A MITEL
PRODUCT
GUIDE

Unify OpenScape UC Application V10

Application Builder

User Guide

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Notices

Trademarks

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1 Introduction

The OpenScape Fusion Application Builder, below referred to as Application Builder, is an administrative application for creating interactive voice applications for different deployment scenarios. You can use a voice application as voice dialog system. It enables the automatic playback of prompts, entering telephone keys via DMTF and making voice entries by means of speech recognition as well as forwarding to other subscribers. For example, prompts may inform the caller and help to navigate in the application. Entries via telephone keypad and via speech recognition enable the caller to find his/her way through the application and to enter data and names. A prompt text may read like this:

"*Welcome to the XY company*. *If you would like to be connected to one of our assistants and know the extension, please push 1. If you would like to be connected with our hotline, please push 2. If you would...*"

In this way callers can be routed to the appropriate conversation partner or routine jobs can be performed as automated procedures. Examples of voice application deployment scenarios are simple information provided via phone, automated reservations and orders or automated telephone exchanges.

1.1 Creating Voice Applications

The Application Builder offers the design interface for voice applications with which it can assemble and configure an application in the form of a callflow. The applications are later provided in the Media Server.

NOTICE: The Media Server does not support the SIP NOTIFY mechanism for REFER method as described in RFC3515.

A call flow consists of function blocks, so-called *controls*, and the *connections* that create a transition between the controls. The control features may e.g. comprise: playing an audio file, executing a database query or setting up a telephone connection to a subscriber. The connections between the controls in the callflow indicate from which control a transition to another control is possible. When constructing a callflow the user determines which controls exist in the callflow and which controls are interconnected. Configuring means the user may set the properties of the contained controls. For example, he/she can set for a control to play audio files, which audio files to play and in which sequence. Furthermore, variables can be defined for storing data and grammar files applied for speech recognition. A voice application may contain several callflow pages in the callflow.

Thus, the callflow does not contain any information about the execution of the model, e. g. how audio files are accessed and how these audio files are forwarded to a PBX so that a caller can listen to these files.

The result delivered by the Application Builder is packed in a `*.mdp.zip.` file and contains all data required for the execution. Besides the callflow of an application with all its control and connection properties the files also represent the configuration of the voice applications and the properties of the variables, prompts and grammar files used. You can import the exported archive file in other workspaces or use it as backup copy.

You can create and simulate the deployment packages for the application offline. Uploading the Deployment Packages is a separate step executed outside the Application Builder. You find information on this in section *How to Provide an Application (Deployment)*.

1.2 Application Builder Features

The following table lists the Application Builder features:

- Creating and editing voice applications
  - Chaining applications
  - Using bookmarks for indicating the most different positions in the application
  - Integrating prompts in the available languages
  - Supporting text-to-speech (TTS) for announcing text
  - Definition of variables to store and forward data and information
  - Importing applications used so far in the Application Builder

    ---
    NOTICE: Please note that you cannot import all applications with all features if the platforms have different features. In most cases the imported application needs further processing.

- Creating and modifying callflows
  - Creating a callflow within an editor
  - Attaching notes to a call flow
  - Linking different callflow pages
- Use of text-to-speech
- Language modification for GUI, documentation and online help after a program reboot

1.3 Features of an Application

A voice application created with the Application Builder may have the following features:

- Playing and recording of sound files
- Performing actions depending on date, weekday, national holidays and time considering the time zone (usage of time profiles)
- Branching in the menu navigation depending on statistic as well as dynamic values
- Forwarding to an extension
- Speech recognition
- Creating and applying call flow rules using specific conditions

- Definition, use and basic operations with variables
- Sending documents
- Searching for contacts and users
- Selecting a supported language
- Database query
- Authenticating an ONS number or the user ID
- Managing and querying a call journal
- Displaying and querying a user's presence status. The contained information may indicate whether a user is in a meeting, absent or available.
- Creating and editing conferences
- Enqueueing incoming calls in queues of a contact center

1.4 Who should read these Instructions?

This manual addresses system administrators and Professional Service employees whose task it is to establish and maintain a voice application.

You need not have any programming knowledge to create a voice application. It is created and edited in the form of a callflow using the graphical user interface of an editor.

1.5 Document Conventions

The following conventions are used in the manual to clearly distinguish the various types of information.

NOTICE: A note in inserted in the text to draw your attention to a feature or to provide information that facilitates working with the program.

IMPORTANT: Text indicated in this way signalizes high priority information. The corresponding details must be heeded to avoid damages to the system or loss of data.

Representation	Purpose
1. Click on **OK**.	The single operating instruction steps are numbered.
• First alternative – Second alternative	Alternative operational steps are represented by unnumbered lists.
Boldface	Menu names, menu entries, dialog buttons, dialog field names, buttons and tabs appear bolded.

Representation	Purpose
`Courier` font	Path descriptions and file names are indicated in Courier font, e. g. c:\Program Files\... or Example.txt
Reference to a section	References to sections in the document are marked in italics.
<*Text in pointed brackets*>	Texts that may have individual contents are represented in pointed brackets, e. g. the specification C:\<*user directory*>\ may mean: C:\Mayer\ or C:\kkh\

1.6 Acronym Directory

The following table lists the acronyms used in this manual in alphabetic sequence.

Acronym	Meaning
ACD	Automatic Call Distribution
ANI	Automatic Number Identification
APL	Access Protocol Layer
ASR	Automatic Speech Recognition
CAD	Call Attached Data
CCBS	Completion of Calls to Busy Subscriber
CCNR	Completion of Calls on No Reply
CVS	Concurrent Versions System
DLL	Dynamic Link Libraries
DNIS	Dialed Number Identification Service
DSN	Data Source Name
DTMF	Dual-Tone Multi-Frequency
IP	Internet Protocol
ITU	International Telecommunication Union
IVR	Interactive Voice Response
LCID	Local ID
MSP	XPR Service Provider
NLU	Natural Language Understanding
ODBC	Open DataBase Connectivity
OSCC	OpenScape Contact Center
RCP	Rich Client Platform
SSML	Speech Synthesis Markup Language

Acronym	Meaning
SQL	Structured Query Language
TTS	Text-To-Speech
XML	Extensible Markup Language

1.7 History of Changes

Date	Changes	Reason
11/2019	Initialization of V110	
10/2020	Added note in Chapter 1.1 Creating Voice Applications	UCBE-24886

2 Setting up the Application Builder

You set up the Application Builder as client application via the setup routine.

The setup media of the OpenScape UC Application are provided as ISO files. The `OpenScapeUcSuiteApps--OptionalPackage-<version>.iso` file contains the `WIN32\APPLICAT.ZIP` file. This file contains the `application_builder_setup.exe` file required for installing the Application Builder.

2.1 How to Install the Application Builder

Prerequisites

- The required hardware environment must be provided in the setup location. You can obtain detailed information from the *OpenScape UC Application Planning Guide*.

Step by Step

1) Start the `application_builder_setup.exe` file.

2) The setup wizard for the Application Builder opens.

3) Select the setup language and confirm with **OK**.

4) The license agreement is displayed. You accept the conditions of the license agreements with **Accept**.

5) Confirm the setup directory with **Install**.

If you wish to change the setup path, click on the **Browse...** button and select the path in the system.
Setup starts. The process status is displayed.

6) Complete the installation with the **Finish** button.

The Application Builder is installed.

2.2 Operating Requirements

Smooth operation of the Application Builder for configuring a voice application requires the following:

- OpenScape UC Application server installation
  See the *OpenScape UC Application Installation and Upgrade* installation instructions on this
- Configured PBX

We recommend the configuration of a Concurrent Version System (CVS) or similar systems for storing the files of the configured voice application or controlling the access to such files.

NOTICE: For further information on the installation and configuration of the OpenScape UC Application please refer to the corresponding installation or administration manuals.

3 First Steps with the Application Builder

This section describes all steps you must execute from starting the Application Builder to performing a first application. We divide them into the following major steps:

- Starting the Application Builder
- Adding a pre-defined language
- Creating the first application
- Simulating this application (optional)
- Adding a server profile
  This step is required for logging the Application Builder on to the OpenScape UC Application.
- Logging the Application Builder on to the OpenScape UC Application
- Providing and executing the application on the OpenScape UC Application

Executing the first application effects an audio file being played on the telephone to the caller who calls a specific OpenScape UC Application phone number.

To familiarize you with the basic procedure of creating and providing an application, we keep it simple as far as possible. For example, we describe how to use a pre-defined language instead of a user-defined language.

In further sub-sections of this section the first application will be extended step by step, so that you learn how to use further Application Builder features.

In the last sub-sections we provide a first insight into the Application Builder features.

3.1 How to Start the Application Builder

Step by Step

1) Start the Application Builder by selecting **Start** > **Programs** > **Unify** > **OpenScape Fusion Application Builder**.

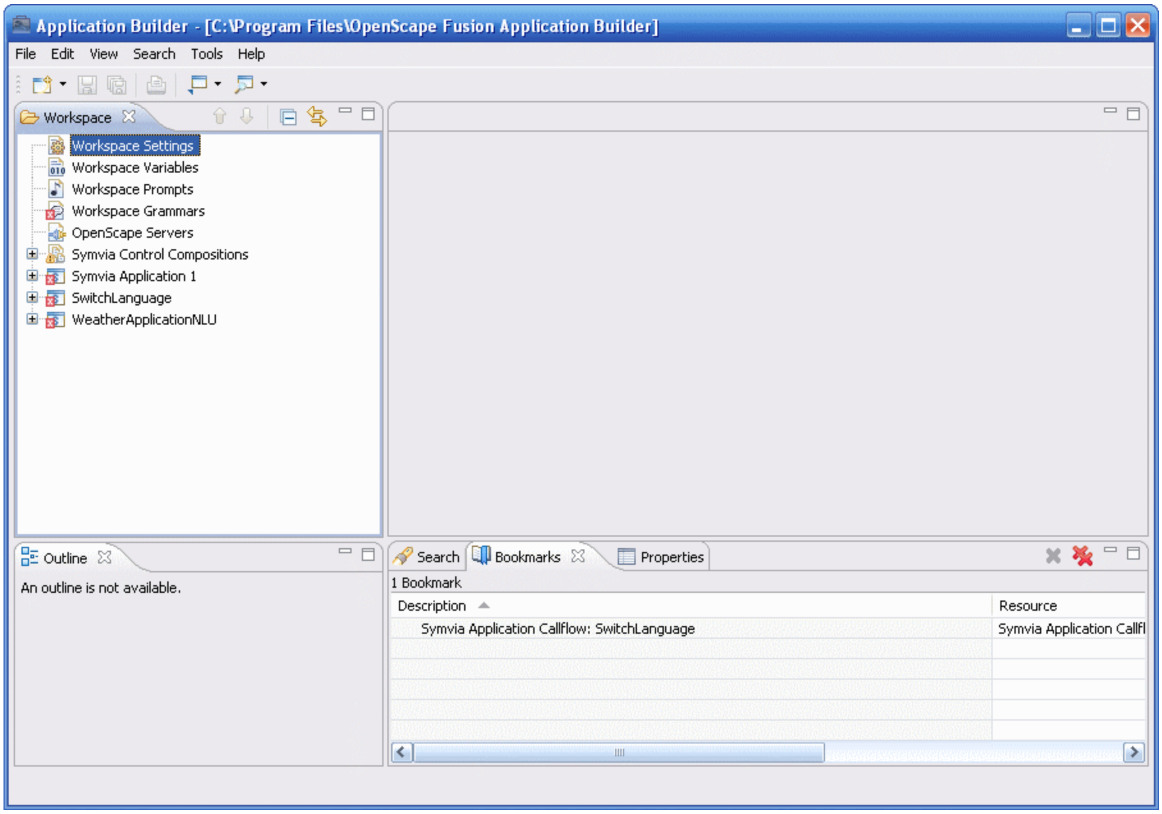
2) When starting the Application Builder select the workspace. Click on the **Browse...** button to select an existing directory or create a new folder.

The data and configuration settings of the workspace, the applications and compositions are stored and also loaded in this directory.

NOTICE: Make sure not to use the `workspace` subfolder of the Application Builder setup path. This folder contains superordinate meta data that must not be overridden or deleted.

NOTICE: If you want the above dialog to be skipped and the Application Builder automatically be started with the workspace used last when you boot the program, activate the **Always start with the last recently used Workspace** check box.

3) Confirm the selected workspace with **OK**.



4) You can select the language of the graphic interface and online help in the **Tools** > **Preferences** menu. However, switching languages does not take effect until the Application Builder is rebooted. You find more information on this in section "Configuring Preferences".

Next steps

Add a predefined language.

3.2 How to Add a Predefined Language

Step by Step

1) Click on the **Workspace Settings** item in the workspace.

The **Workspace Settings** tab for defining and configuring the languages to be used opens in the editor area.

2) Click on the **Add...** button.

The **Add Languages to the Workspace** dialog opens.

Field	Description
Name	The **Name** serves as unique identifier of a language resource.
Code	The **Code** describes the values of the CultureInfo class defined by Microsoft, which contain the cultural properties of a country. These properties contain the name of the culture, the writing system, the calendar used as well as the date format and sorted character strings. The code consists of a two-digit culture code in small letters according to ISO 639 linked to a language and also of a two-digit fractional culture code in small letters linked to a country or region. The format consists of two letters, a hyphen and two letters, for example ja-jp for Japan.
Locale ID	The **Locale ID** or **LCID** (locale identifiers) for short describes a unique code of a language resource introduced by Microsoft, which is also used e.g. by your operating system. Using this ID the operating system can adjust the specific properties and representations of information output such as date and currency specifications or weekday names.
Type	The **Type** indicates for each language resource whether the language is **predefined**, i.e. was installed via the UC system or whether it is a **user-defined** language.

3) Activate the check box of the desired language(s) and confirm your selection with the **OK** button.

The selected language appears indicated in the **All Workspace Languages** list and the **properties** of the added **workspace language** are displayed. The following language properties are available:

Properties	Description
Language Name	The **Name** serves as unique identifier of a language resource.
Language Description	Optional description of the selected language.
Language Code	The **Code** describes the values of the CultureInfo class defined by Microsoft, which contain the cultural properties of a country. These properties contain the name of the culture, the writing system, the calendar used as well as the date format and sorted character strings. The code consists of a two-digit culture code in small letters according to ISO 639 linked to a language and also of a two-digit fractional culture code in small letters linked to a country or region.

Properties	Description
Locale ID	The **Locale ID** or **LCID** (locale identifiers) for short describes a unique code of a language resource introduced by Microsoft, which is also used e.g. by your operating system. Using this ID the operating system can adjust the specific properties and representations of information output such as date and currency specifications or weekday names.
Extra Information	The optional information displayed here can be used by a target platform for identifying the workspace language.
Resource Folders	The **Resource Folder** describes the folder in which the prompts and grammar files configured for the workspace or an application are stored according to the associated language. For each language already assigned by the system a folder name is already predefined. For each user-defined language a folder name must be specified in the right column.

Via the **Set this Language as Workspace Default Language...** link you can define the selected language as language for all prompt, grammar and resource files.

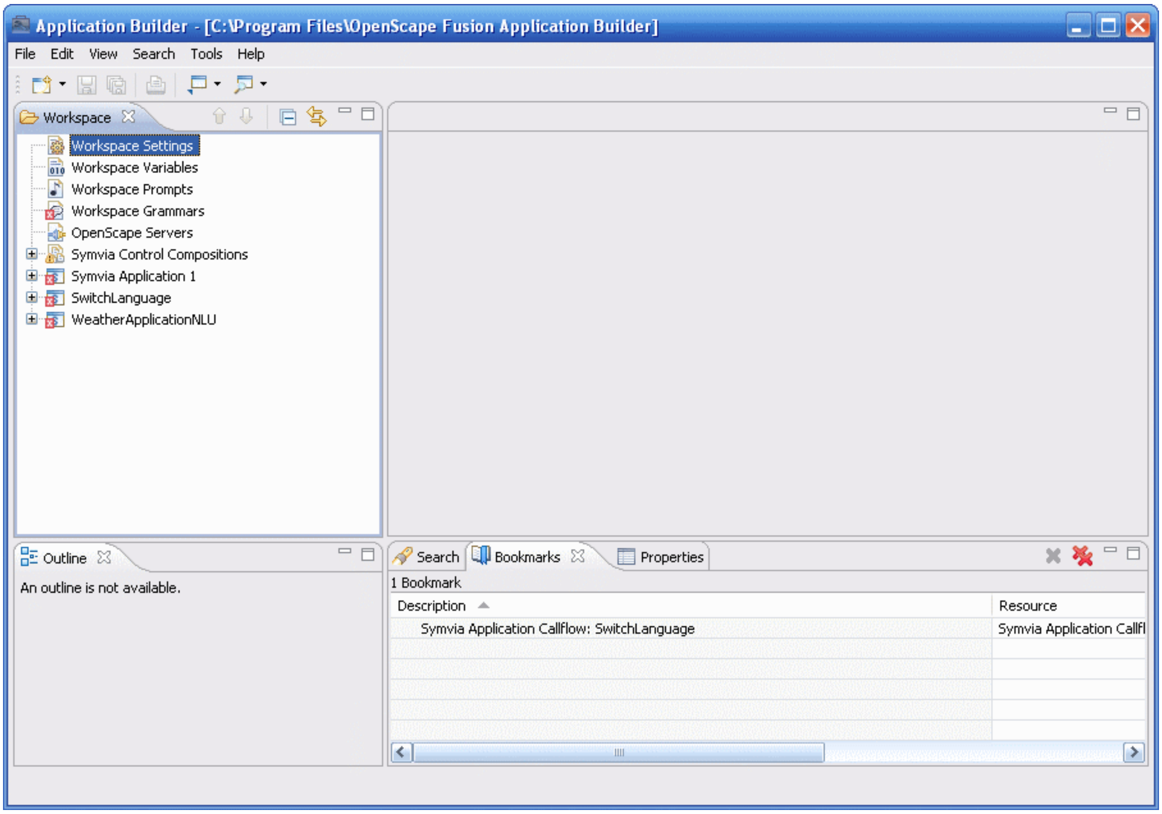
3.3 How to Create the First Application

Prerequisites

- A language must have been configured as workspace language for an application to be created trouble-free. In the most simple case, add a pre-set language to the workspace.
- Provide the audio file (media file) to be played to the caller. The media file must have the format `*.wav` or `*.pcm`.

Step by Step

1) Start the Application Builder by selecting **Start** > **Programs** > **Unify** > **OpenScape Fusion Application Builder** and choosing a workspace.



As the error message shows, the workspace language must first be configured in the next steps.

2) Click on any entry in the workspace view with the right mouse button and select **New > Application...**.

The **Select Type of new Application** dialog opens.

3) Click on the **Symvia Application (AF 2.0)** entry.

4) Click on **Next**.

The **Specify Name of new Application** dialog opens.

5) Click on the **Finish** button.

A new entry with the name of the new application, for example **Symvia Application 1**, has automatically been added to the workspace view.

Furthermore, an error and a warning have appeared in the problem view because certain configurations for this application are missing.

6) Expand the plus sign that precedes **Symvia Application 1**.

7) Expand the plus sign that precedes **Application Callflows**.

An entry, for example **Callflow 1 [Incoming]**, is displayed, the name of which consists of the callflow's name and an expression in square brackets that points to the type of start event.

A callflow determines the actions the application performs when a specific start event has occurred. [Incoming] means that the start event is a call to a specific phone number of the OpenScape UC Application.

8) Double-click the entry **Callflow 1 [Incoming]**.

The callflow editor, dividing itself in a workspace and the palette, opens. A callflow is programmed with the help of controls. Such programming is not performed in the form of code lines entered in an editor but in the form of a flow diagram consisting of blocks (the controls) and arrows between the controls. The Start control and the End control have already been added to the callflow automatically and you can see them in the workspace.

9) Click on the Prompt control in the palette with the left mouse button, keep the mouse button pressed and drag the control into the workspace; then release the mouse button.

NOTICE: If the palette does not display a Prompt control, open **<application name> > Application Settings** in the workspace view, click on the **Application Configuration** tab and activate the **Support of Interactive Voice Response (IVR) Controls** check box in the **Capability Settings** section.

The Prompt control is added to the workspace.

10) Click on the **Connection** entry in the palette.

11) Drag the mouse pointer into the workspace.

A plug icon appears next to the mouse pointer now. This indicates that you are ready for drawing connection lines between the controls.

12) Drag the mouse pointer onto the Start control in the workspace.

In addition to the plug icon, a plus sign appears next to the mouse pointer. Furthermore, an information box appears that contains an error message among other things.

13) Click with the left mouse button on the Start and Prompt control in succession.

A green arrow is drawn from the Start to the Prompt control.

The plus sign next to the mouse pointer has disappeared.

Also gone is the white X on a red background in the top right corner of the Start control. This means that no error is present in the Start control anymore.

14) Move the mouse pointer onto the Start control again.

The information box does not show an error message anymore.

15) Click with the left mouse button on the Prompt and End control in succession.

A green arrow is drawn from the Prompt to the End control.

The yellow warning triangle in the top right corner of the End control has disappeared, because there is now a connection to this control.

The white X on a red background in the top right corner of the Prompt control has been exchanged for a yellow warning triangle, because there is no error message but a warning present for the Prompt control. The content of the warning is displayed in an information box when you move the mouse pointer onto the Prompt control. To make this warning vanish also, a media file will be assigned to the Prompt control in the next steps. Proceeding through those steps we will describe only the most simple case. Please obtain continuative details from section *How to Create and Configure an Application Prompt*.

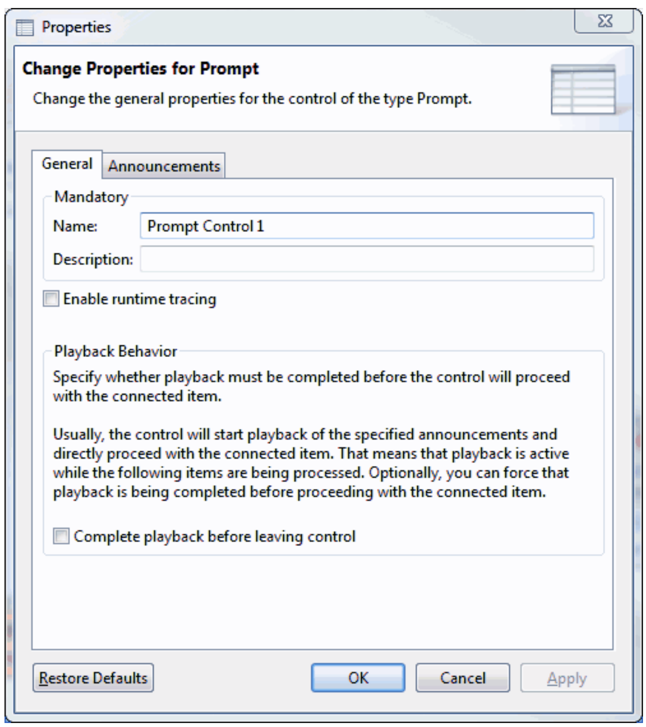
16) Click on the **Select** entry in the palette.

The plug icon next to the mouse pointer disappears.

17) Double-click the Prompt control.

The **Change Properties for Prompt** dialog opens.

18) Click on the **Announcements** tab.



19) Click on the green plus sign.

The **Select Prompts to add to Announcement list** dialog opens.

20) Click on the **Create new Prompt...** link.

The **Set Properties of the Application Prompt** dialog is displayed.

21) In the **Prompt Files** field, click on the **<Click to select file>** entry.

Icons appear on the right in this row.

NOTICE: These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the Windows desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

22) Click on the first icon.

The Windows dialog for selecting a file opens.

23) Select the audio file (media file) to be played to the caller of the application.

24) Click on the **Open** button.

The Windows dialog closes and the name of the media file is displayed in the **Prompt Files** field.

25) Click on the **OK** button.

The **Set Properties of the Application Prompt** dialog closes.

26) Click on the **OK** button.

The **Set Properties of the Application Prompt** dialog closes and the name of the prompt is displayed in the announcement list.

27) Click on the **OK** button.

The **Change Properties for Prompt** dialog closes.

The top right corner of the Prompt control does not display a warning icon anymore. However, in the problem view under the workspace you can still see an error and a warning.

28) Push the Ctrl + S hotkey to save the changes.

The error message in the problem view disappears. You can ignore the warning.

29) In the workspace view, double-click on **<application name> > Application Prompts** and click on the displayed prompt in the **All Symvia Application Prompts** area.

The right-hand section shows details of this prompt.

30) You have now created a first application.

You can compare this application with the SimpleIVR example application. You find this example application in the sub-directory `Samples\Applications` of the Application Builder's setup directory (not in the workspace directory). Import the example application as described in section *How to Import Workspace Elements*. After the import, the workspace view features the new entry **SimpleIVR**.

Next steps

We recommend to simulate the created application.

So that you can use the created application you must generate a server profile for the OpenScape UC Application administrator in the Application Builder, log the Application Builder on to the OpenScape UC Application and provide the application on this OpenScape UC Application.

3.4 How to Simulate the First Application

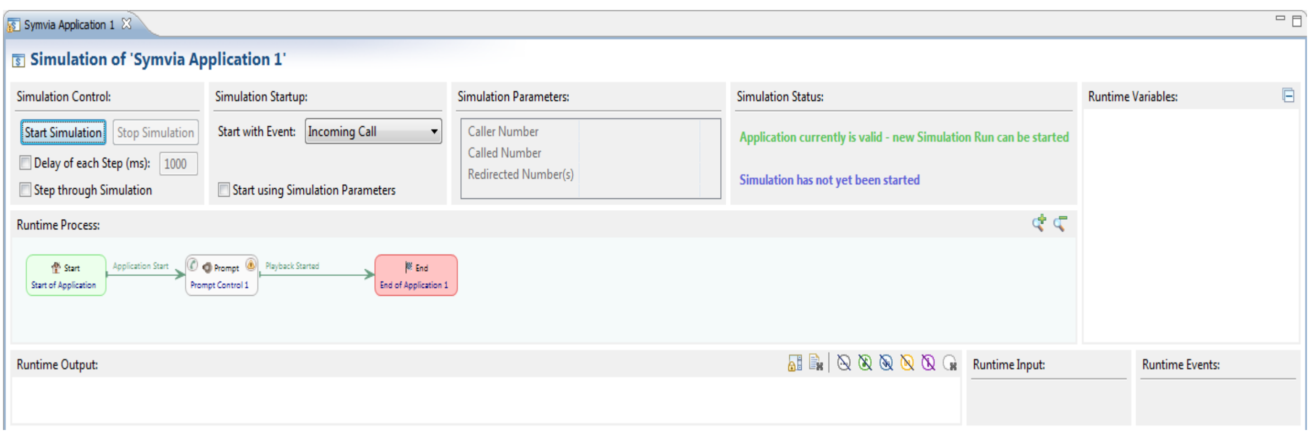
Prerequisites

- The application to be simulated must be error-free but warnings may be present.

Step by Step

1) Click on any entry in the workspace view with the right mouse button and select **Test Application...**.

2) Activate the **Step through Simulation** option.



3) Click on the **Start Simulation** button.

4) Click on the **Start Simulation** button as often as it takes to select the End control.

In the meantime, you can check on the application's actions in the **Runtime Output** and **Runtime Variables** sections.

Next steps

So that you can use the created application you must log the Application Builder on to the OpenScape UC Application and provide the application on this OpenScape UC Application.

3.5 How to Create a Server Profile

You must create a server profile for the administrator of the OpenScape UC Application to connect the Application Builder to the OpenScape UC Application.

Prerequisites

- You need the password of user administrator at the OpenScape UC Application, the IP address of the application computer (back-end computer) of the OpenScape UC Application and the port used for connecting the OpenScape UC Application. Port 4711 is used by default.

Step by Step

1) Click on the **OpenScape Server** entry in the workspace view.

2) Click on the **Server Profiles...** button.

The **Configure the available Server Profiles** opens. You receive an overview of all available server profiles.

3) Click on the **Add...** button.

The **Create new Server Profile** dialog opens.

4) Choose Server Type and specify the following values:

Field	Function
User Name	Name of an OpenScape UC Application user without domain. Example: `administrator`
Server Domain	OpenScape UC Application domain. For the time being, only the `system` domain is supported. This is no Linux or Windows domain.
Server Address	Address of the application computer (back-end computer) of the OpenScape UC Application inclusive port number. Example of usage with unencrypted connection: `js-soc://10.9.30.94:4711`
Profile Name	The profile name is automatically allocated with values of the fields User Name and Server Address. Example: `administrator@system on js-soc://10.9.30.94:4711`
Store Password of server profile	If you wish to store the server profile password, activate this check box.
Password	Password of the server profile
Confirm Password	Password of the server profile

5) Confirm your entries with **OK**.

The created profile is added to the list of server profiles.

Next steps

You can now log the Application Builder on to the OpenScape UC Application.

3.6 How to Log on to the OpenScape UC Application

Prerequisites

- The **Current Status** field shows the login status of the currently selected server profile. You can log on a server profile only if the value of this field is **Not Logged In**. If another server profile is still logged in, log it out with a click on the **Logout** button.
- There is at least one server profile.
- Each firewall between the computer that operates the Application Builder and the application computer (back-end computer) of the OpenScape UC Application opens the port specified in the server profile. Example: Port `4711` in `js-soc://10.9.30.94:4711`

Step by Step

1) In the **Change Status** combo box select the desired server profile for logging on to the OpenScape UC Application.

2) Click on **Login**.

The login dialog opens.

3) Enter the password.

4) If required, activate the **Remember password for this Profile** check box.

5) Click on **OK**.

Value **Logged In** in the **Current Status** field confirms the successful login. A successful login in also stated in the console.

Examples:

14:13:10,323 Account ’administrator@system’ on Server ’js-soc://10.9.30.94:4711’

After a successful login, the **Deployed Applications** tab of the **OpenScape Server Content** shows the provided applications. Such applications may have been created with the Application Builder.

Logging the user off with a click on the **Logout** button in the **OpenScape Server Login** area displays a note in the bottom right corner on the **Deployed Applications** tab of the **OpenScape Server Content** section that describes the tab's content as outdated.

Example:

No Server Connection

Showing last recent Contents of js-soc://10.9.30.94:4711 from 15.11.13 14:20

After a fresh user login, the note disappears.

3.7 How to Deploy the First Application

Prerequisites

- The application to be deployed must not contain any errors.
- You need the phone number that must be called for making the application start (start event of the application).

Step by Step

1) In the menu bar, click on the icon to provide the current application or select an application from the combo box via the triangle.

The **Application Deployment** dialog opens.

2) If the **Currently not connected to an OpenScape Server** message is displayed, select a value in the **Server Profile** field.

3) Click on **Login**.

4) Enter the password for this server profile.

5) Click on the **OK** button.

6) Click on **Next**.

7) Enter the phone number that must be called for making the application start (start event of the application) in the **Phone Number** field.

8) You can activate the **Enable Runtime Tracing** check box.

If you activate this check box, the application will create log data in the server log. This data may help you understanding problems or errors that occurred at the application's runtime.

With this check box enabled, all controls configured for this purpose will create log data. The controls will not create any log data if the check box remains disabled.

9) Click on **Next**.

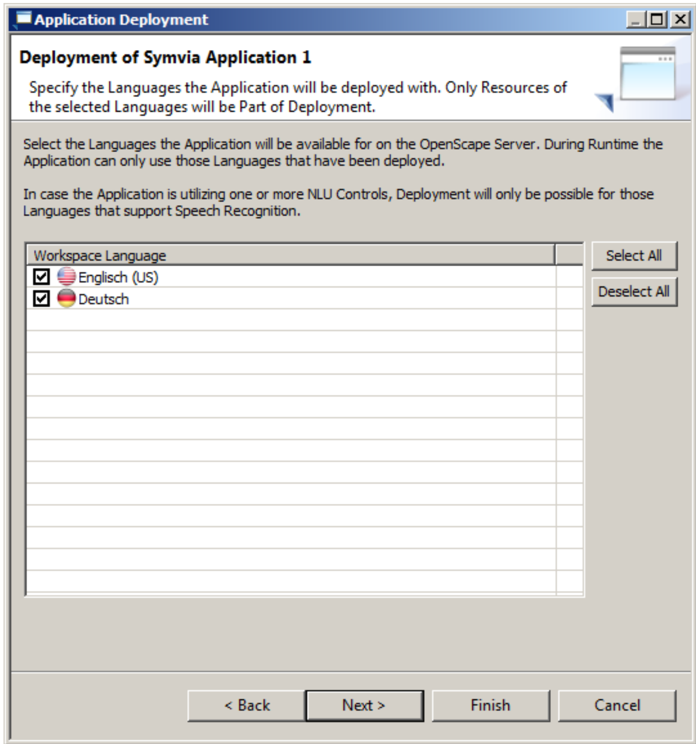
10) Enter a new modification message or activate the check box to use the default modification message

11) Click on **Next**

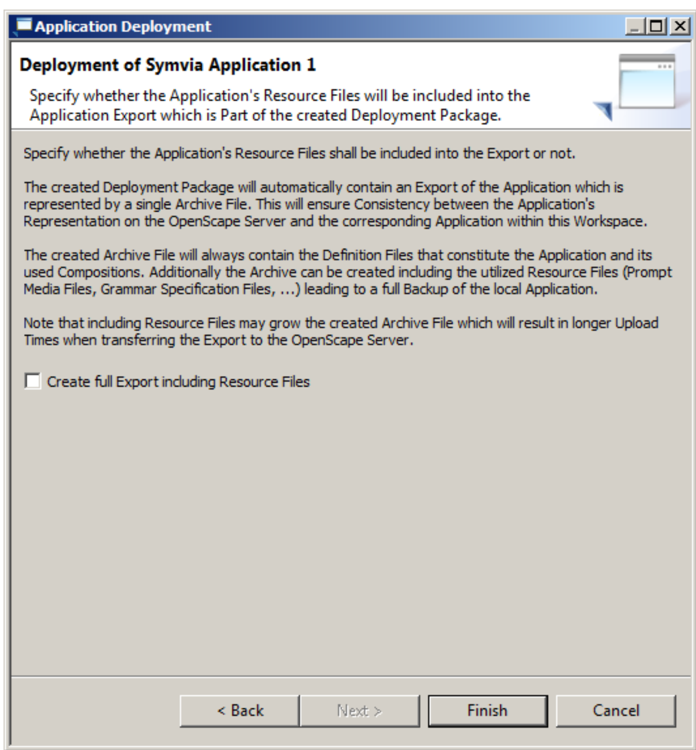
12) Activate or deactivate the check box Overwrite Application Configuration to specify if the current Application Configuration on the Server will be replaced by the new one.

13) Click on **Next**

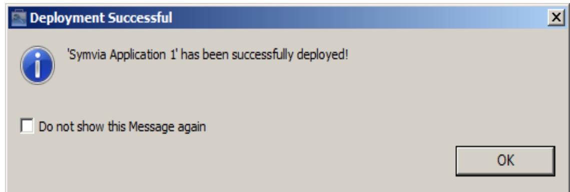
14) Activate or deactivate the check boxes on the left-hand side in the **Language workspace** to provide the respective language.



15) Click on **Next**.



16) Click on the **Finish** button.



17) Click on the **OK** button.

18) Double-click the **OpenScape Server** entry in the workspace view.

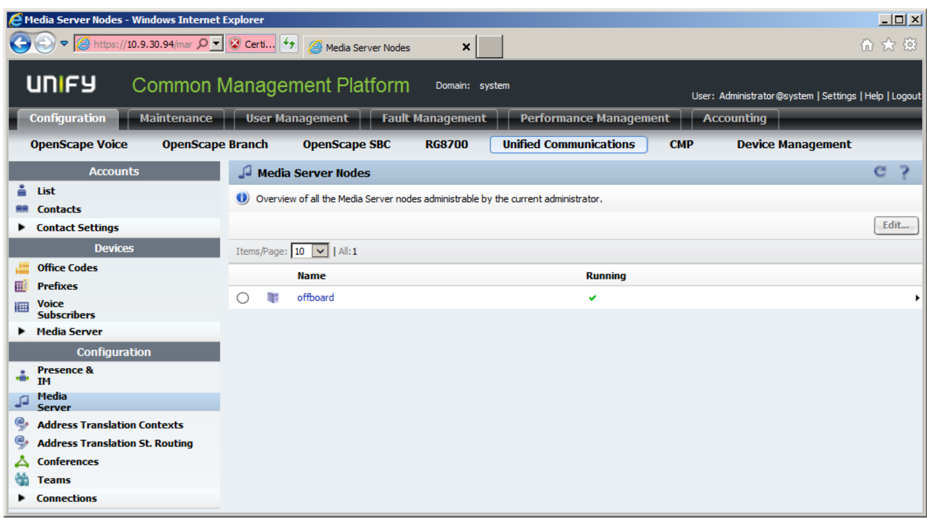
19) The application is now deployed on the OpenScape UC Application and can be configured. Log on to the CMP.

The **OpenScape Server Content > Deployed Applications** section now shows a new entry with the application's name, for example **Symvia Application 1**.

When you click on the plus sign that precedes the entry, the phone number to be called for making the application start is displayed.

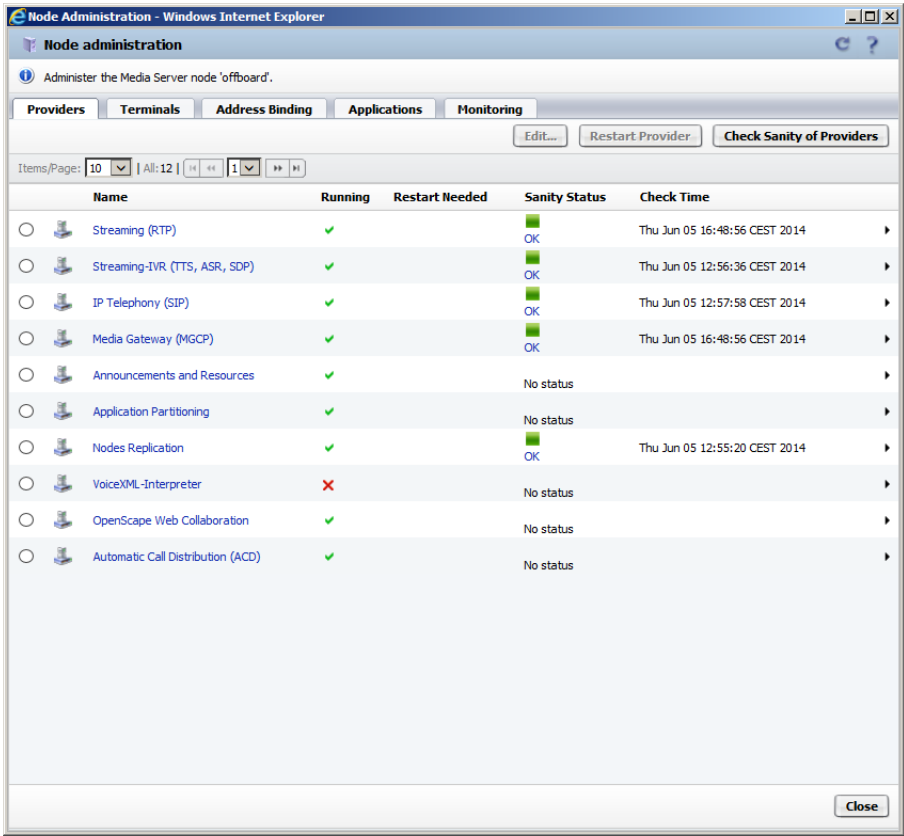
20) Log on to the CMP (Common Management Platform).

21) Open **Configuration > UnifiedCommunications > Configuration > Media Server**.

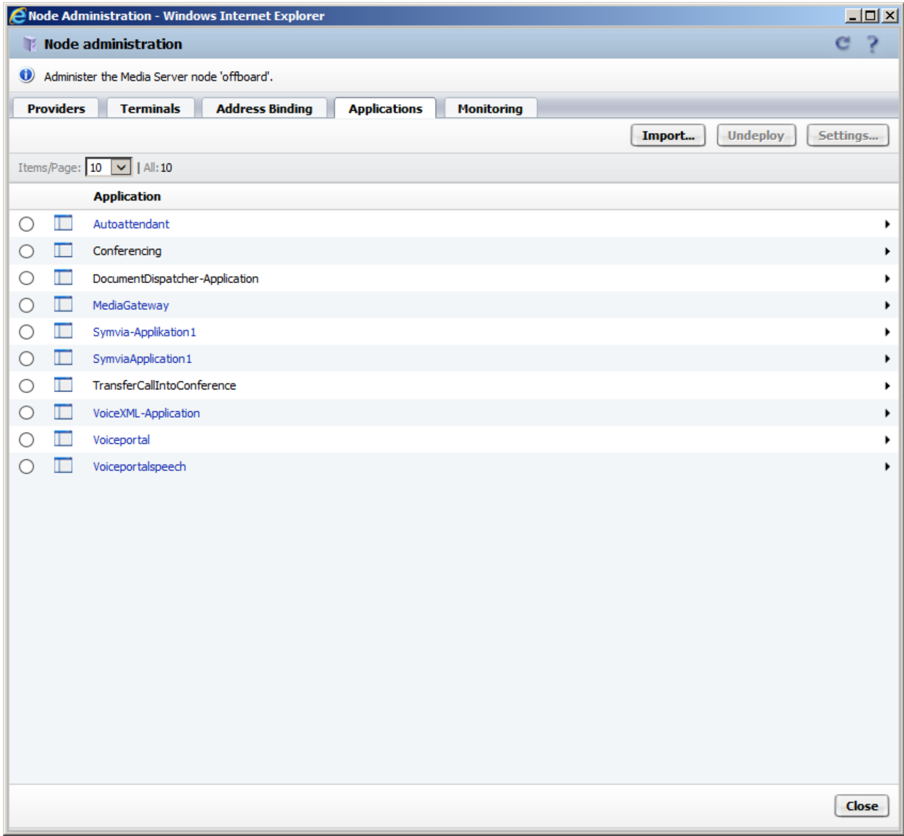


22) Double-click the computer on which the media server is installed.

NOTICE: The names of the OpenScape UC Application computers displayed here are determined in the `knut.-responsefile.txt` file during the OpenScape UC Application setup. Typically, these names are no host names or FQDNs. The default value for the back end computer of the OpenScape UC Application (application computer) is **offboard**. Please obtain details from the *OpenScape UC Application, Installation and Upgrade* setup guide.

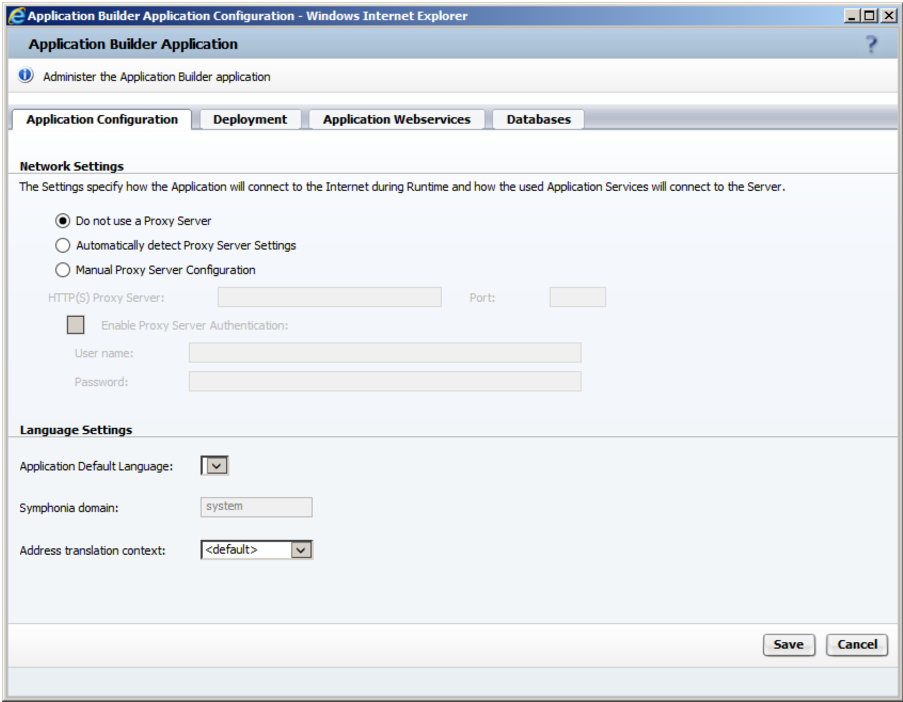


23) Click on the **Applications** tab.



An entry with the application's name, for example **SymviaApplication1**, is displayed.

24) Click on this entry.



25) If you use a proxy server the configuration of which shall be detected automatically, activate the **Automatically detect Proxy Server Settings** radio button.

If you wish to configure the proxy server manually, activate the **Manual Proxy Server Configuration** radio button and execute the following sub-steps:

a) Enter the proxy server's IP address in the **HTTP(S) Proxy Server** field.

b) Enter the port number of the port the proxy server communicates over in the **Port** field.

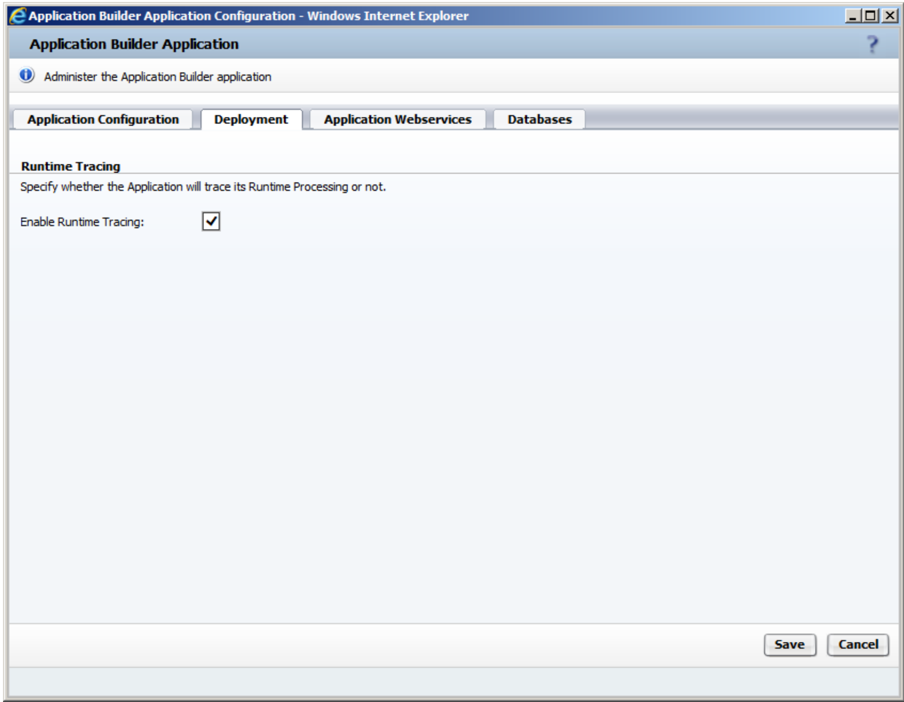
c) If required, activate the **Enable Proxy Server Authentication** check box and fill the **User name** field with the user name to be deployed and the **Password** field with the password.

26) Select the language to be used by the application as default in the **Application Default Language** field.

27) If you do not wish to use the default address translation context, select another value in the **Address translation context** field.

On the CMP, address translation contexts are created under **Configuration > Unified Communications > Configuration > Address Translation Contexts**. Please obtain details on this from the *OpenScape UC Application, Installation and Upgrade* setup guide and the administrator documentation *OpenScape UC Application, Configuration and Administration*.

28) Click on the **Deployment** tab.



29) If the application is to create log data, activate the **Enable Runtime Tracing** check box.

30) Click on the **Save** button.

31) If the OpenScape UC Application is available in the Large Deployment or Very Large Deployment scenario and several Media Server computers are present, execute steps 22 to 30 for all other Media Server computers also.

Please obtain details on the Large Deployment and Very Large Deployment scenarios from the *OpenScape UC Application Planning Guide*.

You can now use the application.

32) Test the application by dialing the phone number entered in step 7.

The media file assigned to the Prompt control in the callflow is played to the caller.

Next steps

You have familiarized yourself with the basic steps of creating and providing an application. The ensuing sub-sections of section *The first Steps with the Application Builder* will provide a rough overview of how to broaden such knowledge. The sections *User Interface* and *Controls* describe single Application Builder elements and proceedings in detail.

The sub-section `Samples\Applications` of the Applicaton Builder setup directory (not the workspace directory) contains sample applications. The SimpleIVR application resembles your first application. The section *How to Import Workspace Elements* describes how to provide such applications. You can use those applications as basis for your own applications.

3.8 How to Use TTS in an Application

In this section we describe how you modify the first created application in such a way that written text transformed into spoken language by TTS (Text to Speech) and offered to the caller is used instead of the audio file (media file).

Prerequisites

- You must have created an application as described in section *How to Create the first Application*.
- You need the password of user root of the OpenScape UC Application to determine the deployment scenario.

Step by Step

1) Start the Application Builder by selecting **Start** > **Programs** > **Unify** > **OpenScape Fusion Application Builder** and choosing a workspace.

2) In the workspace view, double-click on **<application name> > Application Prompts** and click on the displayed prompt in the **All Symvia Application Prompts** area.

The right-hand section shows details of this prompt.

3) Make sure that the language displayed in the fields **Prompt Text** and **Prompt Files** corresponds to the language you installed in step 9 on the Media Servers.

4) Click on the file displayed in the **Prompt Files** field.

Icons appear to the left of this row.

> ***NOTICE:*** These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the Windows desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

5) Click on the button for removing a media file.

The file name is removed.

6) Click in the **Prompt Texts** field and enter the text to be offered as spoken language to the caller.

Example:

```
Welcome to company XYZ.
```

7) Push the Ctrl + S hotkey to save the changes.

8) You must check whether the required TTS language is installed on all computers of the OpenScape UC Application that host a Media Server. Because such computers depend on the deployment scenario of the

OpenScape UC Application used, you first must determine which deployment scenario is on hand. You do this in the following sub-steps:

> ***NOTICE:*** Please obtain deployment scenario details from the *OpenScape UC Application Planning Guide*.

> ***NOTICE:*** This step and the ensuing one are not necessary for creating the application in the Application Builder, but are well required for executing the application on the OpenScape UC Application.

a) Open a command line on the application computer (back-end computer) of the OpenScape UC Application.

b) Log on a user root.

c) Enter the following commands in succession:

```
rpm -qa | grep OpenScapeUC_IntegratedSimplex
rpm -qa | grep OpenScapeUC_StandardDuplexSmall
rpm -qa | grep OpenScapeUC_Large_BE
rpm -qa | grep OpenScapeUC_VeryLarge_BE
```

Component installed on the application computer	**Deployment scenario**	**Media Server on the computer**	
		Application computer	**Media Server computer**
OpenScapeUC_IntegratedSimplex	Integrated Deployment	Mandatory	Optional
OpenScapeUC_StandardDuplexSmall	Small Deployment	Mandatory	Not allowed
OpenScapeUC_Large_BE	Large Deployment	Not allowed	Mandatory
OpenScapeUC_VeryLarge_BE	Very Large Deployment	Not allowed	Mandatory

The command of the above listed ones that delivers a non-empty output indicates the deployment scenario used. The table specifies on which computers in this case a Media Server is present mandatorily or optionally. For Large Deployment or Very Large Deployment, Media Servers can be installed on several Media Server computers. Please obtain the maximum number of Media Server computers from the *OpenScape UC Application Planning Guide*.

If osc-setup is installed on the application computer and a repository is available in osc-setup, you can execute the following command alternatively to the above ones:

```
osc-setup se OpenScapeUC_
```

The line marked with a `i` in the first column of the output table indicates the installed deployment scenario.

Sample output:

```
...
S | Name                             | Summary | Type
...
--+--------------------------------+---------+------
i | OpenScapeUC_StandardDuplexSmall | OpenScape UC -
StandardDuplexSmall | package
...
```

Please obtain osc-setup and repository details from the *OpenScape UC Application, Installation and Upgrade* setup guide.

9) Install the demanded TTS language on all computers on which a Media Server has been set up. Please obtain details on this from the *OpenScape UC Application, Installation and Upgrade* setup guide. The setup command for the German TTS language for example reads as follows:

```
osc-setup in uc-tts-de_de
```

Next steps

We recommend to simulate the created application.

Log the Application Builder on to the OpenScape UC Application if this has not been done yet.

You must provide the created application on the OpenScape UC Application for using it.

3.9 How to Create an Application for Switching Languages

This section describes how you expand your first created application in such a way that the TUI language is switched.

Prerequisites

- You must have created an application as described in section *How to Create the first Application*.
- Because TTS is used in the example that we document in the following steps you must have followed the instructions given in section *How to Use TTS in*

an application. Deviating from the documented example, you can use prompt files as described in section *How to Create the first Application* instead.

Step by Step

1) Start the Application Builder by selecting **Start** > **Programs** > **Unify** > **OpenScape Fusion Application Builder** and choosing a workspace.

2) Because the sample applications described in sections *How to Create the first Application* and *How to Use TTS in an Application* contain only one language, another language must first be added to the Application Builder. To do this, execute the following sub-steps:

   a) In the workspace view, double-click **Workspace Settings**.

   b) Click on the **Add...** button.

   c) Tick the check box of the language the application to be created shall be able to switch to also.

   d) Click on the **OK** button.

   e) Push the Ctrl + S hotkey to save the changes.

   The added language will be displayed in the **All Workspace Languages** section. The language exclusively available until another language was added is marked as default workspace language.

3) In the workspace view, double-click on **<application name> > Application Prompts** and click on the displayed prompt in the **All Symvia Application Prompts** area.

   The right-hand section shows details of this prompt.

4) In the **Prompt Texts** field, click in the line of the added language and enter the text to be offered as spoken language to the caller.

   Example:

   `Welcome at company XYZ.`

5) Push the Ctrl + S hotkey to save the changes.

6) Double-click on **<application name> > Application Callflows > <callflow name>** in the Application Builder's workspace view.

7) Drag a SystemInfo control into the workspace.

   A SystemInfo control serves for storing system information in a variable. System information may be the current time or date, the available languages or the logged-in user. In our case, the available languages are later to be stored in a variable.

8) Click on the connection from the Prompt control to the End control.

   Drag points of this connection appear.

9) Move the mouse pointer onto the red drag point of the End control.

   A plug icon and a double arrow are displayed next to the mouse pointer.

10) Click on the red drag point at the End control with the left mouse button, keep the mouse button pressed, drag the mouse pointer to the SystemInfo control and release the mouse button.

The connection now does not link the Prompt control to the End control anymore but the Prompt control to the SystemInfo control.

11) Double-click the SystemInfo control.

The configuration dialog for this control opens.

12) Click on the **Retrievals** tab.

The information retrieval list is displayed.

13) Click on the green plus sign with the left mouse button.

The **Create new Retrieval for Information Retrieval List** dialog is displayed.

14) Click on the **Enabled Languages** entry.

15) In the **Value Storage** section, click on the **...** button.

The **Select the Application Variable to use** dialog is displayed.

16) Click on the **Create new Variable...** link.

The **Set Properties of the Application Variable** dialog is displayed.

17) Change the value in the **Variable Name** field to `APPLICATION_LANGUAGES` for example. This variable is to store which languages are available in the application. Leave the variable type set to value **String List**.

18) Click on the **OK** button.

The dialog closes. The variable just created is selected.

19) Click on the **OK** button.

The dialog closes.

20) Click on the **OK** button.

The dialog closes.

21) Click on the **OK** button.

The dialog closes.

The variable just created is an application variable, meaning that it is valid in the entire application. Consequently, it cannot only be used in the callflow that contains the just configured SystemInfo control but in all other callflows of the same application. It cannot be used in other applications. You can thus use the data encapsulation principle in the Application Builder as it is deployed in higher programing languages also. Open **<application name> > Application Variables** in the workspace view. When you click on the desired variable in the **All Symvia Application Variables** section, properties of this variable are displayed in the right-hand section.

22) Double-click on **<application name> > Application Callflows > <callflow name>** in the Application Builder's workspace view.

23) Drag a DtmfSelection control into the workspace.

A DtmfSelection control serves for reading a list to the caller from which he/she then selects a value by pushing a key on his/her keypad. Here, the control will serve for selecting a language from the list of available languages.

24) Click on the **Connection** entry in the palette.

25) Create a connection from the SystemInfo control to the DtmfSelection control.

The white X on a red background in the top right corner of the SystemInfo control disappears.

26) Click on the **Select** entry in the palette.

27) Double-click the DtmfSelection control.

The **Change Properties for DtmfSelection** dialog opens.

28) Change the value of the **Name** field to `Select language`.

29) Click on the **Introduction** tab.

On this tab you configure which announcements shall be played when this control is reached upon executing the application. These announcements are to inform the caller about the language currently configured for the TUI. They serve as an introduction to subsequent announcements for selecting a language.

30) Click on the green plus sign.

The **Select Prompts to add to Announcement list** dialog opens.

31) Click on the **Create new Prompt...** link.

The **Set Properties of the Application Prompt** dialog is displayed.

32) Enter the `current_language` value in the **Prompt Name** field.

33) In the **Prompt Texts** field specify in the respective language the text you wish to use to initiate switching the language for the caller.

Examples:

German: `Die gegenwärtige Sprache ist:`

English: `The current language is:`

34) Click on the **OK** button.

The dialog closes.

35) Click on the **OK** button.

The newly created prompt has been added to the end of the announcement list.

Later, when the application is being executed, this text will be announced to the caller as spoken language.

The prompt just created is an application prompt, meaning that it is valid in the entire application. It cannot only be used in the currently edited callflow but in all other callflows of the same application. It cannot be used in other applications. The data encapsulation principle as it is deployed in higher programing languages can thus also be used in the Application Builder for prompts. You can later see the just created prompt in the workspace view **<application name> > Application Prompts**. If you then click the desired prompt in the **All**

Symvia Application Prompts area, the area on the right hand side displays the prompt's properties.

36) You cannot enter the language's name in the DtmfSelection control permanently, because the language used is unknown at the time of the control's creation. Instead, a variable LANGUAGE is used in the next steps.

Click on the small black triangle to the right of the green plus sign and select **Add Variable...** .

The **Select Variables to add to Announcement list** dialog opens.

37) Tick the check box that precedes the **LANGUAGE [Application Default Variable]** entry.

38) Click on the **OK** button.

The **LANGUAGE** entry is added to the end of the announcement list.

In order to play the value of the LANGUAGE variable as spoken language correctly, a transformation must be created in the next steps.

39) Click in the **Transformation** column in the LANGUAGE entry's line.

A button with ellipsis appears.

> ***NOTICE:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the Windows desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

40) Click on this button.

The **Select Value Transformation for Variable** dialog opens.

41) Click on the **Create new Transformation...** link.

42) Enter a name for the transformation in the **Transformation Name** field, for example `LanguageCode`.

43) In the field thereunder, you can optionally give a short description.

44) Click on **Next**.

The **Specify the Directive of the Variable Value Transformation** dialog opens.

45) The translation type is determined in this dialog. Select the **Language Code Transformation [String]** value from the Transformation Directive combo box.

46) Click on the **Finish** button.

The dialog closes and a new value has been added to the list of transformations.

47) The application to be created is to switch the language, i. e. at least two workspace languages must have been configured. Because a transformation is only valid for one language, the **OK** button is still grayed out and cannot be used yet. Execute steps 41 to 46 also for the language added in step 2.

Another value has been added to the list of transformations.

48) Click on the **OK** button.

The playback list displays the transformation added last.

49) Click on the small black triangle to the right of the green plus sign and select **Add Pause...** .

50) Click on the **OK** button.

A pause has been added to the playback list. Announcements are better understood when not being played in immediate succession.

51) Click on the **Iteration** tab.

On this tab you configure which variables shall be used for selecting a language.

52) Leave the **Iterate over Variable List** radio button active.

53) Click on the button with the ellipsis next to the **Variable List to iterate** field.

The **Select the Application Variable or a Member Variable to use** dialog is displayed.

54) Click on the variable you created in steps 16 to 20 and that contains the list of the workspace languages, for example `APPLICATION_LANGUAGES`. This variable determines which languages will later be offered to the caller for selection when the application is being executed.

55) Click on the **OK** button.

The variable name is displayed in the **Variable List to iterate** field.

56) Leave the **Iterator Variable Name** and **Selection Key Variable Name** fields unchanged.

57) Click on the button with the ellipsis next to the **Variable for selected Element** field.

The **Select the Application Variable to use** dialog opens.

58) Click on the **Create new Variable...** link.

The **Set Properties of the Application Variable** dialog is displayed.

59) Change the value in the **Variable Name** field to `SELECTED_LANGUAGE` for example. This variable is to store the language the caller has selected. Leave the variable type set to value **String**.

60) Click on the **OK** button.

The dialog closes. The variable just created is selected.

The variable just created is an application variable like the APPLICATION_LANGUAGES variable created in step 17, meaning that it is valid in the entire application.

61) Click on the **OK** button.

The dialog closes. The **Variable for selected Element** field displays the just created variable.

62) Click on the **Selection** tab.

On this tab you configure which announcements shall be played to the caller for selecting a language.

Examples: "Please press 1 for German. Please press 2 for English."

63) Click on the green plus sign.

The **Select Prompts to add to Announcement list** dialog opens.

64) Click on the **Create new Prompt...** link.

The **Set Properties of the Application Prompt** dialog is displayed.

65) Enter the **switch_language_for...** value in the `Prompt Name` field.

66) In the **Prompt Texts** field specify in the respective language the text you wish to use to initiate switching the language for the caller.

Examples:

German: `Für:`

English: `For:`

67) Click on the **OK** button.

The dialog closes. The just created prompt is selected through a tick.

68) Click on the **OK** button.

The newly created prompt has been added to the end of the announcement list.

Later, when the application is being executed, this text will be announced to the caller as spoken language.

The prompt just created is an application prompt, meaning that it is valid in the entire application. It cannot only be used in the currently edited callflow but in all other callflows of the same application. It cannot be used in other applications. The data encapsulation principle as it is deployed in higher programing languages can thus also be used in the Application Builder for prompts. You can later see the just created prompt in the workspace view **<application name> > Application Prompts**. If you then click the desired prompt in the **All Symvia Application Prompts** area, the area on the right hand side displays the prompt's properties.

69) Click on the small black triangle to the right of the green plus sign and select **Add Variable...** .

The **Select Variables to add to Announcement list** dialog opens.

70) Activate the check box that precedes the **ITERATOR** entry.

71) Click on the **OK** button.

The **ITERATOR** entry is added to the end of the announcement list.

In order to play the value of the ITERATOR variable as a spoken language correctly, a transformation must be selected for the ITERATOR variable in the next steps.

72) Click in the **Transformation** column in the LANGUAGE entry's line.

A button with ellipsis appears.

NOTICE: This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the Windows desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

73) Click on this button.

The **Select Value Transformation for Variable** dialog opens.

74) In the list, click on the `LanguageCode` transformation you created further above and then on **OK**.

The dialog closes. The announcement playback list displays the added `LanguageCode` transformation for the ITERATOR variable.

75) Click on the green plus sign.

The **Select Prompts to add to Announcement list** dialog opens.

76) Click on the **Create new Prompt...** link.

The **Set Properties of the Application Prompt** dialog is displayed.

77) Enter the **switch_language_...press** value in the `Prompt Name` field.

78) In the Prompt Texts field specify in the respective language the text you wish to use to initiate switching the language for the caller.

Examples:

German: `Drücken Sie:`

English: `press:`

79) Click on the **OK** button.

The dialog closes. The just created prompt is selected through a tick.

80) Click on the **OK** button.

The newly created prompt has been added to the end of the announcement list.

Later, when the application is being executed, this text will be announced to the caller as spoken language.

The prompt just created is an application prompt, meaning that it is valid in the entire application.

81) Click on the small black triangle to the right of the green plus sign and select **Add Variable...** .

The **Select Variables to add to Announcement list** dialog opens.

82) Activate the check box that precedes the **KEY** entry.

83) Click on the **OK** button.

The **KEY** entry is added to the end of the announcement list.

84) Click on the small black triangle to the right of the green plus sign and select **Add Pause...** .

85) Change the displayed numerical value to `500`.

86) Click on the **OK** button.

A pause has been added to the playback list. Announcements are better understood when not being played in immediate succession.

Configuring the playback list for selecting a language is now complete. This configuration effects the following output as a spoken language when executing the application: "For German, press 1." A pause of 500 milliseconds follows. "For English press 2." The switch_language_for... prompt thus stands for the word "for", the ITERATOR variable stands for a language name in the list of available workspace languages, the switch_language_...press prompt stands for "press" and the KEY variable stands for the keypad key that must be pressed if the just announced language shall be selected. This playback list is repeated until all language names in the list of available workspace languages have been announced.

87) Click on the **OK** button.

The dialog closes.

88) Drag a Language control into the workspace.

Using this control you can switch the language of the announcements to be played during the application's runtime. This language is also the application language. It can be switched to all languages licensed and installed on the OpenScape UC Application.

89) Click on the **Connection** entry in the palette.

90) Create a connection from the DtmfSelection control to the Language control.

The **Select the Event for the Connection** dialog opens. This dialog is always displayed if a control may have several exits and one or more exists are not used yet.

91) Select the **Element Selected** entry and click on the **OK** button.

This means the Language control is executed if the caller makes a correct selection at runtime of the application.

92) Create a connection from the DtmfSelection control to the End control.

This means that the caller has made an incorrect or no selection and the execution of the application is terminated.

The white X on a red background in the top right corner of the DtmfSelection control disappears.

93) Click on the **Select** entry in the palette.

94) Double-click the Language control.

The **Change Properties for Language** dialog opens.

95) Change the value of the **Name** field to `Switch language`.

96) Activate the **Specify by Variable** radio button.

97) Click on the button with the ellipsis next to the **Specify by Variable** field.

The **Select the Application Variable or a Member Variable to use** dialog is displayed.

98) Click on the variable you created in steps 58 to 60 and that contains the list of the workspace languages selected by the caller, for example `SELECTED_LANGUAGE`.

99) Click on the **OK** button.

The dialog closes. The variable name is displayed in the **Specify by Variable** field.

100) Click on the **OK** button.

The dialog closes.

101) Drag a Prompt control into the workspace.

102) Click on the **Connection** entry in the palette.

103) Create a connection from the Language control to the DtmfSelection control.

The **Select the Event for the Connection** dialog opens.

104) Select the **Language Changed** entry and click on the **OK** button.

This means that executing the DtmfSelection control, which will first inform the caller about the currently configured language, comes next if the language was successfully switched.

105) Create a connection from the Language control to the Prompt control just added.

This means that the Prompt control will be executed if switching the language was not successful.

The white X on a red background in the top right corner of the Language control disappears.

106) Click on the **Select** entry in the palette.

107) Double-click the Prompt control.

The **Change Properties for Prompt** dialog opens.

108) Change the value of the **Name** field to `Error`.

109) Click on the **Announcements** tab.

110) Click on the green plus sign.

The **Select Prompts to add to Announcement list** dialog opens.

111) Click on the **Create new Prompt...** link.

The **Set Properties of the Application Prompt** dialog is displayed.

112) Enter the **error** value in the `Prompt Name` field.

113) In the **Prompt Texts** field specify the text in the respective language.

Examples:

German: `Ein Fehler ist aufgetreten.`

English: `An error has occured.`

114) Click on the **OK** button.

The dialog closes.

115) Click on the **OK** button.

The newly created prompt has been added to the end of the announcement list.

Later, when the application is being executed, this text will be announced to the caller as a spoken language if switching the language failed.

The prompt just created is an application prompt, meaning that it is valid in the entire application.

116) Click on the **OK** button.

117) Click on the **Connection** entry in the palette.

118) Create a connection from the Prompt control edited last to the End control.

The white X on a red background in the top right corner of the Prompt control disappears.

119) Push the Ctrl + S hotkey to save the changes.

The asterisk that precedes the callflow's name on the tab disappears.

Creating the application is now complete.

120) Install the language added in step 2 as TTS language on the OpenScape UC Application according to the instructions given in section *How to Use TTS in an Application*.

NOTICE: This step is not necessary for the above application creation in the Application Builder, but is well required for executing the application on the OpenScape UC Application.

Next steps

We recommend to simulate the created application.

Log the Application Builder on to the OpenScape UC Application if this has not been done yet.

You must provide the created application on the OpenScape UC Application for using it.

3.10 How to Create an Application for Switching Languages with a custom Language and Media Files

This section describes how you expand your first created application in such a way that the TUI language is switched. In contrast to section *How to Create an Application for Switching Languages*, a custom language (for example Canadian French) is used instead of a predefined language and sound files (Media files) instead of TTS for the prompts.

Prerequisites

- You must have created an application as described in section *How to Create the first Application*.

Step by Step

1) Start the Application Builder by selecting **Start** > **Programs** > **Unify** > **OpenScape Fusion Application Builder** and choosing a workspace.

2) Because the example application described in section *How to Create the first Application* contains only one language, another language must first be added to the Application Builder. This language is to be user-defined. To do this, execute the following steps:

3) In the workspace, double-click the **Workspace Settings** entry.

The editor area has now the **Workspace Settings** tab open for specifying and configuring the languages to be used.

4) Click on the **Configure custom Language Definitions...** link.

The dialog of the same name appears.

5) Click on the **Add...** button.

The **Add Custom Language...** dialog opens.

6) Enter the following information:

- **Language Name**
  Example: Canadian French
- **Language Description**
  Example: Quebecois
- **Language Code**
  Example: fr-CA
- **Locale ID (LCID)**
  Example: 3084

You can retrieve the **Language Code** and the associated **Locale ID** from the Microsoft Internet pages.

7) Click on the **OK** button.

The created language is shown in the list of custom language definitions.

You can select a language and edit it via the provided buttons, copy it or remove it from the list. Information about how to proceed is given in section *How to Edit a Custom-Language Definition*.

> ***NOTICE:*** A language configured in a workspace is also available in all other workspaces of the same Application Builder entity. This is independent from whether or not this language has been added to a workspace via **Workspace Settings > Workspace Languages > All Workspace Languages > Add...**.

8) Click on the **OK** button.

The **Configure Custom Language Definitions** dialog closes and the created language is added to the list.

9) Click on the **Add...** button.

The list of selectable languages features the just created language.

10) Activate the check box associated to this language.

11) Click on the **OK** button.

The All Workspace Languages area displays this language.

However, this entry is marked with a white X on a red background.

12) In the **Workspace Language Properties** area doubleclick on **<Click to enter folder>**.

13) Enter the name, for example `quebecois`, of the directory in which the sound files (media files) for this language shall be stored.

14) Push the Ctrl + S hotkey to save the changes.

The white X on a red background next to the language name has disappeared.

However, the workspace entry **<application name> > Application Prompts** features a white X on a red background, because a sound file was assigned to a prompt in section *How to Create the first Application*. This assignment was performed only for the language added at this time but not for the custom language just created. Consequently, another sound file to prompt assignment must be performed in the next steps.

15) Doubleclick on **<application name> > Application Prompts**.

The prompt created in section *How to Create the first Application* is displayed. Next to the prompt name you see a white X on a red background.

16) In the **Prompt Files** field, click on the **<Click to select file>** entry.

Icons appear on the right in this row.

> ***NOTICE:*** These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the Windows desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start >**

Control Panel > Personalization or **Start > Control Panel > Appearance and Personalization > Personalization**.

17) Click on the first icon.

The Windows dialog for selecting a file opens.

18) Select the media file to be played to the caller of the application.

> ***IMPORTANT:*** Make sure that the selected media file has exactly the same name as the media file selected in section *How to Create the first Application*.

19) Click on the **Open** button.

The Windows dialog closes and the name of the media file is displayed in the **Prompt Files** field.

20) Push the Ctrl + S hotkey to save the changes.

The white X on a red background next to **<application name> > Application Prompts** has disappeared.

21) Double-click on **<application name> > Application Callflows > <callflow name>** in the Application Builder's workspace view.

22) Drag a SystemInfo control into the workspace.

A SystemInfo control serves for storing system information in a variable. System information may be the current time or date, the available languages or the logged-in user. In our case, the available languages are later to be stored in a variable.

23) Click on the connection from the Prompt control to the End control.

Drag points of this connection appear.

24) Move the mouse pointer onto the red drag point of the End control.

A plug icon and a double arrow are displayed next to the mouse pointer.

25) Click on the red drag point at the End control with the left mouse button, keep the mouse button pressed, drag the mouse pointer to the SystemInfo control and release the mouse button.

The connection now does not link the Prompt control to the End control anymore but the Prompt control to the SystemInfo control.

26) Double-click the SystemInfo control.

The configuration dialog for this control opens.

27) Click on the **Retrievals** tab.

The information retrieval list is displayed.

28) Click on the green plus sign with the left mouse button.

The **Create new Retrieval for Information Retrieval List** dialog is displayed.

29) Click on the **Enabled Languages** entry.

30) In the **Value Storage** section, click on the **...** button.

The **Select the Application Variable to use** dialog is displayed.

31) Click on the **Create new Variable...** link.

The **Set Properties of the Application Variable** dialog is displayed.

32) Change the value in the **Variable Name** field to `APPLICATION_LANGUAGES` for example. This variable is to store which languages are available in the application. Leave the variable type set to value **String List**.

33) Click on the **OK** button.

The dialog closes. The variable just created is selected.

34) Click on the **OK** button.

The dialog closes.

35) Click on the **OK** button.

The dialog closes.

36) Click on the **OK** button.

The dialog closes.

The variable just created is an application variable, meaning that it is valid in the entire application. Consequently, it cannot only be used in the callflow that contains the just configured SystemInfo control but in all other callflows of the same application. It cannot be used in other applications. You can thus use the data encapsulation principle in the Application Builder as it is deployed in higher programing languages also. Open **<application name> > Application Variables** in the workspace view. When you click on the desired variable in the **All Symvia Application Variables** section, properties of this variable are displayed in the right-hand section.

37) Double-click on **<application name> > Application Callflows > <callflow name>** in the Application Builder's workspace view.

38) Drag a DtmfSelection control into the workspace.

A DtmfSelection control serves for reading a list to the caller from which he/she then selects a value by pushing a key on his/her keypad. Here, the control will serve for selecting a language from the list of available languages.

39) Click on the **Connection** entry in the palette.

40) Create a connection from the SystemInfo control to the DtmfSelection control.

The white X on a red background in the top right corner of the SystemInfo control disappears.

41) Click on the **Select** entry in the palette.

42) Double-click the DtmfSelection control.

The **Change Properties for DtmfSelection** dialog opens.

43) Change the value of the **Name** field to `Select language`.

44) Click on the **Introduction** tab.

On this tab you configure which announcements shall be played when this control is reached upon executing the application. These announcements are to inform the caller about the language currently configured for the TUI. They serve as an introduction to subsequent announcements for selecting a language.

45) Click on the green plus sign.

The **Select Prompts to add to Announcement list** dialog opens.

46) Click on the **Create new Prompt...** link.

The **Set Properties of the Application Prompt** dialog is displayed.

47) Enter the **current_language** value in the `Prompt Name` field.

48) In the **Prompt Files** field, click on the upper **<Click to select file>** entry.

Icons appear on the right in this row.

NOTICE: These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the Windows desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

49) Click on the first icon.

The Windows dialog for selecting a file opens.

50) Select the media file that contains the spoken language for the following text.

Examples:

German: `Die gegenwärtige Sprache ist:`

English: `The current language is:`

51) In the **Prompt Files** field, click on the lower **<Click to select file>** entry.

Icons appear on the right in this row.

NOTICE: These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the Windows desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

52) Click on the first icon.

The Windows dialog for selecting a file opens.

53) Select the media file that contains the spoken language for the following text.

Examples:

German: `Die gegenwärtige Sprache ist:`

English: `The current language is:`

> ***IMPORTANT:*** Make sure that the selected media file has exactly the same name as the file selected in step 50.

54) Click on the **OK** button.

The dialog closes.

55) Click on the **OK** button.

The newly created prompt has been added to the end of the announcement list.

Later, when the application is being executed, this text will be announced to the caller as spoken language.

The prompt just created is an application prompt, meaning that it is valid in the entire application. It cannot only be used in the currently edited callflow but in all other callflows of the same application. It cannot be used in other applications. The data encapsulation principle as it is deployed in higher programing languages can thus also be used in the Application Builder for prompts. You can later see the just created prompt in the workspace view **<application name> > Application Prompts**. If you then click the desired prompt in the **All Symvia Application Prompts** area, the area on the right hand side displays the prompt's properties.

56) You cannot enter the language's name in the DtmfSelection control permanently, because the language used is unknown at the time of the control's creation. Instead, a variable LANGUAGE is used in the next steps.

Click on the small black triangle to the right of the green plus sign and select **Add Variable...** .

The **Select Variables to add to Announcement list** dialog opens.

57) Tick the check box that precedes the **LANGUAGE [Application Default Variable]** entry.

58) Click on the **OK** button.

The **LANGUAGE** entry is added to the end of the announcement list.

In order to play the value of the LANGUAGE variable as spoken language correctly, a transformation must be created in the next steps.

59) Click in the **Transformation** column in the LANGUAGE entry's line.

A button with ellipsis appears.

> ***NOTICE:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the Windows desktop background with the right mouse button and

selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

60) Click on this button.

The **Select Value Transformation for Variable** dialog opens.

61) Click on the **Create new Transformation...** link.

62) Enter a name for the transformation in the **Transformation Name** field, for example `LanguageCode`.

63) In the field thereunder, you can optionally give a short description.

64) Click on **Next**.

The **Specify the Directive of the Variable Value Transformation** dialog opens.

65) The translation type is determined in this dialog. Select the **Language Code Transformation [String]** value from the Transformation Directive combo box.

66) Click on the **Finish** button.

The dialog closes and a new value has been added to the list of transformations.

67) The application to be created is to switch the language, i. e. at least two workspace languages must have been configured. Because a transformation is only valid for one language, the **OK** button is still grayed out and cannot be used yet. Execute steps 61 to 66 also for the language added in step 2.

Another value has been added to the list of transformations.

68) Click on the **OK** button.

The playback list displays the transformation added last.

69) Click on the small black triangle to the right of the green plus sign and select **Add Pause...** .

70) Click on the **OK** button.

A pause has been added to the playback list. Announcements are better understood when not being played in immediate succession.

71) Click on the **Iteration** tab.

On this tab you configure which variables shall be used for selecting a language.

72) Leave the **Iterate over Variable List** radio button active.

73) Click on the button with the ellipsis next to the **Variable List to iterate** field.

The **Select the Application Variable or a Member Variable to use** dialog is displayed.

74) Click on the variable you created in steps 31 to 35 and that contains the list of the workspace languages, for example `APPLICATION_LANGUAGES`. This variable determines which languages will later be offered to the caller for selection when the application is being executed.

75) Click on the **OK** button.

The variable name is displayed in the **Variable List to iterate** field.

76) Leave the **Iterator Variable Name** and **Selection Key Variable Name** fields unchanged.

77) Click on the button with the ellipsis next to the **Variable for selected Element** field.

The **Select the Application Variable to use** dialog opens.

78) Click on the **Create new Variable...** link.

The **Set Properties of the Application Variable** dialog is displayed.

79) Change the value in the **Variable Name** field to `SELECTED_LANGUAGE` for example. This variable is to store the language the caller has selected. Leave the variable type set to value **String**.

80) Click on the **OK** button.

The dialog closes. The variable just created is selected.

The variable just created is an application variable like the APPLICATION_LANGUAGES variable created in step 32, meaning that it is valid in the entire application.

81) Click on the **OK** button.

The dialog closes. The **Variable for selected Element** field displays the just created variable.

82) Click on the **Selection** tab.

On this tab you configure which announcements shall be played to the caller for selecting a language.

Examples: "Please press 1 for German. Please press 2 for English."

83) Click on the green plus sign.

The **Select Prompts to add to Announcement list** dialog opens.

84) Click on the **Create new Prompt...** link.

The **Set Properties of the Application Prompt** dialog is displayed.

85) Enter the **switch_language_for...** value in the `Prompt Name` field.

86) Select in the **Prompt Files** field the media files that correspond to the following text for both languages:

Examples:

German: `Für:`

English: `For:`

IMPORTANT: Make sure that the selected media files have exactly the same name.

87) Click on the **OK** button.

The dialog closes. The just created prompt is selected through a tick.

88) Click on the **OK** button.

The newly created prompt has been added to the end of the announcement list.

Later, when the application is being executed, this text will be announced to the caller as spoken language.

The prompt just created is an application prompt, meaning that it is valid in the entire application. It cannot only be used in the currently edited callflow but in all other callflows of the same application. It cannot be used in other applications. The data encapsulation principle as it is deployed in higher programing languages can thus also be used in the Application Builder for prompts. You can later see the just created prompt in the workspace view **<application name> > Application Prompts**. If you then click the desired prompt in the **All Symvia Application Prompts** area, the area on the right hand side displays the prompt's properties.

89) Click on the small black triangle to the right of the green plus sign and select **Add Variable...** .

The **Select Variables to add to Announcement list** dialog opens.

90) Activate the check box that precedes the **ITERATOR** entry.

91) Click on the **OK** button.

The **ITERATOR** entry is added to the end of the announcement list.

In order to play the value of the ITERATOR variable as a spoken language correctly, a transformation must be selected for the ITERATOR variable in the next steps.

92) Click in the **Transformation** column in the LANGUAGE entry's line.

A button with ellipsis appears.

NOTICE: This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the Windows desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

93) Click on this button.

The **Select Value Transformation for Variable** dialog opens.

94) In the list, click on the `LanguageCode` transformation you created further above and then on **OK**.

The dialog closes. The announcement playback list displays the added `LanguageCode` transformation for the ITERATOR variable.

95) Click on the green plus sign.

The **Select Prompts to add to Announcement list** dialog opens.

96) Click on the **Create new Prompt...** link.

The **Set Properties of the Application Prompt** dialog is displayed.

97) Enter the **switch_language_...press** value in the `Prompt Name` field.

98) Select in the **Prompt Files** field the media files that correspond to the following text for both languages:

Examples:

German: `Drücken Sie:`

English: `press:`

IMPORTANT: Make sure that the selected media files have exactly the same name.

---

99) Click on the **OK** button.

The dialog closes. The just created prompt is selected through a tick.

100)Click on the **OK** button.

The newly created prompt has been added to the end of the announcement list.

Later, when the application is being executed, this text will be announced to the caller as spoken language.

The prompt just created is an application prompt, meaning that it is valid in the entire application.

101)Click on the small black triangle to the right of the green plus sign and select **Add Variable...** .

The **Select Variables to add to Announcement list** dialog opens.

102)Activate the check box that precedes the **KEY** entry.

103)Click on the **OK** button.

The **KEY** entry is added to the end of the announcement list.

104)Click on the small black triangle to the right of the green plus sign and select **Add Pause...** .

105)Change the displayed numerical value to `500`.

106)Click on the **OK** button.

A pause has been added to the playback list. Announcements are better understood when not being played in immediate succession.

Configuring the playback list for selecting a language is now complete. This configuration effects the following output as a spoken language when executing the application: "For German, press 1." A pause of 500 milliseconds follows. "For English press 2." The switch_language_for... prompt thus stands for the word "for", the ITERATOR variable stands for a language name in the list of available workspace languages, the switch_language_...press prompt stands for "press" and the KEY variable stands for the keypad key that must be pressed if the just announced language shall be selected. This playback list is repeated until all language names in the list of available workspace languages have been announced.

107) Click on the **OK** button.

The dialog closes.

108) Drag a Language control into the workspace.

Using this control you can switch the language of the announcements to be played during the application's runtime. This language is also the application language. It can be switched to all languages licensed and installed on the OpenScape UC Application.

109) Click on the **Connection** entry in the palette.

110) Create a connection from the DtmfSelection control to the Language control.

The **Select the Event for the Connection** dialog opens. This dialog is always displayed if a control may have several exits and one or more exists are not used yet.

111) Select the **Element Selected** entry and click on the **OK** button.

This means the Language control is executed if the caller makes a correct selection at runtime of the application.

112) Create a connection from the DtmfSelection control to the End control.

This means that the caller has made an incorrect or no selection and the execution of the application is terminated.

The white X on a red background in the top right corner of the DtmfSelection control disappears.

113) Click on the **Select** entry in the palette.

114) Double-click the Language control.

The **Change Properties for Language** dialog opens.

115) Change the value of the **Name** field to `Switch language`.

116) Activate the **Specify by Variable** radio button.

117) Click on the button with the ellipsis next to the **Specify by Variable** field.

The **Select the Application Variable or a Member Variable to use** dialog is displayed.

118) Click on the variable you created in steps 78 to 80 and that contains the list of the workspace languages selected by the caller, for example `SELECTED_LANGUAGE`.

119) Click on the **OK** button.

The dialog closes. The variable name is displayed in the **Specify by Variable** field.

120) Click on the **OK** button.

The dialog closes.

121) Drag a Prompt control into the workspace.

122) Click on the **Connection** entry in the palette.

123) Create a connection from the Language control to the DtmfSelection control.

The **Select the Event for the Connection** dialog opens.

124) Select the **Language Changed** entry and click on the **OK** button.

This means that executing the DtmfSelection control, which will first inform the caller about the currently configured language, comes next if the language was successfully switched.

125) Create a connection from the Language control to the Prompt control just added.

This means that the Prompt control will be executed if switching the language was not successful.

The white X on a red background in the top right corner of the Language control disappears.

126) Click on the **Select** entry in the palette.

127) Double-click the Prompt control.

The **Change Properties for Prompt** dialog opens.

128) Change the value of the **Name** field to `Error`.

129) Click on the **Announcements** tab.

130) Click on the green plus sign.

The **Select Prompts to add to Announcement list** dialog opens.

131) Click on the **Create new Prompt...** link.

The **Set Properties of the Application Prompt** dialog is displayed.

132) Enter the **error** value in the `Prompt Name` field.

133) Select in the **Prompt Files** field the media files that correspond to the following text for both languages:

Examples:

German: `Ein Fehler ist aufgetreten.`

English: `An error has occured.`

134) Click on the **OK** button.

The dialog closes.

135) Click on the **OK** button.

The newly created prompt has been added to the end of the announcement list.

Later, when the application is being executed, this text will be announced to the caller as a spoken language if switching the language failed.

The prompt just created is an application prompt, meaning that it is valid in the entire application.

136) Click on the **OK** button.

137) Click on the **Connection** entry in the palette.

138) Create a connection from the Prompt control edited last to the End control.

The white X on a red background in the top right corner of the Prompt control disappears.

139) Push the Ctrl + S hotkey to save the changes.

The asterisk that precedes the callflow's name on the tab disappears.

Creating the application is now complete.

140) Install the two languages used as the TTS languages on the OpenScape UC Application according to the following steps 141 and 142.

> ***NOTICE:*** The steps 141 and 142 are not necessary for the above application creation in the Application Builder, but are well required for executing the application on the OpenScape UC Application.

141) You must check whether the required TTS language is installed on all computers of the OpenScape UC Application that host a Media Server. Because such computers depend on the deployment scenario of the OpenScape UC Application used, you first must determine which deployment scenario is on hand. You do this in the following sub-steps:

> ***NOTICE:*** Please obtain deployment scenario details from the *OpenScape UC Application Planning Guide*.

> ***NOTICE:*** This step and the ensuing one are not necessary for creating the application in the Application Builder, but are well required for executing the application on the OpenScape UC Application.

a) Open a command line on the application computer (back-end computer) of the OpenScape UC Application.

b) Log on a user root.

c) Enter the following commands in succession:

```
rpm -qa | grep OpenScapeUC_IntegratedSimplex

rpm -qa | grep OpenScapeUC_StandardDuplexSmall

rpm -qa | grep OpenScapeUC_Large_BE

rpm -qa | grep OpenScapeUC_VeryLarge_BE
```

Component installed on the application computer	Deployment scenario	Media Server on the computer	
		Application computer	Media Server computer
OpenScapeUC_Integrated Simplex	Integrated Deployment	Mandatory	Optional
OpenScapeUC_StandardDuplexSmall	Small Deployment	Mandatory	Not allowed
OpenScapeUC_Large_BE	Large Deployment	Not allowed	Mandatory
OpenScapeUC_VeryLarge_BE	Very Large Deployment	Not allowed	Mandatory

The command of the above listed ones that delivers a non-empty output indicates the deployment scenario used. The table specifies on which computers in this case a Media Server is present mandatorily or optionally. For Large Deployment or Very Large Deployment, Media Servers can be installed on several Media Server computers. Please obtain the maximum number of Media Server computers from the *OpenScape UC Application Planning Guide*.

If osc-setup is installed on the application computer and a repository is available in osc-setup, you can execute the following command alternatively to the above ones:

```
osc-setup se OpenScapeUC_
```

The line marked with a `i` in the first column of the output table indicates the installed deployment scenario.

Sample output:

```
...
S | Name                             | Summary | Type
...
--+----------------------------------+---------+------
i | OpenScapeUC_StandardDuplexSmall | OpenScape UC -
StandardDuplexSmall | package
...
```

Please obtain osc-setup and repository details from the *OpenScape UC Application, Installation and Upgrade* setup guide.

142) Install the demanded TTS language on all computers on which a Media Server has been set up. Please obtain details on this from the *OpenScape UC Application, Installation and Upgrade* setup guide. The setup command for the German TTS language for example reads as follows:

```
osc-setup in uc-tts-de_de
```

Next steps

We recommend to simulate the created application.

Log the Application Builder on to the OpenScape UC Application if this has not been done yet.

You must provide the created application on the OpenScape UC Application for using it.

3.11 Workspace

A workspace serves as superordinate container, which includes and manages all created elements and configured properties. A workspace contains as elements any number of applications with one callflow per application that can be divided in any number of linked callflow pages.

At the Application Builder start, a folder must be created as storage for the workspace at the start. In this folder, all configurations of the single workspace components are locally stored. These files and their contents cannot be used for the execution of created voice applications yet. Only an explicit *deployment* copies the files to the server and allows an execution.

> ***NOTICE:*** This deployment has nothing to do with the deployment scenarios of the OpenScape UC Application.

Languages

Besides the licensed languages, further languages can be activated by means of their language codes and their locale ID. The languages are used for configuring prompts and grammar files.

Prompts

Prompts are either assigned to sound files or are created by defining text and a text-to-speech engine. Each sound file is to be assigned to an available language, while for each activated language a text can be specified for creation by means of a text-to-speech engine.

Grammar files

Grammar files serve as basis for speech recognition and are assigned to an activated language each.

Variables

Variables are wildcards and storage location for data such as phone numbers or DTMF entries. The names are freely selectable.

> ***NOTICE:*** The properties and components set in the workspace are globally valid and applicable for the entire workspace, i.e. also for all applications available in this workspace. Application-

specific language and database settings are not possible. You can export prompts, grammar files and variables specific to a workspace.

3.12 Applications and Compositions

You design applications and compositions using the Application Builder. The configurations of the application or composition are stored locally. The application is not compressed in a file and made available in the Media Server until the design is complete. You can reach the application via one or several phone numbers assigned to the application.

Compositions are applications or application fragments that can be used recurrently in Symvia Application, for example logging a user on to the system (LogIn). The composition is created once and is stored as a deployable unit on the Media Server. Deployed applications then use a reference to the deployed composition.If a composition is modified, only this composition is re-deployed. All applications using this composition will automatically take advantage of the modification.

For Server based compositions the following applies:

- Within the Application Builder, each composition can be deployed directly on the Openscape UC Media Server after connecting to the Media Server.
- All deployed compositions on a connected Media Server will be displayed in the Application Management of the Application Builder.
- A deployed composition can be removed from the connected Media Server.
- A deployed composition can be imported from the connected Media Server into the Application Builder.
- For a deployed composition on a connected Media Server all deployed applications using this composition can be listed.
- While deploying an application using one or more compositions the user can decide to deploy the referenced compositions too.
- All applications using a modified and redeployed composition will automatically take advantage of the modification.
- In case of an incompatible interface change of a composition (number and type of input or output parameters, number of exits) a deployed application using the old interface cannot be instantiated. The Application Builder provides a sanity check to identify applications with an invalid reference to compositions, so the user can adjust and redeploy these applications
- In the Application Management the user can change the following properties of an deployed IVR application/composition directly on a connected Media Server without redeploying:
  – Tags
  – Default language (only application)
  – Phone number binding (only application)
  – Tracing (only application)

- For each change the time of the modification, the modifying user and a new revision number will be automatically added to the deployed application/composition.

Each deployed composition will be stored in a separate deployment package named <composition-id>.mdp.zip located in the deployment-customfolder of the OpenScape UC Media Server. It contains the following items:

- package.xml - Media Server package file
- package.deployment.xml - Media Server package deployment configuration
- symvia.composition.xml - composition configuration file
- composition/<composition-id>.xml - xml representation of the composition call flow
- res/... - composition resource files (prompts, grammars, documents)appbuilder/ - export file of the Application Builder composition
- conf/symvia.properties.xml - custom control configuration of the composition (optional)
- lib/... - custom control libraries (optional)

The deployed composition is neither a Media Server application nor a Media Server component. It is managed by a composition deployment handler in the Symvia Provider of the Media Server. The deployment handler monitors the composition configuration files and creates, updates and removes the compositions stored in the composition repository of the Symvia Provider. The Symvia Provider also provides a composition factory which will be injected to each application session at creation time. Each deployed application using one or more compositions will no longer include an embedded copy of the composition but rather contains a composition reference with the actual interface parameters. The application uses the injected composition factory to create the composition instances, adapt the actual interface parameters and replace each composition reference with the appropriate composition instance. After creating the application session all referenced compositions are instantiated and ready to be processed. If a referenced composition cannot be found in the composition repository or the composition interface is not compatible to the composition reference, the application session cannot be created.

every configured application or composition and are thus immediately usable. Furthermore, prompts, grammar files and variables can be configured in each application that are only available in the respective application. Application-specific language settings are not possible. Application-specific prompts, grammar files and variables can be copied to other applications, though. The same applies for compositions.

3.13 Speech Recognition

In case of applications created with the Application Builder, the user may have to make entries for continuing with the callflow.

If a speech recognition system has been installed, the Application Builder allows making entries by specifying digits on the phone keypad and by voice. Speech recognition is performed by a software with a speech grammar that decodes announcements, compares them with permanent entries and, as the case may be, executes associated commands.

> ***NOTICE:*** For further information about speech recognition please consult the manuals of the speech recognition software used.

3.14 Callflow

You can model a callflow in every voice application. A graphical editor is used for this purpose. Each callflow consists of controls that represent specific features. For example, controls exist for playing prompts, for selection in a menu, for entering DMTF keys or using time profiles. Each control can be used as often as you wish and be connected to other controls. Controls are connected according to specific events or conditions. For example, the connected control is forwarded to after the successful playback of an announcement or selecting a menu option with a DTMF key. In addition, you can connect callflow pages within an application.

The prompts, grammar files and variables configured in a workspace or application are used in the single control for the respectively possible functionality. Prompts are used as information announcements, grammar files as precondition for using speech recognition and variables for storing data.

The Application Builder can detect and represent syntactical errors in the workspace configuration, the applications and controls within call flows. While errors prevent the successful execution of an application and must therefore be rectified, warnings specify improvement options.

> ***NOTICE:*** The Application Builder cannot check the usefulness of a call flow design; this must be done by the user himself/herself.

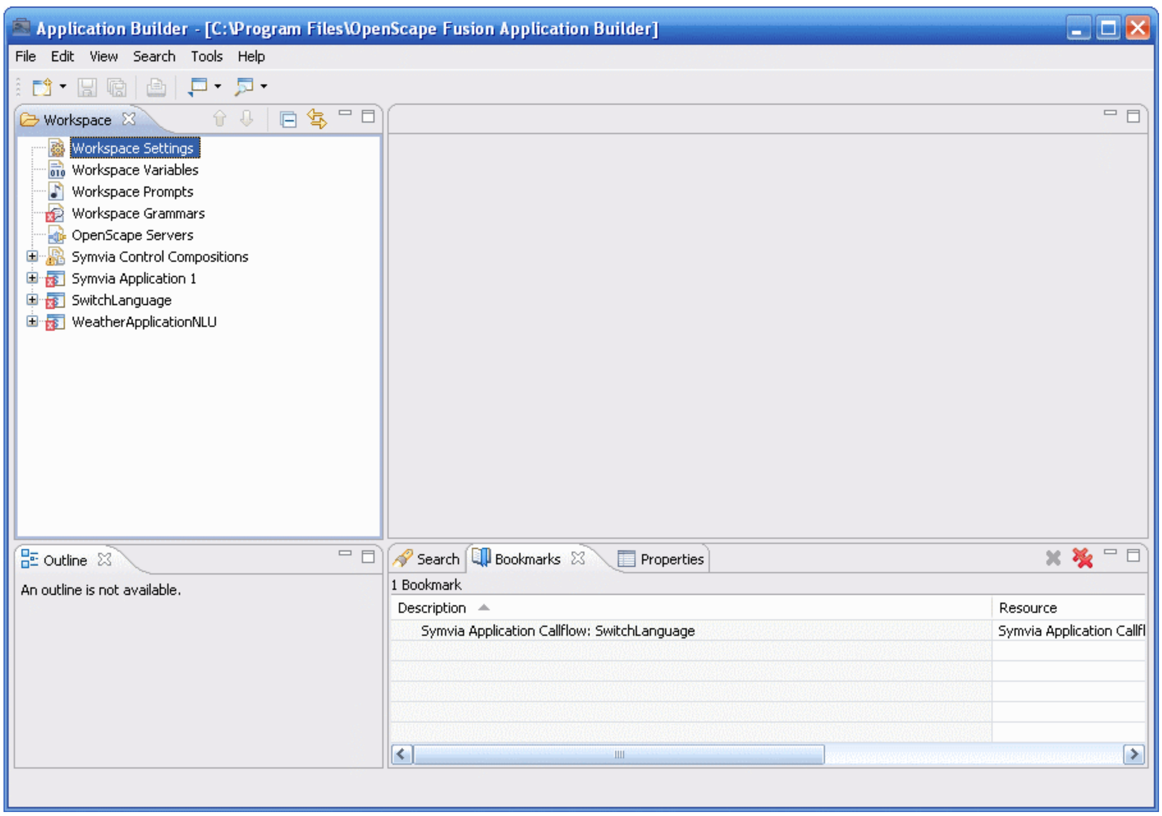
The Application Builder can be operated offline, i.e. without connection to the server. The workspace that is stored in local files is subsequently provided for the server during deployment. The detailed process is described in the section *Deployment*.

4 User Interface

This section contains a detailed description of the single GUI items of the Application Builder and their functions.

The following figure shows the Application Builder GUI with some of its views. The **Problems**, **Bookmark**, **Search** and **Properties** views are combined in the form of tabs, so that only the **Problem view** is fully visible.

The menu bar and toolbar are always displayed. The views can be optionally displayed and opened and closed as required.



Menu bar

The single menu options of the menu bar are described in detail in the *Menu Bar* section.

Toolbar

The single elements of the toolbar are represented in the *Toolbar* section.

Workspace views

The Views term describes different tabs of the Application Builder GUI. Among these are:

- the **workspace** that displays in a tree strucure the different workspace items and existing applications as well as their elements.

- the **outline view**, which represents an open callflow in minimized format.
- the **problem view** for displaying notes and errors in the workspace or in a composition or an application.
- the **properties view**, which displays the information of a selected control, prompt, variable etc.
- the **bookmark** view, which lists the created bookmarks,
- the **search view** for listing search hits and the associated results.
- the **help view** for representing context-sensitive help information.
- the **callflow editor** for creating and editing callflows, prompts and variables. The editor includes a palette, which lists the available controls.

You can control the activation or deactivation of the single views via the **View** menu option.

4.1 Menu Bar

The menu bar is the only GUI item that cannot be freely positioned.

It is anchored beneath the Application Builder's caption bar and comprises the following options:

- File
- Edit
- View
- Search
- Tools
- Help

4.1.1 File

This menu contains the following options:

Option	Function
New > Application...	This menu option serves for creating a new application. The user can select the application type on the basis of which an application is to be created.
New>Symvia Control Composition	This menu option serves for creating a new composition. The user can select the composition type on the basis of which a composition is to be created.
Close	This menu option closes the editors currently displayed in the editor area.
Close All	This option closes all editors opened in the editor area.
Save	Use this menu option to save the current state of the tabs presently displayed in the editor area.

Option	Function
Save As...	This menu option is disabled.
Save All	Use this menu option to save the state of all editors presently displayed in the editor area.
Rename...	With this menu option you can rename the selected applications or call flows.
Refresh	This menu option refreshes the view of all areas with reference to the last modifications after saving or deploying an application. Modifications to applications are immediately executable but the problem view is not immediately updated. Errors and warnings are only put out with saving, updating or executing an application. This function is only enabled if it makes sense in the respective context.
Refresh Problems	This menu option refers to the Problems view only. It updates the problems view according to the current state.
Print...	The menu option enables printing the currently opened call flow. In the open Print dialog you can select a printer and set print options.
Switch Workspace	This options opens the dialog for changing to another workspace.
Backup Workspace...	This option opens the Backup Workspace dialog. Enter the your backup target path in **Settings**. All files from your workspace are saved.
Import	This feature comprises the import of a previously exported application, composition or a custom control. You find more information on this in the sections *How to Import Workspace Items* and *How to Import Custom Controls*.

Option	Function
Export	This feature comprises the Export of a workspace item to an archive file. Exporting applications, compositions as workspace item and custom controls is supported. You find more information on this in the sections *How to Export Workspace Items* and *How to Export Custom Controls*.
Properties	Depending on the selected element (application, callflow or control), the element's properties are displayed when you enable this menu option: • **Application**: You receive general information such as storage location, date of the last access, file size and type. • **Callflow**: The properties for the callflow are divided into 3 sections. – **General**: You receive information such as storage location, date of the last access, file size and type. – **Callflow**: You receive information about the current callflow content and editor settings. – **Event:** The callflow is linked to an event. In this dialog you can select between **Incoming Call** or **Call Disconnected** via a drop-down list. • **Control**: Since each control is to be distinguished according to its type, the configuration dialog of the corresponding control type opens. Here you do not only receive information but you can also immediately perform settings or change them.
Exit	This menu option terminates the Application Builder.

4.1.1.1 How to Import Workspace Items

You can add workspace items to the current workspace. If the import belongs to another target platform, the contained element may be transformed for the Symvia platform.

Step by Step

1) Select **File > Import > Symvia Workspace Items...**.

The **Symvia Workspace Item Import** dialog opens.

2) Click on the **Browse...** button and select the archive file from which the workspace item will be imported.

> ***INFO:*** Select for example in the Application Builder setup folder (not in the workspace directory) the `OpenScape Fusion Application Builder\Samples\Applications\SimpleIVR.zip` file. This file is one of the example applications and example compositions shipped with the Application Builder.

3) Click on **Next**.

   The next dialog displays the content of the selected archive file. Items already available in the Application Builder are represented with a warning icon.

4) Activate the check boxes behind the items you wish to import.

5) Confirm the specifications with **Finish**.

4.1.1.2 How to Import Custom Controls

You can add custom controls to the control's palette.

Step by Step

1) Select **File > Import > Symvia Custom Controls....**.

   The **Symvia Custom Control Import** dialog opens.

2) Click on the **Browse...** button and select the archive file from which you would like to import custom controls.

3) Click **Continue** to view a selection of the imported controls.

   > ***NOTICE:*** If you skip the selection and click **Finish** directly, all custom controls are imported from the archive file.

   The controls are listed in the next dialog. The control selection is displayed by a check box. By default, the check boxes are activated.

4) Confirm the specifications with **Finish**.

In the controls' palette you will find the **Custom Controls** group which includes the imported controls.

4.1.1.3 How to Export Workspace Items

You can export workspace items from the current workspace. This way you can create a backup copy of the application or composition in the form of an archive file. The archive file contains all important definition files of the application and may contain additional resource files of the application. You can use the created archive file also for importing the application or compositions to another workspace. Please note that no workspace prompts or workspace grammars can be exported.

Step by Step

1) Select **File > Export > Symvia Workspace Items...**.

   The **Symvia Workspace Item Export** dialog opens.

2) Enter the path to the archive file in the **Archive File** field or click on the **Browse...** button and select the archive file to which you wish to export.

3) Click on **Next**.

The exportable elements are displayed. You can also see if a composition or application uses a composition. If this is the case make sure that the composition is also selected for the export.

A custom control probably used in a composition or application is included in the export of this composition or application.

4) Activate the check boxes that precede the items you wish to export.

5) Select **Next** or **Finish**.

6) In the next dialog select the additional resources to be saved in the archive file. Activate the corresponding check boxes.

a) Include Prompt Audio Files into the Export

b) Include Grammar Specification Files in the Export

c) Include other Application Resource Files into the Export

d) Include additional Documentation Files in the Export

7) Select **Next** or **Finish**.

Via the **Back** button you can return to the previous dialog.

8) In the next dialog, specify optionally additional information to be displayed during the import.

9) Confirm the specifications with **Finish**.

A dialog confirms the successful export.

10) Click on **OK**.

4.1.1.4 How to Export Custom Controls

You can export custom controls from the current workspace. This way you can create a backup copy of the control in the form of an archive file. The archive file contains definitions and resources of the controls. You can use the created archive file also for importing controls to another workspace.

Step by Step

1) Select **File > Export > Symvia Custom Controls...**.

The **Export Symvia Custom Control** dialog opens.

2) Select the archive file in which the controls are to be exported via the **Browse** button.

3) Select **Next**.

4) In the next dialog select the controls to be saved in the archive file. Activate the corresponding check boxes.

5) Select **Next** or **Finish**.

Via the **Back** button you can return to the previous dialog.

6) In the next dialog, specify optionally additional information to be displayed during the export.

7) Confirm the specifications with **Finish**.

   A dialog confirms the successful export.

8) Click on **OK**.

4.1.2 Edit

This menu contains the following options:

Option	Function
Undo	This menu option undoes the last performed action. These are all actions. You can use this option repeatedly.
Repeat	This menu option cancels the last undoing. It can be applied repeatedly.
Cut	A selected control, linkage or note in the callflow is copied with this command and deleted in its original place when being pasted somewhere else. You cannot cut a connection in the callflow since a connection is permanently assigned to a control.
Copy	A selected control, linkage or note in the callflow is copied with this command and left in its original place when being pasted somewhere else. You cannot copy a connection in the callflow since a connection is permanently assigned to a control. You can also copy callflows, applications and compositions.
Paste	Inserts a cut or copied control, linkage or note in the callflow or a copied application or a copied callflow in an arbitrary place. You cannot copy or cut and paste a connection in the callflow since a connection is permanently assigned to a control.
Delete	This menu option deletes the connection, note, linkage or control selected in the callflow. When a control is deleted, all connections starting from or ending at this control are also deleted. You can also delete selected callflows and applications.
Select All	This menu option selects all controls, notes and linkages available in the active callflow. Since connections are always permanently assigned to controls, they are selected, too.
Add Bookmark	This menu option pastes a bookmark in the bookmark view for the currently opened control or callflow. Bookmarks are represented in the bookmark view and can be selected from there, see section *View Bookmarks View*. You cannot execute the Undo command for the add-bookmark feature.

4.1.3 View

Option		Function
Workspace		Activates or deactivates the workspace view.
Outline		Activates or deactivates the outline view.
Properties		Activates or deactivates the properties view.
Problems		Activates or deactivates the problem view.
Bookmark		Activates or deactivates the bookmark view.
Search		Activates or deactivates the search view.
Console		Activates or deactivates the console view.
Navigation	Problem view	This menu option enables the selective activation of the **Problem View** tabs.
	Bookmark view	This menu option enables the selective activation of the **Bookmark View** tabs.
	Activate Workspace	This menu option enables the selective activation of the **Workspace View** tabs.
	Activate Editor	This menu option enables the selective activation of the **Editor** tabs.
	Maximize Active View or Editor.	This menu option maximizes the active window.
	Minimize Active View or Editor	This menu option minimizes the active elements.
Reset Perspective...		A perspective defines the arrangement of all freely positionable GUI elements of the Application Builder window. This menu option resets the perspective of the workspace to the default settings.

4.1.4 Callflow

This menu item becomes visible if a callflow editor is activated. The menu options are active only if the callflow editor has the focus. This menu contains the following options:

Option	Function
Show grid	Enable/disable grid in callflow editor
Show label	Show/Hide Callflow Name and Application Name
Show legend	Show/hide legend
Show shadow	activate/deactivate the shaded display of a control.

Option	Function
Show ruler	activate/deactivate the ruler at the top left margin of the call-flow editor
Snap to geometry	When you activate this feature and position controls, lines are displayed in relation to other controls. In this way you can position controls precisely on the same level or in the same distance from each other.
Zoom in	The callflow editor view is enlarged. The maximum enlargement is 400%.
Zoom out	The callflow editor view is minimized. The minimum reduction is 50%.

4.1.5 Search

This menu option opens the search dialog and enables searching for a character string in all workspace items. The search result is displayed in the search view.

All names, descriptions and control properties are searched, e. g. also character strings that form a welcome text in a prompt control.

<<Details button

This button expands the Search dialog with the Settings and Scope tabs, thus enabling a more detailed search. After you have clicked this button, it turns into **<<Details**. When you click this button, the two tabs close again.

- **Settings** tab
  Case Sensitive
  Activate the associated check box if upper and lower case writing is to be heeded. If you enter an uppercase search item, only uppercase hits will be delivered.
  Whole Word
  Activate the associated check box if only whole words are to be accepted in the search. Otherwise, all terms starting with the search item will be put out. For example, if you enter an A as search item, all terms beginning with A will be put out as hit.
- **Scope** tab
  On this tab you set the search scope.

4.1.6 Tools

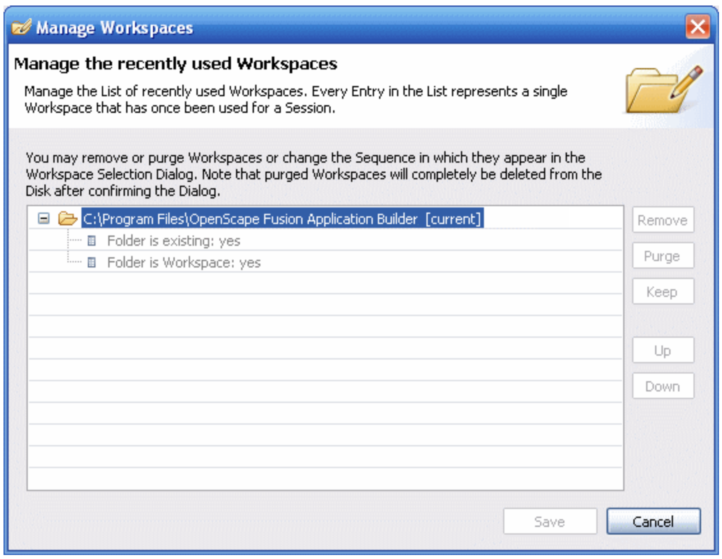
Under the **Tools** menu item you find the options **Manage Workspaces...**, **Configure Symvia Custom Controls...** and **Preferences**. The dialogs are provided for the general settings and the administration of the Application Builder. You can perform settings in the following areas of the **Preferences** dialog:

- General
- Help, Help > Content
- Network

- Logging, Logging > Categories
- Symvia, Symvia > Confirmations

4.1.6.1 Managing Workspaces

Here you can manage the workspaces used last. Each list entry corresponds to a single workspace once used for a session.



You can remove workspaces, purge them or change the sequence in which they appear in the workspace selection dialog.

IMPORTANT: Please note that purged workspaces are removed permanently from the disk after you have confirmed the dialog.

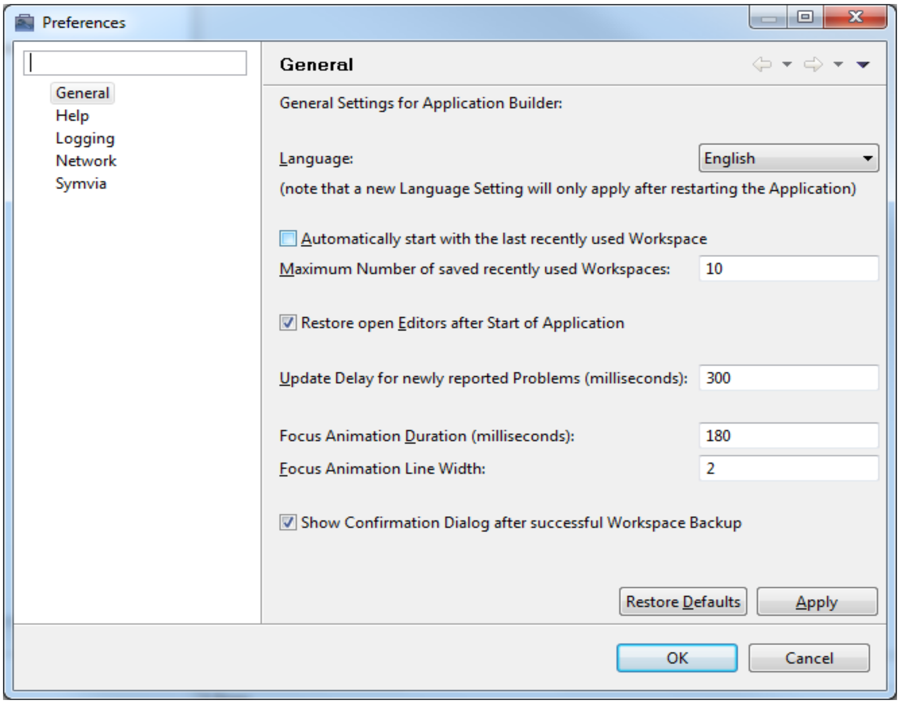
4.1.6.2 Configuring Custom Controls

Here you can administrate custom controls. Each list entry corresponds to a single custom control. You can remove, edit, delete or add controls. Please refer to section *How to Create a Custom Control*.

4.1.6.3 Configuring Preferences

Configuration dialog General

The **General** area lets you perform the following settings:

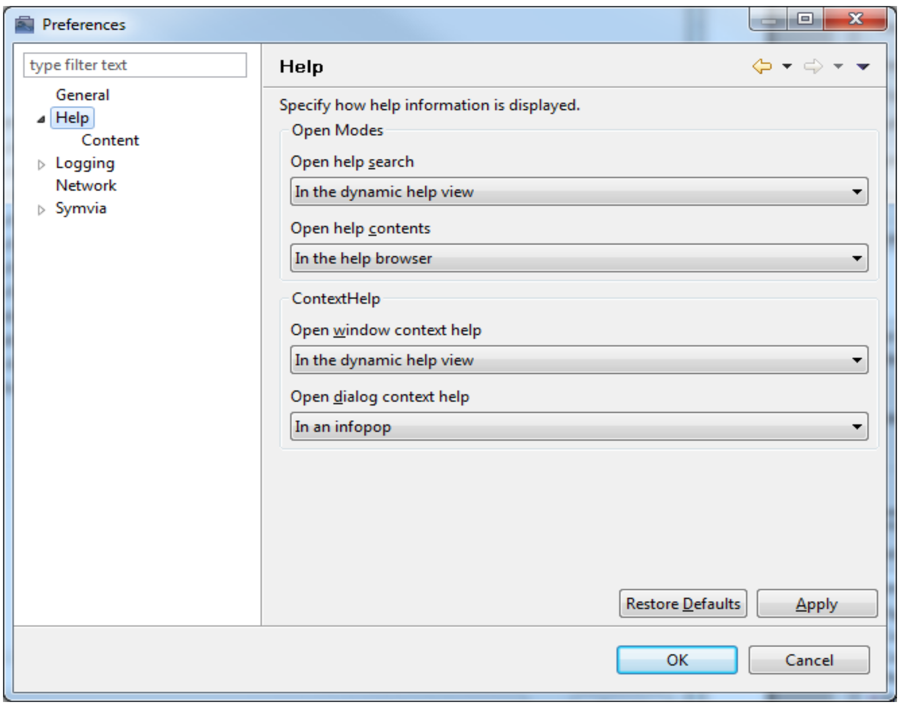


Option	Function
Language	This is the language used by the Application Builder. A modification will not take effect until a reboot.
Automatically start with the last recently used Work-space	This setting determines whether the workspace used last is to be deployed when starting the Application Builder.
Maximum Number of saved recently used Workspaces	This is the number of workspaces used last to be registered by the Application Builder. The default value is 10.
Restore open Editors after Start of Application	This option is active by default and serves for automatically displaying all open editor areas of an application after a program reboot.
Update delay for newly reported Problems (ms)	This field determines the delay for displaying entries newly made in the **Problems** view. The default value is 300 milli-seconds.
Focus Animation Duration (ms)	This setting defines the time in which the focus animation is displayed. Focus animation describes the red frame that appears in the problems view when you doubleclick an error entry. This animation serves highlighting purposes only and is terminated when you select the faulty element. The highest value is 999. The default value is 180 milliseconds. Entry “0” deactivates the function.
Focus Animation Line Width	This setting defines the line width of the focus animation's red frame. The highest value is 9. The default value is 2. The entry “0” deactivates the function.

Option	Function
Show Confirmation Dialog after successful Workspace Backup	If this option is activated, a confirmation dialog will be shown after successfully workspace export.
Restore Defaults	This button resets all values to the defaulted ones.
Apply	This button copies the modified settings.

Configuration dialog Help

In the Help area you can perform the following settings, which influence the Help representation.



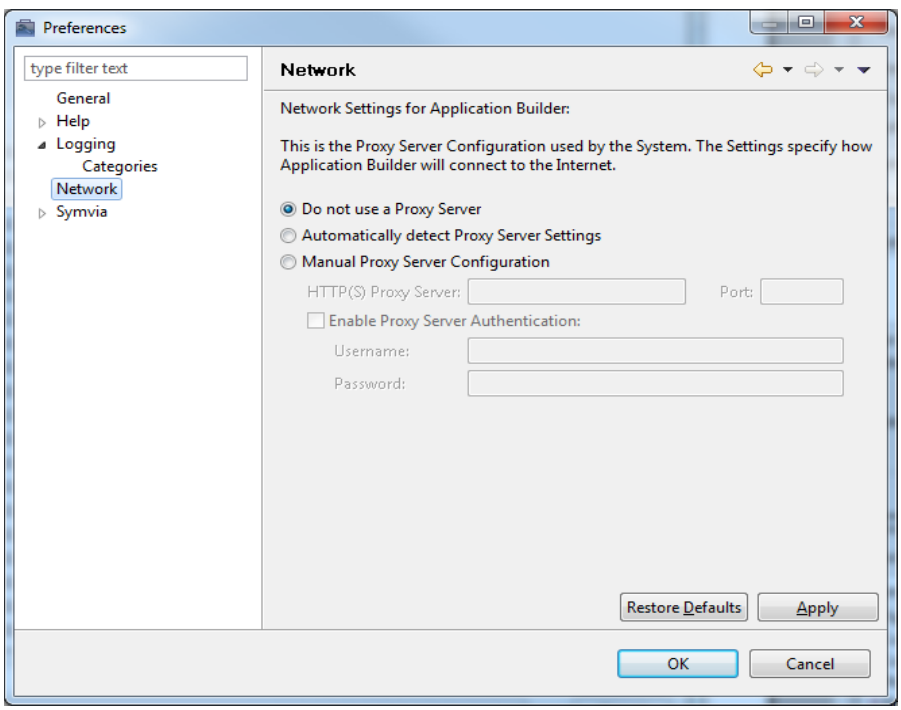
Option	Function
Open help search	
In the dynamic help view	
In a browser	
Open help contents	
In the help browser	
In an external browser	Help is opened in a preconfigured browser if the check box **Include Help Content from Remote Infocenter** has been activated under **Help > Content** and a valid **Infocenter** has been configured via the **Add** button. If this option is inactive, the installed help is displayed in an Application Builder window.
Open window context help	

Option	Function
In the dynamic help view	The context sensitive help is displayed in the help view.
In an infopop	The context sensitive help is displayed in a pop-up window.
Open dialog context help	
In a dialog tray	The context sensitive help of dialogs is displayed in a dialog tray.
In an infopop	The context sensitive help of dialogs is displayed in a pop-up window.
Restore Defaults	This button resets all values to the defaulted ones.
Apply	This button copies the modified settings.

Configuration Dialog Network

The network settings are used if network accesses occur from the Application Builder, e.g. while an application is being simulated.

The **Network** area lets you perform the following settings:



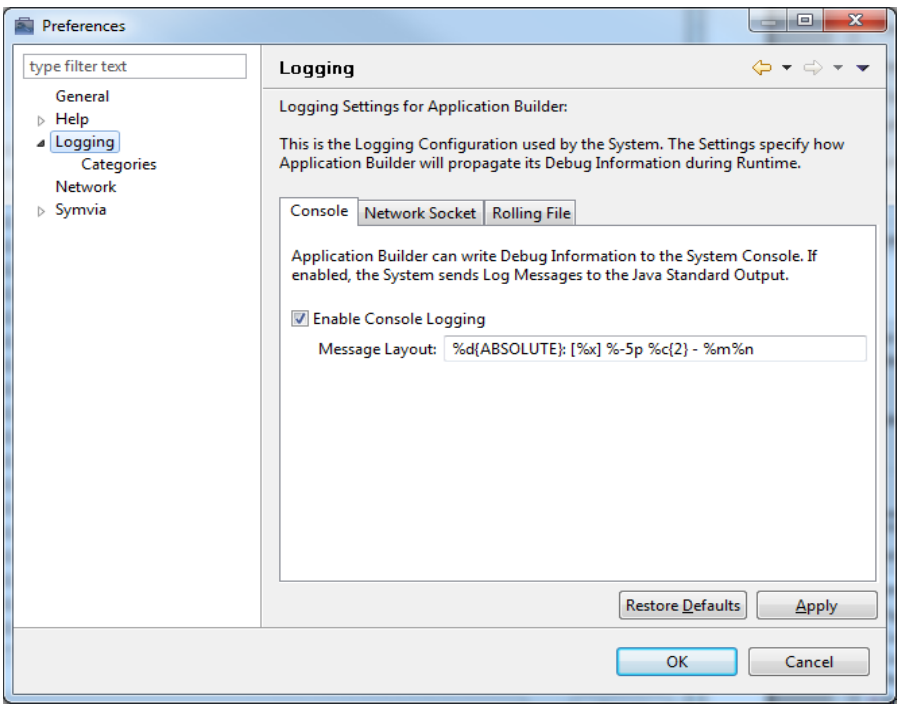
Option	Function
Do not use a Proxy Server	When this option is active, no proxy server is used.
Automatically detect Proxy Server Settings	When this option is active, the proxy server and port are automatically detected and set.
Manual Proxy Server Configuration	When this option is active, the fields for the manual proxy server and port input are enabled.

Option	Function
HTTP(S) Proxy Server	Specify the proxy server.
Port	Specify the port.
Enable Proxy Server Authentication	When this option is active, specify a **Username** and the associated **Password**.

Configuration dialog Logging

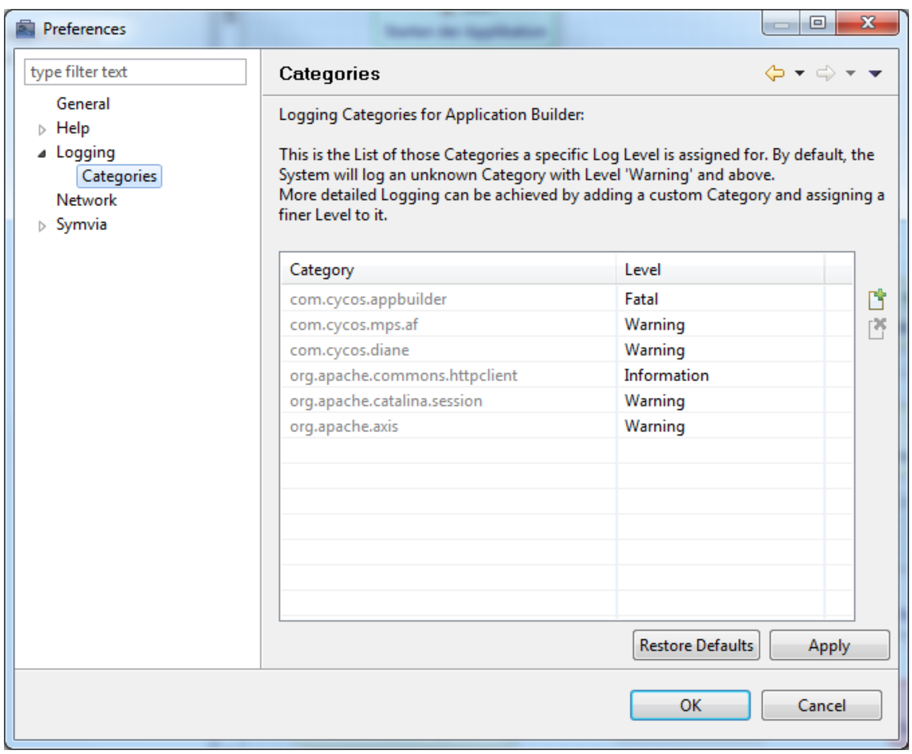
The Application Builder features comprehensive logging. The settings determine which information is stored where and when.

In the **Logging** section you find three tabs with the following configuration options:



Option	Function
Console	Here you can enable the display of log data in the **Console** at runtime. In the **Message Layout** field you can configure the Log4J format of the log data sets. Log4J is a Java logging API. You will find information on Log4J in the internet. The default format string for log information is **%d{ABSOLUTE}: [%x] %-5p %c{2} - %m%n** and can be restored via the **Restore Defaults** button.
Network Socket	Here you can activate a check box for the Application Builder to provide debug information to the network. If you activate this option, you can configure the port number of the log server via which clients can connect this server.
Rolling File	If you activate the check box in this section, log data is written in a file or logging is attached to a file. Furthermore, you can configure the Log4J format of the log data sets, the file path, the maximum file size and the maximum number of log files.

In the **Logging > Categories** area a log layer is configured for each category.

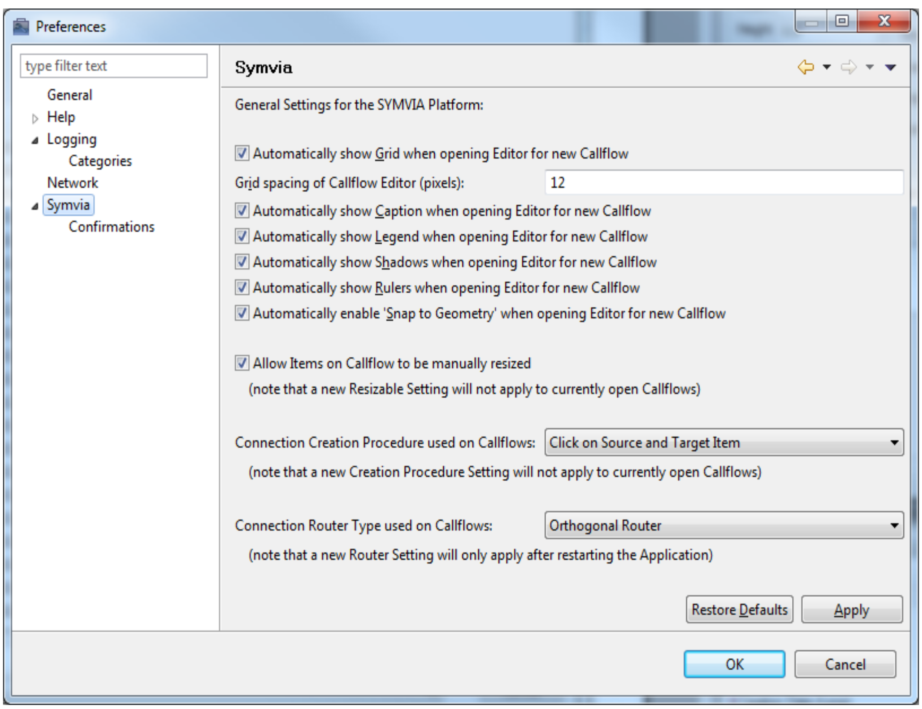


If an event of the configured log level or of a grosser log level occurs for a category, a log data set is created.

Option	Function
Level	• Off No log data sets are created. • Fatal A log data set is created in case of a fatal error only. • Error • Unexpected • Warning • Information • Fine • Finest Very detailed log data sets are created. Default value for an unknown category: Warning

Configuration dialog Symvia

The **Symvia** area lets you perform the following settings:

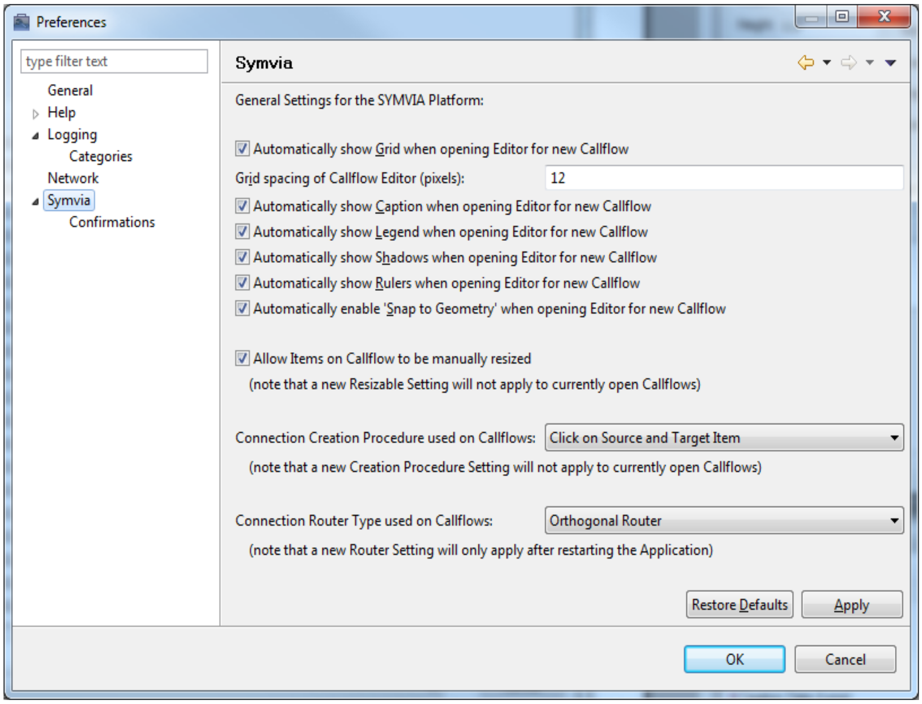


Option	Function
Automatically show Grid when opening Editor for new Callflow	This setting defines whether the grid is to be automatically displayed when creating a new callflow.
Grid spacing of Callflow Editor (Pixel)	Grid spacing of the callflows in pixels. The default value is 12.
Automatically show Caption when opening Editor for new Callflow	You can define whether a writing is configured in the callflow editor.
Automatically show Legend when opening Editor for new Callflow	You can define whether the legend is configured in the callflow editor.
Automatically show Shadows when opening Editor for new Callflow	When you activate this option, all controls are automatically displayed shaded upon the creation of a new callflow.
Automatically show Rulers when opening Editor for new Callflow	Setting that automatically displays rules at the top and left editor margin when creating a new callflow.
Automatically enable ’Snap to Geometry’ when opening Editor for new Callflow	Ticking this check box automatically displays the auxiliary lines for the geometric arrangement of controls when creating a new callflow.

Option	Function
Allow Items on Callflow to be manually resized	After activating this option you can change a control's size in the callflow. The size will otherwise be determined automatically by the length of the control name. Changing this option is not effective for a currently opened callflow. Close the callflow and reopen it.
Connection Creation Procedure used on Callflows:	You can determine how to create a connection between two controls. • Click on Source and Target Item To create a connection between two controls, click on the source control and then on the target control. • Drag from Source to Target Item To create a connection between two controls, click on the source control and keep the mouse button pressed, then drag the mouse pointer onto the target control and release the mouse button. Changing this option is not effective for a currently opened callflow. Close the callflow and reopen it.
Connection Router Type used on Callflows	The following connection types are available: • Straight Router The connection line is straight and directly adjusted. If a third control is between two controls, the line is hidden by the third control. • Linear Router The connection line is straight and directly adjusted. If a third control is between two controls, the line bends around the third control. • Orthogonal Router The connection between two controls always consists of horizontal, vertical and/or right angles. It is not hidden by a third control. Changing this option does not take effect until rebooting the Application Builder.

Configuration dialog Symvia > Confirmations

In the **Confirmations** area you can perform the following settings:



Option	Function
Show Confirmation Dialog after successful Application Deployment	A dialog appear that confirms the successful deployment of an application.
Show Confirmation Dialog after successful Application Export	A dialog appears that confirms the successful export of an application.
Show Confirmation Dialog after successful Composition Export.	A dialog appears that confirms the successful export of a composition.
Show Confirmation Dialog after successful Custom Control Export	A dialog appears that confirms the successful export of the custom controls.
Show Confirmation Dialog after starting Monitoring external Custom Control File.	A dialog appears that confirms the successful start of monitoring a custom control.

4.1.7 Help

This menu has the following options:

Option	Function
Help Contents	This menu option opens the Online help. Depending on the settings you have made in the **Tools > Preferences...** menu option this is done in an external browser or in an Application Builder window.
Dynamic Help	This menu option opens the help view with an overview of all topics. You find further information in section *Dynamic Help*.
Search	This menu option immediately opens the Search topic in the help view. Here you can enter a specific term as online help search item. You find further information in section *Search*.
About OpenScape Fusion Application Builder	This menu option provides information about the Application Builder. You find more information in section *About Application Builder*.

4.1.7.1 Dynamic Help

A click on the **Dynamic Help** menu option opens the help view in the form of a tab. It contains an overview of all topics.

Depending on the selected help page, the bottom margin shows different links:

- **All Topics** leads to the help's table of contents.
- **Related Topics** shows the links that provide information about the desired element.
- **Bookmarks** displays the help pages that you have selected as bookmark.
- **Index** opens the keyword overview of the help.
- **Search** shows the page on which you can specify a search item for searching the help.

You find further information about the help in section *Help View*.

4.1.7.2 Search

When you select the **Search** menu option you are directly taken to the search page of the help.

Enter the item to be searched for in the **Search expression** field and then click on **Go**. The hits and their number are displayed in the bottom section of the view.

> ***NOTICE:*** The special characters ***** (arbitrary sequence), **?** (any character), **““** (expression) and the Boolean operators **AND**, **OR** and **NOT** are allowed in search items.

Under Search scope you can configure the range in which the search is to be performed.

1. Click on the **Default** link to view or change the settings.

2. Select the Default entry and click on the **Edit...** button. The following dialog opens:
   In this dialog you can determine whether to search the local help document . Activate the **Enable search engine** check box for this purpose. In addition, you can select one of the two radio buttons to define the topics to be searched.
   - **Search all topics**
   - **Search only the following topics**
     Activate the check box of the desired **Working set content**. This activates the topic itself and all subordinate topics for the search.

4.1.7.3 About OpenScape Fusion Application Builder

If you have selected the **About OpenScape Fusion Application Builder** menu option, a dialog opens that delivers information about the Application Builder.

Click on the **Installation Details** button to obtain information about the plug-ins and configurations. The dialog **Application Builder Installation Details** opens. It contains the tabs **Plug-ins** and **Configuration**.

Plug-ins tab

All Application Builder plug-ins are listed. Select an entry in the list. The following options become active:

- The **Legal Info** button offers information about the license in HTML format. In this case your default browser opens.
- The **Show Signing Info** button offers information about the certificate of the selected plug-in if it is signed.
- The **Columns** button offers an overview of the displayed columns. If you select a column you can change its displayed width.

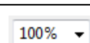
Configuration tab

If you select the **Configuration** tab you receive the entire Application Builder settings.

- The **View Error Log** button opens a window for displaying the error log file. If required, a dialog is displayed for selecting a program to view the error log. We recommend to prefer the editor.
- The **Copy to Clipboard** button copies the settings to the clipboard. From there you can paste the settings into other programs by pushing the `[Ctrl]` + `[V]` key combination, for example.

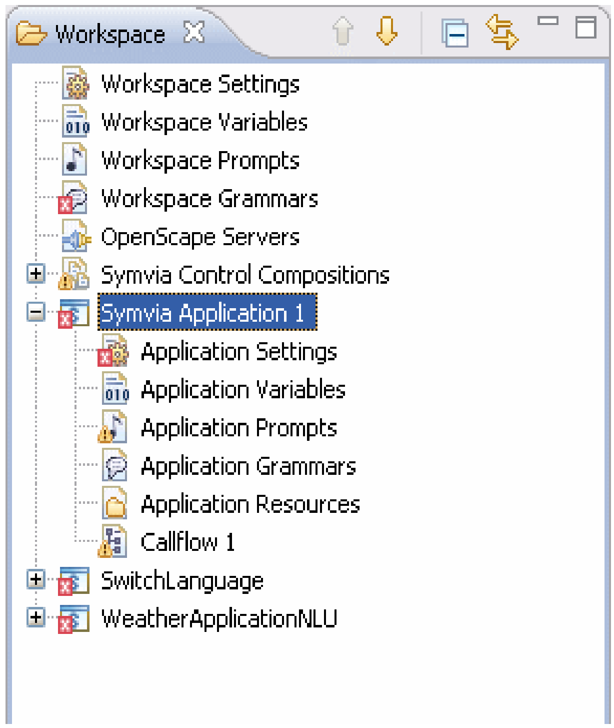
4.2 Toolbar

Except for the zoom feature the toolbar offers a selection of the features that are also available via the menu bar. For a detailed description of the features please also refer to the corresponding chapter on the menu bar.

Icon	Function
	Create new application or composition
	Save open editors or performed settings
	Save all callflows or all performed settings
	Open dialog for printing the selected callflow
	Provide the currently selected application (**deployment**). Via the triangle you can choose from all available applications and compositions.
	Opens the dialog for testing the application. Via the triangle you can choose from all available applications and compositions.
	Undo work step
	Redo
	Cut the selected object and copy it to the clipboard
	Copy the selected object to the clipboard
	Paste the cut or copied element from the clipboard into the desired position.
	Zoom factor of workspace representations IMPORTANT: You can also change the zoom factor by keeping the Ctrl key pressed while turning the mouse wheel.

4.3 Workspace View

The workspace view represents configuration options for the entire workspace and also the connected OpenScape server, the configured compositions and applications as well as their configuration options and associated callflows. The view appears in a tree structure:

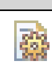


For the entire view you can select the following entries:

- **Workspace Settings** for configuring the supported languages
- **Workspace Variables** for creating and editing wildcards
- **Workspace Prompts** for integrating and creating announcements
- **Workspace Grammars** for activating rules and assignments for speech recognition
- **OpenScape Servers** for logging on server profiles and configuring them. In addition, you can query the connected OpenScape server for hosted Symvia applications and their bindings.
- **Symvia Control Compositions** for creating applications or application fragments that can be used again in the Symvia Application. Composition changes are global and have an effect on all referenced compositions.

For each newly created application the entries for configuring variables, prompts, grammars, and resources are created. The configuration of these variables, prompts, grammars, and resources is only valid in the respective application. Furthermore, the callflows created in an application are displayed.

For each workspace entry a specific icon is displayed.

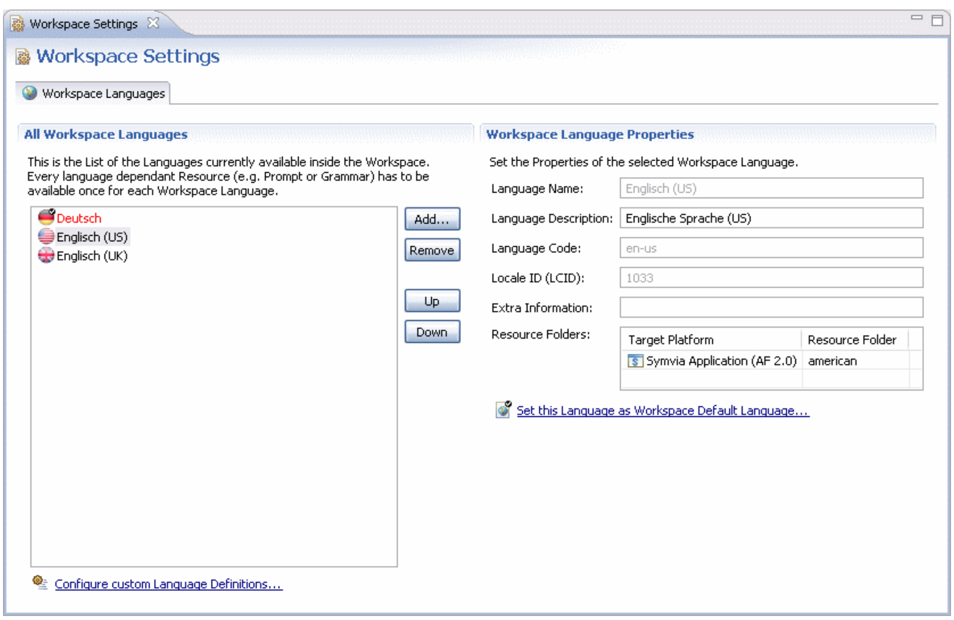
Icon	Meaning
	**Workspace settings**
	**Workspace** or **Application Variables**

Icon	Meaning
	**Workspace** or **Application Prompts**
	**Workspace** or **Application Grammars**
	**Callflow**

If errors or warnings exist in an entry's settings, the  icon is added for an error or the  icon is added for a warning. For example,  indicates that the Symvia application is faulty, and  marks a prompt for which warnings exist. When you select the corresponding entry, the errors or warnings are displayed in the Problem view.

4.3.1 Workspace Settings

If you doubleclick the **Workspace Settings** entry in the workspace view, the **Workspace Settings** tab for defining and configuring the languages to be used opens.



You need to define at least one supported language for each workspace and application. Applications inherit these languages from the workspace, but can be disabled individually. Only for the language set here you can select language-dependent resources such as prompts or grammar files in the application.

> ***IMPORTANT:*** Default languages are German and English (US). If you wish to use additional languages, appropriate TTS and ASR language packages must be installed on each media server of the OpenScape UC Application, for example uc-tts-zh_cn for the TTS language Chinese (Mandarin) or uc-asr-nl_be for the ASR

language Flemish. You find details in the setup guide*OpenScape UC Application Installation and Upgrade*.

On the left-hand side, the tab shows a list of **All Workspace Languages**. As soon as you have selected one of the listed languages, the **Workspace Language Properties** appear on the right hand side.

4.3.1.1 How to Add a Predefined Language

Step by Step

1) Click on the **Workspace Settings** item in the workspace.

The **Workspace Settings** tab for defining and configuring the languages to be used opens in the editor area.

2) Click on the **Add...** button.

The **Add Languages to the Workspace** dialog opens.

Field	Description
Name	The **Name** serves as unique identifier of a language resource.
Code	The **Code** describes the values of the CultureInfo class defined by Microsoft, which contain the cultural properties of a country. These properties contain the name of the culture, the writing system, the calendar used as well as the date format and sorted character strings. The code consists of a two-digit culture code in small letters according to ISO 639 linked to a language and also of a two-digit fractional culture code in small letters linked to a country or region. The format consists of two letters, a hyphen and two letters, for example ja-jp for Japan.
Locale ID	The **Locale ID** or **LCID** (locale identifiers) for short describes a unique code of a language resource introduced by Microsoft, which is also used e.g. by your operating system. Using this ID the operating system can adjust the specific properties and representations of information output such as date and currency specifications or weekday names.
Type	The **Type** indicates for each language resource whether the language is **predefined**, i.e. was installed via the UC system or whether it is a **user-defined** language.

3) Activate the check box of the desired language(s) and confirm your selection with the **OK** button.

The selected language appears indicated in the **All Workspace Languages** list and the **properties** of the added **workspace language** are displayed. The following language properties are available:

Properties	Description
Language Name	The **Name** serves as unique identifier of a language resource.
Language Description	Optional description of the selected language.
Language Code	The **Code** describes the values of the CultureInfo class defined by Microsoft, which contain the cultural properties of a country. These properties contain the name of the culture, the writing system, the calendar used as well as the date format and sorted character strings. The code consists of a two-digit culture code in small letters according to ISO 639 linked to a language and also of a two-digit fractional culture code in small letters linked to a country or region.
Locale ID	The **Locale ID** or **LCID** (locale identifiers) for short describes a unique code of a language resource introduced by Microsoft, which is also used e.g. by your operating system. Using this ID the operating system can adjust the specific properties and representations of information output such as date and currency specifications or weekday names.
Extra Information	The optional information displayed here can be used by a target platform for identifying the workspace language.
Resource Folders	The **Resource Folder** describes the folder in which the prompts and grammar files configured for the workspace or an application are stored according to the associated language. For each language already assigned by the system a folder name is already predefined. For each user-defined language a folder name must be specified in the right column.

Via the **Set this Language as Workspace Default Language...** link you can define the selected language as language for all prompt, grammar and resource files.

4.3.1.2 How to Remove a Predefined Language

Step by Step

1) Click on the **Workspace Settings** item in the workspace.

The **Workspace Settings** tab for defining and configuring the languages to be used opens in the editor area.

2) Select the language you wish to remove from the list.

3) Click on the **Remove** button.

The language is removed from the list.

4.3.1.3 How to Create a Custom Language Definition

Step by Step

1) Click on the **Workspace Settings** item in the workspace.

The **Workspace Settings** tab for defining and configuring the languages to be used opens in the editor area.

2) Click on the link **Configure Custom Language Definitions...**.

The dialog of the same name appears.

3) Click on the **Add...** button.

The **Add Custom Language** dialog opens.

4) Enter the following information:

- **Language Name**
- **Language Description**
- **Language Code**
- **Locale ID**

You can obtain the **Language Code** and the associated **Locale ID** from the Microsoft internet pages.

5) Click the **OK** button.

The created language is displayed in the list of custom language definitions.
You can select an available language and edit, copy or remove it from the list via the offered buttons. How to proceed is described in section *How to Edit a Custom Language Definition*.

6) Click the **OK** button.

The dialog **Configure Custom Language Definitions** closes and the created language is added to the list.

4.3.1.4 How to Edit a Custom Language Definition

Step by Step

1) Click on the **Workspace Settings** item in the workspace.

The **Workspace Settings** tab for defining and configuring the languages to be used opens in the editor area.

2) Click on the link **Configure Custom Language Definitions...**.

3) Select the language to be edited in the list.

4) Click on the **Edit...** button.

The dialog **Edit Custom Language Definitions** opens.

5) Change the language settings.

6) Confirm your changes with **OK**.

The changes are applied to the language.

4.3.1.5 How to Remove a Custom Language Definition

Step by Step

1) Click on the **Workspace Settings** item in the workspace.

The **Workspace Settings** tab for defining and configuring the languages to be used opens in the editor area.

2) Click on the link **Configure Custom Language Definitions...**.

3) Select the language to be removed in the list.

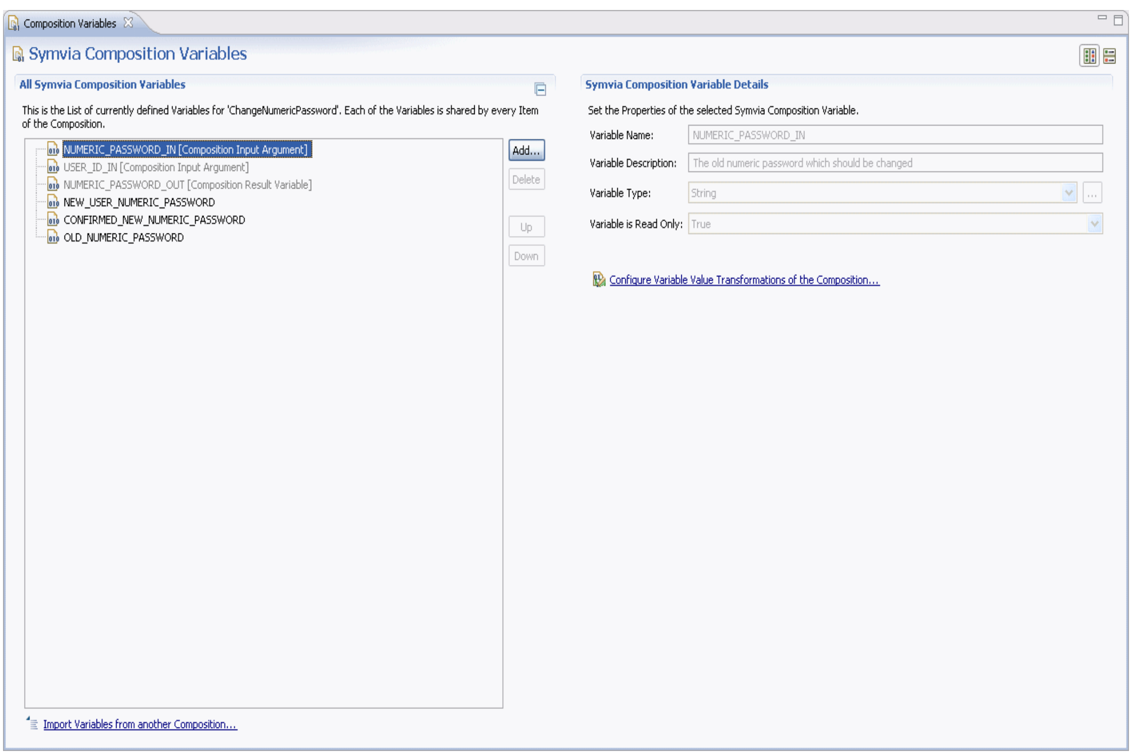
4) Click on the **Remove** button.

The language is removed from the list of custom defined languages.

4.3.2 Workspace Variables

If you doubleclick the **Workspace Variables** entry in the workspace view, the tab for defining and configuring the variables opens in the editor area.

In contrast to application-dependent variables, workspace variables are valid in the entire workspace and can be used across the application.



4.3.2.1 How to Create a new Workspace Variable

Step by Step

1) Click on the **Add...** button.

   The **Create Workspace Variable** view opens.

2) Assign a name to the workspace variable.

3) Enter optionally a **Workspace Variable Description**.

4) Click on **OK**.

   The newly created workspace variable is in bottom position in the **All Workspace Variables** list. The aliases **Alias for Symvia Application (AF 2.0)** and **Alias for OpenScape Vogue Application (OpenScape 2.0)** appear subordinately.

   A click on **Delete** removes a selected workspace variable.

   Using the **Up** or **Down** button you can move a selected variable up or down the list.

   The newly created variable is of type String by default.

Next steps

Configure the workspace variable.

4.3.2.2 How to Configure a Workspace Variable

Step by Step

1) Click on the small triangle that precedes the corresponding variable.

   The application alias of the variable opens.

2) Select the corresponding variable **Alias for Symvia Application (AF 2.0)**.

   The **Symvia Application Variable Details** view opens.

3) If required, edit the values of the **Variable Name** and **Variable Description** field.

4) From the **Variable type** combo box, select a primitive, complex or a list variable type.

   - String
   - Integer
   - Boolean
   - Float
   - URI
     Example:

```
file:///C:/application_builder/my_workspace/items/Symvia Application 1/resources/inst.txt
```

You may use a variable of type URI in a Send control to specify the path to a file to be attached to the message to be sent.

A variable of type URI is needed in the Message control for responding to a message. This variable contains the URI for the media file to be used as reply. The typical contents of this media file is spoken language recorded with the Record control.

- Date
- Time
- User

  A user contains the account ID, the name, the language code and the One-Number Service number.

  A variable of type User can for example be used in the Send control for sending a message to this user.
- Contact

  A contact contains for example the account ID of the user who has this contact, the last name, the first name, e-mail addresses, the fax number and phone numbers of the contact.

  A variable of type Contact can for example be used in the Send control for sending a message to this contact.
- CallInfo

  A CallInfo contains the user device, the date, the time, the direction (inbound/outbound), the call duration, and the device and name of the conversational partner.
- Tree

  A WebService control stores a result of a web service in a variable of type Tree. The automatic speech recognition (ASR) transforms in an NLU control the spoken input of a user in a semantic result, which is then stored in a variable of type Tree.

  INFO: Speech recognition with subsequent storing of a result in a variable is, besides in the NLU control, also performed in the SpeechInput control. There, however, the semantic result is not stored in a variable of type Tree but of type RecognitionResult, the sub-elements or which are fixed.

- Dataset

  A dataset stores the result of a database query in a DatabaseRead control.
- Conference

  A conference contains for example an ID, a title, a list of invited users, a list of moderators, a start date, a start time and a status.

- Message

  A message contains for example a message type, an ID, an originator, a recipient list, a subject, a text, a date and a time.

  A variable of type Message identifies for example in the Message control the message to be replied to.

- EventData

  This variable type can store the values of an application event.

- RoutingInfo

  A RoutingInfo stores the routing recommendations for a call in a contact center. It contains for example the ID of the routing queue recommended for the call, the number of calls in this queue, the ID of the agent recommended for processing the call and the estimated waiting time in the queue until the call is processed.

- QueueInfo

  A QueueInfo stores the following data of a contact center queue: the number of calls in the queue, the estimated and average waiting time in the queue until the call is processed, the waiting time of the oldest call in the queue and the service level of the queue in percent.

- RecognitionResult

  In a SpeechInput control the automatic speech recognition (ASR) transforms the spoken input of a caller in a textual meaning, which is then stored in a variable of type RecognitionResult.

  A RecognitionResult consists of the following sub-elements:

  - Result (String): The textual meaning (semantic result) of the utterance (voice input) of the caller

  - Utterance (String): The caller's voice input that corresponds to the textual meaning

  - Confidence (Integer): The recognition confidence of the textual meaning in percent

  INFO: Speech recognition with subsequent storing of the result in a variable is, besides in the NLU control, also performed in the SpeechInput control. However, the textual meaning is stored there in a variable of type Tree the sub-elements of which are configurable in the NLU control. A confidence does not store this control, though.

- MessageImportance

  This enumeration variable type contains the importance level of a message. The values are Low, Normal and High.

  You can use this variable type for example in a Send control or Prompt control for sending or playing a message's importance. However, a transformation must have been previously defined for this variable type for the values Low, Normal and High to be reproduced by correct words in each supported language. In German, for example, such equivalents would be the words Niedrig, Normal and Hoch. You start a transformation with a click on the **Transformations...** button next to the variable list.

- MessageSensitivity

  This enumeration variable type contains the sensitivity level of a message.

- MessageType

  This enumeration variable type contains the type of a message.

- PresenceStatus

  This enumeration variable type contains the presence status.

- You can also use lists of all above variable types except for tree and event data.

5) Save the changes with .

4.3.2.3 How to Configure the Transformation of a Variable Value

Using the **Transformations...** button you can create a variable the value of which is transformed after the announcement. The resulting, transformed value is then used for the announcement instead of the original value. Each variable transformation is available in the entire application.

Step by Step

1) Click on the **Transformations...** button.

The **Configure the available Symvia Variable Transformations** dialog opens.

2) Click on **Add**.

The **Specify Variable Value Transformation** dialog opens.

3) Enter the following values:

Field	Description
Transformation Name	The name serves as unique identifier of the variable value transformation.
Transformation Description	Optional Description of the Variable Value Transformation.

4) Click on **Next**.

5) Select a **Transformation Directive** from the drop down list.

The transformation directive corresponds to the logic used for transforming the variable value into text that can be spoken. Every directive can be used for a specific file type and may request result values.

6) Click on **Next**.

7) Add **Transformation Arguments** via .

Specify the transformation arguments (input value) and the corresponding results (output value) for each of the activated languages. If the variable is to be announced, its current value is searched for in the arguments list. If the value is found, the corresponding result value of the current language is used.

Using the icon you can remove selected transformation arguments.

8) Click on **Next** or **Finish**.

If you click on **Next** you can test the previously specified values.

9) Click on **Finish**.

The variable value configuration is added to the **Configure the available Symvia Variable Transformations** table.

The changes are copied when the entry is saved.

Using the **Edit...** button you can change the configurations of a selected transformation.

With the **Copy...** button you copy a selected transformation with its settings.

A click on the **Remove** button removes a selected transformation permanently from the list.

You can change the order of the selected transformations with the **Up** and **Down** buttons.

4.3.2.4 How to Import Variables

Step by Step

1) Click on **Import Variables from another Workspace...**.

The **Import Workspace Variables** dialog opens.

2) Click on **Browse...** for selecting the corresponding workspace.

All variables of the other workspace are automatically displayed with their properties.

3) Select the desired variable.

To import all variables of a workspace, click on the **Select All** button.

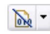
With a click on the **Deselect All** button you undo all variable selections.

4) Click on the **Finish** button.

The imported variable is itemized in the **All Workspace Variables** list.

4.3.2.5 Further Configurations

The **Workspace Variables** tab features at the top right margin three more icons the functions of which are explained in the below table.

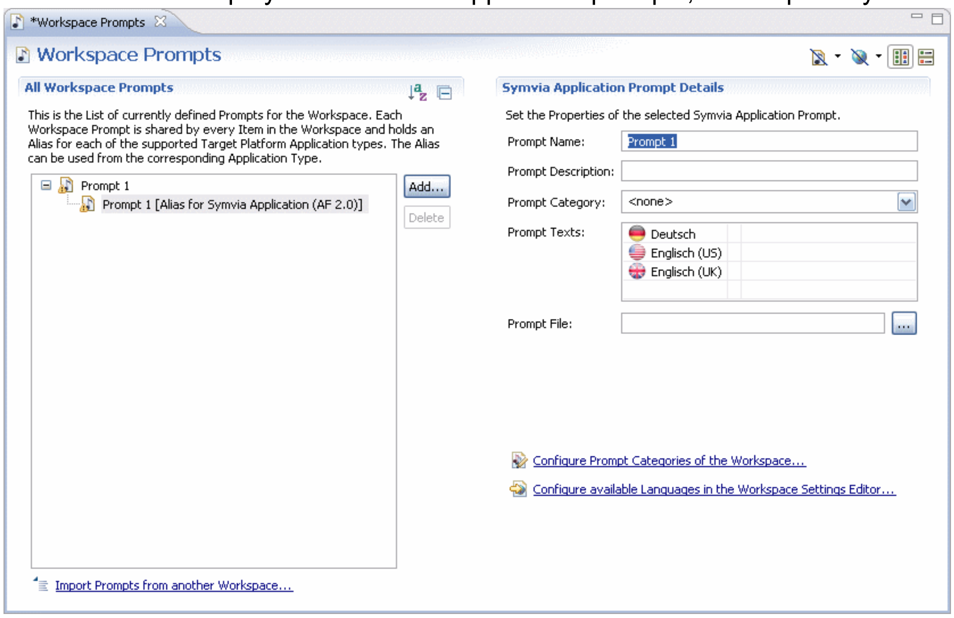
Icon	Function
	After a click on this icon you can determine whether a variable alias shall be displayed only for a Symvia Application, for an OpenScape Vogue application or for both. Activate the check box of the desired application in the opened dialog and then click on the **OK** button. After clicking on the small triangle you can select either Symvia Application or OpenScape Vogue Application.
	In the icon's active state the areas **All Workspace Variables** and **Application Variable Details** or **Workspace Variable Details** are positioned next to each other (vertically). This is the default setting. The area **All Workspace Variables** is found in the left half of the tab.
	With a click on this icon you position the areas **All Workspace Variables** and **Application Variable Details** or **Workspace Variable Details** on top of each other (horizontally), with the area **All Workspace Variables** always being in the upper half of the tab.

On the top right margin of the **All Workspace Variables** area you find the  icon. A click on this icon displays only the variables defined for the workspace in the **All Workspace Variables** list. The respective aliases can be displayed again via the small triangle to the left of each variable.

4.3.3 Workspace Prompts

If you doubleclick the **Workspace Prompts** entry in the workspace view, the tab for defining and configuring the workspace prompts opens in the editor area. Prompts or announcements are either sound files or spoken language created from written text by means of Text-to-Speech (TTS). They are used to serve various purposes in the controls. Examples are welcome announcements, operating instructions or information for the caller, which is announced.

In contrast to application prompts, workspace prompts are valid in the entire workspace and can be used across the application. Workspace prompts are also displayed in the list of application prompts, albeit specially indicated.



4.3.3.1 How to Create a Workspace Prompt

Step by Step

1) Click on the **Add...** button.

The **Create Workspace Prompt** dialog opens.

2) Enter the **Workspace Prompt Name**.

3) You can optionally enter **Workspace Prompt Description** .

4) Click the **OK** button.

The newly created prompt is itemized in the **All Workspace Prompts** list on the **Workspace Prompts** tab. It does not have a text yet for using a text-to-speech engine.

Next steps

Configure the workspace prompt.

4.3.3.2 How to Configure a Workspace Prompt

Prerequisites

- The prompt you wish to assign a media file to must have already been created. The media file must have the format `*.wav` or `*.pcm`.
- Some icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme. You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

Step by Step

1) Select the alias of the corresponding prompt.

The right-hand area of the tab features **Workspace Prompt Details**.

> ***NOTICE:*** Please note that prompts can only be used for the available and configured languages. Languages are configured in the **Workspace Settings** on the **Workspace Languages** tab.

> ***IMPORTANT:*** Default languages are German and English (US). If you wish to use additional languages, appropriate TTS and ASR language packages must be installed on each media server of the OpenScape UC Application, for example uc-tts-zh_cn for the TTS language Chinese (Mandarin) or uc-asr-nl_be for the ASR language Flemish. You find details in the setup guide *OpenScape UC Application Installation and Upgrade*.

2) The **Prompt Name** field allows changing the prompt's alias name.

3) You can enter a description in the **Prompt Description** field.

4) In the **Prompt Category** field you can assign a category to the prompt.

5) In the **Prompt Texts** field you enter a text for each configured language. This text is transformed into an announcement of the corresponding language by means of TTS if the prompt is used in an active application. This requires an installed TTS system.

In addition, the use of definitions in the XML-based SSML is supported. This serves for creating announcements in prompts with help of TTS. But instead of specifying a continuous text for announcement output, the text playback can be adjusted with the help of a special notation. For example, phone numbers may be announced digit by digit and slowly, thus for everybody to understand. Specify the desired entry in SSML for using SSML as text.

In the following example a specified number is announced as phone number:

```
“<say-as interpret-as=”telephone”>012387654</say-as>”
```

You find a list of all possible definitions in SSML in the user guide of the supported speech recognition system (Nuance Recognizer) in the supplied ISO setup files of the languages for implementing TTS. Further information about SSML is contained in the web pages of the W3C institution.

6) In the **Symvia Application Prompt Details** area, click in the **Prompt Files** table on **<Click to select file>** in the row of the language for which you wish to import and assign a media file.

Buttons appear to the left of this row.

NOTICE: These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

You can perform a simple or an extended import.

In case of a simple import, you assign precisely one media file to a prompt for one language. As a result, this media file is imported in the media file repository of the workspace. Importing the media file occurs invisibly and implicitly. This is the most common application.

In case of an extended import you can import several media files for a prompt for one or several languages in the media file repository of the workspace. This is useful if you wish to import music or tones for several languages in one go. One media file will then be assigned to a prompt for one language.

The opposite is also true: Each media file in this directory is available in the media file repository of the server. However, not every media file in this repository need to be assigned to a prompt.

A media file must always have the same name for all available languages, so that it can be stored in the corresponding resources folder for the respective language.

NOTICE: Each workspace, composition, server (i. e. each OpenScape UC Application installation), and application has its own media file repository and resource directory. These repositories are independent from each other.

If you wish to perform a simple import, click in the **Prompt Files** table on the first **...** button in the row in which you clicked on **<Click to select file>**, select a media file and click on **Open**. For this case, import in the media file repository is complete and the assignment to the prompt has been entered but not been saved yet. Continue with the next major step.

If, however, you wish to perform an extended import, execute the following sub-steps:

a) Click on the second **...** button in this row.

A dialog opens that displays the list of prompts available in the media file repository of the workspace.

b) Click on the small triangle on the **Import...** button and select **Extended Import...**.

c) Click on the **Add...** button.

d) Select one or several media files and click on **Open**.

The media files are displayed in the list of media files to be imported.

e) Click on **Next**.

f) Activate the check boxes of the languages for which media files shall be imported in the media file repository of the workspace.

g) Click on the **Finish** button.

The media files are itemized in the list of files available in the media file repository of the workspace. The media files to which you have assigned languages not selected in the **Prompt Files** table are represented grayed out. If you select a media file of such languages, the **OK** button appears grayed out. Click on a file of the language you selected in the **Prompt Files** table. Using the **Play** button you can play this media file.

h) Click on the **OK** button.

For this case, import in the media file repository is complete and the assignment to the prompt has been entered but not been saved yet.

Regardless whether you performed a simple of extended import, icons to the right of the file name indicate whether the file exists and whether the file has a format that the Application Builder supports.

If you wish to remove the assignment of the media file to the prompt, click on the file name and then on the third icon. However, this will not remove the media file from the media file repository of the workspace and not from the resource directory either.

7) If you click on the **Configure Prompt Categories of the Workspace...** link, you can add or remove prompt categories or assign them different colors or descriptions. Each prompt category is available in the entire workspace.

8) If necessary, you can click on the link **Configure available Languages in the Workspace Settings Editor...** to access the **Workspace Settings** > **Workspace Languages** > **All Workspace Languages** tab. You find more information on this in the *Workspace Settings* section.

9) If you click on the **Import Prompts from another Workspace...** link, you can perform the actions described in section *How to Import Prompts from another Workspace*.

10) Push the hotkey CTRL + S or select **File** > **Save** in the menu to store media file assignments to prompts.

4.3.3.3 How to Import Prompts from another Workspace

Step by Step

1) Click on the **Import Prompts from another Workspace...** link.

   The **Import Workspace Prompts** dialog opens

2) Use the **Browse...** button to select the workspace from which the prompts shall be imported.

   All prompts of the selected workspace are added to the list in the dialog **Import Workspace Prompts**.

3) Select in the list the prompts you wish to import or click on the **Select All** button to mark all prompts available in the workspace.

4) Click on **Next**.

5) Activate the check box of the language to be used for the prompt files.

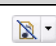
   If the prompt is to be available in several languages and the corresponding audio files with the different languages are available, activate the check boxes of the desired languages.

6) Click on the **Finish** button.

   The imported prompts are itemized in the **All Workspace Prompts** list on the **Workspace Prompts** tab.
   Enabling the **Deselect All** button undoes all prompt selections.

4.3.3.4 Further Configurations

The **Workspace Prompts** tab features at the top right margin four more icons the functions of which are explained in the below table.

Icon	Function
	This icon serves for filtering the prompt display. By enabling this icon you can determine for which applications a prompt alias is to be displayed. Activate the check box of the desired application in the opened dialog and then click on the **OK** button. Only the prompt aliases of the selected application are listed.

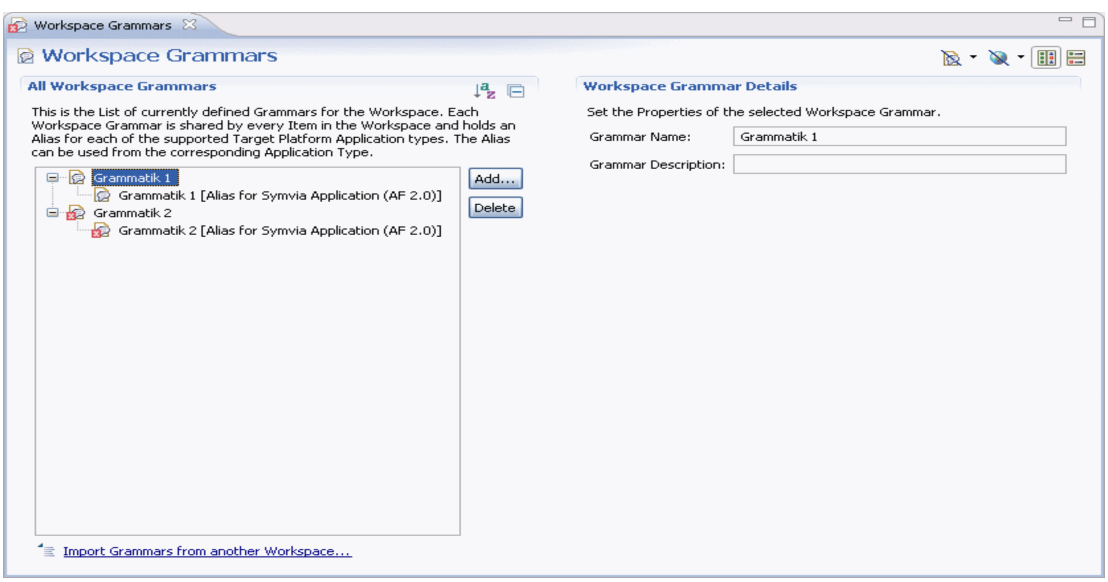
Icon	Function
	This icon lets you filter the prompts on the basis of the assigned languages. Activate the check box of the desired language and then click on the **OK** button. Only the properties of the desired languages are displayed.
	This icon is active by default. It places the sections **All Workspace Prompts** and **Symvia Application Prompts Details** or **Workspace Prompt Details** next to each other (vertically). The area All Workspace Prompts is found in the left half of the tab.
	When you activate this icon, the areas **All Workspace Prompts** and **Symvia Application Prompt Details** or **Workspace Prompt Details** are positioned on top of each other (horizontally), with the area **All Workspace Prompts** always being in the upper half of the tab.

At the top right margin of the **All Workspace Prompts** area the following two icons are available:

Icon	Function
	With the help of this icon you can sort all grammars defined for the workspace alphabetically ascending.
	A click on this icon displays only the prompts defined for the workspace in the **All Workspace Prompts** list. The respective aliases can be displayed again via the plus sign of a prompt.

4.3.4 Workspace Grammars

If you doubleclick the **Workspace Grammars** entry in the workspace view, the tab for configuring the workspace-spanning grammar files opens in the editor area.



A grammar file contains assignments and rules for speech recognition.

The assignments assign meanings to utterances. Utterances are words the caller speaks, recognized by speech recognition (ASR) during the application's runtime. Meanings are the interpretation results of such utterances.

Example:

Utterance: Hallo

Meaning: Hello

Standard grammars

Standard grammars are grammars provided by the Application Builder and usable in the entire workspace. However, you cannot configure them. The following standard grammars are available:

- DTMF Grammars
  - Standard DTMF #
  - Standard DTMF *
  - Standard DTMF 0
  - Standard DTMF 0-9
  - Standard DTMF1
  - Standard DTMF 2
  - Standard DTMF 3
  - Standard DTMF 4
  - Standard DTMF 5
  - Standard DTMF 6
  - Standard DTMF 7
  - Standard DTMF 8
  - Standard DTMF 9
  - Standard DTMF Sequence
  - Standard DTMF Sequence (# terminated)
  - Standard DTMF Sequence (* terminated)
  - Standard DTMF Sequence (separated)
  - Standard DTMF Sequence (separated, # terminated)
  - Standard DTMF Sequence (separated, * terminated)
- Number Grammars
  - Standard Number 0-24
  - Standard Number 0-366
  - Standard Number 0-6
  - Standard Number 0-9
  - Standard Number 0-9,999
  - Standard Number 0-99
  - Standard Number 0-99,999
  - Standard Number 0-999
  - Standard Number 0-999,999

  - Standard Number 0-999,999,999
  - Standard Number 1-12
  - Standard Number 1-12 (ordinal)
  - Standard Number 1-3
  - Standard Number 1-3 (ordinal)
  - Standard Number 1-31
  - Standard Number 1-31 (ordinal)
  - Standard Number 1-366 (ordinal)
  - Standard Number 1-54
  - Standard Number 1-54 (ordinal)
  - Standard Number 1-60
  - Standard Number 1-7
  - Standard Number 1-7 (ordinal)
  - Standard Number 1-9
  - Standard Number 1-9 (ordinal)
  - Standard Number 1-99
  - Standard Number 2-200
  - Standard Number Sequence 0-9
  - Standard Number Sequence 0-9 (separated)
  - Standard Number Sequence 0-99
  - Standard Number Sequence 0-99 (separated)
- Garbage Grammars
  - Standard Garbage (leading)
  - Standard Garbage (inner)
- Letter Grammars
  - Standard Letter
  - Standard Letter Sequence
  - Standard Letter Sequence (separated)
- Date/Time Grammars
  - Standard Date
  - Standard Time
  - Standard Time Range
- Standard Cancel
- Standard Decline
- Standard Accept
- Standard Boolean
- Standard Help
- Standard Repeat

Standard grammars are not displayed in the workspace but in the grammar selection dialogs of the controls. For example, click in the SpeechInput control on the **Recognition** first and the on the icon.

4.3.4.1 How to Create a new Workspace Grammar

Step by Step

1) Click on the **Add...** button.

   The **Create Workspace Grammar** dialog opens.

2) Specify the **Workspace Grammar Name**. You can optionally enter a **Workspace Grammar Description**.

3) Click the **OK** button.

   The grammar appears in the list of **All Workspace Grammars**. No grammar file has yet been assigned to the added grammar.

Next steps

Assign a grammar file that you create or import to the grammar.

4.3.4.2 How to Create a Grammar File for the Workspace

Prerequisites

- Some icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme. You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.
- **IMPORTANT:** The default languages for the automatic speech recognition are German and English (US). If you wish to use additional languages, the corresponding ASR language packages must be installed on each media server of the OpenScape UC Application; for example uc-asr-nl_be for the ASR language Flemish. You find details in the setup guide *OpenScape UC Application Installation and Upgrade*.

Step by Step

1) Select the alias name of the corresponding grammar.

   In the **Workspace Grammar Details** area of the tab you are provided with further setting options.

   > ***NOTICE:*** Please note that grammar files can only be used for the available and configured languages. Languages are configured in the **workspace settings** on the **workspace languages** tab.

2) In the **Workspace Grammar Details** area, click in the **Grammar Files** table on **<Click to select file>** in the row of the language for which you wish to import and assign a grammar file.

   Buttons appear to the left of this row.

INFO: These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

3) Click on the second **...** button in this row.

The **Select Grammar File** dialog opens. All available grammar specification files are listed.

4) Click on the **Create...** button.

The **Create Grammar File** dialog opens.

5) Specify the **File Name**. The file must be a GRM file. You can optionally add a **File Description**.

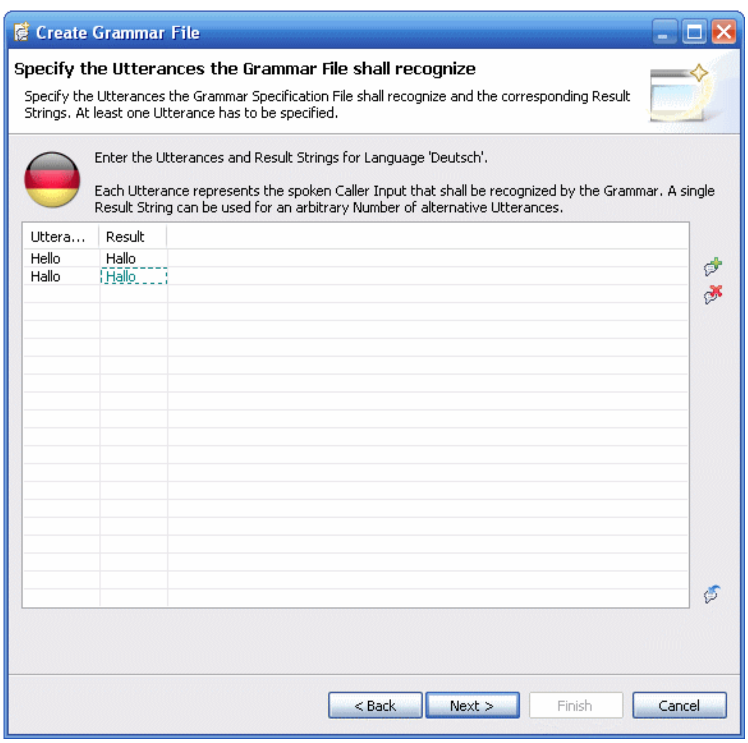
6) Click on **Next**.

7) Activate the check box of the languages for which a grammar file shall be created.

Only languages active in the workspace are displayed.

8) Click on **Next**.

The dialog that specifies the utterances of the respective language opens.



In the top-left area of the dialog you see the respective language represented by the country's flag.

9) Click on to add a new utterance.

10) Enter an **Utterance**. Each utterance corresponds to the spoken call input to be recognized by the grammar.

11) Enter the meaning of this utterance under **Result**.

With you remove selected utterances from the table.

With you can use utterances specified for another language in the grammar file.

> ***NOTICE:*** Please note that in this case the utterances already created for the language are overwritten.

12) Click on **Next**.

You reach the dialog of the next language for specifying utterances and their meaning.

13) After you have created utterances and meanings for all languages, click on **Finish**.

The **Create Grammar File** dialog closes. The grammar file is listed in the **Select Grammar File** dialog and can be selected. This dialog shows the list of files available in the grammar file repository of the workspace. Empty grammar files appear in red.

> ***INFO:*** Each workspace, composition and application has its own grammar file repository and resource directory. These repositories are independent from each other.

14) Choose the grammar file of the above selected language and click on **OK**.

The chosen grammar file is listed for the selected language in the **Grammar Files** field.

> ***NOTICE:*** The grammar file must always have the same name for all available languages, so that it can be stored in the corresponding resources folder for the respective language.

15) Push the hotkey CTRL + S or select **File** > **Save** in the menu to store the changes.

4.3.4.3 How to Import a Grammar File

Step by Step

1) Mark the respective grammar.

In the **Symvia Application Grammar Details** area of the tab you are provided with further setting options.

NOTICE: You need to assign already existing grammar files to grammars. Please note that grammar files can only be used for the available and configured languages. Languages are configured in the **workspace settings** on the **workspace languages** tab.

---

2) Click on the **Browse...** button next to the **Grammar File** field.

The **Select Grammar File** dialog opens. All available grammar specification files are listed.

The grammar files need not match the set workspace languages. Via the **Only show those Files that are available for every Workspace Language** option you can make sure that the displayed grammar files are applicable for all configured languages.

NOTICE: If you want to insert a grammar file already used, proceed with *step 10*. If you wish to add a new grammar file, skip to *step 3*.

---

3) Click on the **Import...** button.

The **Import Grammar Files** dialog opens.

4) Click on the **Add...** button.

5) Select the desired grammar file in the opened dialog and click on the **Open** button.

The selected grammar file is integrated in the list of grammar files to be imported.

6) Select the grammar file just added and click on **Next**.

7) Determine the grammar file language by activating the check box of the relevant language.

If the grammar is to be available in several languages and the corresponding grammar files with the different languages are available, activate the check boxes of the desired languages.

8) Click on the **Finish** button.

The grammar file is itemized in the list of available files in the **Select Grammar File** dialog.

Via the **Details** button you receive a view of the code of a grammar file.

9) Select the grammar file and click on **OK**.

The selected grammar file and the languages for which it is to be used are itemized in the **Symvia Application Grammar Details** list.

> ***NOTICE:*** The grammar file must always have the same name for all available languages, so that it can be stored in the corresponding resources folder for the respective language.

4.3.4.4 How to Import a Grammar from another Workspace

Step by Step

1) Click on the **Import Grammars from another Workspace...** link.
2) Select the corresponding workspace from the selection list or via the **Browse...** button.

   All grammars of the other workspace are automatically displayed with their properties.
3) Click on **OK**.

   The grammars of the file are added to the list in the **Workspace Grammars** dialog.
4) Select the desired grammar in the list.

   A click on the **Select All** button marks all grammars in the list.
   Enabling the **Deselect All** button undoes all grammar selections.
5) Click on **Next** or **Finish**.
6) Determine the grammar file language by activating the check box of the relevant language.

   If the grammar is to be available in several languages and the corresponding grammar files with the different languages are available, activate the check boxes of the desired languages.
7) Click on the **Finish** button.

   The grammar to be imported from the other workspace is integrated in the current workspace and appears in the **All Workspace Grammars** list.

4.3.4.5 Further Configurations

The **Workspace Grammars** tab features at the top-right margin four more icons the functions of which are explained in the below table.

Icon	Function
	This icon serves for filtering the grammar display. By enabling this icon you can determine for which applications a grammar alias is to be displayed. Activate the check box of the desired application in the opened dialog and then click on the **OK** button. Only the grammar aliases of the selected application are listed.
	This icon lets you filter the grammars by the assigned language. Activate the check box of the desired language and then click on the **OK** button. Only the properties of the desired languages are displayed.
	This icon is active by default. It places the sections **All Workspace Grammars** and **Symvia Application Grammar Details** next to each other (vertically).
	A click on this icon places the sections **All Workspace Grammars** and **Symvia Application Grammar Details** on top of each other (horizontally), with section **All Workspace Grammars** always being in the top half of the screen.

At the top right margin of the **All Workspace Grammars** area the following two icons are available:

Icon	Function
	With the help of this icon you can sort all grammars defined for the workspace alphabetically ascending.
	A click on this icon displays only the prompts defined for the workspace in the **All Workspace Grammars** list. The respective aliases can be displayed again via the plus sign of a grammar.

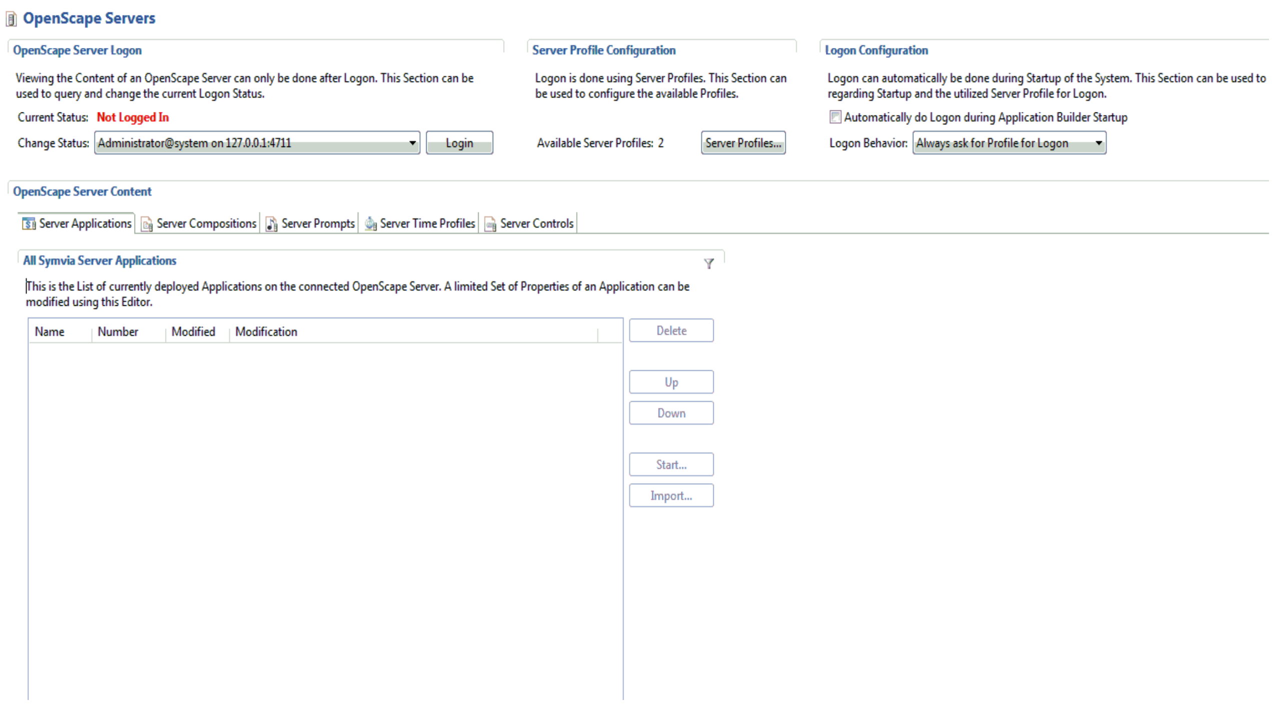
4.3.5 OpenScape Servers

Using an application created with the Application Builder requires the Application Builder being connected to an OpenScape UC Application. Please obtain OpenScape UC Application details from the *OpenScape UC Application System Description*. In the Application Builder GUI, the OpenScape UC Application is called **OpenScape Server**. When you double-click the **OpenScape Server** entry in the workspace view you can edit the settings for connecting an OpenScape UC Application.

The **OpenScape Server** tab contains the following areas:

- **OpenScape Server Logon**
  You perform the login in this area.

- **Server Profile Configuration**
  In this area you manage the profiles deployed for logging on to an OpenScape UC Application.
  A server profile is a combination of a user's login name, the IP address of the application computer (back-end computer) of the OpenScape UC Application and a port number.
  Example: `administrator@system auf js-soc://10.9.30.97:4711`
- **Logon Configuration**
  You configure login details here.
- **OpenScape Server Content**
  This area informs you about applications, server prompts and server time profiles used on the OpenScape UC Application.



4.3.5.1 Configuring OpenScape UC Application Users

The **Available Server Profiles** indicates how many OpenScape UC Application server profiles were configured in the Application Builder. Profiles not yet used for successfully logging on to an OpenScape UC Application are also counted among the available server profiles.

Click on the **Server Profiles...** button.

The **Configure the available Server Profiles** opens. You receive an overview of all available profiles. Here you can add, edit and remove server profiles.

The below table contains the available options:

Icon	Function
Add...	With this button you can create server profiles and configure them for the first time. The **Create new Server Profile for Login** dialog opens.
Edit...	With this button you can edit a server profile previously selected in the list and change the configuration. That is only possible if this server profile is not used for logging on to an OpenScape UC Application at this time.
Copy...	With this button you can copy a server profile previously selected in the list.
Remove	With this button you can permanently remove a server profile previously selected in the list.
Test	With this button you can check a server profile previously selected in the list.
Set as Default	With this button you can select a server profile previously marked in the list as default.
Import Profiles from another Workspace	With this link you can import server profiles from another available workspace in the current workspace.

4.3.5.2 How to Create a Server Profile

You must create a server profile for the administrator of the OpenScape UC Application to connect the Application Builder to the OpenScape UC Application.

Prerequisites

- You need the password of user administrator at the OpenScape UC Application, the IP address of the application computer (back-end computer) of the OpenScape UC Application and the port used for connecting the OpenScape UC Application. Port 4711 is used by default.

Step by Step

1) Click on the **OpenScape Server** entry in the workspace view.

2) Click on the **Server Profiles...** button.

The **Configure the available Server Profiles** opens. You receive an overview of all available server profiles.

3) Click on the **Add...** button.

The **Create new Server Profile** dialog opens.

4) Choose Server Type and specify the following values:

Field	Function
User Name	Name of an OpenScape UC Application user without domain. Example: `administrator`
Server Domain	OpenScape UC Application domain. For the time being, only the `system` domain is supported. This is no Linux or Windows domain.
Server Address	Address of the application computer (back-end computer) of the OpenScape UC Application inclusive port number. Example of usage with unencrypted connection: `js-soc://10.9.30.94:4711`
Profile Name	The profile name is automatically allocated with values of the fields User Name and Server Address. Example: `administrator@system on js-soc://10.9.30.94:4711`
Store Password of server profile	If you wish to store the server profile password, activate this check box.
Password	Password of the server profile
Confirm Password	Password of the server profile

5) Confirm your entries with **OK**.

The created profile is added to the list of server profiles.

Next steps

You can now log the Application Builder on to the OpenScape UC Application.

4.3.5.3 How to Import a Server Profile

This section describes how to import a server profile from another workspace.

Step by Step

1) Click on the **Server Profiles...** button.

The **Configure the available Server Profiles** opens. You receive an overview of all available server profiles.

2) Click on the **Import Profiles from another Workspace...** link.

3) Select the desired workspace from the selection list. Via the **Browse...** button you can add workspaces to the selection.

All server profiles of the other workspace are automatically displayed.

4) Select the desired server profiles and click on **Finish**.

A click on the **Select All** button marks all available server profiles of the workspace.

Enabling the **Deselect All** button undoes all server profile selections.

The server profiles to be imported from the other workspace are integrated in the current workspace and appear in the **Server Profiles List**.

4.3.5.4 How to Configure the Login to the OpenScape UC Application

You can configure the login process as to make the Application Builder start with automatically connecting the OpenScape UC Application under a server profile to be set.

Step by Step

1) Activate the check box **Automatically do Login during Application Builder Startup** if login is to occur automatically.

2) Determine the desired login behavior by selecting one of the following options.

- **Always ask for Profile for Login**: During login you will be prompted to specify the server profile for logging on to the OpenScape UC Application.
- **Always login with Default Profile**: The default server profile is always used for logging on.
- **Always login with specified profile**: The currently specified server profile is always used.
- **Always login with the last used Profile**: The server profile used last serves for logging on.

4.3.5.5 How to Log on to the OpenScape UC Application

Prerequisites

- The **Current Status** field shows the login status of the currently selected server profile. You can log on a server profile only if the value of this field is **Not Logged In**. If another server profile is still logged in, log it out with a click on the **Logout** button.
- There is at least one server profile.
- Each firewall between the computer that operates the Application Builder and the application computer (back-end computer) of the OpenScape UC Application opens the port specified in the server profile. Example: Port `4711` in `js-soc://10.9.30.94:4711`

Step by Step

1) In the **Change Status** combo box select the desired server profile for logging on to the OpenScape UC Application.
2) Click on **Login**.

   The login dialog opens.
3) Enter the password.
4) If required, activate the **Remember password for this Profile** check box.
5) Click on **OK**.

   Value **Logged In** in the **Current Status** field confirms the successful login. A successful login in also stated in the console.

   Examples:

   14:13:10,323 Account 'administrator@system' on Server 'js-soc://10.9.30.94:4711'

   After a successful login, the **Deployed Applications** tab of the **OpenScape Server Content** shows the provided applications. Such applications may have been created with the Application Builder.

   Logging the user off with a click on the **Logout** button in the **OpenScape Server Login** area displays a note in the bottom right corner on the **Deployed Applications** tab of the **OpenScape Server Content** section that describes the tab's content as outdated.

   Example:

   No Server Connection

   Showing last recent Contents of js-soc://10.9.30.94:4711 from 15.11.13 14:20

   After a fresh user login, the note disappears.

4.3.5.6 OpenScape Server Content

On the **OpenScape Server Content** tab you can see information about components queried by OpenScape UC Application or transferred to it.

> ***IMPORTANT:*** The content of the **OpenScape Server Content** tab represents the status during the last communication to OpenScape UC Application. This content need not necessarily be up-to-date.
>
> When you log the user off with a click on the **Logout** button in the **OpenScape Server Login** section, a note is displayed bottom right on the **Deployed Applications**, **Server Prompts** > **All Symvia Server Prompts** and **Server Time Profiles** > **All**

Symvia Server Time Profiles tabs that describes the contents on the aforementioned tabs as obsolete.

Example:

No Server Connection

Showing last recent Contents of js-soc://10.9.30.94:4711 from 15.11.13 14:20

After a fresh user login, the note disappears.

Deployed Applications

On this tab you can see information about the applications used on the OpenScape UC Application. Such applications may have been created with the Application Builder.

Server Prompts

Server prompts are prompts not stored on the computer that hosts the Application Builder but on the computer that hosts the OpenScape UC Application. As a result, all server prompts are available to all applications of the same workspace provided on this OpenScape UC Application. Changes to one of these prompts are immediately available to all of these applications.

Workspace prompts, composition prompts and application prompts, however, are available on the computer that was specified upon the creation of those prompts.

You find server prompt details in section *How to Create and Configure Server Prompts*.

The **Server Prompts** > **All Symvia Server Prompts** area shows server prompts only.

Server Time Profiles

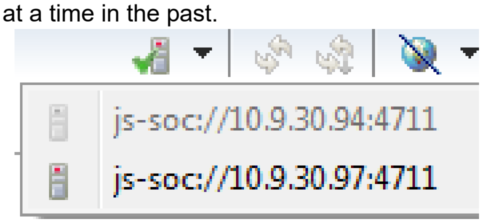
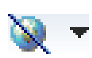
Server time profiles are time profiles not stored on the computer that hosts the Application Builder but on the computer that hosts the OpenScape UC Application. As a result, all server time profiles are available to all applications of the same workspace provided on this OpenScape UC Application. Changes to one of these time profiles are immediately available to all of these applications. In contrast, a time profile created in a TimeProfile control is only available in this TimeProfile control.

You find server time profile details in sections *How to Create a Server Time Profile* and *How to Add an Existing Server Time Profile*.

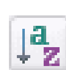
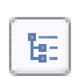
Icons

Click in the **OpenScape Server Content** section on at the top-right margin for updating the configurations of the Symvia protocols of the server or of the created applications. Modifications to the configuration of Symvia logs and Symvia applications are stored in the database via the **Save** command. The displayed information is only a snapshot. An update refreshes the configurations and information in the Symvia protocols and Symvia applications of the server.

The **OpenScape Server Content** tab features at the top-right margin several icons the functions of which are explained in the below table.

Icon	Function
	This icon is only displayed if you are not logged in at an OpenScape UC Application. You can use this icon to display the content present in the **OpenScape Server Content** area when you were logged in at the penultimately connected OpenScape UC Application. Click on this icon or on the associated triangle to select the corresponding server profile. That way you can determine which server prompts and server time profiles were valid for this server profile at a time in the past. 
	This icon is only displayed if you are logged in at an OpenScape UC Application. You use this icon to update the content of the **OpenScape Server Content** area whereby only changes are transmitted.
	This icon is only displayed if you are logged in at an OpenScape UC Application. With help of this icon you update the content of the **OpenScape Server Content** whereby a download in enforced that contains changed as well as unchanged components.
	IMPORTANT: Using this icon you can display or hide languages for prompt texts and prompt files in the **Server Prompts** > **Symvia Application Prompt Details** area.

At the top right margin of the **Server Prompts** > **All Symvia Server Prompts** area you find the following icons:

Icon	Function
	A click on this icon sorts the server prompts alphabetically. Another click on the icon undoes the sorting. This icon is only effective if the server prompts are not displayed sorted by categories.
	A click on this icon sorts the server prompts by categories. Another click on the icon undoes the sorting.
	A click on this icon displays only the prompts defined for the workspace in the **All Workspace Grammars** list. The respective aliases can be displayed again via the plus sign of a grammar.

At the top right margin of the **Server Prompts** > **All Symvia Server Time Profiles** area you find the following icons:

Icon	Function
	A click on this icon sorts the server time profiles alphabetically. Another click on the icon undoes the sorting.

4.3.5.7 How to Create and Configure a Server Prompt

Prerequisites

- You must be logged in at an OpenScape UC Application.
- Some icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme. You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

Step by Step

1) You can assign server prompts to prompt categories. Prompt categories differ in their names, descriptions and color representations. You can display server prompts sorted by categories in the **All Symvia Server Prompts** area. Server prompt categories are independent from workspace prompt categories, composition prompt categories and application prompt categories.

After a click on the **Categories...** button or on the **Configure Prompt Categories of the Server...** link you can add or remove prompt categories or assign them another color or description.

2) Click on the **Add...** button.

The **Create Symvia Server Prompt** dialog opens.

3) Enter the **Prompt Name**.

4) You can specify a **Prompt Description** optionally.

5) Click on the **OK** button.

The prompt is itemized in the **All Symvia Server Prompts** list of the **OpenScape Server Content** tab. It does not have a text yet for using a text-to-speech engine.

In the right-hand section **Symvia Application Prompt Details** you find the following options:

NOTICE: Please note that prompts can only be used for the available and configured languages. Languages are configured in the **Workspace Settings** on the **Workspace Languages** tab.

IMPORTANT: Default languages are German and English (US). If you wish to use additional languages, appropriate TTS and ASR language packages must be installed on each media server of the OpenScape UC Application, for example uc-tts-zh_cn for the TTS language Chinese (Mandarin) or uc-asr-nl_be for the ASR language Flemish. You find details in the setup guide *OpenScape UC ApplicationInstallation and Upgrade*.

6) In the **Prompt Category** field you can assign a category to the prompt.

7) In the **Prompt Texts** field you can enter a text for each configured language. This text is transformed into an announcement of the corresponding language by means of TTS if the prompt is used in an active application. This requires an installed TTS system.

   In addition, the use of definitions in the XML-based SSML is supported. This serves for creating announcements in prompts with help of TTS. But instead of specifying a continuous text for announcement output, the text playback can be adjusted with the help of a special notation. For example, phone numbers may be announced digit by digit and slowly, thus for everybody to understand. Specify the desired entry in SSML for using SSML as text.

   In the following example a specified number is announced as phone number:

   `“<say-as interpret-as=”telephone”>012387654</say-as>”`

   You find a list of all possible definitions in SSML in the user guide of the supported speech recognition system (Nuance Recognizer) in the supplied ISO setup files of the languages for implementing TTS. Further information about SSML is contained in the web pages of the W3C institution.

8) In the **Prompt Files** table of the **Symvia Application Prompt Details** area, click on **<Click to select file>** in the row of the language for which you wish to import or assign a media file of the format `*.wav` or `*.pcm`.

   Buttons appear to the left of this row.

   INFO: These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

   You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

   You can perform a simple or an extended import.

   In case of a simple import, you assign precisely one media file to a prompt for one language. This will import the media file in the media file repository of the server (i. e. the OpenScape UC Application installation). This occurs invisibly and implicitly. This is the most common application.

   In case of an extended import you can import several media files for a prompt for one or several languages in the media file repository of the server. This is useful if you wish to import music or tones for several languages in one go. One media file will then be assigned to a prompt for one language.

   Each OpenScape UC Application has its own ID.

The opposite is also true: Each media file in this directory is available in the media file repository of the server. However, not every media file in this repository need to be assigned to a prompt.

A media file must always have the same name for all available languages, so that it can be stored in the corresponding resources folder for the respective language.

INFO: Each workspace, composition, server (i. e. each OpenScape UC Application installation), and application has its own media file repository and resource directory. These repositories are independent from each other.

If you wish to perform a simple import, click in the **Prompt Files** table on the first **...** button in the row in which you clicked on **<Click to select file>**, select a media file and click on **Open**. That finishes the import and assignment in this case. Continue with the next major step.

If, however, you wish to perform an extended import, execute the following sub-steps:

a) Click on the second **...** button in this row.

A dialog opens that displays the list of media files available in the media file repository of the server.

b) Click on the small triangle on the **Import...** button and select **Extended Import...**.

c) Click on the **Add...** button.

d) Select one or several media files and click on **Open**.

The media files are displayed in the list of media files to be imported.

e) Click on **Next**.

f) Activate the check boxes of the languages for which media files shall be imported in the media file repository of the server.

The media files are automatically copied to the resource folder of the prompts for the corresponding languages.

NOTICE: A media file must always have the same name for all available languages, so that it can be stored in the corresponding resources folder for the respective language.

---

g) Click on the **Finish** button.

The media files are itemized in the list of files available in the media file repository of the server. The media files to which you have assigned languages not selected in the **Prompt Files** table are represented grayed out. If you select a media file of such languages, the **OK** button appears grayed out. Click on a file of the language you selected in the **Prompt Files** table. Using the **Play** button you can play this media file.

h) Click on the **OK** button.

For this case, import in the media file repository is complete and the assignment to the prompt has been entered but not been saved yet.

Regardless whether you performed a simple of extended import, icons to the right of the file name indicate whether the file exists and whether the file has a format that the Application Builder supports.

If you wish to remove the assignment of the media file to the prompt, click on the file name and then on the third icon. However, this will not remove the media file from the media file repository of the server and not from the resource directory either.

9) If necessary, you can click on the link **Configure available Languages in the Workspace Settings Editor...** to access the **Workspace Settings** > **Workspace Languages** > **All Workspace Languages** tab. You find more information on this in the *Workspace Settings* section.

10) After a click on the **Repository...** button you can import media files in the repository or remove, rename, play or update them but you cannot assign them to a prompt.

11) With a click on the **Import Prompts from another Server...** link you open a dialog for importing prompts available on another server.

12) Push the hotkey CTRL + S or select **File** > **Save** in the menu to transfer the changes to the OpenScape UC Application.

4.3.5.8 How to Create a Server Time Profile

This section describes how to create a server time profile. This time profile is available to all TimeProfile controls. If you need a time profile exclusively available in a single TimeProfile control, create the time profile in this control. In order to create such a time profile you need not be logged in at an OpenScape UC Application. You find details in section *How to Create a new Time Profile*.

Prerequisites

- You must be logged in at an OpenScape UC Application.

Step by Step

1) Click on the **Add...** button to create a new profile.

The **Create new Time Profile** dialog opens.

2) Specify under **Time Profile Name** the name of the new time profile, for example `During business hours`, `Outside business hours`, `Public holiday` or `Company holidays`.

INFO: We recommend to specify the word `Server` as name. This will help once more to differentiate server time profiles from time profiles available only in a single TimeProfile control. A TimeProfile control displays both types of time profiles in a common list.

The **Time Range List** itemizes already created time profile ranges for the time profile.

3) Click on .

The **Create new Time Profile Range** dialog opens.

4) Specify the values of the new time profile range. For this purpose, activate one of the radio buttons described in the following:

a) **Specify range of full Calendar Days (will not recur)**: Here you can select the start date and end date of a time range. The time profile range comprises whole days and does not recur.

Example: 20.11.2013 - 27.11.2013

b) **Specify Range within a specific Day of Year (will recur every Year)**: Here you can select a day of a month, a month, a start time and an end time. This time profile range recurs every year.

Example: Every 20 November from 00:09:00 to 17:00:00

c) **Specify Range within a specific Day of Week (will recur every week)**: Here you can select a weekday, a start time and an end time. This time profile range recurs weekly.

Example: Every Wednesday from 00:09:00 to 17:00:00

5) Click on **OK**.

The **Create new Time Profile Range** dialog closes.

The create time profile range has been added under **Time Range List**.

6) The following icons are available for the **Time Range List**.

Icon	Description
	This icon enables creating a new time profile range for this server time profile.
	Using this icon you can change an already created and selected time profile range.
	A click on this icon removes a selected time profile range from the list.
	If you have created several time profile ranges, they are applied in top-to-bottom order. Using these icons you can move selected time profile ranges in the list up or down.

7) Click on **OK** or **Apply**.

The created server time profile has been added to the server time profiles list.

IMPORTANT: Each time profile corresponds to a new exit of a TimeProfile control.

The **Symvia Application Time Profile Properties** area displays properties of the created server time profile.

8) If needed, enter a value in the **Time Profile Description** field.

You can use server time profiles in a TimeProfile control. In this case they are displayed in a list together with other time profiles. This list also displays descriptions of all applied time profiles. Meaningful descriptions facilitate configuring a TimeProfile control.

9) With a click on the **Import Time Profiles from another Server...** link you open a dialog for importing server time profiles available on another server.

10) Push the hotkey CTRL + S or select **File** > **Save** in the menu to transfer the changes to the OpenScape UC Application.

4.3.6 Symvia Control Compositions

Symvia control compositions are application fragments that, created once, can be implemented in any number of applications as application fragments. Reusability is thus increased. A typical example of a composition a user's logging on to the system. Modifications to a composition are automatically applied in all applications in which the composition has been implemented.

NOTICE: You may perform application-specific modifications only in the respective application but not in the composition.

Compositions are similar to functions or methods in higher programming languages.

Compositions are created and configured in the Application Builder's workspace.

NOTICE: Example compositions are available in the `Samples\Compositions` sub-folder of the Application Builder's installation folder (not in the workspace directory). These compositions are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide these compositions.

The context menu of a composition offers various configuration options. Right-click a composition in the workspace to open the application's context menu. The following options are available:

- **New** enables the creation of a new composition or callflow.
- **Copy** copies the selected composition with all its settings to the clipboard.
- **Paste** creates a copy of the selected composition.
- **Delete** removes the selected composition from the workspace.
- **Rename** changes the composition's name.
- **Export Element...** serves for exporting a composition to an archive file.
- **Properties** represents a summary of the general and lingual composition settings. You receive general information such as storage location, date of last access, file size and application type and you can manage language resources available for the application.

The **Composition Variables**, **Composition Prompts** and **Composition Grammars** are configured analog to the areas in the workspace of the same name. The settings in these sections are exclusively valid for the respective composition. You can configure the following elements for compositions:

> ***NOTICE:*** Since the composition settings of the variables, prompts, grammars and resources are identical with the application settings, you find the specific instructions in the *section Applications*.

- Composition Settings
  (cf. section *Composition Setting*)
- Composition Variables
  (cf. section *Application Variables*)
- Composition Prompts
  (cf. section *Application Prompts*)
- Composition Grammars
  (cf. section *Application Grammars*)
- Composition Resources
  (cf. section *Application Resources*)

> ***NOTICE:*** The following descriptions only consider the **differences** to the settings in the workspace.

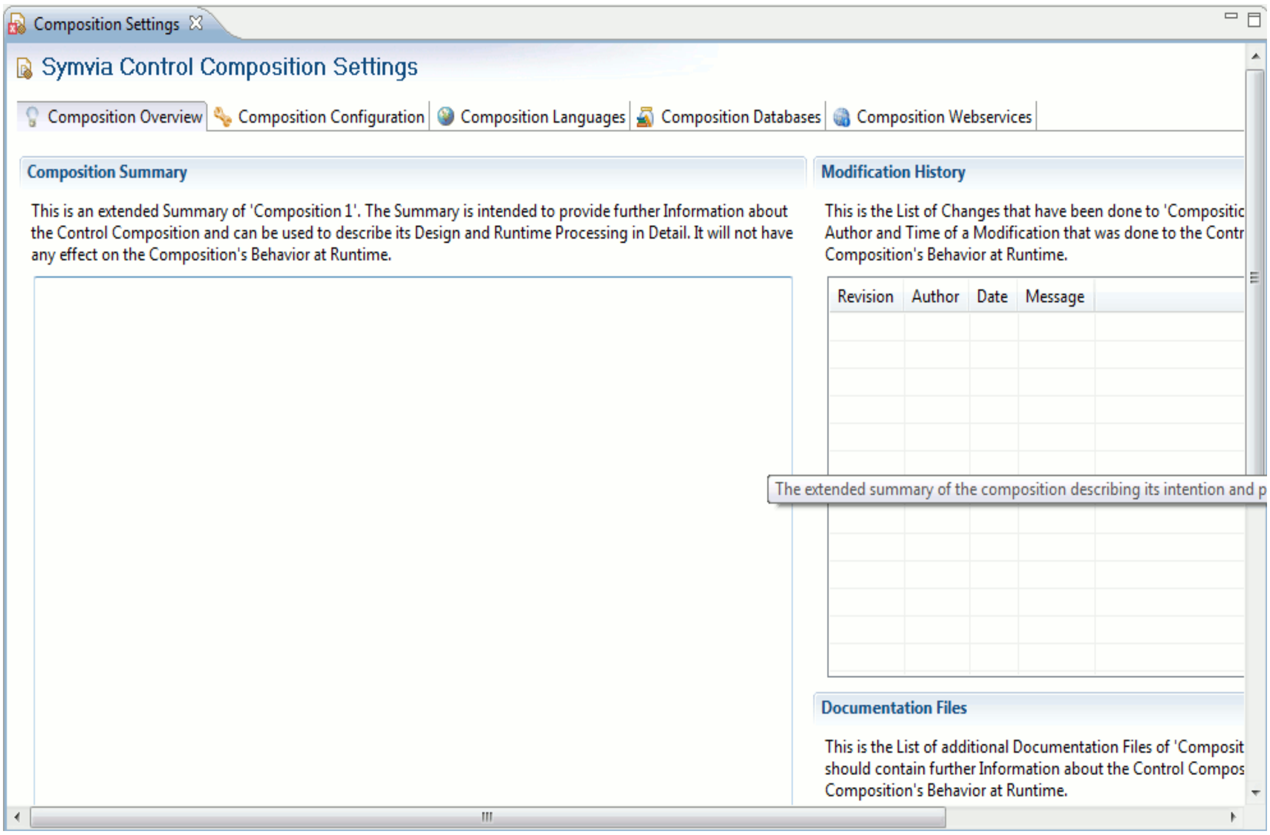
4.3.6.1 Composition Settings

The composition settings contain all data and configuration options relevant for the Symvia control composition. The view includes the following tabs:

- Composition Overview
- Composition Configuration
- Composition Languages
- Composition Databases
- Composition Webservices

4.3.6.2 Composition Overview

The Composition Overview enables delivering information about the control composition and can be used to document the composition's design and processing in detail at runtime. This does not influence the composition's behavior at runtime.



In the **Modification History** the user who has performed changes leaves an entry. Entries always include the author (user), date and an optional message about the changes performed.

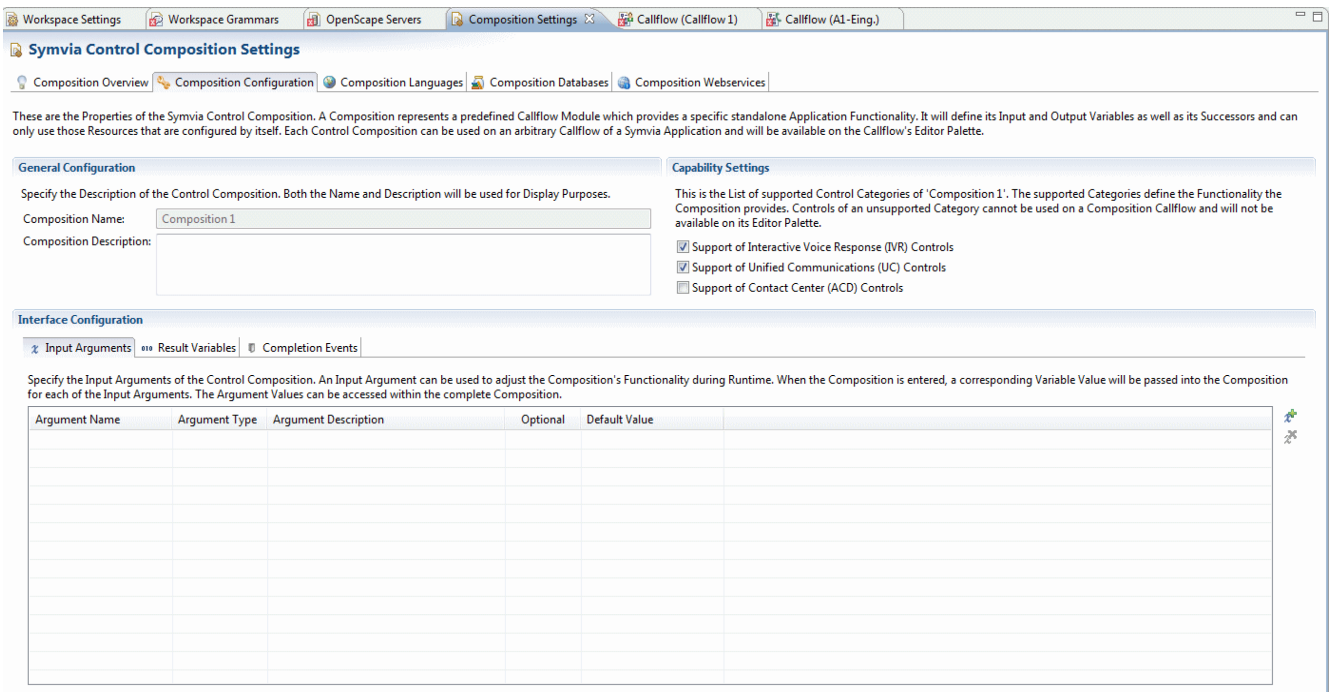
1. Click on .
   A new entry is added to the list. The date is pre-set.
   A click on the icon removes an entry permanently.
2. Enter the author and a short, expressive message for the reader in the corresponding fields.
   The changes are copied when the entry is saved.

In the **Documentation Files** section you can deposit supplementing documents with further information about the composition and its controls. The files may be of any type.

1. Click on .
2. Select the file from the system and click on **Open**.
   The file is added to the list. File type and size are added to the list as additional information.
   A click on the icon removes a selected document permanently.
   A click on the icon opens a selected document file in the associated application.
   With the icon you can export a selected document.
   The changes are copied when the entry is saved.

4.3.6.3 Composition Configuration

The composition configuration contains the properties of the Symvia control composition. A composition corresponds to a pre-defined callflow module, which offers a specific, independent application functionality. It defines its input and output variables as well as its exits or events and can only use the resources it has configured itself. You can use each composition in any callflow of a Symvia application.



In case of the general configurations you assign the **Composition Name** and the **Composition Description**. Both is used with the composition display.

In the **Input Arguments** section you can use an input argument for adjusting the composition's functionality at runtime. When entering the composition, a corresponding variable value is transferred to the composition for each of the input arguments. You can access the argument variables within the entire composition.

1. Click on .
2. Enter an argument description and specify a default value.
3. Activate the **Optional** check box if the argument is to be created as optional size in the composition.

   A click on the icon removes a selected argument permanently.
   The changes are copied when the entry is saved.

You can use the **Result Variable** to pass a single value calculated within the using application or composition. When entering the composition, a corresponding application in transferred to the composition for each of the result variables. This variable is assigned to the result value. You can access the result variables within the entire composition.

1. Click on .

2. Enter a variable description.

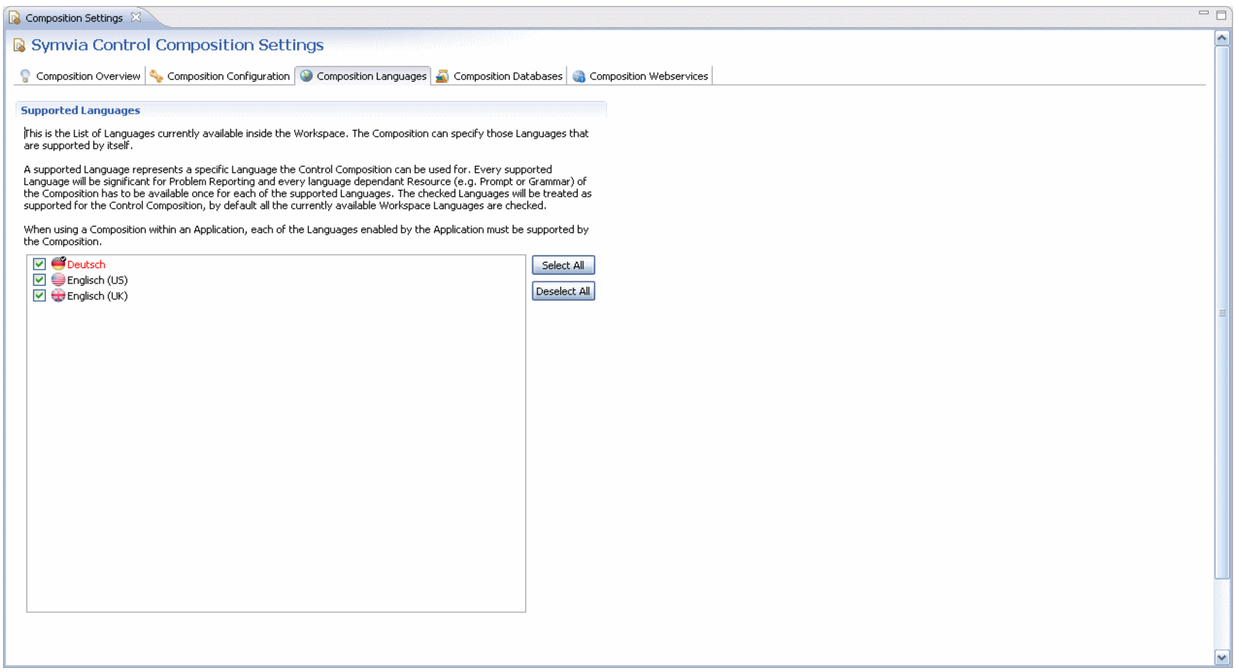
   A click on the icon removes a selected result variable permanently.

   The changes are copied when the entry is saved.

The **Completion Event** corresponds to the exit from the composition and can be used to represent a concrete result of the composition. Every composition must state at least one event.

4.3.6.4 Composition Languages

The composition languages show a list of languages supported by the workspace.



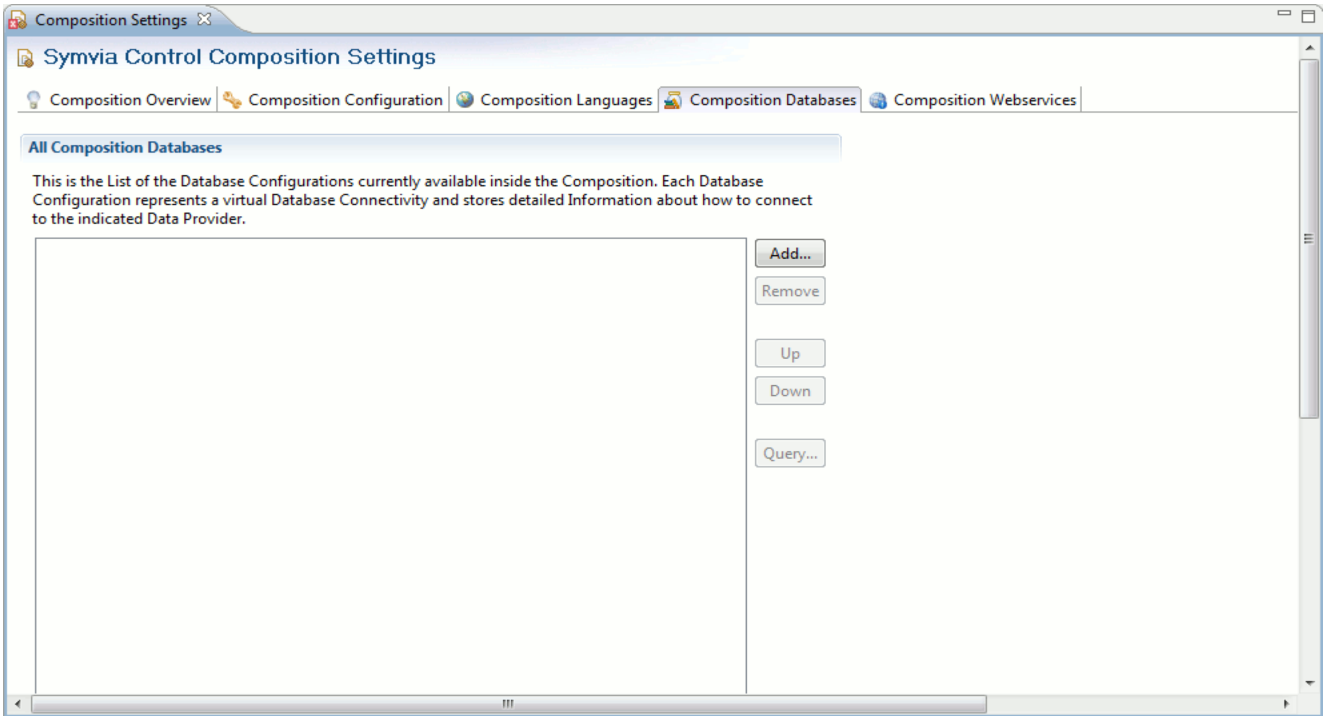
A supported language corresponds to a specific language that can be used for the composition. Every supported language is relevant for reporting problems and each language-dependent resource, for example prompts or grammars, of the composition must be available once for each of the supported languages. The selected languages are treated like being supported by the control composition, all currently available workspace languages are selected by default.

A click on the **Select All** button marks all languages in the list.

A click on the **Deselect All** button disables all language markings in the list.

4.3.6.5 Composition Databases

You can bind compositions to databases for different purposes. The Composition Databases tab offers a list of all database configurations currently available within the composition. Each database configuration corresponds to a virtual database connectivity and stores detailed information about how the connection to the specified data provider shall be set up.



You can add and remove database configurations as well as move them up or down the list and query them.

1. Click on **Add**.
   The **Add Database to Composition** dialog opens.
2. Enter the following values:

Field	Description
Database Name	The name serves as unique identifier of the data-base.
Database Description	Optional description of the database.
Database Driver Archive	The database driver archive is a Java archive that contains the driver classes for the database configu-ration. If there is no archive for selection, select the entry **Import new Resource...**. Choose the corresponding file in the **Select the Resource File to import** and click on **Open**. The resource is offered in the list for selection.
Database Driver Classname	Specify the Java class name that corresponds to the driver from the specified archive.

Field	Description
Database Access URL	Specify the **Database Access URL** in the described format. `jdbc:mysql://<Host>:3306/<database>`
Database Login User	Specify the user name for authentication.
Database Login Password	Specify the login password for authenticating the user.

3. Click on **OK**.
   The database configuration is added to the list of composition databases. The changes are copied when the entry is saved.

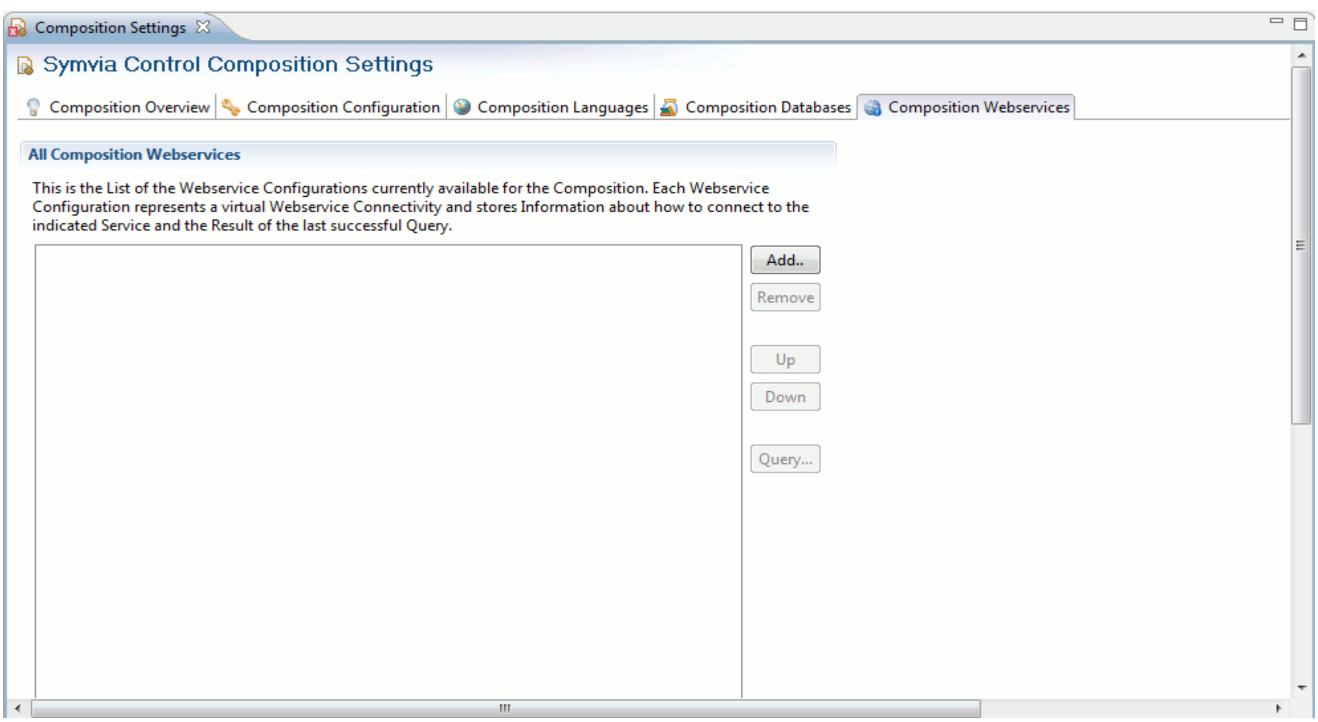
A click on the **Remove** button removes a selected database configuration permanently from the list.

You can change the order of the selected database configurations with the **Up** and **Down** buttons.

Using the **Query...** button you can query the connection of a selected database configuration.

4.3.6.6 Composition Webservices

The Composition Webservices offer all webservice configurations currently available within the composition. Each webservice configuration corresponds to a virtual webservice connectivity and stores detailed information about how the connection to the specified service shall be set up as well as the result of the last successful query.



You can add and remove composition webservices as well as move them up or down the list and query them.

1. Click on **Add**.
   The **Add Webservice to Composition** dialog opens.
2. Enter the following values:

Field	Description
Webservice Name	The name serves as unique identifier of the webser-vice.
Webservice Description	Optional webservice description.
Webservice Type	The type defines the architecture style or the protocol used. Select **REST Architecture** or **SOAP Protocol** from the list.
Webservice Access URI	Specify the Werbservice Access URI used for con-necting to the service. Example: `http://weather.yahooapis.com/forecastrrs?=94089u=c`
Webservice Authentication User	User with whom you gain authorized access to the web service.
Webservice Authentication Password	Password of the Webservice Authentication user.
Webservice SSL Agree-ment	Select one of the following values: • **Only accept officially trusted SSL Certificates** • **Accept officially trusted and self-signed SSL Certificates** This value will only be offered if an HTTPS address was entered in the **Webservice Access URI** field.

3. Click on **OK**.
   The webservice configuration is added to the list of composition webservices. The changes are copied when the entry is saved.

A click on the **Remove** button removes a selected webservice configuration permanently from the list.

You can change the order of the selected webservice configurations with the **Up** and **Down** buttons.

You can use the **Query...** button to send a query to the Webservice Access URI of a selected web service. The result will be displayed in the **Webservice Query Result** field.

4.3.7 Symvia Application

An entry is created in the **workspace** view for each application created with the Application Builder. By default, the name of an application begins with **Symvia**

Application. Beneath this entry you can configure all properties of the application.

The **Application Variables**, **Application Prompts** and **Application Grammars** are configured analog to the areas in the workspace of the same name, but they are exclusively effective for the respective application. You can configure the following elements for configured applications:

- Application Settings
  (cf. section *Symvia Control Application Settings*)
- Application Variables
  (cf. section *Application Variables*)
- Application Prompts
  (cf. section *Application Prompts*)
- Application Grammars
  (cf. section *Application Grammars*)
- Application Resources
  (cf. section *Application Resources*)

> ***NOTICE:*** The following descriptions only consider the differences to the settings in the workspace.

The context menu of an application offers various configuration options. Right-click an application in the workspace to open the application's context menu. The following options are available:

- **New** enables the creation of a new application or callflow.
- **Cut** removes the selected application and stores it with all its settings in the clipboard. The function is inactive.
- **Copy** copies the selected application with all its settings to the clipboard.
- **Paste** inserts a copy of a selected or cut application.
- **Delete** removes the selected application from the workspace.
- **Rename...** changes the application's name.
- **Deploy Application...** compiles the resources for the deployment. Resources are uploaded outside the Application Builder.
- **Test Application...** tests the callflow contained in the application and emits error messages and warnings.
- **Export Element...** serves for exporting an application to an archive file.
- **Properties** represents a summary of the general and lingual application settings. You receive general information such as storage location, date of last access, file size and application type and you can manage language resources available for the application.

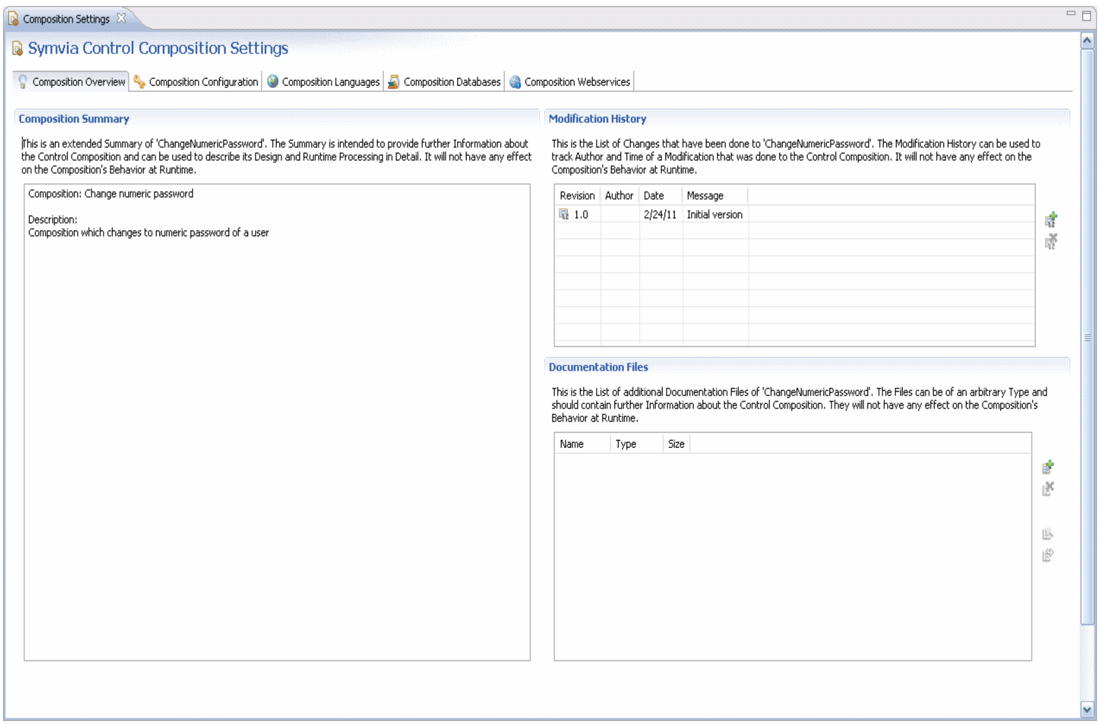
4.3.7.1 Application Settings

The application settings contain all data and configuration options relevant for a Symvia application. The view includes the following tabs:

- Application Overview
- Application Configuration
- Application Databases
- Application Webservices

4.3.7.2 Application Overview

The Application Overview enables delivering information about the application and can be used to document the application's design and processing in detail at runtime. This does not influence the application's behavior at runtime.



In the **Modification History** the user who has performed changes leaves an entry for documenting the history of changes. Changes can thus be traced and clarity is maintained. Entries always include the author (user), date and an optional message about the changes performed.

1. Click on .
   A new entry is added to the list. The date is pre-set.
   A click on the icon removes an entry permanently.
2. Enter the author and a short, expressive message for the reader in the corresponding fields.
   The changes are copied when the entry is saved.

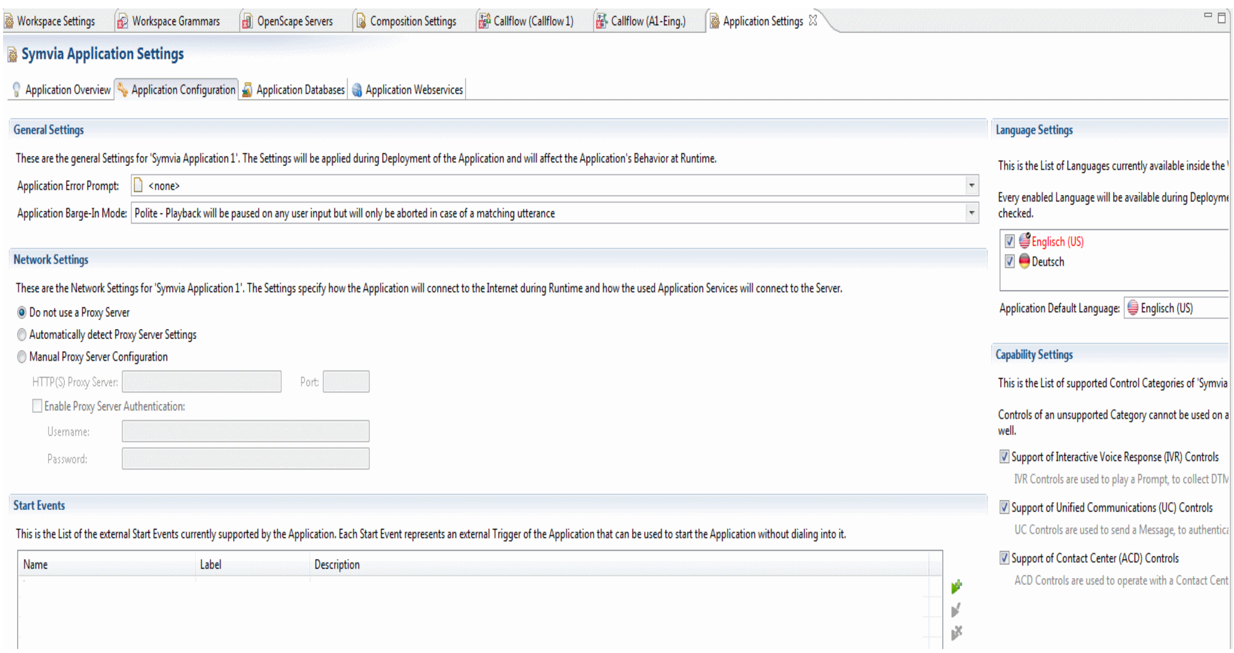
In the **Documentation Files** section you can deposit supplementing documents with further information about the application and its controls. The files may be of any type.

1. Click on .

2. Select the file from the system and click on **Open**.
   The file is added to the list. File type and size are added to the list as additional information.
   A click on the icon removes a selected document permanently.
   A click on the opens a selected document file in the associated application.
   With the icon you can export a selected document.
   The changes are copied when the entry is saved.

4.3.7.3 Application Configuration

The application configuration contains general properties of the Symvia application. The settings are applied during the provision of the application and influence the application behavior at runtime.



General Settings

In the **General Settings** area you specify the **Application Error Prompt**. The defined prompt is played if the application finds an noncorrectable error. The setting is optional.

Furthermore, you set here the barge-in mode of the application, which is important when using an NLU control for speech recognition. This mode determines when the speech recognition starts during an announcement playback and the announcement playback is stopped. The barge-in mode may adopt the following values:

- **Off**
  You cannot interrupt the announcement playback. It will be carried out until the end. Speech and DTMF key recognition will not start until all announcements of the announcement list were played.

- **Speech**
  Announcement playback is interrupted as soon as the speech recognition system registers any tone at a minimum volume or the caller makes a DTMF input. It is irrelevant here whether a keyword was recognized.
- **Hotword**
  Playing the announcements of the announcement list is only canceled if the speech recognition has recognized a keyword in the user's voice input as valid.
- **Polite**
  Playing the announcement list is interrupted as long as the user performs a voice entry. Playing the announcement list is only canceled if the speech recognition has recognized a keyword in the user's voice input as valid. Otherwise, after expiration of the maximum talk delay, the announcement list will be continued from the point at which it was interrupted. When the caller then makes another voice entry, the announcement will be interrupted again.

Network Settings

In the **Network Settings** area you configure how the application connects the Internet at runtime and how the application services connect the proxy server.

1. Activate one of the following settings:
   - **Do not use a Proxy Server** No additional configuration is necessary.
   - **Automatically detect Proxy Server Settings**. No additional configuration is necessary.
   - **Manual Proxy Server Configuration**. No additional configuration is necessary. Follow the further steps.
2. Enter a **HTTP(S)Proxy Server**.
3. Specify the **port**.
4. Activate the **Enable Proxy Server Authentication:** check box if you would like to activate secured user access.
5. Specify a **Username** and the associated **Password**.
   The changes are copied when the entry is saved.

Start Events

Callflows start based on occurring start events. The following start events are already installed:

- Incoming Call
- Call Disconnected
- Contact Center Agent Ready
- Contact Center Failure

You can create additional start events in the **Start Events** area. This is described in section "How to Create a Start Event". You can use such events like the pre-installed ones. The start event sequence in the list is irrelevant.

Language Settings

The **Language Settings** area displays the languages currently available in the workspace. Languages can be activated or deactivated in applications. Each activated language is available during the provision of the application and relevant for reporting problems. All currently available workspace languages are selected by default.

A click on the **Select All** button selects all languages in the list.

Via the **Deselect all** button all languages selected for the application are deleted.

From the drop-down list **Application Default Language** select the default language for the application.

Capability Settings

The **Capability Settings** area displays the control groups supported by the application. Only controls of those groups are shown in the palette of the callflow editor, can be used in the callflow and can deliver additional application events.

- **Support of Interactive Voice Response (IVR) Controls**
  IVR controls are used for example for playing a prompt, collecting DTMF inputs, forwarding to another phone, recording a voicemail or collecting utterances via speech recognition.
- **Support of Unified Communications (UC) Controls**
  UC controls are used for example for sending a message, authenticating at an OpenScape UC Application, changing a password, accessing any groupware data or operation with phone conferences.
- **Support of Contact Center (ACD) Controls**
  ACD controls are used at contact centers for example for adding a call to a queue, requesting a callback from an agent or retrieving status information for a call or queue.

4.3.7.4 How to Create a Start Event

Step by Step

1) Open **<application name> > Application Settings > Application Configuration > Start Events**.
2) Click on the icon plus sign.

   The **Create Symvia Application Start Event** dialog appears.
3) Enter a string to uniquely identify the event in the **Event Identifier** field.

   This event ID will be used later when the OpenScape UC Application is changed.
4) Enter a name for the event in the **Event Name** field.

   > ***INFO:*** When you click in this field and push Ctrl + space bar, a tooltip is displayed.

   Based on its name the start event will later be assigned to a callflow.
5) Enter a label for the event in the **Event Label** field.

> ***INFO:*** When you click in this field and push Ctrl + space bar, a tooltip is displayed.

After the start event has been assigned to a callflow, this label appears next to the callflow's name in the workspace view.

6) Enter a short descriptive text for the event in the **Event Description** field.

> ***INFO:*** When you click in this field and push Ctrl + space bar, a tooltip is displayed.

This description assists in assigning the start event to a callflow.

7) Click on **Next**.

The dialog for creating members of the start event appears.

8) When the start event occurs, a variable of type EventData is supplied. This variable may have members that may be used for processing the event. If the start event is to supply such members, continue with step 9. If not, continue with step 13.

9) Click on the icon plus sign.

A member1 of type String is added to the **Start Event Data Members** table.

10) Change the ID and, if needed, the member type.

11) Enter values in the **Name** and **Description** columns.

12) If required, add further members.

The member sequence is irrelevant.

13) Click on the **Finish** button.

The new start event is displayed in the list of start events. It is, however, not yet assigned to a callflow.

14) In the workspace view, under **<application name> > Application Callflows > <callflow name>**, click with the right mouse button on the callflow for which the start event was created.

15) Click on **Properties**.

The **Preferences for <callflow name>** dialog opens.

16) In the navigator, click on **Event**.

17) You now see the **Event the Callflow is bound to** combo box from which you select the start event's name created in step 4.

Under this combo box the start event's description composed in step 6 is displayed.

> ***INFO:*** A click on the **Configure external Start Events supported by the Application...** link takes you back to the list of start events.

18) Click on the **OK** button.

The workspace view displays the start event's label created in step 5 besides the callflow's name.

19) This callflow now provides a variable named EVENTDATA that contains the members created in steps 9 to 12. You can check this via the following sub-steps:

> ***INFO:*** Because this variable is available in this callflow only, it is not displayed in the workspace view under **Workspace Variables > All Workspace Variables**, not under **Symvia Control Compositions > <composition name> > Composition Variables > All Symvia Composition Variables** and not under **<application name> > Application Variables > All Symvia Application Variables** either.

a) Double-click the callflow name in the workspace view.

The callflow is opened in the workspace.

b) Drag the Assign control from the palette into the workspace and release the mouse button.

c) Double-click this control.

d) Click on the Commands tab.

e) Click on the icon plus sign.

f) Click on the **...** button next to the **Variable** field.

The EVENTDATA variable is displayed in bottom position.

g) Click on the triangle preceding this variable.

The members created in steps 9 to 12 are displayed.

h) Click on the **Cancel** button.

i) Click on the **Cancel** button.

j) Click on the **Cancel** button.

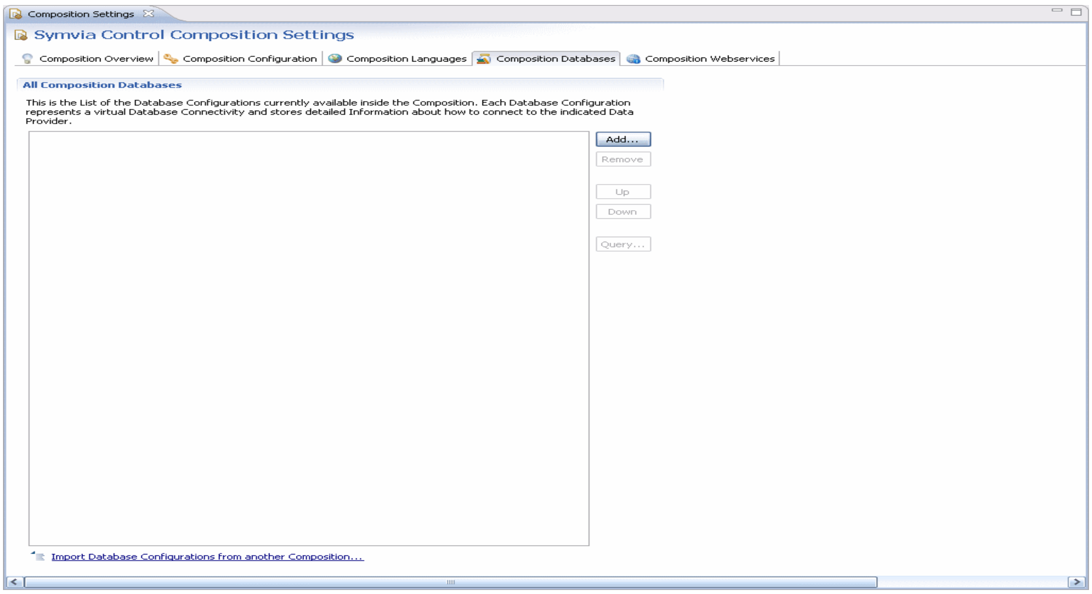
20) Reconfigure the callflow, so that it reacts to the occurring event in the manner you wish it to react.

On the application's side you have now executed all steps for making the application react to the occurring start event in the desired way.

21) Change the OpenScape UC Application as to make the start event occur in the desired situation. In particular, make sure that the event ID configured in step 3 is supplied and that the members created in steps 9 to 12 are allocated with values.

4.3.7.5 Application Databases

You can bind applications to databases for different purposes. The **Application Databases** tab offers a list of all database configurations currently available within the application. Each database configuration corresponds to a virtual database connectivity and stores detailed information about how the connection to the specified data provider shall be set up.



1. Click on **Add**.
   The **Add Database to Application** dialog opens.
2. Enter the following values:

Field	Description
Database Name	The name serves as unique identifier of the data-base.
Database Description	Optional description of the database.
Database Driver Archive	The database driver archive is a Java archive that contains the driver classes for the database configu-ration. If there is no archive for selection, select the entry **Import new Resource...**. Choose the corresponding file in the **Select the Resource File to import** and click on **Open**. The resource is offered in the list for selection.
Database Driver Classname	Specify the Java class name that corresponds to the driver from the specified archive.

Field	Description
Database Access URL	Specify the **Database Access URL** in the described format. `jdbc:mysql://<Host>:3306/<database>`
Database Login User	Specify the user name for authentication.
Database Login Password	Specify the login password for authenticating the user.

3. Click on **OK**.
   The database configuration is added to the list of application databases.
   The changes are copied when the entry is saved.

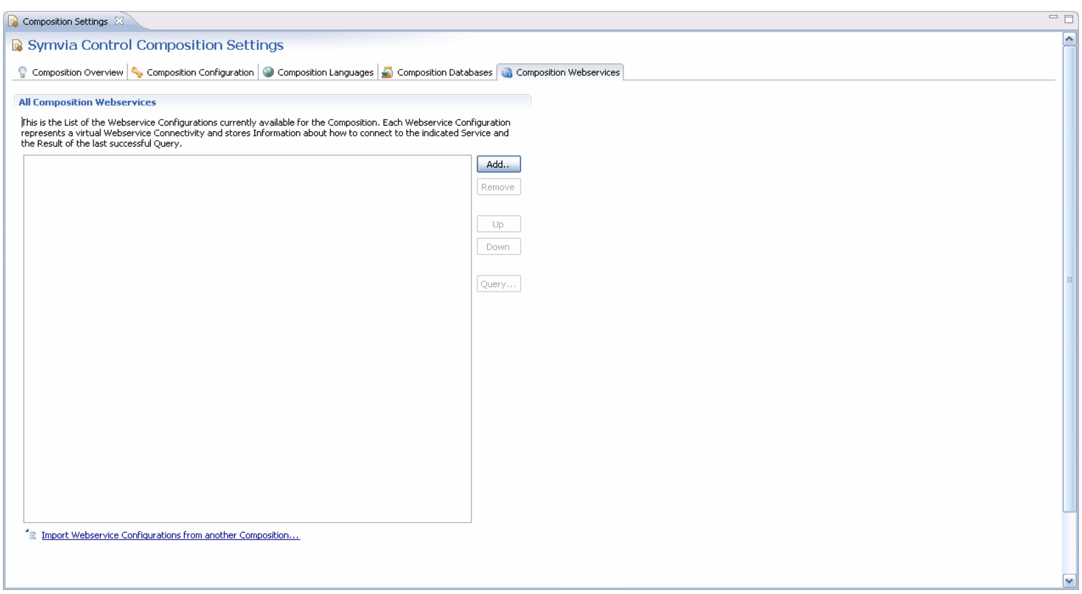
A click on the **Remove** button removes a selected database configuration permanently from the list.

You can change the order of the selected database configurations with the **Up** and **Down** buttons.

Using the **Query...** button you can query the connection of a selected database configuration.

4.3.7.6 Application Webservices

The Application Webservices offer all webservice configurations currently available within the application. Each webservice configuration corresponds to a virtual webservice connectivity and stores detailed information about how the connection to the specified service shall be set up as well as the result of the last successful query.



1. Click on **Add**.
   The **Add Webservice to Application** dialog opens.
2. Enter the following values:

Field	Description
Webservice Name	The name serves as unique identifier of the webservice.
Webservice Description	Optional webservice description.
Webservice Type	The type defines the architecture style or the protocol used. Select **REST Architecture** or **SOAP Protocol** from the list. The Web Service Configuration of the Application Builder supports the following REST methods: • POST - Creates a resource by URI and optionally request body • GET - Retrieves a resource by URI • PUT - Updates a resource by URI and optionally request body • DELETE - Deletes a resource by URI
Webservice Access URI	Werbservice Access URI used for connecting to the service. Example: `http://weather.yahooapis.com/forecastrrs?=94089u=c`
Webservice Authentication User	User with whom you gain authorized access to the web service.
Webservice Authentication Password	Password of the Webservice Authentication user.
Webservice SSL Agreement	Select one of the following values: • **Only accept officially trusted SSL Certificates** • **Accept officially trusted and self-signed SSL Certificates** This value will only be offered if an HTTPS address was entered in the **Webservice Access URI** field.

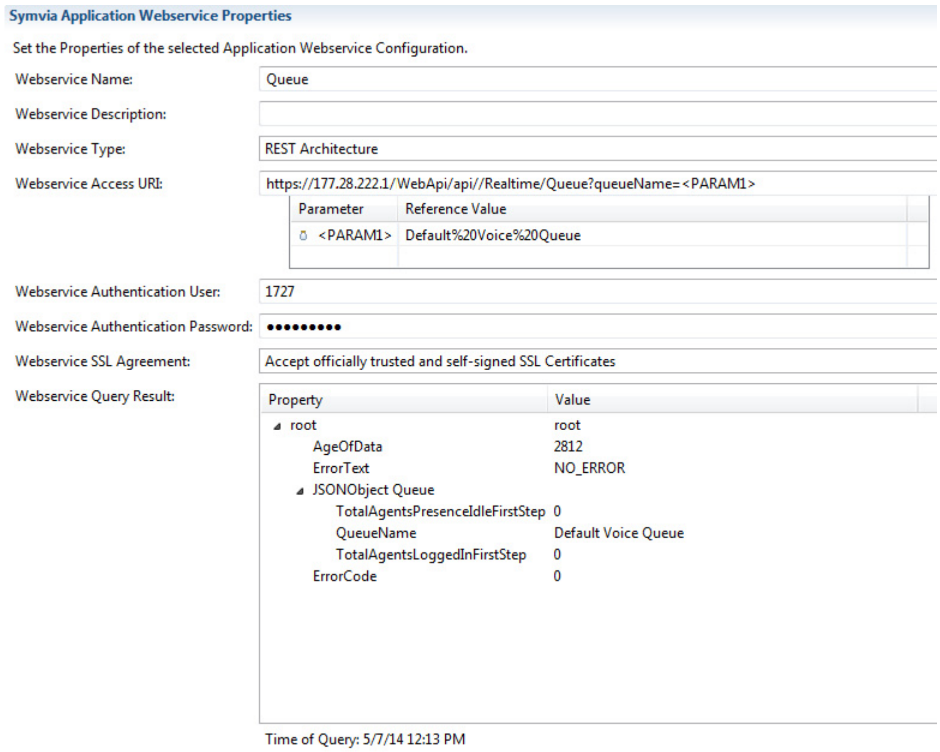
3. Click on **OK**.
   The webservice configuration is added to the list of application webservices. The changes are copied when the entry is saved.

A click on the **Remove** button removes a selected webservice configuration permanently from the list.

You can change the order of the selected webservice configurations with the **Up** and **Down** buttons.

You can use the **Query...** button to send a query to the Webservice Access URI of a selected web service. The result will be displayed in the **Webservice Query Result** field.

Example result:



4.3.7.7 Application Management

After connecting to an Openscape UC Media Server the Application Management of the Application Builder shows all IVR applications deployed on this server. In the table view each application is displayed with:

- name
- phone number binding
- modification time
- modification summary of format <user>:<message>[<revision number>]

properties.

- default language (language the application starts with)
- phone number binding
- runtime tracing
- application tags (comma separated list of associated key words)

The applications displayed in the table view can be sorted manually by using the Up and Down buttons or automatically (ascending or descending) by clicking on the column title.

The applications displayed in the table view can be filtered by their properties. Every application which has a pattern match in at least one of the checked properties is displayed in the table view after applying the filter.

Deployed applications can be imported again in the workspace of the Application Builder by pressing the Import button.

If the application still exists in the workspace of the Application Builder the deployed application can only be imported if the user agrees to overwrite the existing application.

4.3.7.8 Application Variables

The list in the **All Symvia Application Variables** area of the **Symvia Application Variables** tab contains the variables configured in the workspace. These variables appear in gray writing and cannot be edited here. You can, however, modify the properties of a selected variable that was configured as workspace variable via the **Edit this Alias in the Workspace Variables Editor...** link. They are forwarded to the **Workspace Variables**. You receive processing information in section *Workspace Variables*.

A click on the **Add...** button takes you to the **Create Symvia Application Variable** dialog. For every newly created application variable you must specify the **Variable Name** and, optionally, a **Variable Description**. You can select the **Variable Type** from the drop-down list or via the **...** button in the **Select Variable Type** dialog.

A click on **Delete** removes selected application variables.

Using the **Up** or **Down** button you can move a selected variable up or down the list.

In the **Symvia Application Variable Details** area you can view and change the settings of the available and selected application variables.

4.3.7.9 How to Configure the Transformation of a Variable Value

Using the **Transformations...** button you can create a variable the value of which is transformed after the announcement. The resulting, transformed value is then used for the announcement instead of the original value. Each variable transformation is available in the entire application.

Step by Step

1) Click on the **Transformations...** button.

The **Configure the available Symvia Variable Transformations** dialog opens.

2) Click on **Add**.

The **Specify Variable Value Transformation** dialog opens.

3) Enter the following values:

Field	Description
Transformation Name	The name serves as unique identifier of the variable value transformation.
Transformation Description	Optional Description of the Variable Value Transformation.

4) Click on **Next**.

5) Select a **Transformation Directive** from the drop down list.

The transformation directive corresponds to the logic used for transforming the variable value into text that can be spoken. Every directive can be used for a specific file type and may request result values.

6) Click on **Next**.

7) Add **Transformation Arguments** via .

Specify the transformation arguments (input value) and the corresponding results (output value) for each of the activated languages. If the variable is to be announced, its current value is searched for in the arguments list. If the value is found, the corresponding result value of the current language is used.

Using the icon you can remove selected transformation arguments.

8) Click on **Next** or **Finish**.

If you click on **Next** you can test the previously specified values.

9) Click on **Finish**.

The variable value configuration is added to the **Configure the available Symvia Variable Transformations** table.

The changes are copied when the entry is saved.

Using the **Edit...** button you can change the configurations of a selected transformation.

With the **Copy...** button you copy a selected transformation with its settings.

A click on the **Remove** button removes a selected transformation permanently from the list.

You can change the order of the selected transformations with the **Up** and **Down** buttons.

4.3.7.10 How to Import Variables from another Application

Step by Step

1) Click on the **Import Variables from another Application...** link.

2) Select the application from which the variables are to be imported.

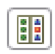
When you have selected an application, the available variables are automatically displayed.

3) Select one or several of the desired variables and click on **Finish**.

The imported variables are integrated in the **All Symvia Application Variables** list on the **Symvia Application Variables** tab.

4.3.7.11 Further Configurations

The **Symvia Application Variables** tab features at the top right margin two more icons the functions of which are explained in the below table.

Icon	Function
	This icon is active by default. It places the areas **All Application Variables** and **Symvia Application Variable Details** next to each other. The area All Vogue Application Variables is found in the left half of the tab.
	When you activate this icon, the areas **All Symvia Application Variables** and **Symvia Application Variable Details** are positioned on top of each other, with the area **All Symvia Application Variables** always being in the upper half of the tab.

4.3.7.12 Application Prompts

The list in the **All Symvia Application Prompts** area on the **Symvia Application Prompts** tab contains already configured workspace prompts. These prompts appear in gray writing and cannot be edited here. You can, however, modify the properties of a selected prompt that was configured as workspace prompt via the **Edit this Alias in the Workspace Prompt Editor...** link. You reach the **Workspace Prompts** tab. See section *Workspace Prompts*.

4.3.7.13 How to Create and Configure an Application Prompt

Prerequisites

- The prompt you wish to assign a media file to must have already been created. The media file must have the format `*.wav` or `*.pcm`.
- Some icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme. You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

Step by Step

1) You can assign application prompts to prompt categories. Prompt categories differ in their names, descriptions and color representations. You can display application prompts sorted by categories in the **All Symvia Application Prompts** area. Application prompt categories are independent from workspace prompt categories, composition prompt categories and server prompt categories.

After a click on the **Categories...** button or on the **Configure Prompt Categories of the Application...** link you can add or remove prompt categories or assign them another color or description. Each prompt category is available in the entire application.

2) Click on the **Add...** button.

3) Enter the **Prompt Name**.

4) You can specify a **Prompt Description** optionally.

5) Click on the **OK** button.

The prompt is itemized in the **All Symvia Application Prompts** list. It does not have a text yet for using a text-to-speech engine.

In the right-hand section **Symvia Application Prompt Details** you find the following options:

> ***NOTICE:*** Please note that prompts can only be used for the available and configured languages. Languages are configured in the **Workspace Settings** on the **Workspace Languages** tab.

> ***IMPORTANT:*** Default languages are German and English (US). If you wish to use additional languages, appropriate TTS and ASR language packages must be installed on each media server of the OpenScape UC Application, for example uc-tts-zh_cn for the TTS language Chinese (Mandarin) or uc-asr-nl_be for the ASR language Flemish. You find details in the setup guide *OpenScape UC Application Installation and Upgrade*.

6) In the **Prompt Category** field you can assign a category to the prompt.

7) In the **Prompt Texts** field you enter a text for each configured language. This text is transformed into an announcement of the corresponding language by means of TTS if the prompt is used in an active application. This requires an installed TTS system.

In addition, the use of definitions in the XML-based SSML is supported. This serves for creating announcements in prompts with help of TTS. But instead of specifying a continuous text for announcement output, the text playback can be adjusted with the help of a special notation. For example, phone numbers may be announced digit by digit and slowly, thus for everybody to understand. Specify the desired entry in SSML for using SSML as text.

In the following example a specified number is announced as phone number:

```
“<say-as interpret-as=”telephone”>012387654</say-as>”
```

You find a list of all possible definitions in SSML in the user guide of the supported speech recognition system (Nuance Recognizer) in the supplied ISO setup files of the languages for implementing TTS. Further information about SSML is contained in the web pages of the W3C institution.

8) In the **Symvia Application Prompt Details** area, click in the **Prompt Files** table on **<Click to select file>** in the row of the language for which you wish to import and assign a media file.

Buttons appear to the left of this row.

> ***INFO:*** These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

You can perform a simple or an extended import.

In case of a simple import, you assign precisely one media file to a prompt for one language. As a result, the media file is imported in the media file repository of the application. This occurs invisibly and implicitly. This is the most common application.

In case of an extended import you can import several media files for a prompt for one or several languages in the media file repository of the application. This is useful if you wish to import music or tones for several languages in one go. One media file will then be assigned to a prompt for one language.

The opposite is also true: Each media file in this directory is available in the media file repository of the application. However, not every media file in this repository need to be assigned to a prompt.

A media file must always have the same name for all available languages, so that it can be stored in the corresponding resources folder for the respective language.

> ***INFO:*** Each workspace, composition, server (i. e. each OpenScape UC Application installation), and application has its own media file repository and resource directory. These repositories are independent from each other.

If you wish to perform a simple import, click in the **Prompt Files** table on the first **...** button in the row in which you clicked on **<Click to select file>**, select a media file and click on **Open**. That finishes the import and assignment in this case. Continue with the next major step.

If, however, you wish to perform an extended import, execute the following sub-steps:

a) Click on the second **...** button in this row.

A dialog opens that displays the list of media files available in the media file repository of the application.

b) Click on the small triangle on the **Import...** button and select **Extended Import...**.

c) Click on the **Add...** button.

d) Select one or several media files and click on **Open**.

The media files are displayed in the list of media files to be imported.

e) Click on **Next**.

f) Activate the check boxes of the languages for which media files shall be imported in the media file repository of the application.

The media files are automatically copied to the resource folder of the prompts for the corresponding languages.

NOTICE: A media file must always have the same name for all available languages, so that it can be stored in the corresponding resources folder for the respective language.

---

g) Click on the **Finish** button.

The media files are itemized in the list of files available in the media file repository of the application. The media files to which you have assigned languages not selected in the **Prompt Files** table are represented grayed out. If you select a media file of such languages, the **OK** button appears grayed out. Click on a file of the language you selected in the **Prompt Files** table. Using the **Play** button you can play this media file.

h) Click on the **OK** button.

Regardless whether you performed a simple of extended import, icons to the right of the file name indicate whether the file exists and whether the file has a format that the Application Builder supports.

If you wish to remove the assignment of the media file to the prompt, click on the file name and then on the third icon. However, this will not remove the media file from the media file repository of the application and not from the resource directory either.

9) If necessary, you can click on the link **Configure available Languages in the Workspace Settings Editor...** to access the **Workspace Settings** > **Workspace Languages** > **All Workspace Languages** tab. You find more information on this in the *Workspace Settings* section.

10) If you click on the **Enable or disable Languages for the Application...** link, you reach the **Application Configuration** tab of the **Symvia Application Settings**. As described in section *Application Configuration*, you can perform language settings there.

11) If you click on the **Import Prompts from another Application or Composition...** link, you can perform the actions described in section *How to Import Prompts from another Application*.

12) Push the hotkey CTRL + S or select **File** > **Save** in the menu to store media file assignments to prompts.

4.3.7.14 How to Import Prompts from another Application

Via the **Import Prompts from another Application** link you can add further prompts from other existing applications analog to the import of prompts from other workspaces:

Step by Step

1) Click on the **Import Prompts from another Application...** link.

2) Select the application the prompts of which are to be imported. The available prompts are automatically displayed.

3) Select one or several prompts and click on **Next**.

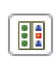
4) In the next dialog specify for which available languages the prompt to be imported is to be used.

5) Click on the **Finish** button.

The imported prompts are integrated in the **All Symvia Application Prompts** list on the **Application Prompts** tab.

4.3.7.15 Further Configurations

The **Application Prompts** tab features at the top right margin three more icons the functions of which are explained in the below table.

Icon	Function
	This icon lets you filter the prompts on the basis of the assigned languages. Activate the check box of the desired language and then click on the **OK** button. Only the properties of the desired languages are displayed.
	This icon is active by default. It places the areas **All Symvia Application Prompts** and **Symvia Application Prompts Details** next to each other. The area **All Symvia Application Prompts** is found in the left half of the tab.
	When you activate this icon, the areas **All Symvia Application Prompts** and **Symvia Application Prompt Details** are positioned on top of each other, with the area **All Symvia Application Prompts** always being in the upper half of the tab.

At the top-right margin of the **All Symvia Composition Prompts** area the following three icons are available:

Icon	Function
	With the help of this icon you can sort all prompts defined for the composition alphabetically ascending.
	Using this icon you can sort and display the prompts by categories.
	A click on this icon displays only the prompts defined for the composition in the All Composition Prompts list. The respective aliases can be displayed again via the plus sign of a prompt.

4.3.7.16 Application Grammars

The list on the **Workspace** > **<application name>** > **Application Grammars** > **All Symvia Application Grammars** tab contains already created workspace grammars. These grammars appear in gray writing and cannot be edited here. You can, however, modify the properties of a selected grammar that was configured as workspace grammar via the **Edit this Alias in the Workspace Grammar Editor...** link. You reach the **Workspace** > **Workspace Grammars** > **All Workspace Grammars** tab. See section *Workspace Grammars* on this.

4.3.7.17 How to Create a new Application Grammar

Step by Step

1) Click on the **Add...** button.
2) Specify a **Grammar Name** and, optionally, a **Grammar Description**.
3) Click the **OK** button.

   The grammar appears in the list of **All Symvia Application Grammars**. No grammar file has yet been assigned to the added grammar.

Next steps

Assign a grammar file that you create or import to the grammar.

4.3.7.18 How to Create a Grammar File for an Application

Prerequisites

- **IMPORTANT:** The default languages for the automatic speech recognition are German and English (US). If you wish to use additional languages, the corresponding ASR language packages must be installed on each media server of the OpenScape UC Application; for example uc-asr-nl_be for the

ASR language Flemish. You find details in the setup guide *OpenScape UC Application Installation and Upgrade*.

- Some icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme. You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

Step by Step

1) Select the alias name of the corresponding grammar.

In the **Symvia Application Grammar Details** area of the tab you are provided with further setting options.

> ***NOTICE:*** Please note that grammar files can only be used for the available and configured languages. Languages are configured in the **workspace settings** on the **workspace languages** tab.

2) In the **Symvia Application Grammar Details** area, click in the **Grammar Files** table on **<Click to select file>** in the row of the language for which you wish to import and assign a grammar file.

Buttons appear to the left of this row.

> ***INFO:*** These icons appear only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

3) Click on the second **...** button in this row.

The **Select Grammar File** dialog opens. All available grammar specification files are listed.

4) Click on the **Create...** button.

The **Create Grammar File** dialog opens.

5) Specify the **File Name**. The file must be a GRM file. You can optionally add a **File Description**.

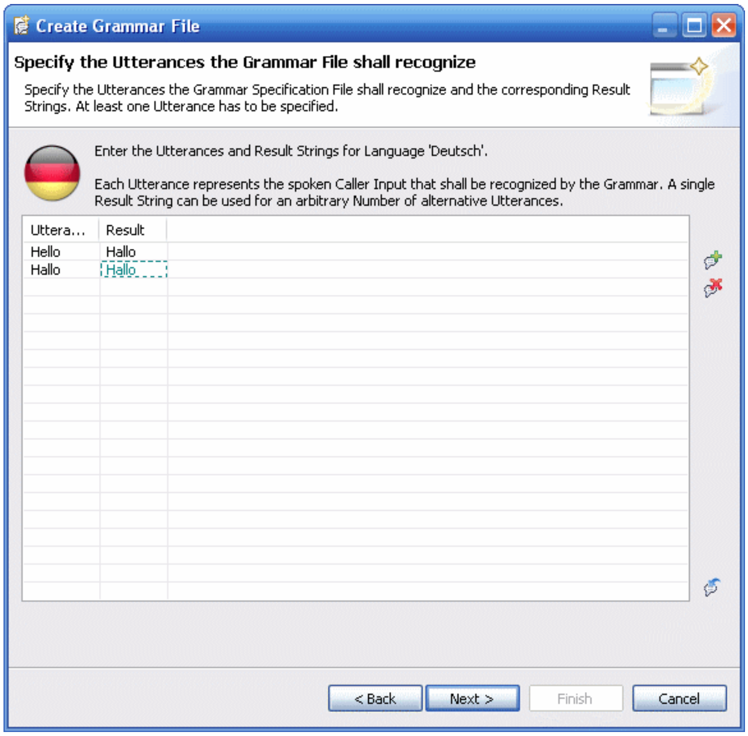
6) Click on **Next**.

7) Activate the check box of the languages for which a grammar file shall be created.

Only languages active in the workspace are displayed.

8) Click on **Next**.

The dialog that specifies the utterances of the respective language opens.



In the top-left area of the dialog you see the respective language represented by the country's flag.

9) Click on to add a new utterance.

10) Enter an **Utterance**. Each utterance corresponds to the spoken call input to be recognized by the grammar.

11) Enter the meaning of this utterance under **Result**.

With you remove selected utterances from the table.

With you can use utterances specified for another language in the grammar file.

> ***NOTICE:*** Please note that in this case the utterances already created for the language are overwritten.

12) Click on **Next**.

You reach the dialog of the next language for specifying utterances and their meaning.

13) After you have created utterances and meanings for all languages, click on **Finish**.

The **Create Grammar File** dialog closes. The grammar file is listed in the **Select Grammar File** dialog and can be selected. This dialog shows the list of files available in the grammar file repository of the application. Empty grammar files appear in red.

> ***INFO:*** Each workspace, composition and application has its own grammar file repository and resource directory. These repositories are independent from each other.

14) Choose the grammar file of the above selected language and click on **OK**.

The chosen grammar file is listed for the selected language in the **Grammar Files** field.

> ***NOTICE:*** The grammar file must always have the same name for all available languages, so that it can be stored in the corresponding resources folder for the respective language.

15) Push the hotkey CTRL + S or select **File** > **Save** in the menu to store the changes.

To edit the language settings, click on the **Configure available Languages in the Workspace Settings Editor...**. You reach the **Workspace Languages** tab. You find further information in section *Workspace*.

To activate/deactivate available languages for the application, click on the link **Enable or disable Languages for the Application...**. The view switches to the **Application Languages** tab. In there select the languages to be activated with a tick or remove the tick to disable the languages.

4.3.7.19 How to Import Variables from another Application

Via the **Import Grammars from another Application...** link you can add further grammars from other existing applications analog to the import of grammars from other workspaces:

Step by Step

1) Click on the **Import Grammars from another Application...** link.

2) Select the application the grammars of which are to be imported. The available grammars are automatically displayed.

3) Select one or several grammars and click on **Next**.

4) Click on the **Finish** button.

The imported grammars are integrated in the **All Symvia Application Grammars** list on the **Application Grammars** tab.

4.3.7.20 How to Import Grammar Specification Files in the Application

Step by Step

1) Click on the **Import Grammar Specification Files into the Application...** link.
2) Click the **Add** button.
3) Select grammar files of the format `*.grm`.
4) Click on the **Open** button.

   You can assign only displayed audio files, thus audio files integrated in the application.

4.3.7.21 Further Configurations

The **Application Grammars** tab features at the top-right margin three more icons the functions of which are explained in the below table.

Icon	Function
	This icon lets you filter the grammars by the assigned language. Activate the check box of the desired language and then click on the **OK** button. Only the properties of the desired languages are displayed.
	This icon is active by default. It places the areas **All Symvia Application Grammars** and **Symvia Application Grammar Details** next to each other. The area **All Symvia Application Grammars** is found in the left half of the tab.
	When you activate this icon, the areas **All Symvia Application Grammars** and **Symvia Application Grammar Details** are positioned on top of each other, with the area **All Symvia Application Grammars** always being in the upper half of the tab.

At the top-right margin of the **All Symvia Application Grammars** area, the following two icons are available:

Icon	Function
	With the help of this icon you can sort all grammars defined for the application alphabetically ascending.
	A click on this icon displays only the grammars defined for the composition in the All Application Grammars list. The respective aliases can be displayed again via the plus sign of a grammar.

4.3.7.22 Application Resources

The **Application Resources** tab serves for copying any file that exists on the file system to the resource repository of an application, so that these files can be used in the callflow controls. That way, you can use files of any other file type besides prompt files or grammar files also.

Example:

The Send control displays all application resource files for selection if you wish to attach a file to the message to be sent.

INFO: If, in contrast, you use the Send control in a composition, only the composition resource files are displayed for selection. They are also listed in the workspace view under **Symvia Control compositions > <composition name> > Composition Resources**.

4.3.7.23 How to Import Resources

Step by Step

1) Click on the **Import...** button.

The **Select Resource File(s) to be imported** dialog opens.

2) Select the desired file.

3) Confirm your selection with **OK**.

The file is copied to the specified resources folder of your application and integrated in the **All Symvia Application Resources** list.

Select an entry in the application resources list and the following properties are listed in the right area of the tab: **Resource Name**, **Resource Type**, **Resource Size** and the **Resource Date** on which the file was added to the application resources. This data serves for viewing and cannot be modified.

Selected files are irretrievably removed from the application resources via the **Delete** button.

With **Rename...** you can rename selected application resource files.

4.3.7.24 How to Import Resources from another Application

Step by Step

1) Click on the **XImport Resources from another Application** link to add further resource files from other applications:

2) Select the **Application** from which the resources are to be imported. The available resources are automatically displayed.

3) Select one or several of the desired resources and click on **Finish**.

The imported resources are integrated in the **All Symvia Application Resources** list on the **Application Resources** tab.

4.3.7.25 Further Configurations

The **Application Resources** tab features at the top right margin two more icons the functions of which are explained in the below table.

Icon	Function
	This icon is active by default. It places the areas **All Symvia Application Grammars** and **Symvia Application Grammar Details** next to each other. The area **All Symvia Application Grammars** is found in the left half of the tab.
	When you activate this icon, the areas **All Symvia Application Grammars** and **Symvia Application Grammar Details** are positioned on top of each other, with the area **All Symvia Application Grammars** always being in the upper half of the tab.

At the top-right margin of the **All Symvia Application Resources** area the following three icons are available:

Icon	Function
	Using this icon you set a flat folder view.
	A click on this icon displays only the resources defined for the composition in the All Composition Resources list. The respective aliases can be displayed again via the plus sign of a resource.
	You can update the list of resource files via this icon or the F5 key.

4.3.7.26 Callflow Editor

Callflows are created with a **callflow editor** and listed in the workspace. Each of them is assigned to an application.

4.3.7.27 How to Create a Callflow

Step by Step

1) Click on an application in the workspace with the right mouse button.

2) Select **New** > **Callflow...**.

3) Enter a name for the callflow in the **Callflow Name** field.

4) Select one of the following inbound events from the **Event the Callflow is bound to** combo box:

Incoming Call

Select this value is the callflow is to be started with an incoming call.

Call Disconnected

Select this value if the callflow is to be started as soon as the call that started the application has been terminated.

Contact Center Agent Ready

Select this value if the callflow is to be started as soon as a call that started the application is being processed by the contact center.

INFO: This option is only displayed if the **Support of Contact Center (ACD) Controls** check box in the workspace view under **<application name> > Application Settings > Application Configuration > Capability Settings** has been activated.

INFO: A variable **EVENTDATA** is created automatically. You can select the **Transfer Number** sub-element of this variable as associated value in the callflow to be created, for example in an Assign control.

You can see this variable in this callflow only. It is not visible as workspace variable, composition variable, application variable and not in another callflow either. However, other variables of the same name may exist in such places.

Contact Center Failure

Select this value if the callflow is to be started as soon as a call that started the application cannot be processed by the contact center.

INFO: This option is only displayed if the **Support of Contact Center (ACD) Controls** check box in the workspace view under **<application name> > Application Settings > Application Configuration > Capability Settings** has been activated.

INFO: A variable **EVENTDATA** is created automatically. You can select the **Failure Reason** sub-element of this variable as associated value in the callflow to be created, for example in an Assign control.

You can see this variable in this callflow only. It is not visible as workspace variable, composition variable, application variable and not in another callflow either. However, other variables of the same name may exist in such places.

---

5) Click on **OK**.

A new callflow is displayed in the workspace under **<application name> > Application Callflows**. The callflow name is followed by the inbound event in abbreviated format (**[Incoming]**, **[Disconnect]**, **[ACD Ready]** or **[ACD Failure]**).

6) Double-click this new entry.

The callflow is displayed in the callflow editor. If you have selected **Incoming Call** as inbound event, the callflow is empty. Otherwise, a first control has been added automatically.

7) Complete the callflow by dragging controls from the palette into the callflow editor where you configure them and connect them to the other controls.

8) Save the callflow.

The callflow is itemized underneath the application in the workspace list.

9) Double-click this entry.

The callflow editor consisting of workspace and palette opens. The palette shows the tools and controls available for this callflow. You drag most of them onto the workspace by drag-and-drop for editing an application. Depending on the above configured event, the workspace contains controls already.

4.3.7.28 Context Menu of a Callflow

When you rightclick a callflow, its context menu opens. The following options are then available:

- **New** enables the creation of a new application.
- **Open with Callflow Editor** enables viewing the graphic representation of an existing callflow as well as its configuration and editing.
- **Cut** cuts the selected callflow and copies it to the clipboard.
- **Copy** copies the selected callflow with all its settings to the clipboard.
- **Paste** creates a copy of the selected callflow.
- **Delete** removes the selected callflow from the workspace or application.
- **Rename...** changes the callflow name.
- **Properties** displays general information such as storage location, last access date, file size and callflow type and displays a summary of the contained controls and the associated editor settings.

With a doubleclick on the callflow's name in the workspace list the **editor** opens for editing the callflow with the associated **palette**. The palette contains controls for usage in the callflow editor.

4.3.7.29 The Palette

The palette is part of the callflow editor. All controls and tools are listed in the palette. The palette can be docked to the left or right margin. The palette can be hidden via a triangle icon in the top bar.

The palette includes all available controls. Several controls are assigned to a group. You can edit settings of the palette via different context menus.

4.3.7.30 Tools and Controls

The following table shows all available tools and controls of the palette and provides a short description of the functionality:

> ***INFO:*** The controls of groups **General Controls**, **IVR Controls**, **UC Controls** and **ACD Controls** are displayed in a special dialog if the focus is on the workspace or on the palette and you push the paste key. You can filter the list of the controls displayed in this dialog using a search string. The jokers `?` and `*` are available for filtering. If you click on a control in this dialog, it will be added to the callflow in the workspace.

Icon	Functionality
Select	The **select** tool (mouse pointer) enables selecting single elements such as controls, connections or notes. Selected elements can be moved in their geometric as well as structural position.
Verbindung	A connection serves for connecting two controls. A connection indicates the processing order from control to control.
Sticky Note	Using the **Sticky Note** tool you can add comments and notes anywhere in the callflow.
Callflow Link	The **Callflow Link** enables connecting two callflows within an application. This control is not displayed if a subflow is open in the workspace.
List Iterator List Modifier List Sorter	One of the following three controls is displayed. Click on the small triangle to display one of the others. You use the **List Iterator** to create a pointer onto a variable lists. The **List Modifier** is a tool for changing variable lists and adding/removing arguments to/from the list. The **List Sorter** allows sorting variable lists as well as changing the sort order and sort criterion.
String Operator Time Operator Date Operator	One of the following three controls is displayed. Click on the small triangle to display one of the others. • **String Operator** • **Time Operator** • **Date Operator** These controls enable editing string values, time values and date values.

Icon	Functionality
Parallel Flow	With the **Parallel Flow** control processing a callflow is branched and rejoined.
Control Compositions	
Composition 1	The **Control Compositions** group is displayed automatically if at least one composition exists. The composition's name, for example **Composition 1** is shown in the palette. You handle this control analog to the other controls. Drag the composition to the workspace.
Subflow Elements	
Subflow Entry	The **Subflow Entry control** marks the start of a subflow. This control is only displayed if a subflow is open in the workspace.
Subflow Exit	The **Subflow Exit control** marks the end of a subflow. This control is only displayed if a subflow is open in the workspace.
Subflow Loop	The **Subflow Loop control** is followed by the controls that need to be traversed in the query loop of the variable lists. This control is only displayed if a subflow is open in the workspace.
Composition Elements	
Composition Entry	The **Composition Entry control** marks the beginning of a composition. This control is only displayed if a composition is open in the workspace. However, it is not displayed if a subflow of a composition is open.
Composition Exit	The **Composition Exit control** marks an end of the composition. This control is only displayed if a composition is open in the workspace. However, it is not displayed if a subflow of a composition is open.
General Controls	
Start	The **Start control** marks the beginning of a callflow and is mandatory for an application.
End	The **End control** marks the end of a callflow.
Assign	In the **Assign control** you can assign values to the variables. You can define your own variables and fill them with contents required in other controls.
Compare	Using the **Compare control** you can execute comparisons according to a previously defined rule. You can define a list of rules here for configuring branches in the callflow based on conditions.

Icon	Functionality
SystemInfo	System information is put out at runtime and retrieved in a variable with the **SystemInfo Control**. The contents in the variable can then be further used in the callflow. The information may put out the current date, time etc.
WebService	The **WebService control** offers the option to submit requests to a REST web service and to write the result in a variable that can be used in the course of the callflow.
DatabaseWrite	With the help of the **DatabaseWrite control** you enter data/data records in already available databases. A JDBC driver must be used for the database.
DatabaseRead	The **DatabaseRead control** enables retrieving data/data records from available databases. A caller is e.g. able to query the current state of his/her order from a contact center.
TimeProfile	In the **TimeProfile control** you can, depending on the call time, implement a branch in the callflow.
Delay	The **Delay control** inserts pauses in the callflow.
IVR Controls	
IVR controls appear in callflows and subflows of applications only if this has been configured under **Application Settings** > **Application Configuration** > **Capability Settings**. IVR controls appear in callflows and subflows of compositions only if this has been configured under **Composition Settings** > **Composition Configuration** > **Capability Settings**.	
Prompt	The **Prompt control** plays one or several announcements and branches then to a continuative control, for example the DtmfMenu control or the SpeechMenu control.
BackingPrompt	The **BackingPrompt control** allows inserting announcements. Such announcements are played until another control is executed that plays its own announcement.
DtmfInput	Using the **DtmfInput control** a caller can enter digit strings such as his/her customer number via telephone keypad.
DtmfMenu	The **DtmfMenu control** enables the caller to navigate through a menu with his/her phone keypad.
DtmfSelection	Via the **DTMF Selection Control** a variable list is iterated where every element can be selected via a DTMF key.
Language	The **Language control** enables switching the language during runtime. Thus the caller can listen to announcements in his/her native language, for example.
Transfer	The task of the **Transfer** control is to dial a phone number after one or several announcements have been played. Example: "*You will now be connected to our hotline. Please hold the line*."). Do not confuse the **Transfer** control with the **ConnectCall** control.

Icon	Functionality
Disconnect	The **Disconnect** control plays one or several announcements and disconnects the current phone call.
CreateCall	The **CreateCall** control dials a phone number.
ConnectCall	The **ConnectCall** control turns an unaccepted (inactive) call into an accepted (active) call. From this moment, the caller incurs call charges. Do not confuse the **ConnectCall** control with the **Transfer** control .
DeflectCall	The **DeflectCall** control routes the current phone call to another phone number.
Record	Via the **Record control** you can make voice recordings.
Transition	The **Transitions** control switches to another application.
Grammar	The **Grammar** control creates a grammar specification file for ASR from an application variable at runtime.
NLU	The **NLU** control enables a voice-controlled interaction (ASR) with the user.
SpeechMenu	With help of the **SpeechMenu** control the caller can navigate through a menu making speech inputs.
SpeechInput	Via the **SpeechInput** control the user can make speech inputs evaluated by the application using ASR.
UC Controls	
UC controls appear in callflows and subflows of applications only if this has been configured in the application settings.	
Send	The **Send Control** sends documents, e.g. a voice recording or a resource as e-mail at one or several recipients.
Message	The **Message** control can play different forms of messages and treat messages differently.
Authentication	The **Authentication** control executes the authentication via the ONS number or the user ID.
ChangePin	The **ChangePIN** control enables a logged-in user to change his/her authentication data.
Presence	The **Presence** control updates, invokes or displays the current status or all available presence statuses.
ContactSearch	The **ContactSearch control** searches the contact database for contacts. You can look for contacts via the phone number (ONS number) or the vanity code. A list of contact variables that contain various contact attributes such as name, phone number, fax number, etc. is returned.
UserSearch	The **UserSearch control** searches the user database for users. A list of user variables that contains different user attributes is returned.

Icon	Functionality
Conference	You use the **Conference control** to create conferences. You can create an ad-hoc conference, join a conference or look for conferences.
CallJournal	The **CallJournal** control allows querying the phone journal.
ACD Controls	
ACD controls appear in callflows and subflows of applications only if this has been configured in the application settings.	
AcdInit	The **AcdInit** control determines the contact center for registering and processing a call.
AcdExit	The **AcdExit** control cancels a call's registration in the contact center.
AcdStart	You can configure the following properties in the **AcdStart** control: • Name of the queue in which a call is enqueued • Call priority • Preferred agent to process the call • Waiting time in which the attempt is made to reach the preferred agent • Assigning contact information to the call • Assigning statistics variables – Calls in the queue – Position in the queue – Estimated waiting time
AcdStop	The **AcdStop** control removes a call from the queue.
AcdCallback	You can use the **AcdCallback** control to configure the following properties of a callback.
AcdContactData	You can use the **AcdContactData** control to provide additional contact data.
AcdRoutingInfo	You can use the **AcdRoutingInfo** control to store routing information about the call in a variable for the contact center to retrieve such information.
AcdQueueInfo	You use the **AcdQueueInfo** control to retrieve the status of a contact center queue.
AcdCallInfo	You can use the **AcdCallInfo** control to receive information about a call. Such information helps improving the call processing.
Custom Controls	
BooleanControl	A custom control is created by the Application Builder user. It allows to fulfill specific requirements.

4.3.7.31 Context Menu of the Controls in the Palette

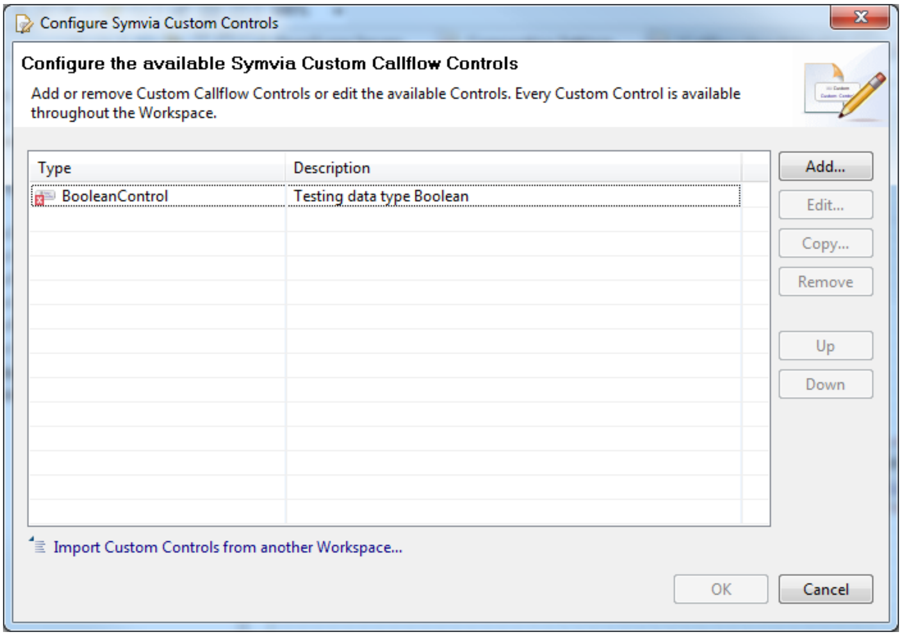
To open the context menu of palette, right click the control within the palette's area. It provides the following options:

- **Layout** offers several options to change the palette's representation. The contents in the views are the same but they are displayed in a different manner. The following options exist:
  - **Columns**
  - **List**
  - **Icons only**
  - **Details**
- **Use Large Icons** enlarges the icon display.
- **Settings...** opens the **Customize Palette** dialog for editing the **Name** and the **Description** as well as for configuring different **Options** of the single controls and their group folders.
  The left dialog area provides an overview of all available controls, sorted according to various groups (**drawer**).

  NOTICE: The settings of the **Tools** drawer and of the tools contained therein cannot be edited.

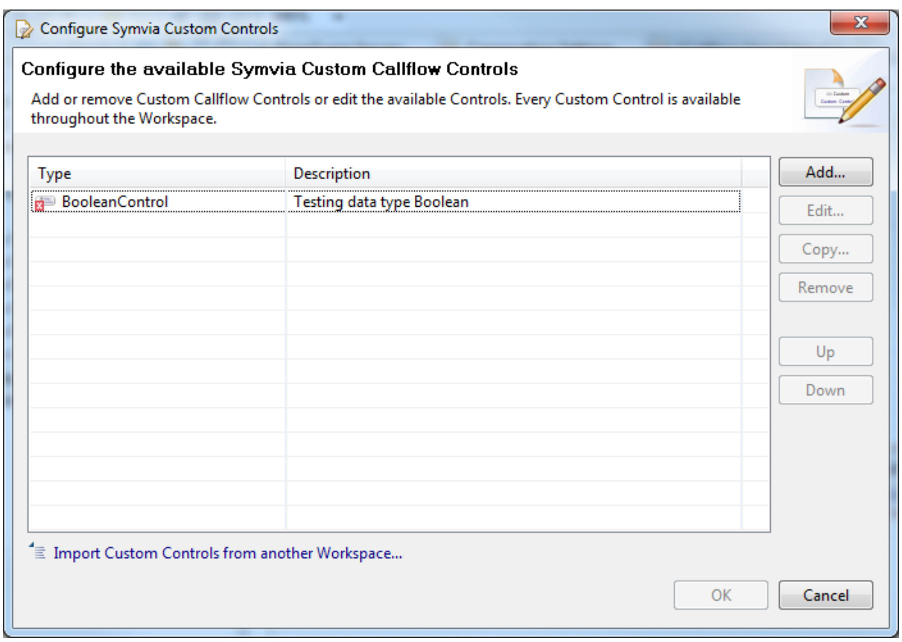
  If you select a control or a group folder you can use the **Up** or **Down** buttons to change the position of the control or group folder in the list. In the right dialog area you can edit the **name** and **description** of a selected control or group folder.
  By activating the **Hide** option you can decide whether or not to display a control or a whole group of controls.
  The **Open drawer at start-up** option can be selected for group folders and determines whether the respective control group is displayed opened at the Application Builder start, i.e. the single controls are displayed in the palette.
  The **Pin drawer open at start-up** option determines if a group folder is furnished with an activated pen at the Application Builder start.
- X**Settings...**X opens the palette settings dialog.
  Push the **Change...** button to open the dialog for setting the font. You can define **Font**, **Font size**, **Size**, **Color** and **Effects**.
  A click on the **Restore Default** button resets the font to its original values.
  In the **Layout** and **List layout options** sections you can change the palette display like in the palette context menu.
  The **Drawer options** specify how the display of opened group folders of controls shall be handled.

- **Custom Controls...** opens the **Configure Symvia Custom Controls** dialog.



You find further descriptions of custom controls in the *Custom Controls* section.

- **Custom Groups...** opens the **Configure Symvia Custom Control Categories** dialog.



- **Reset Palette** resets the palette settings to their default values.

4.3.7.32 Context Menu of the Caption Bar of the Palette

To open the context menu of the caption bar, rightclick the top window bar of the palette. It provides the following options:

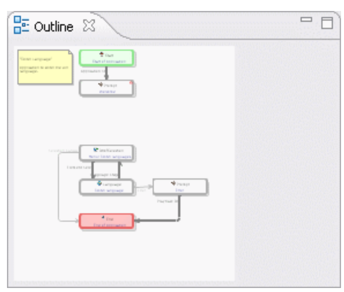
- Resizing
  As soon as you select the option, the mouse pointer changes and is set to the inner margin of the window. Now you can resize the width of the palette window.
- Anchoring
  You may dock the window at the left or the ride hand side.

4.3.7.33 Context Menu of the Groups in the Palette

When you rightclick a group folder (drawer), the context menu contains the additional option **With Pen**. With an active pen you can prevent an open drawer in the palette display from getting closed.

4.4 Outline View

The outline displays the entire callflow in a minimized representation. Depending on the selected zoom factor, the callflow may be shown in the callflow editor only in one extract.

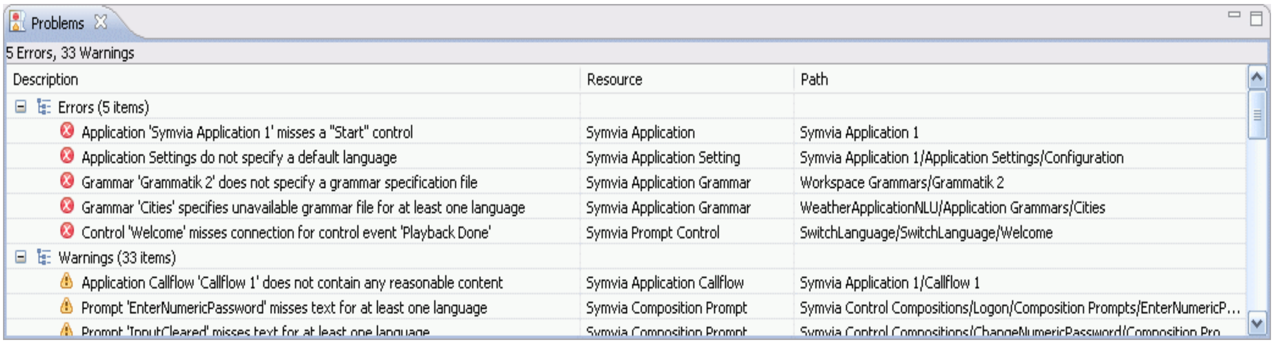


You change the zoom factor by modifying the numerical value in the corresponding field in the toolbar. Another method is to click on the workspace of the callflow editor, then turn the mouse wheel while keeping the Ctrl key pressed.

If the callflow editor does not display the entire callflow, the portion you can see in the callflow editor is blue highlighted in the outline view. You can move this blue section with the left mousebutton kept pressed. The area shown in the workspace of the callflow editor is updated accordingly.

4.5 Problem View

The problem view shows errors and warnings of all settings in the workspace of all compositions and applications. This is independent from the callflow shown in the callflow editor.



The view has the format of a table with the following columns:

- **Description**
  This column precisely describes the error or warning. For example, it states that a control does not have a mandatory connection to another control or that not all necessary properties have been specified for a control.
- **Resource**
  This column states for each error or warning the control type, for example application prompt, DtmfMenu control etc.
- **Path**
  This column specifies for each error or warning the path of the concerned control. Example: *Workspace Grammars/Grammar1*.

4.5.1 Context Menu of the Problem View

You open the context menu of the problem view with a rightclick on an entry to be provided with the following options:

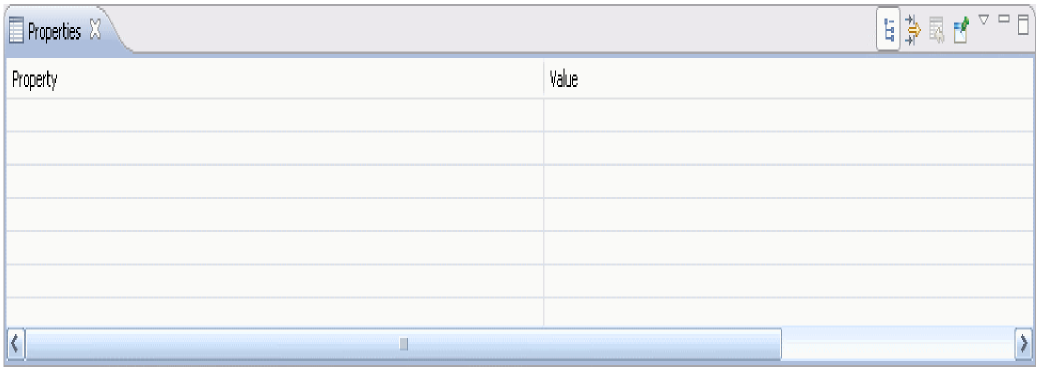
- **Go To** opens the corresponding position of the error or warning. For example, the callflow is opened in the callflow editor and the control selected in which the problem occurred.

> ***NOTICE:*** Doubleclicking the entry also opens the respective error or warning position.

- The **Copy** option copies the content of the selected problem to the clipboard.
- **Select All** selects all entries in the problem view.
- **Update** refreshes the problem view by searching all configurations in the workspace, in compositions, in applications (compositions) and callflows for faulty settings.
- **Properties** opens the Properties dialog in which the Description, the Resource and the Resource Path of an error or warning are put out.

4.6 Properties View

The properties view shows the **properties** of the elements selected in the callflow editor view and their **values**. The properties are the hight and width of the element and the geometric position in X- and Y-coordinates of the control in the callflow.



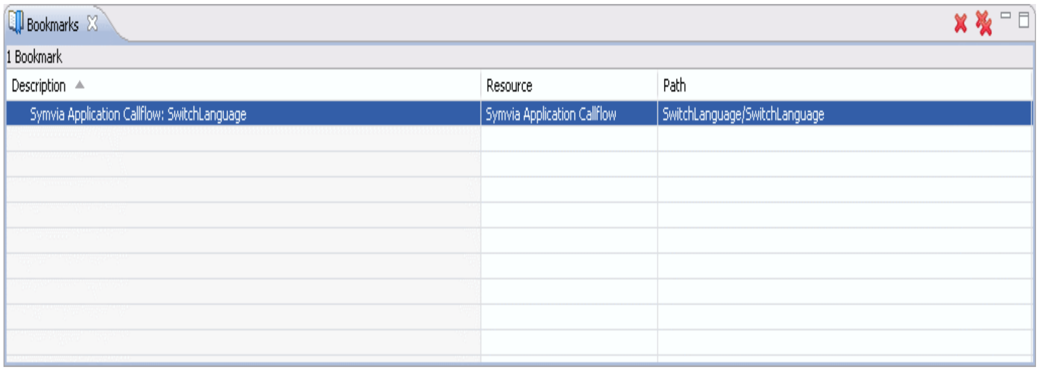
Caption Bar Icons

The Properties view features the following icons on the right margin of the caption bar:

Icon	Meaning
	Display categories.
	Display extended settings.
	Restore default.
	Maintains the current selection on the properties page.
	When you click the triangle, a menu opens. Each menu option corresponds to an executable icon in the caption bar. A ticked menu option is active. Selecting a menu option has the same effect as pushing the corresponding icon.
	Minimize properties view
	Maximize properties view

4.7 Bookmark View

Bookmarks serve as marker for quickly finding specific features or jobs. Uncompleted configurations or remarks can be quickly viewed in this way. Especially users who have not created the callflow themselves can then receive additional information.



Bookmarks can be added to callflows, controls, variables, prompts, grammars, languages, databases or resources. Select the desired element for this purpose.

- Control in the **callflow editor**
- Variable on the tab **Workspace**, **Composition** or **Application Variable**
- Prompt on the tab **Workspace**, **Composition** or **Application Prompts**
- Grammar on the tab **Workspace**, **Composition** or **Application Grammars**
- Language or database on the **Workspace Settings** tab or
- Resource on the tab **Application or Composition Resources**.

Click in the menu bar on **Edit > Add Bookmark...**.

If you want to furnish a callflow with a bookmark, open it with a doubleclick on the name of the desired callflow in the workspace and select on the menu bar **Edit > Add Bookmark...**.

NOTICE: The bookmarks of the bookmark view do not correspond to the help bookmarks.

4.7.1 Caption Bar Icons

The bookmark view features the following icons on the right margin of the caption bar:

Icon	Function
	Delete selected bookmark
	Delete all bookmarks
	Minimize bookmark view
	Maximize bookmark view

4.7.2 Context Menu of the Bookmark View

You open the context menu of the bookmark view with a rightclick on an entry to be provided with the following options:

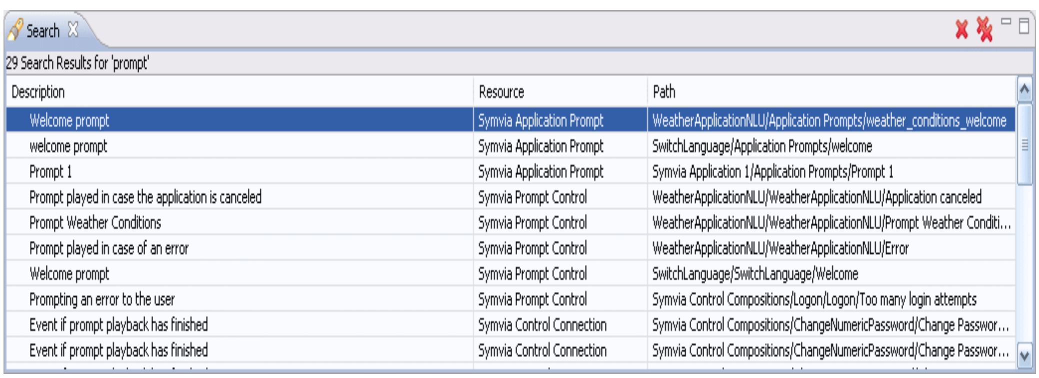
- **Go to** opens the page the bookmark refers to.

> ***NOTICE:*** Double-clicking the entry also opens the page the bookmark refers to.

- The **Copy** option copies the content of the selected bookmark to the clipboard.
- **Select All** marks all entries of the bookmark view.
- **Delete** removes a selected entry from the bookmark view.
- **Edit Description** enables modifying the description of the selected bookmark.
- **Properties** opens the **Properties** dialog in which the **Description**, the **Resource** and the **Resource Path** of an error or bookmark are put out.

4.8 Search View

The search view shows the results of the search for a character string in all applications. The search is started via the **Search** menu option and the **Search** dialog then open.



- **Description**
  This column states the name of the element in which the character string was found.
- **Resource**
  This column specifies the resource type, for example *Application 1*.
- **Path**
  This column indicates the path of the concerned element, for example *Appl07/Callflow07/Phone Number Input Control*.

> ***NOTICE:*** The search view does not correspond to the help search-page.

4.8.1 Caption Bar Icons

The search view features the following icons on the right margin of the caption bar:

Icon	Function
	Delete selected search hit
	Delete all search hits
	Minimize search view
	Maximize search view

4.8.2 Context Menu of the Search View

You open the context menu of the search view with a rightclick on a search hit to be provided with the following options:

- **Go To** opens the dialog or tab in which the string searched for was found.

> ***NOTICE:*** Doubleclicking the entry also opens the search hit position.

- Doubleclicking the entry also opens the respective error or warning position.
- **Copy** copies the content of the selected search hit to the clipboard.
- **Select All** marks all entries of the search view.
- **Delete** removes a selected entry from the search view.
- **Properties** opens the **Properties** dialog in which the **Description**, the **Resource** and the **Resource Path** of a search hit are put out.

4.9 Help View

The help view shows the context-sensitive help. It opens when you select the element about which you want to have information and then push the **F1** key. An element can e.g. be a view, a tab or a control. In addition, you can open the help view via the menu bar under **Help > Dynamic Help**.

> ***NOTICE:*** Selecting **Tools > Preferences** in the menu bar opens a dialog. When you then click on **Help** in this dialog's navigator and select **In an Infopop** from the **Open window context help** combo box, you can later decide in a dialog after pushing the F1

key whether the context-sensitive help shall appear in the help view or in a pop-up.

The help view displays various links:

- **Related Topics** shows the links that provide information about the desired element
- **All Topics** leads to the help's table of contents
- **Search** shows the page including a search item
- **Bookmarks** displays the help pages that you have selected as bookmark.
- **Index** opens the keyword overview of the help

4.9.1 Caption Bar Icons

The help view has additional icons in the caption bar. Which icons are displayed depends on the link selected in the help view.

NOTICE: The help search-page does not correspond to the search view. Likewise, the help bookmarks do not correspond to the bookmarks of the bookmark view.

Icon	Function
	Fold all elements of the table of contents in this view.
	Display the categories of the search results on the help pages.
	Display the descriptions of the search results on the help pages.
	Display the entry of the displayed help page in the table of contents.
	Add a bookmark to the displayed page
	Show last displayed help page.
	Undo skipping to the last help page.
	Minimize help view
	Maximize help view

4.9.2 Context Menus of the Help View

The help view features different context menus for different help pages.

> ***NOTICE:*** The help pages **Related Topics**, **Index** and **Search** have identical context menus.

You open the context menu (**All Topics**) of the table of contents with a rightclick on an entry.

- **Open** displays the context sensitive help in the help view.
- **Open in Help contents** opens the desired help page in a separate help dialog.
- **Add Bookmark** sets a new bookmark for the selected entry of the help's table of contents.
- **Back** shows the help page displayed last.
- **Next** undoes skipping to the last help page.
- **Help Contents** opens the online help.

You open the context menu (**Reference Information**) on this help page with a rightclick on a free space.

When you rightclick one of the reference links displayed on this page, the above context menu of the table of contents opens.

When you rightclick a bookmark on this page, the following context menu **Bookmark**):

- **Open** displays the context sensitive help in the help view.
- **Delete** removes the selected bookmark of the help.
- **Delete All** deletes all bookmarks of the help.
- **Back** shows the help page displayed last.
- **Next** undoes skipping to the last help page.
- **Help Contents** opens the online help.

If no bookmarks have been added to the help view, the context menu only contains the three lower options.

4.9.3 Browsing the Help Pages

Open the search and enter the search item you wish to find on the help pages in the **Search expression** field. Then click on **Go**.

When you click on **Search expression** the following search options are displayed:

Option	Function
*	Look for any string
?	Look for any character
""	Look for the expression embedded between the two inverted commas
AND, OR, NOT	Use Boolean operators for the search

The link to the right of **Search scope** indicates the search range. If not otherwise modified, the search range is called **Default**. When you click the small black triangle on the left, an information section opens that indicates where the help is searching. The default is **Local Help**. The **Advanced Settings** link allows detailed settings for the search.

In the area thereunder you can see the hits of the completed search process in the form ***<defined search scope> (<number> hits)***. With a click on the triangle to the left, all search results are listed for the corresponding search scope. The search hits are displayed as links and a short extract of the help text is also shown.

4.9.3.1 How to Select a Search Scope Set

Step by Step

1) Click on the link to the right of the **Search scope**.

The **Select Scope Sets** dialog opens.

Remove deletes the selected scope set entry.

The settings dialog of a selected search scope is opened via the **Edit...** button.

2) You can set the desired search scope as current search scope in two ways:

- Double-click the desired entry in the list of search scope sets.
- Select the desired entry in the list of search scope sets and click on **OK**.

The search scope name appears as link to the right of **Search scope**.

4.9.3.2 Configuring the Search Scope

In the **Select Scope Sets** dialog click on the **Edit...** button. The left-hand section of the **Scope <search scope name>** dialog may feature the search engine types **Local Help**, **Information Center** and **Web Search**. Each entry may appear several times. You remove an entry from the list with the **Delete** button. A new search engine is created via the **New...** button.

The three search engine types mentioned above are available. After you have selected the desired search engine type and clicked on the **Finish** button, the search engine list features this type for this search scope.

In the right section you can set a search engine's properties. All search engines can be activated by ticking off the X**Enable search engine**X check box. In the following we will explain the settings of the three possible search engines.

Local Help

The X**Name**X and **Description** cannot be modified.

If the **Search all topics** radio button is active, all topics of the selected search engine are searched. If the X**Search only the following topics**X radio button is active, only pages among those pages are searched that are ticked off in the **Working set content** field.

The **Restore Defaults** button resets all values to the defaulted ones.

The performed modifications are copied via the **Apply** button.

Info Center

The **Name** and **Description** of the search engine cannot be modified. Enter the internet address of the search engine in the **URL** field.

If the **Search all topics** radio button is active, all topics of the selected search engine are searched. If the **Search only the following topics** radio button is active, only pages entered in the **Working set content** field are searched.

The **Restore Defaults** button resets all values to the defaulted ones.

The performed modifications are copied via the **Apply** button.

Web Search

The **Name** and **Description** of the search engine cannot be modified. You can receive the **URL template** by copying the web query from the internet browser address field and replacing the search item with ***{openscape}***.

The **Restore Defaults** button resets all values to the defaulted ones.

The performed modifications are copied via the **Apply** button.

5 Controls

You add a control to a callflow by

- clicking the control in the palette once and adding the control with a second click to the desired position of the workspace or
- doubleclicking the corresponding control in the palette or
- dragging the control into the workspace with the left mousebutton kept pressed.

To move a control, select it in the callflow and place it in the target position with the left mousebutton kept pressed.

Controls are displayed as rectangles with rounded corners. Within the rectangle you see the icon, the control type and the control name.

The name of a created control is always pre-defined by the control type description and a digit as numbering (for example “Prompt Control 1”).

When you doubleclick a control or the context menu, its **Properties** configuration dialog opens. In this dialog you can always perform the following three settings on the **General** tab:

- You can enter a **Name** for the new control or change the existing **Name** (max. 63 characters, special characters are not allowed).
- You can optionally enter a **Description**. The description is displayed as tooltip of the control and does not affect the control's functionality.
- The **Enable Runtime Tracing** check box activates logging for the control. The log messages depend on the control and are written to the server log.
- The **Restore Defaults** button resets all settings of a control except **Name** and **Description** to the default values.

In some controls, variables and announcements can be used. You can use only variables and announcements that were created either for the workspace or for the application.

Further setting options depend on the control type and are described in detail for each single control in the respective section.

NOTICE: A callflow always begins with a control of type Start and may end with a control of type End if it is no composition or a subflow.

NOTICE: In a callflow, several controls may have the same name.

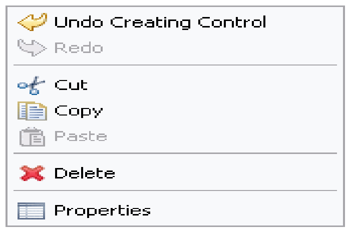
5.1 General Information about Controls

While working with the Application Builder, procedures in the controls are repeated (*standard procedures*). In order to focus the information in the single controls on the basic functions, the standard procedures are described in detail beforehand. The respective paragraphs refer to the content.

5.1.1 Context Menu of a Control

All properties of a control's context menu are available in a callflow, a subflow, a composition and in both branches of a parallel flow.

Every control has a context menu. You open the context menu with a rightclick on the control.



The context menu offers the following functions:

- **Undo**
  Undoes the action or modification performed last.
- **Repeat**
  Executes the action or modification performed last once again.
- **Cut**
  The control is cut out of its position and can be pasted in another position if required.
- **Copy**
  Copies the control. You can paste a duplicate in another position.
- **Paste**
  Pastes the control copied or cut last.
- **Delete**
  Removes the selected control permanently.
- **Properties**
  Opens the Properties configuration dialog of the control.

If you have selected two or more controls, the following two additional features are provided:

- **Align**
  - **Align Left**
    Aligns all selected controls to the left margin of the control clicked with the mouse last.
  - **Align Center**
    Aligns all selected controls to the vertical middle line of the control clicked with the mouse last.
  - **Align Right**
    Aligns all selected controls to the right margin of the control clicked with the mouse last.

   - **Align Top**
     Aligns all selected controls to the top margin of the control clicked with the mouse last.
   - **Align Middle**
     Aligns all selected controls to the horizontal middle line of the control clicked with the mouse last.
   - **Align Bottom**
     Aligns all selected controls to the bottom margin of the control clicked with the mouse last.
- **Match**
   - **Match Width**
     The width of the control clicked last is adopted by all other selected controls.
   - **Match Height**
     The height of the control clicked last is adopted by all other selected controls.
   - **Match Size**
     The width and height of the control clicked last is adopted by all other selected controls.

If you have selected three or more controls, the following additional features are provided:

- **Arrange Horizontally**
  The controls positioned in the middle of all selected controls seen horizontally are moved in such a way that the horizontal distances between all selected controls are the same.
- **Arrange Vertically**
  The controls positioned in the middle of all selected controls seen vertically are moved in such a way that the vertical distances between all selected controls are the same.

5.1.2 Quick-Configuration Menu

Every control has a quick-configuration menu. You open this menu by placing the mousepointer onto the control. The quick-configuration menu that opens is semitransparent. When you position the mousepointer onto the quick-configuration menu, it becomes transparent and you can click the functions with the mouse.

The quick-configuration menu offers the following functions:

- **Delete**
  Removes the selected control permanently.
- **Cut**
  The control is cut out of its position and can be pasted in another position if required.

- **Copy**
  Copies the control. You can paste a duplicate in another position.
- **Properties**
  Opens the Properties configuration dialog of the control.

5.1.3 Speech Recognition

In case of applications created with the Application Builder, the user may have to make entries for continuing with the callflow.

If a speech recognition system has been installed, the Application Builder allows making entries by specifying digits on the phone keypad and by voice. Speech recognition is performed by a software with a speech grammar that decodes announcements, compares them with permanent entries and, as the case may be, executes associated commands.

> ***NOTICE:*** For further information about speech recognition please consult the manuals of the speech recognition software used.

5.1.4 How to Add a Prompt

Step by Step

1) Click on and select the **Add Prompt** option.

The **Select Prompts for Announcements List** dialog opens, which lists all announcements already imported and created. These announcements are created either for the entire workspace or for an application. You can also insert announcements for selection.

2) Select the **Create new Prompt...** link.

The dialog **Create Symvia Application Prompt** opens for creating announcements for an application. The configuration occurs analog to creating prompts for applications (see section *Application Prompts*).

3) Select the prompts that are to be copied to the announcement list and confirm your selection with **OK**.

The selected prompts are now listed. The sequence of the prompts in the list corresponds to the sequence of the announcement playback. If you select further announcements they will be added to the end of the list.

5.1.5 How to Add a Variable

Step by Step

1) Click on and select the **Add Variable** option.

   The dialog dialog lists all variables already imported and created. These variables are created either for the entire workspace or for an application. If a text-to-speech program is installed, the value of this variable (text) is converted into speech while the application is run through.

   > ***NOTICE:*** Check with the system administrator whether a text-to-speech program is installed on the UC server and whether the text to be converted into speech is available in a language that this program can process.

2) Select the variables that are to be copied to the variable list and confirm your selection with **OK**.

   The selected variables are listed. The sequence of the variables in the list corresponds to the sequence of the announcement playback. If you select further variables, they are added to the end of the list.

5.1.6 How to Add a Pause

Step by Step

1) Click on and select the **Add Pause** option.

   The **Specify Pause for Announcement List** opens.

2) Specify the pause length (ms) and confirm your selection with a click on **OK**.

   The selected files are listed. The sequence of the files in the list corresponds to the sequence of the announcement and pause playback.

5.1.7 How to Add a Playback Option

Prerequisites

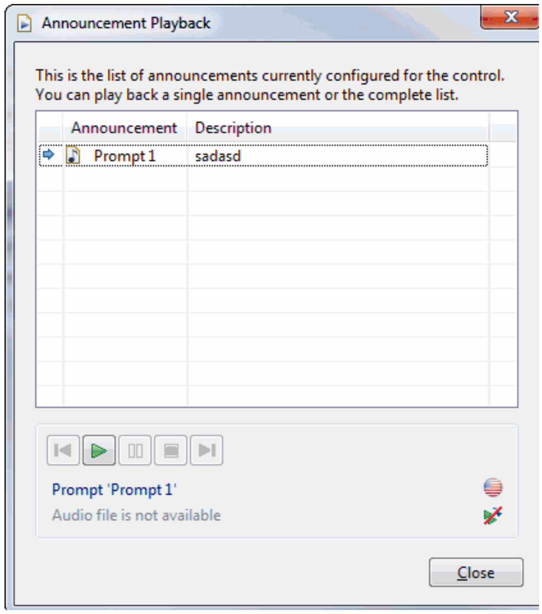
- The playback option is available for recorded prompts only. Prompts created by (TTS) are excluded from the function.

Step by Step

1) Select an element in the announcement list and click on

   A selection list with the options **Direct Playback** and **Custom Playback**... opens.

2) If you select the **Custom Playback...** option. The **Announcement Playback** dialog opens.



This dialog lists all configured announcements and variables of the DtmfSelection control.

Icon	Description
	You use these icons to control the playback of a selected announcement.
	With this icon you can **select the playback language**, if an announcement is available in several languages.
	This icon activates/deactivates the **continuous playback**.

3) A click on the **Close** button closes the **Announcement Playback** dialog.

4) If you select the **Direct Playback** option, a selected announcement is played directly.

5.1.8 Connection

Via connection a call is forwarded from one control to the next.

> ***NOTICE:*** You cannot set up connections between all kinds of controls; for example not between a Start control and an End control.

The color and the line type of a connection represent the call status:

Graphic Representation			Call Status		Meaning
Color	**Line Type**	**Stroke Width**			
Gray	Straight	Thick	Unknown		The last control before this connection is disconnected at the entry.
		Thin			
Green	Straight	Thick	Active	Accepted	Prompts can be played to the caller and inputs can be accepted from him/her. Call charging has been started.
		Thin			
	Dotted	Thick		Unaccepted	Prompts can be played to the caller and inputs can be accepted from him/her. Call charging has not been started yet.
		Thin			
Red	Straight	Thick	Inactive	Accepted	No prompts can be played to the caller and no inputs can be accepted from him/her. Call charging has been started.
		Thin			
	Dotted	Thick		Alerted	No prompts can be played to the caller and no inputs can be accepted from him/her. Call charging has not been started yet.
		Thin			

The thick stroke width of a connection indicates that the event which caused leaving the last control was desired. This is the case for example with a successful database query. However, if an undesired event caused leaving the last control (for example a failed database query), a thin stroke width is used for the connection. The stroke width is independent from the call status.

Positioning the mouse over a connection displays a tooltip providing information about the call status and about the event that lead to this connection.

Depending on the call status a connection may only lead to the entry of specific controls. If a non-permitted control is connected, an error is created and displayed in the control's tooltip and in the problem view. Controls that require an active call status at the entry have a green receiver icon top left in the graphic representation.

This graphic representation is also used within a Parallel Flow control. The call status behind the exit of a Parallel Flow control is determined by the connection of the highest priority that leads to the exit. There is the following priority list:

- Active and accepted (highest priority)
- Active and unaccepted
- Inactive and alerted
- Inactive and accepted
- Unknown (lowest priority)

5.1.8.1 How to Create a Connection

Prerequisites

- There must be at least two controls in the callflow.

Step by Step

1) Select **Connection** in the palette.

A plug-icon is attached to the mousepointer.

2) Click on the control the connection is to be started from and keep the mouse-button pressed. Now point the electric plug to the control to which you would like to create a connection.

For each connection the connection name is displayed, which is identical with the event name and the position of which (as closely as possible to the connection startpoint) is automatically defined.

If a control can have several outbound connections, a dialog opens in which you select the event to be used for the connection.

If allowed, a connection is set up between the two controls.

NOTICE: Connecting the Start and End control directly is not allowed.

Alternatively, you can directly draw a connection between controls by moving the mousepointer along the edge of a control. Three semitransparent handles appear on the edge and the mouse pointer becomes an electric plug. Click and keep the left mouse button pressed and drag the connection to the desired control. Release the left mouse button to establish the connection.

NOTICE: The number of connections is limited to those allowed by the control. When all possible connections have been set up, no further handles are displayed.

5.1.8.2 How to Edit a Connection

Step by Step

1) Choose **Select** in the palette.

2) Click the connection you wish to edit.

The connection name appears blue. The connection line receives diamonds and squares as handles.

3) Select the desired handle with the mousebutton kept pressed, drag the connection line to the desired position and release the button.

The new position of the connection line is maintained.

All relocations of the dots can be made undone. A connection can be straightened by selecting **Normalize Connection** in the connection's context menu.

5.1.8.3 Context Menu of a Connection

You open the context menu with a rightclick on the bent connection.

The context menu offers the following functions:

- **Undo**:
  Undoes the action or modification performed last.
- **Redo**
  Executes the action or modification performed last once again.
- **Normalize Connection**:
  Straightens the bent connection.

> ***NOTICE:*** The functions **Cut**, **Copy**, **Paste** and **Properties** are not available in the context menu for connections.

5.2 Callflow Link

The callflow link connects two callflows within an application. The callflow linking with an arbitrary, configured control of the other callflow serves as point of entry in the other callflow.

A subflow cannot have a callflow link.

5.2.1 How to Create a Callflow Link

Step by Step

1) Click on the **Callflow Link** in the palette, keep the left mousebutton pressed and drag the callflow link to the desired position. Release the mousebutton.

The callflow link position is maintained.

2) Double-click the callflow link with the left mousebutton.

The **Select Target Item** dialog opens.

3) Select the target item from another callflow to be linked.

4) Click on **OK**.

The specifications are copied.

5.2.2 Context Menu of the Callflow Link

You open the context menu with a rightclick on the callflow link.

The context menu offers the following functions:

- **Go to Target Item**:
  Opens the selected target item in the linked callflow.

- **Undo**:
  Undoes the action or modification performed last.
- **Redo**
  Executes the action or modification performed last once again.
- **Cut**
  The callflow link is cut out of its position and can be pasted in another position if required.
- **Copy**
  The callflow link is copied. You can paste a duplicate in another position.
- **Paste**
  Inserts the callflow link copied or cut last.
- **Delete**
  Deletes the selected callflow link permanently.
- **Set Target Item**:
  Select the target item from another callflow.

NOTICE: The **Properties** function is not available in the context menu.

5.3 Sticky Note

With a sticky note you can add comments to a callflow.

NOTICE: A sticky note does not affect the callflow functionality and process in any way.

5.3.1 How to Create a Sticky Note

Step by Step

1) Click on **Sticky Note** in the palette, keep the left mousebutton pressed and drag the sticky note in the callflow to the desired position. Release the mouse-button.

The position of the sticky note is maintained.

2) Doubleclick the sticky note with the left mousebutton for changing the text of the sticky note and enter the text.

3) Click in a free area of the callflow to conclude the process.

The text of the sticky note is copied.

5.3.2 How to Link a Sticky Note to a Control

You can link a sticky note to a control to point out the information's association.

Prerequisites

- There must be a control to be linked up with the sticky note.

Step by Step

1) Create a sticky note as described under *How to Create a Sticky Note*.

2) Select **Connection** in the palette.

A plug-icon is attached to the mousepointer.

3) Click on the sticky note from which you wish to create a link and then on the control.

A link is set up. The link is highlighted by color to separate the sticky note link from the control connections.

5.3.3 Context Menu of a Sticky Note

You open the context menu with a rightclick on the sticky note.

The context menu offers the following functions:

- **Undo**:
  Undoes the action or modification performed last.
- **Redo**
  Executes the action or modification performed last once again.
- **Cut**
  The sticky note is cut out of its position and can be pasted in another position if required.
- **Copy**
  The note is copied. You can paste a duplicate in another position.
- **Paste**
  Pastes the sticky note copied or cut last.
- **Delete**
  Deletes the selected sticky note permanently.
- **Edit Note**:
  You can edit the text of the sticky note.

NOTICE: The **Properties** function is not available in the context menu.

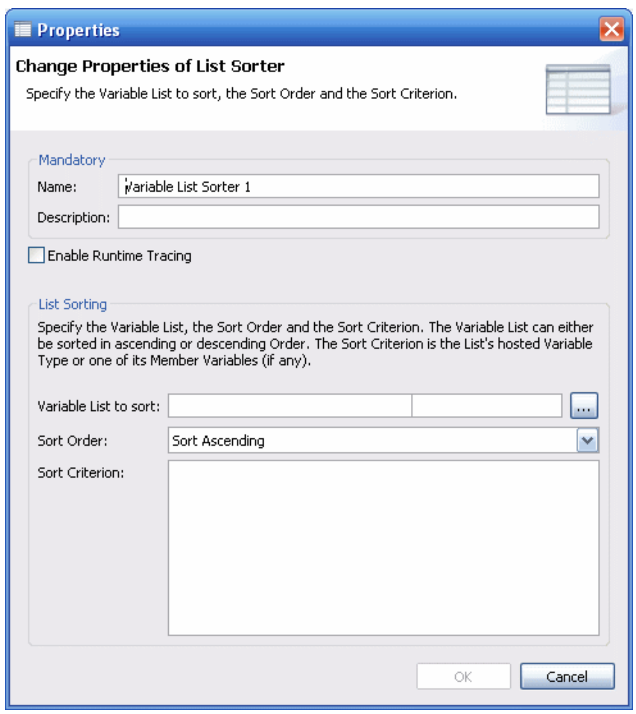
5.4 List Group

This group contains the list controls. They serve for modifying variable lists. A list control is partly handled like a normal control.

The extract from the palette view shows which elements are part of this group.

5.4.1 List Sorter Control

The List Sorter controls contains the **Properties** view.



Properties view

In the **Properties** view of the control you can perform the following settings. See section *General Information about Controls*.

Under **List Sorting** you specify the variable list to be sorted, the sort order and the sort criterion. The sort criterion is the variable type of the list or one of its sub-variables. For configuration proceed as follows:

1. Specify the **Variable List to sort**. Use the **...** button to select the corresponding variable and click on **OK**.
2. Select the **Sort Order**:

- Sort Ascending
- Sort Descending

3. Select a **Sort Criterion** by which the variable list shall be sorted.
   If the variable you selected is of the type date list, you can choose between the variable date and the member variables year, month or day.
4. Click on **OK**.
   The configurations are saved.

5.4.2 List Iterator Control

A List Iterator control serves for running through a variable list step by step and to execute actions programmed in a subflow for each of the variables.

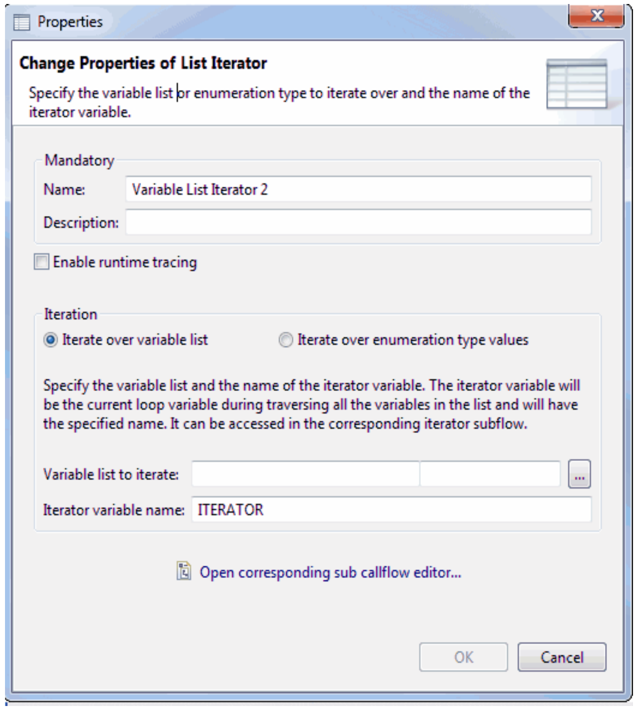
When you add a List Iterator control to a callflow, the name of this control is automatically displayed in the workspace in one of the following places:

- **<application name>** > **application callflows**> **<callflow name>**
- **Symvia Control Compositions** > **<composition name>** > **<composition callflows>** > **<callflow name>**

An iterator is assigned to exactly one subflow and a subflow is assigned to exactly one iterator.

NOTICE: In the example application AutomaticSurvey, the List Iterator control is available in the `Samples\Applications` subfolder of the Application Builder's installation folder (not in the workspace directory). This application is shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide this application.

The List Iterator control contains the **Properties** view.



Properties view

In the **Properties** view of the control you can perform the following settings. See section *General Information about Controls*.

The name of the Listen Iterator control is identical with the name of the assigned subflow. A click on the Listen Iterator control in the callflow opens the configuration dialog of the control. In contrast, a click on the entry of the same name in the workspace opens the assigned subflow.

Under **List Iteration** you specify the variable list and the name of the Iterator variable. The Iterator variable is the loop variable during traversing all list elements. For configuration proceed as follows:

1. Specify the **Variable List to iterate**. Use the **...** button to select the corresponding variable and click on **OK**.

   NOTICE: You can access the Iterator variable in the subflow. You open the subflow via the **Open corresponding Sub Callflow Editor** link or by double-clicking the subflow name in the workspace. You find further information in the *Subflow* section.

2. Enter an Iterator variable name.
3. Click on **OK**.
   The configuration has been saved.

5.4.2.1 Subflow

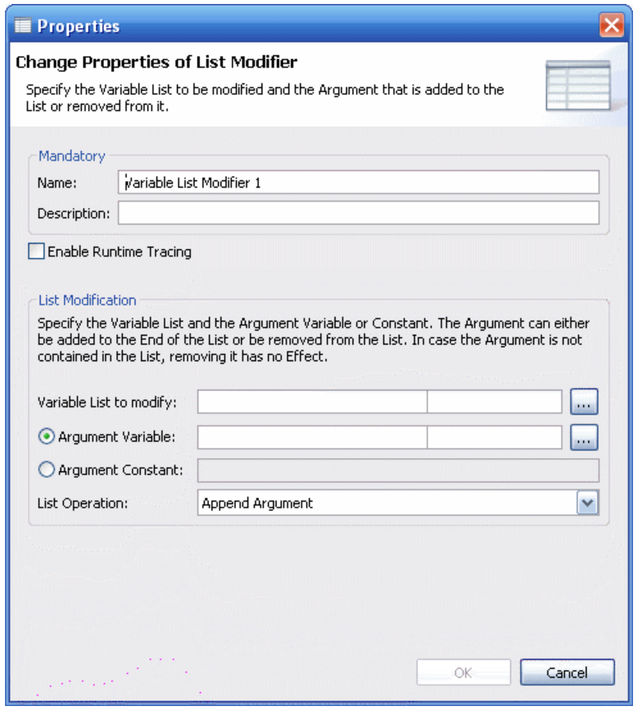
When a List Iterator control is created or deleted, a subflow assigned to this List Iterator control is automatically created or deleted also. A List Iterator control serves for running through a variable list step by step and to execute actions programmed in the associated subflow for each of these variables.

A subflow differs from the a normal callflow in the following points:

- A List Iterator control is assigned to exactly one subflow and a subflow is assigned to exactly one List Iterator control.
- The name of the List Iterator control is identical with the name of the subflow.
- When you add a List Iterator control to a callflow, the name of the subflow is automatically displayed in the workspace in one of the following places:
  - **<application name>** > **application callflows**> **<callflow name>**
  - **Symvia Control Compositions** > **<composition name>** > **<composition callflows>** > **<callflow name>**
- There are the following two options to open a subflow:
  - In the configuration dialog of the associated List Iterator control with a click on the **Open corresponding Sub Callflow Editor** link.
  - With a double-click on the name on the subflow in the workspace.
- A subflow cannot have a Start control and callflow link.
- The following controls can only be used in a subflow:
  - **Subflow Entry**
  - **Subflow Exit**
  - **Subflow Loop**
- Each subflow starts mandatorily with a Subflow Entry control connected to a Subflow Loop control.

5.4.3 List Modifier Control

The List Modifier view contains the **Properties** view.



Properties view

In the **Properties** view of the control you can perform the following settings. See section *General Information about Controls*.

Under **List Modification** you specify the variable list and the argument variable or constant. You can either add the argument to the end of the list or remove it from the list. For configuration proceed as follows:

1. Specify the **Variable List to modify**. Use the **...** button to select the corresponding variable and click on **OK**.
2. Select whether to specify an **Argument Variable** or an **Argument Constant** by placing a tick in the appropriate checkbox.
3. Select the **List Operation**:
   - Append Argument
   - Remove Argument
4. Click on **OK**.
   The configuration has been saved.

5.4.4 String Operator Control

With the String Operator control you can apply the following operations to a variable of type String:

- Initialize string
- Insert string
- Delete substring

- Copy substring
- Append string
- Remove blank from string
- Convert string to capital letters
- Convert string to small letters
- Split string in substring using a regular expression
- Replace substring using a regular expression
- Split string in substrings using separators
- Reverse string
- Determine string length
- Search string forward for substring
- Search string backward for substring

You need a result variable for each operation. Depending on the operation, you also require a source variable and/or parameters (strings, format specifications or a regular expression).

5.4.4.1 How to Initialize a String

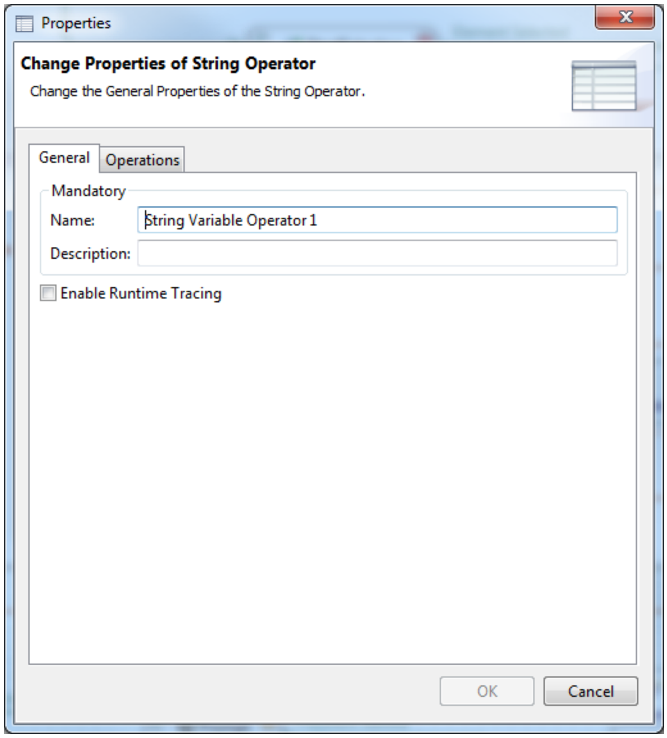
This section describes how to fill a string variable with text.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

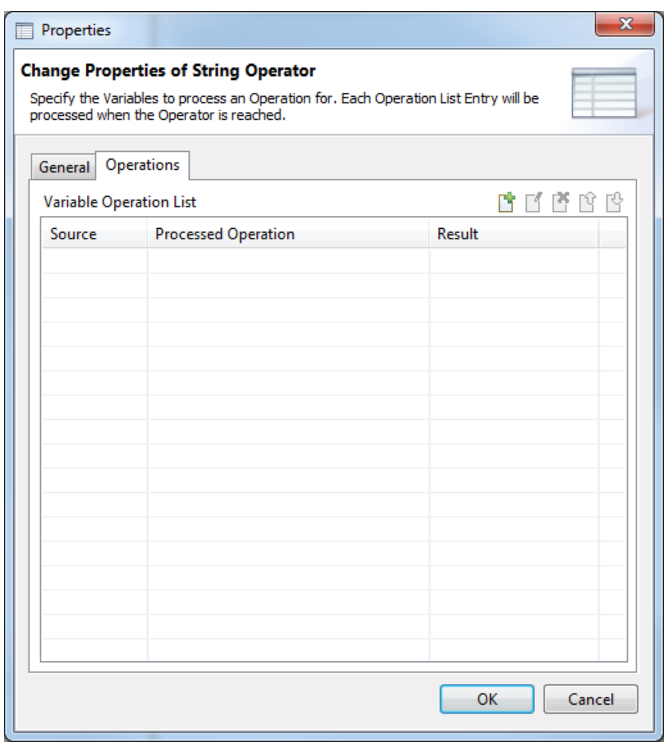
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Initialize String`.

5) If needed, enter a value in the **Description** field.

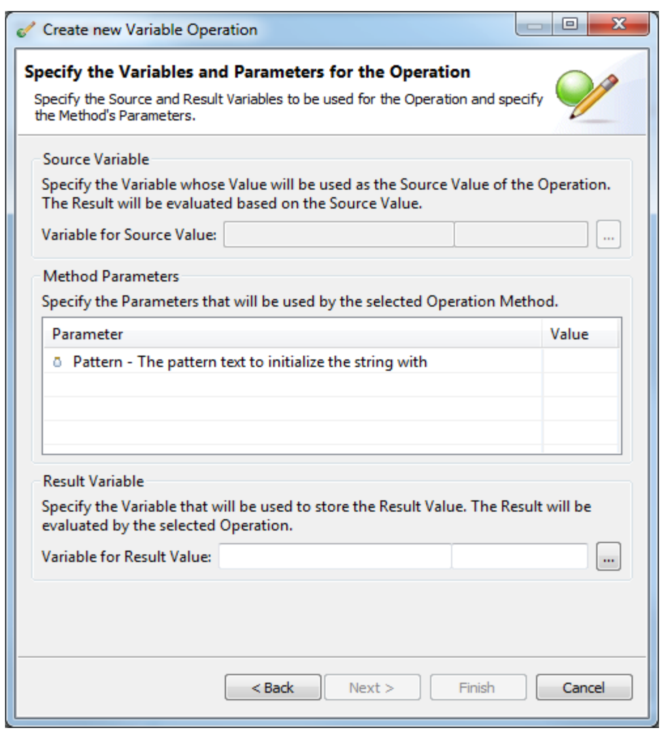
6) Click on the **Operations** tab.



7) Click on the icon.

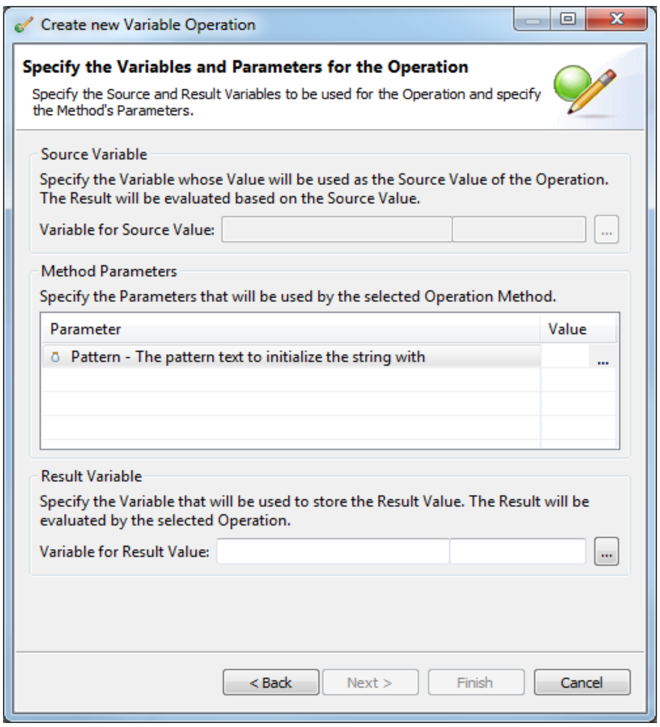
8) Select value **Initialize [String < - String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

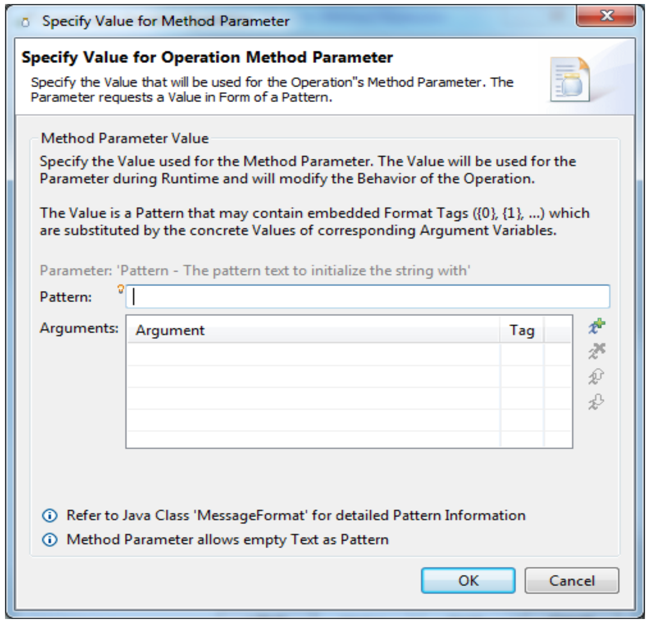


10) In the **Method Parameters** section, click in the first row of the **Value** column. A button with the ellipsis appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.



11) Click on this button.



12) Enter the text to be used for initializing the string in the **Pattern** field. If you wish to enter variable values in this field indirectly, click on the icon, select the variable the value of which you wish to use and click on **OK**. The selected variable is displayed in the **Arguments** field. The **Tag** column displays the format tag that corresponds to the variable, for example `{0}`. If you wish to remove a variable from the **Arguments** field, click on the icon. You can change the variable - format tag assignment using the icons and . Place the format tags in the subject line in positions where the corresponding variable values are required. When you click in the **Pattern** field and push the hotkey CTRL + space bar, a selection of format tags is provided. Click on the appropriate format tag and push the enter key.

Example of a pattern with format tags:

`Project Status: {0}, Project Target Date: {1}`

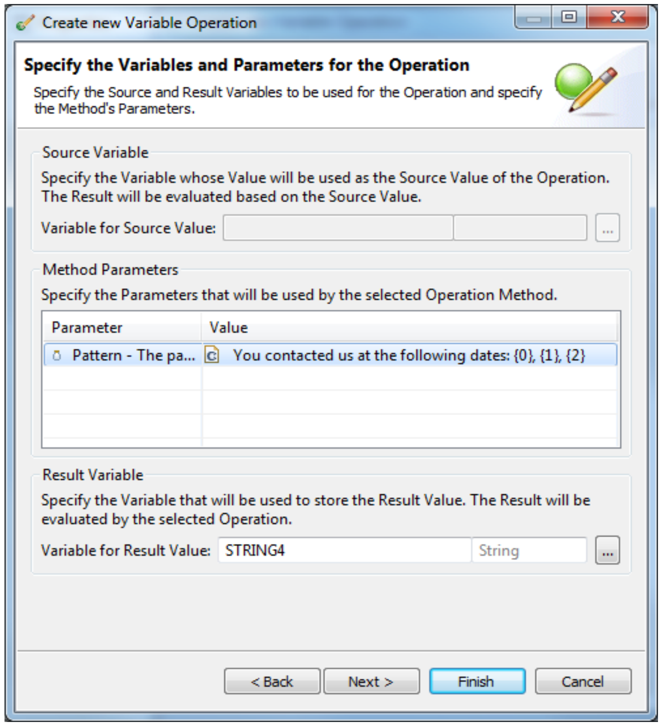
INFO: The description of the Java class MessageFormat provides further information about format tags; see for example `docs.oracle.com/javase/6/docs/api/java/text/MessageFormat.html`. This page also describes the use of the number, date, time and choice format types as well as of the short, medium, long, full, integer, currency, percent and Subfor-matPattern format styles.

Example of a pattern with two format types and one format style:

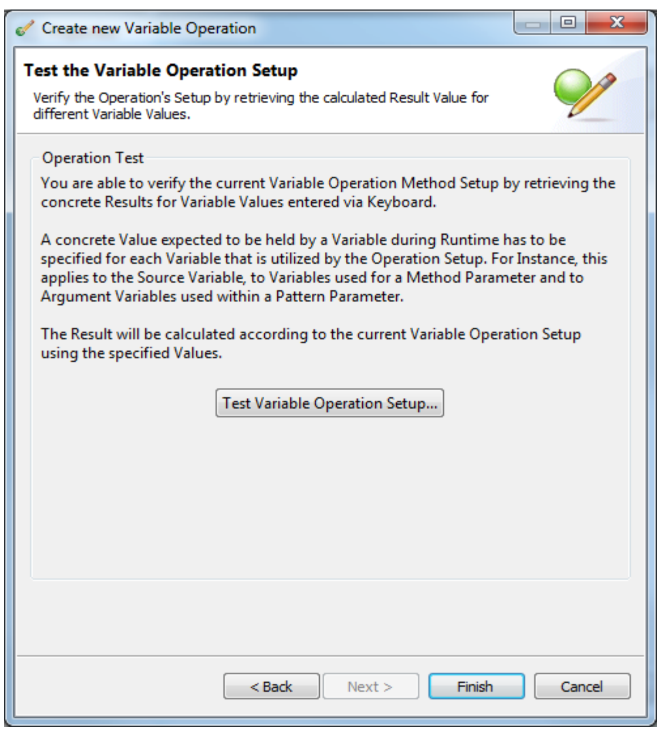
Project Status: {0,number,percent}, Project target date: {1,date}

13) Click on the **OK** button.

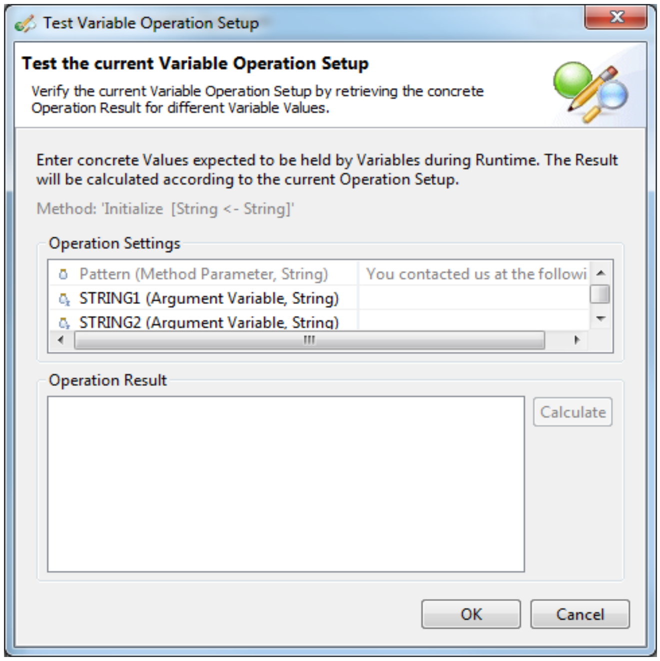
14) In the **Result Variable** section, click on the ... button, select the string variable to store the result of the string initialization and click on **OK**.



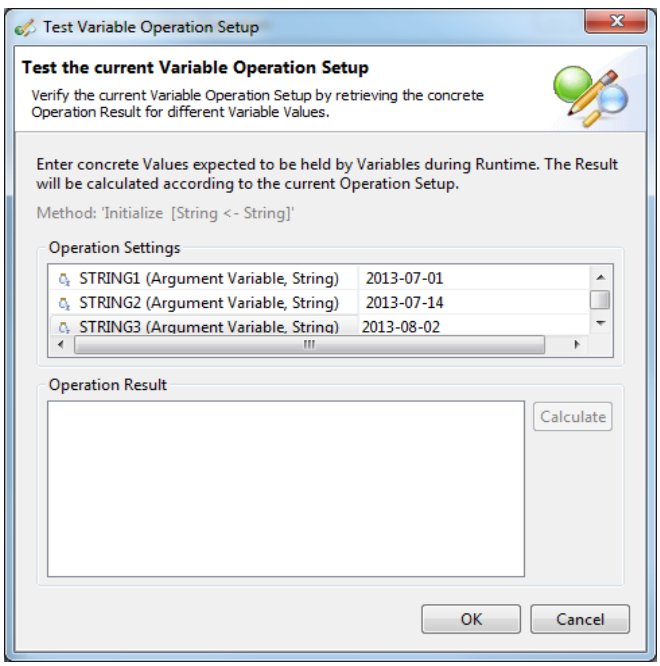
15) If you wish to test the string initialization, click on **Next**.



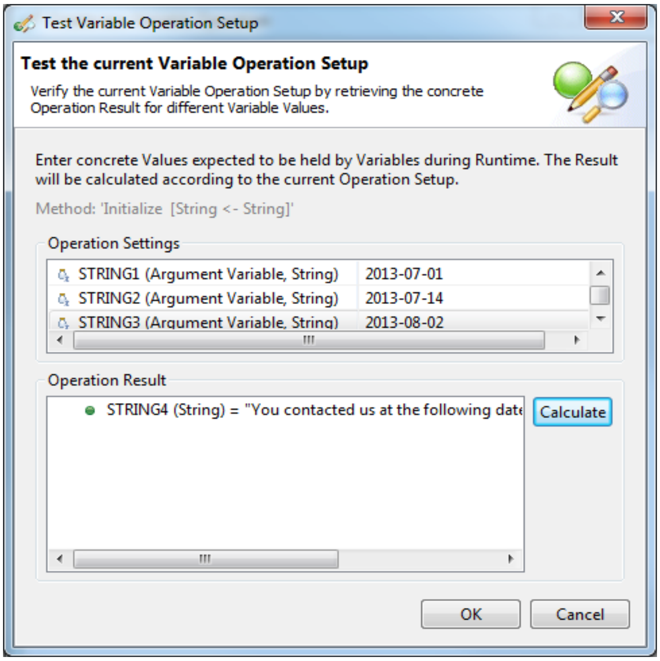
16) Click on **Test Variable Operation Setup...**.

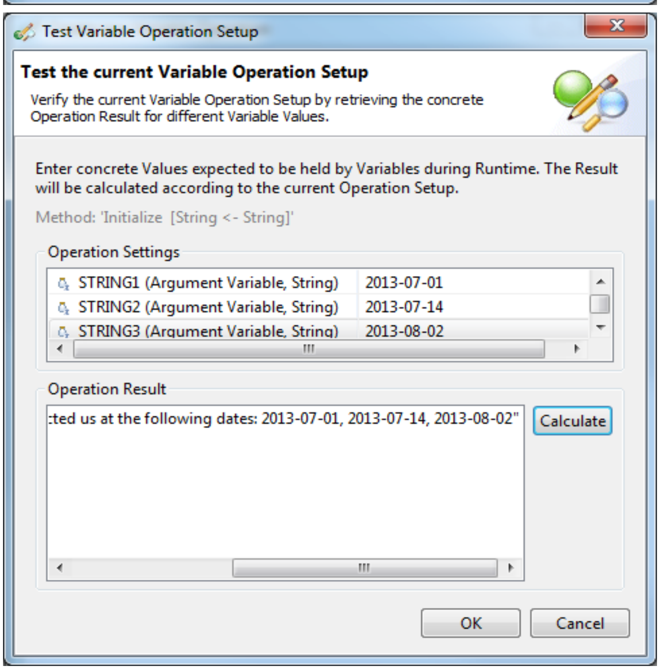


17) Enter the test values in the right column of the **Operation Settings** field.



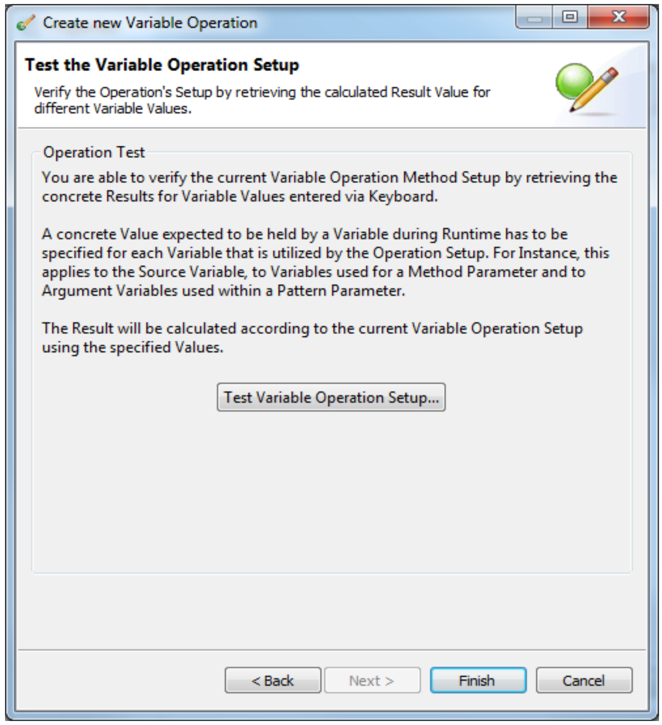
18) Click on **Calculate**.



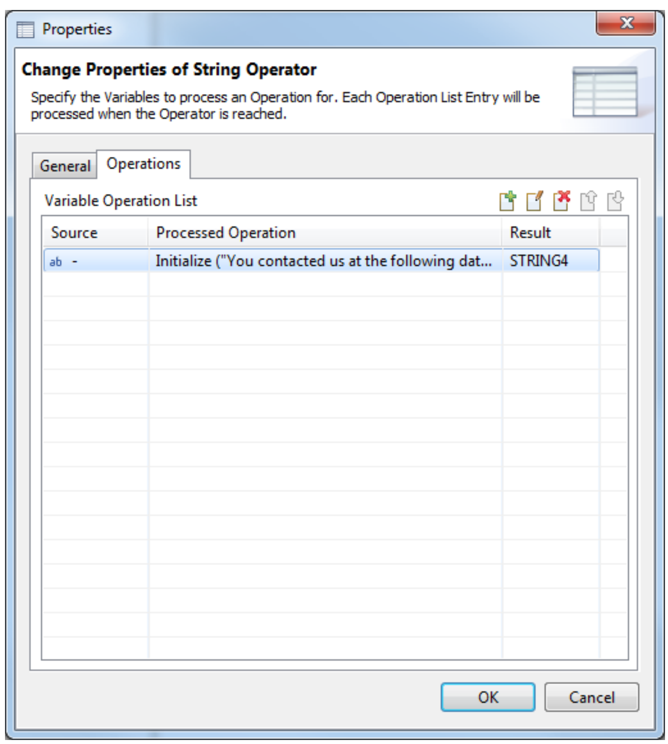


The **Operation Result** field shows the result.

19) Click on **OK**.



20) Click on **Finish**.



21) Click on **OK**.

5.4.4.2 How to Insert a Substring

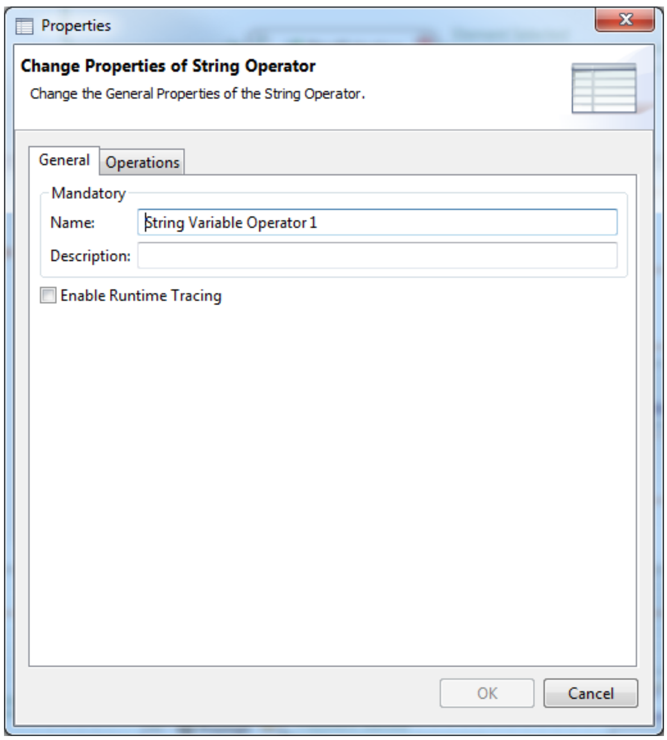
This section describes how to insert text in a specific position in a string variable.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

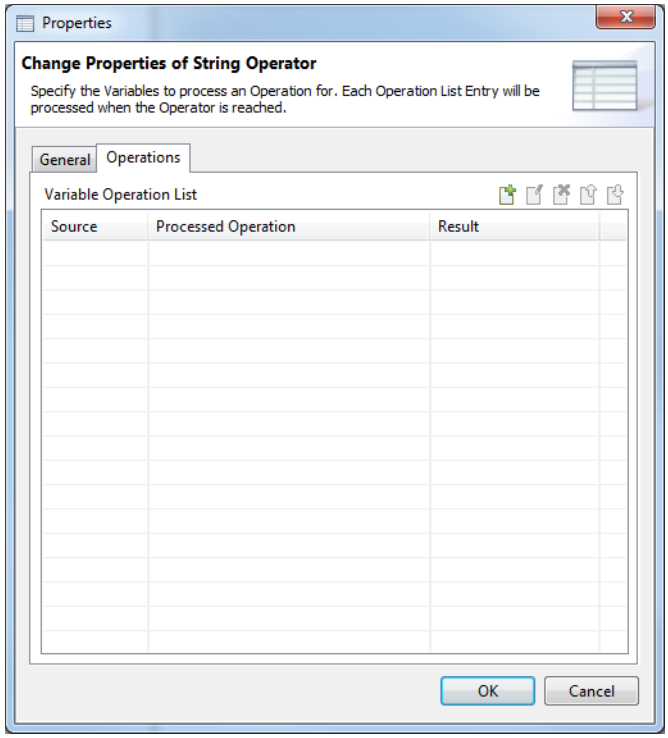
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Insert Substring`.

5) If needed, enter a value in the **Description** field.

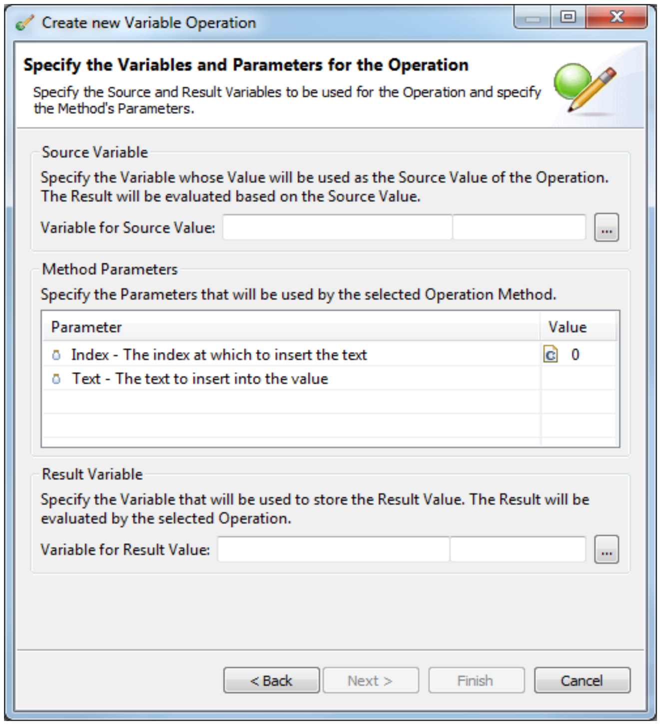
6) Click on the **Operations** tab.



7) Click on the icon.

8) Select value **Insert [String < - Integer, String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

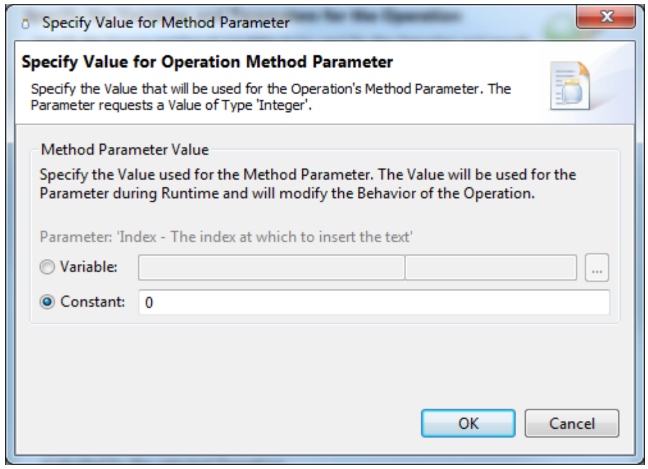


10) In the **Source Variable** section, click on the button, select the string variable the value of which you wish to use as starting point for adding a substring and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The button appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

12) Click on this button.



13) If you wish to use a variable value for the position in which the substring shall be inserted, click on the ... button, select a variable and click on **OK**.

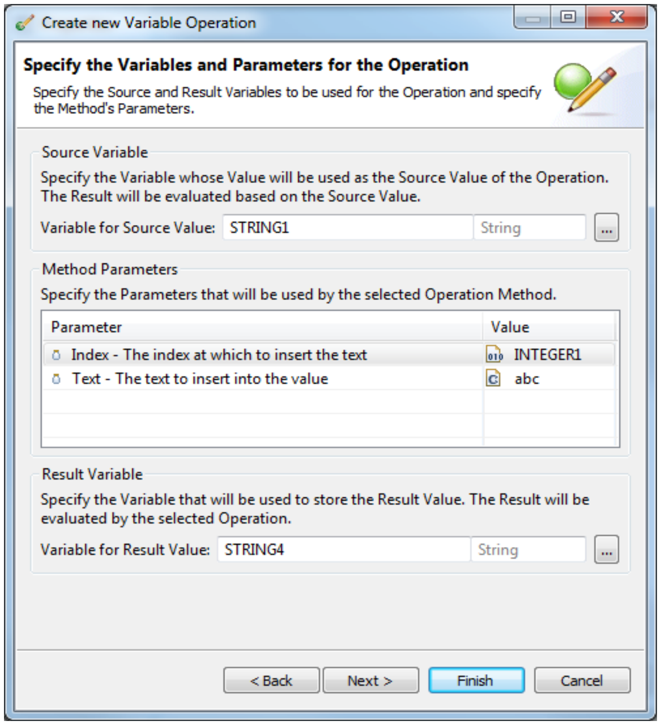
If, in contrast, you wish to use a permanent numerical value, activate the **Constant** radio button and enter the value. The position must be greater than/ equal to 0 and smaller than/equal to the string length.

> ***INFO:*** If the position is identical with the string length, the substring is attached to the string. In this case you can use the variable operation method **Append [String < - String]** instead of **Insert [String < - Integer, String]**.

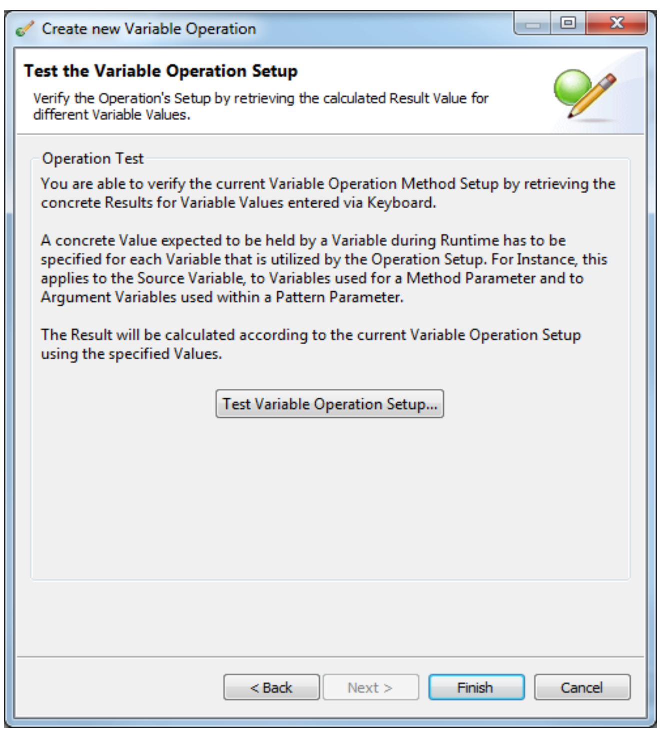
14) Click on **OK**.

15) Proceed analog for the text to be inserted.

16) In the **Result Variable** section, click on the ... button, select the string variable to store the result of the text insertion and click on **OK**.



17) If you wish to test the text insertion, click on **Next**.



18) Click on **Test Variable Operation Setup...**.

19) Enter the test values in the right column of the **Operation Settings** field.

20) Click on **Calculate**.

The **Operation Result** field shows the result.

21) Click on **OK**.

22) Click on **Finish**.

23) Click on **OK**.

5.4.4.3 How to Remove a Substring

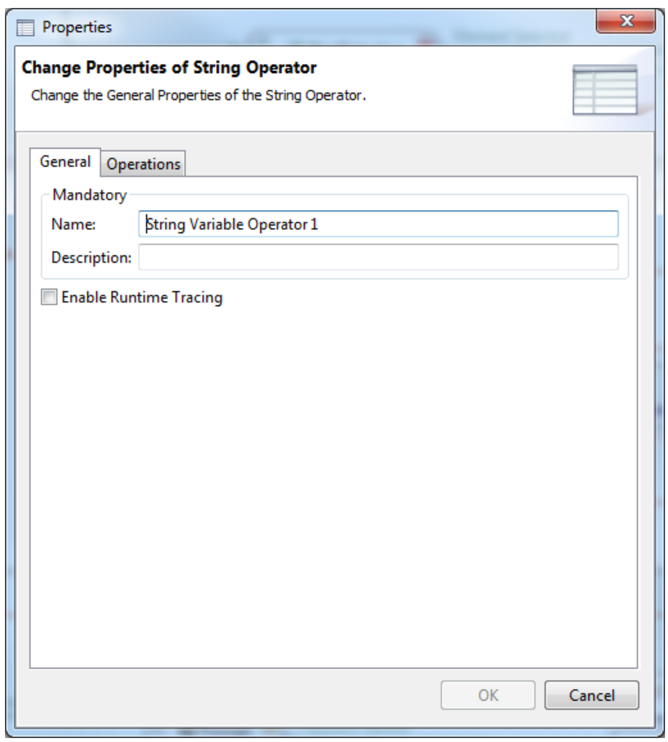
This section describes how to remove a substring from the value of a string variable.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

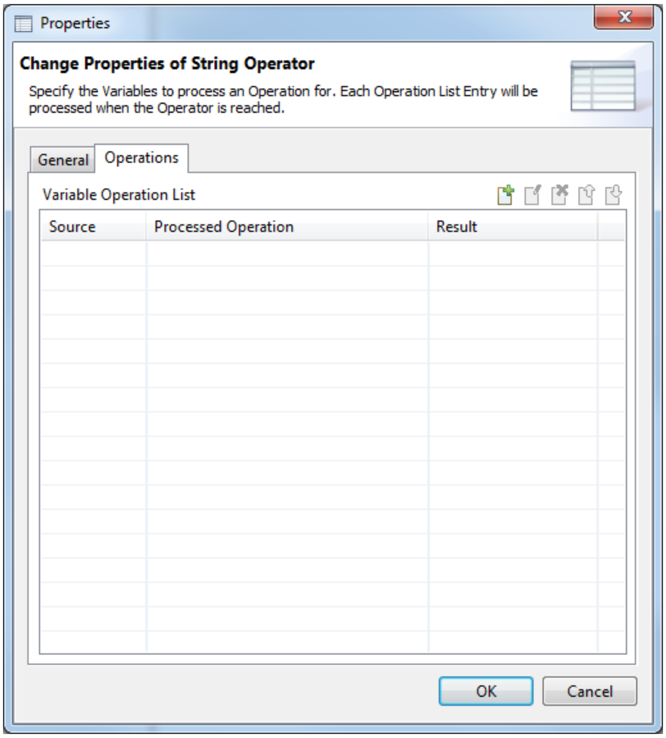
3) Double-click this control.



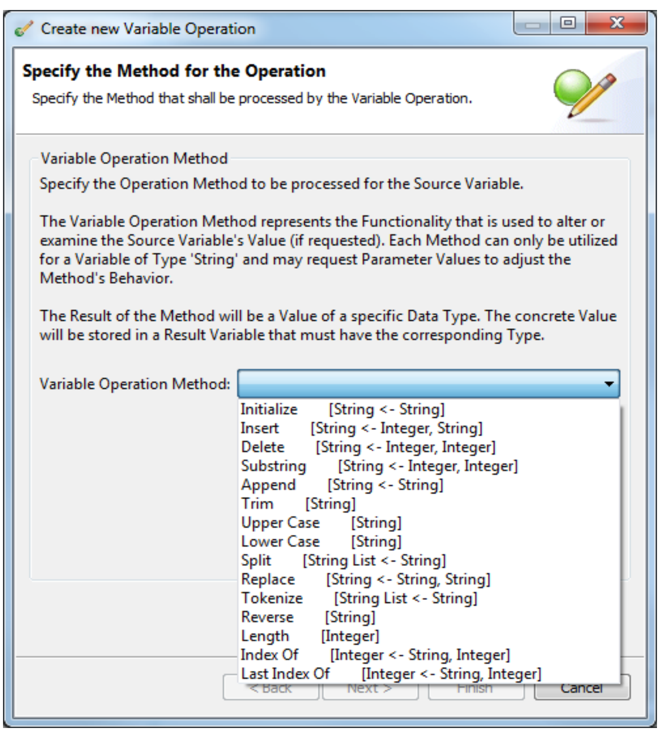
4) If required, change the value in the **Name** field, for example to `Remove Substring`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

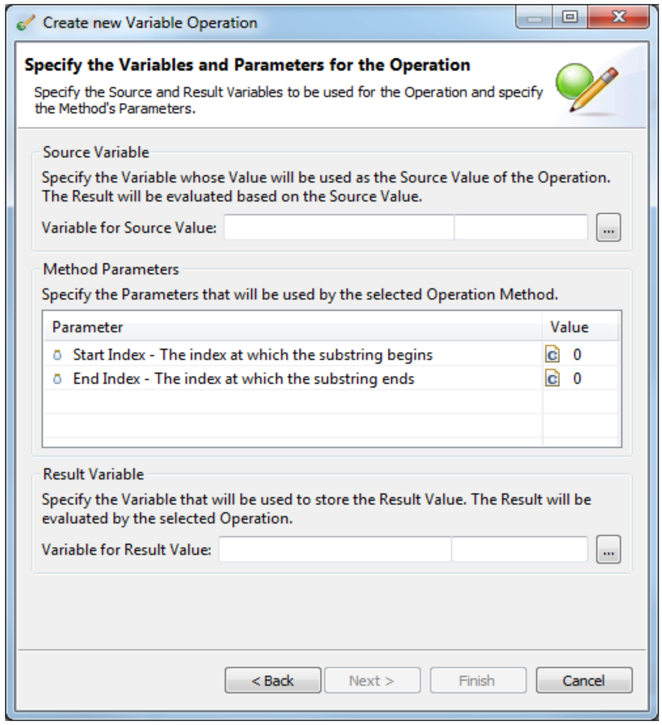


7) Click on the icon.



8) Select value **Delete [String < - Integer, Integer]** in the **Variable Operation Method** combo box.

9) Click on **Next**.



10) In the **Source Variable** section, click on the ... button, select the string variable the value of which you wish to use as starting point for removing a substring and click on **OK**.

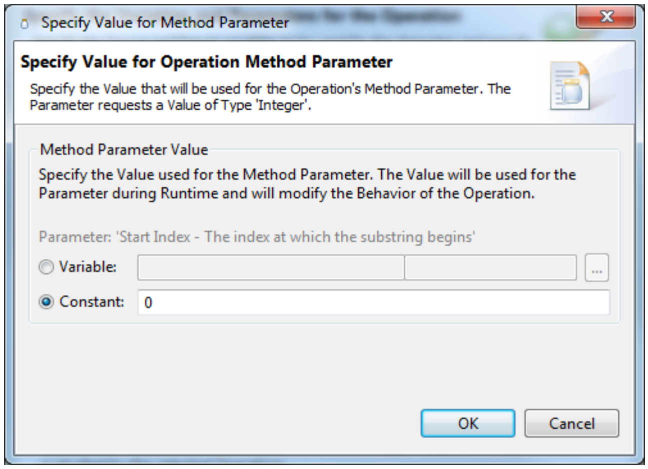
11) In the **Method Parameters** section, click in the first row of the **Value** column. The ... button appears.

INFO: This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

12) Click on this button.



13) If you wish to use a variable value for the position where the substring to be removed begins, click on the [...] button, select a variable and click on **OK**.

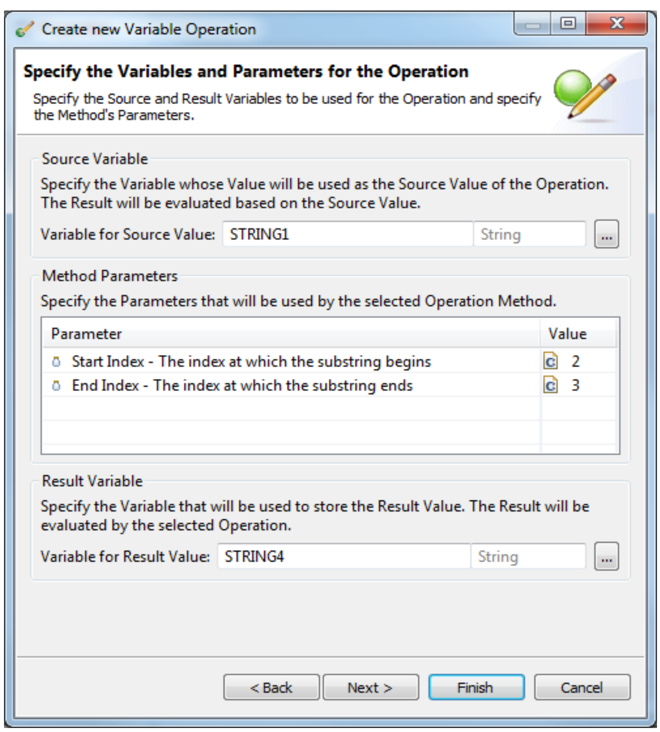
If, in contrast, you wish to use a permanent numerical value, activate the **Constant** radio button and enter the value.

The position must be greater than/equal to 0 and smaller than the string length.

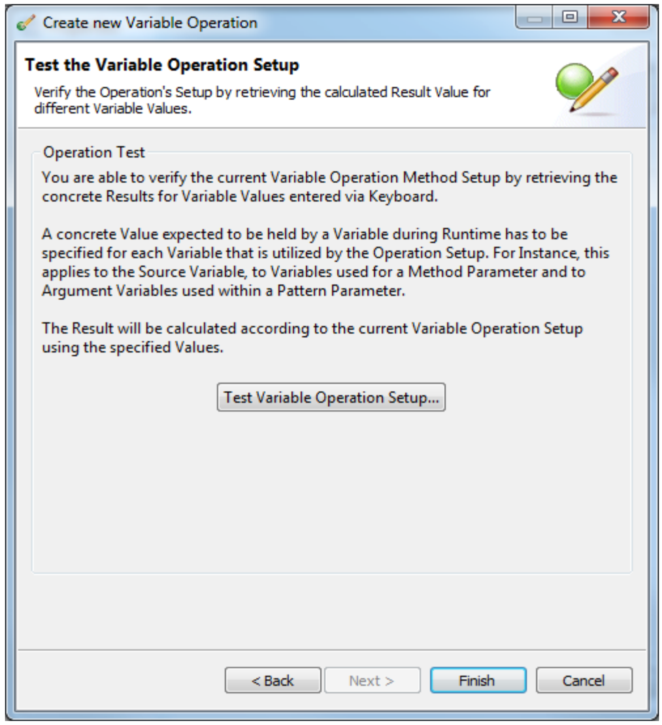
14) Click on **OK**.

15) Proceed analog for the end position of the test to be removed. The end position must be greater than 0 and smaller than/equal to the string length.

16) In the **Result Variable** section, click on the [...] button, select the string variable to store the remaining string after the text has been deleted and click on **OK**.

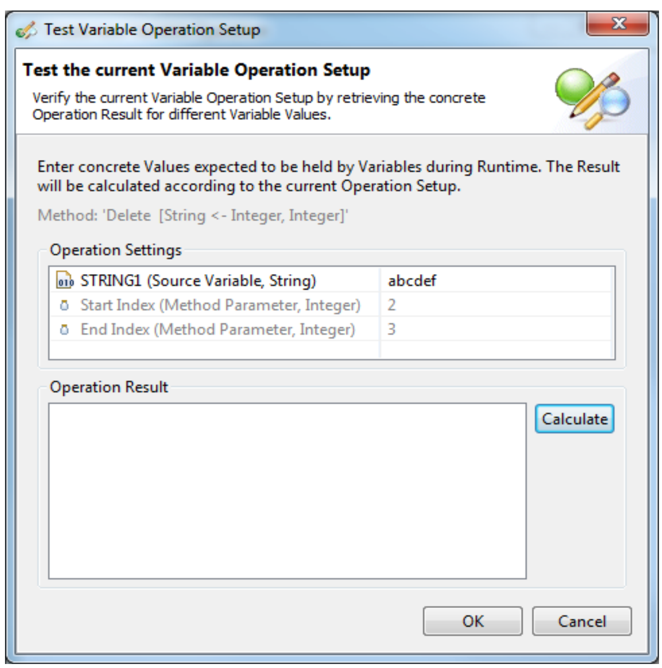


17) If you wish to test the text deletion, click on **Next**.

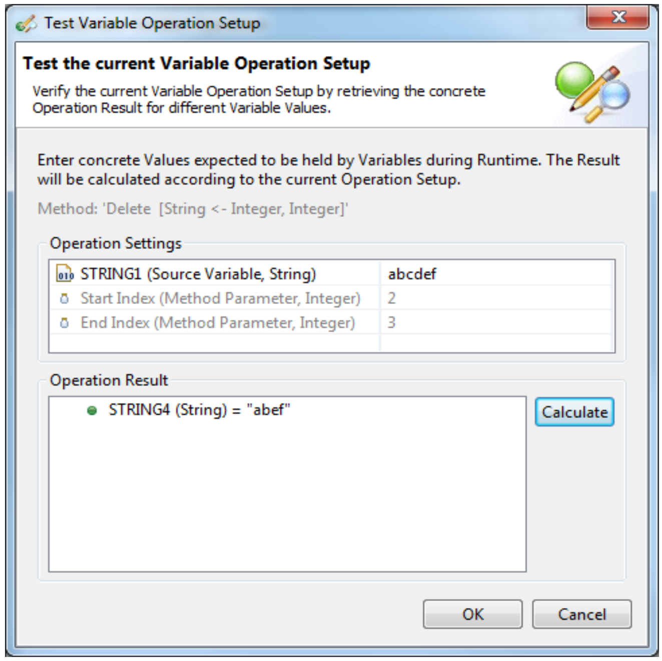


18) Click on **Test Variable Operation Setup...**.

19) Enter the test values in the right column of the **Operation Settings** field.



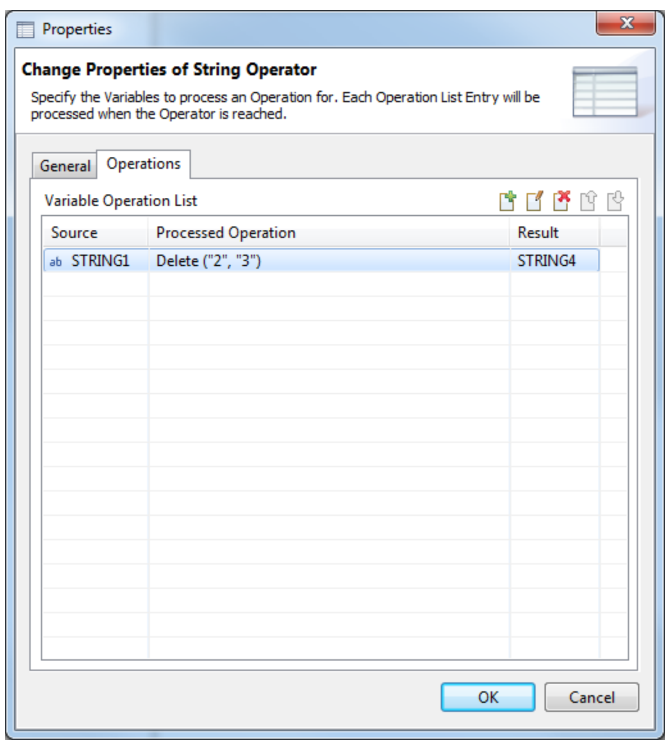
20) Click on **Calculate**.



The **Operation Result** field shows the result.

21) Click on **OK**.

22) Click on **Finish**.



23) Click on **OK**.

5.4.4.4 How to Copy a Substring

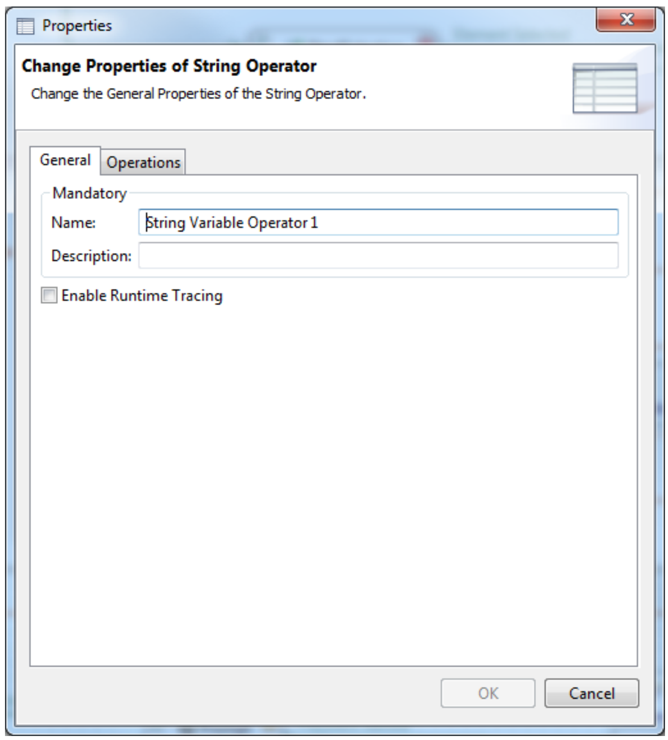
This section describes how to copy a substring from the value of a string variable.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

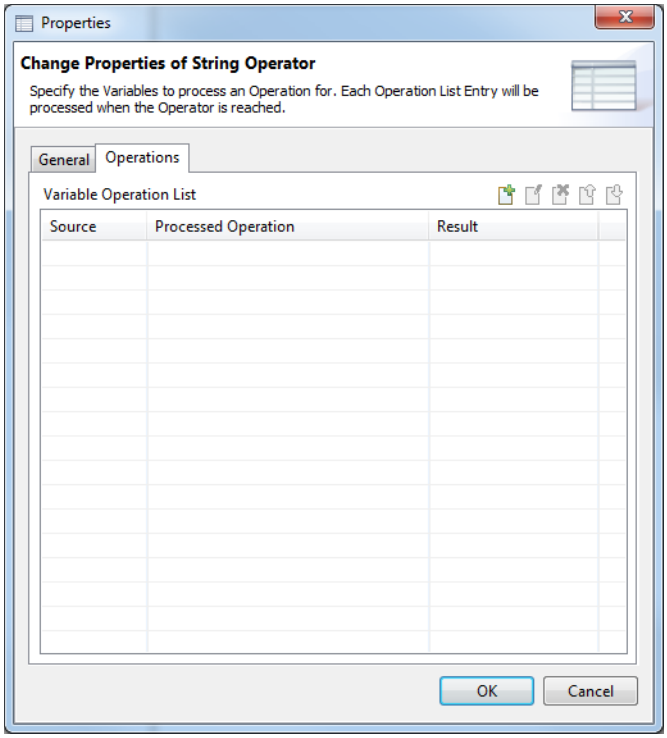
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Copy Substring`.

5) If needed, enter a value in the **Description** field.

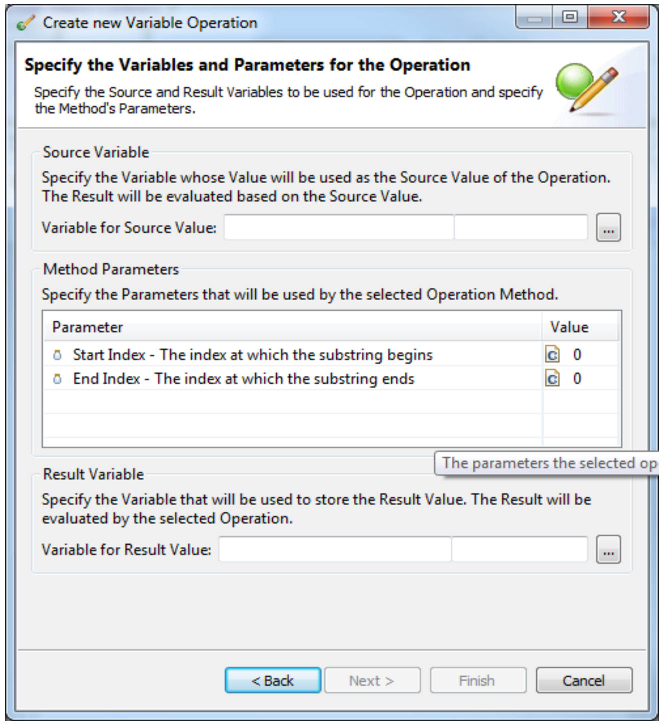
6) Click on the **Operations** tab.



7) Click on the icon.

8) Select value **Substring [String < - Integer, Integer]** in the **Variable Operation Method** combo box.

9) Click on **Next**.

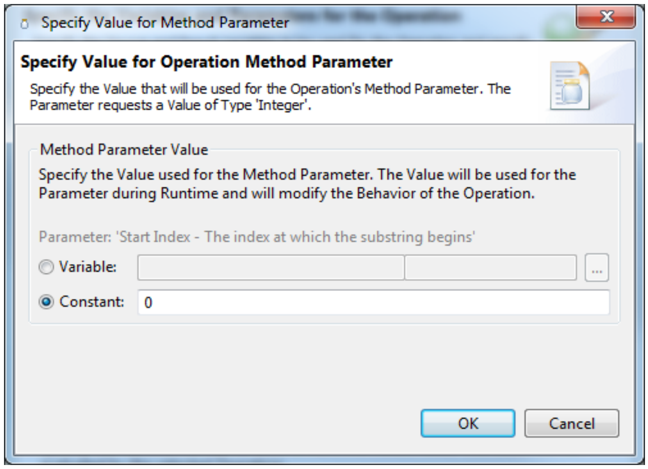


10) In the **Source Variable** section, click on the button, select the string variable the value of which you wish to use as starting point for copying a substring and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The button appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

12) Click on this button.



13) If you wish to use a variable value for the position where the substring to be removed begins, click on the ... button, select a variable and click on **OK**.

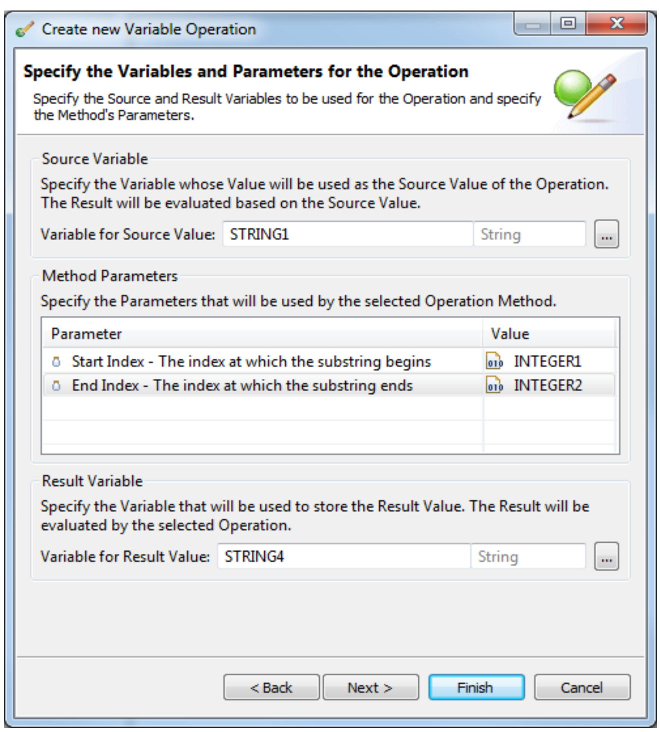
If, in contrast, you wish to use a permanent numerical value, activate the **Constant** radio button and enter the value.

The position must be greater than/equal to 0 and smaller than the string length.

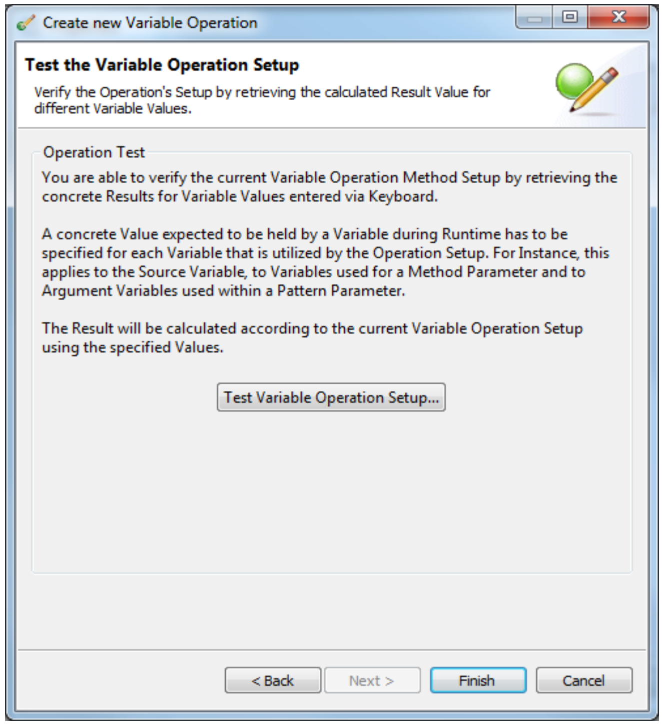
14) Click on **OK**.

15) Proceed analog for the end position of the test to be removed. The end position must be greater than 0 and smaller than/equal to the string length.

16) In the **Result Variable** section, click on the ... button, select the string variable to store the substring to be copied and click on **OK**.

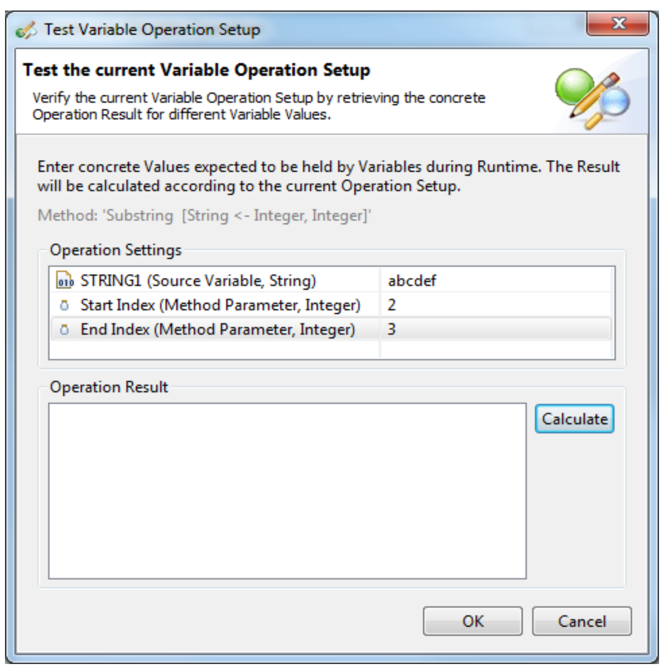


17) If you wish to test the text copying, click on **Next**.

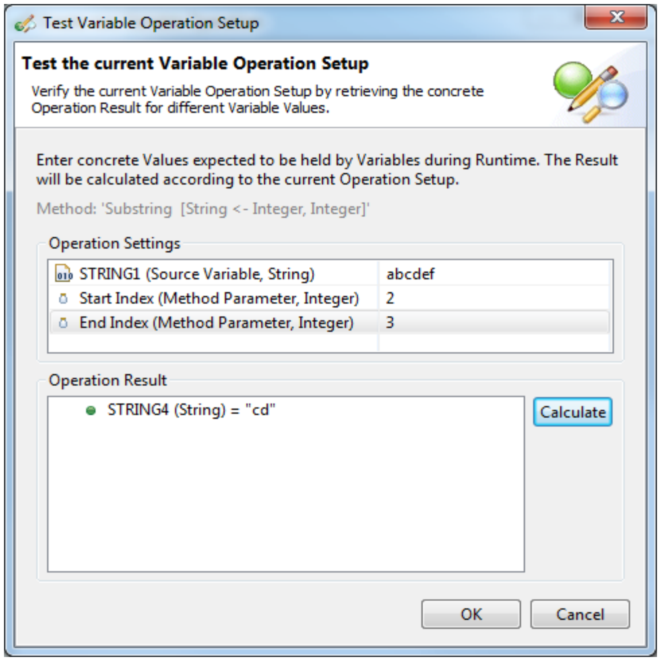


18) Click on **Test Variable Operation Setup...**.

19) Enter the test values in the right column of the **Operation Settings** field.



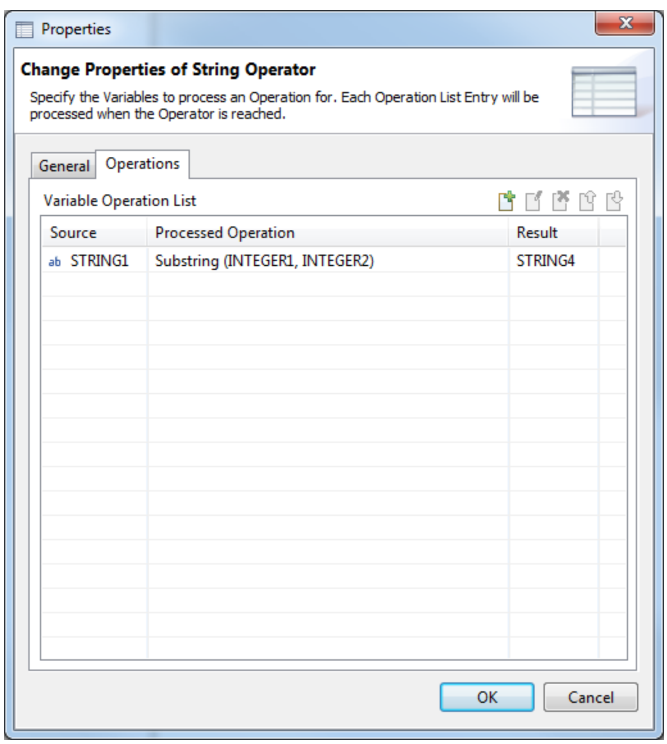
20) Click on **Calculate**.



The **Operation Result** field shows the result.

21) Click on **OK**.

22) Click on **Finish**.



23) Click on **OK**.

5.4.4.5 How to Append a String

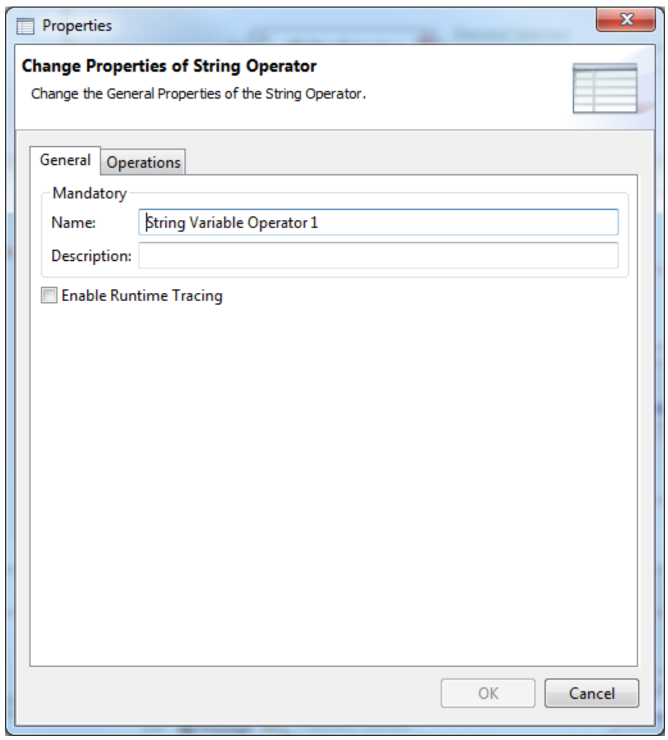
This section describes how to append a string to another string.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

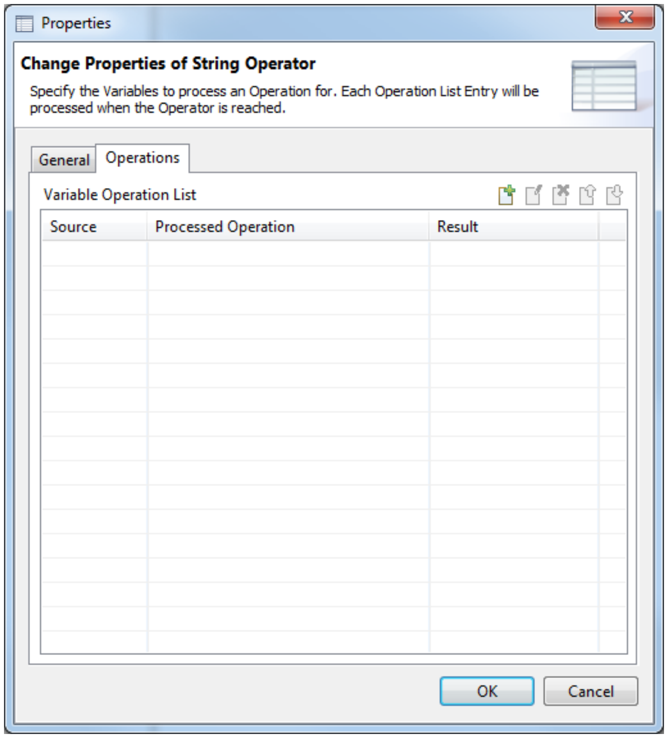
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Append String`.

5) If needed, enter a value in the **Description** field.

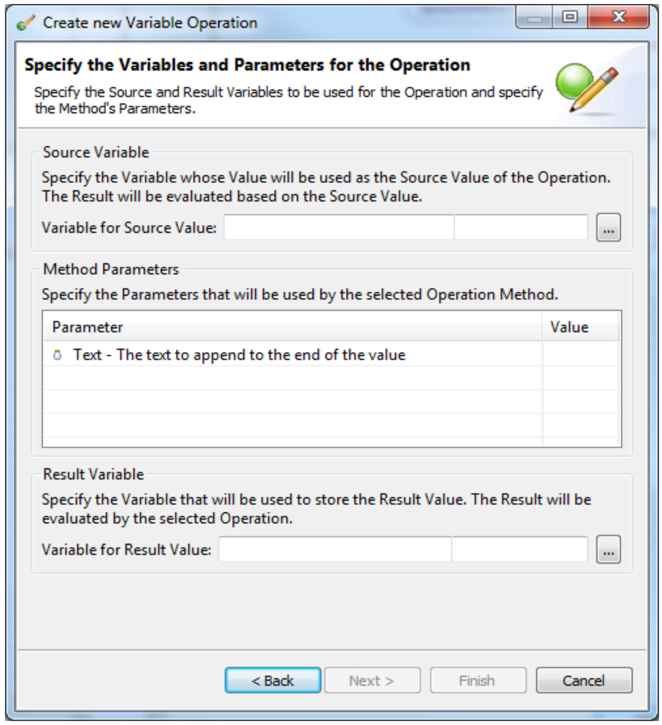
6) Click on the **Operations** tab.



7) Click on the icon.

8) Select value **Append [String < - String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

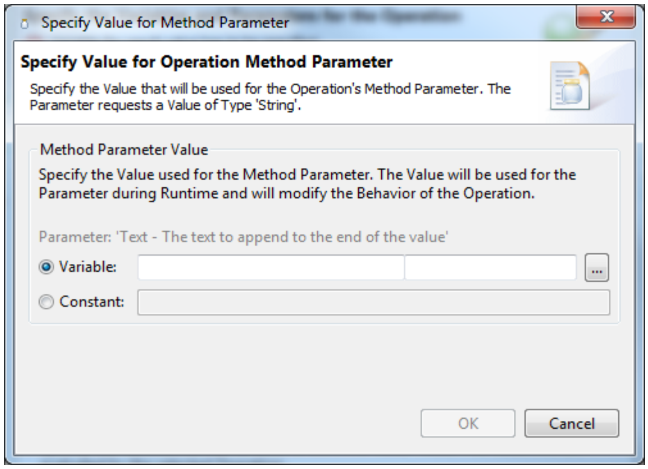


10) In the **Source Variable** section, click on the ... button, select the string variable the value of which you wish to use as starting point for appending a string and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The ... button appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

12) Click on this button.

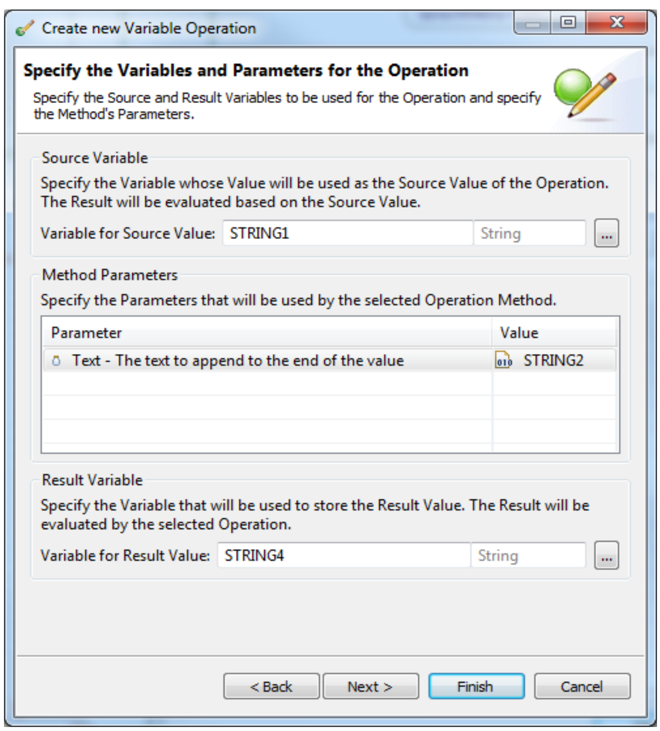


13) If you wish to use a variable value for the string to be appended, click on the ... button, select a variable and click on **OK**.

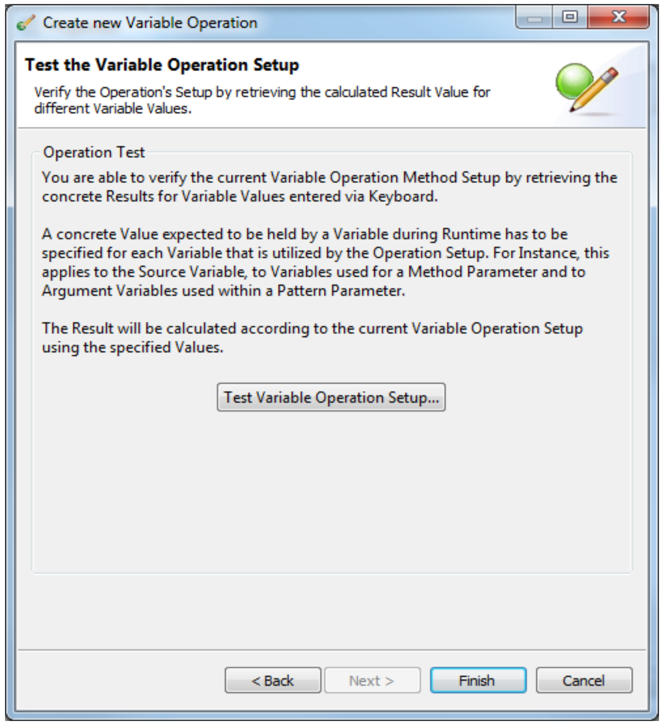
If, in contrast, you wish to use a constant, activate the **Constant** radio button and enter the value.

14) Click on **OK**.

15) In the **Result Variable** section, click on the ... button, select the string variable to store the original string with the appended string and click on **OK**.

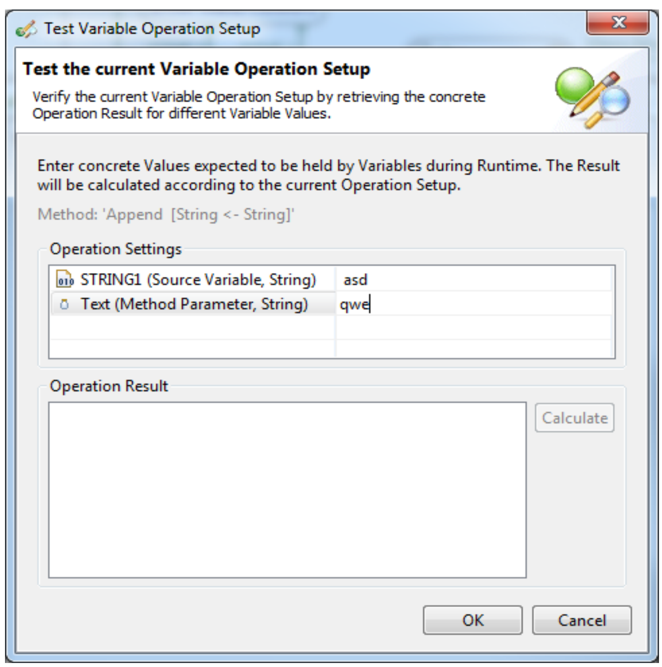


16) If you wish to test the string attachment, click on **Next**.

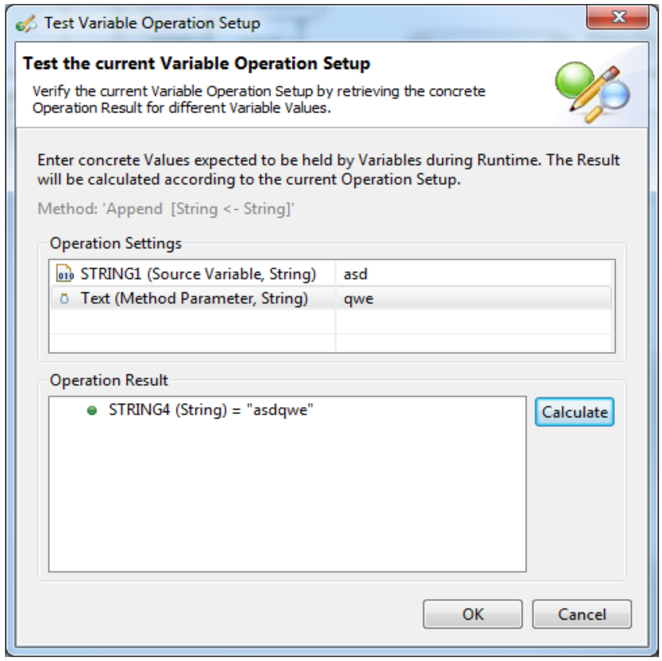


17) Click on **Test Variable Operation Setup...**.

18) Enter the test values in the right column of the **Operation Settings** field.



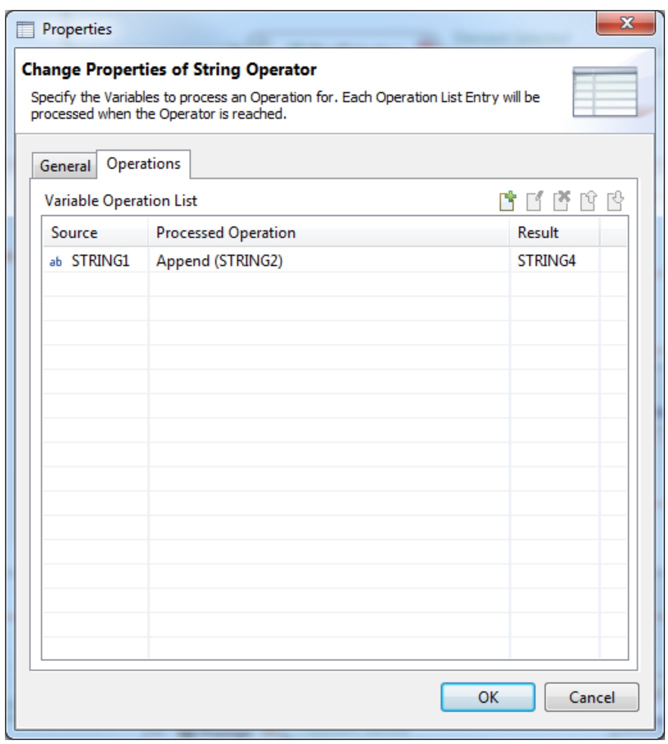
19) Click on **Calculate**.



The **Operation Result** field shows the result.

20) Click on **OK**.

21) Click on **Finish**.



22) Click on **OK**.

5.4.4.6 How to Remove Blanks from a String

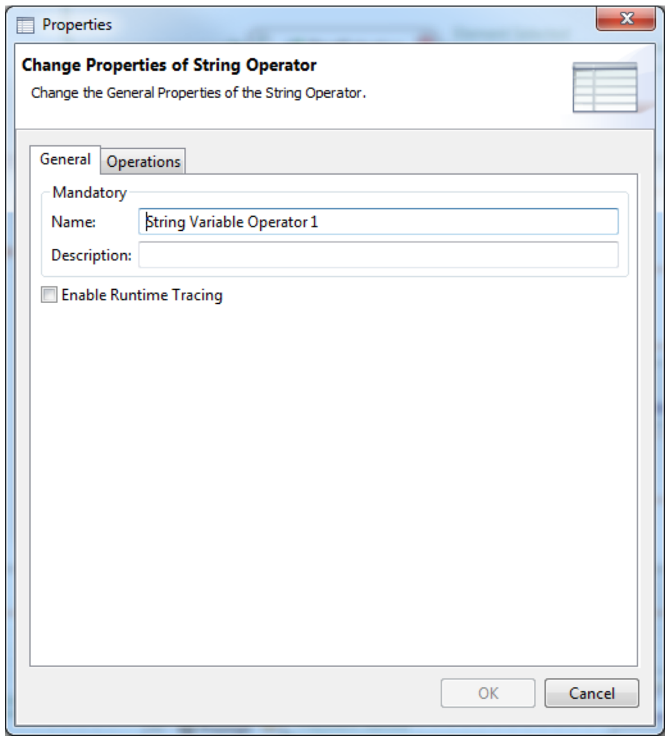
This section describes how to remove leading and trailing blanks from a string.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

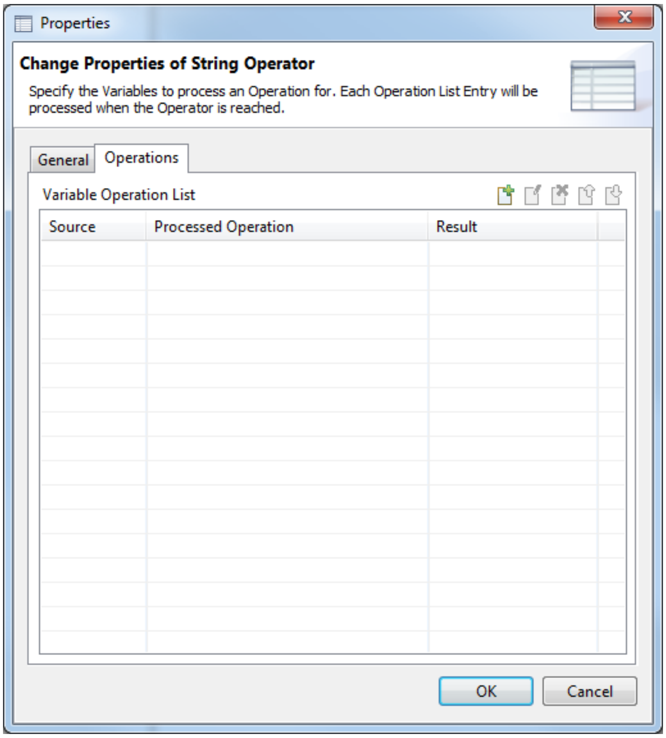
3) Double-click this control.



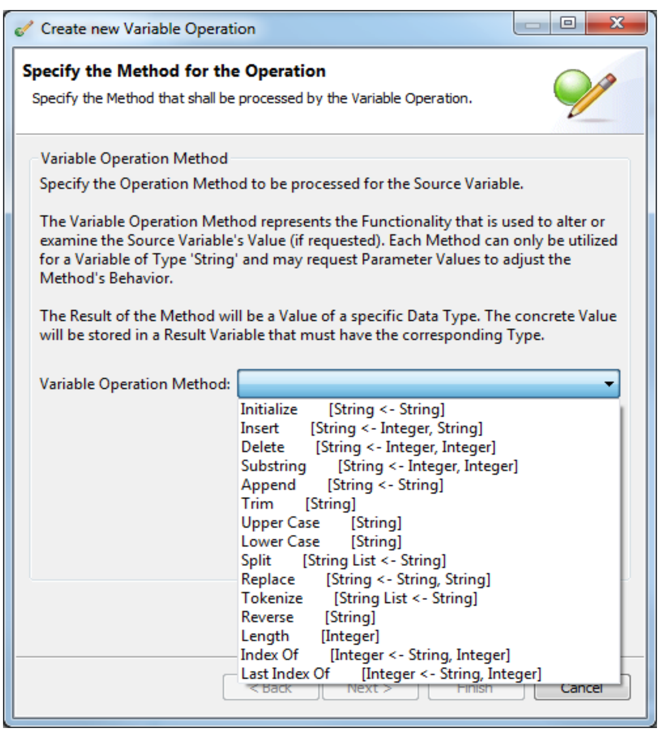
4) If required, change the value in the **Name** field, for example to `Trim a string`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

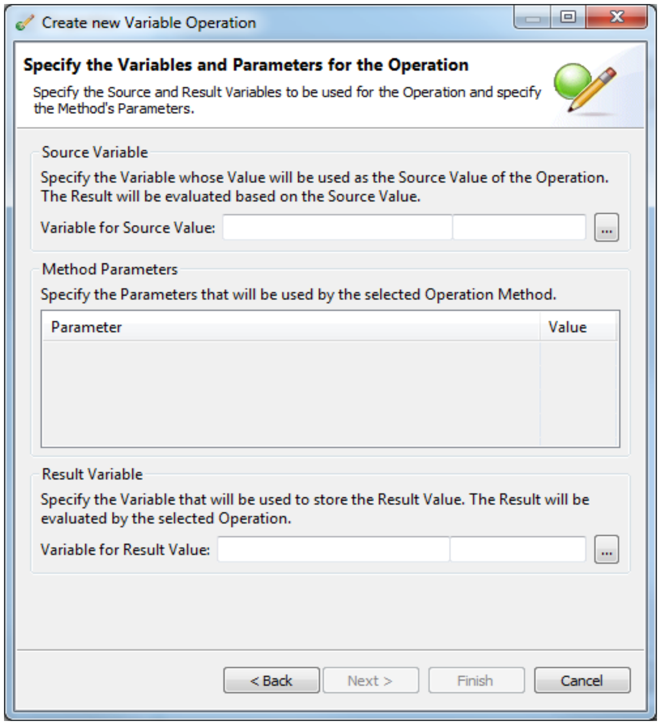


7) Click on the icon.



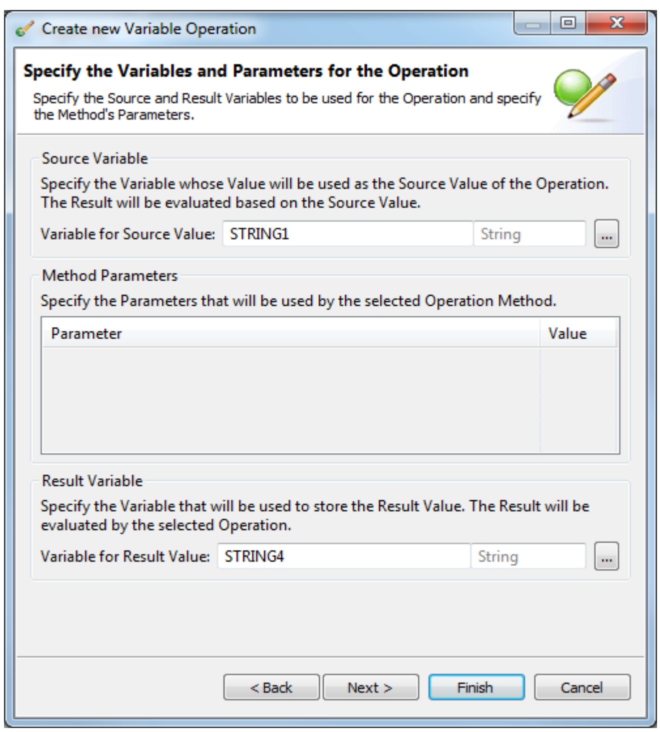
8) Select value **Trim [String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

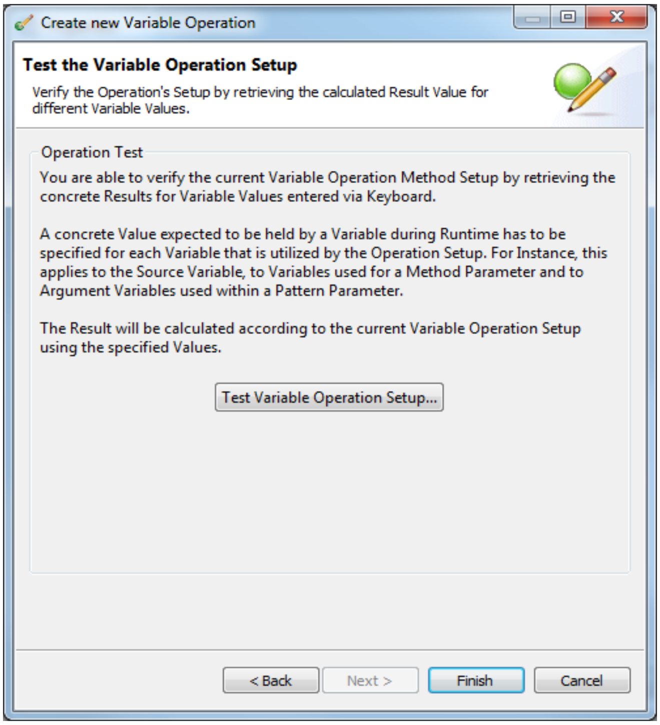


10) In the **Source Variable** section, click on the ... button, select the string variable from the value of which you wish to remove blanks and click on **OK**.

11) In the **Result Variable** section, click on the ... button, select the string variable to store the result string and click on **OK**.

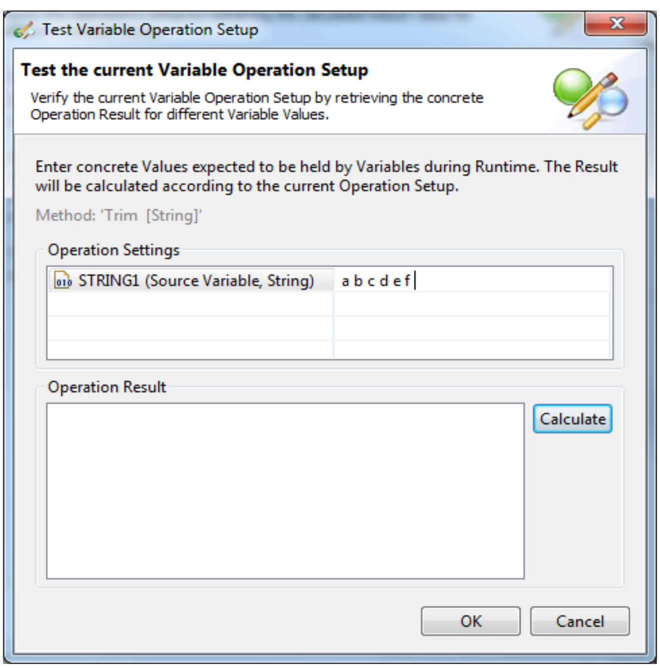


12) If you wish to test the removal of blanks, click on **Next**.

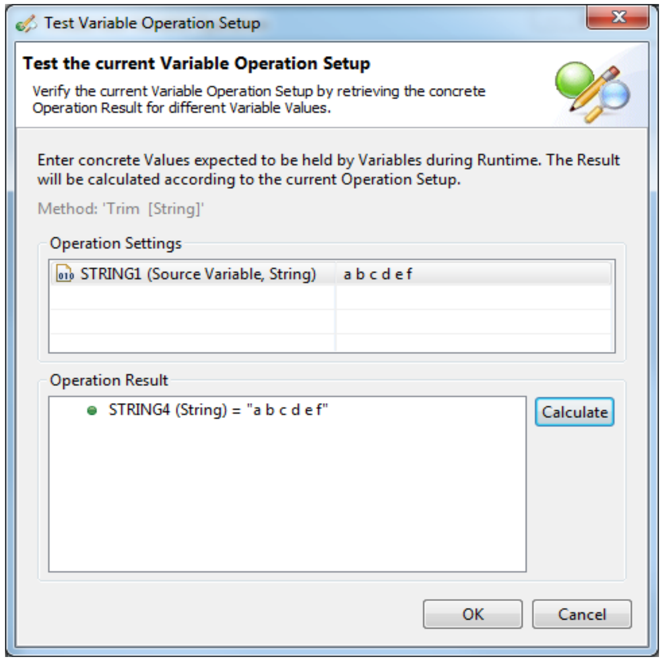


13) Click on **Test Variable Operation Setup...**.

14) Enter the test values in the right column of the **Operation Settings** field.



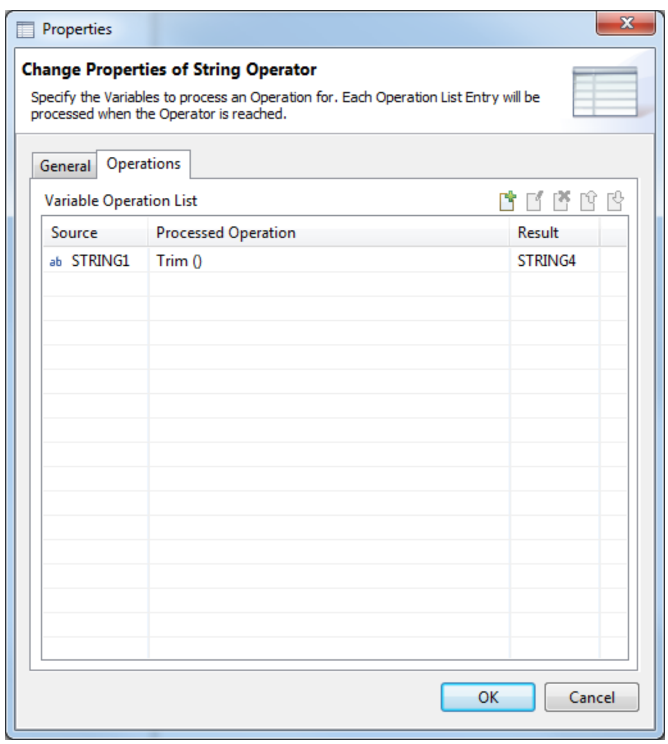
15) Click on **Calculate**.



The **Operation Result** field shows the result.

16) Click on **OK**.

17) Click on **Finish**.



18) Click on **OK**.

5.4.4.7 How to Convert a String into Capital Letters

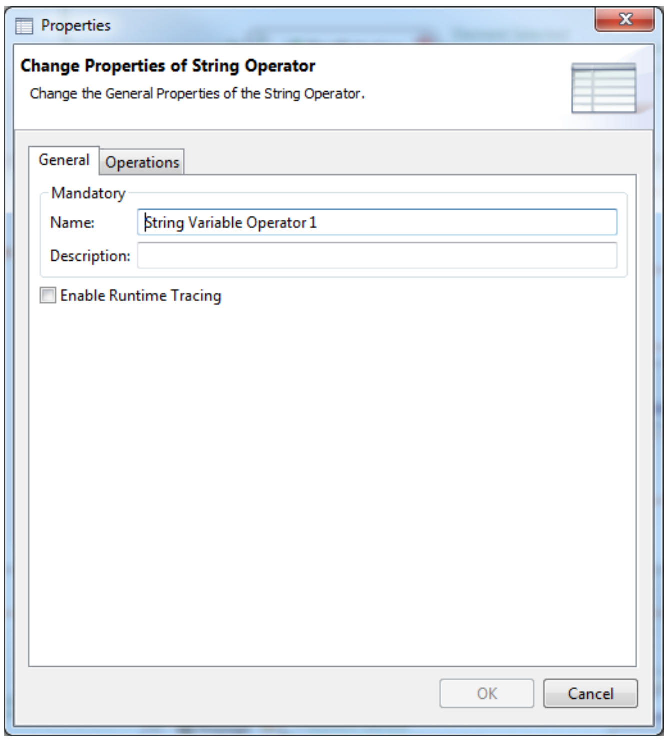
This section describes how to convert all letters in a string into capital letters.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

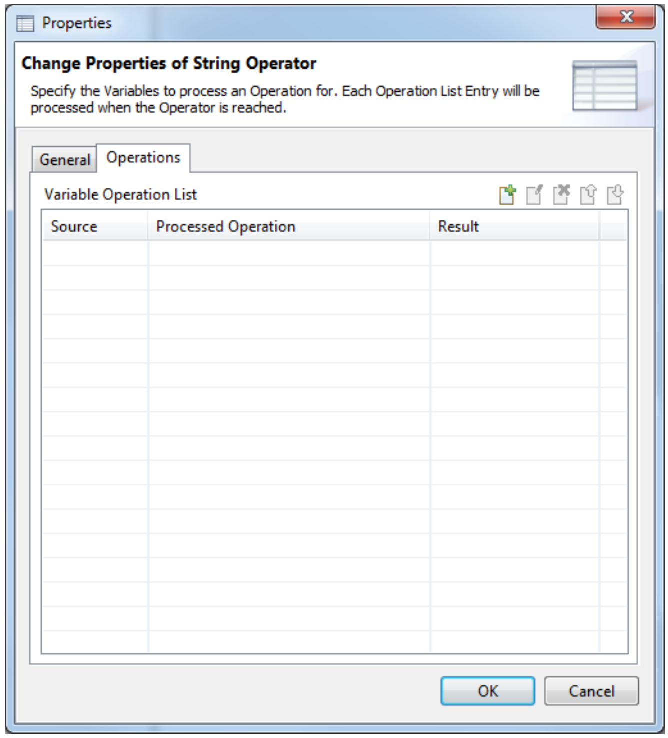
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Convert into Capital Letters`.

5) If needed, enter a value in the **Description** field.

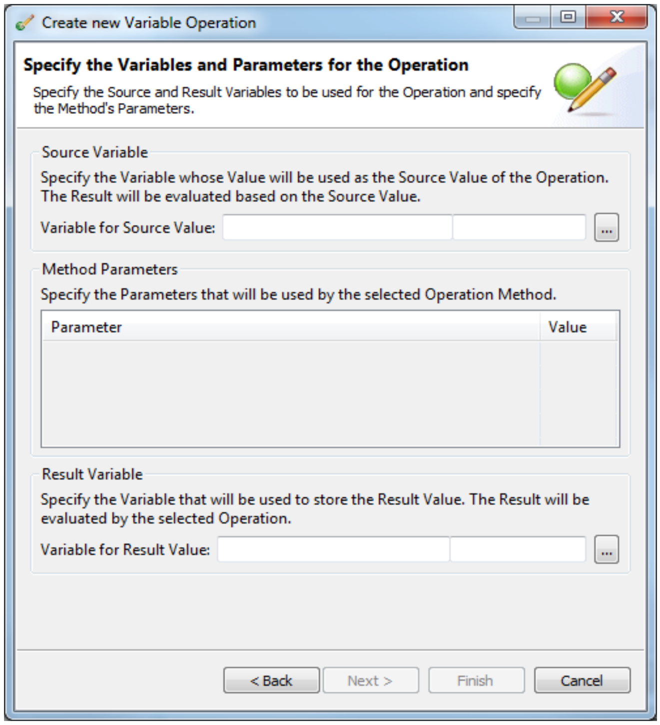
6) Click on the **Operations** tab.



7) Click on the icon.

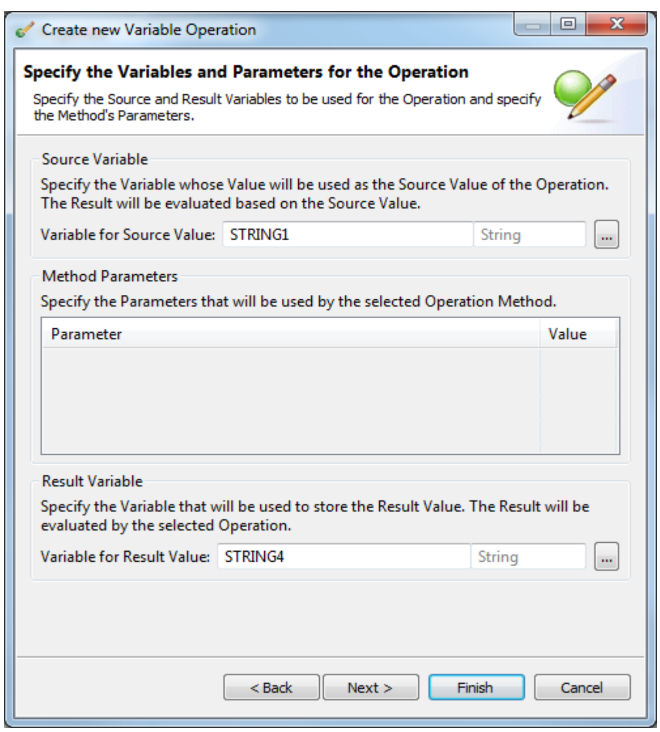
8) Select value **Upper Case [String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

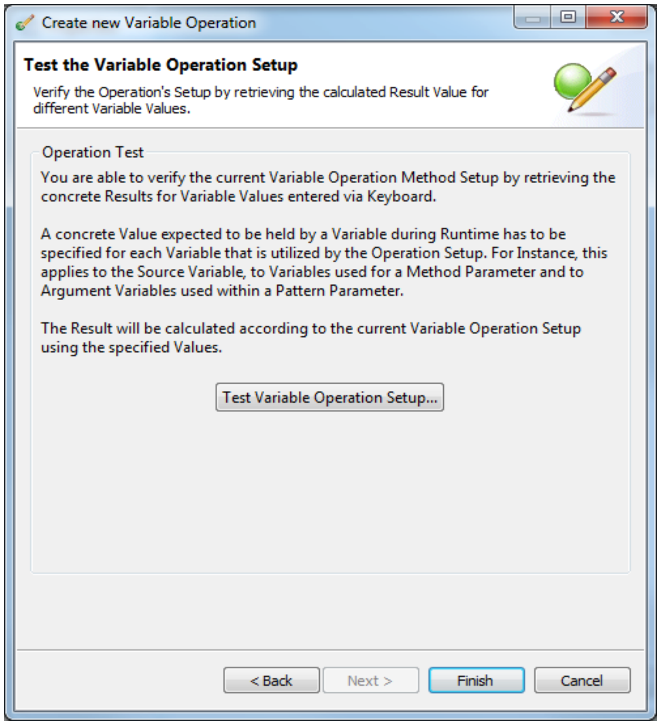


10) In the **Source Variable** section, click on the ... button, select the string the letters of which are to be converted into small letters and click on **OK**.

11) In the **Result Variable** section, click on the ... button, select the string variable to store the result string and click on **OK**.

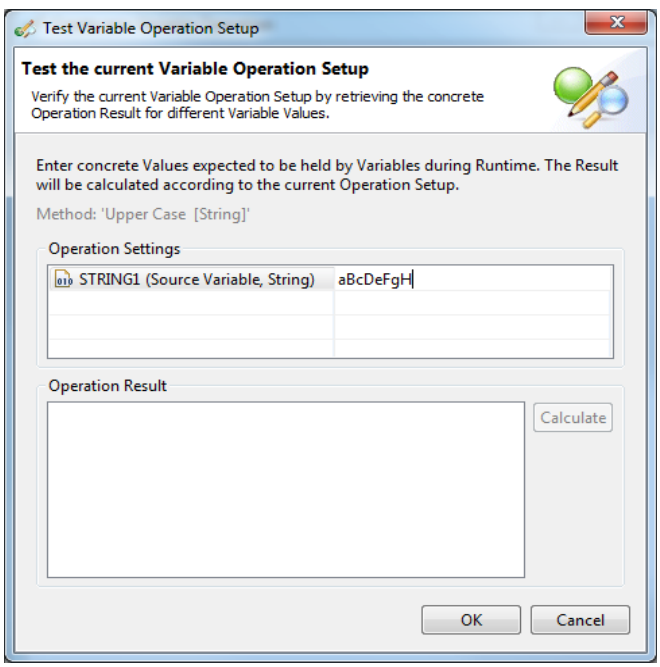


12) If you wish to test the conversion into capital letters, click on **Next**.

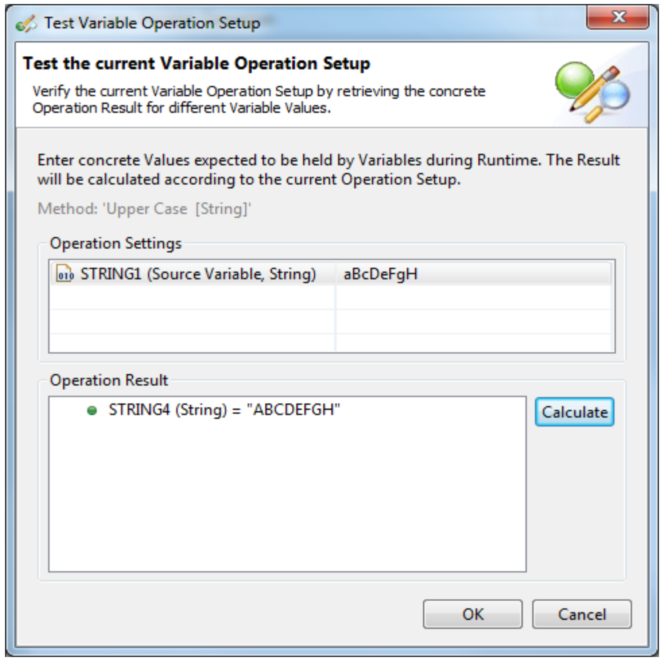


13) Click on **Test Variable Operation Setup...**.

14) Enter the test values in the right column of the **Operation Settings** field.



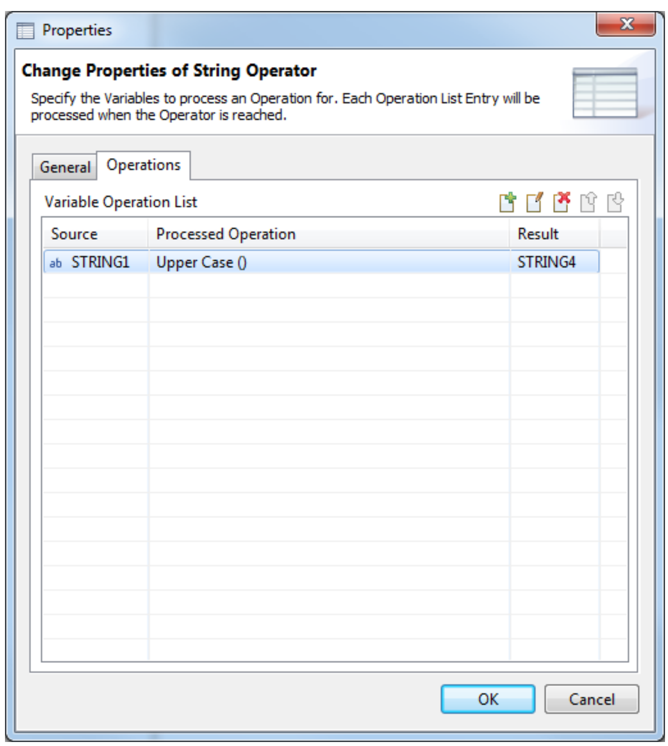
15) Click on **Calculate**.



The **Operation Result** field shows the result.

16) Click on **OK**.

17) Click on **Finish**.



18) Click on **OK**.

5.4.4.8 How to Convert a String into Small Letters

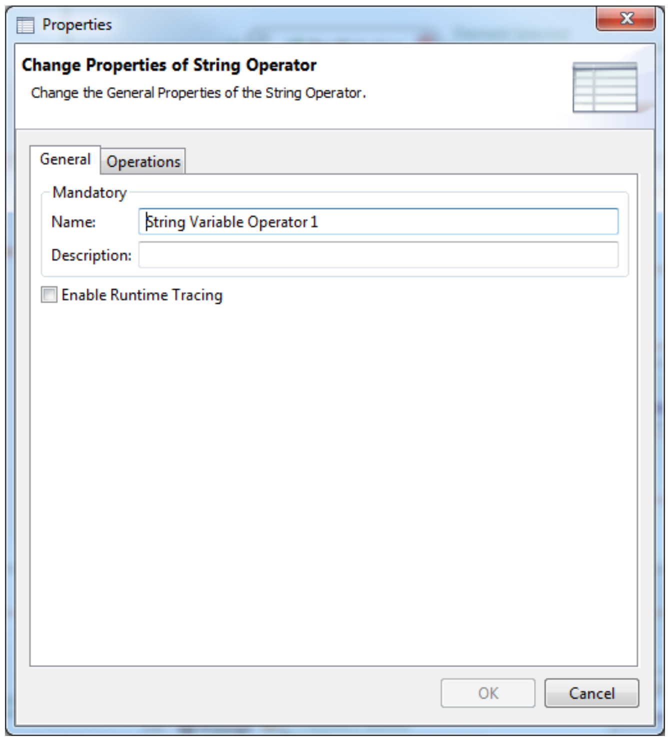
This section describes how to convert all letters in a string into small letters.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

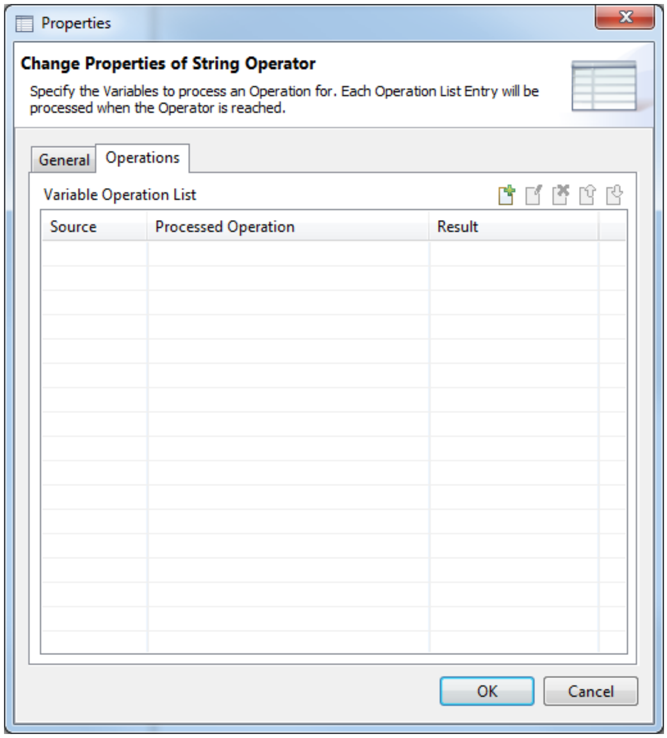
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Convert into Small Letters`.

5) If needed, enter a value in the **Description** field.

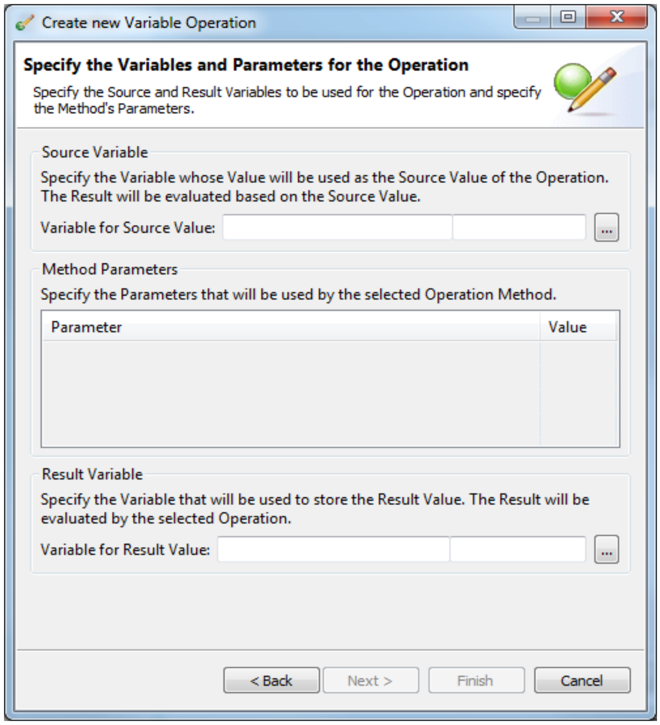
6) Click on the **Operations** tab.



7) Click on the icon.

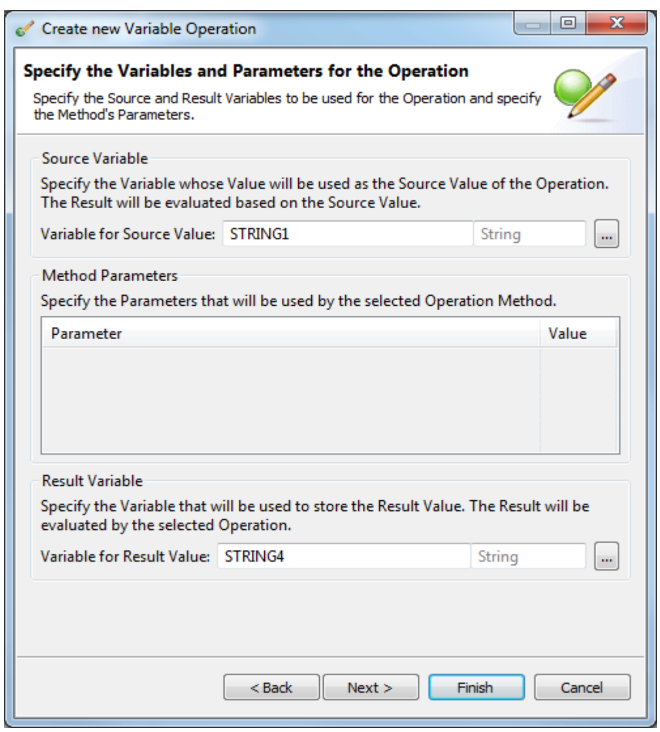
8) Select value **Lower Case [String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

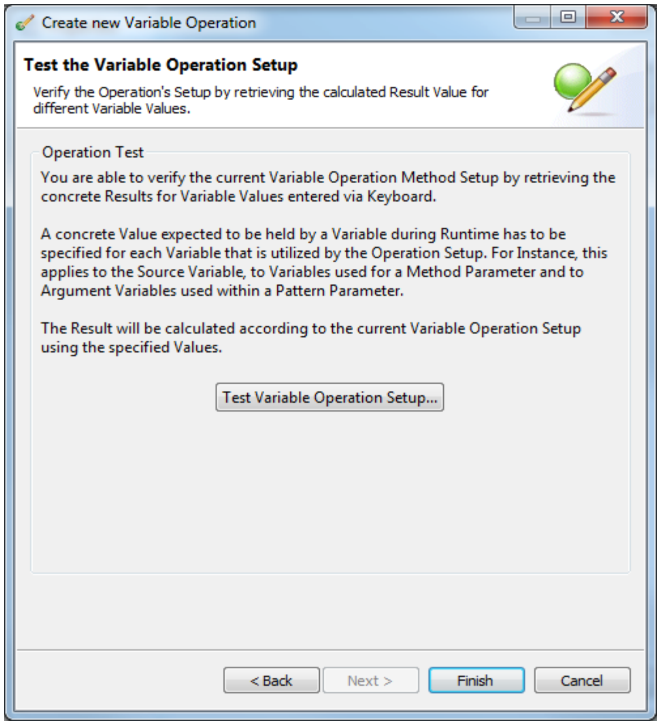


10) In the **Source Variable** section, click on the ... button, select the string the letters of which are to be converted into small letters and click on **OK**.

11) In the **Result Variable** section, click on the ... button, select the string variable to store the result string and click on **OK**.

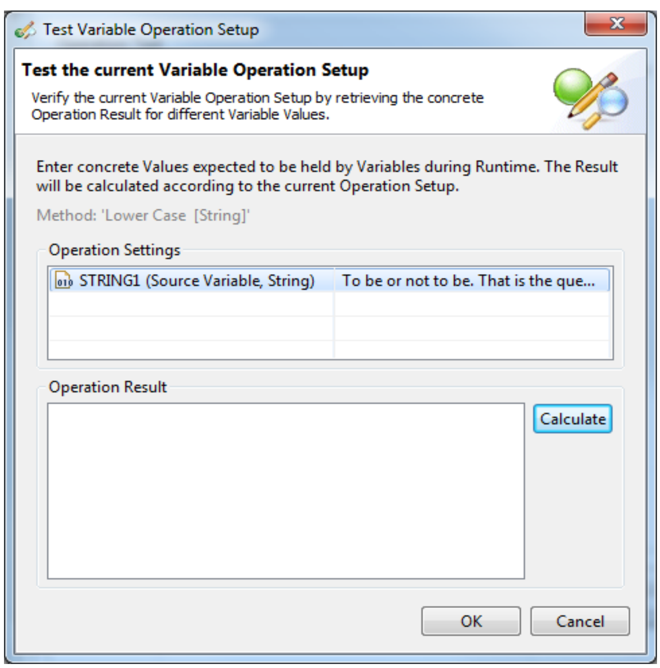


12) If you wish to test the conversion into small letters, click on **Next**.

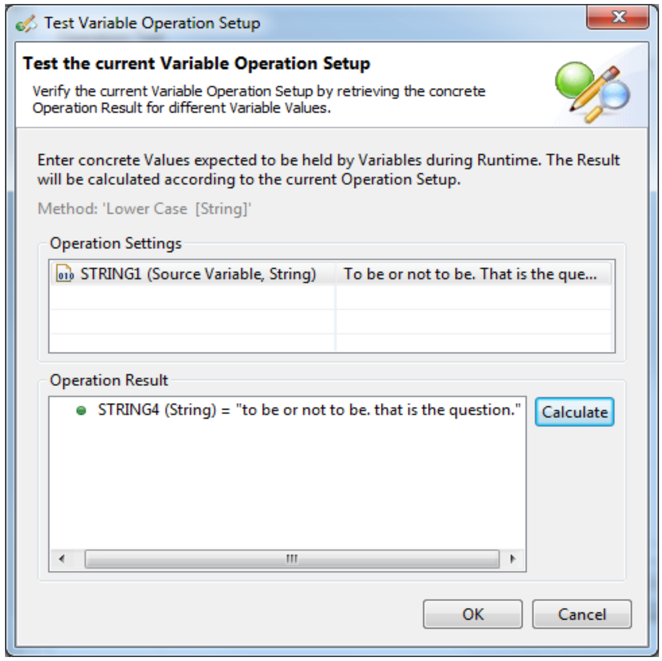


13) Click on **Test Variable Operation Setup...**.

14) Enter the test values in the right column of the **Operation Settings** field.



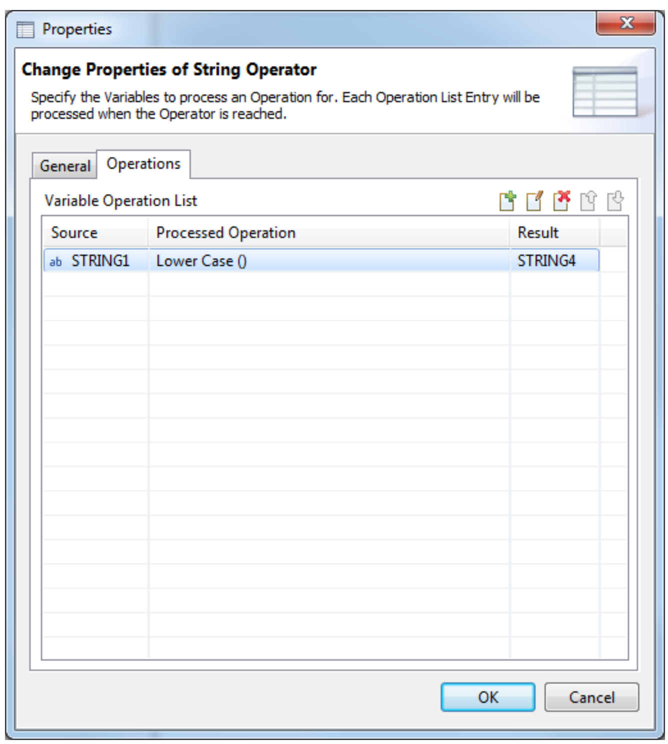
15) Click on **Calculate**.



The **Operation Result** field shows the result.

16) Click on **OK**.

17) Click on **Finish**.



18) Click on **OK**.

5.4.4.9 How to Divide a String Using a Regular Expression

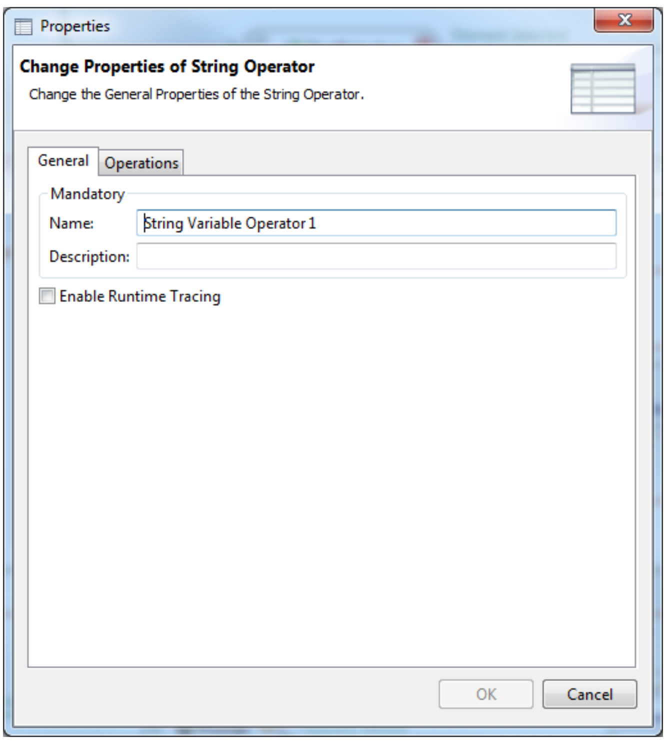
This section describes how to divide a string and store the result in a string list with a regular expression determining where to divide. The regular expression `[ot]` for example divides the string `To be or not to be. That is the question.` in the string list `T`, `be`, `r n`, `,` `be. Tha`, `is`, `he`, `ques`, `i`, `n.`. If the regular expression is not fulfilled anywhere in the string, the entire string is copied to the string list.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

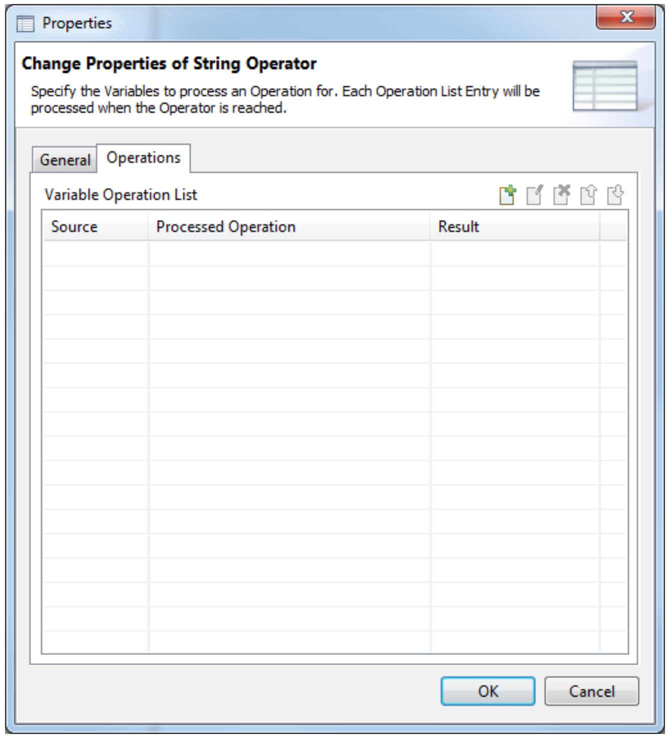
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Divide String`.

5) If needed, enter a value in the **Description** field.

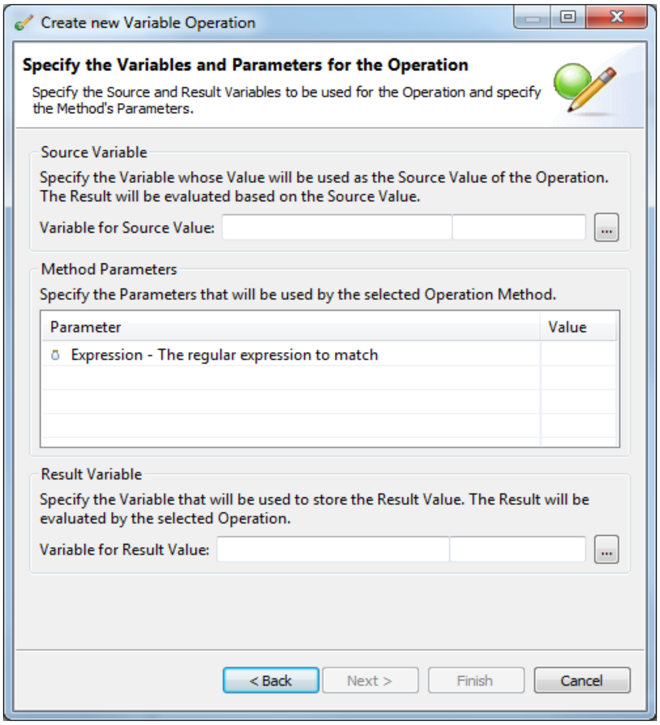
6) Click on the **Operations** tab.



7) Click on the  icon.

8) Select value **Split [String List < - String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

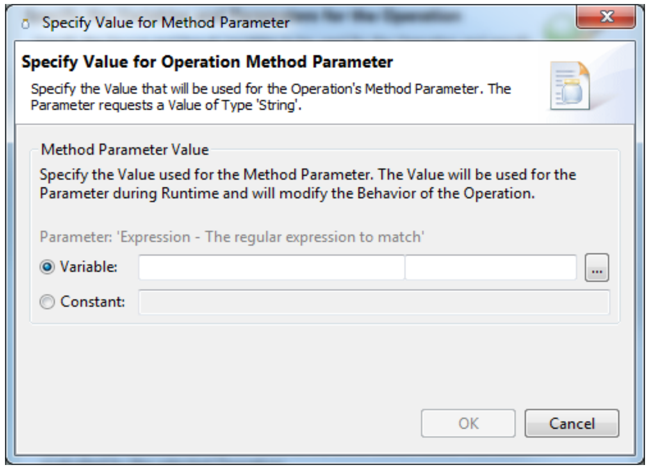


10) In the **Source Variable** section, click on the ... button, select the string variable the value of which you wish to divide and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The ... button appears.

> ***NOTICE:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

12) Click on this button.



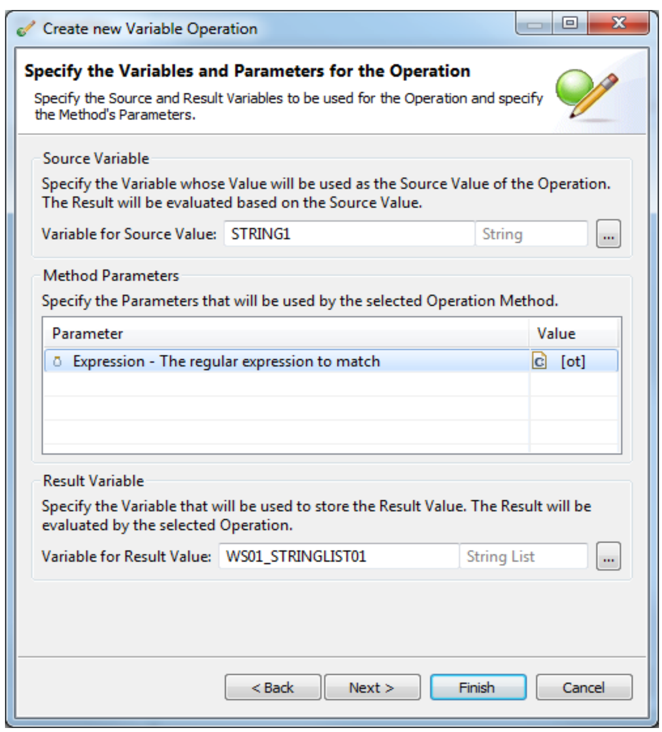
13) If you wish to use a variable value for the regular expression, click on the ... button, select a variable and click on **OK**.

If, in contrast, you wish to use a constant, activate the **Constant** radio button and enter the value.

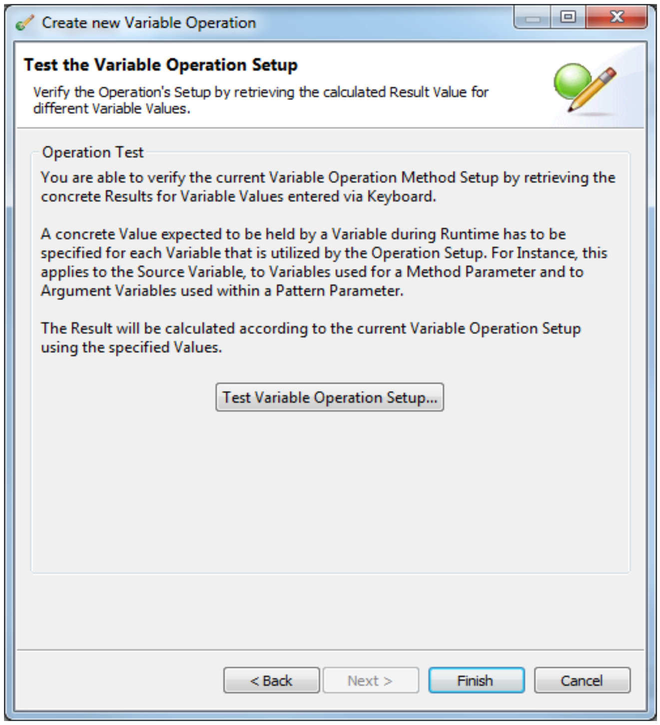
`[ot]` for example divides the string in places where a small `o` or a small `t` occurs.

14) Click on **OK**.

15) In the **Result Variable** section, click on the ... button, select the string list variable to store the result and click on **OK**.

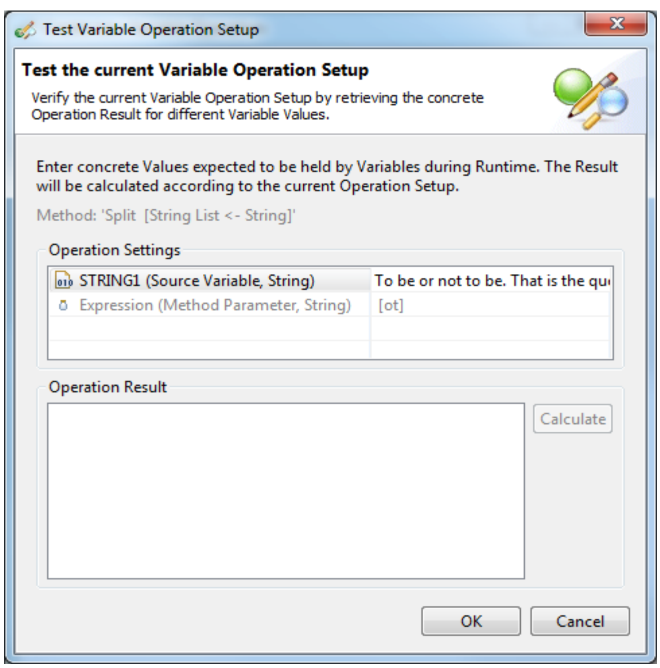


16) If you wish to test the string division, click on **Next**.

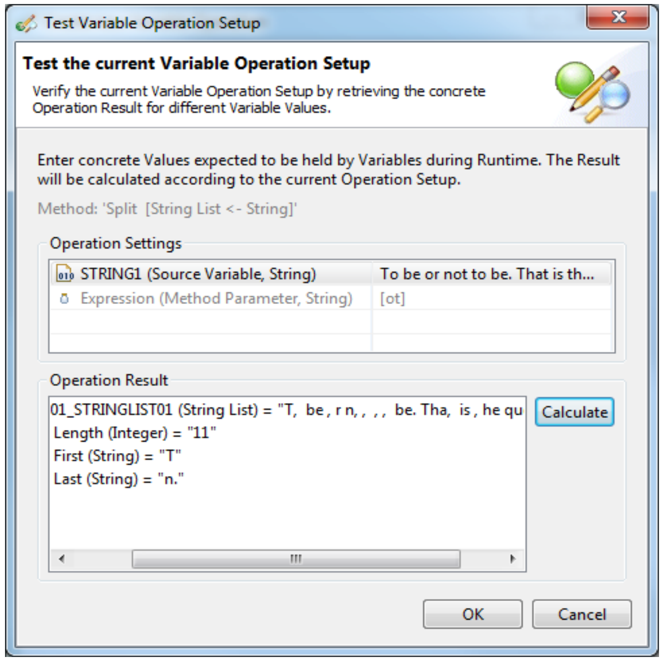


17) Click on **Test Variable Operation Setup...**.

18) Enter the test values in the right column of the **Operation Settings** field.



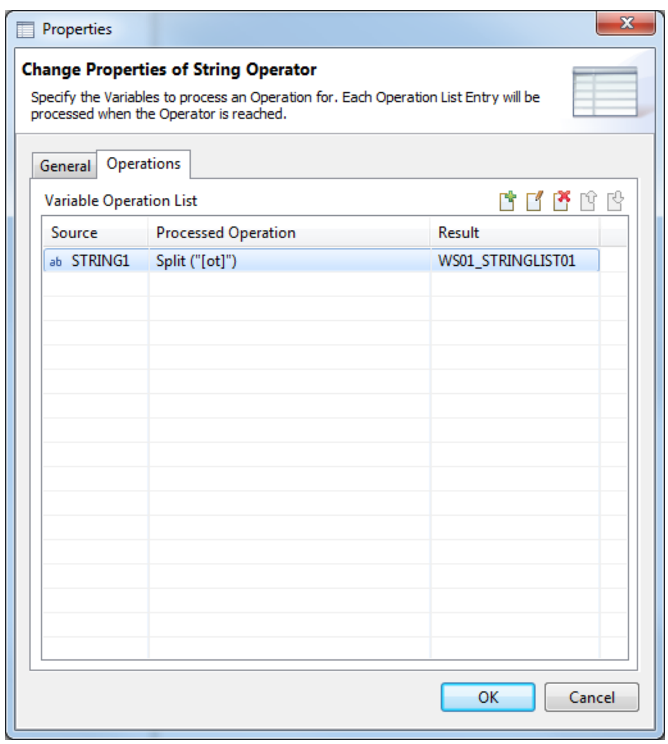
19) Click on **Calculate**.



The **Operation Result** field shows the result.

20) Click on **OK**.

21) Click on **Finish**.



22) Click on **OK**.

5.4.4.10 How to Replace a Substring using a Regular Expression

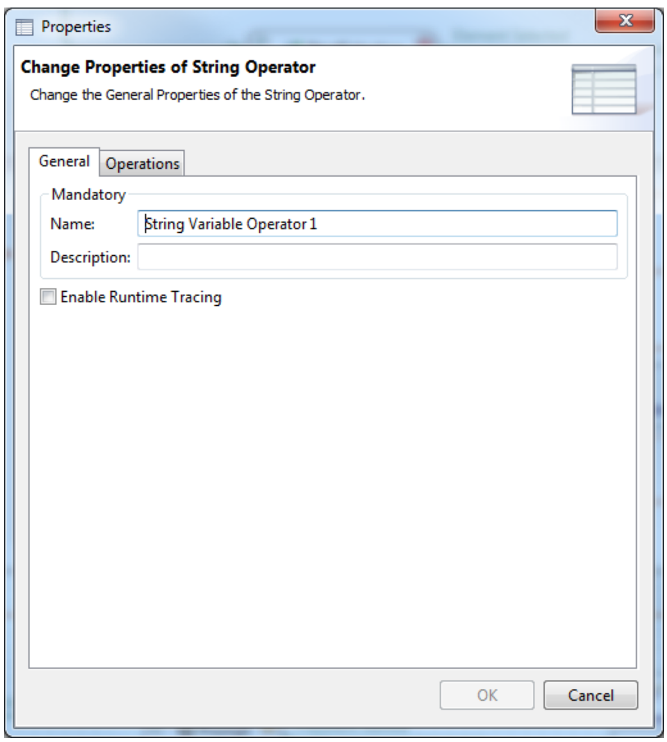
This section describes how to replace a substring with another substring with help of a regular expression in a string. The regular expression `[ot]` replaces for example in the string `To be or not to be. That is the question.` all occurrences of the letters `o` and `t` with one or several characters to be selected. If you select for example letter `x` as replacement, you receive the following result: `Tx be xr nxx xx be. Thax is xhe quesxixn.`

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

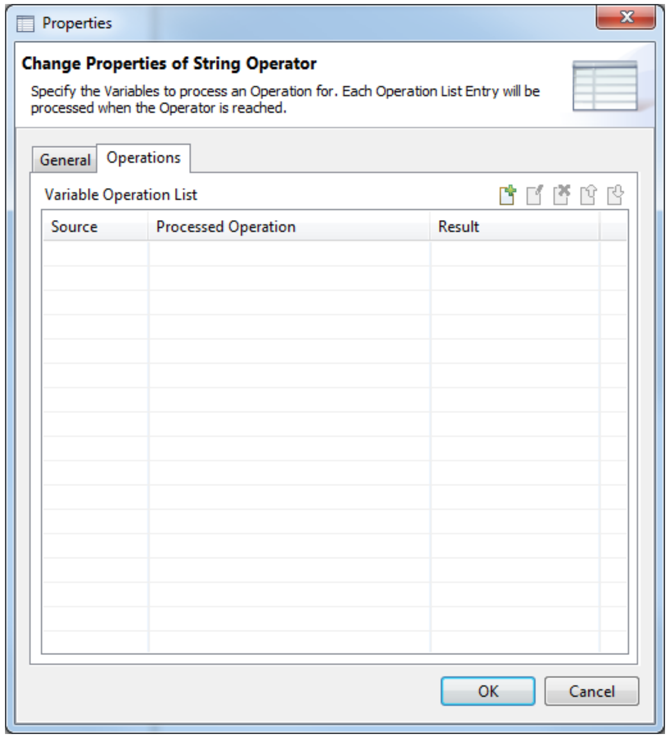
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Replace Substring`.

5) If needed, enter a value in the **Description** field.

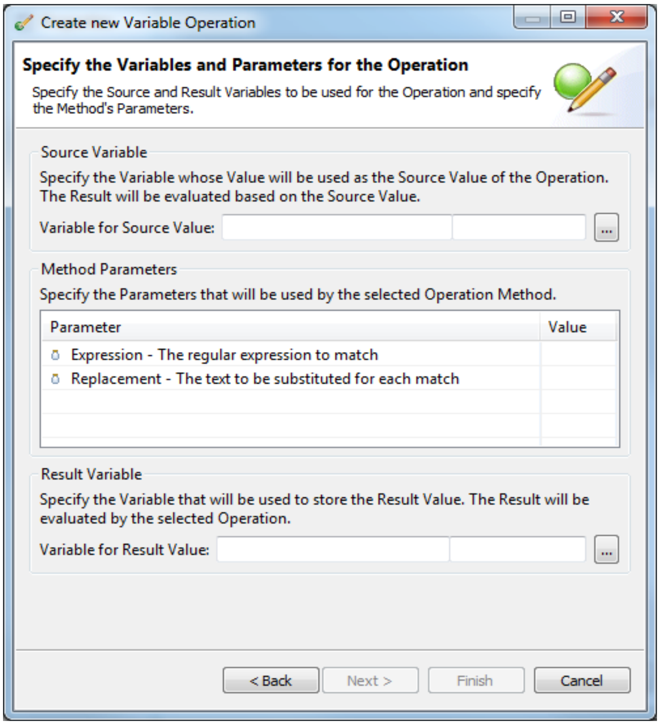
6) Click on the **Operations** tab.



7) Click on the  icon.

8) Select value **Replace [String < - String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

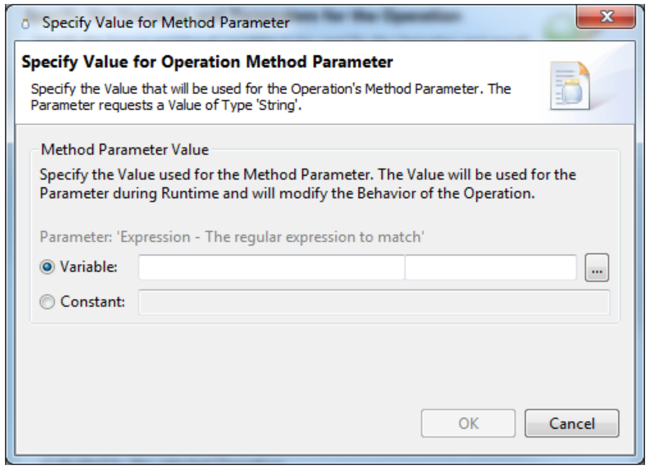


10) In the **Source Variable** section, click on the ... button, select the string the value of which you wish to partly replace and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The ... button appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

12) Click on this button.



13) If you wish to use a variable value for the regular expression, click on the ... button, select a variable and click on **OK**.

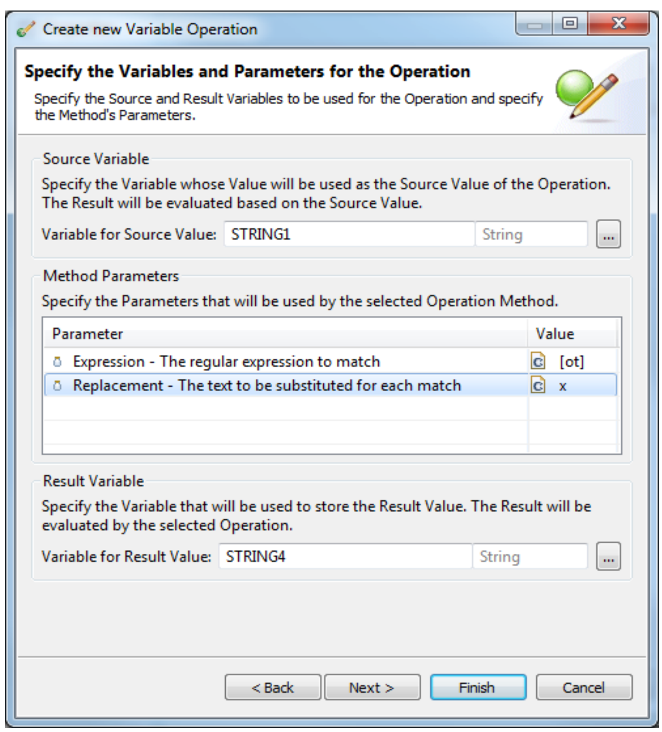
If, in contrast, you wish to use a constant, activate the **Constant** radio button and enter the value.

`[ot]` for example divides the string in places where a small `o` or a small `t` occurs.

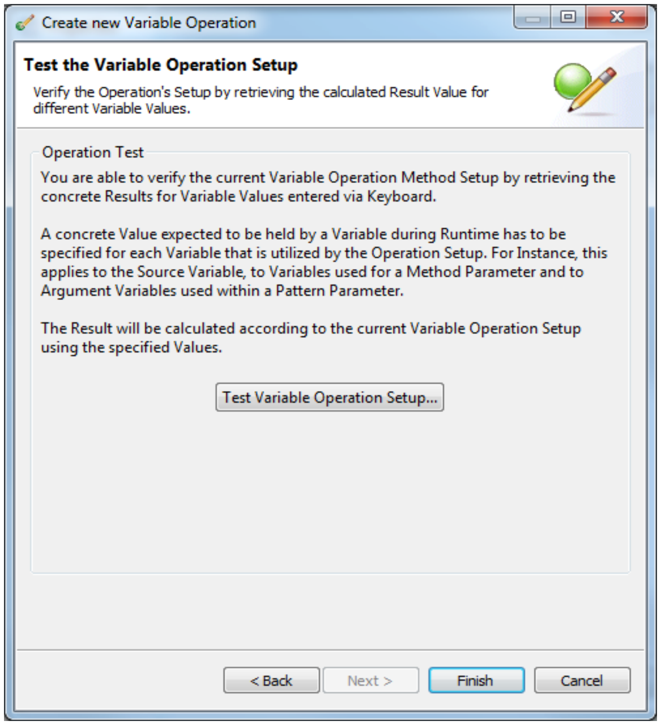
14) Click on **OK**.

15) Proceed analog for the **Replacement** parameter, thus for the string to replace the substring.

16) In the **Result Variable** section, click on the ... button, select the string variable to store the result and click on **OK**.

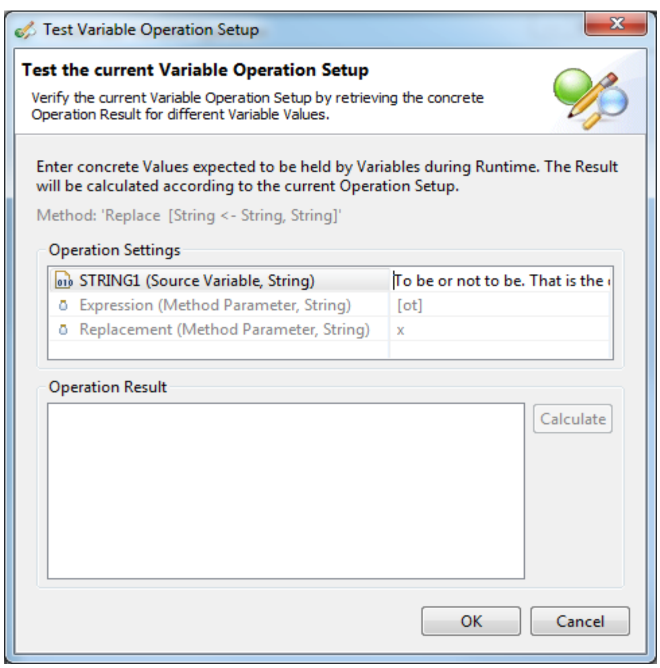


17) If you wish to test the substring replacement, click on **Next**.

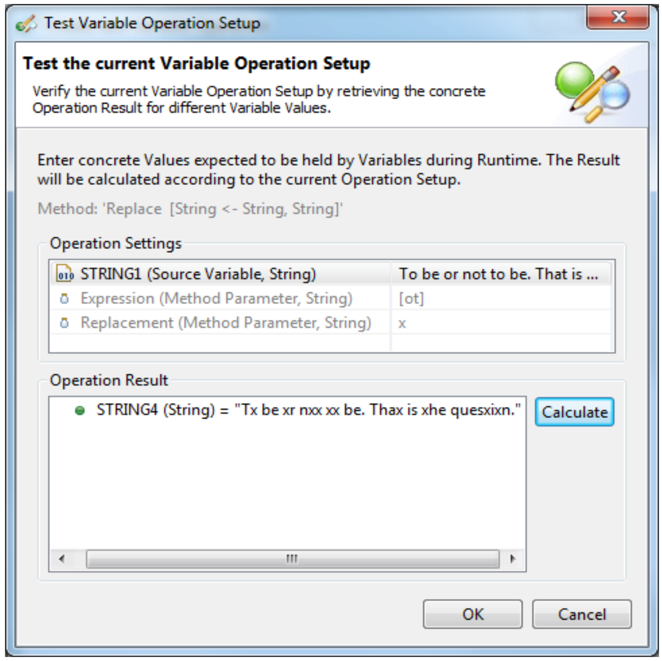


18) Click on **Test Variable Operation Setup...**.

19) Enter the test values in the right column of the **Operation Settings** field.



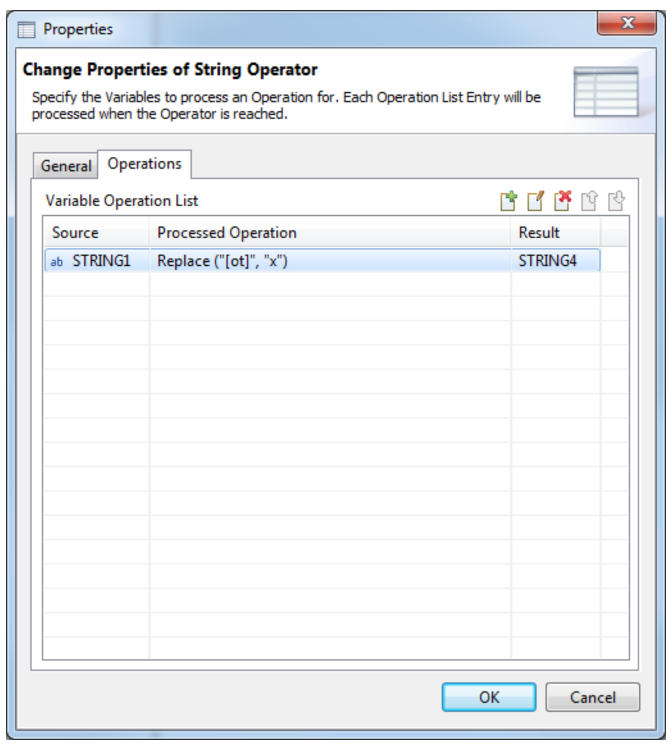
20) Click on **Calculate**.



The **Operation Result** field shows the result.

21) Click on **OK**.

22) Click on **Finish**.



23) Click on **OK**.

5.4.4.11 How to Divide a String Using Separators

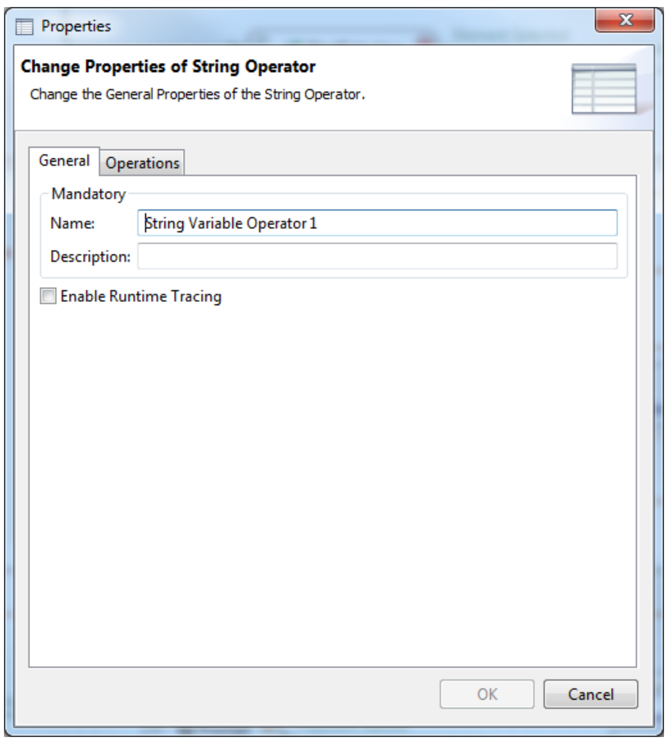
This section describes how to divide a string and store the result in a string list with separators determining where to divide. The separators `ot` for example divide the string `To be or not to be. That is the question.` in the string list `T`, `be`, `r n`, , `be. Tha`, `is`, `he`, `ques`, `i`, `n.`. If the string does not contain the separators, the entire string is copied to the string list.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

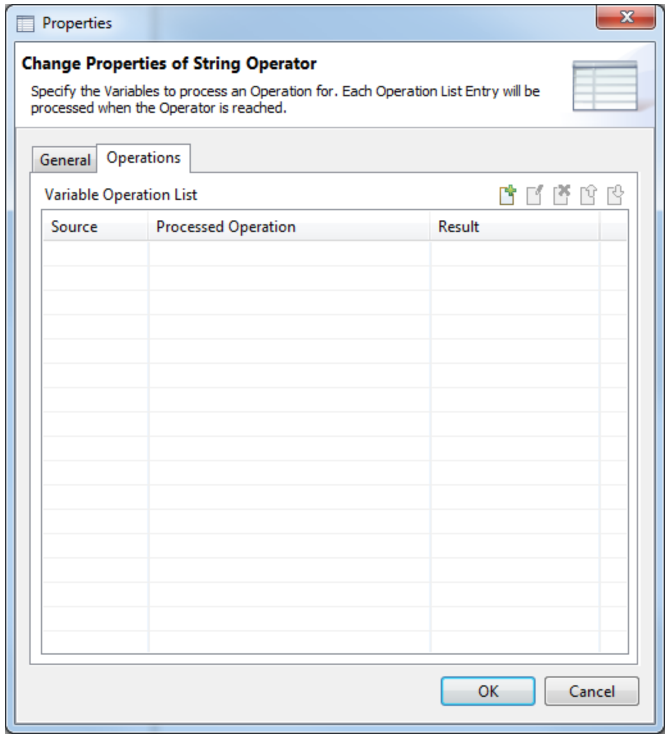
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Divide String`.

5) If needed, enter a value in the **Description** field.

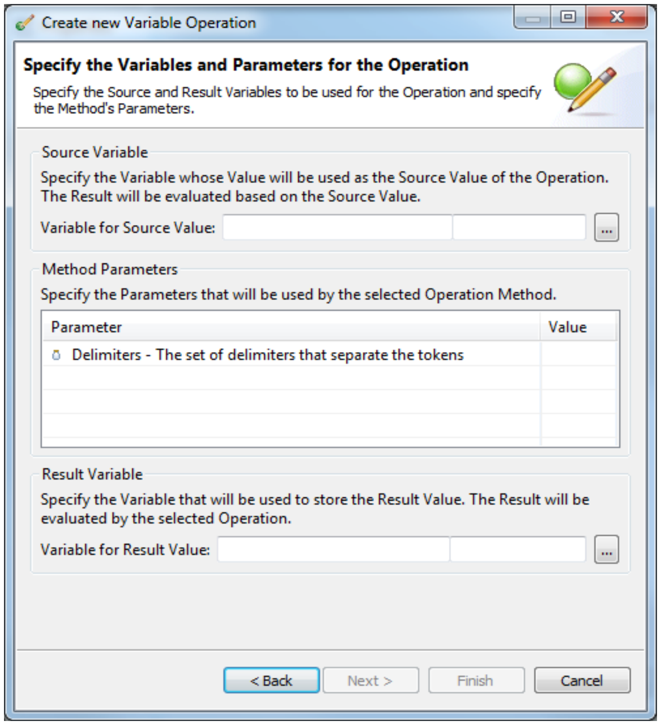
6) Click on the **Operations** tab.



7) Click on the  icon.

8) Select value **Tokenize [String List -> String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.



10) In the **Source Variable** section, click on the ... button, select the string variable the value of which you wish to divide and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column.

The ... button appears.

INFO: This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

12) Click on this button.

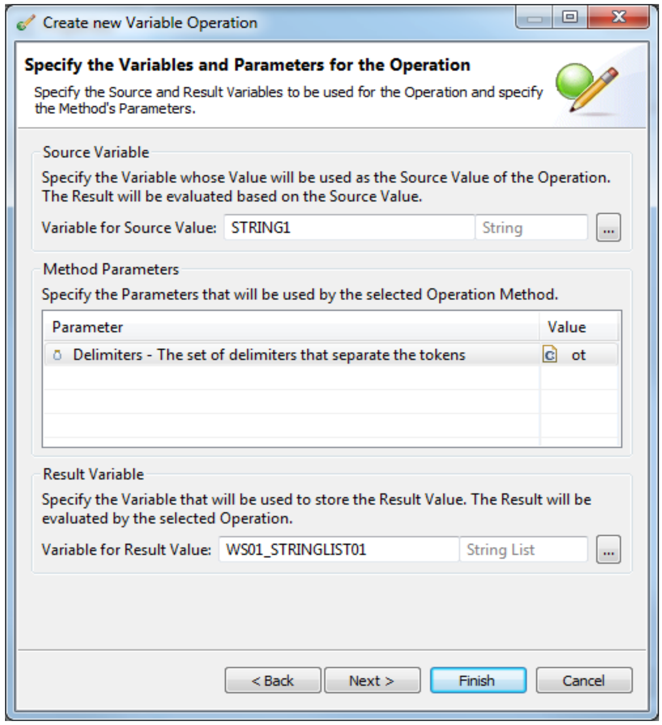
13) If you wish to use a variable value for the separators, click on the ... button, select a variable and click on **OK**.

If, in contrast, you wish to use a constant, activate the **Constant** radio button and enter the value.

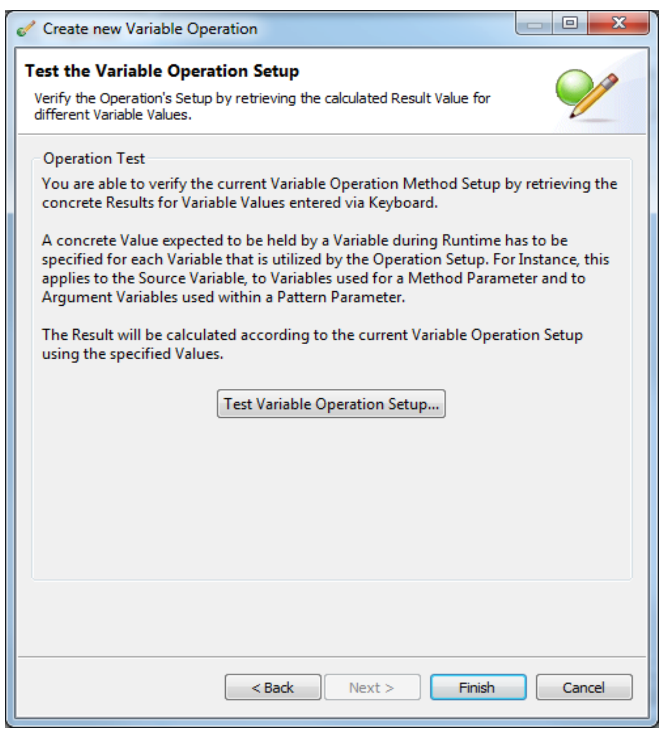
`ot` for example divides the string in places where a small `o` or a small `t` occurs.

14) Click on **OK**.

15) In the **Result Variable** section, click on the ... button, select the string list variable to store the result and click on **OK**.

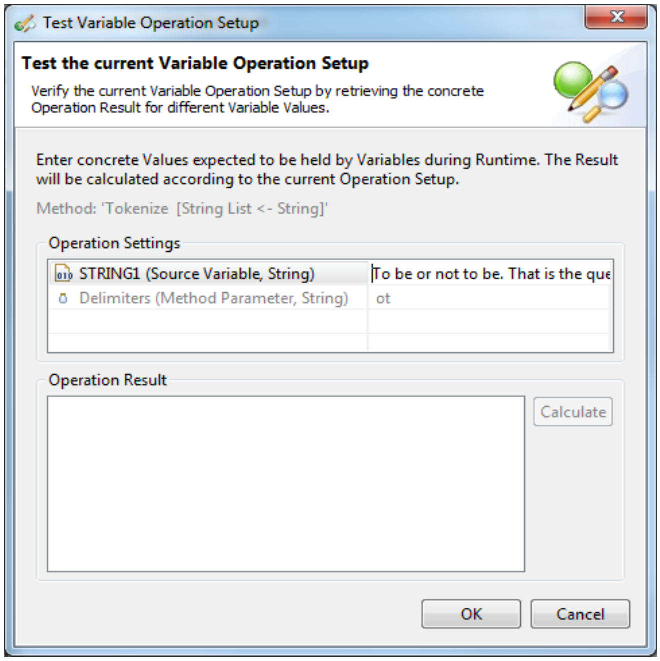


16) If you wish to test the string division, click on **Next**.

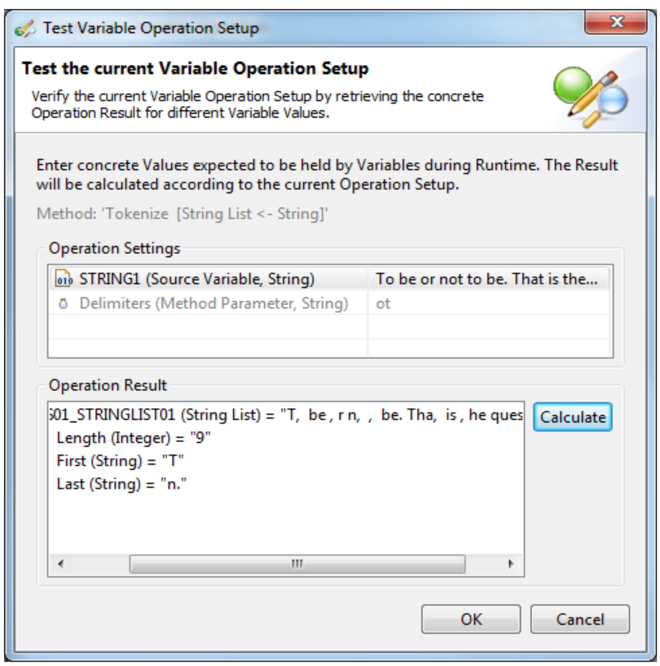


17) Click on **Test Variable Operation Setup...**.

18) Enter the test values in the right column of the **Operation Settings** field.



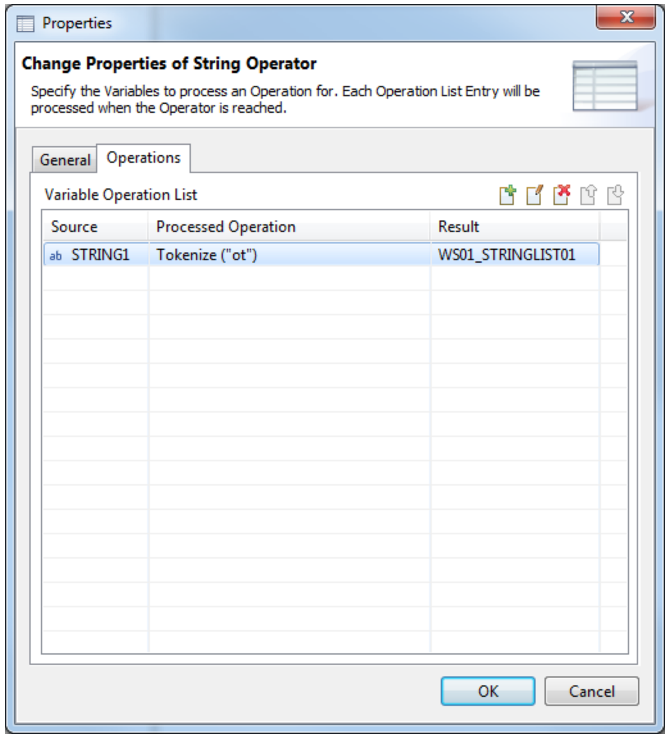
19) Click on **Calculate**.



The **Operation Result** field shows the result.

20) Click on **OK**.

21) Click on **Finish**.



22) Click on **OK**.

5.4.4.12 How to Reverse a String

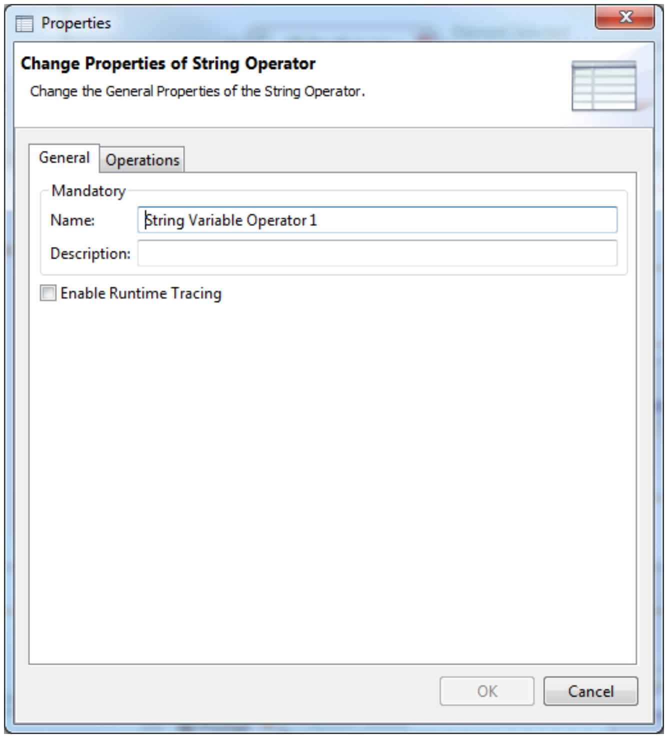
This section describes how to copy the characters of a string to another string in reverse order.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

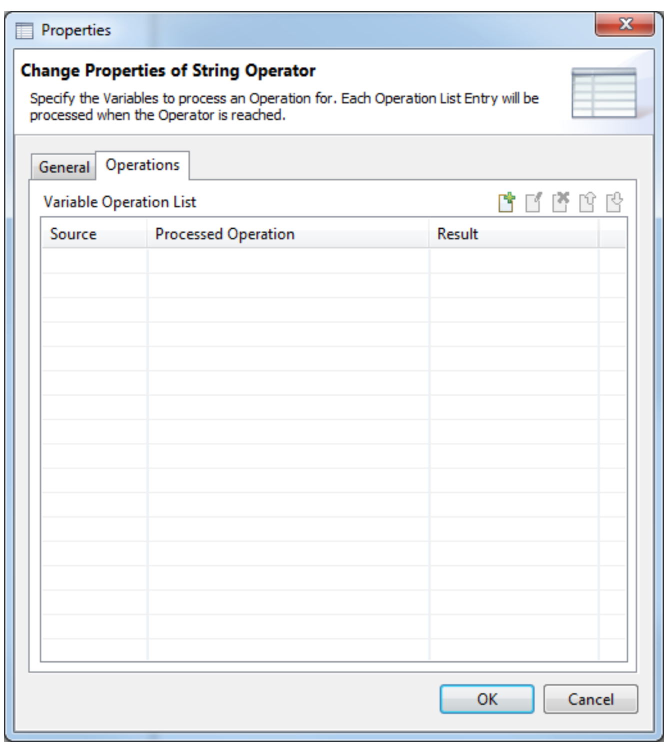
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Reverse String`.

5) If needed, enter a value in the **Description** field.

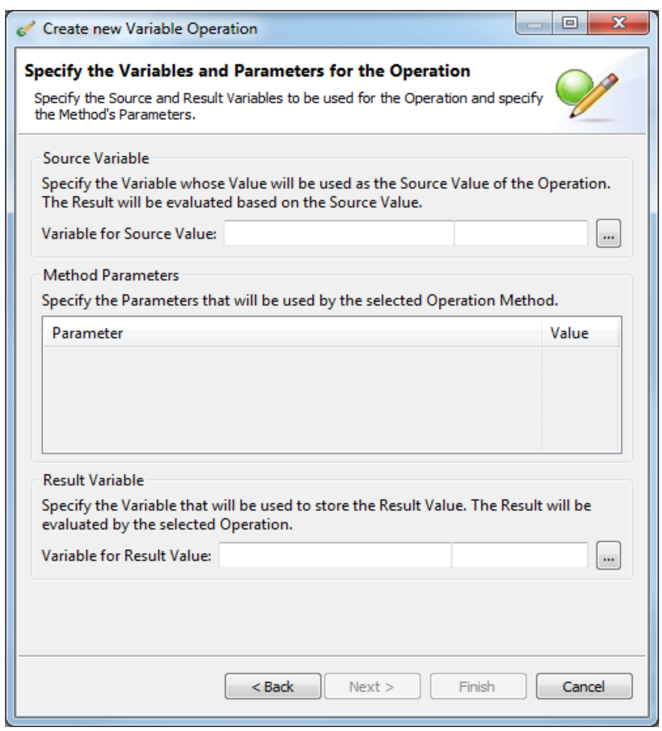
6) Click on the **Operations** tab.



7) Click on the icon.

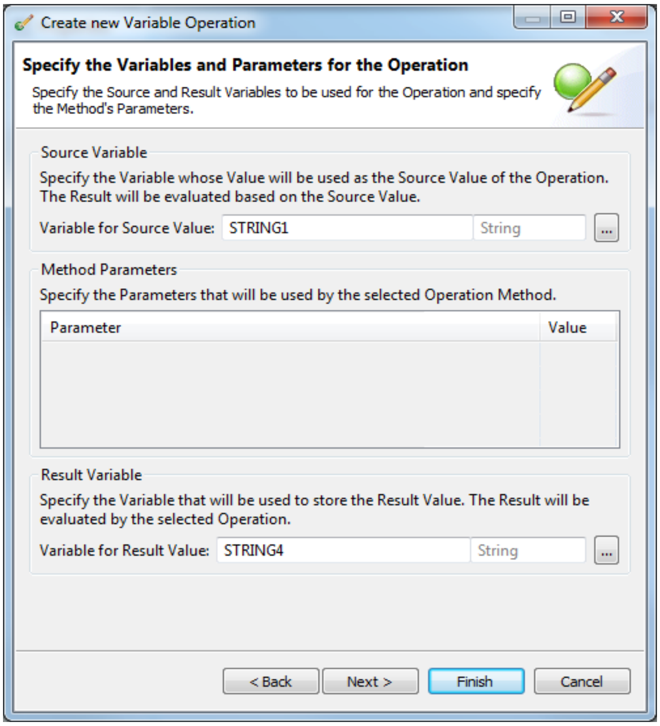
8) Select value **Reverse [String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

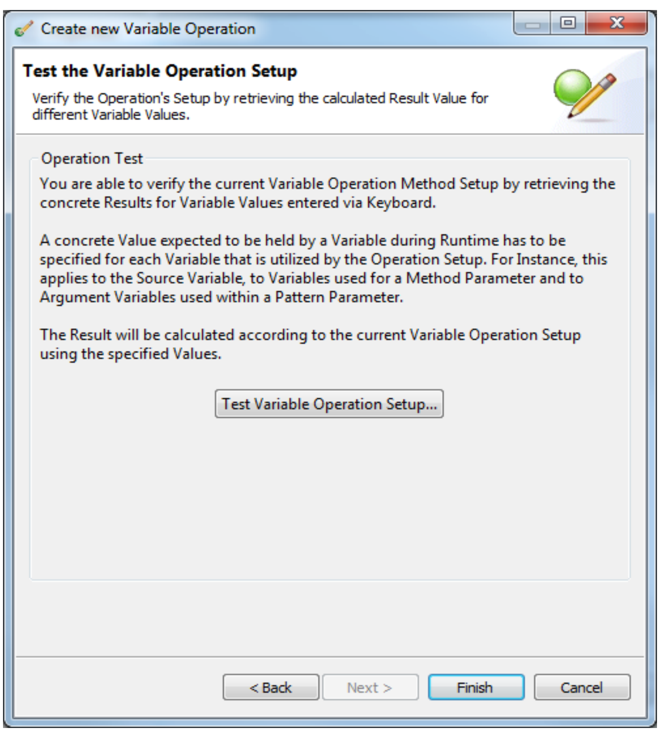


10) In the **Source Variable** section, click on the ... button, select the string variable the value of which you wish to reverse and click on **OK**.

11) In the **Result Variable** section, click on the ... button, select the string list variable to store the result and click on **OK**.

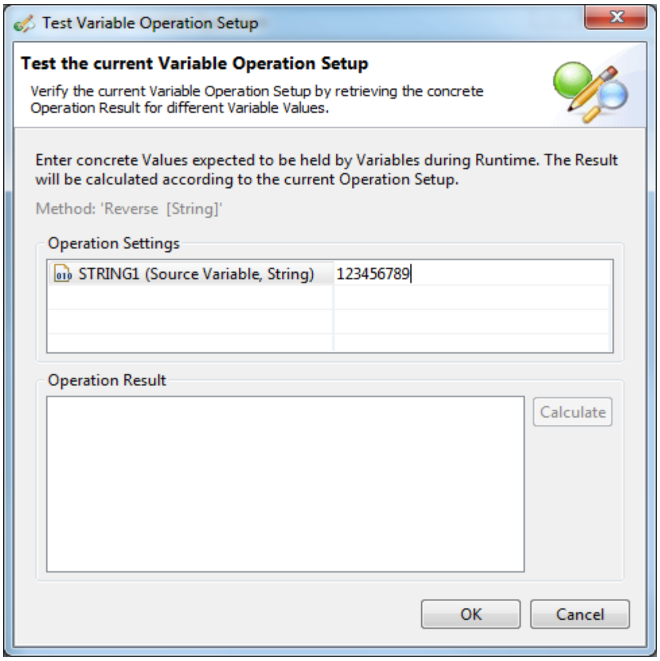


12) If you wish to test the string reversal, click on **Next**.

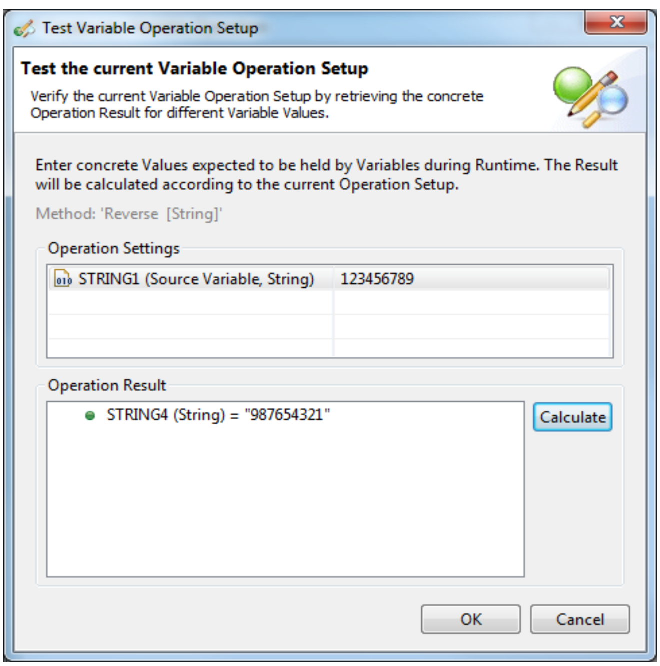


13) Click on **Test Variable Operation Setup...**.

14) Enter the test values in the right column of the **Operation Settings** field.



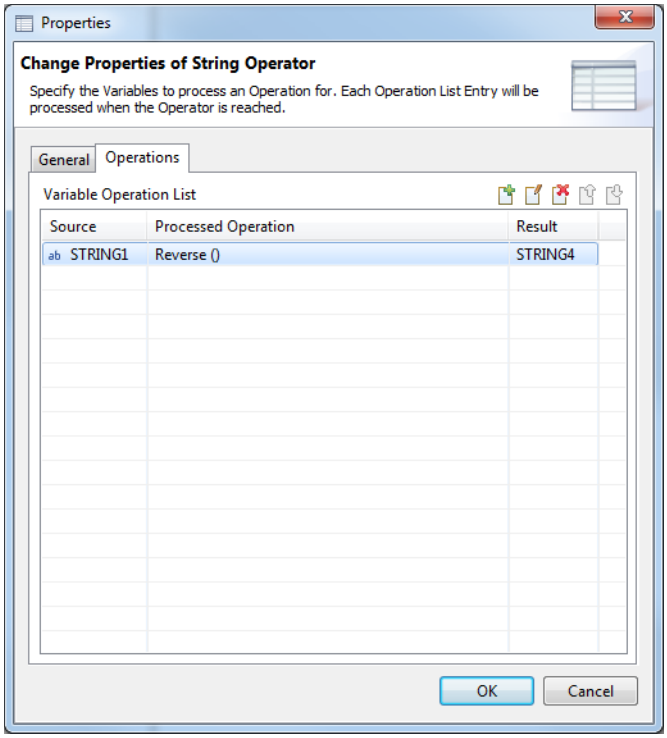
15) Click on **Calculate**.



The **Operation Result** field shows the result.

16) Click on **OK**.

17) Click on **Finish**.



18) Click on **OK**.

5.4.4.13 How to Determine the Length of a String

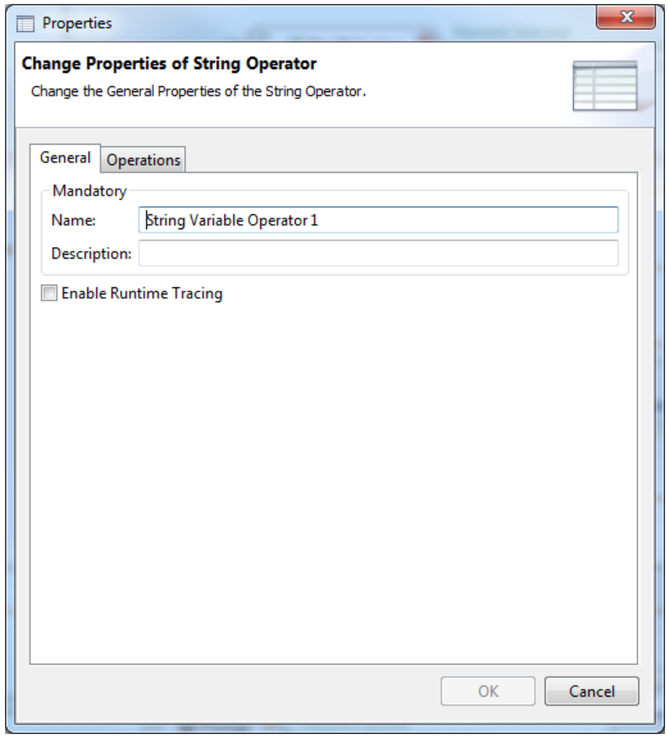
This section describes how you determine the length of a string.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

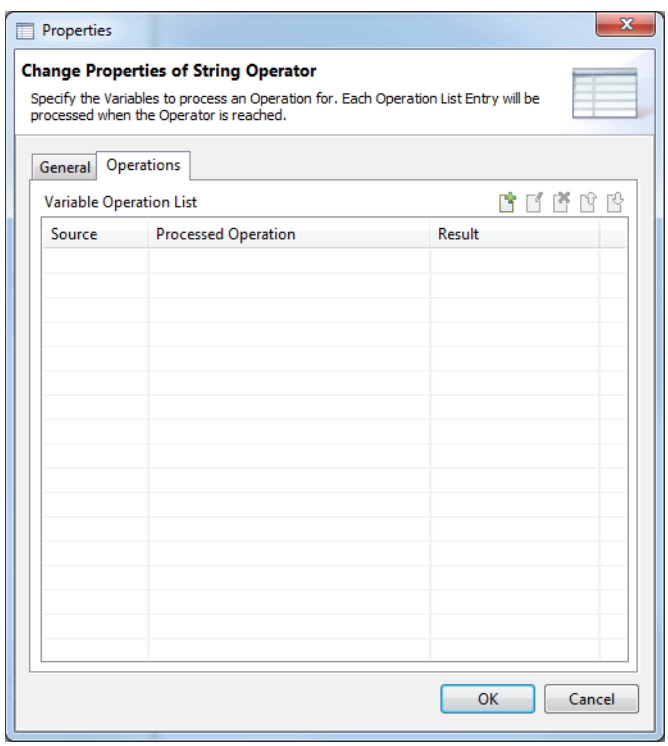
3) Double-click this control.



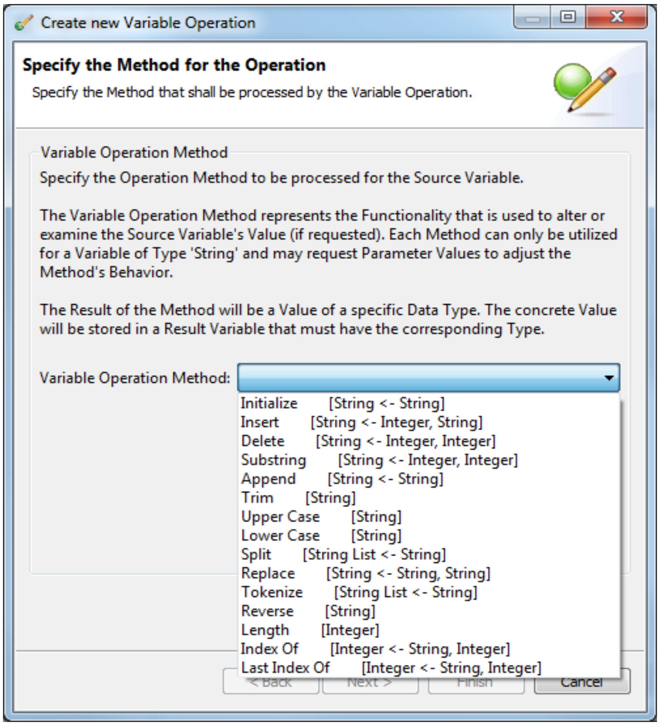
4) If required, change the value in the **Name** field, for example to `Determine String Length`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

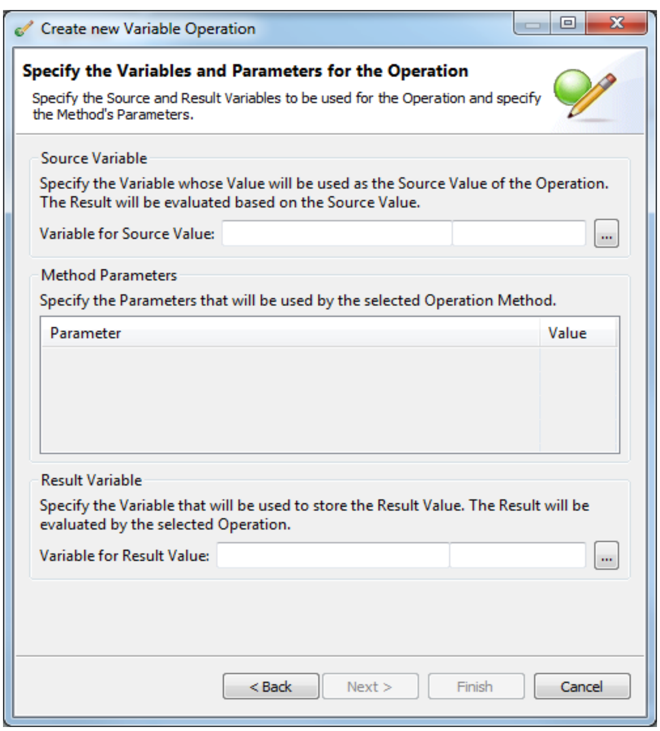


7) Click on the icon.



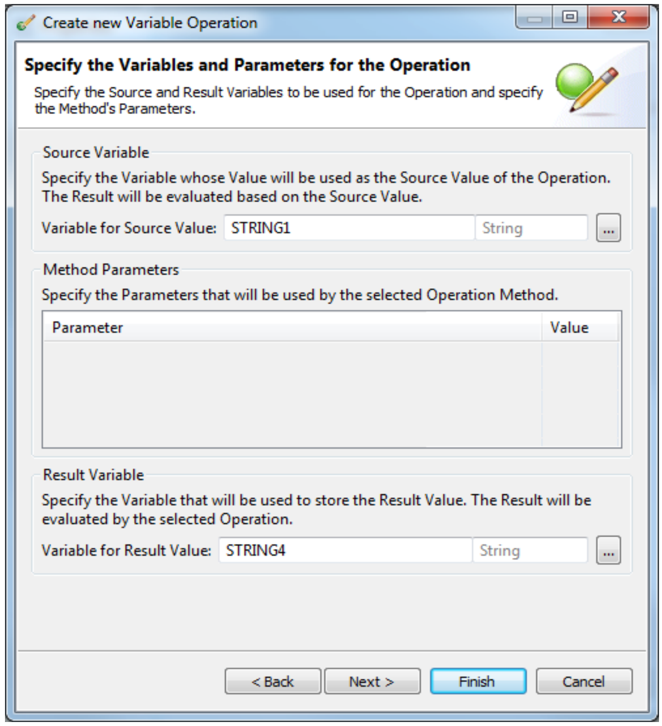
8) Select value **Reverse [String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

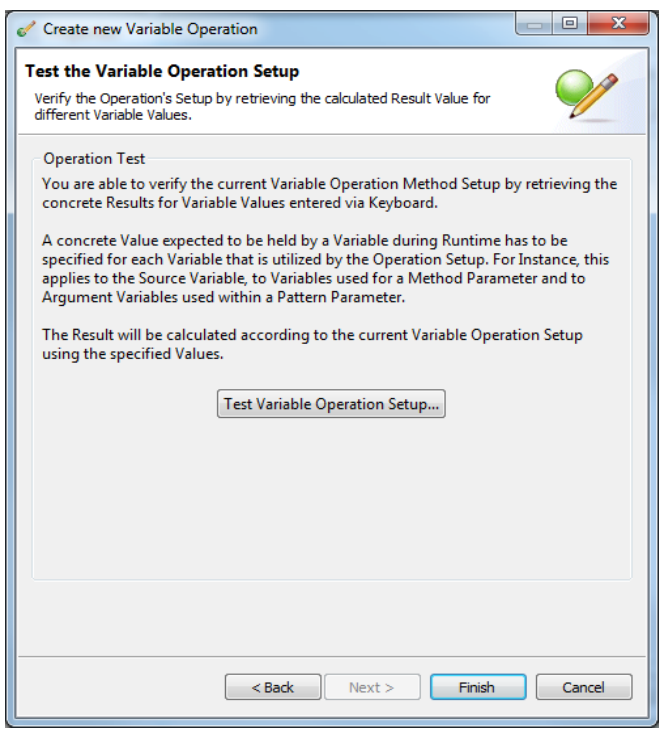


10) In the **Source Variable** section, click on the ... button, select the string the value length of which you wish to determine and click on **OK**.

11) In the **Result Variable** section, click on the ... button, select the string list variable to store the result and click on **OK**.

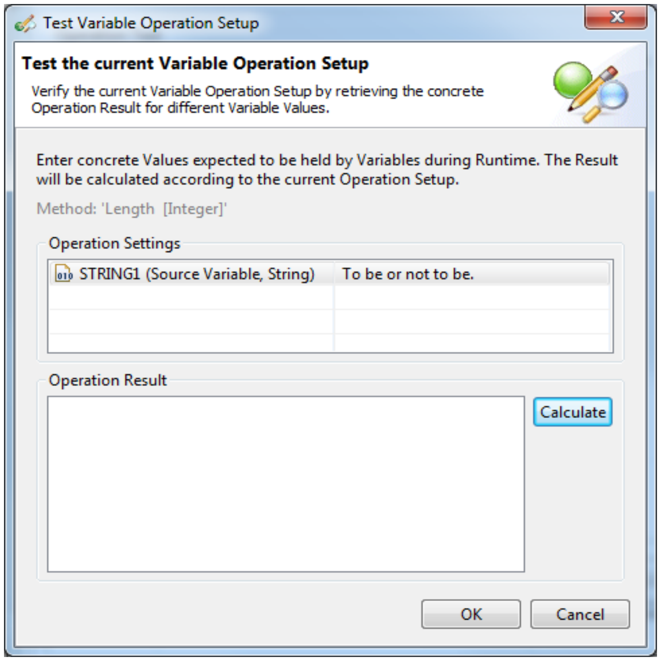


12) If you wish to test the string length determination, click on **Next**.

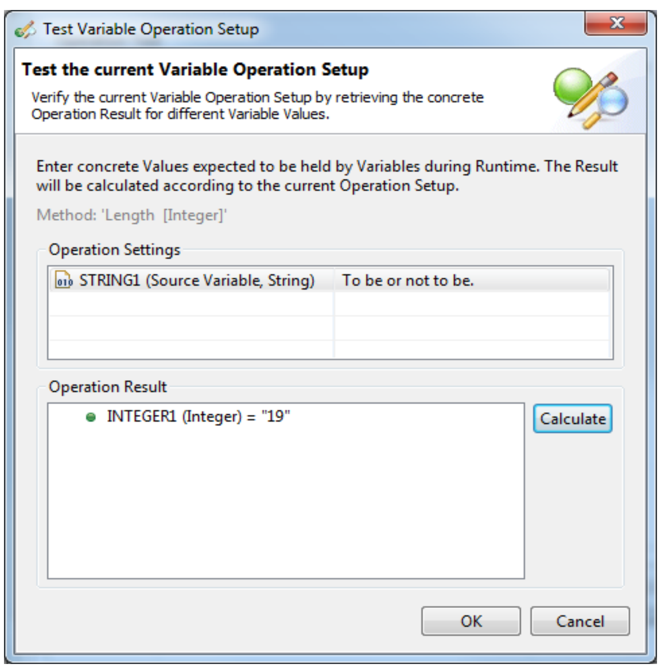


13) Click on **Test Variable Operation Setup...**.

14) Enter the test values in the right column of the **Operation Settings** field.



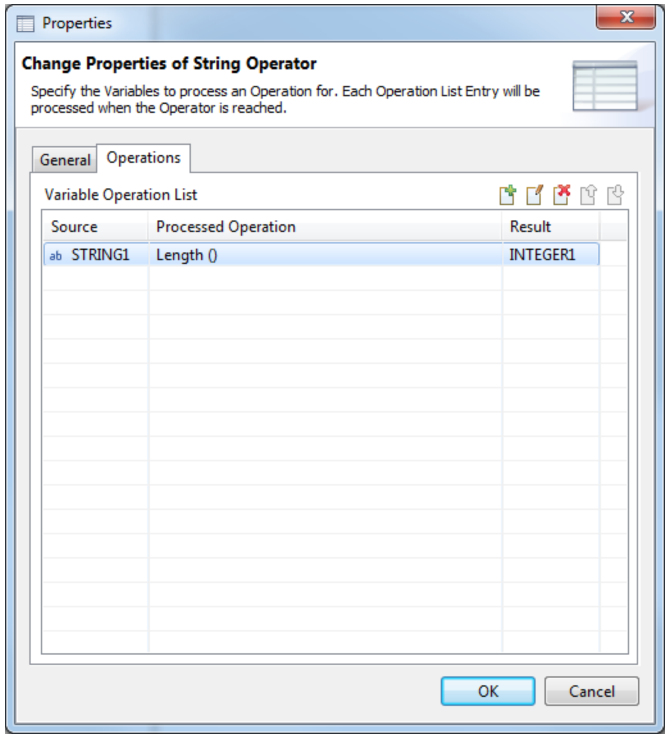
15) Click on **Calculate**.



The **Operation Result** field shows the result.

16) Click on **OK**.

17) Click on **Finish**.



18) Click on **OK**.

5.4.4.14 How to Search Forward for a Substring

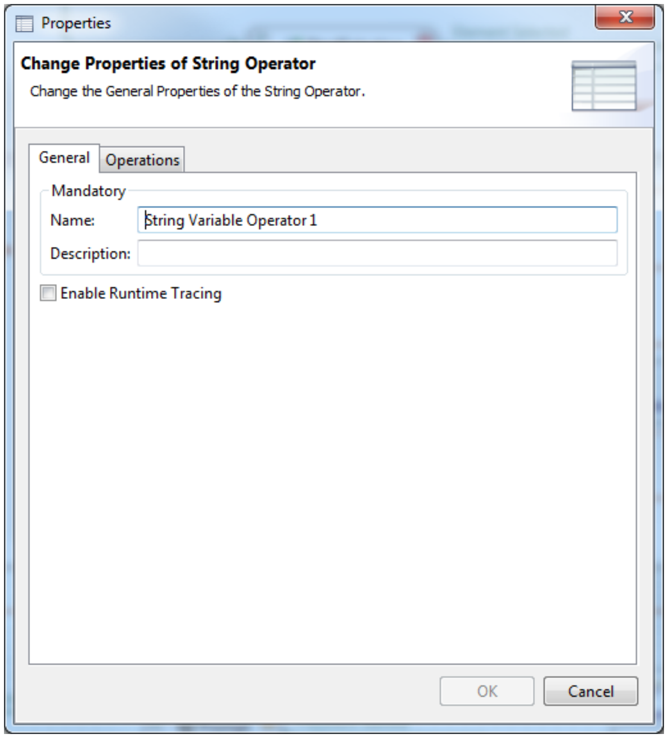
This section describes how to search forward for a substring from a starting point to be specified in a string. When the substring searched for is found for the first time, the position of the substring's first character is returned. If the substring cannot be found, -1 is returned.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

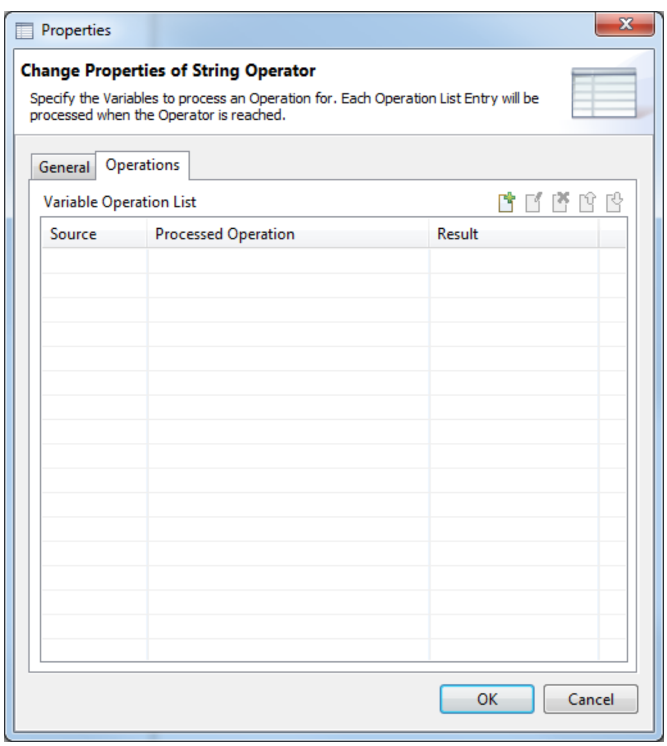
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Search Forward`.

5) If needed, enter a value in the **Description** field.

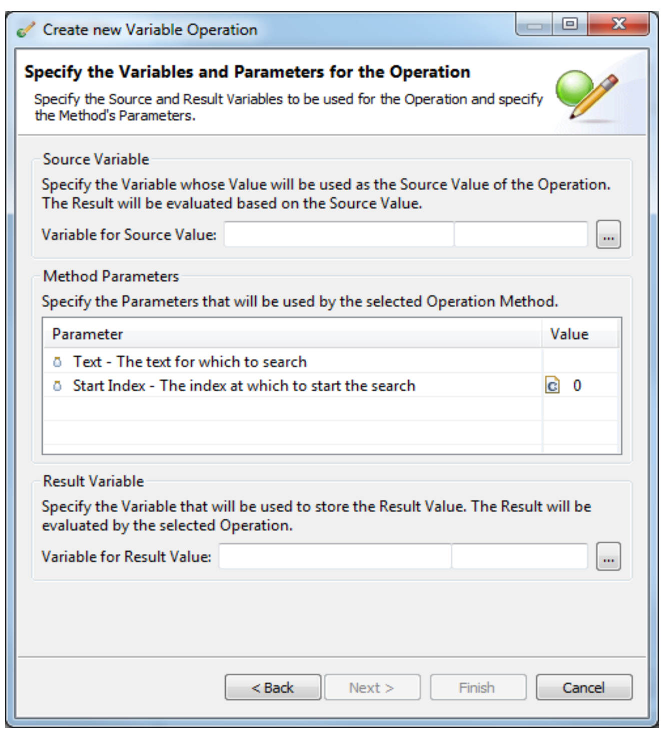
6) Click on the **Operations** tab.



7) Click on the icon.

8) Select value **Index Of [Integer < - String, Integer]** from the **Variable Operation Method** combo box.

9) Click on **Next**.



10) In the **Source Variable** section, click on the ... button, select the string variable the value of which you wish to search for a substring and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The ... button appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

12) Click on this button.

13) If you wish to use a variable value for the substring to the searched for, click on the ... button, select a variable and click on **OK**.

If, in contrast, you wish to use a constant, activate the **Constant** radio button and enter the value.

14) Click on **OK**.

15) In the **Method Parameters** section, click in the second row of the **Value** column. The ... button appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

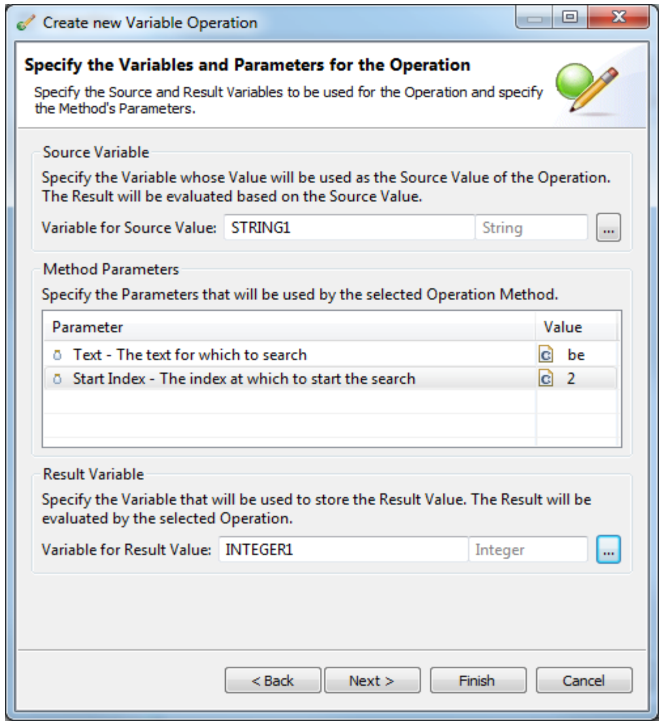
16) If you wish to use a variable value for the position from where the substring search shall start, click on the ... button, select a variable and click on **OK**.

If, in contrast, you wish to use a permanent numerical value, activate the **Constant** radio button and enter the value. The position must be greater than/ equal to 0 and smaller than the string length.

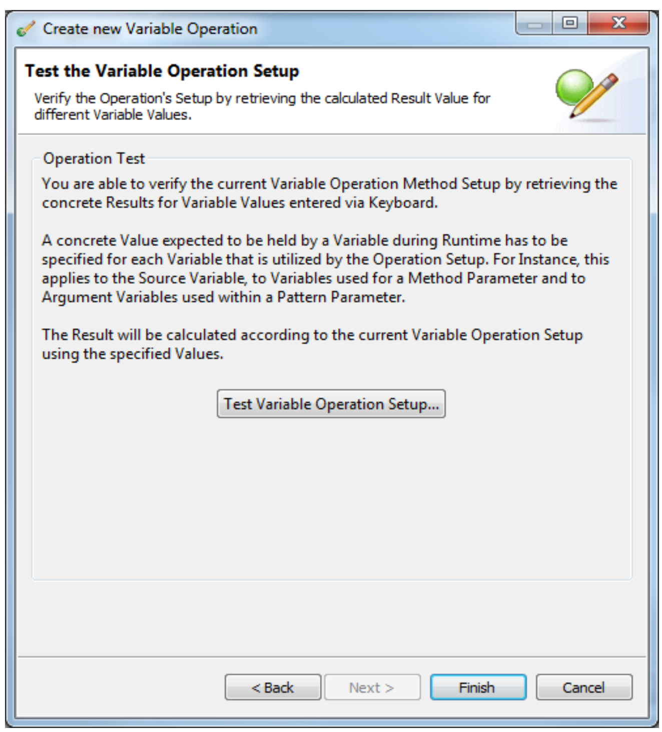
> ***INFO:*** If the position is identical with the string length, -1 is returned.

17) Click on **OK**.

18) In the **Result Variable** section, click on the ... button, select the integer variable to store the result and click on **OK**.

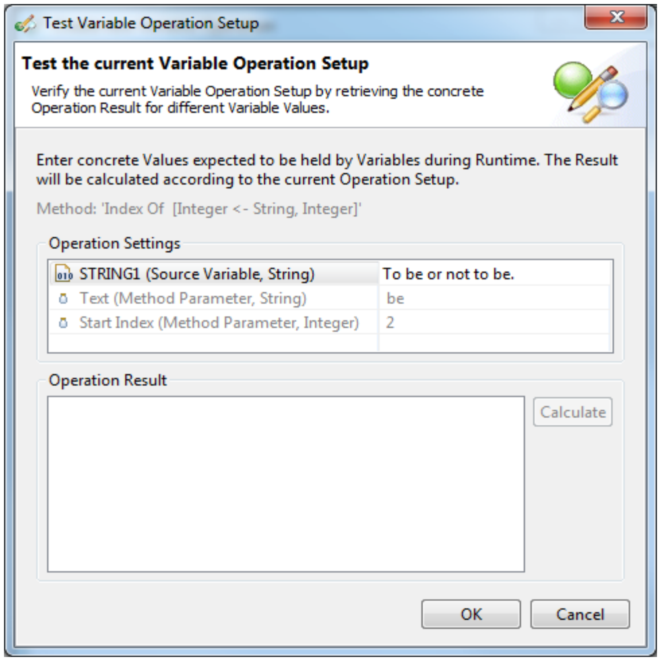


19) If you wish to test the forward search, click on **Next**.

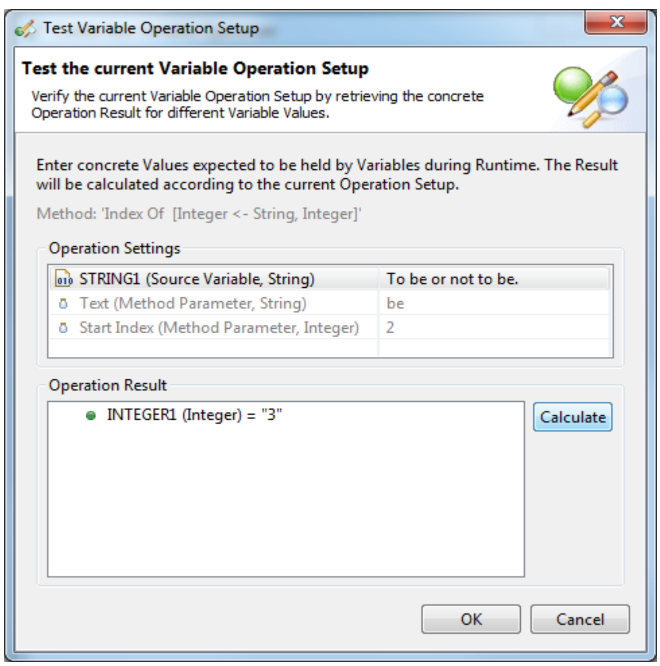


20) Click on **Test Variable Operation Setup...**.

21) Enter the test values in the right column of the **Operation Settings** field.



22) Click on **Calculate**.



The **Operation Result** field shows the result.

23) Click on **OK**.

24) Click on **Finish**.

25) Click on **OK**.

5.4.4.15 How to Search Backward for a Substring

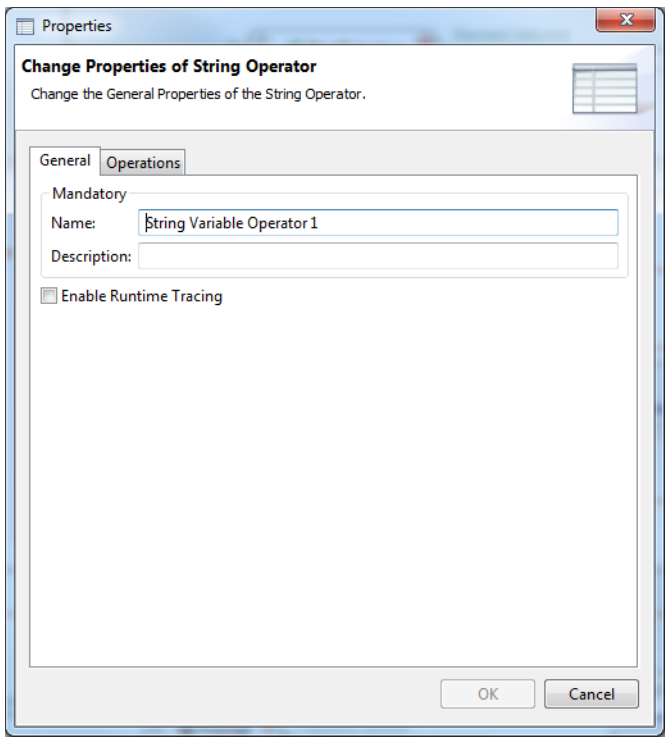
This section describes how to search backward for a substring from a starting point to be specified in a string. When the substring searched for is found for the first time, the position of the substring's first character is returned. If the substring cannot be found, -1 is returned.

Step by Step

1) Click in the palette on the **String Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

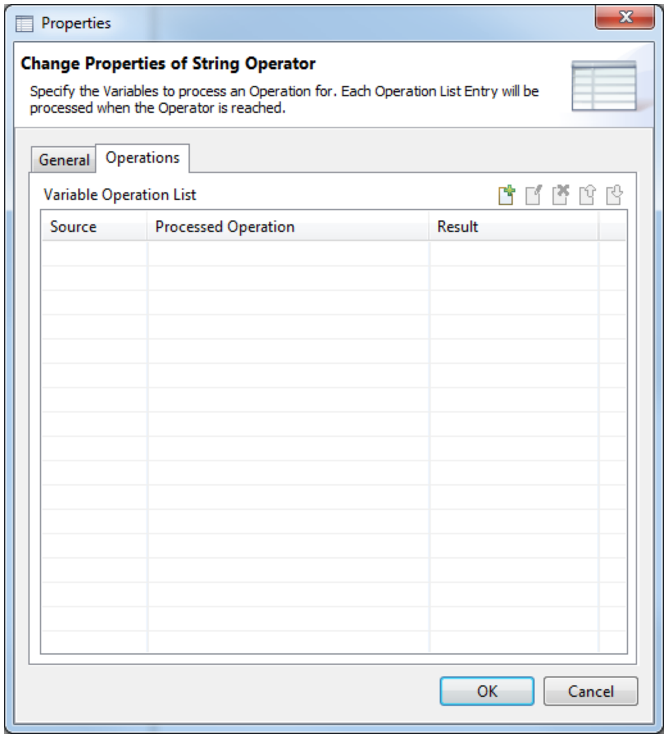
3) Double-click this control.



4) If required, change the value in the **Name** field, for example to `Search Backward`.

5) If needed, enter a value in the **Description** field.

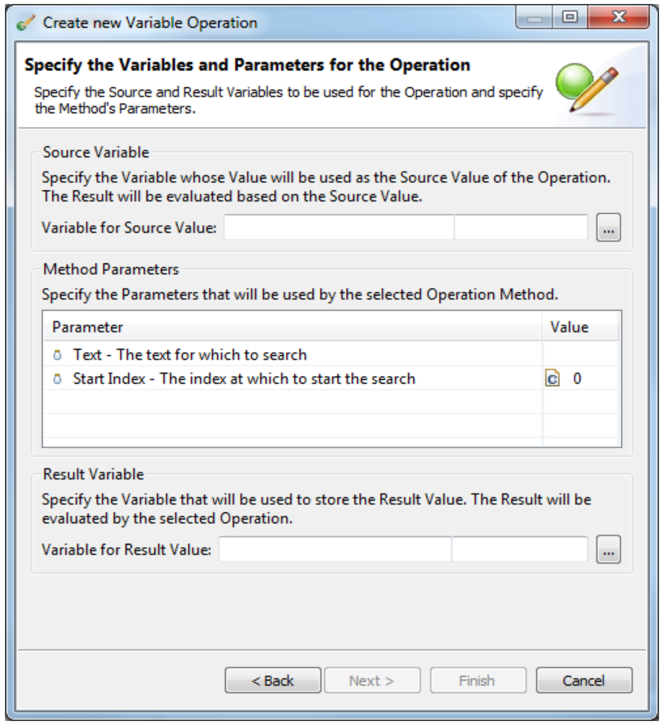
6) Click on the **Operations** tab.



7) Click on the icon.

8) Select value **Last Index Of [Integer < - String, Integer]** from the **Variable Operation Method** combo box.

9) Click on **Next**.



10) In the **Source Variable** section, click on the ... button, select the string variable the value of which you wish to search for a substring and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The ... button appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

12) Click on this button.

13) If you wish to use a variable value for the substring to the searched for, click on the ... button, select a variable and click on **OK**.

If, in contrast, you wish to use a constant, activate the **Constant** radio button and enter the value.

14) Click on **OK**.

15) In the **Method Parameters** section, click in the second row of the **Value** column. The ... button appears.

INFO: This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

16) If you wish to use a variable value for the position from where the substring search shall start, click on the ... button, select a variable and click on **OK**.

If, in contrast, you wish to use a permanent numerical value, activate the **Constant** radio button and enter the value. The position must be greater than/ equal to 0 and smaller than the string length.

INFO: If the position is equal to 0, -1 is returned.

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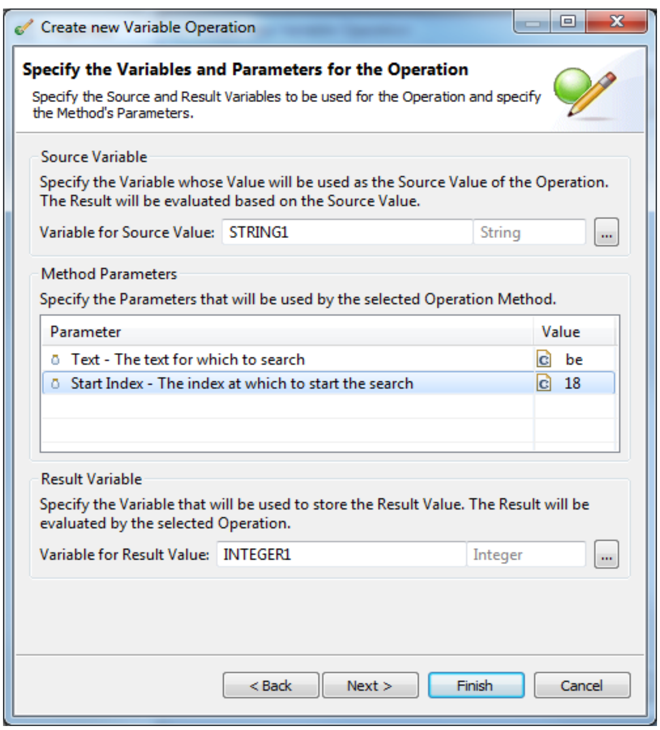
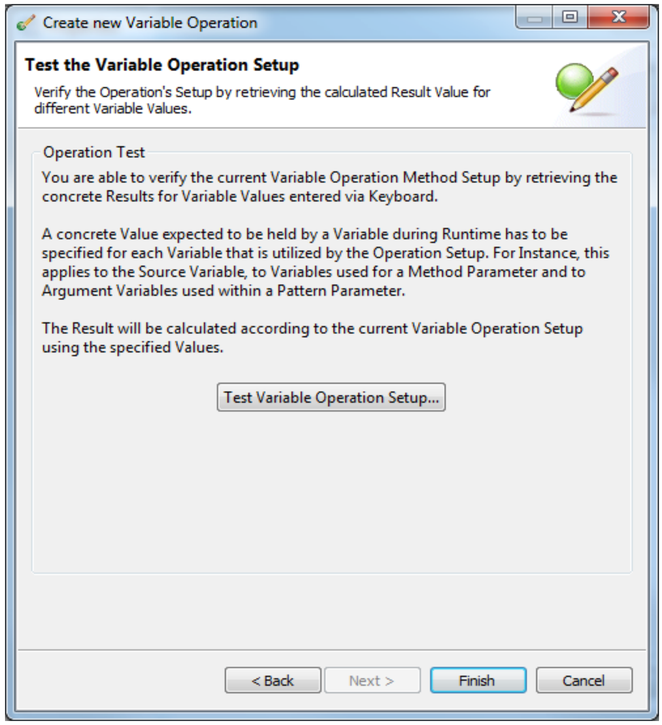
17) Click on **OK**.

18) In the **Result Variable** section, click on the ... button, select the integer variable to store the result and click on **OK**.

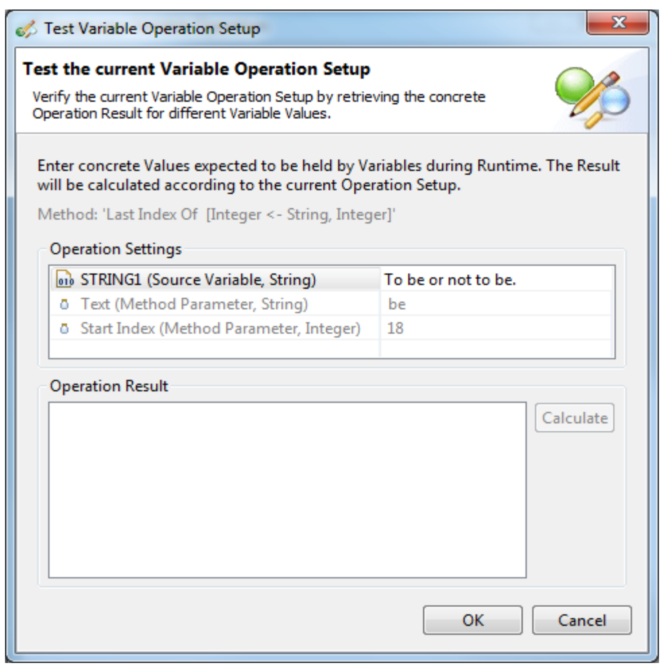


19) If you wish to test the backward search, click on **Next**.

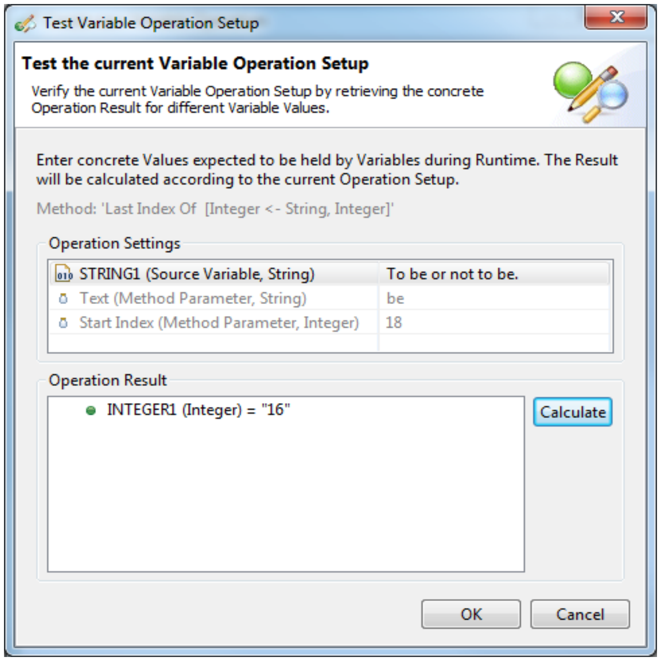


20) Click on **Test Variable Operation Setup...**.

21) Enter the test values in the right column of the **Operation Settings** field.



22) Click on **Calculate**.



The **Operation Result** field shows the result.

23) Click on **OK**.

24) Click on **Finish**.

25) Click on **OK**.

5.4.5 Date Operator Control

With the Date Operator control you can apply the following operations to a variable of type Date:

- Initialize date by a text
- Initialize date by year, month and day
- Initialize date by a temporal value in milliseconds
- Add year, month and day to a date
- Subtract year, month and day from a date
- Convert date to milliseconds
- Convert date to a string

You need a result variable for each operation. Depending on the operation, you also require a source variable and/or parameters (for example format specifications).

5.4.5.1 How to Initialize a Date by Text

This section describes how to initialize a date variable by text.

Step by Step

1) Click in the palette on the **Date Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

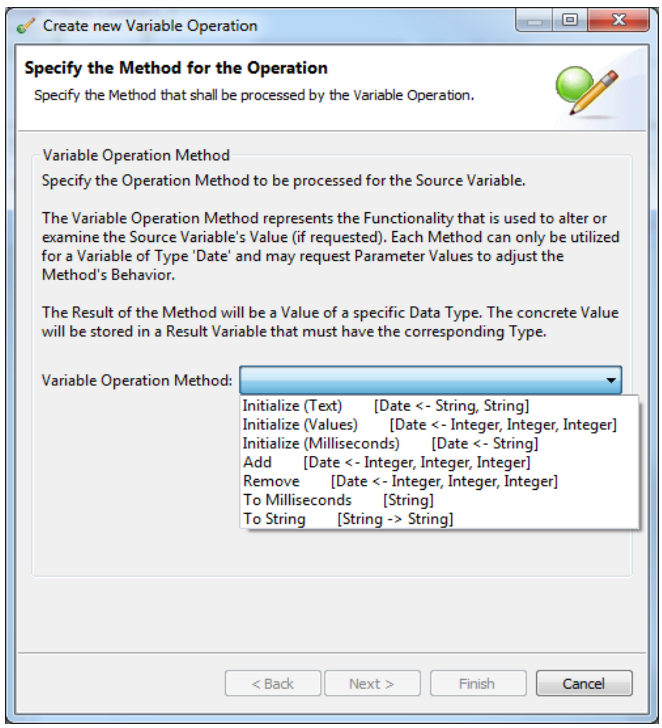
3) Double-click this control.

4) If required, change the value in the **Name** field, for example to `Initialize Date by Text`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

7) Click on the icon.



8) Select value **Initialize (Text) [Date < - String, String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

10) In the **Method Parameters** section, click in the first row of the **Value** column.

The button appears.

11) Click on this button.

12) If you wish to use a variable value for the text to initialize the date, click on the button, select a variable and click on **OK**.

If, in contrast, you wish to use a constant value, activate the **Constant** radio button and enter the value.

> ***INFO:*** The description of the Java class SimpleDateFormat provides further information about formats, see for example `docs.oracle.com/javase/6/docs/api/java/text/SimpleDateFormat.html`.

13) Click on **OK**.

14) Proceed analog for the **Format** parameter.

15) In the **Result Variable** section click on the … button, select the data variable to be initialized and click on **OK**.

16) If you wish to test the date initialization, click on **Next**.

17) Click on **Test Variable Operation Setup...**.

18) Enter the test values in the right column of the **Operation Settings** field.

19) Click on **Calculate**.

The **Operation Result** field shows the result.

20) Click on **OK**.

21) Click on **Finish**.

22) Click on **OK**.

5.4.5.2 How to Initialize a Date by Year, Month and Day

This section describes how to initialize a date variable by specifying year, month and day.

Step by Step

1) Click in the palette on the **Date Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

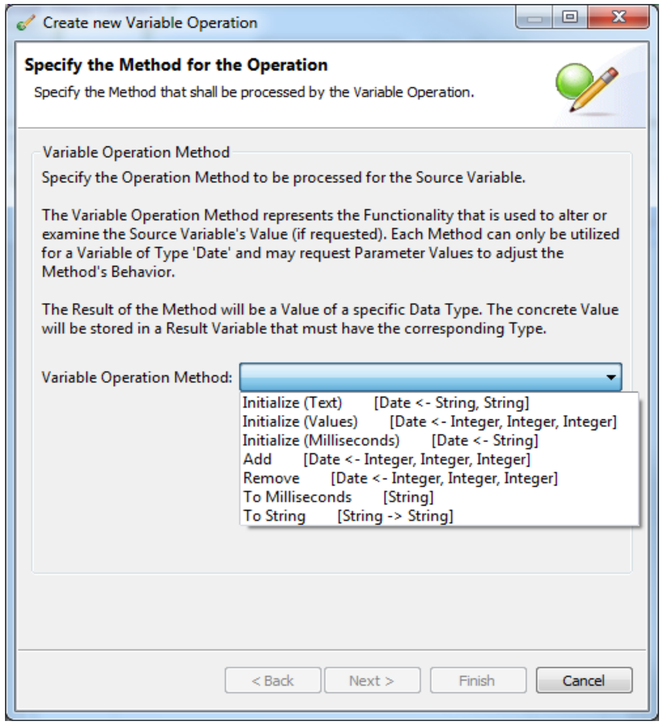
3) Double-click this control.

4) If required, change the value in the **Name** field, for example to `Initialize Date by Year, Month and Day`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

7) Click on the icon.



8) Select value **Initialize (Values) [Date < - Integer, Integer, Integer]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

10) In the **Method Parameters** section, click in the first row of the **Value** column.

The ... button appears.

INFO: This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

11) Click on this button.

12) If you wish to use a variable value for the year number to initialize the date, click on the ... button, select an integer variable and click on **OK**.

If, in contrast, you wish to use a constant value, activate the **Constant** radio button and enter the value.

13) Click on **OK**.

14) Proceed analog for the parameters **Months** and **Days**.

15) In the **Result Variable** section click on the ... button, select the data variable to be initialized and click on **OK**.

16) If you wish to test the date initialization, click on **Next**.

17) Click on **Test Variable Operation Setup...**.

18) Enter the test values in the right column of the **Operation Settings** field.

19) Click on **Calculate**.

The **Operation Result** field shows the result.

20) Click on **OK**.

21) Click on **Finish**.

22) Click on **OK**.

5.4.5.3 How to Initialize a Date by a Temporal Value in Milliseconds

This section describes how to initialize a date variable by the number of milli-seconds since 01 January 1970 00:00:00 UTC.

Step by Step

1) Click in the palette on the **Date Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

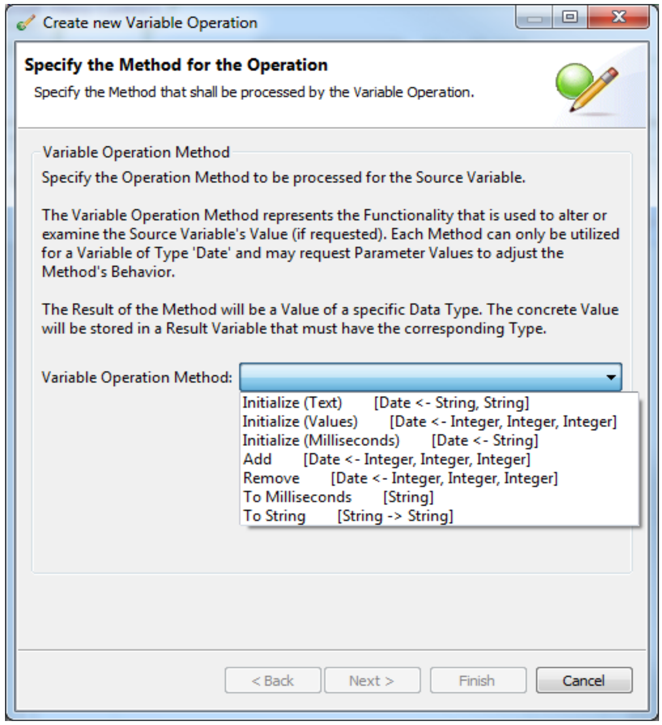
3) Double-click this control.

4) If required, change the value in the **Name** field, for example to `Initialize Date by Milliseconds`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

7) Click on the  icon.



8) Select value **Initialize (Milliseconds) [Date < - String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

10) In the **Method Parameters** section, click in the first row of the **Value** column.

The button appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

11) Click on this button.

12) If you wish to use a variable value for the number of milliseconds to initialize the date, click on the button, select a string variable and click on **OK**.

If, in contrast, you wish to use a constant value, activate the **Constant** radio button and enter the value.

13) Click on **OK**.

14) In the **Result Variable** section click on the button, select the data variable to be initialized and click on **OK**.

15) If you wish to test the date initialization, click on **Next**.

16) Click on **Test Variable Operation Setup...**.

17) Enter the test value in the right column of the **Operation Settings** field.

18) Click on **Calculate**.

The **Operation Result** field shows the result.

19) Click on **OK**.

20) Click on **Finish**.

21) Click on **OK**.

5.4.5.4 How to Add Year, Month and Day to a Date

This section describes how to add a temporal value to a date variable by specifying year, month and day.

Step by Step

1) Click in the palette on the **Date Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

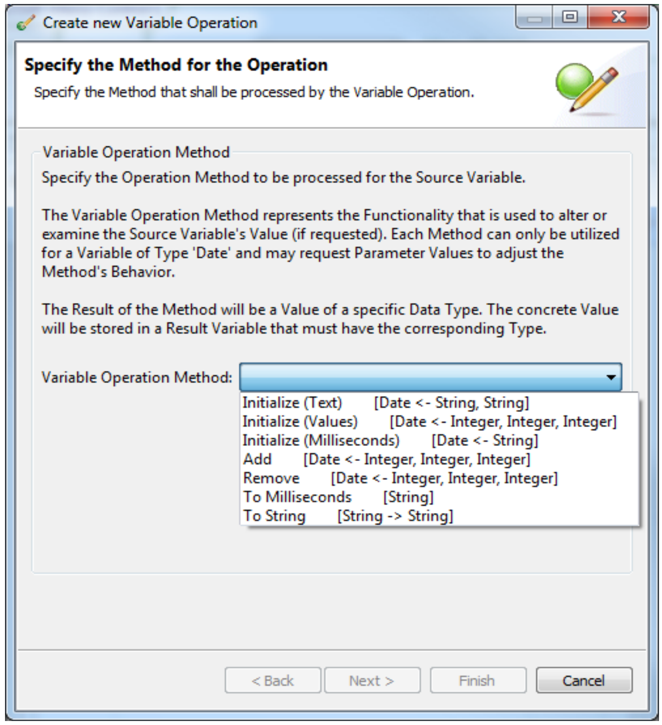
3) Double-click this control.

4) If required, change the value in the **Name** field, for example to `Add Time to Date`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

7) Click on the  icon.



8) Select value **Add [Date < - Integer, Integer, Integer]** in the **Variable Operation Method** combo box.

9) Click on **Next**.

10) In the **Source Variable** section, click on the ... button, select the date variable the value of which you wish to use as starting point for the time addition and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The ... button appears.

INFO: This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.

You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

---

12) Click on this button.

13) If you wish to use a variable value for the number of years to be added to the date, click on the ... button, select an integer variable and click on **OK**.

If, in contrast, you wish to use a constant value, activate the **Constant** radio button and enter the value.

14) Click on **OK**.

15) Proceed analog for the parameters **Months** and **Days**.

16) In the **Result Variable** section, click on the ... button, select the date variable to which the years, months and days shall be added and click on **OK**.

17) If you wish to test time addition, click on **Next**.

18) Click on **Test Variable Operation Setup...**.

19) Enter the test values in the right column of the **Operation Settings** field.

20) Click on **Calculate**.

    The **Operation Result** field shows the result.

21) Click on **OK**.

22) Click on **Finish**.

23) Click on **OK**.

5.4.5.5 How to Subtract Year, Month and Day from a Date

This section describes how to subtract a temporal value from a date variable by specifying year, month and day.

Step by Step

1) Click in the palette on the **Date Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

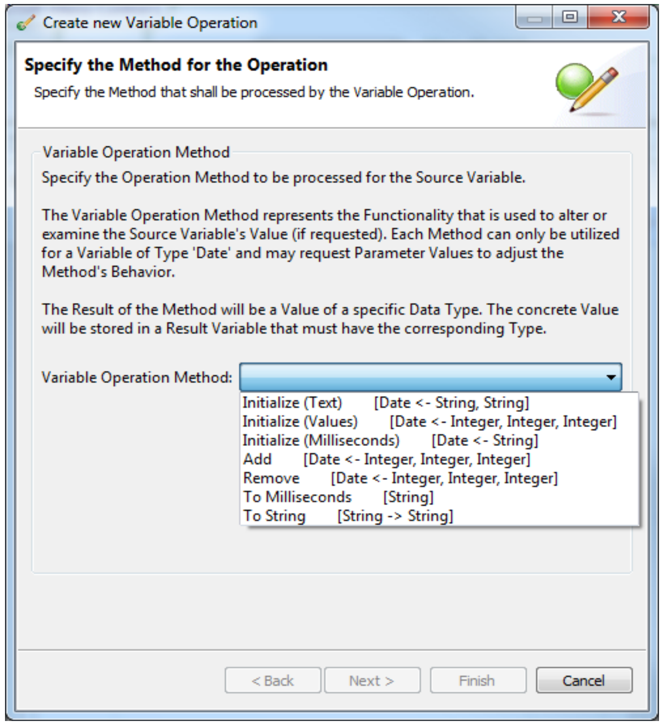
3) Double-click this control.

4) If required, change the value in the **Name** field, for example to `Subtract Time from Date`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

7) Click on the icon.



8) Select value **Remove [Date < - Integer, Integer, Integer]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

10) In the **Source Variable** section, click on the ... button, select the date variable the value of which you wish to use as starting point for the time subtraction and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The ... button appears.

> ***INFO:*** This button appears only if you use specific Windows themes such as any Aero theme or the Windows 7 basic theme.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

12) Click on this button.

13) If you wish to use a variable value for the number of years to be subtracted from the date, click on the ... button, select an integer variable and click on **OK**.

If, in contrast, you wish to use a constant value, activate the **Constant** radio button and enter the value.

14) Click on **OK**.

15) Proceed analog for the parameters **Months** and **Days**.

16) In the **Result Variable** section, click on the ... button, select the date variable from which the years, months and days shall be subtracted and click on **OK**.

17) If you wish to test the time subtraction, click on **Next**.

18) Click on **Test Variable Operation Setup...**.

19) Enter the test values in the right column of the **Operation Settings** field.

20) Click on **Calculate**.

The **Operation Result** field shows the result.

21) Click on **OK**.

22) Click on **Finish**.

23) Click on **OK**.

5.4.5.6 How to Convert a Date to Milliseconds

This section describes how to convert a date to the number of milliseconds since 01 January 1970 00:00:00 UTC.

Step by Step

1) Click in the palette on the **Date Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

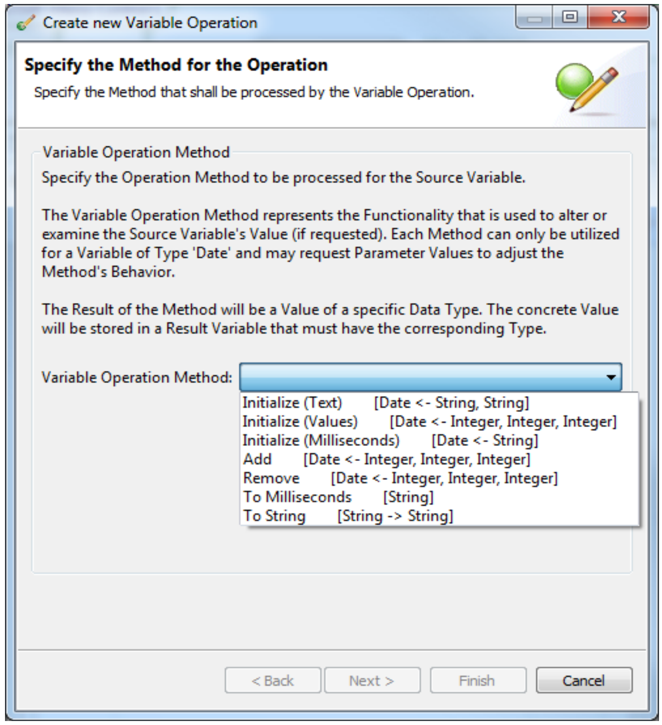
3) Double-click this control.

4) If required, change the value in the **Name** field, for example to `Convert Time to Milliseconds`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

7) Click on the icon.



8) Select value **To Milliseconds [String]**from the **Variable Operation Method** combo box.

9) Click on **Next**.

10) In the **Source Variable** section, click on the ... button, select the date variable the value of which you wish to use as starting point for the conversion to milliseconds and click on **OK**.

11) In the **Result Variable** section, click on the ... button, select the string variable to store the milliseconds and click on **OK**.

12) If you wish to test the conversion to milliseconds, click on **Next**.

13) Click on **Test Variable Operation Setup...**.

14) Click on **Calculate**.

The **Operation Result** field shows the result.

15) Click on **OK**.

16) Click on **Finish**.

17) Click on **OK**.

5.4.5.7 How to Convert a Date to a String

This section describes how to convert a date to a string, for example `2013-08-05 12:47:01.344 +0200`.

Step by Step

1) Click in the palette on the **Date Operator** control and drag it into the callflow editor.

2) Release the mousebutton.

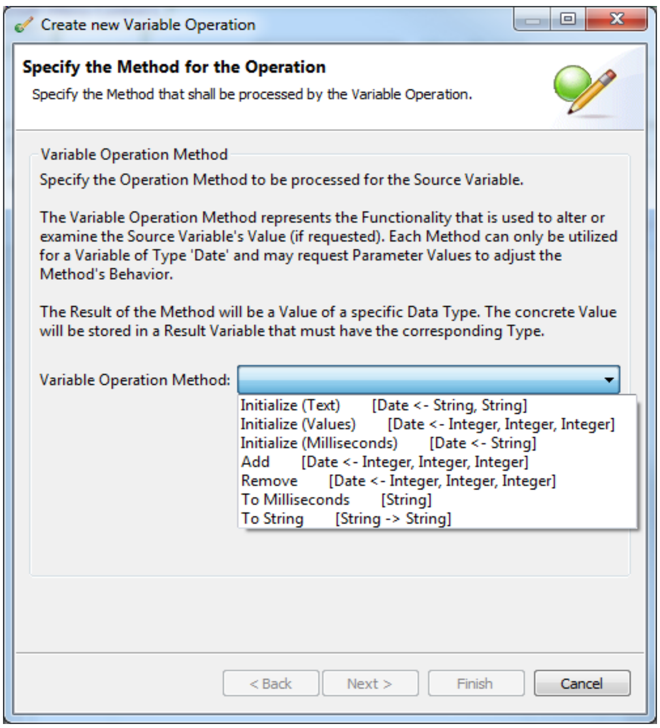
3) Double-click this control.

4) If required, change the value in the **Name** field, for example to `Convert Time to String`.

5) If needed, enter a value in the **Description** field.

6) Click on the **Operations** tab.

7) Click on the icon.



8) Select value **To String [String -> String]** from the **Variable Operation Method** combo box.

9) Click on **Next**.

10) In the **Source Variable** section, click on the button, select the date variable the value of which you wish to use as starting point for the conversion to a string and click on **OK**.

11) In the **Method Parameters** section, click in the first row of the **Value** column. The button appears.

12) Click on this button.

13) If you wish to use a variable value for the format of the conversion to a string, click on the ... button, select a variable and click on **OK**.

If, in contrast, you wish to use a constant value, activate the **Constant** radio button and enter the value.

Example: `yyyy-MM-dd HH:mm:ss.SSS Z`

> ***INFO:*** The description of the Java class SimpleDateFormat provides further information about formats, see for example `docs.oracle.com/javase/6/docs/api/java/text/SimpleDateFormat.html`.

14) Click on **OK**.

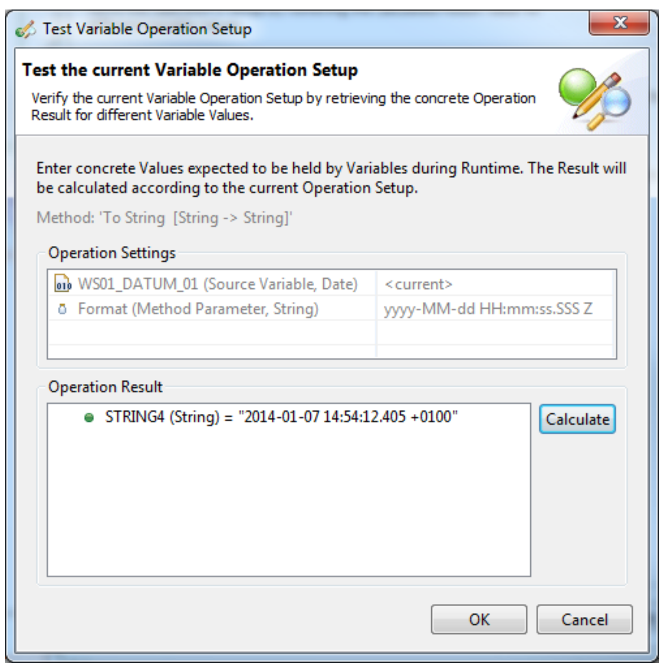
15) Proceed analog for the **Format** parameter.

16) In the **Result Variable** section, click on the ... button, select the string variable to store the converted date and click on **OK**.

17) If you wish to test the conversion to a string, click on **Next**.

18) Click on **Test Variable Operation Setup...**.

19) Click on **Calculate**.



The **Operation Result** field shows the result.

20) Click on **OK**.

21) Click on **Finish**.

22) Click on **OK**.

5.4.6 Time Operator Control

With the Time Operator control you can apply the following operations to a variable of type Time:

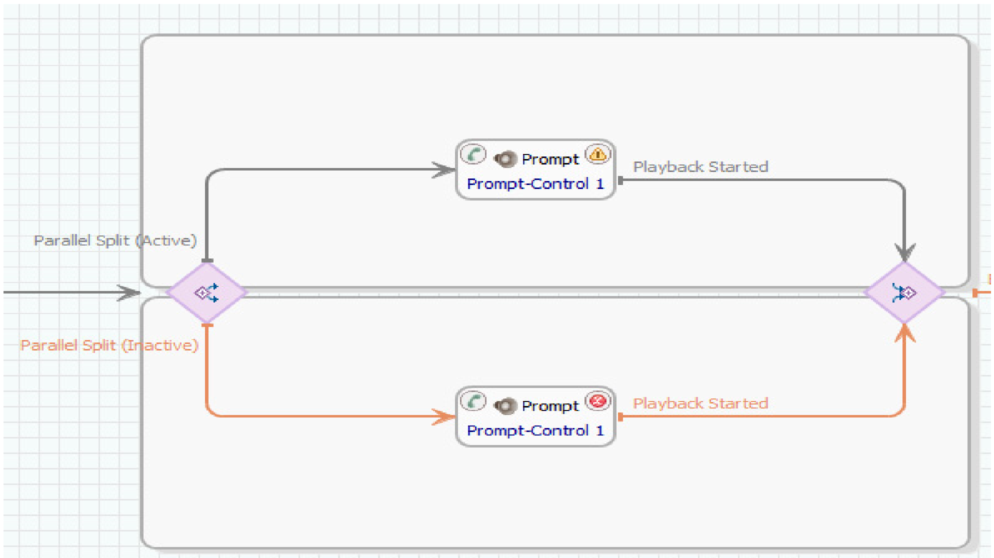
- Initialize time by text
- Initialize time by hours, minutes and seconds
- Initialize time by a temporal value in milliseconds
- Add time to a time
- Subtract time from a time
- Convert time into milliseconds
- Convert time into a string

You need a result variable for each operation. Depending on the operation, you also require a source variable and/or parameters (for example format specifications).

You perform such operations analog to the operations described in section *Date Operator Control*.

5.4.7 Parallel Flow Control

The Parallel Flow control allows you to divide the processing of a callflow into two parallel branches at the control's starting point. The execution in the two branches occurs independently from each other. You can deploy different controls in the two branches. Using the mouse, you drag such controls either from the remaining callflow or from palette into the Parallel Flow control. If you drag several controls into the Parallel Flow control simultaneously, connections that may exist between them are maintained. However, connections to other controls in the remaining callflow are automatically removed. The Parallel Flow control has one exit only and this is where both branches end. At this exit, both branches are connected with an exclusive OR link, i. e. the branch executed fastest is lead out of the Parallel Flow control and processing the other branch is abandoned.



The Parallel Flow control appears maximized by default so that you can see both branches with their controls in the workspace of the callflow editor. By default, the control is divided in two areas of the same size positioned on top of each other for the two branches. In the control's properties you can activate the **Vertical (from top to bottom)** radio button in the **Parallel Flow Layout** section to position the two areas next to each other.

In the **Primary Subflow Ratio** field you can configure the size of the upper or left area relative to the entire area of the control. Allowed are values from 10 to 90.

If you activate the **Flow is displayed minimized** check box, the control is represented smaller and like all other controls, i. e. you cannot see the branches in the control anymore.

The properties of the control's connections and context menu in the two branches are identical with the properties in a callflow.

The primary branch appears always on top or on the left.

The primary branch adopts always the call status of the connection that leads to the entry of the Parallel Flow control. The secondary branch starts always with the Inactive and Accepted call states. This prevents the primary and secondary branch from having the Active call status and thus prompts from being played in both branches at the same time.

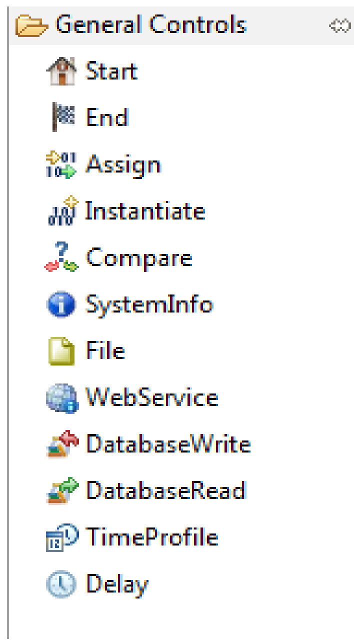
The call status behind the exit of a Parallel Flow control is determined by the connection of the highest priority that leads to the exit. There is the following priority list:

- Active and accepted (highest priority)
- Active and unaccepted
- Inactive and alerted
- Inactive and accepted
- Unknown (lowest priority)

5.5 Group General Controls

In the group **General Controls** you find all basic controls that have no telephony function.

The extract from the palette view shows which controls are part of this group.



5.5.1 Start Control

A Start control corresponds to starting the application by one of the following events:

- **Incoming call**
- **Custom start events**
  You can configure custom start events under **<application name> > Application Settings > Application Configuration > Start Events**.

> ***NOTICE:*** For an application, there is always only one callflow that contains a Start control and that is assigned to the Incoming Call start event. If you create a second callflow with the Incoming Call start event, a Start control is not automatically assigned to this callflow and you cannot add a Start control to it manually either. You need to remove the Start control from the first callflow before you can add a Start control to the second callflow manually. The same applies for callflows with a custom start event.

If you use one of the following start events, a Callflow Entry control is automatically used instead of the Start control:

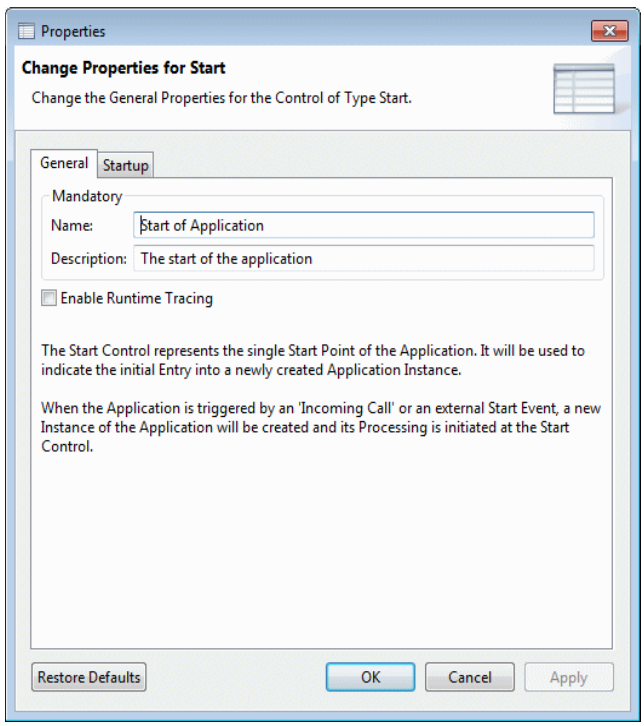
- **Call connection interrupted**
- **Contact center agent ready**
- **Contact center error**

Each callflow must not contain more than one Start control.

You cannot use the Start control in a callflow of a composition or in a subflow.

> ***NOTICE:*** In all example applications, the Start control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). These applications are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide these applications.

The configuration dialog of the Start control provides the tabs **General** and **Startup**.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

"Startup" tab

If you use the Incoming Call event, you can configure the start mode of the application on the Start control's **Startup** tab. The following options are available:

- **Normal (Immediate Accept)**
- **Unaccepted (Early Media)**

- **Alerted (Free of Charge Deflection)**

The following table provides an overview of the start event, the start mode and the call status. For the sake of completeness, we also provide information on callflows that begin with a Callflow Entry control instead of a Start control.

Application							
Start Event	Start Mode	Callflow					
		First Control	Connection from the first to the second control				
			Graphic Representation		Call Status		Meaning
			Color	Line Type			
Incoming call	Normal (Immediate Accept)	Start control	Green	Straight	Active	Accepted	The caller accepted the call immediately. Prompts can be played to the caller and inputs can be accepted from him/her. Call charging has been started.
	Unaccepted (Early Media)	Start control	Green	Dotted	Active	Unaccepted	The callee has not yet explicitly accepted the call. Prompts can be played to the caller and inputs can be accepted from him/her. Call charging has not been started yet.
	Alerted (Free of Charge Deflection)	Start control	Red	Dotted	Inactive	Alerted	The callee has not yet explicitly accepted the call. No prompts can be played to the caller and no inputs can be accepted from him/her. Call charging has not been started yet.
Custom start event	-	Start control	Red	Straight	Inactive	Accepted	The caller accepted the call immediately. No prompts can be played to the caller and no inputs can be accepted from him/her. Call charging has been started.
Call connection interrupted	-	Callflow Entry	Red	Straight	Inactive	Accepted	No prompts can be played to the caller and no inputs can be accepted from him/her. Call charging has been started.
Contact center agent ready	-	Callflow Entry	Green	Straight	Active	Accepted	The caller accepted the call immediately. Prompts can be played to the caller and inputs can be accepted from him/her. Call charging has been started.
Contact center error	-	Callflow Entry	Green	Straight	Active	Accepted	The caller accepted the call immediately. Prompts can be played to the caller and inputs can be accepted from him/her. Call charging has been started.

5.5.2 End Control

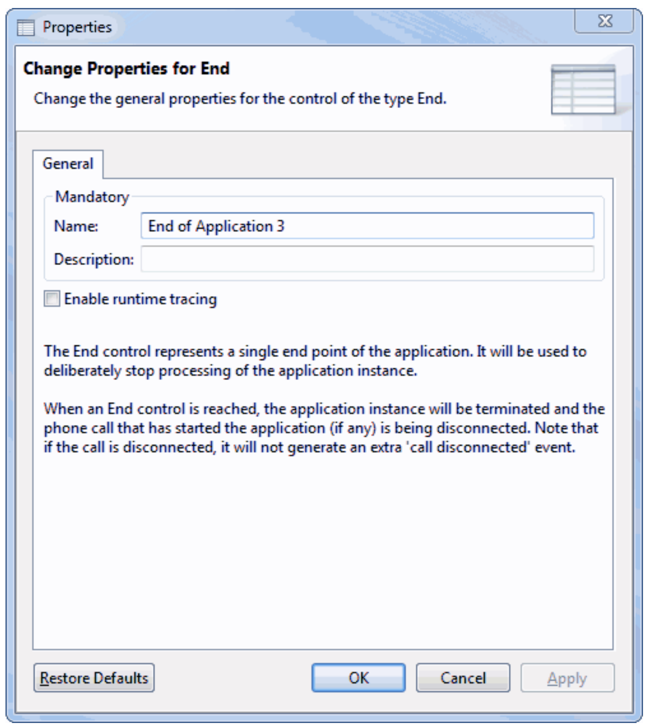
The End control does not only represent the point of exit in the graphic callflow design, but also serves the purpose of disconnecting the call from the system.

Each application must have at least one End control.

You cannot use the End control in a callflow or subflow of a composition.

> ***NOTICE:*** In the example applications, the End control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). These applications are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide these applications.

The End control contains the **Properties** configuration dialog only.



"Properties" tab

On the **Properties** tab of the control you can perform the following settings. See section *General Information about Controls*.

5.5.3 Assign Control

With the Assign control, you define one or several variables or assign values to existing variables. Such variables can be read in other controls of the same application, and if they are not write-protected they can be written.

You can assign a string, a number, a language file etc. to a variable. It does not have to be defined right at an application's start, but only when it is needed. Variables have specific data types and accept only compatible values.

You can define variables in other areas also. However, you can freely define the variable value only in the **Assign** control.

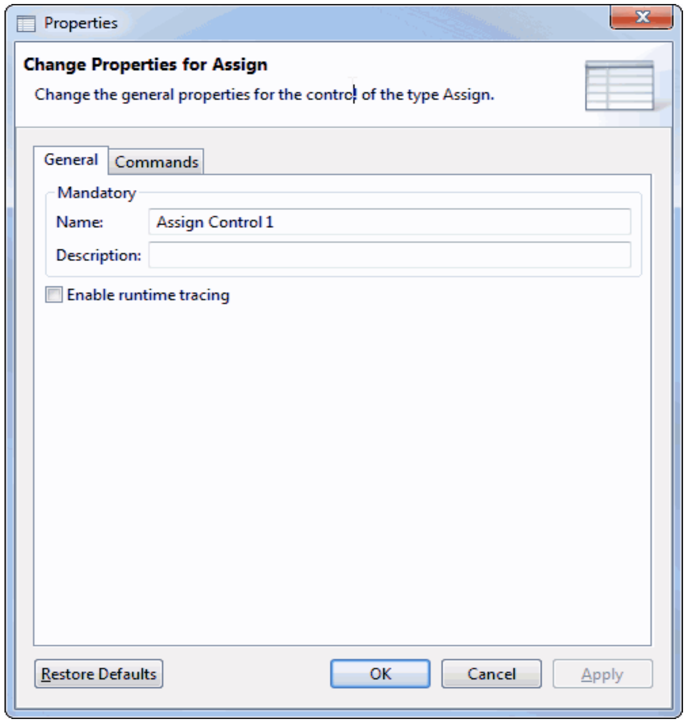
In addition, you can define variables for the entire workspace or for applications. See section *Workspace View* on this.

You can use the following default-system variables in an application:

Variable name	Description	Data type
`DATE`	Date at the time of the application start	Date
`TIME`	Time at the time of the application start	Time
`REDIRECTED`	Phone number of the redirected phone	String
`CALLED`	Phone number of the callee	String
`CALLER`	Phone number of the caller	String
`LANGUAGE`	current language of the application	String

> ***NOTICE:*** In the example application SpeakingClock, the Assign control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). In the example compositions Logon and Change-Password, the control is also available in the `Samples\Compositions` folder. The application and compositions are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide the application and compositions.

The configuration dialog of the Assign control provides the tabs **General** and **Commands**.



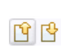
"General" Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

"Commands" Tab

On the **Commands** tab you can assign values to several variables. The definition occurs with the help of a wizard.

The following icons are available:

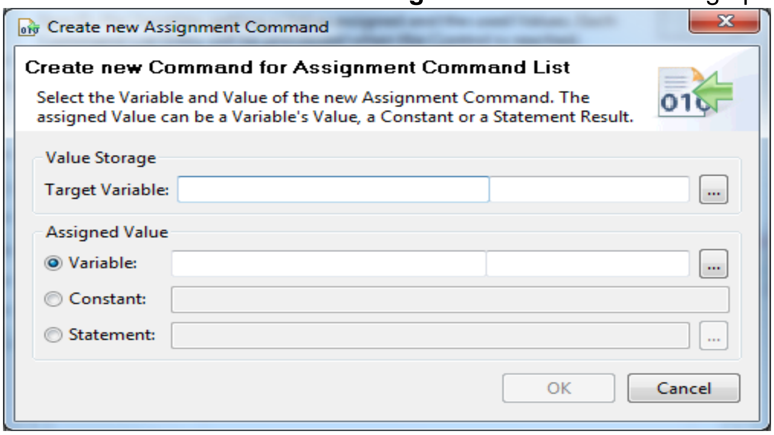
Icon	Description
	This icon lets you create a new assignment command. See under this table *Defining a new Assignment Command*.
	A click on this icon enables you to modify the settings of an already created and selected assignment command in the **Edit Assignment Command** dialog.
	You use this icon to remove a selected assignment command from the list.
	If you have created several assignment commands, they are applied in order from top to bottom. Using these icons you can move a selected assignment command in the list up or down.

5.5.3.1 How to Define a new Assignment Command

Step by Step

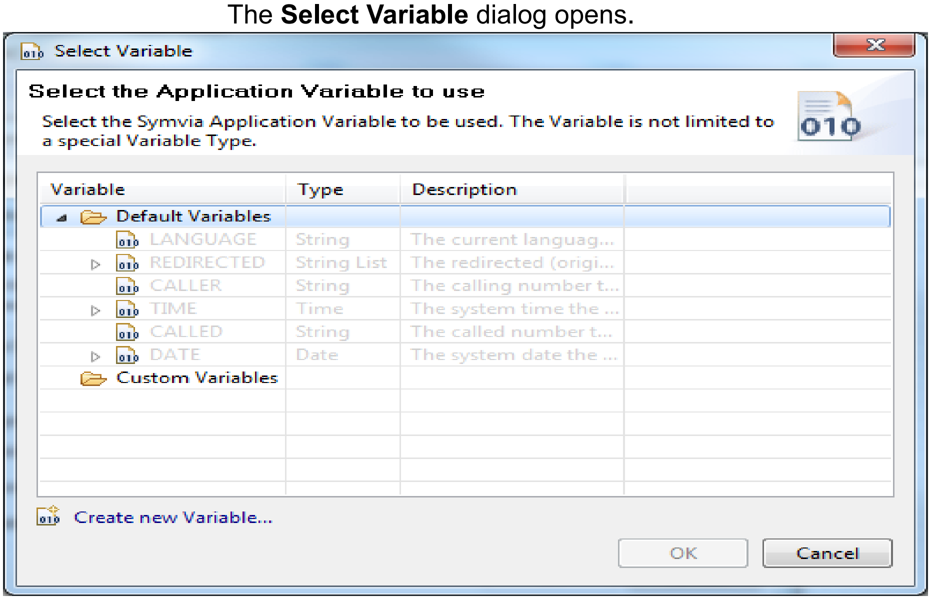
1) Click on to define a new command for assigning a value of a new or of an already existing variable.

The **Create new Assignment Command** dialog opens.



2) Click on **...** next to the fields of the **target variable**.

The **Select Variable** dialog opens.



3) Select a user-defined variable from the list or create a new variable via the **Create new variable**... link.

4) Click on **OK**.

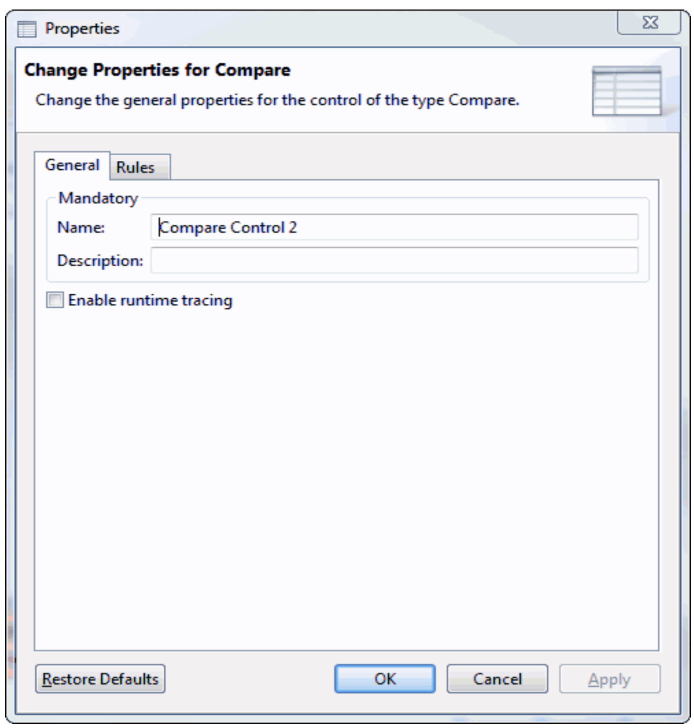
5) Select the desired assignment via the radio buttons and click on **OK**.

5.5.4 Compare Control

With the help of the Compare control you can perform comparisons by previously defined rules. You can specify a list of rules, so that for example all incoming calls are assigned to their country of origin on the basis of the phone number's leading digits.

> ***NOTICE:*** In the example application SpeakingClock, the Compare control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). In the example compositions Logon and ChangePassword, the control is also available in the `Samples\Compositions` folder. The application and compositions are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide the application and compositions.

The configuration dialog of the Compare control provides the tabs **General** and **Rules**.



“General” Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

“Rules” tab

On the **Rules** tab you define one or several rules for comparing values in variables. This definition is realized with the help of a wizard.

The following icons are available:

Icon	Description
	This icon lets you create a new comparison rule. See under this table *Defining a new Comparison Rule*.
	A click on this icon enables you to modify the settings of an already created and selected comparison rule in the **Edit Comparison Rule** dialog.
	You use this icon to remove a selected comparison rule from the list.
	If you have created several comparison rules, they are applied in order from top to bottom. Using these icons you can move a selected comparison rule in the list up or down.

5.5.4.1 How to Create a new Comparison Rule

You perform comparisons using a comparison operation like greater than, smaller than, etc. This comparison operation serves as condition for declaring the result of a rule as true or false.

Step by Step

1) Click on . The **Create new Comparison Rule** dialog opens.

2) In the **Left Value** section select a **Variable** , a **Constant** or an already created **Rule** via the radio button which is to deliver the first comparison value. You can fall back to variables, constants or rules you have specified for the entire workspace or for the application.

3) Select a comparison operation from the drop-down list in the **Condition** section.

4) Then determine in the **Right Value** section the value to be compared with the variable in the **Left Value** section.

The value of the **Variable to Compare** is compared under the **Condition** with the value from the variable in the **Right Value** section with a fixed text or a rule. The comparison is stored as rule and implemented in the application upon the execution of the Compare control. Depending on the result of a rule comparison (true or false), the call is forwarded to the next control. The control has its own exit for each rule that is used as exit when the rule applies.

Example: The callers' phone numbers are stored in the variable in the **Left Value** section. If you want to filter all calls from Germany, use the **Leading characters are equal to** condition and specify "+49" in the **Compare with Text** field. For each caller from Germany the call is forwarded to a specific control.

5) If you have made all entries for creating a comparison rule, click on **OK**.

The created rule appears now in the **Comparison Rule List** on the **Rules** tab.

You can rename the newly created rule with a click on the defaulted **Name** of the rule. Doubleclicking the icon next to the predefined rule name opens the **Edit Comparison Rule** dialog. Enter the desired rule name, for example `Caller from Germany`, and then push the Enter key . Your modifications are copied.

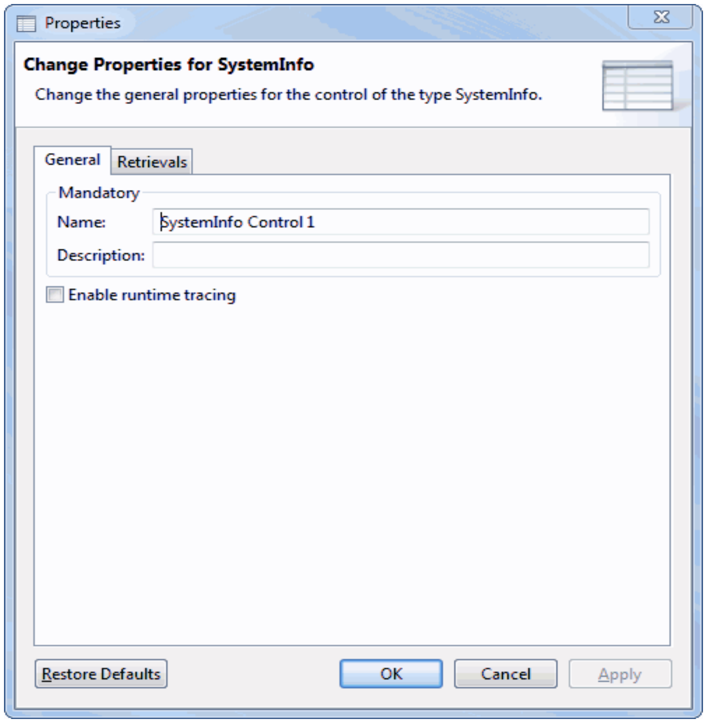
5.5.5 SystemInfo Control

The SystemInfo control assigns one or several of the following points to variables of a suitable type.

- Current Date
- Current Time
- Enabled Languages
- Logged On User

> ***NOTICE:*** In the example applications SpeakingClock and Switch-Language, the SystemInfo control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). It is also available in the Logon example composition in the `Samples\Compositions` folder. The applications and composition are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide the applications and composition.

The configuration dialog of the SystemInfo control provides the tabs **General** and **Retrievals**.



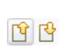
“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

"Retrievals" tab

On the **Retrievals** tab you define one or several rules for the system information and the variable of the new information retrieval. The assigned value is then the value of the system information. This definition is realized with the help of a wizard.

The following icons are available on the **Retrievals** tab.

Icon	Description
	This icon lets you create a new retrieval. See under this table *Defining a new Retrieval*.
	A click on this icon enables you to modify the settings of an already created and selected retrieval in the **Edit Information Retrieval** dialog.
	You use this icon to remove a selected retrieval from the list.
	If you have created several retrievals, they are applied in order from top to bottom. Using these icons you can move a selected retrieval in the list up or down.

5.5.5.1 How to Configure a SystemInfo Control

Step by Step

1) Click on the **Retrievals** tab.

2) Click on .

3) Select the system information of the new information retrieval.

- Current Date
- Current Time
- Enabled Languages
- Logged On User

4) Click on **...** next to the fields of the target variable.

5) Select one of the offered variables or create a new one via **Create new Variable**.

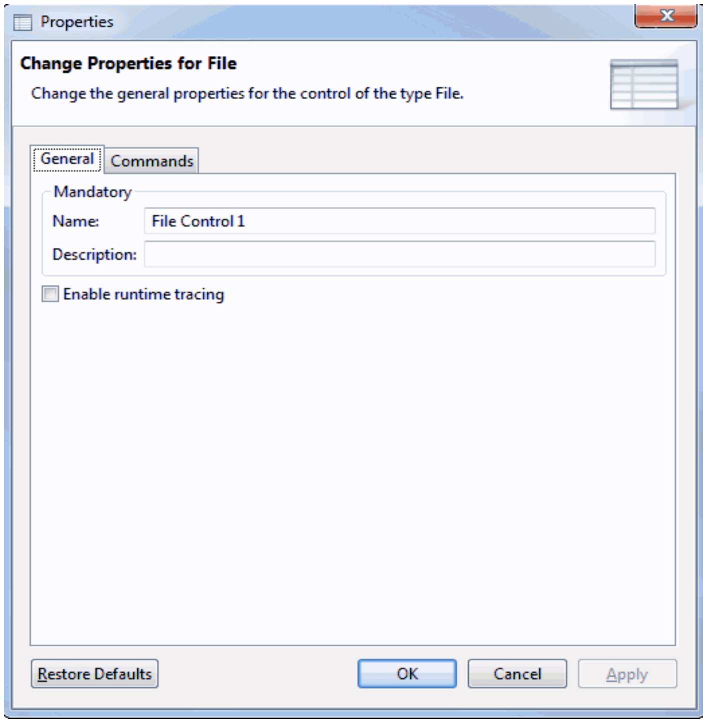
6) Select **OK**.

7) If required, repeat this process for further assignments.

5.5.6 File Control

The File control specifies the file storage that shall be accessed and the file operation that shall be processed by the storage command.

The configuration dialog of the File control provides the tabs **General** and **Commands**.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

"Commands" tab

On the **Commands** tab you can assign values to several variables. The definition occurs with the help of a wizard.

The following icons are available on the **Commands** tab.

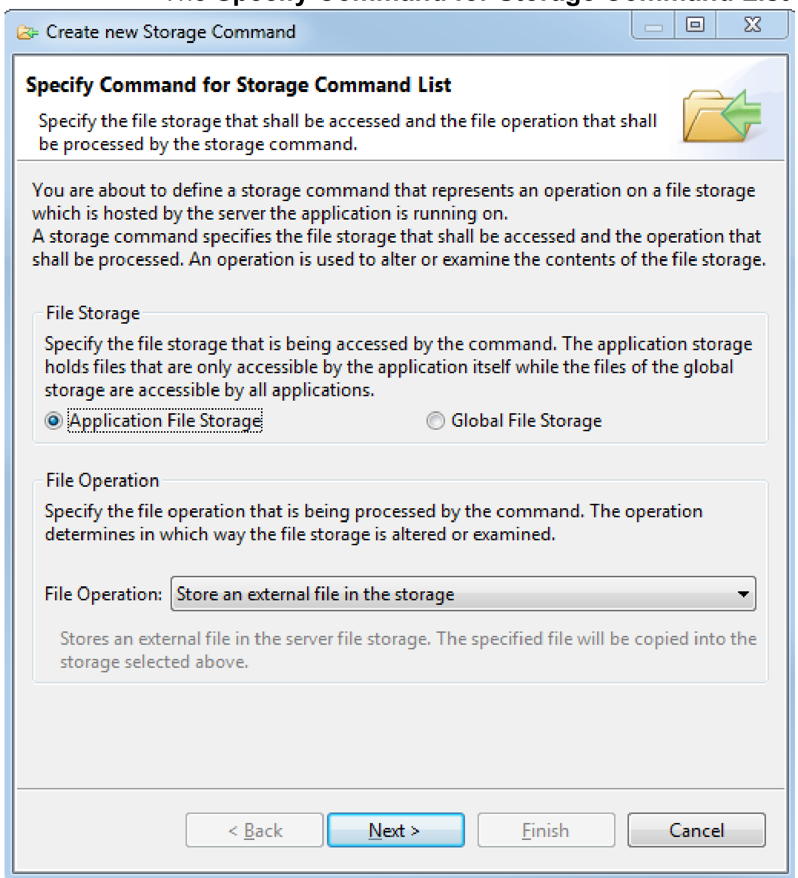
Icon	Description
	This icon lets you create a new storage command.
	A click on this icon enables you to modify the settings of an already created and selected storage command.
	You use this icon to remove a selected storage command from the list.
	If you have created several commands, they are applied in order from top to bottom. Using these icons you can move a selected storage command in the list up or down.

5.5.6.1 How to Define a new Storage Command

Step by Step

1) Click on to define a new storage command that represents an operation on a file storage which is hosted by the server the application is running on.

The **Specify Command for Storage Command List** dialog opens.



2) Specify the file storage that is being accessed by the command by clicking in the radio button of your choice.

- **Application File Storage** holds files that are only accessible by the application itself.
- **Global File Storage** holds files that are accessible by all applications.

3) From the drop down menu, select the file operation that is being processed by the command. The operation determines in which way the file storage is altered or examined.

- **Store an external file in the storage** stores an external file in the server file storage. The specified file will be copied into the storage selected above.
- **Retrieve the location of a file in the storage** retrieves the absolute URI of a file within the server file storage. The resulting URI will be set to a variable.

- **Remove a file from the storage** removes a file from the server file storage. The specified file will be deleted from the selected storage.
- **Move a file within the storage** moves a file within the server file storage. The specified file will be moved ore renamed in the selected storage.
- **List the files in the storage** lists the files in the server file storage using an optional filter. The resulting URI list will be set to a variable.

4) Click **Next**.

5) Specify the optional filter the files in the file storage shall be listed for and the variable for the result. The following icons are available:

Icon	Description
	This icon lets you create a new parameter used in the parameterized text. The parameter does not require a reference value.
	This icon enables you to modify the settings of an already created parameter.
	You use this icon to remove a selected parameter from the list.
	This icon lets you select the Symvia application variable or one of its member variables to be used to store the listed files. Only those variables or member variables are a valid selection that have the requested variable type 'Uri List'.

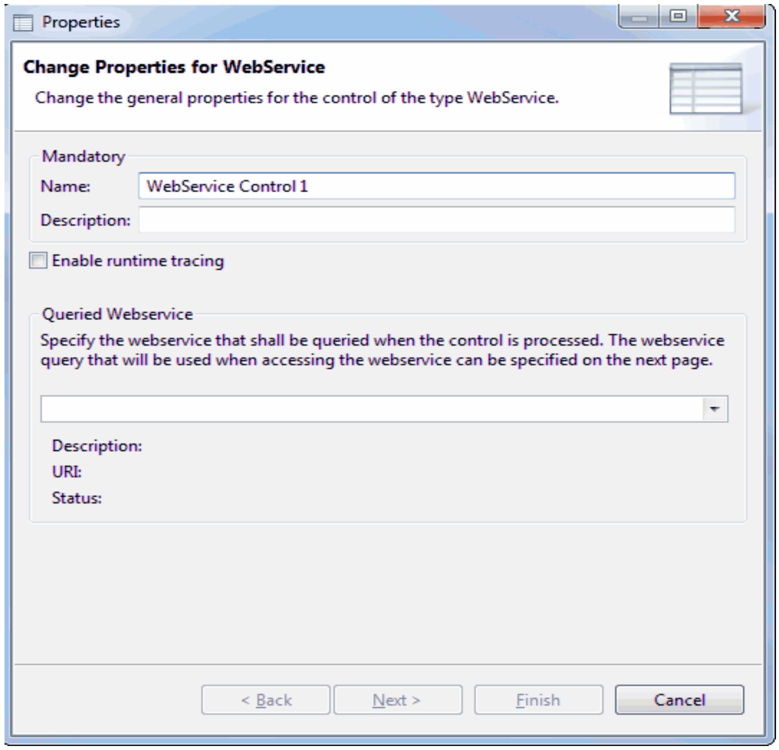
6) Click **Finish**.

5.5.7 WebService Control

The WebService control queries a web service. You can store parts of the query result in a variable.

The last query result is stored for each web service and can be used as reference for the assigning variables. However, the structure of the result is not sure to still be valid then.

The WebService control contains the **Properties** configuration dialog only.



"Properties" tab

On the **Properties** tab of the control you can perform the following settings. See section *General Information about Controls*.

You configure the web service query under **Queried Webservice**. You can either select a web service configured in the workspace under **<application name>** > **Application Settings** > **Applications Webservices** > **All Application Webservices** or you create a new web service configuration.

5.5.7.1 How to Configure the Query of a Web Service

Step by Step

1) Select the entry **Create new Webservice Configuration** from the drop-down list under **Queried Webservice**.

The **Add Webservice to Composition** dialog opens.

2) Specify a **Name** and optionally a **Description** for the web service.

3) Specify the Webservice Type.

4) Specify the **Webservice Access URI**.

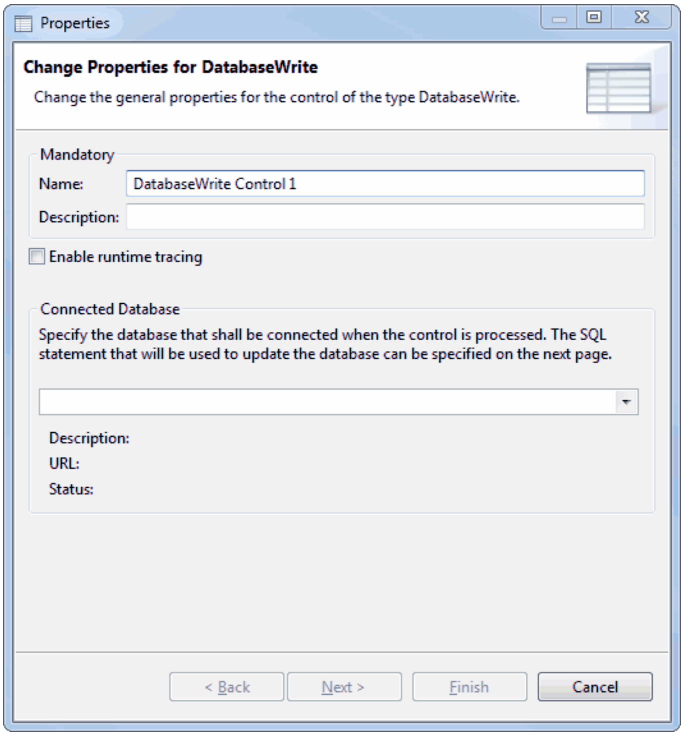
5) Select **OK**.

The query result is stored for every web service.

5.5.8 DatabaseWrite Control

The DatabaseWrite control writes data records in already available databases. For example, an order can be written in a database for a user who calls a mail order service.

The DatabaseWrite control contains the **Properties** configuration dialog only.



"Properties" Tab

On the **Properties** tab of the control you can perform the following settings. See section *General Information about Controls*.

Under **Connected Database** you perform the required settings or select an already configured database to be connected.

5.5.8.1 How to Create a Database Configuration

Step by Step

1) If you wish to use an already existing database configuration, select it from the **Connected Database** drop-down list and continue with step 9.

INFO: Existing database configurations are also displayed in the workspace under **Symvia Control Compositions** > **<composition name>** > **Composition Settings** > **Composition Databases** > **All Symvia Composition Databases** and under

<application name> > **Application Settings** > **Application Databases** > **All Application Databases**.

If you wish to create a new database configuration, click on the **Create new Database Configuration...** entry. The **Add Database to Application** dialog opens. Continue with step 2.

2) Specify a **Database Name** and, optionally, a **Database Description**.

3) Select the **Database Driver Archive**.

The database driver archive is a Java archive that contains the driver classes for the database configuration.
Example:

```
C:\binary\mysql-jdbc-driver\mysql-connector-java-5.1.13-bin.jar
```

4) Select a **Database Driver Classname**.

Select the Java class name that corresponds to the driver from the specified archive.
Example: `com.mysql.jdbc.Driver`

5) Specify a **Database Access URL**.

Example:

```
jdbc:mysql://<IP address of the database computer>:3306/<database name>
```

6) Specify the **Database Login User**.

Example: `root`

NOTICE: The configuration data of your database must be known. Please ask your database administrator. You probably need not enter any user data and can consequently skip step 6 and 7.

7) Specify the **Database Login Password** for the database user.

8) Select **OK**.

The application database has now been added to the drop-down list and can be selected.

9) Click on **Next**.

10) Select the **Create new Database Query...** option from the drop-down list.

The **Add a new Query to the Database** dialog opens.

11) Enter the query name under **Query Name** and enter optionally a description under **Query Description**.

12) Enter a valid SQL statement in the **SQL Statement** field.

Example of reading from the database:

```
SELECT idquestion, question, max(if(name='A', answer, 0)) as
A, max(if(name='B', answer, 0)) as B, max(if(name='C', answer,
0)) as C FROM (question inner join possibleanswer on idques-
tion = fiquestion and fisurvey = 1) group by idquestion;
```

Example of writing in the database:

```
INSERT INTO `survey`.`result`
(   `idresult`,   `date`,   `fiquestion`,   `fipossibleAnswer
`)VALUES (   NULL ,   NOW(),   <IDQUESTION>,   '1');
```

13) Click on **Continue** to check the query result.

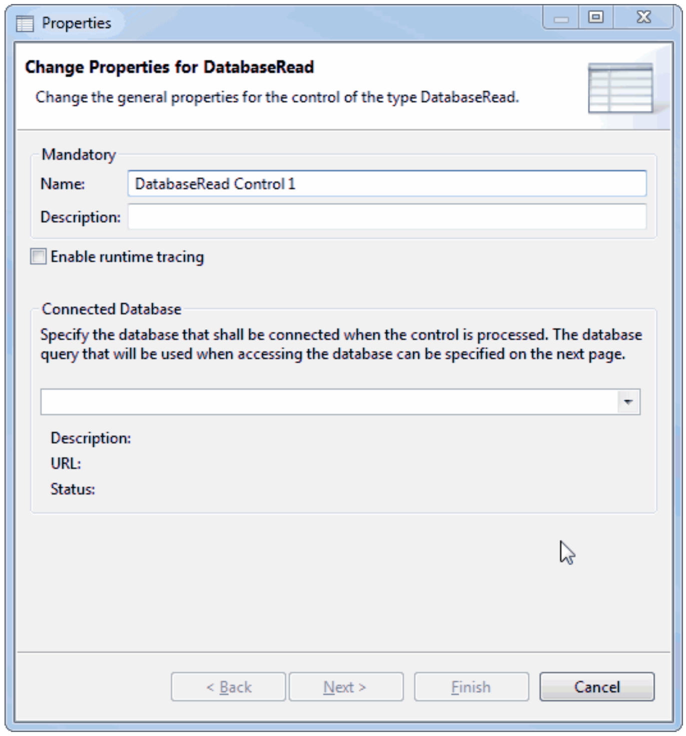
> ***NOTICE:*** The query must once run successfully so that the Control can be used.

5.5.9 DatabaseRead Control

This control queries data records from existing databases and puts them out. A caller is, for example, able to query the current state of his/her order from a contact center.

> ***NOTICE:*** In the example application AutomaticSurvey, the DatabaseRead control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). This application is shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide this application.

The DatabaseRead control contains the **Properties** configuration dialog only.



"Properties" tab

On the **Properties** tab of the control you can perform the following settings. See section *General Information about Controls*.

Under **Connected Database** you perform the required settings or select an already configured database to be connected.

5.5.9.1 How to Create a Database Configuration

Step by Step

1) If you wish to use an already existing database configuration, select it from the **Connected Database** drop-down list and continue with step 9.

> ***INFO:*** Existing database configurations are also displayed in the workspace under **Symvia Control Compositions** > **<composition name>** > **Composition Settings** > **Composition Databases** > **All Symvia Composition Databases** and under **<application name>** > **Application Settings** > **Application Databases** > **All Application Databases**.

If you wish to create a new database configuration, click on the **Create new Database Configuration...** entry. The **Add Database to Application** dialog opens. Continue with step 2.

2) Specify a **Database Name** and, optionally, a **Database Description**.

3) Select the **Database Driver Archive**.

The database driver archive is a Java archive that contains the driver classes for the database configuration.

Example:

```
C:\binary\mysql-jdbc-driver\mysql-connector-java-5.1.13-bin.jar
```

4) Select a **Database Driver Classname**.

Select the Java class name that corresponds to the driver from the specified archive.

Example: `com.mysql.jdbc.Driver`

5) Specify a **Database Access URL**.

Example:

```
jdbc:mysql://<IP address of the database computer>:3306/<database name>
```

6) Specify the **Database Login User**.

Example: `root`

> ***NOTICE:*** The configuration data of your database must be known. Please ask your database administrator. You probably need not enter any user data and can consequently skip step 6 and 7.

7) Specify the **Database Login Password** for the database user.

8) Select **OK**.

The application database has now been added to the drop-down list and can be selected.

9) Click on **Next**.

10) Select the **Create new Database Query...** option from the drop-down list.

The **Add a new Query to the Database** dialog opens.

11) Enter the query name under **Query Name** and enter optionally a description under **Query Description**.

12) Enter a valid SQL statement in the **SQL Statement** field.

Example of reading from the database:

```
SELECT idquestion, question, max(if(name='A', answer, 0)) as
A, max(if(name='B', answer, 0)) as B, max(if(name='C', answer,
0)) as C FROM (question inner join possibleanswer on idques-
tion = fiquestion and fisurvey = 1) group by idquestion;
```

Example of writing in the database:

```
INSERT INTO `survey`.`result`
(   `idresult`,   `date`,   `fiquestion`,   `fipossibleAnswer
`)VALUES (   NULL ,   NOW(),   <IDQUESTION>,   '1');
```

13) Click on **Continue** to check the query result.

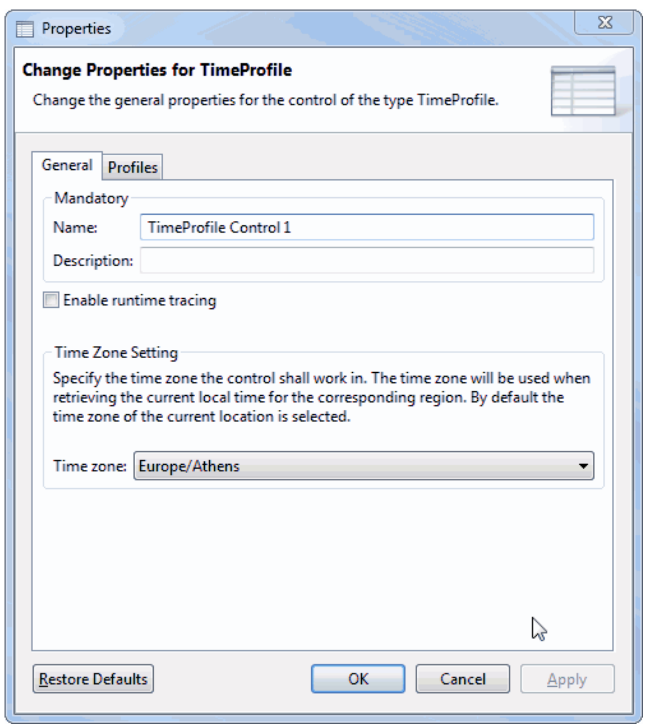
> ***NOTICE:*** The query must once run successfully so that the Control can be used.

5.5.10 TimeProfile Control

Depending on the time of a call, this control branches to different controls.

For example, the call is forwarded to a Connect control if the office of a company is open. If the company is closed, the call is forwarded to a Prompt control and the Prompt control plays the following announcement: *"You are calling outside our business hours. You can reach us daily from ... until .... Goodbye!*". After playing the announcement the End control terminates the call. If the call is made during a break, it is forwarded to the DTMF Menu control. The caller can then use the menu options to decide how to further proceed with the call.

The configuration dialog of the TimeProfile control provides the tabs **General** and **Profiles**.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

Under **Time Zone Setting** you specify the time zone in which the control shall be executed. The time zone of the current location is selected by default.

"Profiles" tab

On the **Profiles** tab you define one or several time profiles for a TimeProfile control.

> ***INFO:*** A TimeProfile control may contain one or several time profiles. Each time profile may contain one or several time profile ranges. Another term for time profile range is time range.

The following icons are available:

Icon	Description
	This icon lets you create a new time profile for this control. See section *How to Create a Time Profile.* After clicking the small black triangle next to this icon you can select **Add new Profile...** to add an already existing server time profile. See section *How to Add an Existing Server Time Profile.*
	A click on this icon enables you to modify the settings of an already created and selected time profile in the **Edit Time Profile** dialog. You cannot apply this icon to server time profiles.
	Via this icon a selected time profile is removed from the list.
	If you have created several time profiles, they are applied in order from top to bottom. Using these icons you can move selected time profiles in the list up or down.

5.5.10.1 How to Create a Time Profile

> ***INFO:*** This section describes how to create a time profile exclusively available in a single TimeProfile control. If you need a time profile available to all TimeProfile controls, create a server time profile under **OpenScape Servers** > **OpenScape Server Content** > **Server Time Profiles**. To do this you must logged in at an OpenScape UC Application. You find details in section *How to Create a Server Time Profile*.

Step by Step

1) Double-click the TimeProfile control.

2) Click on the **Profiles** tab.

3) Click on .

The **Create new Time Profile** dialog opens.

4) Specify under **Time Profile Name** the name of the new time profile, for example `During business hours`, `Outside business hours`, `Public holiday` or `Company holidays`.

The **Time Range List** itemizes already created time profile ranges for the time profile.

5) Click on .

The **Create new Time Profile Range** dialog opens.

6) Specify the values of the new time profile range. For this purpose, activate one of the radio buttons described in the following:

a) **Specify range of full Calendar Days (will not recur)**: Here you can select the start date and end date of a time range. The time profile range comprises whole days and does not recur.

Example: 20.11.2013 - 27.11.2013

b) **Specify Range within a specific Day of Year (will recur every Year)**: Here you can select a day of a month, a month, a start time and an end time. This time profile range recurs every year.

Example: Every 20 November from 00:09:00 to 17:00:00

c) **Specify Range within a specific Day of Week (will recur every week)**: Here you can select a weekday, a start time and an end time. This time profile range recurs weekly.

Example: Every Wednesday from 00:09:00 to 17:00:00

7) Click on **OK**.

The **Create new Time Profile Range** dialog closes.

8) Click on **OK**.

INFO: Each time profile in this list corresponds to a new exit of the TimeProfile control.

The created time profile has been added to the time profiles list.

INFO: Descriptions can only be displayed for server time profiles.

---

9) Click on **OK** or **Apply**.

5.5.10.2 How to Add an Existing Server Time Profile

This section describes how to add a server time profile to a TimeProfile control. Server time profiles are available to all TimeProfile controls. However, if you require a time profile exclusively available to one single TimeProfile control, please read section *How to Create a Time Profile*.

Prerequisites

- You must have logged in at an OpenScape UC Application under **OpenScape Servers** > **OpenScape Server Login** > **Login**.
- You must have created a server time profile under **OpenScape Servers** > **OpenScape Server Content** > **Server Time Profiles**.

Step by Step

1) Double-click the TimeProfile control.

2) Click on the **Profiles** tab.

3) Click on the small black triangle next to the icon and select **Add Server Profile...**.

The **Select Server Profiles for Profiles List** dialog opens.

4) Activate the check boxes of one or several server time profiles.

5) Click on **OK**.

> ***INFO:*** Each time profile in this list corresponds to a new exit of the TimeProfile control.

The server time profile has been added to the time profiles list.

Server time profiles appear grayed out. If you are no longer logged in at an OpenScape UC Application, **<Unknown Profile>** is displayed. This is also the case after you have logged in again.

6) Click on **OK**.

7) Click on **OK** or **Apply**.

5.5.11 Delay Control

The Delay control enables placing breaks in a callflow. With e. g. millisecond specifications you can determine how much time must pass until the next connected control is forwarded to. This will delay playing back greetings or generally delay executing each control.

> ***NOTICE:*** In the example application SpeakingClock, the Delay control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). This application is shipped with the Application Builder.

The *How to Import Workspace Elements* section describes how to provide this application.

The Delay control contains the **Properties** configuration dialog only.

“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Callflow Delay** section you configure the callflow delay.

5.5.11.1 How to Configure a Delay

Step by Step

1) Activate one of the following radio buttons and specify the corresponding value:

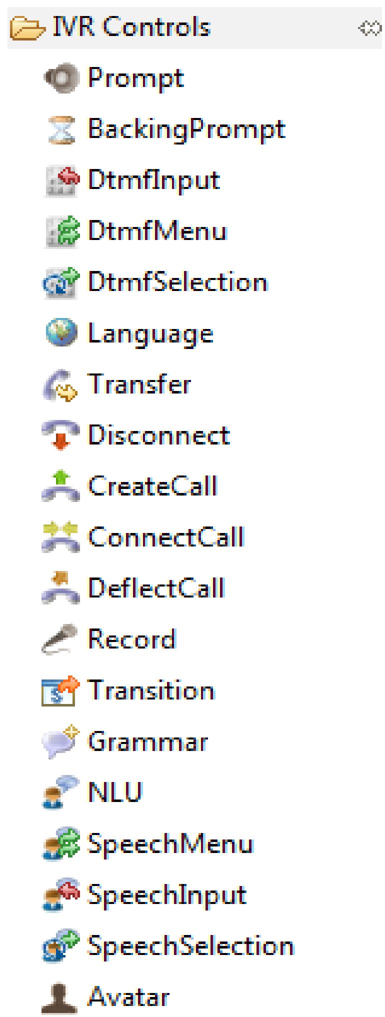
- **Specify by Value (ms)**
  Specify the delay in milliseconds. Values from 1 to 360000 are allowed.
- **Specify by Variable**
  Specify the variable name. The value of this integer variable specifies the delay in milliseconds.
- **Specify by Pattern**
  Enter a pattern in milliseconds. The pattern value matches if you can divide the time by the value without remainder. If you enter for example 360000, the system will always wait until the next full hour. If the call comes in at 2:58 p.m., two minutes are waited in the Delay control. If the call comes in at 2:06 p.m., 54 minutes are waited in the Delay control.

2) Click on **OK**.

5.6 Group IVR Controls

In the group **IVR Controls** you find controls with which you can execute telephony functions such as playing prompts or entering telephone keys via DTMF.

The extract from the palette view shows which controls are part of this group.

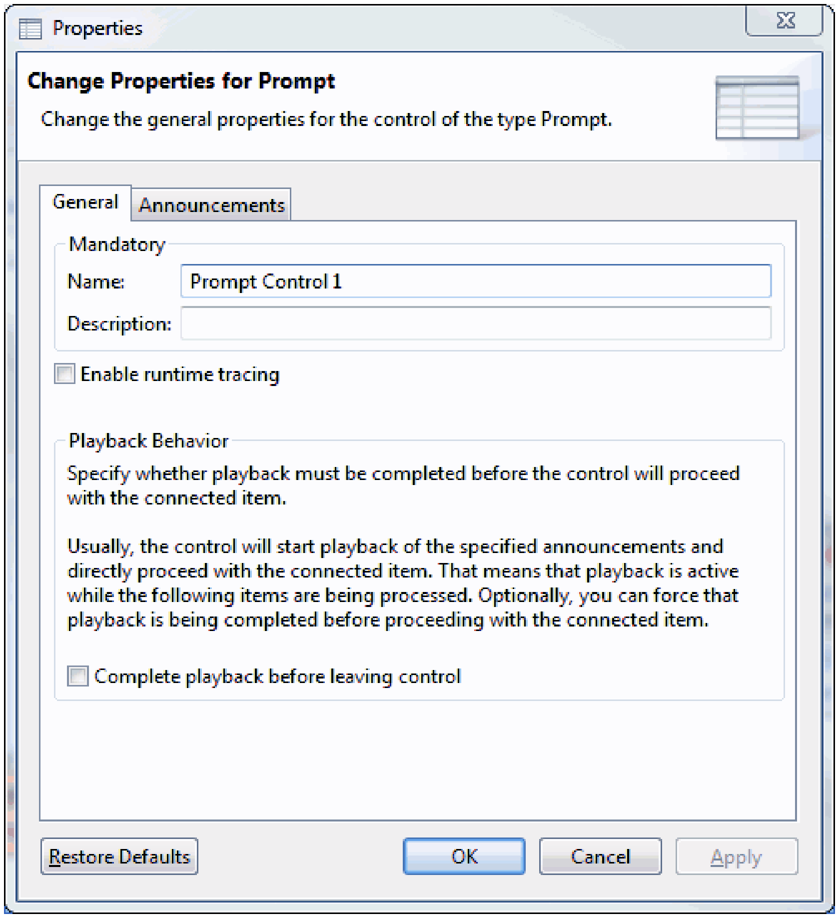


5.6.1 Prompt Control

A Prompt control defines a list of announcements, which are either prompts, variables or pauses. The list is processed when the control is reached in the call flow.

NOTICE: In all example applications, the Prompt control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). The same applies for the example compositions in the `Samples\Compositions` directory. These applications and compositions are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide these applications and compositions.

The configuration dialog of the Prompt control provides the tabs **General** and **Announcements**.



"General" tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

"Announcements" tab

On this tab you specify the announcement(s) for the Prompt control. All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

The following icons are available:

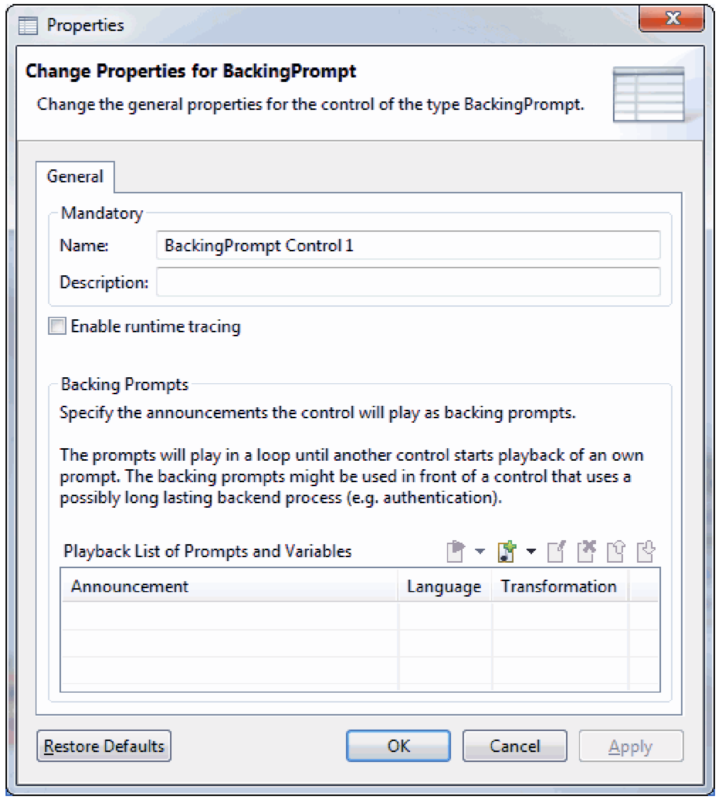
Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements, variables or pauses, they are played in order from top to bottom. Using these icons you can move a selected announcement, variable or pause in the list up or down.

5.6.2 BackingPrompt Control

The BackingPrompt control is in charge of playing announcements until the next prompt is played.

> ***NOTICE:*** In the example application SpeakingClock, the BackingPrompt control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). This application is shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide this application.

The BackingPrompt control contains the **General** configuration dialog only.



“General” Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

Under **Backing Prompts** you can optionally specify a prompt to be played for bridging temporary silence.

All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, variable or pause in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements, variables or pauses, they are played in order from top to bottom. Using these icons you can move a selected announcement, variable or pause in the list up or down.

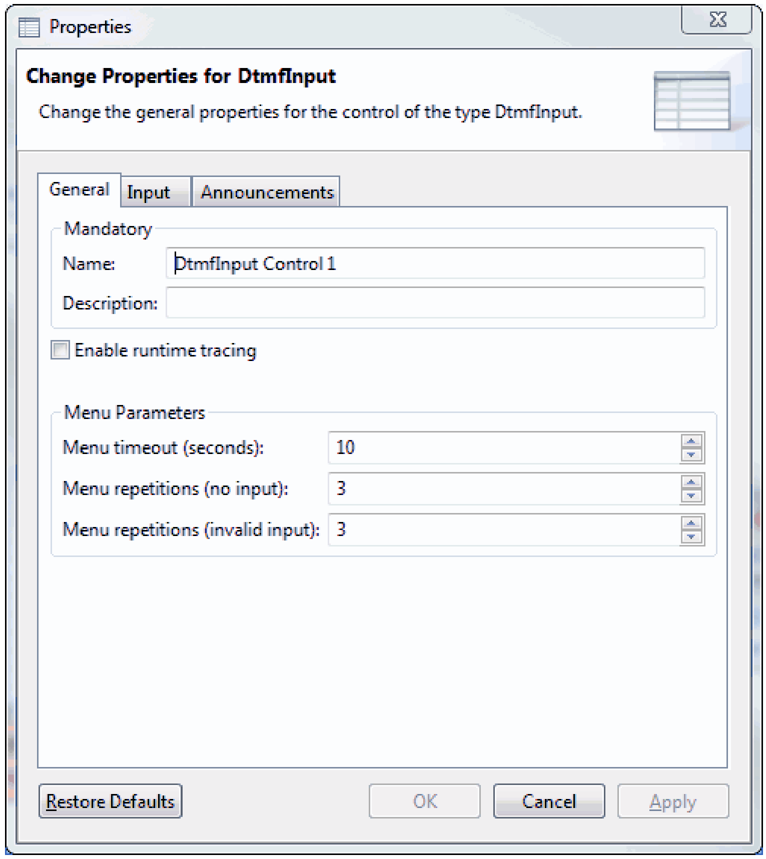
5.6.3 DtmfInput Control

The caller can use this control for entering digit strings like his/her customer number via his/her telephone keypad. Furthermore, a safety question can be posed, so that not every calling customer can access all data. Instead, he/she can request individual data, such as the status of a purchase order, after he/she has been authenticated by entering the customer number.

> ***NOTICE:*** If you wish to make entries by voice rather than by phone keypad, either use the NLU control or the SpeechInput control.

> ***NOTICE:*** In the example compositions Logon and Change-Password, the DtmfInput control is available in the `Samples\Compositions` sub-folder of the Application Builder's installation folder (not in the workspace directory). These compositions are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide these compositions.

The configuration dialog of the DTMF Input control provides the tabs **General**, **Input** and **Announcements**.



"General" Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Menu Parameters** section you can define the behavior of the control in case of time-out (no input after a certain amount of time). The following settings are available:

Field	Description
Menu Timeout (seconds)	Enter here the time (in seconds) available to the caller to make his/her input by keypad after the announcement(s) have been played. If you enter a ’0', the caller can wait an undefined period of time until he/she makes an entry via a key. The default value is 10 seconds.
Menu Repetitions (No Input) and (Invalid Input)	If the caller has made an invalid entry by keypad or no entry at all, the announcement is repeated. You specify how often an entry can be repeated before the control reports the error event, whereby the next control is moved to. The value refers to the number of missing/invalid entries. In case of value 3, the entry and thus also the announcement will be repeated three times, so with the first execution the announcement is played altogether four times. If you enter a ’0’, the announcement is not repeated but the caller is directly forwarded to the control configured for the error event after a missing/invalid entry. Three repetitions are allowed by default.

“Input” tab

In the **Key Layout for Confirm/Cancel** section you define the key allocation for the actions confirm and cancel. You can choose from two options by activating the respective checkbox.

In the **Input Parameters** section you specify the data entry options. These are:

Field	Description
Minimum Input Length	In this field you enter the minimum length of the digit string the caller has to enter. If the number of entered digits falls short of this and the time specified in the **Menu Timeout (seconds)** has elapsed, the process is aborted. The caller may then repeat his/her entry if allowed by the settings in the **Menu Repetitions** field. By default, value 0 deactivates this feature and an empty entry is also allowed.
Maximum Input Length	In this field you enter the maximum length of the digit string the caller may enter. If the caller exceeds this entry restriction, a default announcement will be played. His/her entry is finished. If you enter a 0 in the **Maximum Input Length** field, the entry will become the value that is saved if you loose the field focus, e.g. if you click **Apply**. By default, 10 keystrokes are defined as entry.

NOTICE: Please note that the **Maximum Input Length** must be greater than/equal to the **Minimum Input Length**.

In the **Input Storage** section you need specify a variable to store the confirmed input. You can either use a variable already available or create a new one. The **Variable for confirmed Input** stores the sequence of pressed keys. The **Variable for Input Length** specifies the number of keys pressed for the entry, this variable is optional.

“Announcements” Tab

On this tab you specify the announcement(s) for the DtmfInput control. All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

In the **Confirmation Prompts** section you can specify announcements for the cases **Prompt for cleared Input** and **Prompt for invalid Input** that play a signal to the user. You select the prompt files from the drop-down list or create a new one.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement or variable from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

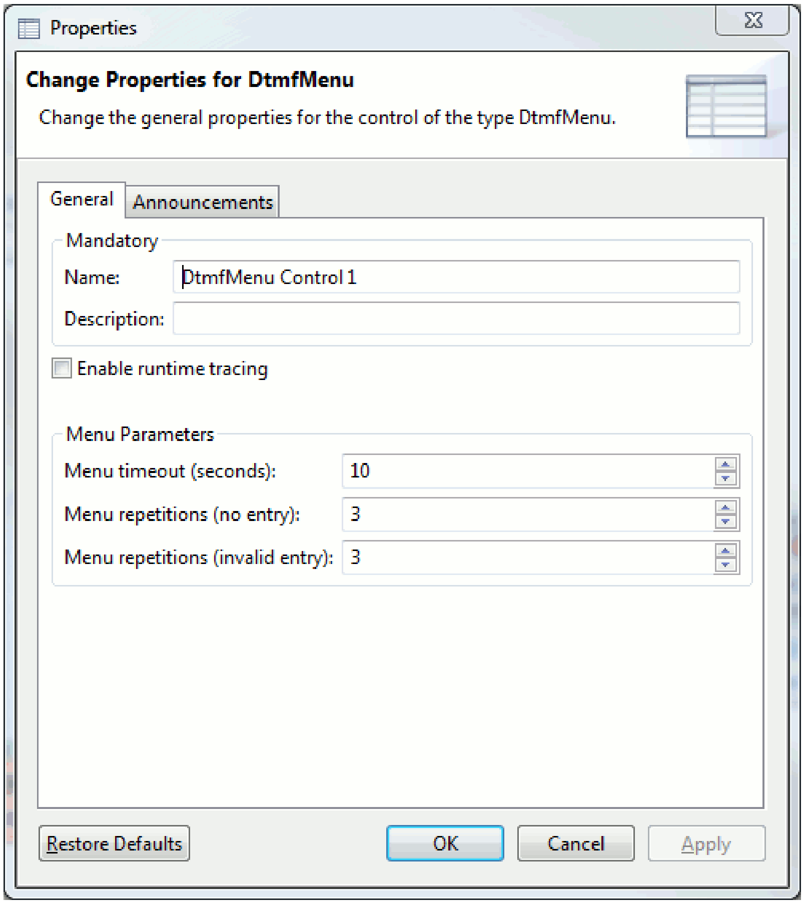
5.6.4 DtmfMenu Control

With this control you enable the caller to navigate through a menu with the help of his/her phone keypad.

The caller may hear the following example announcement: ”*If you wish to be connected to our customer service, please push 1. If you wish to be connected to our sales department, please push 2*.”

After the announcement, the caller has a certain period of time for his/her entry. If in the example the caller pushes 1 within this period, he/she is forwarded to the next control that connects him/her to the customer service. If he/she enters 2, he/she is forwarded to a control that connects him/her to the sales department. But if he/she does not make an entry within the specified period or the entry is incorrect, he/she can be forwarded to another control (for example an End control).

The configuration dialog of the DTMF Menu control provides the tabs **General** and **Announcements**.



“General” Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Menu Parameters** section you can determine the behavior of the control in case of time-out (no input after a certain amount of time). The following settings are available:

Field	Description
Menu Timeout (seconds)	Enter here the time in seconds available to the caller to make his/her input by keypad or voice after the announcement(s) have been played. If you enter a ’0', the caller can wait an undefined period of time until he/she makes an entry via a key. The default value is 10 seconds.
Menu Repetitions (No Inupt) and (Invalid Input)	If the caller has made no/an incorrect entry by keypad, the announcement will be repeated. You specify how often an entry can be repeated before the control reports the event error, whereby the next control is moved to. The value refers to the number of missing/invalid entries. In case of value 3, the entry and thus the announcement will be repeated three times, so with the first execution the announcement is played altogether four times. If you enter a ’0’, the announcement is not repeated but the caller is directly forwarded to the control configured for the error event after a missing/invalid entry. Three repetitions are allowed by default.

“Announcements” Tab

On this tab you specify the announcement(s) for the DtmfMenu control. All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

In the **Confirmation Prompts** section you can specify an announcement for the case **Prompt for invalid Input** that plays a signal for the user. You select the prompt file from the drop-down list or create a new one.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls*/*Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls*/*Adding a Prompt*, *Variable or Pause*.

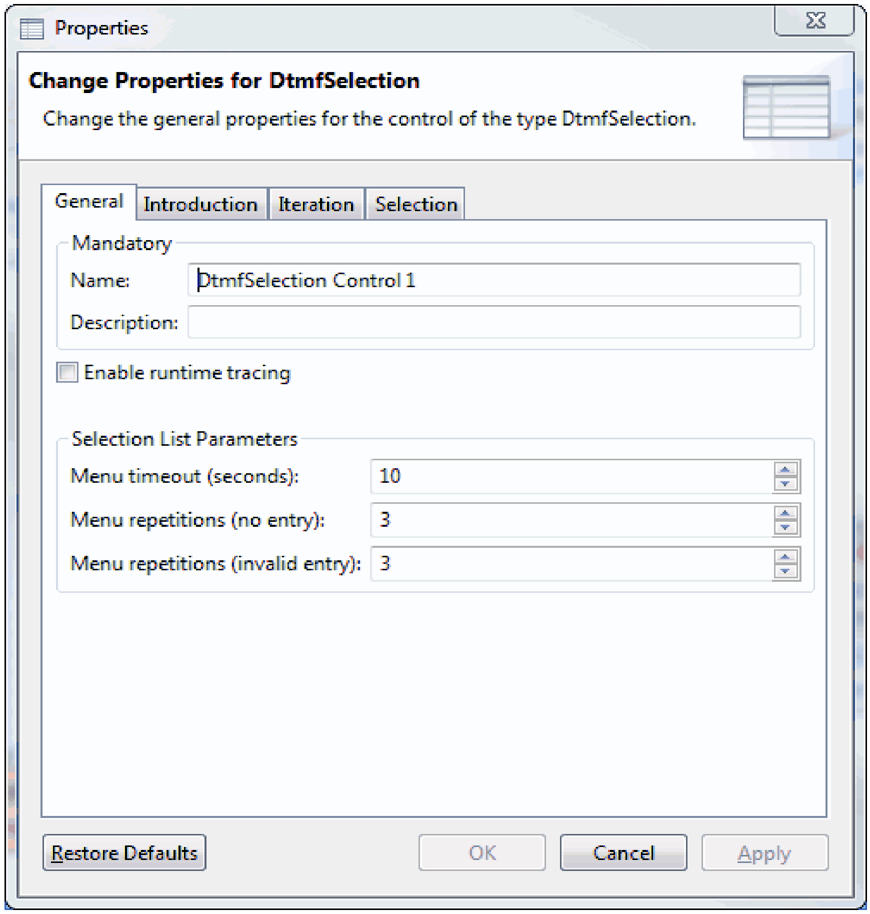
Icon	Description
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

5.6.5 DtmfSelection Control

The DtmfSelection control links the variable list elements to the telephone keys. You can select a variable from the list. Therefore the single variables and the key to be pressed are announced.

NOTICE: In the example applications SetPresenceState and SwitchLanguage, the DtmfSelection control is available in the `Samples\Compositions` sub-folder of the Application Builder's installation folder (not in the workspace directory). These applications are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide these applications.

The configuration dialog of the DtmfSelection control provides the tabs **General**, **Introduction, Iteration**and **Selection**.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Selection List Parameters** section you can determine the behavior of the control in case of a time-out (no input is made after a specific period). The following settings are available:

Field	Description
Menu Timeout (seconds)	Specify here the time (in seconds) available to the caller to make his/her input by keys after the announcement (s) has been played. If you enter a ’0', the caller can wait an undefined period of time until he/she makes an entry via a key. The default value is 10 seconds.
Menu Repetitions (No Input) and (Invalid Input)	If the caller has made no/an incorrect entry, the announcement will be repeated. You specify how often an entry can be repeated before the control reports the error event, whereby the next control is moved to. The value refers to the number of missing/invalid entries. In case of value 3, the entry and thus the announcement will be repeated three times, so with the first execution the announcement is played altogether four times. If you enter a ’0’, the announcement is not repeated but the caller is directly forwarded to the control configured for the error event after a missing/invalid entry. Three repetitions are allowed by default.

"Introduction" tab

On this tab you define the introductory announcements played before the selection list announcements. All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

In the **Confirmation Prompt** section you can specify a **Prompt for invalid Input** that acoustically signal errors to the user. You select the prompt file from the drop-down list or create a new one.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls*/*Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls*/*Adding a Prompt, Variable or Pause*.

Icon	Description
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

"Iteration" tab

On this tab you specify what you wish to iterate over and the iterator, selection key and event store variable name.

Leave the **Iterate over Variable List** radio button activated if you wish to iterate via the variable list. Activate the **Iterate over Enumeration Type Values** radio button if you wish to iterate via the values of an enumeration variable type.

Field	Description
Variable List to iterate respectively **Enumeration Type to iterate**	If you wish to iterate via a variable list, select a variable list via the **...** field and click on **OK**. If you wish to iterate via an enumeration variable type, click in the field and select an enumeration variable type.
Iterator Variable Name	The **Iterator Variable Name** enters the name that is used for the current variable list element during the iteration. The iterator variable is the loop variable during traversing all list entries. This variable is available in this control only, thus neither in other DtmfSelection controls nor anywhere else in the application or workspace.
Selection Key Variable Name	Specify the variable name. The value of the variable is the respective DTMF key assigned to the selection of the current list element or to the value of the enumeration variable type. This variable is available in this control only, thus neither in other DtmfSelection controls nor anywhere else in the application or workspace.
Variable for selected Element	Specify in the **Result Storage** section a variable for a selected element. Use the **...** button to select the appropriate variable and click on **OK**. You can select only one variable of the same type as the above selected enumeration type or as the list elements of the above selected list. This variable is used for storing the list element or value of the enumeration variable type.

"Selection" tab

On this tab you specify the selection list announcements to be played during the iteration for every variable in the list. The following settings are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

In the **Navigation Prompts** section you can set prompts for the single user interactions. The following settings are available:

Field	Description
Prompt for next Page	Name of the prompt played as instruction for skipping to the next page. The optional prompt is bound to the pound key.
Prompt for previous Page	Name of the prompt played as instruction for skipping to the previous page. The optional prompt is bound to the star key.
Prompt to cancel Selection	Name of the prompt played as instruction for cancelling a selection. The optional prompt is bound to the "0" key.

NOTICE: Next or previous page means that the selection list announcement may contain an indefinite number of prompts. Because the caller interacts via the telephone keys, the prompts must be combined in groups (pages) of 9 prompts. The "0" key is reserved.

5.6.6 Language Control

With this control you can change the language of the announcements to be played at the application's runtime. At the same time, this language is the application language. You can switch to all languages licensed and installed on the UC server.

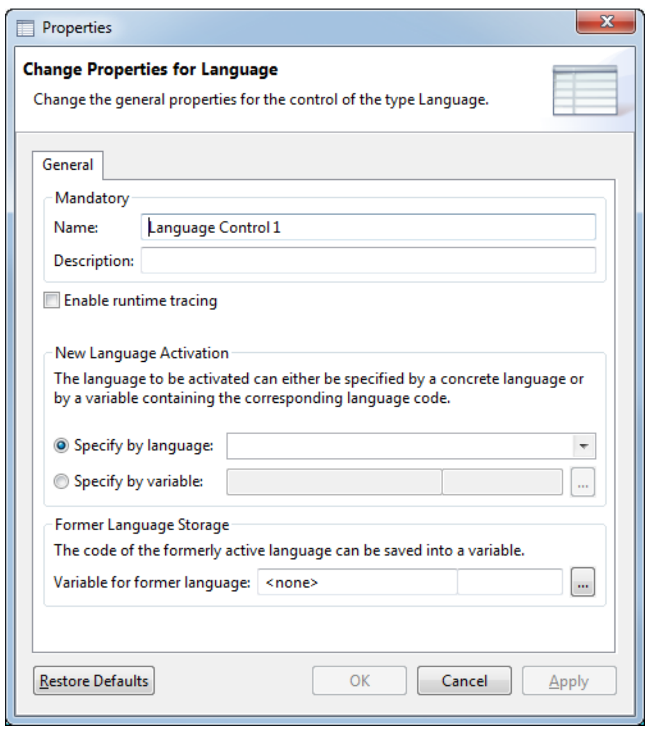
Before the initial execution of a Language control the application uses the default language.

IMPORTANT: Default languages are DE-DE and EN-US. For languages deviating from the defaults you must install the matching ASR/TTS language packages on the UC server.

NOTICE: In special cases you can also use the Grammar control to change the language.

NOTICE: In the example application SwitchLanguage, the Language control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). This application is shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide this application.

The Language control contains the **General** configuration dialog only.



“General” Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **New Language Activation** section you specify the language either directly or via a variable.

- Under **Specify by Language** you can choose from all languages that are already activated.

- Under **Specify by Variable** you can select the variable the value of which specifies the language to be used after the execution of this control.

> ***IMPORTANT:*** The value of this variable must be a valid language code.

The assignment of such a value to a variable must have been performed in another control, for example, a Definition control or a DatabaseRead control, before the execution of the Language control. If this variable does not include valid code, the event error is reported.

> ***NOTICE:*** No variables can be created at this point. The variables to be selected are specified either for the workspace or for the application.

> ***NOTICE:*** Please keep in mind that the variable value must be written in capital letters.

In the **Former Language Storage** section the former language code is stored in a variable if you select a variable.

5.6.7 Transfer Control

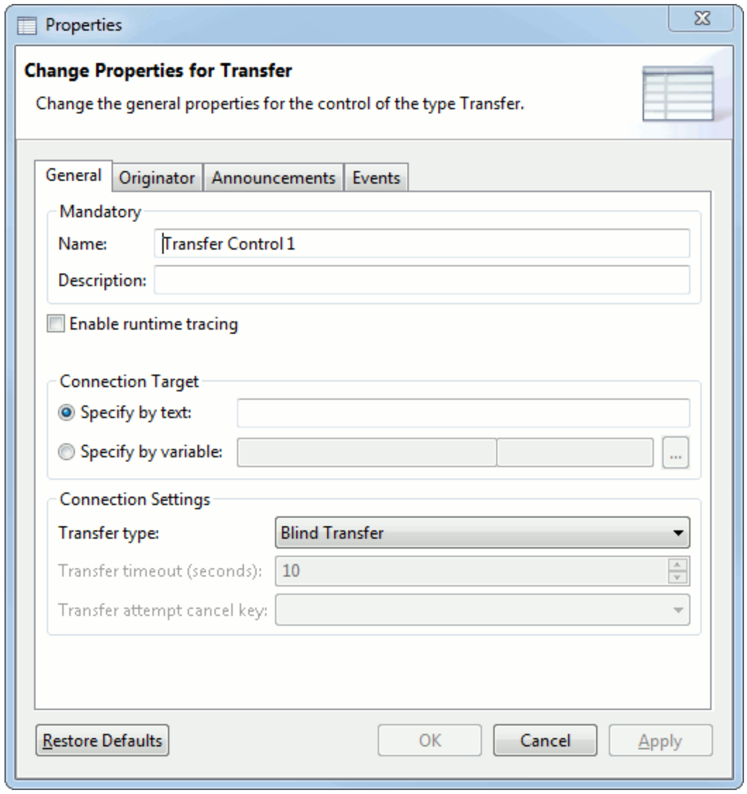
The Transfer control dials a phone number after one or several announcements have been played ("*You will now be connected to the hotline. Please hold the line*."). When a connection has been successfully established to a new target by dialing a phone number, the caller will be connected to this target. The Transfer control plus the entire application are shut down. If the connection attempt fails, the call is forwarded to the control configured for the event of a failed connection (error).

> ***INFO:*** Do not confuse the Transfer control with the ConnectCall control, which turns an unaccepted call into an accepted call.
>
> The ConnectCall control must have an unaccepted call at its entry; the Transfer control, in contrast, an accepted call.

The Transfer control differs from the CreateCall control in the following:

- You can select whether a connection shall be set up blind, supervised, ringing or bridged.
- Announcements before the connection setup
- You can cancel the connection setup by pushing a specific key
- You cannot store the internal ID of the created call in a variable.

The configuration dialog of the Connect control provides the tabs **General**, **Originator**, **Announcements** and **Events**.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Connection Target** section you specify the phone number to be called. There are two options:

- **Specify by Text**: Specify the phone number to be used.
- **Specify by Variable**: Specify the variable that contains the phone number.

In the **Connection Settings** section you specify the type of connection attempt and determine how much control the platform maintains during the connection setup.

1. Specify the **Transfer Type**. Select one of the following options:
   - **Blind Transfer**: The current session ends even if the outgoing call is not put through by the connection setup.
   - **Consultation (Supervised) Transfer**: The current session stays active at the end of the outgoing call.
     If you select the supervised connection setup, the fields **Transfer Timeout (Seconds)** and **Transfer Attempt Cancel Key** become active.
   - **Ringing Transfer:** The current session monitors the progress of the outbound call until the target device is ringing and is not busy, then the current session ends.

- **Bridged transfer:** The current session retains control over the outbound call and continues after the target device has finished the call (additionally listens for external events).

2. Specify under **Transfer Timeout (Seconds)** the number of seconds a connection setup will be waited for.
3. Specify under **Transfer Attempt Cancel Key** an input key for abandoning the connection setup.
4. Click on **OK**, **Apply** or switch to another tab for performing further settings.

"Originator" tab

On the **Originator** tab you define the originator to be used as calling subscriber during the connection setup. You can specify any or a custom originator as calling subscriber for the connection. This, however, affects billing the outgoing call.

1. Activate the **Use custom Connection Originator** check box.
2. Select one of the two options:
   - **Specify by Text**: Specify the phone number to be used for the connection originator.
   - **Specify by Variable**: Specify the variable that contains the phone number for the connection originator.
3. Click on **OK**, **Apply** or switch to another tab for performing further settings.

“Announcements” tab

On the **Announcements** tab you define the announcements to be played shortly before the connection attempt and the playback order. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

In the **Transfer Prompt** section you can optionally specify a prompt to be played while a connection is being set up. You select the prompt files from the drop-down list or create a new one. This option is only available if you have selected **General** for the setting connection setup type **Consultation (Supervised) Transfer**.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls*/*Playback Options*.
	A click on the triangle of the icon depicted to the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls*/*Adding a Prompt*, *Variable or Pause*.

Icon	Description
	This icon allows you to change the selected announcement, prompt or variable in the list.
	This icon allows you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

"Events" tab

On the **Events** tab you can specify the events that can occur during a bridged call. Each event list entry represents a subflow, that is processed when the event is received.

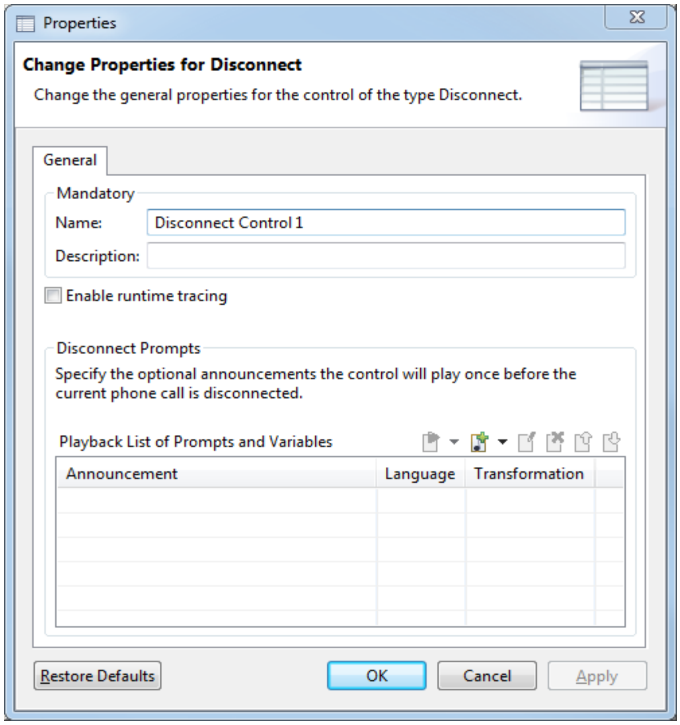
The following icons are available:

Icon	Description
	This icon allows you to see the corresponding subflow of the selected event.
	This icon allows you to add an event to the bridged transfer event list by opening a new window that allows you to specify the identifier, the name and the description of the external bridged transfer event.
	This icon allows you to edit a selected event.
	This icon allows you remove a selected event from the list.
	If you have several events, use these icons to move a selected event in the list up or down.

5.6.8 Disconnect Control

The Disconnect control terminates the current call after one or several greetings were probably played.

The configuration dialog of the Disconnect control contains the **General** tab only.



"General" Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Disconnect Prompts** section you optionally specify one or several prompts to be played before the current phone call is terminated.

All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.

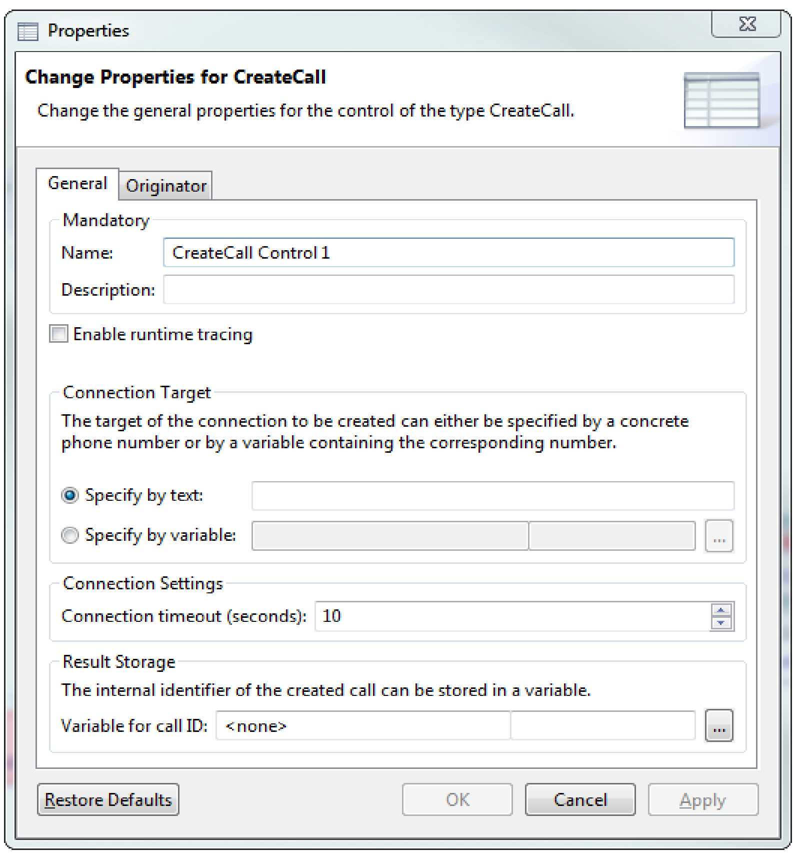
Icon	Description
	By clicking this button you may change the selected announcement, variable or pause in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements, variables or pauses, they are played in order from top to bottom. Using these icons you can move a selected announcement, variable or pause in the list up or down.

5.6.9 CreateCall Control

The CreateCall control dials a phone number. When a connection has been successfully established to a new target by dialing a phone number, the caller will be connected to this target.

The CreateCall control requires an inactive call status at its entry.

The configuration dialog of the CreateCall control provides the tabs **General** and **Originator**.



“General” Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Connection Target** section you specify the phone number to be called. There are two options:

- **Specify by Text**: Specify the phone number to be used.
- **Specify by Variable**: Specify the variable that contains the phone number.

In the **Connection Settings** section you specify the time a connection setup may take in the **Connection Timeout (Seconds)** field.

The **Result Storage** area contains the **Variable for Call ID** field to specify the variable of type string that will store the internal ID of the created call. This ID may serve for example in the AcdInit control to identify the call.

"Originator" tab

On the **Originator** tab you define the originator to be used as calling subscriber during the connection setup. You can specify any or a custom originator as calling subscriber for the connection. The calling subscriber pays for the outgoing call.

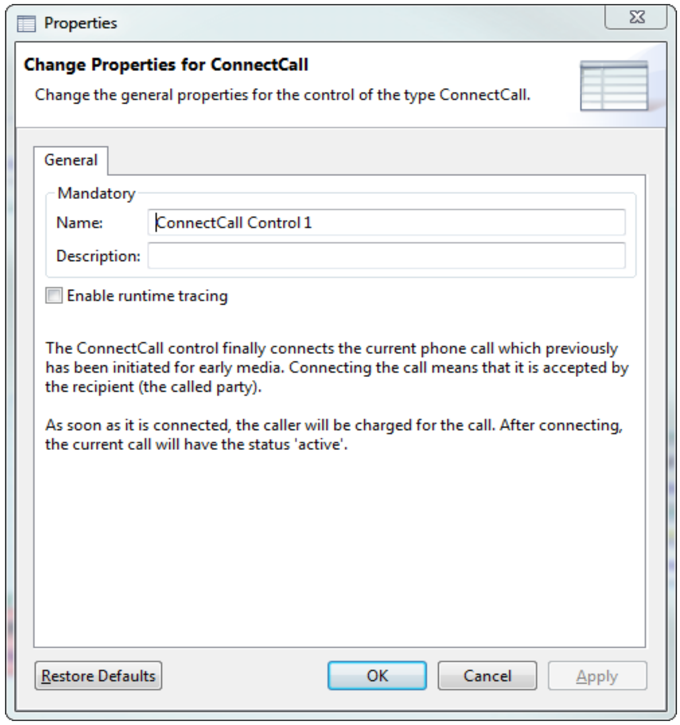
1. Activate the **Use custom Connection Originator** check box.
2. Select one of the two options:
   - **Specify by Text**: Specify the phone number to be used for the connection originator.
   - **Specify by Variable**: Specify the variable that contains the phone number for the connection originator.
3. Click on **OK**.

5.6.10 ConnectCall Control

If you have configured the startup mode **Unaccepted (Early Media)** or **Alerted Free of Charge Deflection)** for an application, an unaccepted call is present, i. e. the caller does not pay any charges. The connections in the callflow appear as dotted line. Applying the ConnectCall control turns the call into an accepted call and from this moment the caller pays charges. If the call has been successfully connected by the ConnectCall control, the connection line to the next control is straight; otherwise a dotted line connects the next control.

> ***INFO:*** Do not confuse the ConnectCall control with the Transfer control, which forwards the caller to a phone number to be dialed.
>
> The ConnectCall control must have an unaccepted call at its entry; the Transfer control, in contrast, an accepted call.

The configuration dialog of the ConnectCall control contains the **General** tab only.



"General" tab

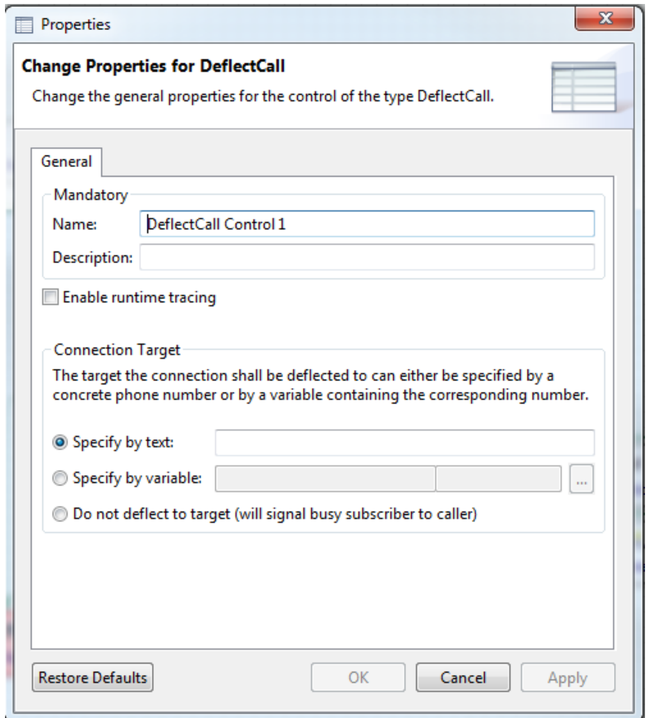
On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

5.6.11 DeflectCall Control

The DeflectCall control forwards a call to a phone number to be dialed.

Independent from the connection type at the entry of the DeflectCall control there is always an inactive (red) and accepted (straight) connection at the control's exit.

The configuration dialog of the DeflectCall control contains the **General** tab only.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

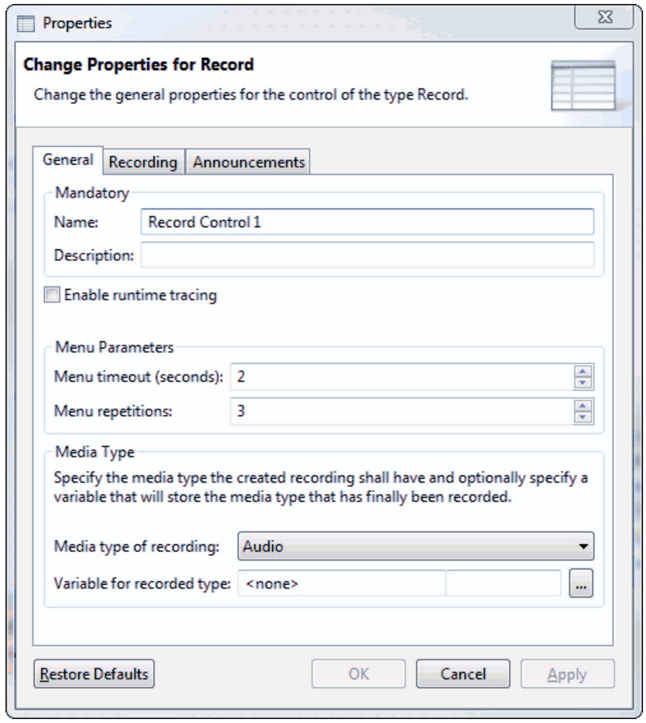
In the **Connection Target** section, activate one of the following radio buttons and, if required, specify appropriate values:

- **Specify by Text**
  Enter the phone number to be dialed.
- **Specify by Variable**
  Select the string that contains the phone number to be dialed as value.
- **Do not deflect to target (will Signal busy Subscriber to Caller)**

5.6.12 Record Control

Using this control a caller can make a recording that is e.g. subsequently transmitted to an addressee with a Send control.

The configuration dialog of the Record control provides the tabs **General, Recording** and **Announcements**.



“General” Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Menu Parameters** section you can determine the behavior of the control in case of time-out (no input after a certain amount of time). The following settings are available:

Field	Description
Menu Timeout (Seconds)	Here you specify the time in seconds that a caller has for speaking. If the caller does not say anything within the set time, the specified prompt is repeated. The default value is 2 seconds.
Menu Repetitions	If the caller makes an incorrect voice entry or none at all, the announcement is repeated. You define how often an input can be repeated before the control reports the event error, whereby the next control is moved to. The value refers to the number of missing/invalid entries. In case of value 3, the entry and thus the announcement will be repeated three times, so with the first execution the announcement is played altogether four times. If you enter a ’0’, the announcement is not repeated but the caller is directly forwarded to the control configured for the error event after a missing/invalid entry. The feature is then deactivated. Three repetitions are allowed by default.

“Recording” Tab

On the **Recording** tab you can configure the options in the sections **Recording Parameters**, **Recording Storage** and **Recording Behavior**.

In the **Recording Parameters** section you configure:

- **Maximum Recording Length**: Time (seconds) the caller has for making his/her voice entry. If the caller does not make and entry, recording is abandoned. Alternatively, the caller can push a DTMF key to finish the recording.
- **Final Recording Silence** is the length of the silence that is used when the signal to end the recording is played.
- Check box Finish Recording via arbitrary DTMF Key: The user can finish the recordings via a DTMF input.

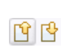
In the **Recording Storage** section you configure the variable in which the recording is to be stored. Click on **...** for selecting the corresponding variable.

In the **Recording Behavior** section you configure a variable for the event that the Recording Storage variable already contains a recording. You can attach the new recording to the old one or overwrite the old one. Click on **...** for selecting the corresponding variable.

“Announcements” Tab

On the **Announcements** tab you define the announcements to be played and the playback order. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

The following icons are available:

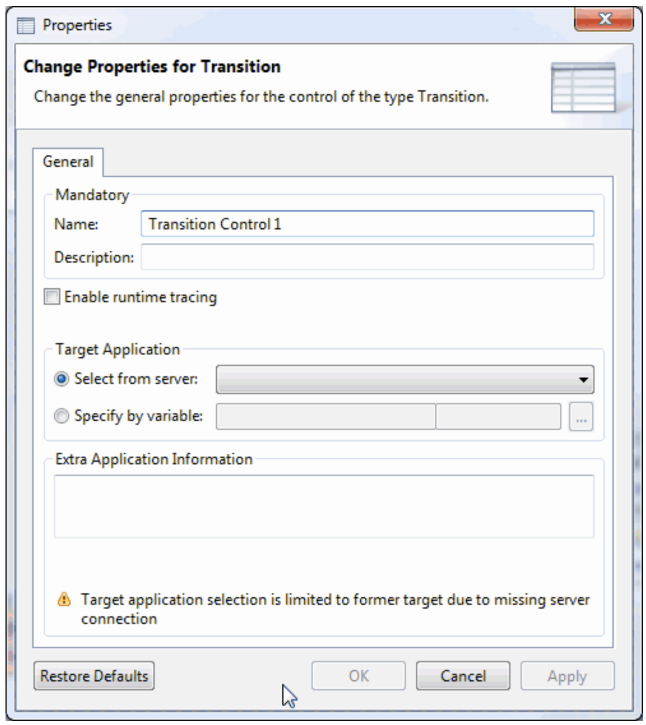
Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

In the **Recording Prompts** section you can specify announcements for the events **Prompt played as beep** and **Prompt for terminated Recording** that give the user acoustic feedback. You select the prompt files from the drop-down list or create a new one.

5.6.13 Transition Control

The Transition control enables changing to another application.

It contains the **Properties** configuration dialog only.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

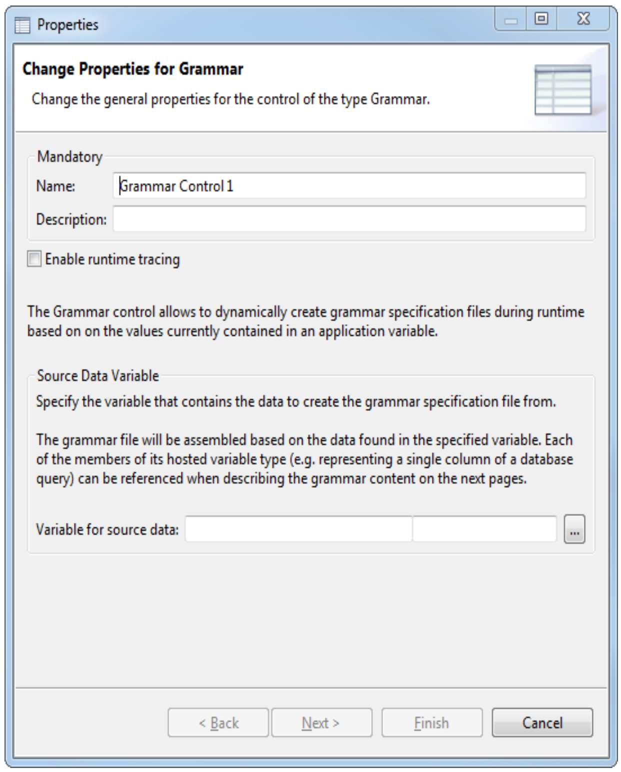
Under **Target Application** you define the desired application and its point of entry to be used as transition target. There are two options for specifying the information:

- **Select from Server**:
  Name of the application and its point of entry to be used as target.
- **Specify by Variable**:
  Name of the variable that contains the name of the application to be used as transition target. Click on **...** for selecting the corresponding variable.

Under **Extra Application Information** you can add relevant information to the control.

5.6.14 Grammar Control

A Grammar control temporarily replaces a genuine grammar with another grammar during runtime of the application. This other grammar is composed of information from database records, variables or constant values. You can store this grammar in a file on the speech recognition system and precompile it to increase the performance. A grammar may deliver several results if the speech recognition is ambiguous. By default, the Grammar control uses the language currently set in the application. You can configure the Grammar control to make it use another language.



In the **Mandatory** area you can use the Enable Runtime Tracing check box to perform the settings described in section *General Information about Controls*.

You find further details in section *How to Configure the Grammar Control*.

5.6.14.1 How to Configure the Grammar Control

Prerequisites

- A variable of type Dataset List must be available for providing information to create a grammar.
- A grammar to be temporarily replaced with the grammar created by the Grammar control must be available.

Step by Step

1) Click on the **...** button next to the **Variable for Source Data** field.

2) Select the variable of type Dataset List to be used a data source for creating a grammar.

Each variable of type Dataset has sub-variables. Such sub-variables represent columns of a database query. You can use each sub-variable for defining the grammar in the ensuing steps.

3) Click the **OK** button.

4) Click on **Next**.

The **Grammar Entry List** field shows the list of assignments Utterance --> Semantic Result, which will be part of the grammar to be created.

5) Click on the icon to create a new assignment.

The **Create new Entry for Grammar Entry List** dialog opens.

Assemble here an utterance of the caller to be recognized by the automatic speech recognition from one or several segments.

6) In step 2 you configured a variable of type Dataset List as data source. This variable consists of a list of variables of type Dataset. If you wish to use the value of a sub-variable of such a variable as segment, click on the icon and select the value.

7) If you wish to use a constant text as segment, click on the icon and enter the text.

You can remove a segment with the icon. You can move a segment to the left or right with the icons.

8) If you configured a sub-variable as data source in step 6, this sub-variable may be empty during runtime of the application, which leads to unexpected recognitions of the grammar. To avoid this, you can activate the **Skip Entry for empty Source Data Member** check box. This will only be possible if at least one sub-variable is used as segment.

The left-hand side of an assignment Utterance --> Semantic Result is now defined.

9) Click on the **Result** tab.

On this tab you define the right-hand side of such an assignment.

INFO: The semantic result is independent from languages.

Example:

Language	Utterance	Semantic Result
English	yes	YES
	no	NO
German	ja	YES
	nein	NO

If different semantic results were configured for an utterance in different languages, the following example error message would be put out: **Grammar 'grammar01' delivers grammar files with different semantic results**.

10) Select for the semantic result either a sub-variable of the data source, select a string variable, enter a constant text or activate the **Do not use concrete Result (will use Alternative's Text)** radio button. An alternative text is here the left-hand portion of an assignment in a grammar file.

11) Click the **OK** button.

The new assignment is displayed in the **Grammar Entry List** field.

You can perform the following actions:

Icon	Description
	Adding a new grammar entry
	Editing a grammar entry
	Copying and editing a grammar entry
	Removing a grammar entry
	Changing a grammar entry's sequence

12) If required, add further grammar entries.

13) Click on **Next**.

14) Click on the **...** button next to the **Target Grammar** field.

15) Select the grammar to be replaced with the grammar determined by the Grammar control during runtime of the application.

The grammar file of the grammar determined by the Grammar control is created according to the Grammar control configuration and for a language valid at runtime of the application.

INFO: Please consider that the new grammar file is created for the speech recognition system only temporarily. The local file is never changed.

16) Click the **OK** button.

17) The new temporary grammar is generally only created in the working memory before being sent to the speech recognition. The grammar can optionally be created in a real file on the file system. This enables debugging and precompiling the grammar.

If you wish the new temporary grammar file to be created as real file on the speech recognition system, activate the Grammar **File is physically created on Speech Recognition System** check box.

18) When creating a real, temporary grammar you can precompile this file before it is used by the speech recognition. This will improve the general speech recognition performance.

> ***INFO:*** Please consider that a precompilation should always be performed if the grammar contains a large number of assignments.

If you wish to perform a precompilation, activate the **Grammar File is precompiled for Speech Recognition System** check box.

19) When precompilation is used, enter the path to the binary files of the compiler on the speech recognition system in the **Compiler Directory** field.

Example:

`C:\MS_Starter_Kit\ms_starter_kit\speech\Recognizer`

20) Click on **Next**.

21) If a grammar contains phonetically identical utterances, the speech recognition may return a list of semantic results of all recognized utterances. This list consists of single semantic results separated by a separator to be specified further below. If the grammar does not support any of such multiple semantic results, the sole result of an ambiguous speech recognition is a randomly selected result entry from the list.

If the new temporary grammar supports multiple semantic results, activate the **Created Grammar supports multiple Semantic Results** check box.

22) When the **Created Grammar supports multiple Semantic Results** is active, you can specify the multiple semantic results separator in the **Result List Separator** field.

> ***INFO:*** Please consider that the separator must not be contained in any of the possible results.

23) Click on **Next**.

24) The language currently set is generally used for the speech recognition. You can optionally change the language for the case that an utterance is present in another language, for example an English name in a German grammar. This requires the data source providing information about which language to use for the speech recognition of this utterance.

If another language is to be used, activate the **Use custom Language for Recognition** check box.

> ***INFO:*** Do not confuse this language changing with the language changing by the Language control.

25) When the **Use custom Language for Recognition** check box is active, select the language code to be used in the **Source Data Member** field.

The Code describes the values of the CultureInfo class defined by Microsoft, which contain the cultural properties of a country. These properties contain the name of the culture, the writing system, the calendar used as well as the date format and sorted character strings. The code consists of a two-digit culture code in small letters according to ISO 639 linked to a language and also of a two-digit fractional culture code in small letters linked to a country or region. The format consists of two letters, a hyphen and two letters, for example `ja-jp` for Japan.

26) Click on **Next**.

27) Some words may be pronounced totally differently from their written appearance as is sometimes the case with names or foreign words. If this occurs, you must add a new assignment **Original Data Member** --> **Substituting Data Member** in the **Pronunciation Mapping List** field, which replaces the original word with the desired one.

28) Click on the **Finish** button.

5.6.15 NLU Control

Like the DtmfInput control, the NLU (Natural Language Understanding) control stores a caller's input in a variable. However, the user's input here is not made by keys but by voice (utterance). The way the utterance is made it is recognized by ASR and its meaning, the semantic result, is stored in a variable in compliance with a grammar. Consequently, there is the following causal chain: utterance --> recognized utterance --> meaning (semantic result) --> variable value. In case of an ambiguous utterance recognition, all likely results can optionally be stored in a variable list.

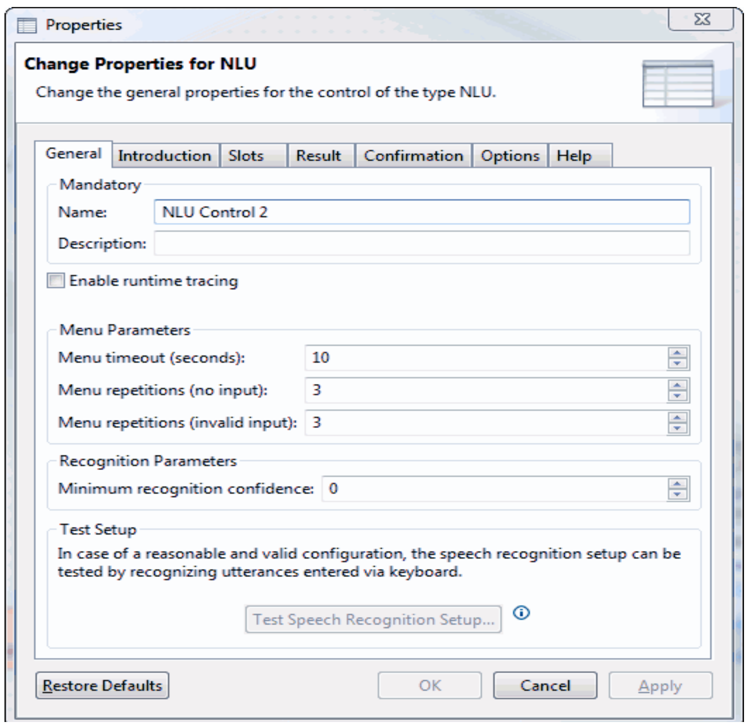
The NLU (Natural Language Understanding) control serves for configuring the automatic speech recognition (ASR).

> ***NOTICE:*** Speech recognition with subsequent storing of a result in a variable is, besides in the NLU control, also performed in the SpeechInput control. However, in contrast to the SpeechInput control that allows processing only one result, you can process several results in the NLU control. Furthermore, results in the NLU control are stored in a variable of type Tree, whereas a SpeechInput control stores the result in a variable of type RecognitionResult.

NOTICE: No control can translate a caller's spoken language in written text.

NOTICE: In the example applications Appointment and ReadTheMeter, the NLU control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). These applications are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide these applications.

The configuration dialog of the NLU control provides the tab **General**, **Introduction, Slots, Result, Confirmation, Options** and **Help**.



"General" tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Menu Parameters** section you can determine the behavior of the control in case of time-out (no input after a certain amount of time). The following settings are available:

Field	Description
Menu Timeout (seconds)	Specify here the time (in seconds) available to the caller to make his/her input after the announcement (s) has been played. If you enter a '0', the caller can wait an undefined period of time until he/she makes an entry via a key. The default value is 10 seconds.
Menu Repetitions (No Input) and (Invalid Input)	If the caller has made no/an incorrect voice input, the announcement will be repeated. You define how often an input can be repeated before the control reports the event error, whereby the next control is moved to. The value refers to the number of missing/invalid entries. In case of value 3, the entry and thus the announcement will be repeated three times, so with the first execution the announcement is played altogether four times. If you enter a '0', the announcement is not repeated but the caller is directly forwarded to the control configured for the error event after a missing/invalid entry. The feature is then deactivated. Three repetitions are allowed by default.

In the **Test Setup** section you can test the correct flow of all grammars relevant for the control. This is only possible if a valid configuration exists. To achieve a useful test result, set up a real callflow that contains obvious user utterances. Enter such utterances in the text field via keyboard.

How to test the correct flow of the relevant grammars:

1. Click on the **Test Speech Recognition Setup** icon.
   The **Test Speech Recognition Setup** dialog opens.
2. Select from the **Language** drop-down list the language you wish to test for the flow.
3. Enter the utterances of the possible call flow under **Utterance**.
4. Click on the **Recognize** button to copy the settings.
   In the **Recognition Result** section you receive the single utterance fragments in the Utterance column. The grammar assignment is displayed in the Grammar column.
   Words important for the call flow must be contained in the created grammar.
   Irrelevant elements of the utterance should be assigned to a garbage grammar. Utterances that are irrelevant for the all flow and not assigned to a garbage grammar can be assigned to an application-specific garbage grammar via the recycle bin icon. The global garbage grammar contains automatically a link to the application-specific garbage grammar.
5. Click the **OK** button to close the test dialog.

"Introduction" Tab

On this tab you specify the announcement(s) to serve as introduction for the NLU control. All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

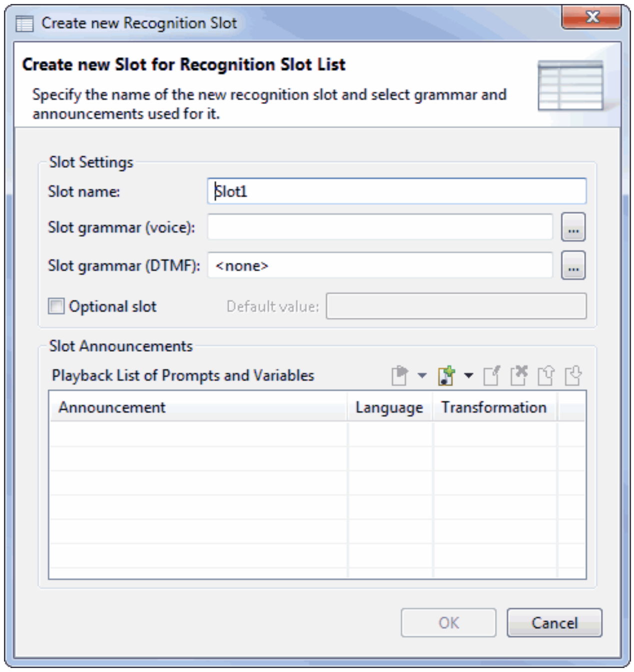
"Slots" Tab

On this tab you specify the recognition slots to be filled in by the user via voice. Each slot corresponds to a single entry value demanded from the user. The result of a slot grammar is the value with which a slot is filled in. The following settings are available:

Icon	Description
	This icon enables creating or adding a new slot to the list. See *How to add a slot* under this table.
	This icon allows editing a selected slot.
	You use this icon to remove a selected slot from the list.
	If you have inserted several slots, they are dialed in order from top to bottom. Using these icons you can move a selected slot in the list up or down.

How to add a slot:

1. Click on the icon.
   The dialog **Create new Slot for Recognition Slot List** opens.



2. Enter a name for the slot.
3. Specify the **Slot Grammar**. Use the **...** button to select the corresponding grammar and click on **OK**.

> ***NOTICE:*** You can import a new grammar file via the **Create new Grammar** link.

4. Activate the **Optional Slot** checkbox if the slot shall not be announced. The slot can be left empty for the recognition. The **Slot Announcements** section becomes inactive.
5. When activating the **Optional Slot**, specify a **Default Value**. The default value is executed if the user does not fill in the slot.
6. In the **Slot Announcements** section you specify the announcement(s) for the slot that the user needs to fill in. All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.
   The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls*/*Play-back Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Con-trols*/*Adding a Prompt*, *Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or vari-ables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

7. Click on OK.
   The dialog **Create new Slot for Recognition Slot List** closes and the config-uration is saved.

“Results” Tab

On this tab you specify the variable that stores the speech recognition result. The specified variable stores the complete speech recognition result, which consists of all single results of the defined recognition slot. Each slot is available as sub-variable of the specified variable.

1. Specify the **Variable for Recognition Result**. Use the **...** button to select the corresponding variable and click on **OK**.
2. Switch to the next tab or click on **OK** or **Apply**.
   The configurations are saved.

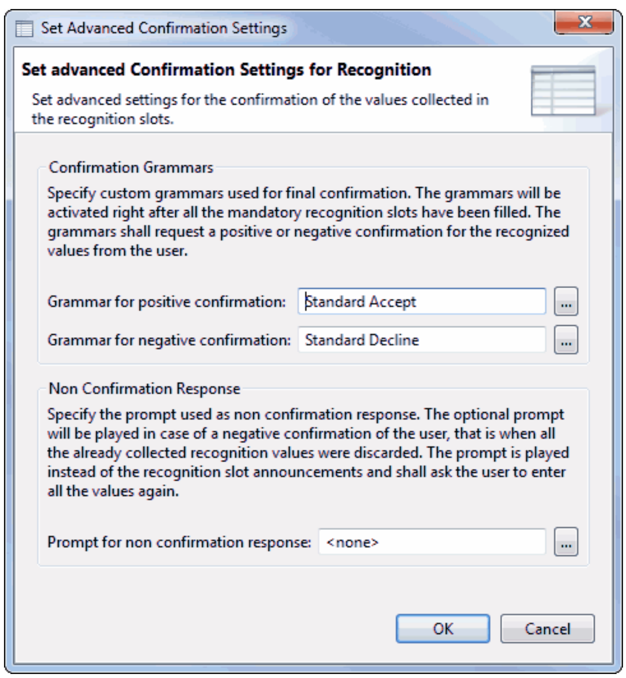
"Confirmation" Tab

On this tab you define the announcement to be played by the control as final result after all necessary slots have been filled in.

The following icons are available on the **Confirmation** tab.

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

After a click on the **Advanced Confirmation Settings...** link you can perform the advanced settings for confirming the variable.



In the **Confirmation Grammars** section the default grammars are active, if at least one confirmation announcement has been configured.. You can specify further grammars that were previously created. The grammars should demand a positive or a negative confirmation for the recognized values. Use the **...** button to select the appropriate variable and click on **OK**.

In the **Non Confirmation Response** section the optional prompt of the non confirmation response is played in case of a negative confirmation of the user. You select the prompt files from the drop-down list or create a new prompt.

"Options" Tab

In the **Filter Grammars** section you define redundant and unimportant contents to be filtered out of the user's utterances. You can specify a grammar applied to the beginning of the utterance (**Grammar for leading Garbage**) and one applied to the remaining content (**Grammar for inner Garbage**). Use the ... button to select the corresponding variable and click on **OK**.

In the **Control Grammars** section you can activate further default grammars. This enables the user to repeat the entry (**Grammar for Menu Repetition**) or cancel the entire process (**Grammar for Menu Abortion**). In case of an abortion the control delivers an additional event. Use the **...** button to select the corresponding variable and click on **OK**.

"Help" Tab

On this tab you define the announcements played by the control if the user has asked for help. The prompts are to contain detailed information about the purpose and use of the control.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

In the **Help Grammar** section you can as a rule use the default help grammar activated automatically as soon as a help prompt is configured. Use the **...** button to select the corresponding variable and click on **OK**.

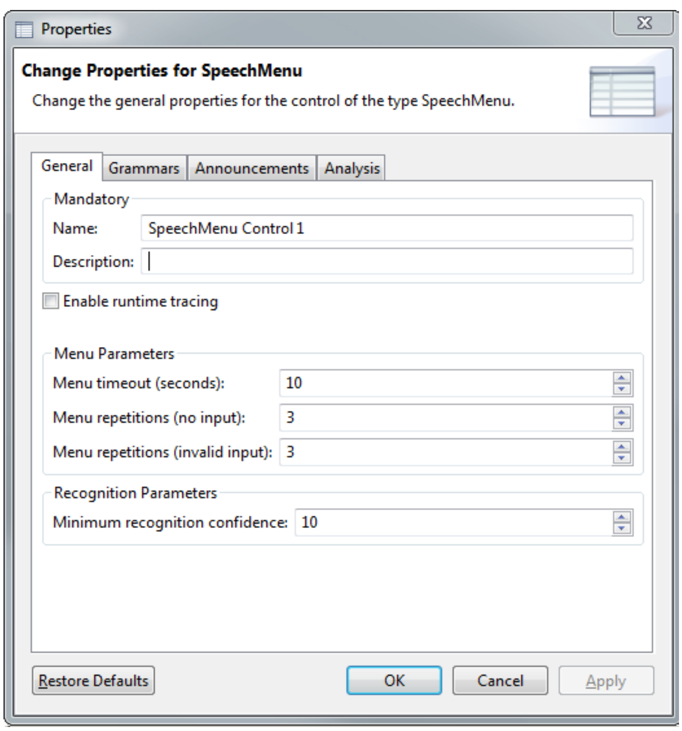
5.6.16 SpeechMenu Control

Like the DtmfMenu control, the SpeechMenu control provides the caller with a menu from which he/she can select an option. However, the user's input is not made by keys but by voice (utterance). The way the utterance is made it is recognized by ASR and its meaning, the semantic result, is determined according to a grammar. This semantic result determines the event to be triggered. This event determines the connection that forwards to the next control. Consequently, there is the following causal chain: utterance --> recognized utterance --> meaning (semantic result) --> event --> connection --> next control.

NOTICE: No control can translate a caller's spoken language in written text.

NOTICE: In the example application ReadTheMeter, the SpeechMenu control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). This application is shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide this application.

The configuration dialog of the SpeechMenu control provides the tabs **General**, **Grammars**, **Announcements** and **Analysis**.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

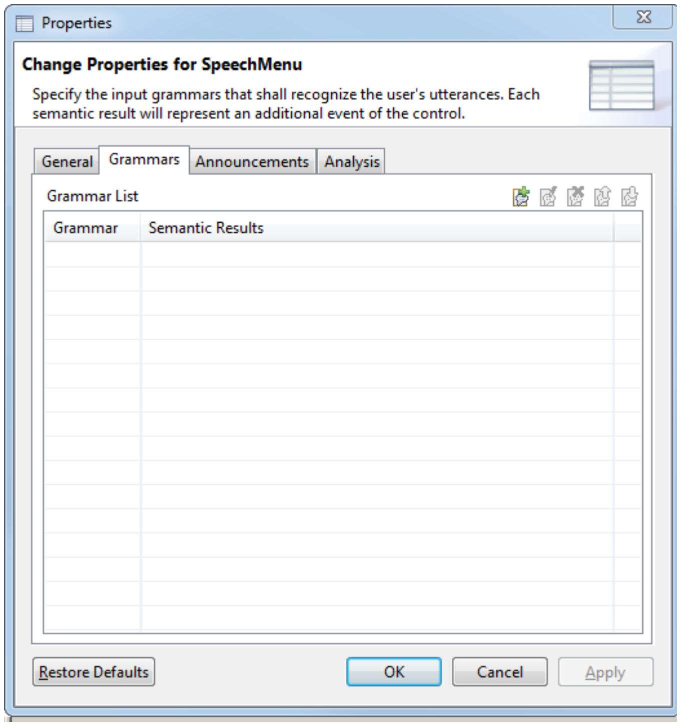
In the **Menu Parameters** section you can determine the behavior of the control in case of time-out (no input after a certain amount of time). The following settings are available:

Field	Description
Menu Timeout (Seconds)	Specify here the time (in seconds) available to the caller to make his/her input after the announcement (s) has been played. If you enter a ’0', the caller can wait an undefined period of time until he/she makes an entry by voice. The default value is 10 seconds.
Menu Repetitions (No Input) and (Invalid Input)	If the caller has made no/an incorrect voice input, the announcement will be repeated. You specify how often an input can be repeated before the control reports the event error, whereby the next control is moved to. The value refers to the number of missing/invalid entries. In case of value 3, the entry and thus the announcement will be repeated three times, so with the first execution the announcement is played altogether four times. If you enter a ’0’, the announcement is not repeated but the caller is directly forwarded to the control configured for the error event after a missing/invalid entry. Three repetitions are allowed by default.

In the **Recognition Parameters** section you configure the **Minimum Recognition Confidence**. This specification is the minimum speech recognition quality that must be reached for regarding the speech recognition as valid. The value may range between 0 and 100. The default value is 10.

"Grammars" tab

On the **Grammars** tab you add the grammars used for assigning utterances of the caller to events of this control.



Click on the icon. Activate the check box that precedes the grammar you wish to add or create a new grammar with a click on the **Create new Grammar...** link.

NOTICE: When creating a new grammar you must use certain Windows themes such as any Aero theme or the Windows 7 basic theme for displaying specific buttons.

You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

NOTICE: After adding the grammars check whether the **Semantic Results** column shows the semantic results of your desired keywords. In doing so please consider that the semantic result is the representation of the textual meaning but not the textual meaning itself. This difference is important when creating the utterance --> semantic result assignment for several languages, because the textual meaning of an utterance always depends on a language but the semantic result must be language-independent.

Check grammars that do not display anything at all in the **Semantic Results** column because the grammar selection dialog includes faulty grammars also. In such a case the problem view shows for example the following error message: **Grammar 'ws01_ grammar_01' specifies grammar files having different semantic results**.

NOTICE: The number of results of this control depends on the added grammars. If no grammar has yet been added, only the **Menu Aborted** event exists, i. e. there can only be a connection from the SpeechMenu control to the next control.

Faultless grammars added to the control create one or several comma-separated values in the **Semantic Results** column. Each of these values effects another event. Repetitions of values in another row do not effect any further events.

Example: One or several rows of the **Semantic Results** column contain **No, Yes**. This effects two further events: **Result ’No’** and **Result ’Yes’**. Consequently, a total of three connections can be created to the next controls.

The following icons are available:

Icon	Description
	This icon opens the dialog for adding one or several grammars. See for example section *Workspace Grammars*.
	This icon opens the dialog for editing a grammar.
	This icon removes the selected grammar.
	If you have inserted several grammars, they are processed in top-to-bottom order. If a caller's utterance is recognized as valid, the grammars further down in the list are not applied. Using these icons you can move a selected grammar in the list up or down.

“Announcements” tab

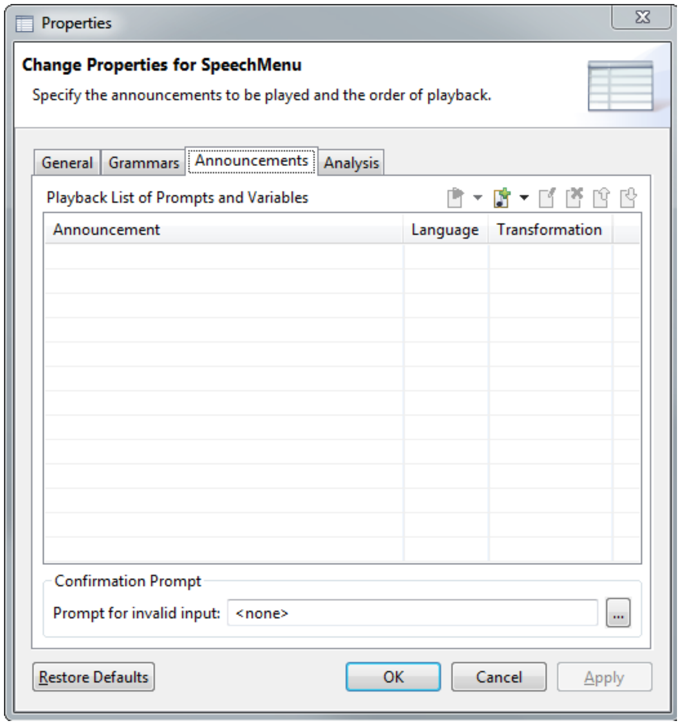
On this tab you specify the announcement(s) for the SpeechMenu control. Use them to inform the caller about his/her selection options.

Example

```
If you wish to be forwarded to a specific coworker, say
"One", if you wish to query the delivery status of your
order, say "Two", if you wish to speak to the customer
service, say "Three".
```

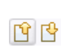
For event "One" you are forwarded to a SpeechInput control that queries the coworker's name, for event "Two" you are forwarded to a DatabaseRead control and for event "Three" you are forwarded to a Connect control that routes the call to the already known phone number of the customer service.

All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.



In the **Confirmation Prompts** section you can specify an announcement for the case **Prompt for invalid Input** that plays a signal for the user. You select the prompt file from the drop-down list or create a new one.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

"Analysis" tab

On this tab you specify via the **Record invalid speech input** setting, whether to record and save invalid speech input or not. The recorded speech input will be stored on the OpenScape server and might later be used to optimize the used grammars.

If recording is enabled, each user utterance that is not properly recognized by the speech recognition system will be stored on the server along with the corresponding (active) grammar files. The files will be saved into the folder `<Speech/<control-name>/<call-id>` within the application's file storage and can be downloaded from the server for analysis.

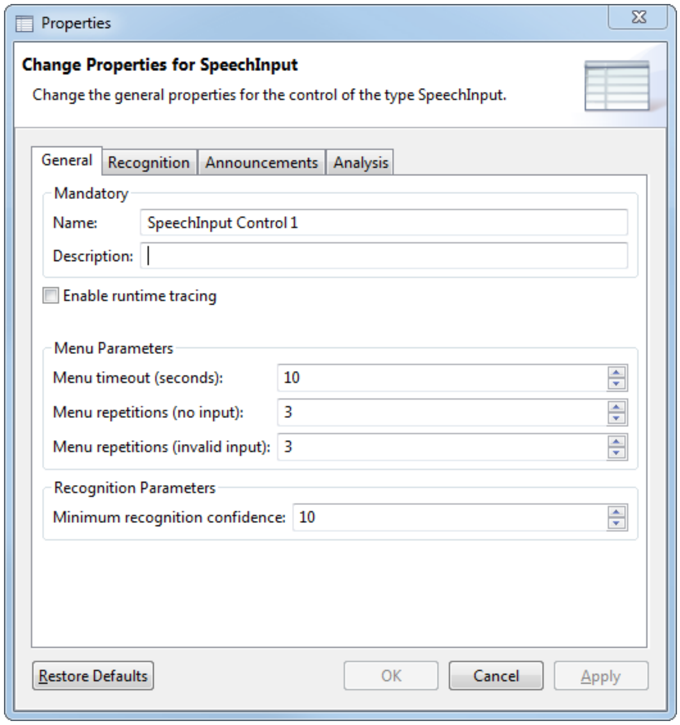
5.6.17 SpeechInput Control

Like the DtmfInput control the SpeechInput control stores a caller's input in a variable. However, the user's input here is not made by keys but by voice (utterance). The way the utterance is made it is recognized by ASR and its meaning, the semantic result, is stored in a variable in compliance with a grammar. Consequently, there is the following causal chain: utterance --> recognized utterance --> meaning (semantic result) --> variable value. In case of an ambiguous utterance recognition, all likely results can optionally be stored in a variable list.

> ***NOTICE:*** Speech recognition with subsequent storing of a result in a variable is, besides in the NLU control, also performed in the SpeechInput control. However, in contrast to the SpeechInput control, which allows processing only one result, you can process several results in the NLU control. Furthermore, results in the NLU control are stored in a variable of type Tree, whereas a SpeechInput control stores the result in a variable of type RecognitionResult.

> ***NOTICE:*** No control can translate a caller's spoken language in written text.

The configuration dialog of the SpeechMenu cont.rol provides the tabs **General**, **Recognition**, **Announcements** and **Analysis**.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

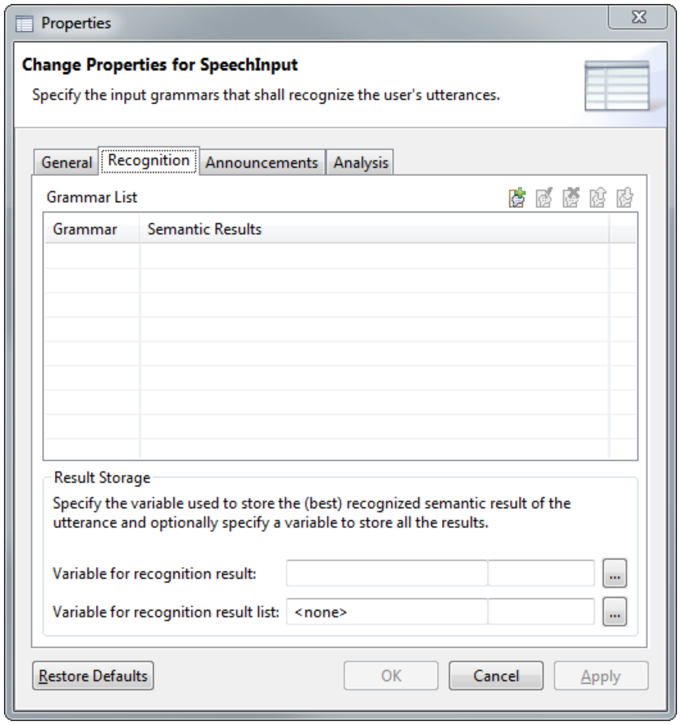
In the **Menu Parameters** section you can determine the behavior of the control in case of time-out (no input after a certain amount of time). The following settings are available:

Field	Description
Menu Timeout (Seconds)	Specify here the time (in seconds) available to the caller to make his/her input after the announcement (s) has been played. If you enter a ’0', the caller can wait an undefined period of time until he/she makes an entry by voice. The default value is 10 seconds.
Menu Repetitions (No Input) and (Invalid Input)	If the caller has made no/an incorrect voice input, the announcement will be repeated. You specify how often an input can be repeated before the control reports the event error, whereby the next control is moved to. The value refers to the number of missing/invalid entries. In case of value 3, the entry and thus the announcement will be repeated three times, so with the first execution the announcement is played altogether four times. If you enter a ’0’, the announcement is not repeated but the caller is directly forwarded to the control configured for the error event after a missing/invalid entry. Three repetitions are allowed by default.

In the **Recognition Parameters** section you configure the **Minimum Recognition Confidence**. This specification is the minimum speech recognition quality that must be reached for regarding the speech recognition as valid. The value may range between 0 and 100. The default value is 10.

"Recognition" tab

On the **Recognition** tab you add the grammars used for assigning utterances of the caller to events of this control.



Click on the icon. Activate the check box that precedes the grammar you wish to add or create a new grammar with a click on the **Create new Grammar...** link.

> ***NOTICE:*** When creating a new grammar you must use certain Windows themes such as any Aero theme or the Windows 7 basic theme for displaying specific buttons.
>
> You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

After adding the grammars check whether the **Semantic Results** column shows the semantic results of your desired keywords. In doing please consider that semantic results must correspond to their keywords but need not be identical with them. A semantic result is valid for all languages of a grammar. For example, the German keyword "Ja" and the English keyword "Yes" may be assigned to the semantic result "Yes".

Check grammars that do not display anything at all in the **Semantic Results** column because the grammar selection dialog includes faulty grammars also. In such a case the problem view shows for example the following error message: **Grammar 'ws01_ grammar_01' specifies grammar files having different semantic results**.

The following icons are available:

Icon	Description
	This icon opens the dialog for adding one or several grammars. See for example section *Workspace Grammars*.
	This icon opens the dialog for editing a grammar.
	This icon removes the selected grammar.
	If you have inserted several grammars, they are processed in top-to-bottom order. If a caller's utterance is recognized as valid, the grammars further down in the list are not applied. Using these icons you can move a selected grammar in the list up or down.

In the **Result Storage** area click on the ... button next to the **Variable for Recognition Result** field and select the variable to store the best meaning of the caller's recognized utterance, the semantic result. This variable must be of type **Recognition Result**. In the **Variable for Recognition Result List** field you can optionally select a variable of type **RecognitionResult List**. In this variable all likely meanings of the utterance are stored. This is of importance if no best meaning can be uniquely determined.

“Announcements” tab

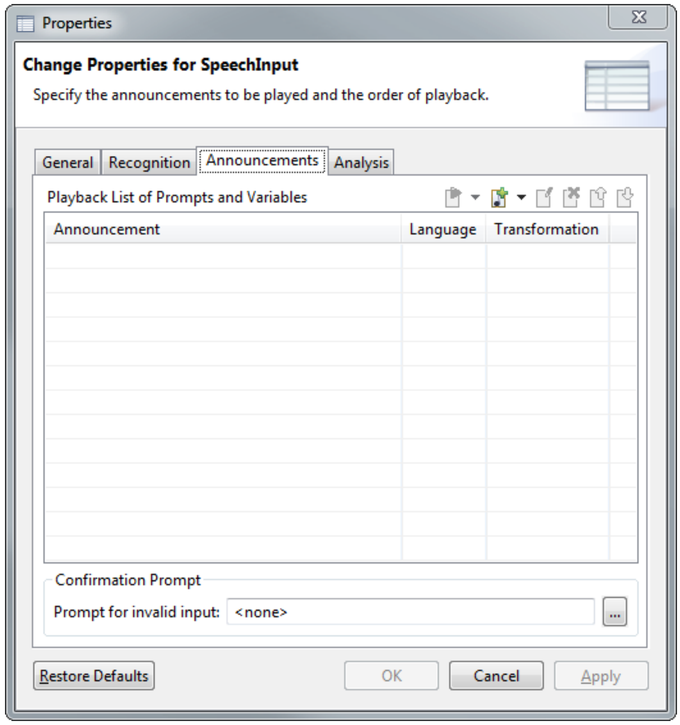
On this tab you specify the announcement(s) for the SpeechInput control. Use them for telling the user which keywords he/she is expected to put in.

Example

```
Please state the name of the coworker you wish to be
forwarded to.
```

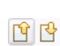
You may then be routed to a DatabaseRead control that queries the phone number of the desired coworker.

All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.



In the **Confirmation Prompts** section you can specify an announcement for the case **Prompt for invalid Input** that plays a signal for the user. You select the prompt file from the drop-down list or create a new one.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

"Analysis" tab

On this tab you specify via the **Record invalid speech input** setting, whether to record and save invalid speech input or not. The recorded speech input will be stored on the OpenScape server and might later be used to optimize the used grammars.

If recording is enabled, each user utterance that is not properly recognized by the speech recognition system will be stored on the server along with the corresponding (active) grammar files. The files will be saved into the folder `<Speech/<control-name>/<call-id>` within the application’s file storage and can be downloaded from the server for analysis.

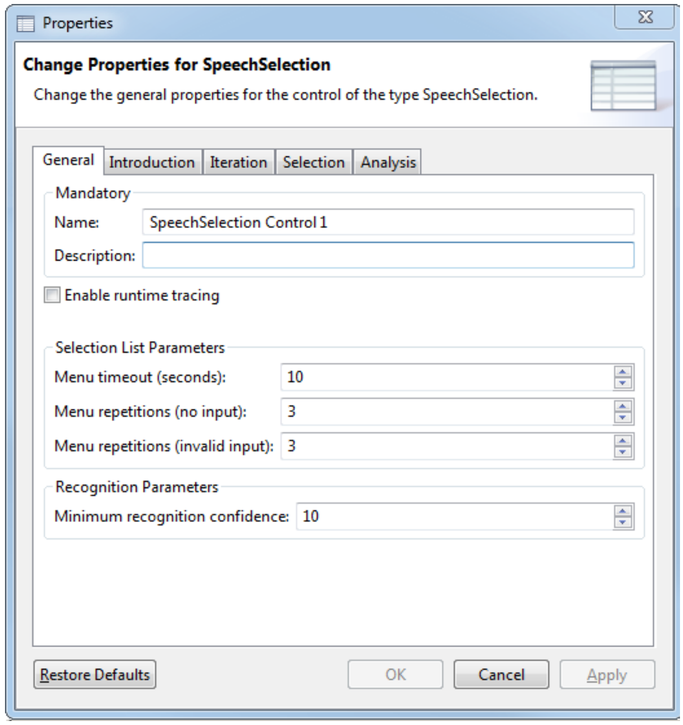
5.6.18 SpeechSelection Control

Like the DtmfSelection control, the SpeechSelection control links the variable list elements to the telephone keys. However, the user's input is not made by keys but by voice (utterance). The way the utterance is made it is recognized by ASR and its meaning, the semantic result, is determined according to a grammar. This semantic result determines the event to be triggered.

> ***NOTICE:*** No control can translate a caller's spoken language in written text.

> ***NOTICE:*** In the example application ReadTheMeter, the SpeechMenu control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). This application is shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide this application.

The configuration dialog of the SpeechSelection control provides the tabs **General**, **Introduction**, **Iteration**, **Selection** and **Analysis**.



“General” tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Selection List Parameters** section you can determine the behavior of the control in case of time-out (no input after a certain amount of time). The following settings are available:

Field	Description
Menu Timeout (Seconds)	Specify here the time (in seconds) available to the caller to make his/her input after the announcement (s) has been played. If you enter a ’0', the caller can wait an undefined period of time until he/she makes an entry by voice. The default value is 10 seconds.
Menu Repetitions (No Input) and (Invalid Input)	If the caller has made no/an incorrect voice input, the announcement will be repeated. You specify how often an input can be repeated before the control reports the event error, whereby the next control is moved to. The value refers to the number of missing/invalid entries. In case of value 3, the entry and thus the announcement will be repeated three times, so with the first execution the announcement is played altogether four times. If you enter a ’0’, the announcement is not repeated but the caller is directly forwarded to the control configured for the error event after a missing/invalid entry. Three repetitions are allowed by default.

In the **Recognition Parameters** section you configure the **Minimum Recognition Confidence**. This specification is the minimum speech recognition quality that must be reached for regarding the speech recognition as valid. The value may range between 0 and 100. The default value is 10.

"Introduction" tab

On this tab you define the introductory announcements played before the selection list announcements. All announcements or variables assigned to the control are listed in the **Announcements** column. **Transformation** transforms variable values into complete announcements the user can understand. You need to enter the transformations for every available language to be used.

In the **Confirmation Prompt** section you can specify a **Prompt for invalid Input** that acoustically signal errors to the user. You select the prompt file from the drop-down list or create a new one.

The following icons are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

"Iteration" tab

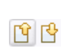
On this tab you specify what you wish to iterate over and the iterator, selection key and event store variable name.

Leave the **Iterate over Variable List** radio button activated if you wish to iterate via the variable list. Activate the **Iterate over Enumeration Type Values** radio button if you wish to iterate via the values of an enumeration variable type.

Field	Description
Variable List to iterate respectively **Enumeration Type to iterate**	If you wish to iterate via a variable list, select a variable list via the **...** field and click on **OK**. If you wish to iterate via an enumeration variable type, click in the field and select an enumeration variable type.
Iterator Variable Name	The **Iterator Variable Name** enters the name that is used for the current variable list element during the iteration. The iterator variable is the loop variable during traversing all list entries. This variable is available in this control only, thus neither in other DtmfSelection controls nor anywhere else in the application or workspace.
Selection Key Variable Name	Specify the variable name. The value of the variable is the respective DTMF key assigned to the selection of the current list element or to the value of the enumeration variable type. This variable is available in this control only, thus neither in other DtmfSelection controls nor anywhere else in the application or workspace.
Variable for selected Element	Specify in the **Result Storage** section a variable for a selected element. Use the **...** button to select the appropriate variable and click on **OK**. You can select only one variable of the same type as the above selected enumeration type or as the list elements of the above selected list. This variable is used for storing the list element or value of the enumeration variable type.

"Selection" tab

On this tab you specify the selection list announcements to be played during the iteration for every variable in the list. The following settings are available:

Icon	Description
	This icon enables playing a selected announcement. See section *General Information about Controls/Playback Options*.
	A click on the triangle of the icon depicted on the left opens a list to select the options **Add Prompt ...**, **Add Variable...** or **Add Pause...**. Depending on the option you select, the corresponding icon is displayed. These icons enable creating or adding a new prompt or variable to the list. See section *General Information about Controls/Adding a Prompt, Variable or Pause*.
	By clicking this button you may change the selected announcement, prompt or variable in the list.
	This icon lets you remove a selected announcement, variable or pause from the list.
	If you have inserted several announcements or variables, they are played in order from top to bottom. Using these icons you can move a selected announcement or variable in the list up or down.

In the **Navigation Prompts** section you can set prompts for the single user interactions. The following settings are available:

Field	Description
Prompt for next Page	Name of the prompt played as instruction for skipping to the next page. The optional prompt is bound to the pound key.
Prompt for previous Page	Name of the prompt played as instruction for skipping to the previous page. The optional prompt is bound to the star key.
Prompt to cancel Selection	Name of the prompt played as instruction for cancelling a selection. The optional prompt is bound to the "0" key.

> ***NOTICE:*** Next or previous page means that the selection list announcement may contain an indefinite number of prompts. Because the caller interacts via the telephone keys, the prompts must be combined in groups (pages) of 9 prompts. The "0" key is reserved.

"Analysis" tab

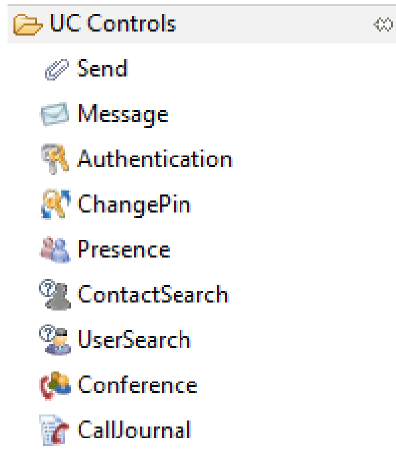
On this tab you specify via the **Record invalid speech input** setting, whether to record and save invalid speech input or not. The recorded speech input will be stored on the OpenScape server and might later be used to optimize the used grammars.

If recording is enabled, each user utterance that is not properly recognized by the speech recognition system will be stored on the server along with the corresponding (active) grammar files. The files will be saved into the folder `<Speech/<control-name>/<call-id>` within the application's file storage and can be downloaded from the server for analysis.

5.7 Group UC Controls

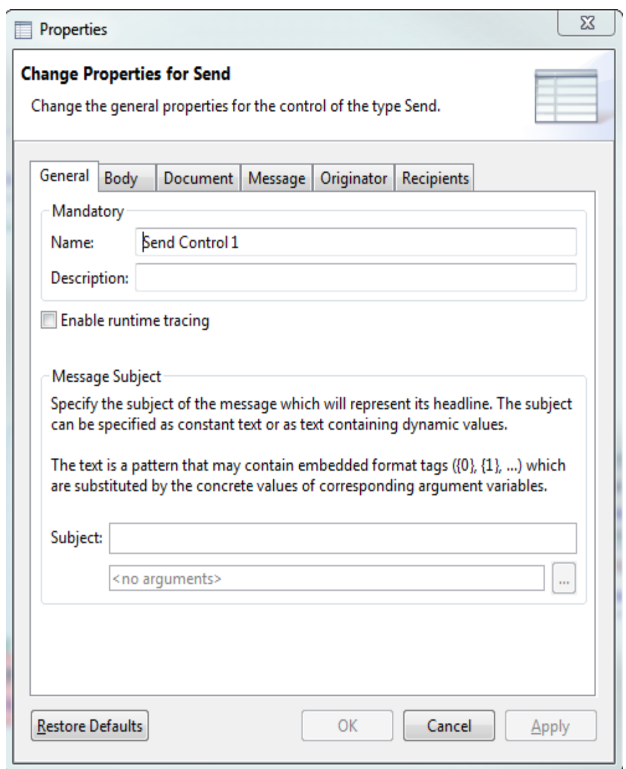
In the group **UC Controls** you find controls that can execute Unified Communications functions, such as playing messages or receiving faxes.

The extract from the palette view shows which controls are part of this group.



5.7.1 Send Control

The configuration dialog of the Send control is divided in the tabs **General**, **Body**, **Document**, **Message**, **Originator** and **Recipients**.



"General" tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

Enter the message's header in the **Subject** field. If you wish to specify variable values in this field indirectly, click on the ... button. The **Select Arguments for Patterns** dialog opens. Click on the icon, select the variable the value of which you wish to use and click on **OK**. The selected variable is displayed in the **Arguments** field. The **Tag** column displays the format tag that corresponds to the variable, for example `{0}`. If you wish to remove a variable from the **Arguments** field, click on the icon. You can change the variable - format tag assignment using the icons and . When you click the **Pattern Text** button, the content of the **Subject** field is displayed. Click the **OK** button. The assignment of format tag to variable is shown beneath the subject. Place the format tags in the subject line in positions where the corresponding variable values are required. When you click in the **Subject** field and push the hotkey CTRL + space bar, a selection of format tags is provided. Click on the appropriate format tag and push the enter key.

Example of a subject with format tags:

```
Project Status: {0}, Project Target Date: {1}
```

> ***INFO:*** The description of the Java class MessageFormat provides further information about format tags; see for example `docs.oracle.com/javase/6/docs/api/java/text/MessageFormat.html`. This page also describes the use of the number, date, time and choice format types as well as of the short, medium, long, full, integer, currency, percent and SubformatPattern format styles.

Example of a subject with two format types and one format style:

```
Project Status: {0,number,percent}, Project Target Date: {1,date}
```

"Body" tab

Enter the optional message content in the **Body** field.

Analog to the subject you can use format tags in the **Body** field also.

"Document" tab

In the **Message Document** area, you can specify a file to be sent optionally.

After activating the **Specify by Resource** radio button and clicking in the field of the same name, you can select one of the displayed files.

> ***INFO:*** If you use the Send control in an application, only the application resource files are displayed for selection. They are also listed in the workspace view under **<application name> > Application Resources**. You find these files in the directory <workspace path>\items\symvia-<application name>\resources.
>
> If, in contrast, you use the Send control in a composition, only the composition resource files are displayed for selection. They are

also listed in the workspace view under **Symvia Control compositions > <composition name> > Composition Resources**.
You find these files in the directory `<workspace path>\items\symvia-compositions\<composition name>\resources`.

After clicking in the **Specify by Resource** field and then on **Import new Resource...**, you can select any file available on the file system.

> ***INFO:*** If you use the Send control in an application, this file is added to the application resource files.
>
> If, in contrast, you use the Send control in a composition, this file is added to the composition resource files.

After activating the **Specify by Variable** radio button and clicking on the **...** button, you can select a variable of type URI the value of which identifies the file to be attached to the message. This file may have been filled by a Record control.

In the **Display Name of Document** field you can assign a name that will be displayed within the message. Enter the name manually.

"Message" tab

On the **Message** tab you can configure the sensitivity, the importance and the delivery receipt of a message.

You can select one of the following values from the **Specify Sensitivity by Value** combo box to assign it manually to the message's sensitivity:

- None
- Personal
- Private
- Confidential

In the **Specify Sensitivity by Variable** field you can configure the sensitivity using a variable of type Message Sensitivity.

You can select one of the following values from the **Specify Importance by Value** combo box to assign it manually to the message's importance:

- Low
- Normal
- High

In the **Specify Importance by Variable** field you can configure the importance using a variable of type Message Importance.

If you activate the **Request Message Delivery Receipt** check box, a delivery receipt is sent to the message originator after the message's successful delivery. The message originator is the user logged in at OpenScape UC Application. If no user is logged in, the custom originator configured on the "Originator" tab is taken as the message originator. If neither a user is logged in nor a custom originator has been configured, sending a receipt may fail.

INFO: A delivery receipt is no read confirmation.

"Originator" tab

On the **Originator** tab you can set a message originator. The user currently logged in at OpenScape UC Application is specified as message originator by default. The originator pays for the all.

If no user has logged in, the custom user (if configured) is deployed as originator. To configure a custom originator, activate the **Use custom Message Originator** check box. You have the following options:

- **Specify by Text**
  Enter the message originator manually.
- **Specify by Variable**
  Specify the variable of type String that contains the message originator.

If no user is logged in at OpenScape UC Application and no custom originator has been configured, OpenScape UC Application determines the originator.

"Recipients" tab

On the **Recipients** tab you specify the recipients of a message and determine their order. A list entry may correspond to one recipient or to a list of recipients.

The following icons are available on the **Recipients** tab.

Icon	Description
	This icon adds a recipient entry.
	This icon opens a recipient entry for editing.
	This icon removes a recipient entry.
	If you have created several recipients, they are applied in order from top to bottom. Using these icons you can move selected recipient entries in the list up or down.

5.7.1.1 How to Add a User to the Recipient List

Step by Step

1) Click on the black triangle next to the icon and select **Add User...**.

The **Add User to Recipient List** dialog opens.

2) In this dialog there are three options for specifying the user data.

a) **Specify single User by concrete User**

Check that the Application Builder is connected to an OpenScape UC Application (**Workspace > OpenScape Servers > OpenScape Server**

Login > Current Status). Only then the **Specify single User by concrete User** field will display OpenScape UC Application users for selection. Select a user (example: **Olga Olgova**). If there is no connection to an OpenScape UC Application, the message **User Selection is not available due to missing Server Connection**.

The **Address by** field provides the account name of the user for selection (example: **Account (’olgova@system’)**). If you wish to use the user's e-mail address instead of the account name, use **Add Contact...** instead of **Add User...**.

b) **Specify single User by Variable**

Specify the variable of type User that contains the user the message shall be sent to.

c) **Specify multiple Users by Variable List**

Specify the variable list of type User List that contains the users the message shall be sent to.

3) Click on **OK**.

The selected recipients are added to the **Message Recipient List**.

4) Click on **OK** or switch to another tab for performing further settings.

5.7.1.2 How to Add a Contact to the Recipient List

Step by Step

1) Click on the black triangle next to the  icon and select **Add Contact...**.

The Add **Contact to Recipient List** dialog opens.

2) In this dialog there are three options for specifying the contact data.

a) **Specify single Contact by concrete Contact**

Check that the Application Builder is connected to an OpenScape UC Application (**Workspace > OpenScape Servers > OpenScape Server Login > Current Status**). Only then the **Specify single Contact by concrete Contact** field will display contacts of the OpenScape UC Application for selection. Select a contact (example: **Olga Olgova**). If there is no connection to an OpenScape UC Application, the message **Contact Selection is not available due to missing Server Connection** informs you accordingly.

The **Address by** field provides the contact's account name for selection (example: **Account (’olgova@system’)**). If an e-mail address has been configured for this contact, it is provided for selection as well (Example: **Email: ’olgova@mycompany.com’**).

INFO: You find the e-mail address of a contact or user in the CMP under **User Management > Administration > Users & Resources > <user name> > General > E-mail address 1**.

b) **Specify single Contact by Variable**

Specify the variable of type Contact that contains the contact the message shall be sent to.

c) **Specify multiple Contacts by Variable List**

Specify the variable list of type Contact List that contains the contacts the message shall be sent to.

3) Click on **OK**.

The selected recipients are added to the **Message Recipient List**.

4) Click on **OK** or switch to another tab for performing further settings.

5.7.1.3 How to Add an E-Mail Address to the Recipient List

Step by Step

1) Click on the black triangle next to the icon and select **Add Email...**.

The **Add Email Address to Recipient List** dialog opens.

2) In this dialog there are three options for specifying the contact data.

a) **Specify single Email Address by concrete Text**

Enter an e-mail address manually.

b) **Specify single Email Address by Variable**

Specify the variable of type String that contains the e-mail address the message shall be sent to.

c) **Specify multiple Email Addresses by Variable List**

Specify the variable list of type String list that contains the e-mail addresses the message shall be sent to.

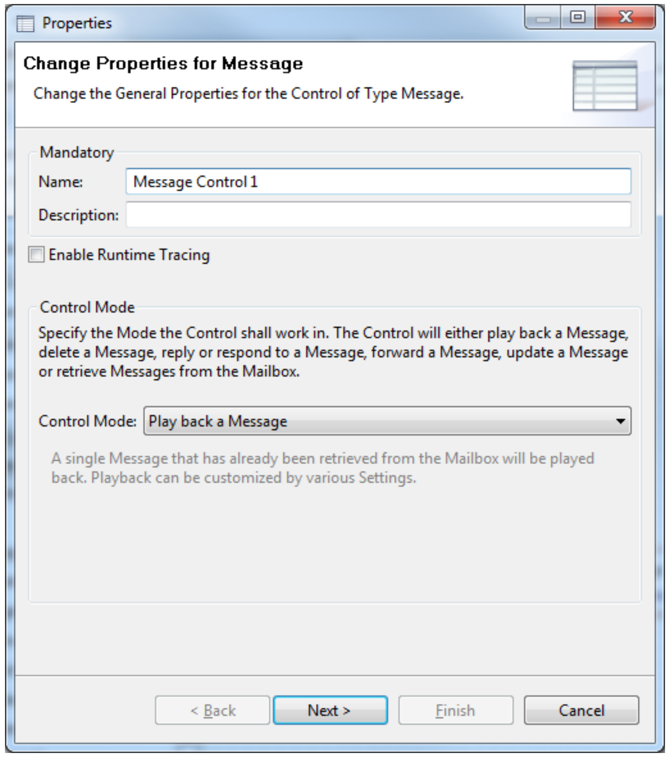
3) Click on **OK**.

The selected recipients are added to the **Message Recipient List**.

4) Click on **OK** or switch to another tab for performing further settings.

5.7.2 Message Control

The Message control contains the **Properties** configuration dialog. It can play, delete, answer and forward messages. Additionally, the control can update the message status, answer meeting requests and play mailbox messages.



IMPORTANT: If using the Message control in an application, the control will work only if a user has been previously logged in at an OpenScape UC Application in the application through use of the Authentication control.

If no use has been logged in, a corresponding error message is issued in the control (see screenshot).

In contrast, if using the Message control in a composition, no such error message is put out because within the composition there is no way of checking in which application the composition is used and whether a login has been performed within the application.

Properties view

In the **Change Properties for Message** view you can perform the following settings. See section *General Information about Controls*.

The **Message Control** can work in different modes. These are:

- Play back a Message
- Delete a Message
- Reply to a Message
- Forward a Message
- Update the Status of a Message
- Respond to a Meeting Request
- Retrieve Messages from Mailbox

When a message is sent, the user logged in at the OpenScape UC Application is used as message originator.

5.7.2.1 How to Configure the Play back a Message Mode

Prerequisites

- You have opened the properties dialog of the Message control.

Step by Step

1) Select the **Play back a Message** item from the **Control Mode** combo box.
2) Click on **Next**.
3) Select a variable of type Message in the **Message Playback** section via the **...** button.
4) Select prompts for different situations in the **Playable Prompts** section from the combo box or create a new prompt via the **Create New Prompt...** link. You need prompts for the following situations:
   - Prompt for empty Body
   - Prompt for Attachment Separator
   - Prompt for Invalid Attachment

   NOTICE: When creating a new prompt you must use certain Windows themes such as any Aero theme or the Windows 7 basic theme for displaying specific buttons.

   You can change the Windows theme for example by clicking on the desktop background with the right mouse button and selecting **Personalize**. Alternatively, you can open **Start > Control Panel > Personalization** or **Start > Control Panel > Appearance and Personalization > Personalization**.

   NOTICE: If the Message Control is used in a composition and you create a new prompt, no composition prompt is created.

   If, in contrast, the Message Control is used in an application and you create a new prompt, an application prompt is created.

   You find details of creating prompts in section "How to Create and Configure an Application Prompt". Those details apply likewise for composition prompts.
5) Click on **Next**.

   You can define message information that can be added to your playable message.
6) In the **Include** column, enable the check boxes of the properties you would like to add to your message.

7) Click the **Finish** button to complete the configuration.

5.7.2.2 How to Delete a Message

Prerequisites

- You have opened the properties dialog of the Message control.

Step by Step

1) Select the **Delete a Message** item from the **Control Mode** combo box.

2) Click on **Next**.

3) Select a variable of type Message in the **Message Deletion** section via the **...** button.

4) If you would like to delete the message permanently, enable the check box **Delete Message permanently**.

> ***NOTICE:*** If you activate this mode, the messages cannot be restored.

5) Click the **Finish** button to complete the configuration.

5.7.2.3 How to Reply to a Message

Prerequisites

- You have opened the properties dialog of the Message control.

Step by Step

1) Select the **Reply to a Message** item from the **Control Mode** combo box.

2) Click on **Next**.

3) Next to the **Variable for Message** field click on the **...** button to select the variable of type Message that contains the message to be replied to.

4) Next to the **Variable for Comment** field click on the **...** button to select the variable of type URI that contains the path to the media file to be inserted. The typical contents of this media file is spoken language recorded with the Record control.

5) Click the **Finish** button to complete the configuration.

6) If you wish to reply to all other persons besides the message originator, activate the **Reply to All (instead of replying to message Sender only)** check box.

7) Click the **Finish** button to complete the configuration.

5.7.2.4 How to Forward a Message

Prerequisites

- You have opened the properties dialog of the Message control.

Step by Step

1) Select the **Forward a Message** item from the **Control Mode** combo box.

2) Click on **Next**.

3) Next to the **Variable for Message** field click on the **...** button to select the variable of type Message that contains the message to be forwarded.

4) Next to the **Variable for Comment** field click on the **...** button to select the variable of type URI that contains the URI of the media file to be inserted in the message to be forwarded. The typical contents of this media file is spoken language recorded with the Record control.

> ***INFO:*** Specifying this variable is optional.

> ***INFO:*** The user who has logged in at the OpenScape UC Application with help of the Authentication control is used as originator of the message to be forwarded.

5) Click on **Next**.

6) Next to the **Message Recipient List** click on the icon to add a user to the list or click on the black triangle next to the icon to add a user, a contact or an e-mail.

Another dialog opens. There are three options for you to decide whether to add a user, a contact or an e-mail address. Pick one of them.

Actions	User	Contact	E-mail
Concrete information	Select a user via the combo box.	Select a contact from the combo box and select an address from the **Address by:** combo box.	Enter an e-mail address in the field.
Variable	Select a variable of the type **User** via the **...** button .	Select a variable of the type **Contact** via the **...** button.	Select a variable of the type **String** via the **...** button.
Variable List	Select a variable of the type **User list** via the **...** button.	Select a variable of the type **Contact list** via the **...** button.	Select a variable of the type **String** via the **...** button.

> ***NOTICE:*** The icon changes to if you have selected **Add Email...**.

> ***NOTICE:*** The concrete user and contact selection are only available if you are logged in at an OpenScape UC Application. Check this in the workspace view under **OpenScape Servers > OpenScape Server Login > Current Status**.

7) Finish your selection with **OK**.

8) Click the **Finish** button to complete the configuration.

5.7.2.5 How to Set a Message Status

Prerequisites

- You have opened the properties dialog of the Message control.

Step by Step

1) Select the **Update the Status of a Message** item from the **Control Mode** combo box.

2) Click on **Next**.

3) In the **Message Deletion** section click on the **...** button to select a variable of type Message.

4) Select value **Read** or **Unread** from the **New Message Status** combo box.

5) Click the **Finish** button to complete the configuration.

5.7.2.6 How to configure the Respond to a Meeting Request Mode

Prerequisites

- You have opened the properties dialog of the Message control.

Step by Step

1) Select the **Respond to a Meeting Request Mode** item from the combo box next to Control Mode: combo box.

2) Click on **Next**.

3) Select a variable in the **Variable for message** section via the **...** button.

> ***NOTICE:*** The variable must be of the type **Message**.

4) Select a variable in the **Variable for Comment** section via the **...** button.

> ***NOTICE:*** The variable must be of the type **URI**.

5) Select from the combo box next to **Response to Invitation** one of the following options:
   - Accept
   - Tentatively Accept
   - Decline
6) Click the **Finish** button to complete the configuration.

5.7.2.7 How to Configure the Retrieve Messages from Mailbox Mode

Prerequisites

- You have opened the properties dialog of the Message control.

Step by Step

1) Select the **Retrieve Messages from Mailbox** item from the combo box next to **Control Mode** .
2) Click on **Next**.
3) Select a variable in the **Variable for Result** section via the **...** button.

   > ***NOTICE:*** The variable must be of the type **Message List**.

4) Enter the limit in the field next to **Number of Search Results**.
5) Click on **Next**.

   Another dialog opens in which you need to define a message filter. Filtering has four configuration options.
   - Message Type
   - Message Priority
   - Message Status
   - Message Receiving Time

   > ***NOTICE:*** You need to select at least one type and one priority.

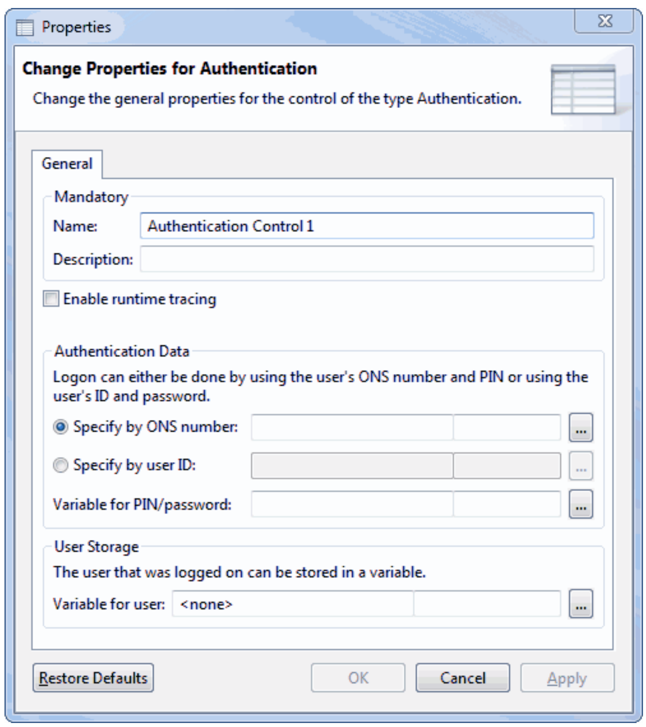
6) Enable a check box in the **Retrieved Messages by Type** group.
7) Enable a check box in the **Retrieved Messages by Importance** group.
8) Select the **Read State** from the drop-down list.
9) Select the **receiving time** from the lower drop-down list.
10) Click the **Finish** button to complete the configuration.

5.7.3 Authentication Control

A user deploys the Authentication control to log on to the OpenScape UC Application by specifying either the ONS number or the user ID.

> ***NOTICE:*** In the example composition Logon, the Authentication control is available in the `Samples\Compositions` sub-folder of the Application Builder's installation folder (not in the workspace directory). This composition is shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide this composition.

The Authenticationcontrol contains the **General** configuration dialog only.



"General" Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Authentication Data** section you define the desired authentication type. There are two options for specifying the information:

- **Specify by ONS Number**:
  Name of the variable that contains the one-number service (ONS) number used for logging on. Click on **...** for selecting the corresponding variable.
- **Specify by User ID**:
  Name of the variable that contains the user ID used for logging on. Click on **...** for selecting the corresponding variable.

Add under **Variable for PIN/Password** via **...** the name of the variable that contains the authentication information. If you have selected the **Specify by ONS Number:** option, the variable will contain a **PIN**, if you have selected the **Specify by User ID:** option, the variable will contain a **Password**.

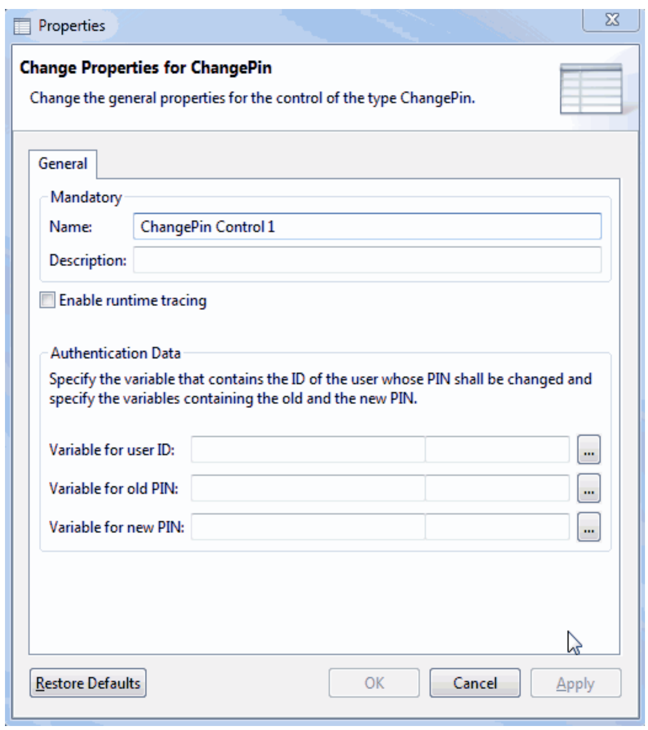
In the **User Storage** section you specify the variable that stores the user who was logged in at the system after a successful authentication. Click on **...** for selecting the corresponding variable.

5.7.4 ChangePin Control

Using the ChangePin control you can modify the PIN for any user.

NOTICE: In the example composition ChangePassword, the ChangePin control is available in the `Samples\Compositions` sub-folder of the Application Builder's installation folder (not in the workspace directory). This composition is shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide this composition.

The ChangePin control contains the **General** configuration dialog only.



“General” Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

Under **Authentication Data** you specify the variable for the user ID and for changing the PIN.

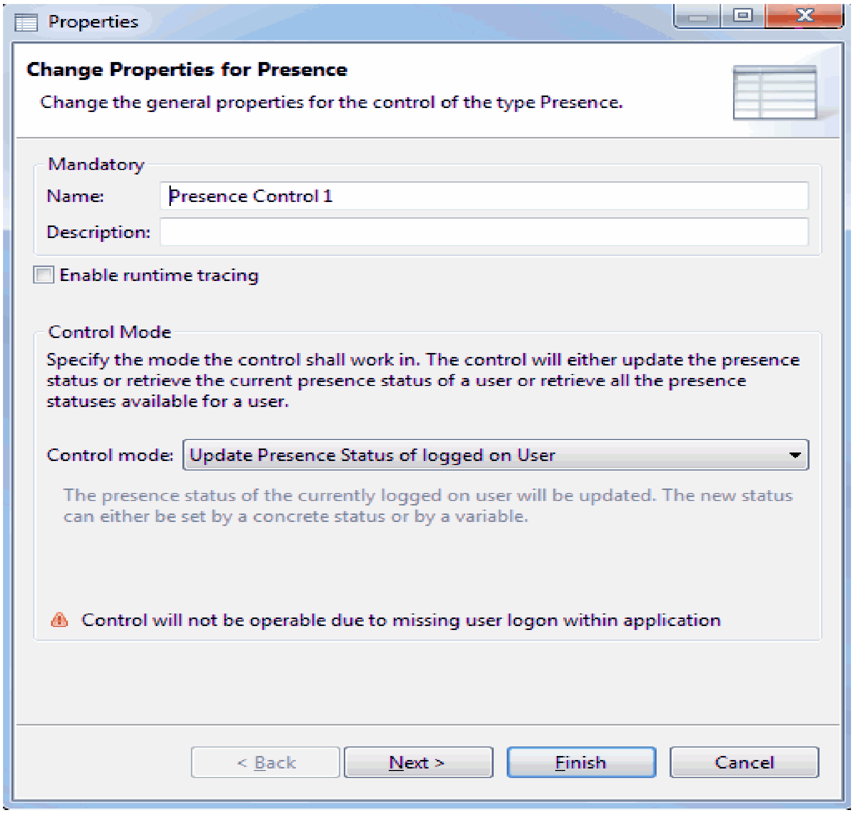
- **Variable for User ID**: Specify the variable that contains the ID of the user whose PIN shall be changed. Click on **...** for selecting the corresponding variable.
- **Variable for old PIN**: Specify the variable of the PIN to be changed. Click on **...** for selecting the corresponding variable.
- **Variable for new PIN**: Specify the variable that contains the new PIN. Click on **...** for selecting the corresponding variable.

5.7.5 Presence Control

You can use the Presence control to execute different functions with regard to the user's presence status. The contained information may later indicate whether a user is for example in a meeting, absent or available.

> ***NOTICE:*** In the example applications GetPresenceState and SetPresenceState, the Presence control is available in the `Samples\Applications` sub-folder of the Application Builder's installation folder (not in the workspace directory). These applications are shipped with the Application Builder. The *How to Import Workspace Elements* section describes how to provide these applications.

The Presence control contains the **Properties** configuration dialog only.



"Properties" tab

On the **Properties** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Control Mode** section you specify the mode in which the control is to operate. How to configure the status information:

5.7.5.1 How to Configure the Presence status

Step by Step

1) Activate one of the three checkboxes

> ***NOTICE:*** If no user is specified, the presence status of the user currently logged in is updated. If no user was previously logged in, retrieving the current presence status fails.

a) **Update Presence State of logged on User**: The presence status is always updated for the user currently logged in.

b) **Retrieve Presence State of a User**: The presence status is retrieved for a specific user or the user currently logged in.

   c) **Retrieve Presence States available for a User**: The available presence statuses are always retrieved for the user currently logged in.

2) Click on **Next >**.

   The displayed dialog depends on the previously selected presence status.

3) Configure the settings:

   a) **Update Presence State of logged on User**: You can specify the new status as explicit presence status (**Specify by State**) or as variable (**Specify by Variable**). There must be a server connection. Use the **...** button to select the variable and click on **OK**.

   b) **Retrieve Presence State of a User**:Specify the **Variable for User ID** for which the current presence status is to be retrieved and the **Variable for State** in which the ID of the retrieved status is stored. Use the **...** button to select the corresponding variable and click on **OK**.

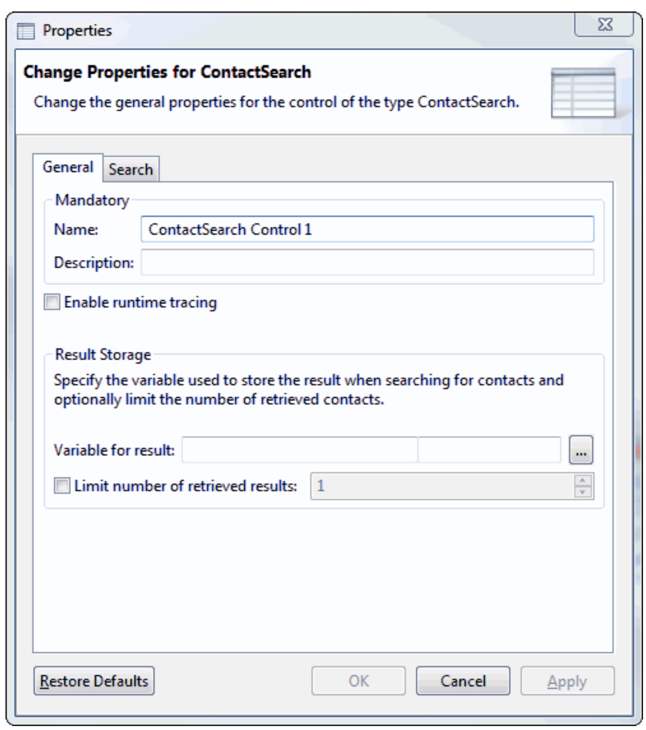
   c) **Retrieve Presence States available for a User**: Specify the **Variable for States** in which the ID of all available presence statuses is to be stored. Use the **...** button to select the variable and click on **OK**.

4) Click on **Finish**.

5.7.6 ContactSearch Control

The ContactSearch control searches for a user who matches a previously determined name dialing number.

The configuration dialog of the ContactSearch control provides the tabs **General** and **Search**.



“General” Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Result Storage** section you configure the search and store options for searching for a contact.

Specify the variable (for the result) to be used for storing the search results. Use the **...** button to select the corresponding variable and click on **OK**.

The **Limit Number of retrieved Results** checkbox lets you restrict the number of retrieved contacts. Activate the checkbox and enter the desired number.

"Search Settings" Tab

On the **Search** tab you define the search criterion, the search scope and the search prompt.

In the **Search Criterion** section you can configure whether the contact is to be searched via ONS number or vanity Code. Activate the corresponding checkbox. Use the **...** button to select the corresponding variable and click on **OK**.

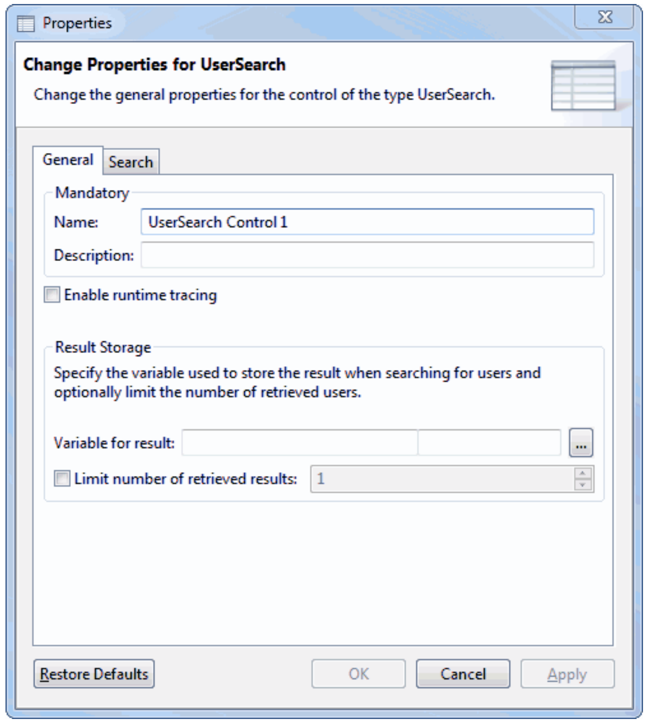
In the **Search Scope** section you can restrict the search to private contacts and also extend it to global ones. The default setting always includes all contacts in the search. Activate the corresponding checkbox. You can activate both search scopes.

In the **Search Prompt** section you can cover the required search time with a prompt. The prompt cannot be played if the search time is too short. You select the prompt file from the drop-down list or create a new one.

5.7.7 UserSearch Control

The UserSearch control offers the caller to enter a name dialing number and to subsequently search for the corresponding user.

The configuration dialog of the UserSearch control provides the tabs **General** and **Search Settings**.



"General" tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Result Storage** section you configure the search and store options for searching for a user.

Specify the variable (for result) to be used for storing the search results. Use the **...** button to select the corresponding variable and click on **OK**.

The **Limit Number of retrieved Results** checkbox lets you restrict the number of retrieved users. Activate the checkbox and enter the desired number.

"Search Settings" tab

On the **Search Settings** tab you define the search criterion and the search prompt.

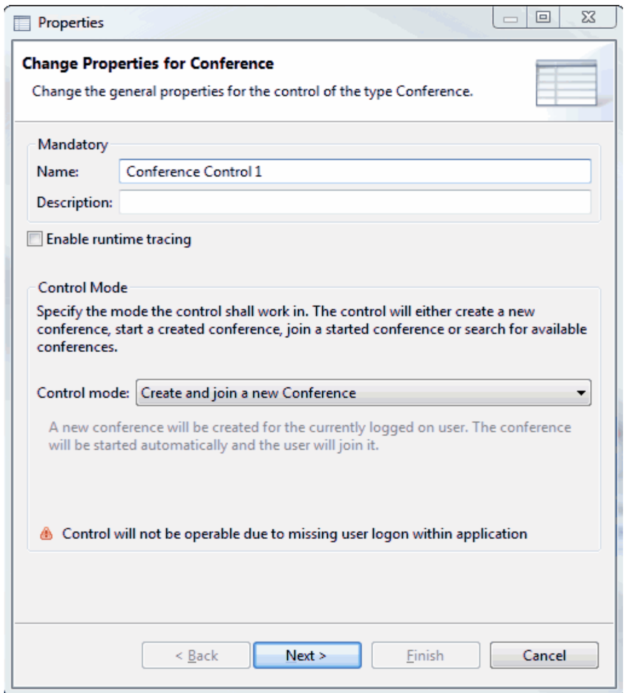
In the **Search Criterion** section you configure the user search via the ONS number. Use the **...** button to select the corresponding variable and click on **OK**.

In the **Search Prompt** section you can cover the required search time with a prompt. The prompt cannot be played if the search time is too short. You select the prompt file from the drop-down list or create a new one.

5.7.8 Conference Control

A conference is a virtual meeting between at least two participants. Besides the default communication between two participants, conference may also be held by several participants.

The Conference control contains the **Properties** configuration dialog only.



"General" Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Control Mode** section you specify the mode in which the control is to operate.

5.7.8.1 How to Create and Configure a Conference

Step by Step

1) Select one of the following modes from the drop-down list:

- **Create and join a new Conference**
- **Start and join an already created Conference**
- **Join an already started Conference**
- **Search for available Conferences**

2) Click on **Next**.

The displayed dialog depends on the previously selected configuration settings.

3) Depending on the selected mode, perform the configuration:

a) **Create and join a new Conference**: Create the conference by specifying the variables for the conference information and for the participants. Use the **...** button to select the variable and click on **OK**.

b) **Start and join an already created Conference**: The conference must have been previously created by the user logged in at the system. If no user is logged in at the system or the conference has not been created by this user, it will fail to start. You need to specify the variable that contains the conference information. Use the **...** button to select the appropriate variable and click on **OK**.

c) **Join an already started Conference**: The user logged in at the system must have been invited for the conference. If no user is logged in at the system or the user has not been invited for the conference, joining the conference will fail. For joining the conference you must specify the variable that contains the conference information. Use the **...** button to select the appropriate variable and click on **OK**.

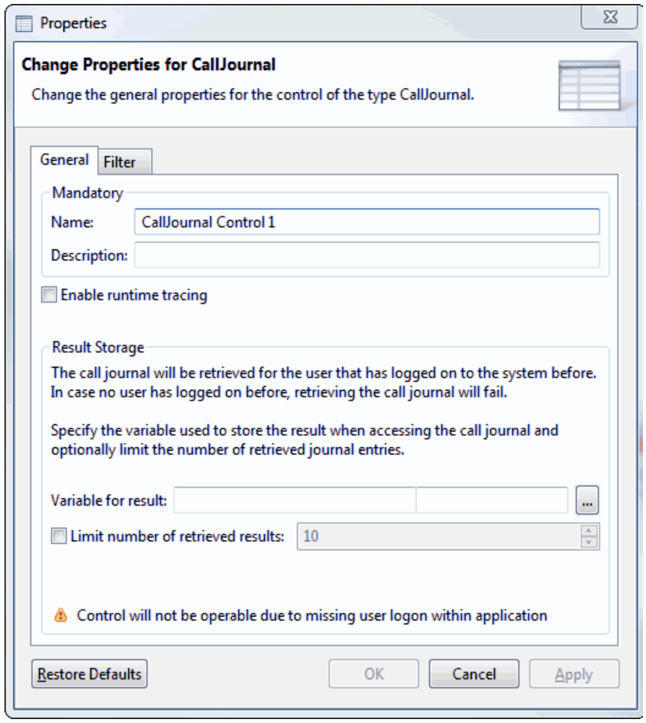
d) **Search for available Conferences**: Use the **...** button to select the variable in which the result of searching for conferences shall be stored and click on **OK**. Only the conferences that the logged-in user has created or for which he/she has been invited will be put out. If no user is logged in, searching for conferences will fail. Set the **Conference Type** to **Joinable Conferences** or **Startable Conferences**. Select **Limit Number of retrieved Results**.

4) Click on **Finish**.

5.7.9 CallJournal Control

The CallJournal Controls lists calls corresponding to the respective configuration for the user.

The configuration dialog of the CallJournal control provides the tabs **General** and **Filter**.



"General" Tab

On the **General** tab of the control you can perform the following settings. See section *General Information about Controls*.

In the **Result Storage** section you configure the search and store options for the retrieved call journal entries.

Specify the variable (for result) to be used for storing the search results. Use the **...** button to select the corresponding variable and click on **OK**.

The **Limit Number of retrieved Results** checkbox lets you restrict the number of retrieved contacts. Activate the checkbox and enter the desired number.

"Filter" Tab

On the **Filter** tab you define the criteria by which the calls shall be filtered. You can filter by Direction/Status and Time.

In the **Filter by Direction/Status** section you configure which calls are included in the search. You can select one of the following configurations from the **Included Calls** drop-down list:

- **All Calls**
- **Only Incoming Calls**
- **Only Outgoing Calls**
- **Only Missed Incoming Calls**

In the **Filter by Time** section you can limit the number of retrieved calls. This restriction may occur by time (**Specify by Period**) or number of calls (**Specify by Value**). Activate the corresponding checkbox. You can select one of the following configurations from the **Specify by Period** drop-down list:

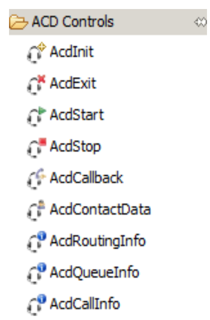
- **Only Calls from Today**
- **Only Calls from Today and Yesterday**
- **Only Calls from the last 7 Days**
- **All Calls**

5.8 Control Group ACD

In the control group ACD (Automatic Call Distribution) you find the controls that serve controlling an OSCC (OpenScape Contact Center).

> ***INFO:*** Using the ACD controls requires administrator knowledge of the contact center.

The extract from the palette shows which controls are part of this group.



> ***INFO:*** After you have opened the callflow of an application you see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active in the workspace under **<application name> > Application Settings > Application Configuration > Capability Settings**. This applies for subflows also.
>
> After you have opened the callflow of a composition you see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active in the workspace under **Symvia Control Compositions > <composition name> > Composition Settings > Composition Configuration > Capability Settings**. This applies for subflows also.

5.8.1 AcdInit Control

The AcdInit control determines the contact center for registering and processing a call.

5.8.1.1 How to Configure an AcdInit Control

This section describes how to introduce a contact center to the application.

Prerequisites

- You can see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active in the application settings under **Application Configuration > Capability Settings**.

Step by Step

1) Click in the palette on the **AcdInit** control and drag it into the callflow editor.

2) Release the mousebutton.

3) Double-click this control.

4) If required, change the value in the **Name** and **Description** field.

5) Activate the **Use custom Contact Center** check box and enter the name the contact center has on the OSCC server (OpenScape Contact Center) in this field.

If you do not specify a value, the default value is used.

6) If the queue belongs to a specific customer on the contact center server, you must activate the **Use custom Business Unit** check box and enter the name of the business unit in this field.

If you do not specify a value, the default value is used.

7) Click on the **Phone Call** tab.

8) In the **Variable for Call Identifier** field, select the variable of type string that contains the internal ID of the call. This ID may have been assigned for example in the CreateCall control.

Next steps

Typically, use the AcdStart control next to enqueue the call in a contact center queue, to prioritize it, to assign it to a contact center agent and to specify additional contact data for the call.

5.8.2 AcdStart Control

You can configure the following properties in the AcdStart control:

- Name of the queue in which a call is enqueued
- How the call behaves while in hold mode
- Call priority
- Preferred agent to process the call
- Waiting time in which the attempt is made to reach the preferred agent
- Assigning contact information to the call
- Assigning statistics variables

- Calls in the queue
- Position in the queue
- Estimated waiting time

- Variables used to store the result of the enqueue

5.8.2.1 How to Configure an AcdStart Control

Prerequisites

- You can see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active in the application settings under **Application Configuration > Capability Settings**.
- The contact center must have been determined through use of the AcdInit control.

Step by Step

1) Click in the palette on the **AcdStart** control and drag it into the callflow editor.

2) Release the mouse button.

3) Double-click this control.

4) If required, change the value in the **Name** and **Description** field.

5) If you do not wish to use a variable for the name of the queue in which a call shall be enqueued, specify the queue name in the **Specify by Text** field. If you wish to use a variable for the name of the queue, activate the **Specify by Variable** radio button, click on ..., select a string variable and click on **OK**.

After a call has been enqueued, it can be routed to a contact center agent.

6) Click on the **Hold** tab.

Hold mode allows you to specify how a call on hold will be held by the system while waiting for an agent to become available.

7) Select the hold mode for the call from the drop down menu. The following options are available:

- **Hold in OpenScape Server (IVR Hold)**
  Holds the call within the OpenScape Server until an agent becomes available. The application will usually play a prompt while waiting for an agent and will continue running. When an agent becomes available the application gets notified by a corresponding runtime event that provides the transfer number the agent can be reached on.
- **Hold in Contact Center (ACD Hold)**
  Holds the call within the Contact Center until and agent becomes available. The application will usually immediately transfer the call to the contact center and will stop running afterwards. When an agent becomes available, the contact center will route the call to the agent.

8) Click on **Apply.**

9) Click on the **Results** tab.

When the hold mode is set in the **Hold** tab, the relevant variables become maintainable in the **Results** tab. This allows you to specify how to store the result of the enqueue or how to store the transfer number to the contact center. If you selected **Hold in OpenScape Server (IVR Hold)** then you can select the variables:

- to be used for calls in queue
- for estimated wait time

If you select **Hold in Contact Center (ACD Hold)** then you can select the variables for the transfer number.

10) Click on **Apply.**

11) Click on the **Enqueue** tab.

12) You can provide a custom description of the contact. An agent can obtain this description to use the information for identifying the call. If you wish such a description to be used, activate the **Use custom Call Description** check box.

> ***INFO:*** Do not confuse the custom description of the contact with the contact data. Such data is specified on the **Contact Data** tab (see below).

a) If you do not wish to use a variable for the custom call description, enter the description in the **Specify by Text** field.

b) If you wish to use a variable for the custom call description, activate the **Specify by Variable** radio button, click on ..., select an integer variable and click on **OK**.

13) In the **Call Priority** section you can specify an initial priority of the call.

a) If you do not wish to use a variable for the initial priority, select an integer value in the **Specify by Text** field.

b) If you wish to use a variable for the initial priority, activate the **Specify by Variable** radio button, click on ..., select an integer variable and click on **OK**.

14) Click on **Apply.**

15) Click on the **Agent** tab.

16) You can assign the call to a preferred agent. In case of such an assignment the contact center will try to route the call to this agent within a specific period. If this routing fails, the call is enqueued in a queue. If no preferred agent is used, the call is instantly enqueued in a queue.

a) If you wish to assign a call to a preferred agent, activate the **Use preferred Agent** check box.

b) If you do not wish to use a variable for the ID of the preferred agent, enter the agent's ID in the **Specify Agent by Text** field.

c) If you wish to use a variable for the ID of the preferred agent, activate the **Specify Agent by Variable** radio button, click on ..., select a string variable and click on **OK**.

d) If you do not wish to use a variable for the period in which the attempt is made to route a call to the preferred agent, select an integer value in the **Specify Timeout by Text** field.

e) If you wish to use a variable for the period in which the attempt is made to route a call to the preferred agent, activate the **Specify Timeout by Variable** radio button, click on ..., select an integer variable and click on **OK**.

17) Click on the **Contact Data** tab.

18) You can specify additional contact data for a call. Such contact data can be used to transfer further data to the contact center. The data can influence a call's routing and may be obtained by an agent who can use the data for identifying a call.

> ***INFO:*** Contact data can also be assigned to a call in the AcdContactData control.

a) Click on the icon to add an entry to the **Contact Data List** field.

b) If you wish to use a variable, click on the ... button, select a string variable and click on **OK**.

c) If you wish to use a permanent value, activate the **Constant** radio button and enter the value.

d) Click on **OK**.

e) In the contact data list, you can edit and delete entries as well as change their sequence.

f) Click on **OK**.

19) After a call has been enqueued, the number of calls in the queue, the position of the call in the queue and the estimated waiting time until an agent processes the call can be stored in variables. To do this, click on the button ... to the right of the **Variable for Calls in Queue** or **Variable for Estimated Wait Time** field, select an integer variable and click on **OK**.

20) Click on **OK**.

5.8.3 AcdExit Control

The AcdExit control cancels a call's registration in the contact center. The call can subsequently not be processed in the call center anymore.

5.8.3.1 How to Configure an AcdExit Control

Prerequisites

- You can see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active under **Application Configuration > Capability Settings**.
- The contact center must have been determined through use of the AcdInit control.
- If the call was already in a queue, we urgently recommend to remove it from there using the AcdStop control before you cancel the call's registration in the contact center with help of the AcdExit control.

Step by Step

1) Click in the palette on the **AcdExit** control and drag it into the callflow editor.

2) Release the mousebutton.

3) Double-click this control.

4) If required, change the value in the **Name** and **Description** field.

5) Click on **OK**.

Next steps

If the call center is to process the call at a later date again, the call must be previously registered with the contact center by the AcdInit.

5.8.4 AcdStop Control

The AcdStop control removes a call from the queue. A removed call is not routed to an agent. The call remains registered with the contact center, though.

5.8.4.1 How to Configure an AcdStop Control

Prerequisites

- You can see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active in the application settings under **Application Configuration > Capability Settings**.
- The contact center must have been determined through use of the AcdInit control.
- The call must have been enqueued in a contact center queue with help of the AcdStart control.

Step by Step

1) Click in the palette on the **AcdStop** control and drag it into the callflow editor.

2) Release the mousebutton.

3) Double-click this control.

4) If required, change the value in the **Name** and **Description** field.

5) Click on **OK**.

Next steps

If you wish to re-enqueue the call in the contact center queue at a later date, use the AcdStart control.

If required, you can unregister the call with the contact center using the AcdExit control. After the call has been unregistered, it cannot be processed by the call center anymore.

5.8.5 AcdCallback Control

You can use the AcdCallback control to configure the following properties of a callback:

- Name of the callback queue in which the callback shall be enqueued
- Contact who requested the callback
- Reason for the callback
- Time zone difference between UTC and local time of the caller
- Phone number for the callback
- Callback time ranges
  - Start date
  - Start time
  - End date
  - End time

5.8.5.1 How to Configure an AcdCallback Control

Prerequisites

- You can see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active in the application settings under **Application Configuration > Capability Settings**.
- The contact center must have been determined through use of the AcdInit control.

Step by Step

1) Click on the **AcdCallback** control in the palette and drag it into the callflow editor.

2) Release the mouse button.

3) Double-click the control.

4) If required, change the value in the **Name** and **Description** field.

5) Specify the name of the callback queue in which the callback shall be enqueued.

a) If you do not wish to use a variable for the name of the callback queue, enter the queue name in the **Specify by Text** field.

b) If you wish to use a variable for the name of the callback queue, activate the **Specify by Variable** radio button, click on ..., select a string variable and click on **OK**.

You must specify the queue with the name it has on the contact center server.

6) Click on the **Callback** tab.

7) Specify the contact who requested the callback.

a) If you do not wish to use a variable for the contact, enter the contact in the **Specify Contact by Text** field.

b) If you wish to use a variable for the contact, activate the **Specify Contact by Variable** radio button, click on ..., select a string variable and click on **OK**.

8) Specify the callback reason.

a) If you do not wish to use a variable for the callback reason, enter the callback reason in the **Specify Description by Text** field.

b) If you wish to use a variable for the callback reason, activate the **Specify Description by Variable** radio button, click on ..., select a string variable and click on **OK**.

9) If the person to be called back does not live in the UTC time zone, specify the difference between his/her time zone and UTC in hours.

Time Zone	Difference to UTC
Honolulu	-10
Anchorage	-9
Pacific Standard Time	-8
Mountain Standard Time	-7
Central Standard Time	-6
Eastern Standard Time	-5
Atlantic Standard Time	-4
Sao Paulo	-3
South Georgia	-2
Azores	-1
Reykjavik	0
London	0
Lisbon	0
Berlin	1
Madrid	1
Paris	1
Rome	1
Cairo	2
Johannesburg	2
Moscow	3
Tehran	3:30
Eriwan (Armenia)	4
Calcutta	5:30
Dhaka	6
Ho Chi Minh	7
Hong Kong	8
Shanghai	8
Taipei	8
Tokyo	9
Sydney	10
Solomon Islands	11
Auckland	12

a) If you do not wish to use a variable for the time zone difference, select the difference in the **Specify by Text** field.

b) If you wish to use a variable for the time zone difference, activate the **Specify by Variable** radio button, click on ..., select an integer variable and click on **OK**.

10) Click on the **Schedule** tab.

11) Click on the icon to add an entry to the **Callback Schedule List** field.

12) The callback target is the phone number under which the person who initiated the callback can be reached. Click on the ... button next to the **Variable for Phone Number** field, select a string variable and click on **OK**.

13) Specify the time range in which the callback shall be performed.

a) Click on the ... button next to the **Variable for Start Date** field, select the date variable that contains the earliest date for the callback and click on **OK**.

b) Click on the ... button next to the **Variable for Start Time** field, select the time variable that contains the earliest time on the start date for the callback and click on **OK**.

c) Click on the ... button next to the **Variable for End Date** field, select the date variable that contains the latest date for the callback and click on **OK**.

d) Click on the ... button next to the **Variable for End Time** field, select the time variable that contains the latest time on the end date for the callback and click on **OK**.

14) Click on **OK**.

15) In the callback schedule list you can create further entries, edit and delete them as well as change their sequence.

16) Click on **OK**.

5.8.6 AcdContactData Control

You can use the AcdContactData control to provide additional contact data. Such contact data can be transferred to the contact center. The data can influence a call's routing and may be obtained by an agent who can use the data for identifying a call.

INFO: Contact data can also be assigned to a call in the AcdStart control.

5.8.6.1 How to Configure an AcdContactData Control

Prerequisites

- You can see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active under **Application Configuration > Capability Settings**.
- The contact center must have been determined through use of the AcdInit control.

Step by Step

1) Click in the palette on the **AcdContactData** control and drag it into the callflow editor.

2) Click on the icon to add an entry to the **Contact Data List** field.

3) If you wish to use a variable, click on the ... button, select a string variable and click on **OK**.

4) If you wish to use a permanent value, activate the **Constant** radio button and enter the value.

5) Click on **OK**.

6) In the contact data list, you can create further entries, edit and delete them as well as change their sequence.

7) Click on **OK**.

5.8.7 AcdRoutingInfo Control

You can use the AcdRoutingInfo control to store routing information about the call in a variable for the contact center to retrieve such information. Routing information can be used to display the status of the routing progress and to improve a call's processing.

5.8.7.1 How to Configure an AcdRoutingInfo Control

Prerequisites

- You can see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active in the application settings under **Application Configuration > Capability Settings**.
- The contact center must have been determined through use of the AcdInit control.

Step by Step

1) Click in the palette on the **AcdRoutingInfo** control and drag it into the callflow editor.

2) Release the mousebutton.

3) Double-click this control.

4) If required, change the value in the **Name** and **Description** field.

5) Click on the ... button to the right of the **Variable for Result** field and select the routing info variable in which information shall be stored.

6) Click on **OK**.

7) Click on **OK**.

5.8.8 AcdQueueInfo Control

You use the AcdQueueInfo control to retrieve the status of a contact center queue. Queue information may improve a call's processing.

5.8.8.1 How to Configure an AcdQueueInfo Control

Prerequisites

- You can see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active in the application settings under **Application Configuration > Capability Settings**.
- The contact center must have been determined through use of the AcdInit control.

Step by Step

1) Click in the palette on the **AcdQueueInfo** control and drag it into the callflow editor.

2) Release the mousebutton.

3) Double-click this control.

4) If required, change the value in the **Name** and **Description** field.

5) Executing one of the following sub-steps, specify the name of the queue from which you wish to retrieve information.

> ***INFO:*** The queue about which information shall be stored need not be the queue in which the current call is enqueued.

a) If you do not wish to use a variable for the name of the queue, enter the queue name in the **Specify Queue by Text** field.

b) If you wish to use a variable for the name of the queue, activate the **Specify Queue by Variable** radio button, click on ..., select a string variable and click on **OK**.

You must specify the queue with the name it has on the contact center server.

6) If the queue belongs to a specific customer on the contact center server, you must activate the **Use custom Business Unit** check box and enter the name of the business unit in this field.

7) Click on the **Result** tab.

8) Click on the ... button and select the queue info variable in which information about the queue shall be stored.

9) Click on **OK**.

10) Click on **OK**.

5.8.9 AcdCallInfo Control

You can use the AcdCallInfo control to receive information about a call. Such information helps improving the call processing.

5.8.9.1 How to Configure an AcdCallInfo Control

Prerequisites

- You can see ACD controls in the palette only if the **Support of Contact Center (ACD) Controls** check box is active under **Application Configuration > Capability Settings**.
- The contact center must have been determined through use of the AcdInit control.

Step by Step

1) Click on the **AcdCallInfo** control in the palette and drag it into the callflow editor.

2) Release the mouse button.

3) Double-click the control.

4) If required, change the value in the **Name** and **Description** field.

5) Click on the ... button next to the **Variable for Queue Position** field, select an integer variable and click on **OK**.

6) Click on the ... button next to the **Variable for Call Status** field, select a string variable and click on **OK**.

7) Click on **OK**.

5.9 Custom Controls

These controls are created by the client. The client may design controls according to his/her individual requests and can then integrate them into the Application Builder. The custom controls are listed in the controls palette. Therefore, a new group must be created. The control has the same basic properties as the controls that are automatically provided by the Application Builder.

5.9.1 How to Create a Custom Control

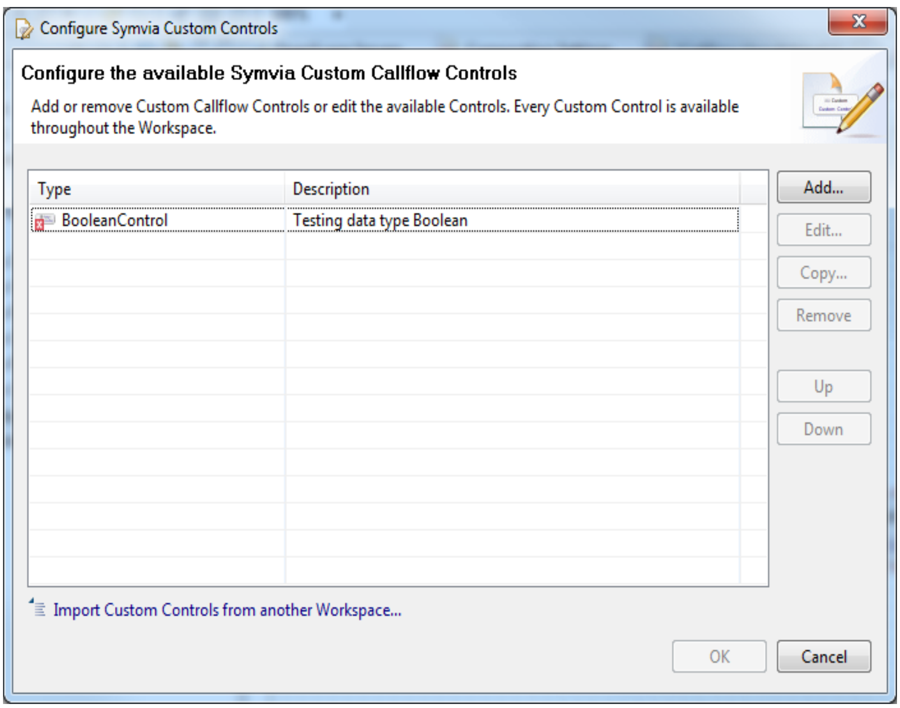
Step by Step

1) Execute one of the following sub-steps:

a) Select the **Tools > Configure Symvia Custom Controls...** option from the menu bar.

b) Right-click the control palette and select the **Custom Controls...** option from the context menu.

The **Configure Symvia Custom Controls** dialog opens.



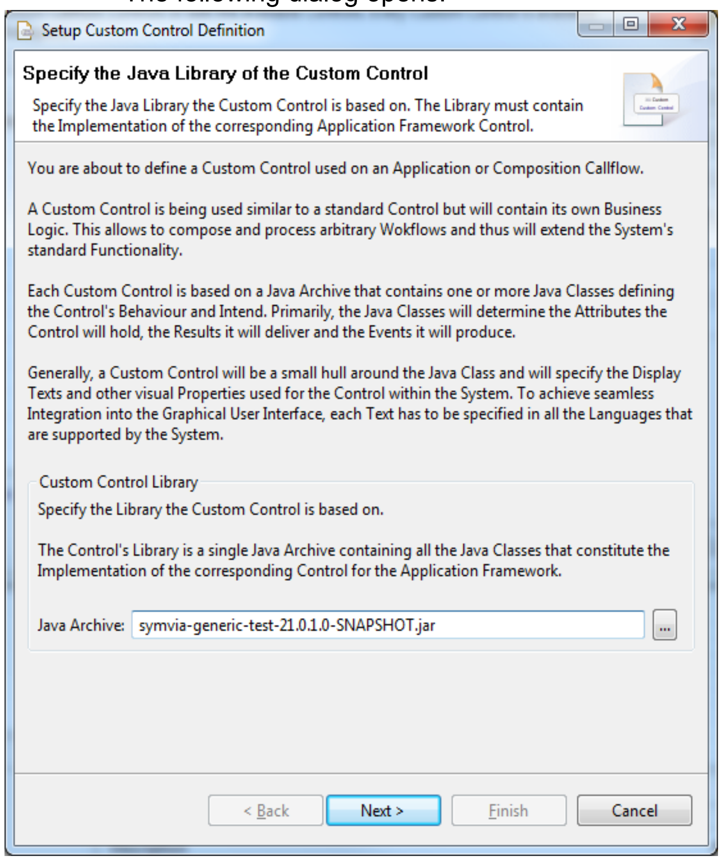
The following buttons are displayed:

Option	Function
Add	Via this button controls can be added.
Edit	Click on **Edit** to edit the properties of the selected con-trol.
Copy	Via this option you can copy a custom control

Option	Function
Remove	You may delete the selected control by clicking on it.
Up/ Down	Using these icons you can move a selected control the list up or down.
Importing Custom Control from another Workspace	Click this link to import a custom control from another workspace. The **Import Symvia Custom Control** dialog opens. Specify a workspace via **Browse**. The bottom section of the dialog displays all custom controls. Select the controls that you want to import and then click on **OK**.

2) Click on **Add...** to create a custom control.

The following dialog opens:



3) Click on the **...** button to assign a java library to your control.

The **Select File** dialog opens.

4) Click on the **Import...** button and select a Java archive.

5) Then click the **OK** button and then **Next** in the configuration dialog.

6) Determine the desired implementation class in the **Class of Custom Controls** section from the drop-down list next to **Java Class:**.

In the **Control Library Dependencies** section you must specify the dependencies of your determined implementation class.

Then click **Next**.

7) Click on **Next**.

8) Enter the control type in the **Custom Control Settings** section and add a description.

9) Click in the **Custom Control Icons** section on the **...** button to assign icons to your control.

10) Click on **Next**.

11) In the **Custom Control Category** section select a group in which your control is to be placed from the drop-down list.

12) Click on **Next**.

13) Accomplish the configuration with a click on **Finish**.

6 Deploying an Application

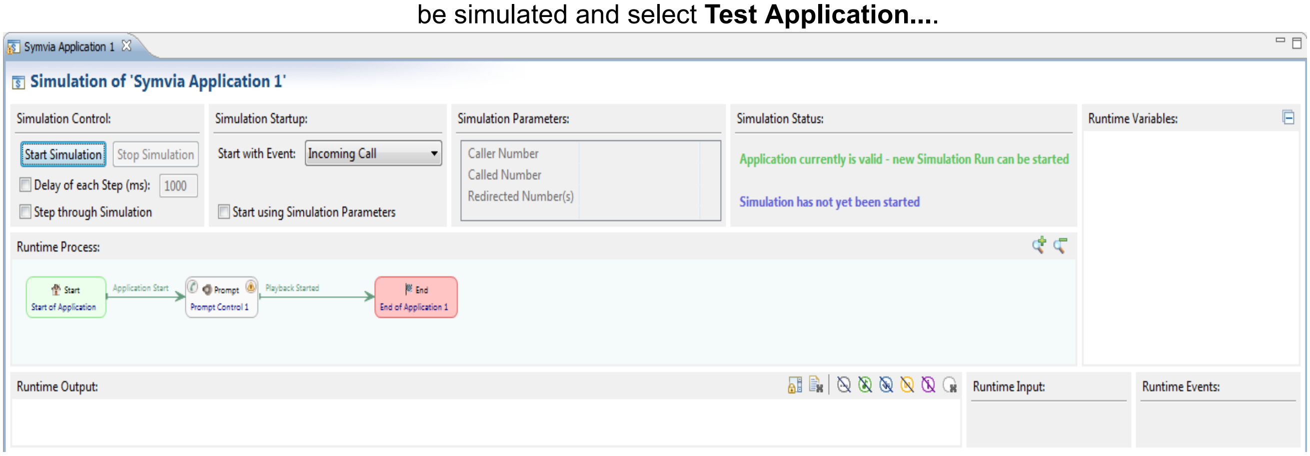
This section describes how to integrate your application into your PBX system. You should test your application before deploying it. For this, the Application Builder provides a simulator.

6.1 Simulating an Application

> ***NOTICE:*** The application to be simulated, the workspace prompts and the workspace grammars must not contain any errors. The connection to the OpenScape UC Application and other applications, however, may contain errors. Only those Symvia Control Compositions not used in the application to be simulated may contain errors.

Select one of the following methods for opening the **Simulation of '<application name>'** view:

- Click on the icon on the toolbar.
- Click on the black triangle in the icon on the toolbar and select the application to be simulated.
- In the workspace view, click with the right mouse button on the application to be simulated and select **Test Application...**.



Simulation view

The simulation view is divided in three parts. You can customize the size of the parts. The simulation can be configured in the upper left part. The upper right part serves to display variables and the lower part displays several messages.

Simulation control

To start or end your simulation you will find the **Start simulation** and **Stop simulation**. You can control the simulation in two different ways. If you would like to delay the single simulation steps, activate the **Delay of each Step (ms):** check box. At the right hand side you can enter the delay time (1-9999). If you would like to conduct the simulation step by step, activate the **Step through Simulation** check box.

Simulation parameters

There are three parameters that you can edit:

- Caller number
- Called number
- Forwarded number

Simulation Status

Two states are displayed.

- Green signifies that the application to be tested is valid. If you have modified your application incorrectly, red writing signifies that the simulation is not possible.
- Blue writing shows the current simulation status.

Runtime Variables

Here you can watch all variables and their sub-variables. The variables are listed with their content. The variable value is refreshed after each simulation step. The last variable displayed is in blue writing. The variable that has been refreshed last is in red.

Runtime Process

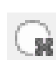
This area represents the callflow. At the top on the right-hand side you can minimize or maximize the representation. The selected control shows at which position in the callflow you currently are.

The lower editor area serves for displaying different messages and provides configuration options during the simulation runtime. This editor area is divided in three sections.

Runtime Output

Here, messages at runtime are displayed. The messages are, depending on their type, of a different color. All messages start by default with a time stamp. The top right area features a toolbar for influencing the output.

All icons are listed in the following table.

Icon	Function
	Via this button you can freeze the message output. A click with the left mouse button selects the icon and the ongoing message display stops. To view the current messages you need to navigate to the respective position. Another click undoes the selection and ongoing messages are displayed again.
	Via this button you can remove all messages in the output area.
Via the following buttons you can show or hide messages. The messages have certain writing colors that match the icon colors. A click with the left mouse button selects the icon and the selected message type is no longer displayed. Another click undoes the selection and messages of this type are displayed again.	
	**Hide Status Messages** The status messages are in black writing. Status messages are messages about the simulation status, e.g. processing the ’Control Name’ control.
	**Hide Prompt Messages** The prompt messages are in green writing.
	**Hide Input Messages** The input messages are in blue writing. Input messages are messages about events that have been executed at runtime.
	**Hide Variable Messages** The variable messages are in yellow writing. Variable messages have the format: "Assigning Value *’Value’* to Variable *’Variable name’*".
	**Hide Information Messages** The information messages are in purple writing. Information messages are messages
	**Reset Message Filters** With a click on this button you undo all hidings.

Runtime Input

If you have activated the **Step through Simulation** check box, the **Continue Simulation** becomes visible here. You can continue the simulation stepwise by clicking on this button.

> ***NOTICE:*** If you would like to toggle the simulation types, you must deactivate the current simulation type before defining a new one.

Runtime Events

In this section you can specify an event type from a combo box and send the event via the **FireEvent** button. The running simulation works internally with a copy. If you make changes to your application, you must restart the simulation to trace the effects of your changes.

6.2 How to Provide an Application (Deployment)

Prerequisites

- The application to be deployed, the workspace prompts and the workspace grammars must not contain any errors. The connection to the OpenScape UC Application and other applications, however, may contain errors. So may Symvia Control Compositions not used in the application to be deployed.
- While deploying an IVR application on a connected Media Server the application can be bound to one or more phone numbers. To avoid binding conflicts it will be checked if at least one of these phone numbers is already bound to another IVR application. In this case the application has to be deployed with another phone number binding. Multiple phone number bindings of an deployed IVR application can also be changed in the Application Management of the Application Builder without redeploying the application. But a change to a phone number binding which is already in use by another IVR application is also not possible. To support multiple phone number bindings within the Application Builder, multiple phone numbers can be specified by a comma separated list. It is also possible to specify phone number ranges. The format of a multiple phone number binding is:
  – phoneNumberBinding := number | range ["," number | range]*
  – range := number "-" number
  – number := ["+"]digit*
- If the application to be deployed contains a Webservice control, provide the following data of the web service. They will be needed in step 37.

Field	Description
Webservice Name	The name serves as unique identifier of the webservice.
Webservice Description	Optional webservice description.
Webservice Type	The type determines the architectural style, for example REST architecture, or the protocol used, for example SOAP.
Webservice Access URI	Specify the Werbservice Access URI used for connecting to the service. Example: `http://weather.yahooapis.com/forecastrrs?=94089u=c`

INFO: You find these data in the Application Builder if you select a web service in the workspace view under **<application name> > Application Settings > Application Webservices > All Symvia Application Webservices** or under **Symvia Control Compositions > <composition name> > Composition**

Settings > Composition Webservices > All Symvia Composition Webservices.

- If the application to be deployed contains a DatabaseRead or DatabaseWrite control, provide the following database data. They will be needed in step 39.

Field	Description
Database Name	The name serves as unique identifier of the database.
Database Description	Optional description of the database.
Database Driver Classname	Specify the Java class name that corresponds to the driver from the specified archive.
Database Access URL	Specify the **Database Access URL** in the described format. jdbc:mysql://<Host>:3306/<database>
Database Login User	Specify the user name for authentication.
Database Login Password	Specify the login password for authenticating the user.

INFO: You find these data in the Application Builder if you select a database in the workspace view under **<application name> > Application Settings > Application Databases > All Symvia Application Databases** or under **Symvia Control Compositions > <composition name> > Composition Settings > Composition Databases > All Symvia Composition Databases**.

Step by Step

1) In the menu bar, click on the  icon to provide the current application or select an application from the combo box via the triangle.

The **Application Deployment** dialog opens.

2) There are two options: If you wish to deploy the application directly on the OpenScape UC Application, continue with step 3. If you wish to create the application locally and copy it to the OpenScape UC Application manually, continue with step 17.

3) If the **Currently not connected to an OpenScape Server** message is displayed, select a value in the **server profile** field.

If there are no values for selection, create a server profile under **Workspace > OpenScape Servers > Server Profile Configuration** first.

4) Click on **Login**.

5) Enter the password for this server profile.

6) Click on the **OK** button.

7) Click on **Next**.

8) If this application can be triggered by an 'Incoming Call' start event, enter the telephone number under which the application is to be reached in the **Phone Number:** field.

9) You can activate the **Enable Runtime Tracing** check box.

If you activate this check box, the application will create log data in the server log. This data may help you understanding problems or errors that occurred at the application's runtime.

With this check box enabled, all controls configured for this purpose will create log data. The controls will not create any log data if the check box remains disabled.

10) Click on **Next**.

11) Activate or deactivate the check boxes on the left-hand side in the **Language workspace** to provide the respective language.

12) Click on **Next**.

13) You can activate the **Create full Export including Resource Files** check box.

The created deployment package contains automatically an export of the application that corresponds to a single archive file. This ensures that the application is represented consistently on both the OpenScape UC Application and the corresponding application within the workspace.

The created archive file always contains definition files that form the application and its compositions used. Furthermore, you can create the archive inclusive the resource files (prompt media files, grammar files, etc.) used, this providing a complete backup copy of the local application.

Please note that including the resource files will enlarge the archive file. As a result, transferring the export to the OpenScape UC Application will be more time consuming.

14) Click on the **Finish** button.

15) Click on the **OK** button.

16) Continue with step 26.

17) Activate the **Deploy into a local Deployment Package** check box.

18) Enter the directory for the deployment package in **Target Folder:**. Click on the **Browse** button to select a directory.

19) Enter the telephone number under which the application is to be reached in the **Phone Number:** field.

20) Click on **Next**.

21) Activate or deactivate the check box **Enable Runtime Tracing**.

22) Click on **Next**.

23) Activate or deactivate the check boxes on the left-hand side in the **Language workspace** to provide the respective language.

24) Click on **Finish**.

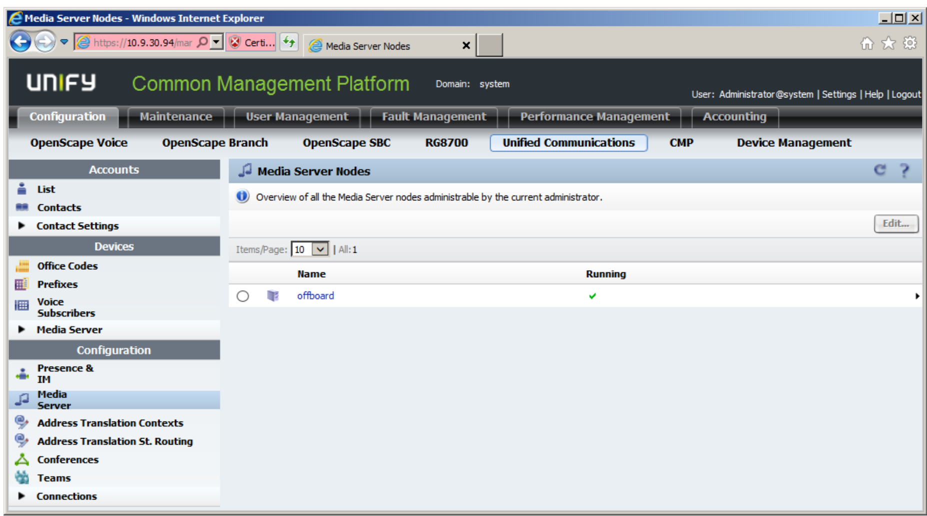
A dialog that confirms the successful deployment opens. Click the **OK** button to close the dialog.

25) To apply the application, the deployment package must be loaded on the Media Server. You find detailed information about how to proceed in the *Administrator Documentation OpenScape Media Server*.

Continue with step 26.

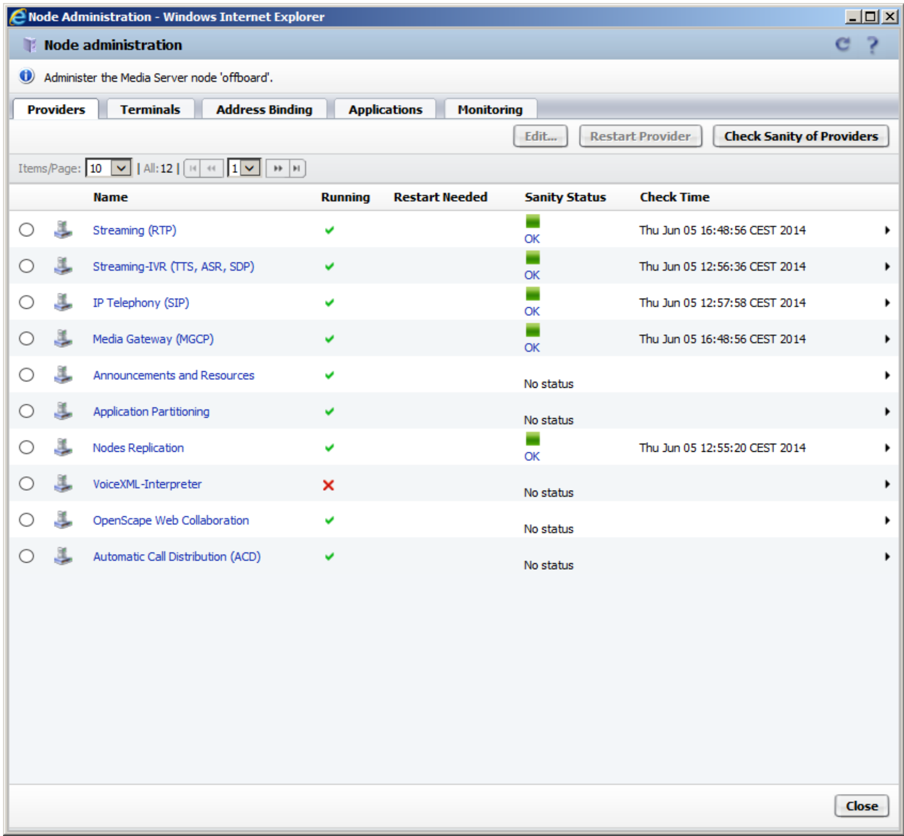
26) The application is now deployed on the OpenScape UC Application and can be configured. Log on to the CMP.

27) Open **Configuration > UnifiedCommunications > Configuration > Media Server**.

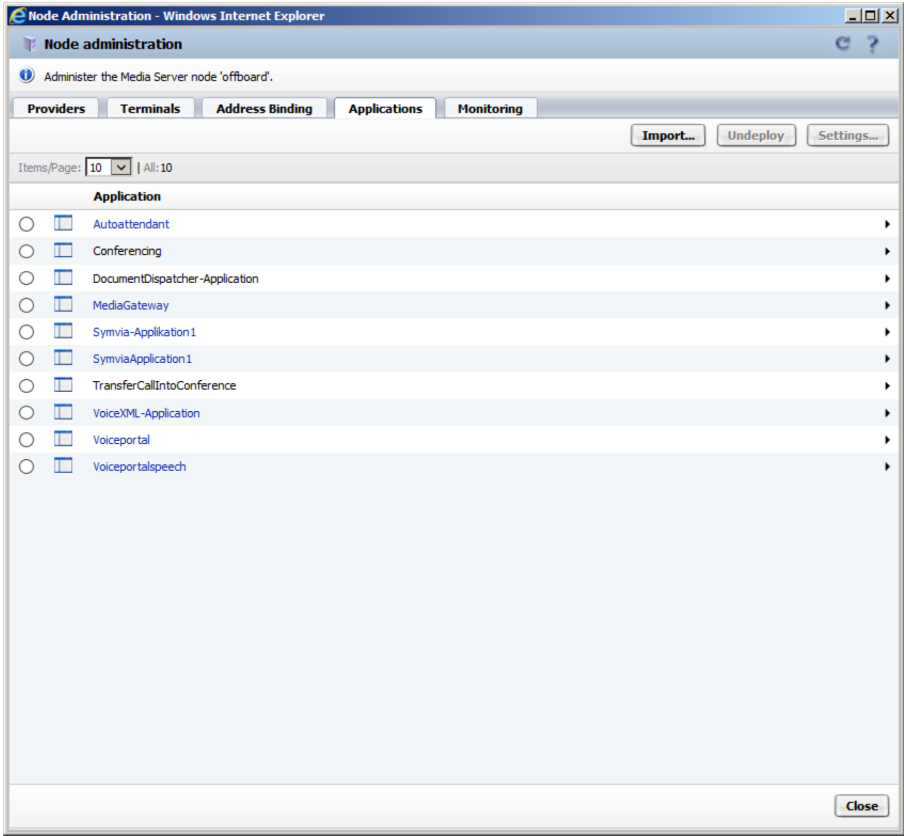


28) Double-click the computer on which the media server is installed.

NOTICE: The names of the OpenScape UC Application computers displayed here are determined in the `knut.responsefile.txt` file during the OpenScape UC Application setup. Typically, these names are no host names or FQDNs. The default value for the back end computer of the OpenScape UC Application (application computer) is **offboard**. Please obtain details from the *OpenScape UC Application, Installation and Upgrade* setup guide.

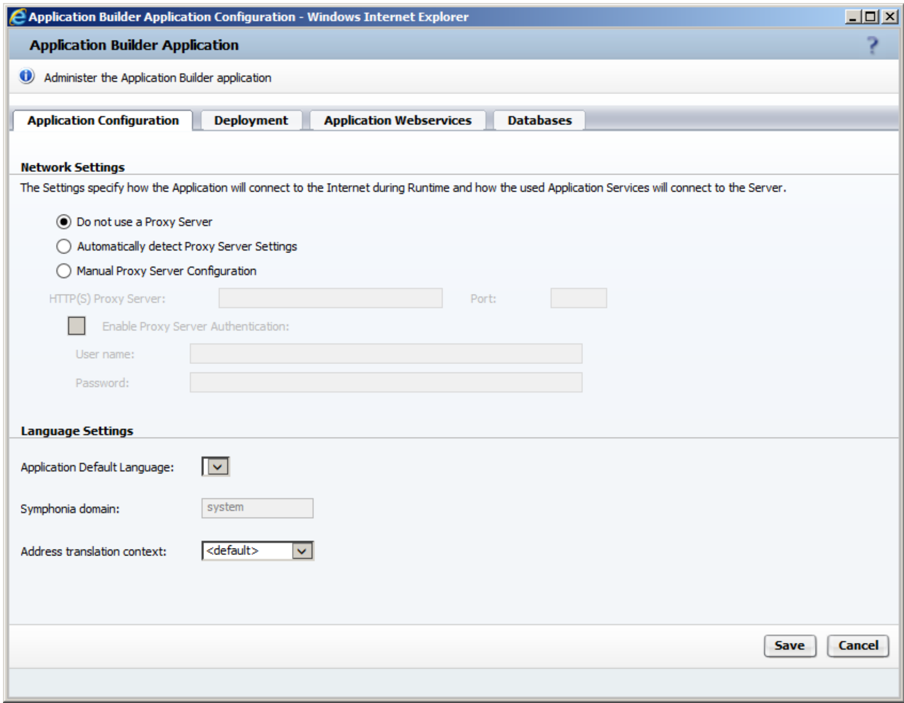


29) Click on the **Applications** tab.



An entry with the application's name, for example **SymviaApplication1**, is displayed.

30) Click on this entry.



31) If you use a proxy server the configuration of which shall be detected automatically, activate the **Automatically detect Proxy Server Settings** radio button.

If you wish to configure the proxy server manually, activate the **Manual Proxy Server Configuration** radio button and execute the following sub-steps:

a) Enter the proxy server's IP address in the **HTTP(S) Proxy Server** field.

b) Enter the port number of the port the proxy server communicates over in the **Port** field.

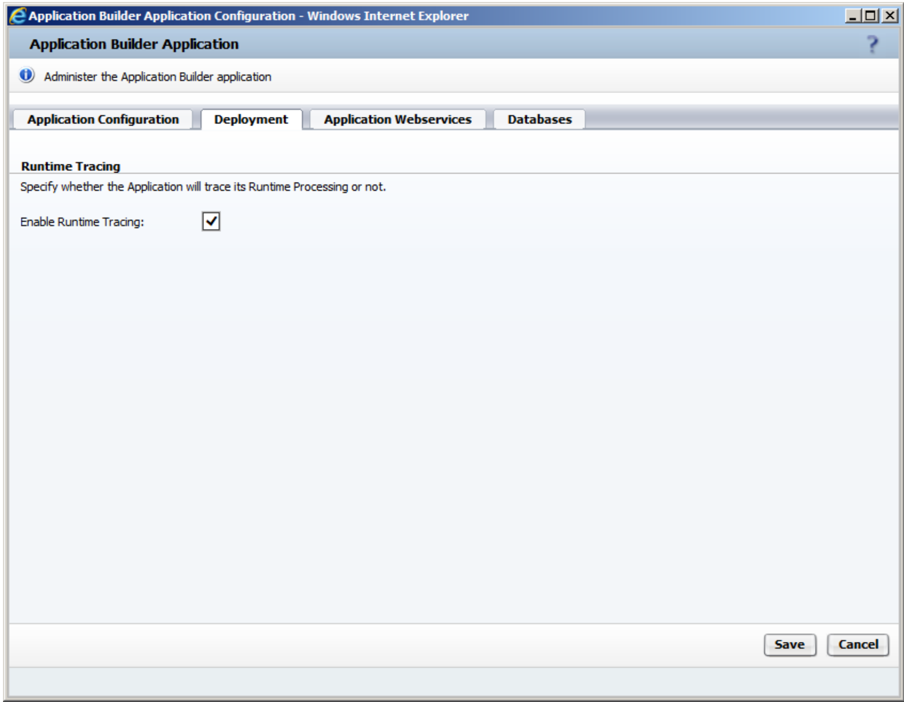
c) If required, activate the **Enable Proxy Server Authentication** check box and fill the **User name** field with the user name to be deployed and the **Password** field with the password.

32) Select the language to be used by the application as default in the **Application Default Language** field.

33) If you do not wish to use the default address translation context, select another value in the **Address translation context** field.

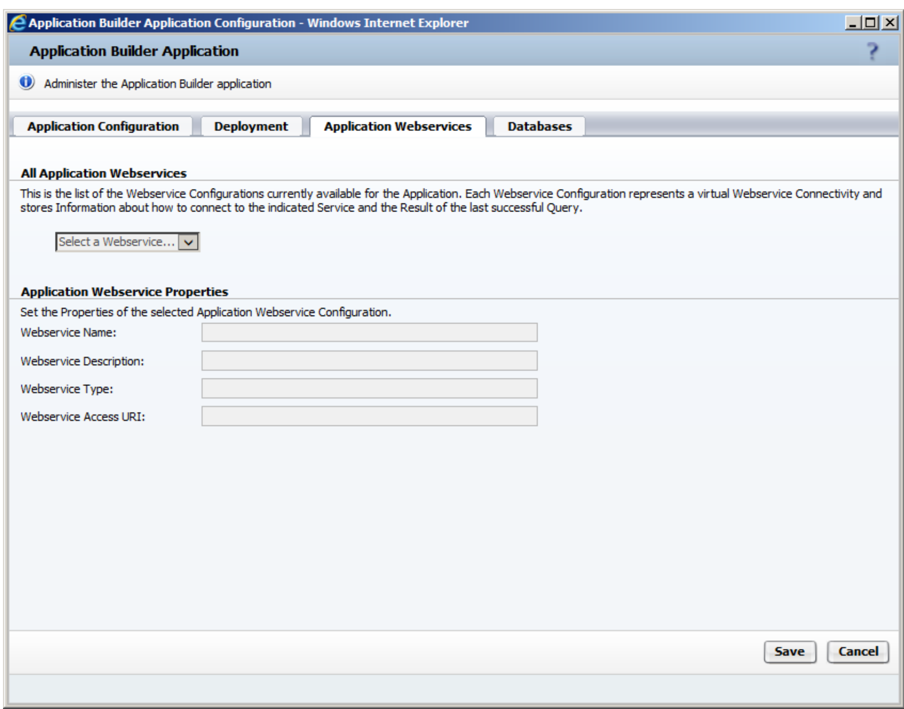
On the CMP, address translation contexts are created under **Configuration > Unified Communications > Configuration > Address Translation Contexts**. Please obtain details on this from the *OpenScape UC Application, Installation and Upgrade* setup guide and the administrator documentation *OpenScape UC Application, Configuration and Administration*.

34) Click on the **Deployment** tab.



35) If the application is to create log data, activate the **Enable Runtime Tracing** check box.

36) Click on the **Application Webservices** tab.

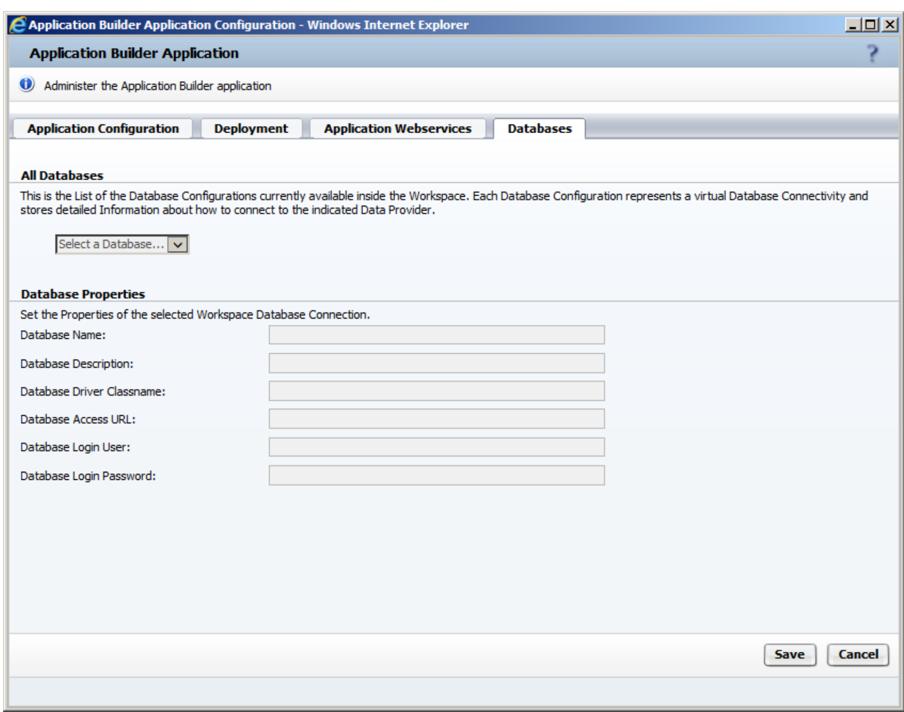


37) If you use a Webservice control in the application, select a web service in the **All Application Webservices** section and enter the values for the following fields:

Field	Description
Webservice Name	The name serves as unique identifier of the webservice.
Webservice Description	Optional webservice description.
Webservice Type	The type determines the architectural style, for example REST architecture, or the protocol used, for example SOAP.
Webservice Access URI	Specify the Werbservice Access URI used for connecting to the service. Example: `http://weather.yahooapis.com/forecastrrs?=94089u=c`

Use the values you see in the Application Builder when you select a web service in the workspace view under **<application name> > Application Settings > Application Webservices > All Symvia Application Webservices** or under **Symvia Control Compositions > <composition name> > Composition Settings > Composition Webservices > All Symvia Composition Webservices**.

38) Click on the **Databases** tab.



39) If you use a DatabaseRead or DatabaseWrite control in the application, select a database in the **All Databases** section and enter the values for the following fields:

Field	Description
Database Name	The name serves as unique identifier of the database.
Database Description	Optional description of the database.
Database Driver Classname	Specify the Java class name that corresponds to the driver from the specified archive.
Database Access URL	Specify the **Database Access URL** in the described format. `jdbc:mysql://<Host>:3306/<database>`
Database Login User	Specify the user name for authentication.
Database Login Password	Specify the login password for authenticating the user.

Use the values you see in the Application Builder when you select a database in the workspace view under **<application name> > Application Settings > Application Databases > All Symvia Application Databases** or under **Symvia Control Compositions > <composition name> > Composition Settings > Composition Databases > All Symvia Composition Databases**.

40) Click on the **Save** button.

41) If the OpenScape UC Application is available in the Large Deployment or Very Large Deployment scenario and several Media Server computers are present, execute steps 28 to 40 for all other Media Server computers also.

Please obtain details on the Large Deployment and Very Large Deployment scenarios from the *OpenScape UC Application Planning Guide*.

6.3 Practical Example

This section illustrates by means of an example the creation of an application that includes a composition and is meant to help you to familiarize with the Application Builder's functionality.

NOTICE: You find example applications and compositions in the *Samples* folder. This folder is automatically created during the installation. You find detailed information in the section *Importing a Workspace Item*.

6.3.1 Creating a Concept

At first, a concept with the demands to the voice application will first be formulated and the proceeding defined. Subsequently, the application or composition will be configured step by step in the extension, application and controls areas and eventually tested before being put into operation.

Before you configure an application or composition, you should first create a concept. Consider the following issues as a starting point:

- What sort of service will be offered to the callers?
- How many or which options are to be provided to the caller?
- What does my menu structure look like?
- Which announcement is necessary?
- Are time-dependent announcements necessary?
- Which telephone numbers are provided?

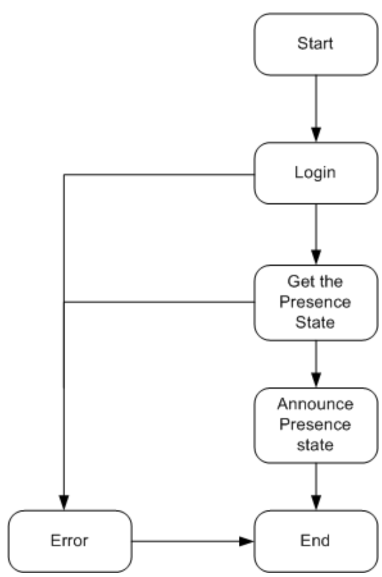
Make Draft

After you have written down the course of the procedure, you should outline your draft. A draft is quite useful for representing the entire flow of your customer service over the telephone.

This draft is to contain a tree structure with “branches” and “leaves”. Each of these leaves corresponds to a control of the Application Builder.

Each Application Builder control represents a specific action in the application and has thus individual functions. For example, there is a control for playing back the greeting text, a control for checking the connected user and a control for forwarding to the authentication.

Using the draft you can check whether the application structure has a closed form. This means that each tree branch in the draft must lead to a control that either finishes the call or routes to a further control.



With the help of the designed concept and the draft as starting point the creation of the application is continued with the Application Builder.

6.3.2 Practical Example Composition

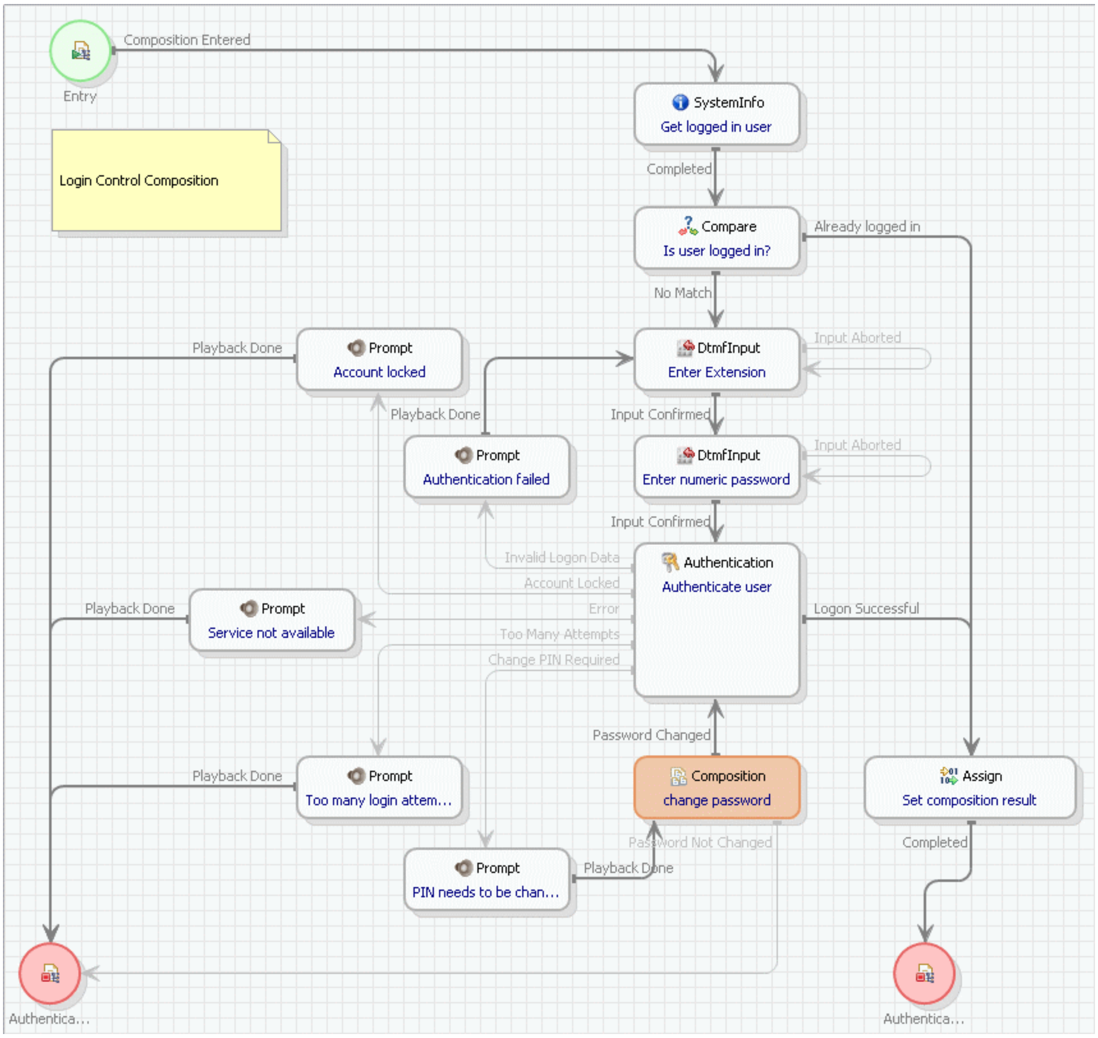
The example application forms the basis of the function to retrieve the presence status of a connected user: *Logon*. The composition checks whether a user is connected to the system. If this is not the case, the user has to log on to the system. The composition is stored as example in the *Samples* folder and can be imported. You find detailed information in the section *Importing a Workspace Item*.

Prerequisite for creating the composition

- **Systeminfo Control**: Retrieving the current login status.
- **Compare Control**: Querying whether a user is currently logged on.
- **DTMF Input Control**: Command prompt via DTMF input.
- **Authentication Control**: User is authenticated.
- **Prompt Control**: Acoustic playback for user orientation.
- **Assign Control**: Assigns the user.
- **ChangeNumericPassword Composition**: The composition asks the logged-in user to change the password.

Composition structure

The composition starts via the **Composition Entry**. The **Systeminfo** returns whether a user is connected. After the information playback has finished, the call is transferred to the **Compare** control.



The **Compare** control compares the user. If the user is connected, the call is forwarded to the **Assign** control and after the assignment the login is finished successfully.

If the **Compare** control returns no match, the user is asked to log on. The call is forwarded to the **DTMF Input** *Enter Extension*. After the confirmed entry the DTMF input *Enter numeric password* takes place. After the confirmed input the user authentication takes place.

The **authentication** is extensive because of the possible results and the respective forwardings. The control disposes of 6 exits that will be explained in the following paragraph:

- **Logon Successful**: The call is forwarded to the **Assign** control. After the assignment the login is finished successfully.
- **Invalid Logon Data**: The call is forwarded to the *Authentication failed* **prompt**. An announcement is played for the user and he/she is asked to repeat the DTMF input. The call is again forwarded to the DTMF Input. The number of login repetitions are defined beforehand. By default, three login attempts are configured.

- **Account Locked**: The account is locked if the authentication has failed during the defined repetitions. The call is forwarded to the *Account locked* **prompt**. An announcement is played for the user. The authentication is completed without success.
- **Error**: If an error occurs during the authentication, the call is forwarded to the *Service not available* **prompt**. An announcement is played for the user. The authentication is completed without success.
- **Too many attempts**: The call is forwarded to the *Too many login attempts* **prompt**, if the authentication has failed during the defined repetitions. An announcement is played for the user. The authentication is completed without success.
- **Change PIN required**: The user is asked to change his/her password. The call is forwarded to the *PIN needs to be changed* **prompt**. An announcement is played for the user. The call is transferred to the *change password* **composition**.
  In the *change password* **composition**, the user needs to change his/her password. If the process is successful, the call is transferred to the **Authentication** control. If the user does not change his/her password, the authentication has failed.

The composition is completed with the **Composition Exit** either with *Authentication Successful* or *Authentication Failed*. The call is transferred to the application control that follows in the callflow. In this practical example the **Presence** control follows in the *Get Presence State* application.

6.3.3 Practical Example Application

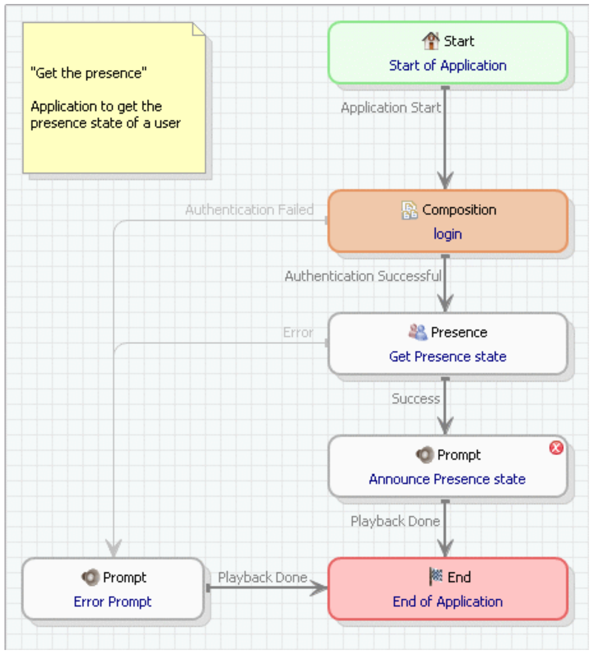
The example application forms the basis of the function to retrieve the presence status of a connected user: *Get Presence State*. This application is stored as example in the *Samples* folder and can be imported. You find detailed information in the section *Importing a Workspace Item*.

Prerequisite for creating the application

- **Presence Control**: Retrieving the current status of a certain user
- **Presence Control**: Announcement of the current status of a certain user
- **Login Control Composition**: The composition checks whether a user is connected to the system. If this is not the case, the user has to log on to the system.

Application structure

The application starts. The user is forwarded to the login. Login (*Login Control Composition*) checks whether a user is connected to the system. If no user is logged on to the system, the user is asked to log on to the system.



If the login was incorrect, the caller is forwarded to an **Error Prompt** that is played. The number of login repetitions are defined beforehand. By default, three login attempts are configured. If the login is successful, the call is transferred to the **Presence** control.

In the **Presence** control the **Retrieve Presence State of a User** function is activated. The query variable contains the user account. If the presence query is incorrect, the caller is forwarded to an **Error Prompt** that is played. The application is finished with the **End** control.

Next comes a **Prompt** control that plays the retrieved user status. The announcement is composed of a prompt file and a variable that queries the status already in the Presence control. The prompt contains the phrase: *The presence state is...<variable value>*

Prerequisite for the application

- Minimum requirement is OpenScape UC V6
- The application must be operated on an OpenScape UC Media Server, since the *OpenScape Presence Service* is used.
- A TTS server must be configured on the MediaServer.

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