Unify OpenScape Contact Center Enterprise

Communication Platform V11 R1

Integration Guide
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Mitel

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1 About this guide

This guide describes how to configure the various supported communication platforms and voice processors to integrate with the OpenScape Contact Center system.

1.1 Who should use this guide

This guide is intended for communication platform technicians or anyone else in the organization who is responsible for configuring communication platforms and voice processors.

1.2 Formatting conventions

The following formatting conventions are used in this guide:

Bold
This font identifies OpenScape Contact Center components, window and dialog box titles, and item names.

Italic
This font identifies references to related documentation.

`Monospace Font`
This font distinguishes text that you should type, or that the computer displays in a message.

NOTE: Notes emphasize information that is useful but not essential, such as tips or alternative methods for performing a task.

IMPORTANT: Important notes draw special attention to actions that could adversely affect the operation of the application or result in a loss of data.

1.3 Documentation feedback

To report an issue with this document, call the Customer Support Center.

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- **Title:** Communication Platform Integration Guide

- **Order Number:** AP31003-S22B1-N103-02-7620

2 Configuring the OpenScape Voice communication platform

This chapter describes how to configure the following communication platforms to communicate with the OpenScape Contact Center system:

- OpenScape Voice V7

- OpenScape Voice V8

- OpenScape Voice V9

Before you begin, you must be familiar with the following configuration concepts:

- Hunt groups (previously known as Multi-Line Hunt Groups)

- Business groups

- Subscriber numbers (previously known as business group lines)

- Media servers

IMPORTANT: Only properly trained personnel should configure the communication platform. Attempts to configure the communication platform by personnel who are not properly trained might adversely affect the operation of the OpenScape Contact Center system.

The examples provided in this chapter are designed to guide you through simple OpenScape Contact Center routing workflows, including backup routing. If you choose to configure more complex workflows or backup routing strategies, follow the examples provided in this chapter and then configure additional values. For more information, contact your service representative.

After you have completed the configuration tasks in this chapter, continue your implementation by following the guidelines in the *Installation Guide*.

NOTE: In a multitenant environment, communication platform resources must be assigned to a specific business unit. The only exceptions are Call Director subscriber numbers and IVR subscriber

numbers, which are shared across all business units. For more information on the multitenancy feature, see the *Manager Administration Guide* or *Manager Help*.

NOTE: If the OpenScape Voice node that is in active mode fails, all queued calls will be lost.

2.1 Before you begin

Before you configure the OpenScape Voice communication platform, ensure that:

- The OpenScape Voice communication platform is operating with a fully-tested numbering plan and a business group configuration. Incoming and outgoing calling are both configured and have been fully tested.

- You have administrative access to the Linux system where the OpenScape Voice communication platform resides.

- You have obtained the IP address and CSTA port number of the OpenScape Voice communication platform. These settings must be configured in OpenScape Contact Center to point to the communication platform for a CSTA connection. We strongly recommend that the CSTA port number remain at the default setting of 1040.

  NOTE: Protection against internal attacks is provided between OpenScape Contact Center and OpenScape Voice (CSTA Signaling Manager) through the use of a valid and trusted server IP address table. The OpenScape Contact Center IP address must be added to this table as a trusted address. The CSTA Signaling Manager does not accept connections from any IP addresses that are not specified in the trusted IP address table. This table is configured and managed on the OpenScape Voice communication platform.

- All users have a SIP telephone supported by OpenScape Contact Center.

- The media server is configured to provide announcements and Music On Hold (MOH), as required.

- The media server has a sufficient number of ports to:

- Provide treatments to all the callers in queues. The number of ports should be equivalent to the sum of the queue depths for Initial and Music On Hold Hunt Groups. For more information, see Section 2.3, "Understanding the basic configuration", on page 12.

- Provide additional ports for callers who are placed on hold by users.

- Support the conference feature.

- Support the silent monitoring, continuous silent monitoring, and barge-in features, if configured.

NOTE: If a port is not available on the media server for either the ring back treatment or MOH treatment, the OpenScape Voice communication platform will disconnect callers. It is critical that a sufficient number of ports are available. For more information, see Section 2.3.2, "Media server intercept treatments", on page 13.

2.2 Network configuration

This section describes how the OpenScape Contact Center system and the communication platform communicate.

2.2.1 Caller interactions

For caller interactions, you can choose one of the following solutions:

- **Call Director** – This solution uses the Call Director feature with the OpenScape Contact Media Service.

  For information on how to configure the OpenScape Contact Media Service, see Section 5.1, "Configuring the OpenScape Contact Media Service".

- **OpenScape Contact Center Voice Portal** – This solution uses the OpenScape Contact Center VoiceXML interface. For more information about the voice portal, refer to the OpenScape Contact Center Voice Portal documentation.

- **Third-party IVR** – This solution uses the OpenScape Contact Center IVR application programming interface (API) or the OpenScape Contact Center VoiceXML interface. For more information about third-party IVR solutions, contact your service representative.

- **Call Director and an IVR** – Both Call Director and one of the IVR solutions are configured.

If caller interaction is not required, then you do not require Call Director or an IVR. Basic user treatment, by means of configured user treatments on the hunt groups, is used. For more information, see Section 2.3, "Understanding the basic configuration", on page 12.

2.2.2 Media server

The media server should be configured to provide basic treatments for queued calls such as MOH and messages. For more information, see Section 2.3.2, "Media server intercept treatments", on page 13.

2.2.3 TDM to IP gateway

The OpenScape Voice network configuration requires a TDM to IP gateway for connectivity to the PSTN. Consider the following:

- If the caller ID settings (caller name and caller telephone number) have been configured for callbacks in the Manager application, you must ensure that the TDM to IP Gateway is configured to allow for propagation of the caller ID settings. If the propagation of the caller name or caller telephone number is blocked by the telecommunications provider, the information will not be displayed to the customer. For details on configuring the caller ID settings in the Manager application, see the *Manager Help*.

- In some cases, the "early call connect" (or similar) functionality on the TDM to IP Gateway can cause the OpenScape Voice communication platform to think that an outgoing call, such as a callback, is answered even though the call is still ringing. This can cause problems with the OpenScape Contact Center reporting statistics and the Client Desktop softphone. To ensure that this behavior does not occur, you must disable the "early call connect" option on the gateway. Note that any SIP telephones that require this option cannot be supported for use by OpenScape Contact Center users.

NOTE: When using an OpenScape Business communication platform as a gateway to the OpenScape Voice communication platform, the **Protocol Variant Extended Fast Connect Active** gateway property must be set to **Yes**. Otherwise, there will be no voice path between the caller and the Client Desktop user for calls routed to hunt group pilot directory numbers.

2.3 Understanding the basic configuration

This section describes some concepts related to the basic configuration.

2.3.1 Initial and Music On Hold Hunt Group pairs

In a basic configuration, all calls are routed to an Initial Hunt Group that is configured in a pair with a Music On Hold Hunt Group. This pair of hunt groups must be configured in the communication platform to support the OpenScape Contact Center solution as follows:

- **Initial Hunt Group** – This hunt group is configured in manual mode, with an intercept treatment configured to play a ring back tone, followed by an announcement to the caller through the media server.

- **Music On Hold Hunt Group** – This hunt group is configured in manual mode, with an intercept treatment configured to play music-on-hold (MOH) to the caller through the media server.

In manual mode, the communication platform does not directly distribute calls from the hunt group. Calls remain in the hunt group until they are moved by the OpenScape Contact Center system.

The only difference in configuration between these two types of hunt groups is that the Initial Hunt Group has ring back and the Music On Hold Hunt Group has music. In both cases, this intercept treatment is provided by the media server. For details, refer to Section 2.3.2, "Media server intercept treatments", on page 13.

A hunt group has a queue capacity of 511 calls. If the contact center has high call volumes and this queue capacity is exceeded in the primary Initial Hunt Group, you must configure a secondary Initial Hunt Group to handle the call overflow. The overflow extension in the primary hunt group can be configured to be the pilot directory number of the secondary hunt group. In this way, you can avoid call overflow. Similarly, the associated hunt groups can also be chained together to avoid call overflow on the Music On Hold Hunt Groups.

2.3.2 Media server intercept treatments

An intercept treatment is an audio sequence played to a waiting caller by the OpenScape Voice communication platform through the media server. Each hunt group can be configured to have an intercept treatment that is applied to calls waiting in the hunt group.

For OpenScape Contact Center operation, the intercept treatments for the hunt groups described in Section 2.3.1, "Initial and Music On Hold Hunt Group pairs" are configured as follows:

- **Ring back treatment** – The Initial Hunt Group needs to be configured so that a ring back tone is heard by calls in the hunt group. The Initial Hunt Group is configured with an intercept treatment to play rings for the amount of time it takes to execute an OpenScape Contact Center routing strategy workflow, followed by a generic outage message, for example:

  "All agents are busy assisting other callers. Please stay on the line and your call will be answered in the order that it was received."

  If a caller hears the outage message, it means that there is a problem with the OpenScape Contact Center system.

- **MOH treatment** – The Music On Hold Hunt Group must be configured so that when a call is queued, continuous music is heard. The media server is the only MOH source.

As an option, individual calls on hold on the subscriber number can have an intercept treatment of MOH configured at the subscriber number level. The intercept treatment can be configured through the media server for calls that are placed on hold on these extensions.

To configure the media server to provide these intercept treatments, refer to the OpenScape Voice documentation and the media server documentation.

2.3.3 Backup routing

If the OpenScape Contact Center system is not functioning properly, it is imperative that calls continue to be answered by users. Users can continue to answer calls through backup routing. The core backup routing concept is that if the OpenScape Contact Center system becomes unavailable, the communication platform is responsible for routing calls to users until the system is restored.

If the OpenScape Contact Center system fails to communicate with the OpenScape Voice communication platform, the CSTA Signaling Manager in the communication platform detects the failure. The communication platform removes the OpenScape Contact Center monitors on each hunt group causing the calls in the hunt groups to be distributed by the communication platform instead of the OpenScape Contact Center system. In this scenario, there can be no other CSTA applications monitoring the hunt group.

NOTE: In a multitenant environment, each business unit must be assigned its own hunt groups to facilitate backup routing.

2.3.4 Multiple business groups

The OpenScape Contact Center system supports the use of multiple business groups. This means that OpenScape Contact Center user subscriber numbers can be configured within different business groups on the communication platform (although each subscriber number must be configured in only one business group). In a multitenant environment, user subscriber numbers for each OpenScape Contact Center business unit can be configured within a corresponding business group on the communication platform, or within different business groups, as required.

When using multiple business groups, we recommend the following:

- For backup routing purposes, ensure that each subscriber number belongs to the same business group as the Initial and Music On Hold Hunt Group pairs to which it is assigned.

- Configure all Call Director subscriber numbers within the same business group.

- Configure all IVR subscriber numbers within the same business group.

NOTE: OpenScape Contact Center users can transfer, consult, and conference calls across business groups. However, the Call Transfer Security with Intercept functionality is not supported across business groups. Configuring the communication platform

This section describes how to configure the communication platform to communicate with the OpenScape Contact Center system.

2.3.5 Configuring a feature profile

Before you configure hunt groups or subscriber numbers for users, configure a feature profile for OpenScape Contact Center use. All features specified in the feature profile will be inherited by the hunt groups and subscriber numbers that use the feature profile.

To configure a feature profile:

1. Create a new feature profile called **OSCC** (recommended name) and configure the following settings:

   - **CSTA Access** – enabled, set to **CSTA Over SIP** for OpenStage devices or **Type 1** for other types of devices

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     NOTE: To query the line state of a device, the CSTA setting needs to be configured on the subscriber numbers.

   - **Call Transfer** – enabled, set **Transfer Calls** to **All**

   - **Large Conference** – enabled (required to initiate a conference)

   - **Music On Hold** – enabled.

2.3.6 Configuring hunt groups

You must configure the hunt groups to which the subscriber numbers for users are assigned. For more information, see Section 2.3.1, "Initial and Music On Hold Hunt Group pairs", on page 12 and Section 2.3.8.1, "Configuring subscriber numbers for users", on page 17.

To configure hunt groups:

1. Create a subscriber number for each Initial and Music On Hold Hunt Group pilot directory number. Use the OSCC profile described in Section 2.3.5, "Configuring a feature profile", on page 15. Ensure that the **Connection Information** is set to **Profile Only**.

2. Create pairs of Initial and Music On Hold Hunt Groups using the subscriber numbers that you created in step 1. Ensure that the following parameters are set for both the Initial and Music On Hold Hunt Groups:

   - **Hunt Type** set to **Manual**

   - **Max time in Queue** set to **0** (seconds)

   - **Intercept Announcement** configured to play the proper announcement

   - **Queue Position Announcement Interval** set to **0** (seconds)

- **Night Service** not enabled

2.3.7 Configuring pilot numbers

Pilot numbers can be used to support monitored destinations, queue targets, network transit numbers, and IVR transit numbers in the OpenScape Contact Center system. For each pilot number that you want to use, you must configure a subscriber number that does not have an associated SIP device and that is configured with call forwarding unconditional.

IMPORTANT: If pilot numbers are not configured as described in this section, the OpenScape Contact Center system will prevent calls from being routed. If you are upgrading, this will require that you update your existing OpenScape Contact Center configuration.

IMPORTANT: All monitored destinations, queue targets, network transit numbers, and IVR transit numbers must also be configured in the Manager application. At least one queue target must be configured in the Manager application. Otherwise, the OpenScape Contact Center system will not start properly. For details on how to configure these resources, see the *Manager Help*.

NOTE: The system does not support the configuration of a One Number Service Device (that is, a preferred device for a subscriber number with One Number Service enabled) as the pilot number of a hunt group.

To configure pilot numbers:

1. For each pilot number, create a subscriber number. Do not associate the subscriber number with a SIP device. Set the **Connection Information** to **SIP**.

2. For each subscriber number that you created in step 1, enable **Call Forwarding Unconditional** and specify the pilot directory number of a hunt group, as follows:

   - If the subscriber number will be used as a queue target (that is not configured as requeue target) or a monitored destination, specify the pilot directory number of an Initial Hunt Group.

- If the subscriber number will be used as a queue target that is configured as requeue target, a network transit number, or an IVR transit number, specify the pilot directory number of a Music On Hold Hunt Group.

2.3.8 Configuring subscriber numbers

This section describes how to configure user, Call Director, and IVR subscriber numbers.

All subscriber numbers that are public (externally dialable) should be configured in international number format. If you want to configure subscriber numbers in national number format, see Section 2.3.8.6, "Configuring subscriber numbers in national number format", on page 22.

NOTE: If **Number Permanent Presentation Status** is enabled on a subscriber number, you must set all the corresponding calling numbers to **Allowed**.

NOTE: If you delete a resource (such as a subscriber number) from the communication platform, you must also delete the resource from OpenScape Contact Center using the Manager application. If the resource is not deleted from OpenScape Contact Center and it is created again in the future, it will adversely affect the operation of the system. You can use the Config Sync feature to help you determine which resources are not synchronized.

2.3.8.1 Configuring subscriber numbers for users

You must configure a subscriber number for each telephone used by OpenScape Contact Center users. For information on how to configure user telephones, see Section 2.4, "Configuring a user telephone", on

To configure subscriber numbers for users:

1. Create a subscriber number for each user telephone using the OSCC feature profile described in Section 2.3.5, "Configuring a feature profile", on page 15. Ensure that **Connection Information** is set to **SIP**.

NOTE: To enable other users to transfer a call directly to voice mail on a subscriber number, enable the **Call Forwarding - Voice Mail** feature and configure the voice mail number. You only need to select the **Activate** check box if you want to allow call forwarding to voice mail in addition to transfer to voice mail. You must also configure the voice mail system so that calls are routed to the correct mailbox. For details, refer to the voice mail system's documentation.

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2. Add each subscriber number to a hunt group pair that you created in Section 2.3.6, "Configuring hunt groups", on page 15. Each subscriber number must be a member of at least one hunt group pair. Ensure that the following parameters are set properly:

   - **Can make hunt group busy** – enabled

   - **Attendant/Agent** – enabled

3. Create a **Prefix Access Code** with the following parameters:

   - **Minimum Length** set to **1**

   - **Maximum Length** set to **20**

   - **Digit Position** set to **3**

   - **Prefix Type** set to **Vertical Service**

   - **Nature of Address** set to **Unknown**

   - **Destination Type** set to **Service**

   - **Destination Name** set to **Make Busy Toggle**

2.3.8.2 Configuring subscriber numbers for Circuit users

Create an additional Circuit subscriber and configure the following parameters:

- **OpenScape Mobile Device** - enabled.

- **Main Device (ONS)** - associated Agent subscriber number.

- **Mobile Device (Cellular)** - empty.

- **Profile** - use the default Mofile subscriber profile in OSV.

2.3.8.3 Configuring the silent monitoring, continuous silent monitoring, and barge-in features for users

When the system is connected to an OpenScape Voice communication platform, the silent monitoring, continuous silent monitoring, and barge-in features are supported. To use these features, the following configurations are required:

- The subscriber number that is being monitored must be in the same business group as the monitoring user.

- For the OpenScape Voice V7 or higher communication platforms, the monitoring user's subscriber number must be configured in the Manager application as a user subscriber number so that it can be monitored by the OpenScape Contact Center system.

- To silently monitor, continuously silent monitor, or barge in on active calls from a user real-time report in the Manager application, the CSTA Access feature must be enabled on the monitoring user's subscriber number on the communication platform and set to **CSTA Over SIP** for OpenStage devices or **Type 1** for other types of devices.

2.3.8.4 Configuring subscriber numbers for Call Director

When you are using Call Director to provide caller interactions on the OpenScape Voice communication platform, you must configure a subscriber number for each Call Director extension. For more information on caller interaction solutions, see Section 2.2.1, "Caller

> *NOTE:* You must configure Call Director subscriber numbers in both the Manager application and the communication platform. This resource type cannot be synchronized by the Config Sync feature. You must also configure the voice processor in the Manager application. For details, see the *Manager Help*.

> *NOTE:* When the system is configured for high availability (warm standby), redundant voice processors are required. Therefore, you must configure one or more backup voice processors (depending on your configuration) and a matching set of Call Director subscriber numbers separately on the backup server machine. For details, see the *Manager Help*.

> *NOTE:* If you are using multiple business groups on the communication platform, we recommend that you configure all the Call Director subscriber numbers within the same business group.

To configure subscriber numbers for Call Director:

1. Create a new feature profile called **Call Director** (recommended name) and configure the following settings:

   - **CSTA Access** – enabled, set to **Type 1**

   - **Call Transfer** – enabled, set **Transfer Calls** to **All**

   > *NOTE:* Ensure that the **Music On Hold** feature is not enabled.

2. Create a subscriber number for each Call Director extension using the Call Director feature profile you created in step 1. Ensure that the following parameters are set properly:

   - **Connection Information** set to **SIP**

   - **Call Forwarding to No Reply** – enabled, set the **Redirect Number** to the voice error transfer number configured in the Manager application and the **Ring Duration** to 5 seconds (recommended)

3. Configure a hunt group (with **Hunt Type** set to **Manual**) using the Call Director feature profile and add the Call Director subscriber numbers to the hunt group. Each Call Director subscriber number must be a member of the hunt group. The hunt group must be

dedicated for this purpose and separate from the pair of Initial and Music On Hold Hunt Groups to which the user subscriber numbers belong. The hunt group is not configured in the Manager application.

IMPORTANT: If you are upgrading, this setup might require that you update your existing OpenScape Contact Center configuration.

2.3.8.5 Configuring subscriber numbers for an IVR

If you plan to use a monitored third-party IVR solution to provide call processing via the OpenScape Contact Center IVR API, you must configure a subscriber number for each IVR extension. You cannot use IVR subscriber numbers with the OpenScape Contact Center VoiceXML integration. For more information on caller interaction solutions, see Section 2.2.1, "Caller interactions", on page 10.

NOTE: You must configure IVR subscriber numbers in both the Manager application and the communication platform. This resource type cannot be synchronized by the Config Sync feature.

NOTE: If you are using multiple business groups on the communication platform, we recommend that you configure all the IVR subscriber numbers within the same business group.

To configure subscriber numbers for an IVR:

1. Create a new feature profile called **IVR** (recommended name) and configure the following settings:

   - **CSTA Access** – enabled, set to **Type 1**

   - **Call Transfer** – enabled, set **Transfer Calls** to **All**

NOTE: Ensure that the **Music On Hold** feature is not enabled.

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2. Create a subscriber number for each IVR extension using the IVR feature profile you created in step 1. Ensure that the following parameters are set properly:

- **Connection Information** set to **SIP**

- **SIP Phone Registration Type** set to **Static**

- **SIP Phone Address** set to the IP address of the IVR server machine

- **SIP Phone Port** set to **5060**

3. Configure a hunt group (with **Hunt Type** set to **Manual**) using the IVR feature profile and add the IVR subscriber numbers to the hunt group. Each IVR subscriber number must be a member of the hunt group. The hunt group must be dedicated for this purpose and separate from the pair of Initial and Music On Hold Hunt Groups to which the user subscriber numbers belong. The hunt group is not configured in the Manager application.

IMPORTANT: If you are upgrading, this setup might require that you update your existing OpenScape Contact Center configuration.

2.3.8.6 Configuring subscriber numbers in national number format

All subscriber numbers that are public (externally dialable) must be configured in international number format in the OpenScape Contact Center system to communicate properly with the OpenScape Voice communication platform. If you are upgrading, this might require that you update your existing OpenScape Contact Center configuration.

To configure subscriber numbers on the OpenScape Voice communication platform that are public (externally dialable) but have a national number format, you must do the following on the communication platform:

- Configure the **Display Number Modification** such that the definition is complete including Country Code, Area Code, Local Office Code, and so on, and the modification has the Output Type of Number set to International.

- Set the **OwnCountryCode** parameter to the appropriate country-specific code (as described in the following procedure). This parameter must be configured using the Command Line Interface (CLI).

These settings will help the communication platform remove the country code when it receives a CSTA request from the OpenScape Contact Center system.

To set the OwnCountryCode parameter:

1. Connect to the communication platform using a local console or remotely via SSH.

2. Log on as **srx** and start the CLI.

3. Log on as **superad**. A password is not required.

4. Enter Configuration Management and change the value of the Srx/Main/OwnCountryCode parameter to the code specific to your country.

5. Exit the CLI session.

6. Restart the communication platform for the change to take effect.

2.3.9 Configuring the One Number Service feature

When the system is connected to an OpenScape Voice V7 R1 or higher communication platform, the One Number Service feature (with the status set to Inbound and Outbound) must be enabled on the Initial and Music On Hold hunt groups as well as the subscriber numbers of any users who intend to use a preferred device to either handle calls or silently monitor or barge in on active calls.

2.4 Configuring a user telephone

You must complete this procedure for each telephone used by OpenScape Contact Center users.

IMPORTANT: Do not configure multiple telephones with the same extension, as this can adversely affect the operation of the OpenScape Contact Center system.

To configure a user telephone via the Web interface, you need the IP address of the telephone. For details, refer to the documentation provided with the telephone. You can use the Deployment Service Tool (DLS) to configure multiple user telephones. For more information, refer to the DLS documentation.

NOTE: If you are configuring a multiline telephone device, some special considerations apply. For details, see Section 2.4.1, "Multiline telephone devices", on page 25.

To configure a user telephone:

1. Configure the following settings on the telephone:

   - Auto answer – On

   - Auto reconnect – On

   - Busy when dialing – Off

   - Call forwarding unconditional (or all calls) – Off

   - Call forwarding on busy – Off

   - Call join – On

   - Call waiting – Off

   - Deflect – Off

   - Do not disturb – Off

   - Reject – Off

NOTE: When using OpenStage telephone devices, ensure that the Allow uaCSTA setting is enabled on the device.

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2. Set one of the function keys on the telephone to function as FeatureToggle. For the Feature Code, enter the digits you entered for the Prefix Access Code in step 3 of Section 2.3.8.1, "Configuring subscriber numbers for users", on page 17. The function key (in conjunction with the Make Busy Toggle setting) can be used when the system is in backup routing to indicate that the user is busy. The LED is lit when the user is busy.

3. Configure the Conference URI service for the Large Conference feature. For details, see the documentation provided with the telephone.

2.4.1 Multiline telephone devices

When the user telephone is a multiline telephone device, the subscriber number that is used by the user for OpenScape Contact Center call handling must be configured as the primary line on the telephone, and the primary line cannot be registered on any other device. Also, if the keyset operation on the user subscriber number is set to None, the primary line must be configured as a private line.

NOTE: When the user telephone is a multiline telephone device, if the user initiates a consultation on one line and then receives a call on another line, the user cannot answer the call on the other line until the consultation is complete.

If you are configuring a telephone for a user, such as a supervisor, who will be using the multiline telephone device to handle routed calls and use the silent monitoring and barge-in features, the following conditions apply:

● If the keyset operation on the user subscriber number is set to None, the primary line can be used for both purposes, or you can configure a secondary line that is dedicated to silent monitoring and barge-in operations. In both cases, the lines must be configured as private lines.

● If the keyset operation on the user subscriber number is set to Primary or Phantom, the primary line must be used for both purposes. In this case, the primary line must be configured as a shared line.

The following restrictions apply when a supervisor is using a multiline telephone device to handle routed calls and use the continuous silent monitoring feature in the Manager application:

- If the same primary line is used for both handling routed calls and continuous silent monitoring, the supervisor can receive calls while a monitored user is idle and not handling an active call. If the monitored user receives a routed call while the supervisor's primary line is busy, silent monitoring of that call is not initiated.

- If multiple lines are configured on the supervisor's telephone and a monitored user receives a routed call while the supervisor is talking on one line, continuous silent monitoring is automatically initiated on another line and the caller on the first line is immediately put on hold.

2.5 Configuring the DNS server in a separate subnet configuration

When the OpenScape Voice communication platform nodes reside on separate subnets, if the primary node fails, the OpenScape Contact Center system must be able to locate the CSTA Signaling Manager service on the secondary node and reconnect to it. In this configuration, the OpenScape Contact Center system queries the DNS server using the CSTA Signaling Manager service name and domain name, and then uses the returned DNS SRV record to obtain the correct IP address.

To enable this process, on the DNS server for the domain where the OpenScape Voice communication platform and the OpenScape Contact Center system reside, you must create two DNS SRV records with the same service name (for example, **cstasm**) using the tcp protocol, as follows:

- The first SRV record specifies the IP address of the primary CSTA Signaling Manager service. The priority of this SRV record must be higher (in the range 0 to 65535, where 0 is the highest) than that of the second SRV record.

- The second SRV record specifies the IP address of the secondary CSTA Signaling Manager service.

The weight is irrelevant and can be set to zero for both SRV records.

You can specify the CSTA Signaling Manager service name and domain name during installation of the OpenScape Contact Center software on the main server machine, or in the Manager application. For details, see the *Installation Guide* or the *Manager Help*, respectively.

2.6 Configuring the DNS server when using the OpenScape Contact Media Service

When the OpenScape Voice communication platform nodes reside on separate subnets and the OpenScape Contact Center configuration is using the OpenScape Contact Media Service, the OpenScape Contact Media Service must be able to query the DNS server to obtain the IP address of the communication platform.

To enable this process, you must create two DNS SRV records, as follows:

- The first SRV record specifies the IP address of the SIP Server that is configured in the OpenScape Contact Media Service. This is the IP address of the OpenScape Voice communication platform.

- The second SRV record specifies the IP address of the Registrar Host that is configured in the OpenScape Contact Media Service. The Registrar Host is normally the same as the SIP Server.

The format of the DNS SRV records must be _sip._<*protocol*>.<*IPaddress*>, where <*protocol*> can be UDP, TCP, or TLS.

2.7 Configuring a high availability (warm standby) environment

The OpenScape Contact Center system can be configured for high availability (warm standby) when the system is connected to an OpenScape Voice communication platform. For more information on how to configure the system for high availability (warm standby) and a list of system requirements, see the *Installation Guide*.

In a high availability (warm standby) environment, the OpenScape Contact Center primary and backup server machines can be collocated or geographically separated. Also, the OpenScape Voice nodes can reside on a common subnet or on separate subnets. For information on how to configure the nodes on separate subnets, see Section 2.5, "Configuring the DNS server in a separate subnet configuration", on page 26.

NOTE:
If the OpenScape Voice communication platform is in standalone mode due to cluster network connectivity issues, some functionality may be limited or lost. OSCC was not designed to operate with both nodes simultaneously in standalone mode.
For this reason, CSTA communication will be restarted by the OSCC and

cause a failover. Services may be limited until the communication is reestablished.

2.8 Configuring an OpenScape Branch deployment

OpenScape Branch systems can be deployed at remote locations to support remote contact center users, particularly during loss of connectivity with the OpenScape Voice communication platform. This section provides guidelines for deploying OpenScape Branch within an OpenScape Contact Center solution. For more information on the OpenScape Branch system and how to configure it, refer to the OpenScape Branch documentation.
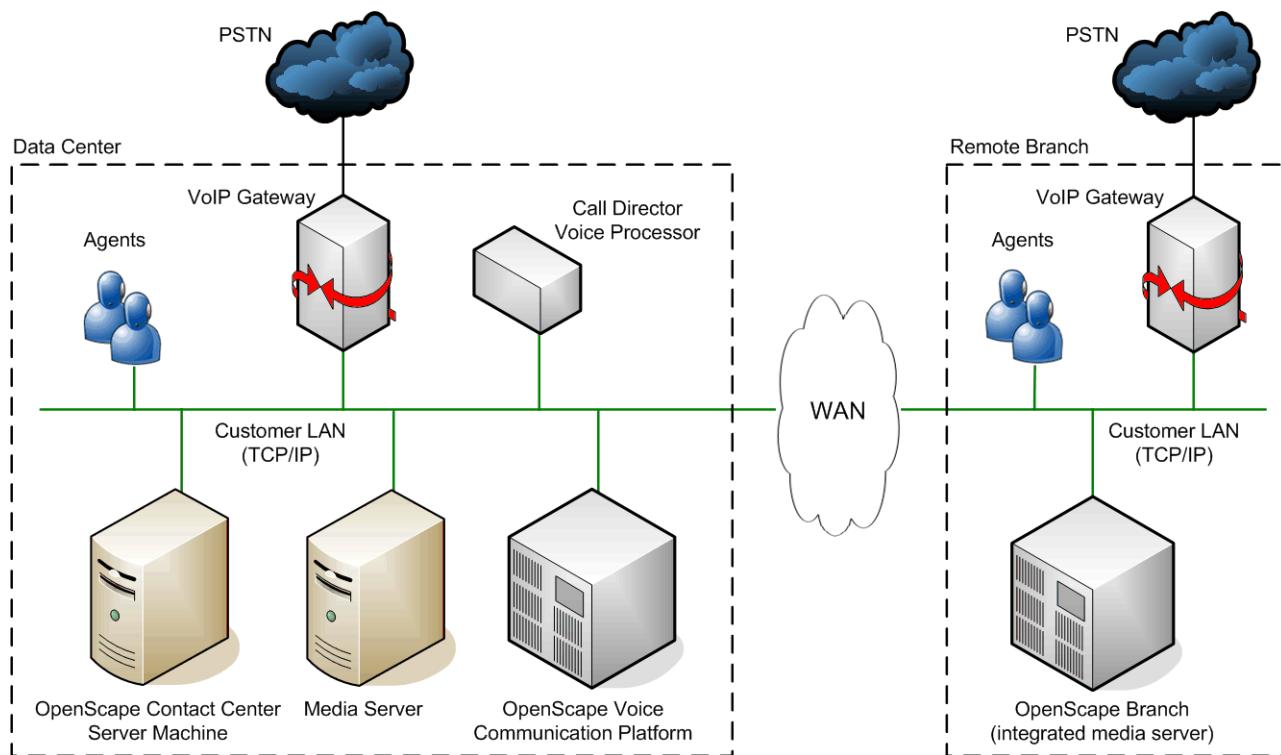
Figure 1   *Network configuration with OpenScape Branch*

The OpenScape Branch system is supported within an OpenScape Contact Center solution in the following operating modes:

- **Proxy** – This mode is for regular proxy usage when the remote branch is connected via a private network.

- **Proxy ACD** – This mode is for regular proxy usage when the remote branch is connected via a private network, and the branch has the capability to provide ACD functionality during survivability.

Within the context of an OpenScape Contact Center solution, the OpenScape Branch system can operate in two states:

- **Normal** – The OpenScape Branch system acts as a proxy to the OpenScape Voice communication platform to extend the call processing functionality provided to the remote branch over the WAN. Within the OpenScape Contact Center system, statistics are generated and calls are routed as if users are connected directly to the OpenScape Voice communication platform.

- **Survivability** – If the OpenScape Branch system is operating in Proxy ACD mode, when connectivity to the OpenScape Voice communication platform at the data center (also called main office) via the WAN is lost, the OpenScape Branch system takes over the call processing function for calls at the remote branch. The OpenScape Branch users are automatically logged off the OpenScape Contact Center system and statistics are no longer generated for those users. The OpenScape Branch users must log on to an OpenScape Branch ACD using a telephone so that they can continue to handle calls at the remote branch, which are routed via backup ACD routing. When the connection is restored, the OpenScape Branch users must log back on to the OpenScape Contact Center system.

2.8.1 Configuring the OpenScape Voice features

You must configure the OpenScape Voice communication platform such that during normal operation:

- The media server at the data center provides treatment for users at the data center and for callers on the incoming calls at the main VoIP gateway.

- The integrated media server on the OpenScape Branch system provides treatment for users at the remote branch and for callers on the incoming calls at the remote branch VoIP gateway.

You must ensure that the integrated media server at the remote branch has a sufficient number of ports to support the OpenScape Branch users. However, in the event that there are no media ports available on the integrated media server at the remote branch, the OpenScape Voice communication platform must be configured such that media port requests are redirected to another media server.

2.8.2 Configuring the OpenScape Branch ACDs

In a typical OpenScape Contact Center deployment, one or more pairs of Initial and Music On Hold Hunt Groups is configured with multiple pilot numbers so that customers can reach users from different departments offering various services. On the OpenScape Voice communication platform, subscriber numbers for all OpenScape Contact Center users (including those at the branch) are configured as members of the Initial and Music On Hold Hunt Groups. The incoming calls are typically routed by the OpenScape Contact Center system to various OpenScape Contact Center queues depending on the numbers dialed by the customers. The enqueued calls are then offered to the users (including those at the branch) associated with the OpenScape Contact Center queues.

When the OpenScape Branch system is operating in Proxy ACD mode, you must configure the system such that, during survivability state, the incoming calls at the branch are assigned to the same users at the branch who would have handled similar calls routed by the OpenScape Contact Center system during normal operation.

Therefore, on the OpenScape Branch system, you must configure an ACD group for each incoming pilot number, which must be mapped to an Initial Hunt Group pilot directory number at the data center. The subscriber numbers for users on the OpenScape Branch system must also be configured as members of one or more of the ACD groups, to match the configuration of the corresponding Initial and Music On Hold Hunt Groups at the data center.

When transitioning out of survivability state, the OpenScape Branch system will move all calls that are currently in the ACD queues at the branch into the Initial Hunt Group on the OpenScape Voice communication platform, using the Initial Hunt Group pilot directory numbers that are associated with the ACD groups at the branch.

To configure the OpenScape Branch ACDs:

1. Configure one ACD group for each pilot number on the OpenScape Branch system, and associate the ACD group with the matching Initial Hunt Group pilot directory number at the data center.

2. Configure the subscriber numbers for users on the OpenScape Branch system as members of one or more ACD groups, in the same way that the subscriber numbers are configured as members of the corresponding Initial and Music On Hold Hunt Groups at the data center. Each subscriber number must be a member of at least one ACD group.

2.9 Configuring CAC rerouting

When the OpenScape Contact Center system is connected to an OpenScape Voice communication platform, the CAC (Call Admission Control) feature is supported. CAC is a mechanism that is used in VoIP systems to guarantee an acceptable quality of service on the IP network. When the IP network does not have the bandwidth to handle a new call with an acceptable quality of service, you can use the CAC rerouting feature to reroute the call to an alternate provisioned route, normally the PSTN. For details on how to configure CAC rerouting on OpenScape Voice, see the OpenScape Voice documentation.

NOTE: The OpenScape Contact Center system does not support the OpenScape Voice backup access link feature.

For OpenScape Voice to be able to reroute a call over the PSTN, a pool of Direct Inward Dialing (DID) numbers must be configured on each survivable branch office. If your system configuration is such that the OpenScape Voice data center will receive CAC rerouted calls, you must configure a DID pool in the OpenScape Voice data center. Since a DID pool can only be configured at a survivable branch office, you must create a "virtual" branch office in the OpenScape Voice data center using a virtual endpoint, and then assign a DID pool to it.

NOTE: To use the CAC feature with the silent monitoring, continuous silent monitoring, and barge-in features, the monitoring user and monitored user must belong to the same CAC group.

Guidelines for configuring a virtual branch office in the data center:

1. Create a virtual endpoint that points to a non-existing IP address, and enable the **Survivable Endpoint** attribute.

2. After creating the virtual endpoint, set the **Do Not Audit Endpoint** attribute to **True**. This attribute can only be configured using the Command Line Interface (CLI), as follows:

   a) Connect to the communication platform using a local console or remotely via SSH.

   b) Log on as **srx** and start the CLI.

   c) Log on as **superad**. A password is not required.

   d) Enter **Application-level Management**, then **Zone Management**, and then **Modify Endpoint**.

      e) Set the **Do Not Audit Endpoint** attribute to **True**, as follows:

```
Change SIP endpoint attributes as bitmap sums? (default:
true): false

Do not audit Endpoint <0=false|1=true|-1=unchanged>
(default: -1): 1
```

      f) Exit the CLI session.

3. Using the virtual endpoint you just created, create a branch office. Ensure that the **Routing Area** attribute is not configured.

4. Assign a DID pool to the branch office. The numbers in the DID pool cannot be used for any other purpose.

2.9.1 Configuring the SIP rerouting parameters

The following SIP parameters must be configured on the communication platform to allow CAC rerouting over the PSTN:

- **Enable Registration Renewal** – enabled

- **Enable Rerouting for SIP Subscribers** – enabled

- **Subscriber Rerouting Prefix Access Code** – set to the PSTN access code

2.10 Circuit Integration

To integrate the Circuit telephony features with OpenScape Contact Center, you must create a Server-side application on Circuit. When creating the Circuit application, a unique client ID and client secret are generated. These client credentials are mandatory for authentication and authorization of Agent Portal Web via OAuth 2.0 on Circuit.

Fill in the fields below with the following information:

- **App Name**: The name of the application. It will be displayed during the Agent Portal Web login with Circuit account

- **Description**: A description of the application

- **Author name**: Name of the company that is developing the application. It will be displayed during the Agent Portal Web login with Circuit account

- **Redirect URIs**: The domain of the OSCC Application Server that provides the Agent Portal Web app. Circuit must be able to reach this URI. HTTPS is mandatory

- **Scopes**: The permission levels that the application can request from a user. For the Agent Portal Web, the scope must be **User.**

- **Time to live**: The maximum time a Circuit access token remains valid.

The page will display information about the newly created application. The Client ID and Client secret are necessary for the configuration of Circuit integration on the OSCC side.

After leaving the page, the Client secret will be hidden and can only be re-generated.

NOTE: For detailed information on the installation and configuration of the OpenScape SBC as ATC, see the document *OpenScape SBC V9, Circuit Telephony Connectors End-to-End*

NOTE: To obtain a Circuit account, please refer to the Circuit webpage (https://www.circuit.com).

2.11 Recording requirements

OSV Requirements

- **Silent Monitoring** activated in Business Group.

- **Prefix Access Code** created with service SILM Monitor and Maximum Length configured to comport the code + monitored extension. Example: if your code is *72 and monitored extension is 554133415000 you need to configure the PAC Maximum Length to 15 or more.
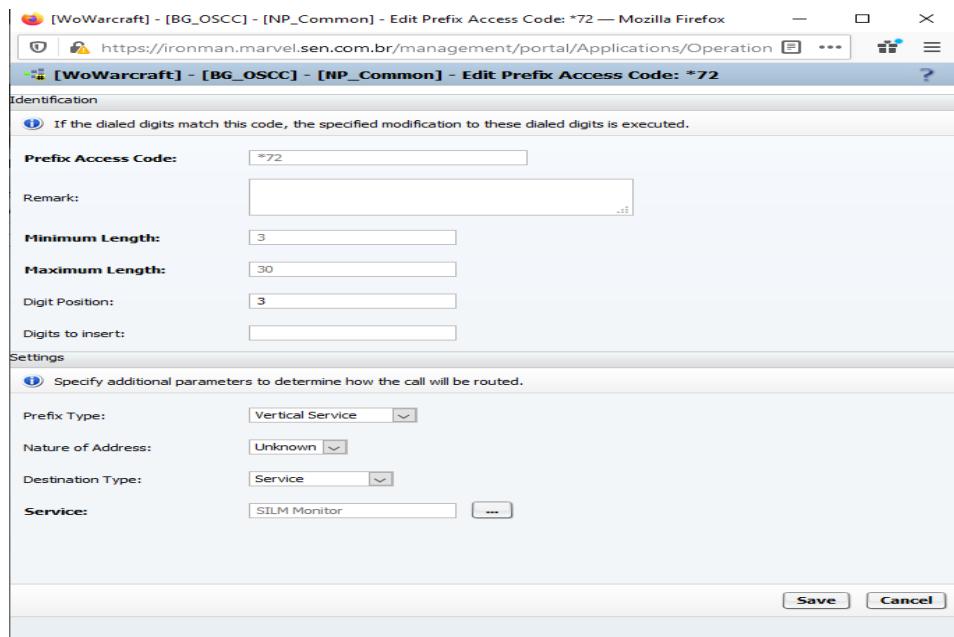
- **Recorder Extension** configured with feature Silent Monitoring Supervisor and it with only the flags Silent Monitoring and Hold Call when Inactive checked;
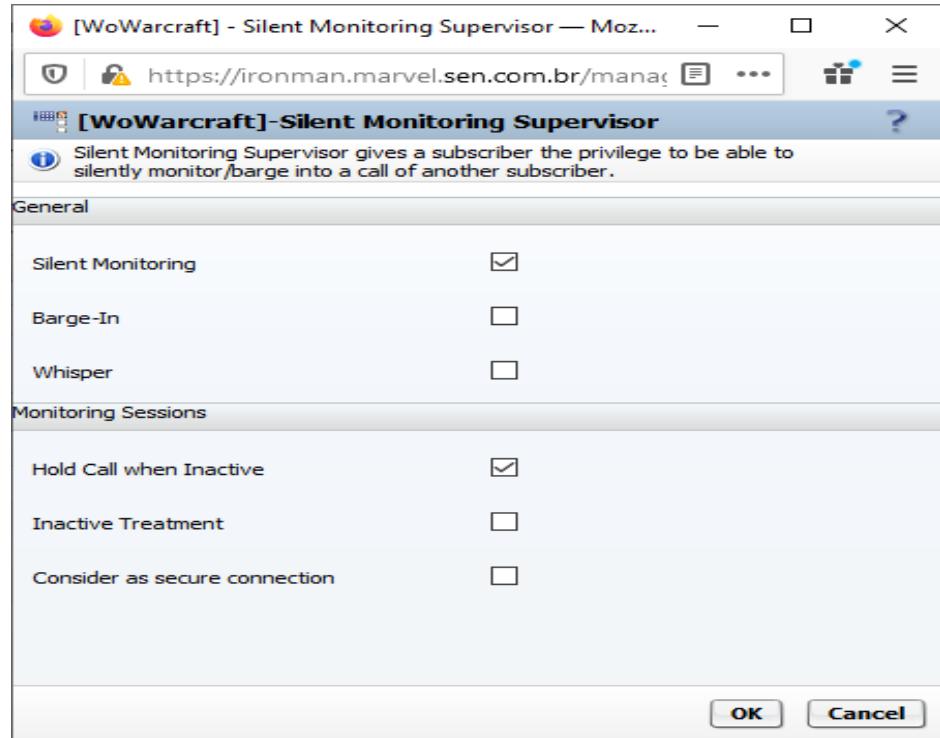
- **Monitored Extensions** configured with feature Silent
  Monitoring Agent and flag Silent Monitoring checked;
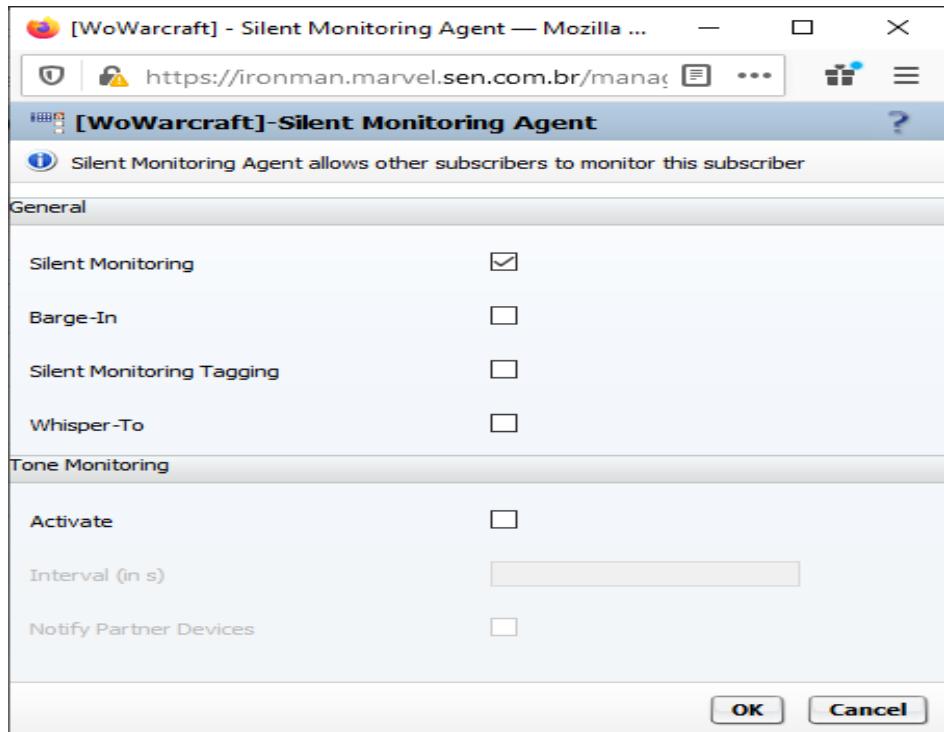
- **Media Server** dimensioned to support expected simultaneous
  recorded. One recorded extension use 5 RTP streams: two for
  the caller, two for answer and one for the recorder.

3 Configuring the OpenScape 4000 communication platform

This chapter describes how to configure the following communication platforms to communicate with the OpenScape Contact Center system:

- OpenScape 4000 V7 and V8

IMPORTANT: Only properly trained personnel should configure the communication platform. Attempts to configure the communication platform by personnel who are not properly trained might adversely affect the operation of the OpenScape Contact Center system.

NOTE: When you log on to the CSTA Web interface, you must specify a user name and password. The default user name is **Admin** and the default password is **Admin**.

The examples provided in this chapter are designed to guide you through simple OpenScape Contact Center routing workflows, including backup routing. If you choose to configure more complex workflows or backup routing strategies, follow the examples provided in this chapter and then configure additional values. For more information, contact your service representative.

NOTE: The Connectivity Adapter software is installed on the communication platform. If you are upgrading from a HiPath 4000 V4, V5 or V6 communication platform, you must uninstall the Connectivity Adapter software on the OpenScape Contact Center main server machine, and the backup server machine in a high availability (warm standby) environment. You might also have to reconfigure the CSTA settings in the Manager application. For details, see the *Manager Help*.

NOTE: In a multitenant environment, communication platform resources must be assigned to a specific business unit. The only exceptions are Call Director extensions, IVR extensions, and IVR Route Control Groups, which are shared across all business units. For more information on the multitenancy feature, see the *Manager Administration Guide* or *Manager Help*.

After you have completed the configuration tasks in this chapter, continue your implementation by following the guidelines in the *Installation Guide*.

NOTE: Call Recording feature supports agents configured with preferred device extensions. It is recommended to always use the latest version of switch.

Restriction: No recording is possible in case of SIP(UFIP) – SIP(UFIP), when DMC is active.

3.1 Before you begin

Before you configure the communication platform, you must ensure that:

- The communication platform is operational and fully functional. Test the communication platform to ensure that it can make and receive external calls.

- You have administrative access to the communication platform.

- You have obtained the UNIX IP address.

- The communication platform is running the correct patch for the software level. For more information, contact your service representative.

- The server on which you intend to install the OpenScape Contact Center software is connected to the customer LAN. For guidelines, see Section 3.2, "Network configuration", on page 41.

NOTE: When the system is connected to an OpenScape 4000 communication platform, the Config Sync feature is not supported.

3.2 Network configuration

This section describes how the OpenScape Contact Center system and the communication platform communicate.

NOTE: The communication platform can also be used in an OpenScape Contact Center high availability (warm standby) environment. For details, see Section 3.6, "Configuring a high

The following diagram illustrates how the communication platform communicates with the OpenScape Contact Center system.
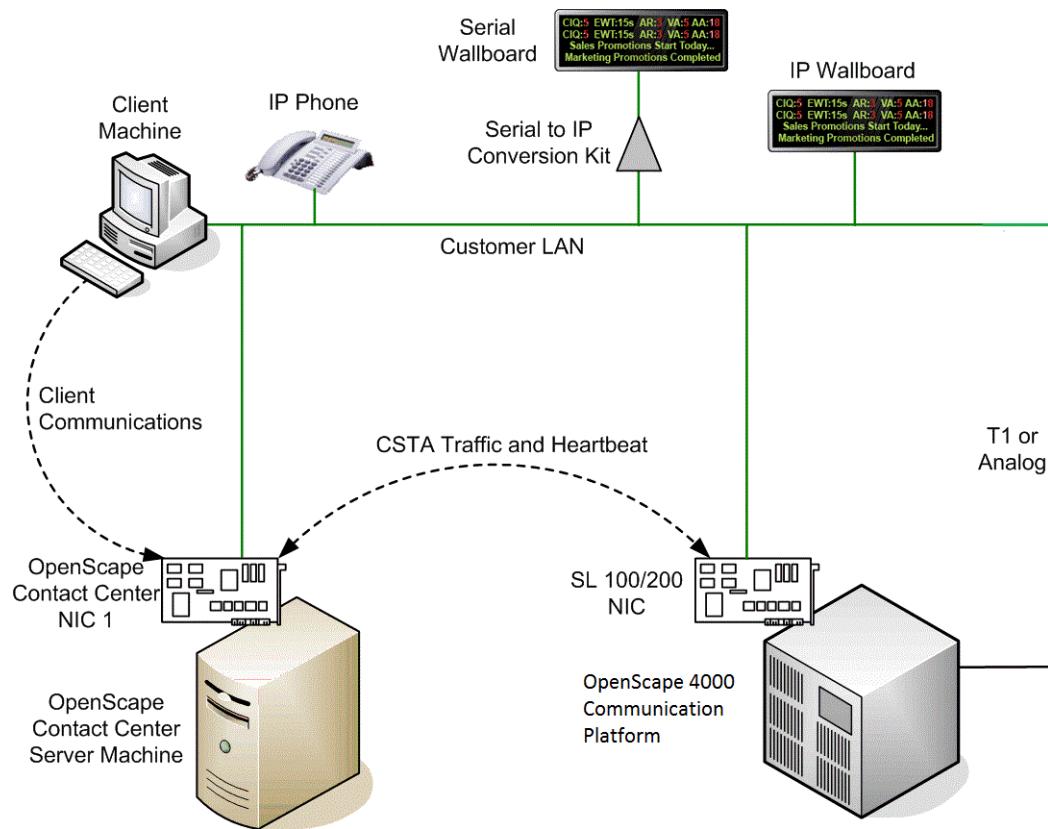

Figure 2   *Network configuration*

NOTE: If the communication platform is operating in duplex mode and the node that is in active mode fails, all queued calls will be lost.

3.3 Understanding the basic configuration

This section describes some concepts related to the basic configuration.

3.3.1 ACD configuration

The following flow provides a sample ACD configuration for the communication platform. The numbers in parentheses are the default numbers created by OpenScape Contact Center.
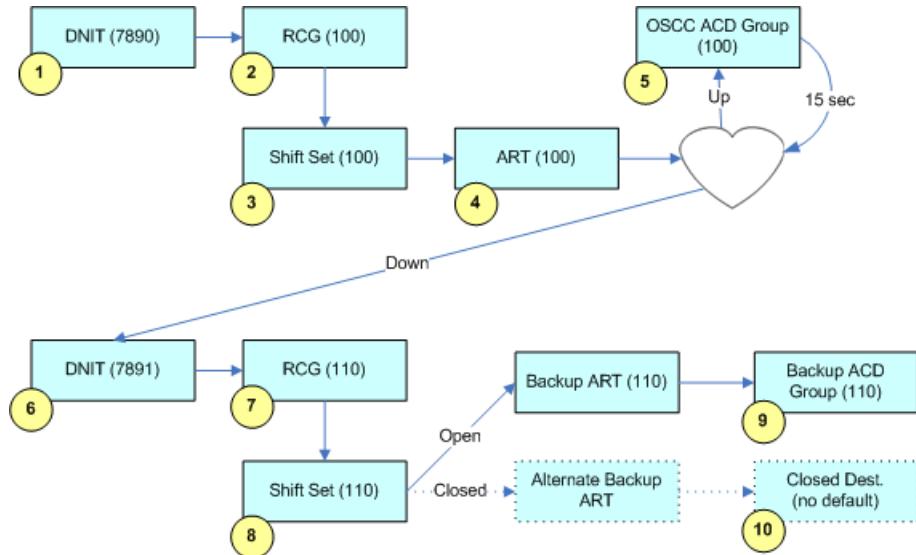

Figure 3   ACD setup flow

The ACD setup flow shown in Figure 3 is:

1. A call arrives on the communication platform via a dialed number, which is translated into a DNIT (Dialed Number Identification Table). A DNIT is a pointer on the communication platform. The incoming number can be either a 1-800 number dialed directly or a number that is transferred by a front-end device such as OpenScape Xpressions.

   NOTE: Multiple pilot numbers can be used for this step, all entering into this flow on the communication platform.

2. For OpenScape Contact Center, the DNIT must point to an OpenScape Contact Center Route Control Group (RCG).

3. The RCG references a shift set. The shift set schedules the call flow at various times throughout the day. Ensure that this shift set is configured appropriately for your shifts, such as a 24x7x365 operation.

4. The shift set references an ACD Routing Table (ART) on the communication platform. The ART is configured with special checks that ensure the application is operational. For more details, see Section 3.3.2, "Heartbeat mechanism", on page 45.

5. If the heartbeat is operational, the communication platform routes the call to the OpenScape Contact Center ACD group. This group is monitored by OpenScape Contact Center for calls. After the call arrives in this group, OpenScape Contact Center routes the call according to the workflow configured in the Manager application (for more information, see the *Manager Administration Guide*). If the call is still in the communication platform queue after 15 seconds, the communication platform will re-check the status of OpenScape Contact Center. If it is still running, the call remains in queue waiting for OpenScape Contact Center to route it.

6. If the heartbeat is not operational, the communication platform needs to route the call. In the default case, a step should be added to the end of the ART instructing the communication platform to send all calls to an alternate DNIT until communication is reestablished between the communication platform and OpenScape Contact Center.

7. The alternate DNIT points to a backup RCG.

8. The backup RCG points to a backup shift set. The backup shift set can be configured on the communication platform to reflect when the contact center is open or closed. The default is set to a 24x7x365 contact center. For more information, see Section 3.4.3, "Configuring backup routing", on page 48.

9. If the contact center is open, the calls are then routed to the backup ART. The backup ART will have the communication platform route all calls to the backup ACD group. This group is where all of the users are configured on the communication platform. Note that there is no intelligent routing within this group on the communication platform.

10. If you configure the shift set to reflect when the contact center is closed, calls will be routed to the destination in the alternate backup ART. Suggestions for the destination include voice mail or an operator.

NOTE: In a multitenant environment, if the communication platform RNA feature is configured, calls must be deflected to the correct OpenScape Contact Center Route Control Group for each business unit. For more information on the multitenancy feature, see the *Manager Administration Guide* or *Manager Help*.

3.3.2 Heartbeat mechanism

A heartbeat mechanism is used by all communication platforms to determine if OpenScape Contact Center is functioning properly. If the communication platform detects that OpenScape Contact Center is not functioning properly, the communication platform routes calls using backup routing logic configured on the communication platform.

The heartbeat mechanism uses CSTA messaging over the communication platform LAN.

The ART that contains the OpenScape Contact Center ACD group (default is 100) contains ART steps that monitor the heartbeat ACD group. The ART steps ensure that calls are being made to the heartbeat ACD group, and that the calls are disconnecting at the proper interval.

If there is a failure in communication between OpenScape Contact Center and the communication platform, then the communication platform routes the calls according to the steps defined in the example ART.

Example ART

The default steps for routing OpenScape Contact Center calls with a heartbeat check are:

```
Step 1 CHANGE-ACDRT:100,ARTSTEP,1,HEARTCND,HPPC,20,6;

Step 2 CHANGE-ACDRT:100,ARTSTEP,2,RTGRP,100;

Step 3 CHANGE-ACDRT:100,ARTSTEP,3,WTSEC,15;

Step 4 CHANGE-ACDRT:100,ARTSTEP,4,HEARTCND,HPPC,20,6;

Step 5 CHANGE-ACDRT:100,ARTSTEP,5,GOSTEP,3;

Step 6 CHANGE-ACDRT:100,ARTSTEP,6,RTEXT,7891;
```

Note that **100** is the default ACD group for OpenScape Contact Center that is created by the macro file and **7891** is the default DNIT number that references the backup strategy for the customer.

In the above example, the communication platform will wait 20 seconds for OpenScape Contact Center to send a CSTA message via the communication platform LAN. If that message is received, then the communication platform enqueues the call to the OpenScape Contact Center ACD group. If the call has not been routed to a user after 15 seconds, the communication platform re-checks the heartbeat. Steps 3 and 4 are repeated until the call is routed to a user. If for any reason the heartbeat fails, the communication platform proceeds to step 6 (and any subsequent steps, as desired) that list the backup strategy.

3.4 Configuring the communication platform

This section describes how to configure the communication platform to communicate with the OpenScape Contact Center system.

3.4.1 Loading the CSTA settings

OpenScape Contact Center and the communication platform communicate through CSTA. The communication platform notifies OpenScape Contact Center of calls that require routing, and then OpenScape Contact Center instructs the communication platform how to route the calls. The default CSTA settings are shown below.

NOTE: If you are connecting more than one OpenScape Contact Center main server machine to a single communication platform, the CSTA settings (such as the application number) configured in the communication platform and in the Connectivity Adapter software must be unique for each OpenScape Contact Center server machine. When the system is configured for high availability (warm standby), this requirement also applies to the primary and backup server machines.

CSTA settings

```
ADD-CPTP:DPCON,55,"PROCID5","192.0.2.25";
ADD-CPTP:APPL,55,"ACM55","PROCID5","APPL55",YES,102,102,"ACM55","APPL55";
ADD-ACMSM:,55,ACLAPPL,"APPL55","ACM55","PROCID5",CB,"CSTAGW",Y,1020,1020;
ADD-XAPPL:55,"APPL55","APPLICATION_55",,Y;
CHANGE-XAPPL:SUBAPPL,55,D25,ACCOUNT&AGASSIGN&AGENT&ABANDON&QUEUED,;
CHANGE-XAPPL:SUBAPPL,55,D25,REDIRECT&LOGON&RCGDISC&RCGSEL&DIGDIALD,;
CHANGE-XAPPL:MONCB,55,D25,RCG,;
EXE-UPDAT:BP,ALL;
EXE-UPDAT:A1,ALL;
```

3.4.2 Loading the ACD settings

OpenScape Contact Center is designed to work with the default settings shown below.

NOTE: If you are connecting more than one OpenScape Contact Center main server machine to a single communication platform, the application name (default HPPC) and resources (extensions, ACD groups, and so on) must be unique for each OpenScape Contact Center server machine. Also, the application name must match the heartbeat application name configured in the Manager application.

ACD settings

CHA-SDAT:<Supervisor Extension>,ATTRIBUT,AGENT&SUPER;

ADD-ACDGP:100,NORMAL,FIFO,<Supervisor Extension>,YES,YES,5,20,30;

/* HPPC's basic ACD group

ADD-ACDGP:110,NORMAL,FIFO,<Supervisor Extension>,YES,YES,5,20,30;

/* fallback ACD group

ADD-WABE:7890,,,STN;

ADD-WABE:7891,,,STN;

ADD-WABE:7895,,,RCG;

ADD-WABE:7896,,,RCG;

CHA-ACDSD:CAFRCG,100,7895;

CHA-ACDSD:CAFRCG,110,7896;

ADD-ACDRT:100,6;

CHANGE-ACDRT:100,ARTSTEP,1,HEARTCND,HPPC,20,6;

CHANGE-ACDRT:100,ARTSTEP,2,RTGRP,100;

CHANGE-ACDRT:100,ARTSTEP,3,WTSEC,15;

CHANGE-ACDRT:100,ARTSTEP,4,HEARTCND,HPPC,20,6;

CHANGE-ACDRT:100,ARTSTEP,5,GOSTEP,3;

CHANGE-ACDRT:100,ARTSTEP,6,RTEXT,7891;

ADD-ACDRT:110,3;

CHANGE-ACDRT:110,ARTSTEP,1,RTGRP,110;

ADD-ACDRS:DS,100,23-59,100,NO,100;

ADD-ACDRS:DS,110,23-59,110,NO,110;

ADD-ACDRS:RS,100,10,10,10,10,10,10,10;

ADD-ACDRS:RS,110,11,11,11,11,11,11,11;

ADD-DNIT:DNI,7890,DRTD,0,"HPPC MAIN",YES,100;

ADD-DNIT:DNI,7891,DRTD,0,"HPPC BACKUP",YES,110;

EX-UPDAT:BP,ALL;

3.4.3 Configuring backup routing

If OpenScape Contact Center is not functioning properly, it is imperative that calls continue to be answered by users. Users can continue to answer calls through backup routing.

The core backup routing concept of OpenScape Contact Center is that if OpenScape Contact Center becomes unavailable, the communication platform becomes responsible for routing the calls to available users who are logged on to the communication platform until OpenScape Contact Center is restored.

As shown in , there is an option to define backup routing so that if OpenScape Contact Center is unavailable, calls will be routed to a predefined destination rather than the contact center where there are no users logged on.

NOTE: In a multitenant environment, each business unit must be assigned its own backup routing ACD group. Ensure that the communication platform is configured such that the calls for each business unit are routed to the corresponding backup routing ACD group.

3.4.3.1 Sample business environment

The following dialogue represents a sample business environment. The "question and answer" format reflects typical questions asked during a design interview:

Question: What hours and days does the contact center have users logged on and active?

Answer: Our contact center has three departments: sales, support, and billing. The sales and billing departments work from 9 A.M. to 5 P.M., Monday to Friday. The support department works 7 days a week from 7 A.M. to 11 P.M.

Question: Where should calls go when the contact center is closed?

Answer: Calls could go to voice mail or to a 24-hour operator. These are just two possible examples.

After you have these questions answered, you are ready to set up the workflow. For more information, see the *Manager Administration Guide*.

3.4.3.2 Modifying contact center hours

To modify contact center hours for backup routing settings on the communication platform, run the AMOs according to the example in this section.

NOTE: Before you run the AMOs, ensure that ComWin is connected to the communication platform and that you are logged on. For more information, see the communication platform documentation.

To modify contact center hours:

1. Set up shift numbers on the communication platform (for each day there are different hours). As an example, run the AMO:

   `ADD-ACDRS:DS,100,<Shift time Start>,120,NO,120;`

   where `<Shift time Start>` is when the shift ends. It must be entered in the format of `<HH-MM>` for the 24-hour clock.

   NOTE: The text `Shift time Start` refers to the actual time the shift ends. The AMO parameter, however, is called `shift end`. `The shift runs from midnight until the shift time starts. The assumption is that the contact center is closed during that time, and that calls that arrive when the contact center is closed are sent to ART 120.`

   ---

2. Set up when the contact center is open. As an example, run the AMO:

   `CHA-ACDRS:DS,100,<Shift time End>,110,NO;`

   where `<Shift time End>` is when the shift ends. It must be entered in the format of `<HH-MM>` for the 24-hour clock.

   This shift runs from <shift time start> to <shift time end>. Calls are sent to ART 110 for backup routing purposes when the contact center opens. It contains a step that routes calls to the agent ACD group on the communication platform.

3. Close off the shift. As an example, run the AMO:

   `CHA-ACDRS:DS,100,23-59,120,YES;`

   This shift runs from <shift time end> until the end of the day.

4. Modify the shift set. As an example, run the AMO:

   `CHA-ACDRS:RS,110`

5. After running the above AMO, you are prompted to enter the following:

   `Sun = <Enter in Shift number created for Sunday's hours>`

   `Mon = <Enter in Shift number created for Monday's hours>, etc.`

6. After you have entered the appropriate days, set up the after-hours destination in the alternate backup ART. For example, run the AMO:

   `CHA-ACDRT:120,ARTSTEP,1,RTEXT,<After hours destination number>;`

   where `<After hours destination number>` is a number that matches the after-hours destination in the OpenScape Contact Center design.

3.4.3.3 Example AMOs for a contact center for a shift day

An example of a shift day for a contact center open from 7 A.M. until 6 P.M. is:

Step 1 `ADD-ACDRS:DS,120,07-00 120,NO,120;`

Step 2 `CHA-ACDRS:DS,120,18-00,110,NO;`

Step 3 `CHA-ACDRS:DS,120,23-59,120,YES;`

where:

- **Step 1** defines that the contact center is closed from midnight until 7 A.M. Calls are sent to ART 120 which references the after hours destination.

- **Step 2** defines that the contact center is open until at 6 P.M. From 7 A.M. until 6 P.M., calls are sent to ART 110, which sends callers to the agent ACD group.

- **Step 3** defines that the day is closed at 11:59 P.M. Calls are sent to ART 120.

If you have different hours on different days (for example, on weekends), you will need to create different shifts for those days. To do this, run the three AMOs above again, but increase the number 120 to 130, then 140, and so on, for each day where there are different hours.

3.4.4 Configuring additional dialable numbers

In the OpenScape Contact Center system, any DNIT that points to a monitored Route Control Group (RCG) can be used as an IVR transit number, a network transit number, or a requeue target. The numbers that are used to create these targets should be created to work within the dialing plan.

NOTE: Before you run the AMOs, ensure that ComWin is connected to the communication platform and that you are logged on. For more information, see the communication platform documentation.

To configure additional dialable numbers and requeue targets:

1. Run the following AMO:

   `ADD-DNIT:DNI,<DIALABLE NUMBER>,DRTD,0,<DESCRIPTION>,YES,100;`

   where:

   - `<DIALABLE NUMBER>` is a dialable number in the dial plan.

   - `<DESCRIPTION>` is a description of the dialable number.

   - `100` is the default OpenScape Contact Center RCG number that is created by the macro file.

2. Repeat step 1 for every dialable number or requeue target that you want to create.

3.4.5 Configuring extensions

This section describes how to configure user extensions and Call Director extensions. You can configure user extensions, Call Director extensions, or both, depending on your configuration.

3.4.5.1 Configuring user extensions

If you are configuring user extensions, ensure that the telephone is set up properly by running the AMOs specified in this section.

NOTE: Before you run the AMOs, ensure that ComWin is connected to the communication platform and that you are logged on. For more information, see the communication platform documentation.

NOTE: Ensure that call forwarding unconditional (or all calls) and call forwarding on busy are not enabled on the user telephones.

NOTE: If the user's telephone has been configured to display the Contacts Waiting Indicator, and the user is not logged on to the Client Desktop application, the Contacts Waiting lamp indicator on the telephone will notify the user when there are contacts waiting in the queue. The Contacts Waiting lamp indicator on the telephone is turned off when the user is logged on to the Client Desktop application.

To configure user extensions:

1. Run the AMO TAPRO to set the following buttons on the telephone:

    - ACD Logon/Logoff

    - ACD Available

    - ACD Unavailable

    - Work

NOTE: If the user is not configured to use the Client Desktop application, and the user is in Post-processing handling state, the Work button on the telephone will be activated regardless of the

---

user's routing state. In this case, to exit Post-processing handling state, the user can press one of the other buttons on the telephone, such as Available.

2. Run the AMO SDAT to ensure that the extensions have the attribute AGENT assigned to them.

3. Run the AMO SBCSU to configure the presentation indicator. The presentation indicator is normally configured as unrestricted (SSTNO=NO). However, if the Calling Line Identification Restriction (CLIR) setting on the user's extension is configured as "presentation restricted", you must configure the presentation indicator as restricted (SSTNO=YES). In this case, you must add some parameters to each instance of the CA4000.cfg file where the Connectivity Adapter software has been installed. You have two choices:

   – You can set the restricted value to private data, in which case you must add the following parameters:

     PRESENTATION_RESTRICTED=private data

     ALLOW_ALL_PRIVATE_DATA=True

   – You can set the restricted value to special, in which case you must add the following parameters:

     PRESENTATION_RESTRICTED=special

     PRESENTATION_RESTRICTED_SPECIAL_VALUE=<special value>

     Where <special value> specifies the value that you want to display in the OpenScape Contact Center system instead of the caller's telephone number. The specified value can contain alphanumeric characters, but no spaces. If <special value> is not specified, the default value 9999 will be used. As a result, you should not configure any devices on the communication platform with an ID of 9999.

3.4.5.2 Configuring SIP extensions for Call Director

When you plan to use the Call Director feature to enable interactive messages for callers, you must configure the Call Director extensions. A license is required to use the Call Director feature.

IMPORTANT: Do not configure Call Director extensions as agent auto logon because it might cause Call Director to fail

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NOTE: Configure the Call Director extensions (if the Config Sync feature is not enabled) and the voice processor in the Manager application. For details, see the Manager Help

---

NOTE: When the system is configured for high availability (warm standby), redundant voice processors are required. Therefore, you must configure the backup voice processor and a second set of Call Director extensions separately on the backup server machine. For details, see the document *OpenScape Contact Center Enterprise V10 Manager Administration Guide*

When using an OpenScape Contact Media Service voice processor, you must configure the SIP extensions for OpenScape Contact Media Service on the communication platform. For more information on the OpenScape Contact Media Service, see chapter **Configuring the OpenScape Contact Media Service** in *OpenScape Contact Center Enterprise V10, OpenScape Contact Media Service*.

The OpenScape Contact Media Service must be connected to an STMI2, STMI4 or STMIX board or a SoftGate that has been configured to support SIP extensions.

NOTE: Before you run the AMOs, ensure that ComWin is connected to the communication platform and that you are logged in. For more information, see your communication platform's documentation

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To configure SIP extensions for Call Director (For example, using OpenScape 4000 V8 and STMIX board) follow the steps below:

1. Add an STMIX board to the communication platform. For example, run the AMO:

   ```
   ADD-BFDAT:FCTBLK=<BFDAT #>,FUNCTION=SIP,BRDBCHL=BCHL120;
   ```

```
CHANGE-BFDAT:CONFIG=CONT,FCTBLK==<BFDAT #>,FUNCTION=SIP,
LINECNT=240,BCHLCNT=120;
```

```
CHANGE-BFDAT:CONFIG=OK,FCTBLK=<BFDAT #>,ANSW=YES;
```

```
ADD-BCSU:MTYPE=IPGW,LTG=1, LTU=<LTU>, SLOT=<SLOT>,
PARTNO="Q2343-X" ,FCTID=1, LWVAR="0",FCTBLK=<BFDAT #>,
BCHLSIP=120, ALARMNO=0, IPMODE=IPV4, DHCPV4=NO,
DHCPV6=NO;
```

```
ADD-
CGWB:LTU=<LTU>,SLOT=<SLOT>,SMODE=NORMAL,IPADR=<IP_Addres
s>, NETMASK=<Netmask>, DEFRT=<Gateway_IP_Address>;
```

```
CHANGE-CGWB: MTYPE=CGW, LTU=<LTU>, SLOT=<SLOT>,
TYPE=DMCDATA, DMCCONN=10; CHANGE-CGWB: MTYPE=CGW,
LTU=<LTU>, SLOT=<SLOT>, TYPE=SIPTRERH, GWAUTREQ=NO;
```

```
CHANGE-CGWB: MTYPE=CGW, LTU=<LTU>, SLOT=<SLOT>,
TYPE=SIPTRSSA, SIPREG=NO;
```

```
RESTART-BSSU: ADDRTYPE=PEN, LTG=1, LTU=<LTU>,
SLOT=<SLOT>;
```

NOTE: If you intend to connect the OpenScape Contact Media Service voice processor to a SoftGate using a vSTMI (vHG3550), you must specify ATTR=SOCO in ADD-BFDAT and the part number of the vSTMI in ADD-BCSU (Q2330-X).
```
ADD-BFDAT:FCTBLK=<BFDAT
#>,FUNCTION=SIP,BRDBCHL=BCHL120,ATTR=SOCO;
```

---

2. Add a SIP extension for each OpenScape Contact Media Service port that you want to connect to Call Director. For example, run the AMO:

```
ADD-WABE: CD=<Station Number or range>, DAR=STN;
```

```
ADD-SBCSU:STNO=<Station nr. or
range>,OPT=OPTI,CONN=IP2,PEN=<PEN>,
DVCFIG=UFIP,COS1=<COS>,COS2=<COS>,LCOSV1=1,LCOSV2=1,LCOS
D1=1, LCOSD2=1,DPLN=0,ITR=0,SSTNO=N,COSX=0,SPDI=0,
DTMFCTRD=YES;
```

```
CHANGE-SDAT:STNO=<Station nr. or range>, TYPE=ATTRIBUT,
AATTR=CALLDIR&MBCHL;
```

> **NOTE:** The attribute CALLDIR must be set in SDAT for each Call Director extension. The attribute CALLDIR indicates to OpenScape 4000 that this is a Call Director extension

> **NOTE:** For older versions, like HiPath 4000 V6 and OpenScape 4000 V7, add the SIP extension by following the example below:
> ```
> ADD-SBCSU:STNO=<Station #>,OPT=FPP,CONN=SIP,PEN=<PEN>,
> DVCFIG=S0PP ,DPLN=0, ITR=0, SSTNO=N, COSX=0, SPDI=0,
> PROT=SBDSS1*, PERMACT=Y, INS=Y, OPTIDX=10*, PASSWD="",
> USERID="", SECZONE="", DTMFCTRD=YES, DTMFBLK=NO;
> CHANGE-SDAT:STNO=<Station
> #>,TYPE=ATTRIBUT,AATTR=CALLDIR&MBCHL
> ```
> *Verify that SBDSS1 was loaded with DISPLAY-ZAND:TYPE=OPTTBL; (IDX=10)

3.5 Configuring the Connectivity Adapter software

You must configure the Connectivity Adapter settings that are required by the OpenScape Contact Center system on the communication platform and on the standby Access Point Emergency unit, if it is being used in a high availability (warm standby) environment.

To configure the Connectivity Adapter settings:

1. Open the CA4000.cfg file using a text editor.

2. Edit the following parameters:

   - ALLOW_RELATEDCLD=1

   - CALLID_MAX_AGE=14400

   - CSTA3_DELAY_DEFLECT_CALL_RESP=1

   - CSTA3_DELAY_DEVICE_DEFLECT_CALL_RESP=1

   - CSTA3_DELAY_SST_CALL_RESP=1

   - STORE_SST_DEST=1

   If the ZAND/ACD parameter SUPAGTNU is set to yes, the following parameters must be added:

   PRESENTATION_RESTRICTED=private data

ALLOW_ALL_PRIVATE_DATA=True

3. Save and close the file.

4. Restart the Connectivity Adapter service.

3.6 Configuring a high availability (warm standby) environment

When the system is connected to an OpenScape 4000 communication platform, the OpenScape Contact Center system can be configured for high availability (warm standby). For more information on how to configure the system for high availability (warm standby) and a list of system requirements, see the *Installation Guide*.

If the communication platform is using a standby Access Point Emergency unit in a high availability (warm standby) environment, see Section 3.7, "Using a standby Access Point Emergency unit", on page 59.

NOTE: If the communication platform supports the payload survivability feature, the feature is also supported in these configurations.

3.6.1 High availability (warm standby) configuration

The following diagram illustrates the configuration of the communication platform in a high availability (warm standby) environment.

In this environment, you must ensure that the CSTA settings (such as the application number) configured in the communication platform and in the Connectivity Adapter software are unique for the primary and backup server machines. For details, see Section 3.4.1, "Loading the CSTA settings", on page 46.
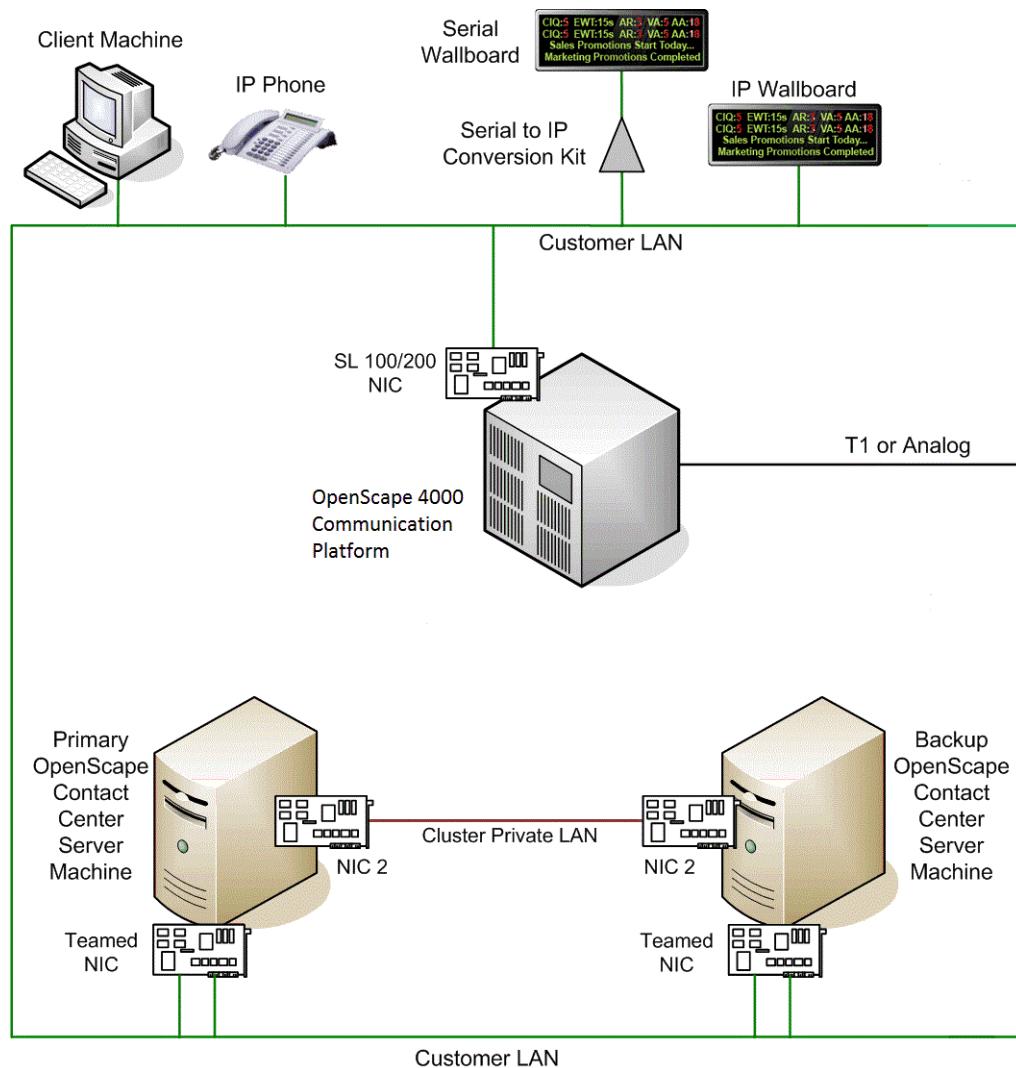
Figure 4   *High availability (warm standby) configuration*

3.7 Using a standby Access Point Emergency unit

This section describes how to configure a high availability (warm standby) environment when the communication platform is using a standby Access Point Emergency unit. The configuration depends on the version of the communication platform.

NOTE: A Microsoft server cluster requires that all nodes in the cluster belong to the same subnet. Therefore, if the primary and backup server machines are configured on different networks (such as when you are deploying a geographically separated configuration), the different networks must be deployed as a single subnet. One way to meet this requirement is using virtual LAN (VLAN) technology. For more information, refer to *Microsoft Knowledge Base Article 280743* which discusses Windows clustering and geographically separated sites. Other approaches (such as VPN) are also possible. In any case, the maximum round-trip latency between server machines should be no more than 500 milliseconds.

In the event that the communication platform fails over to the Access Point Emergency unit:

- All connected and queued calls on the communication platform main unit are lost.

- All users logged on to the communication platform main unit are logged off voice and callback. However, they are still able to handle e-mail and Web collaboration contacts.

- All users whose extensions are configured on the Access Point Emergency unit are automatically logged on to voice and callback.

- Config Sync operations are not supported.

NOTE: When the system is connected to an OpenScape 4000 communication platform, the Config Sync feature is not supported.

When the communication platform becomes operational and OpenScape Contact Center reconnects to the communication platform main unit:

- All connected and queued calls on the Access Point Emergency unit are lost.

- All users logged on to the Access Point Emergency unit are logged off.

- All users on the communication platform main unit have to log on manually to voice and callback. They must check the state of their hard telephone periodically to determine when they are able to log back on.

3.7.1 Using a standby Access Point Emergency unit

When the communication platform is using a standby Access Point Emergency unit in a high availability (warm standby) environment, the configuration is as shown in Figure 5. In this configuration, the Access Point Emergency software is installed on the proprietary IP Distributed Architecture (IPDA) hardware.

In addition to the configuration shown in the diagram, the following configurations are also supported:

- SoftGate V6 – The Access Point Emergency software and the SoftGate software are installed on a standard server machine, rather than the proprietary IPDA hardware.

- HiPath Access 500 – This all-in-one unit (with built-in SoftGate software and media gateway functionality) acts as a standby Access Point Emergency unit.

You must enable two ports on the communication platform and two ports on the standby Access Point Emergency unit. In each case, one port is for connection to the primary server machine and one port is for connection to the backup server machine. The host names and port numbers are specified during installation and can also be configured in the Manager application.

In this configuration, several failover scenarios are possible, including:

- If the primary server machine cannot communicate with the main unit, it will first try to communicate with the standby Access Point Emergency unit.

- If the primary server machine cannot communicate with the main unit or the standby Access Point Emergency unit, it will fail over to the backup server machine.

- If the backup server machine cannot communicate with the main unit, it will try to communicate with the standby Access Point Emergency unit.
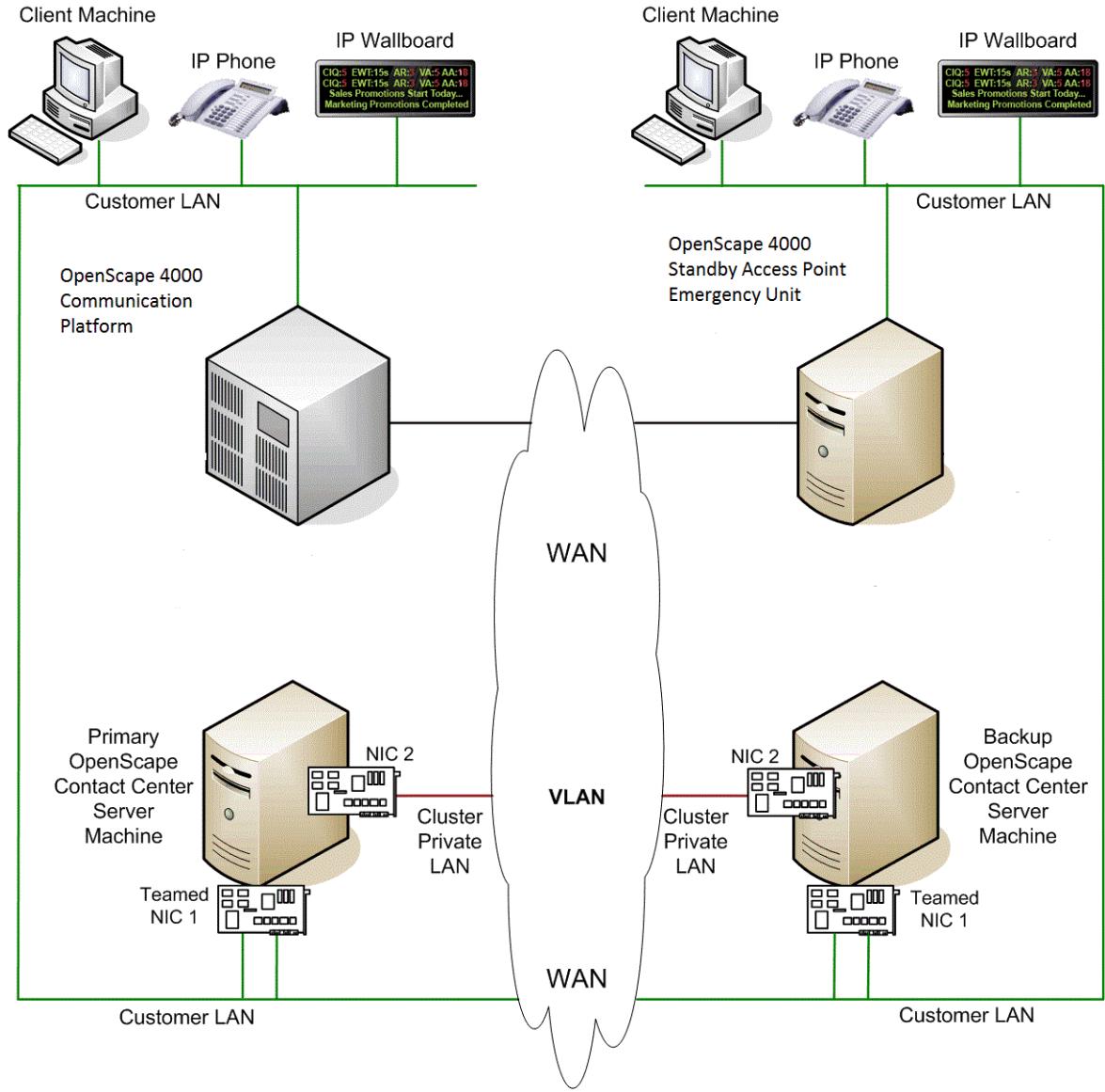
Figure 5   High availability (warm standby) configuration with standby Access Point Emergency unit

3.8 Recording requirements

OS4K requirements: STMI board configured with the required number of UFIP subscribers.

Comments:

- Each recording channel in the recording system uses two UFIP participants.

- The CMS needs the all UFIP extensions to be created on the same STMI board.

- ACD and Silent monitoring enable in the PBX the following:

CHANGE-ZAND:TYPE=ACD,ACDALLOW=YES,MONTONE=YES;

SET-ZAND:MONSLNT=YES

ACD pilot used by CMS to recorder calls. This example will use the pilot number 999900 and RCG number 100:

ADD-WABE:CD=999900,DAR=STN,CHECK=N;

ADD-WABE:CD=999941,DAR=RCG,CHECK=N

CHANGE-ACDSD: CAFRCG,100,999941;

ADD-ACDRT:ART=100,MAXSTEP=5;

CHANGE-ACDRT:ART=100,TYPE=ARTSTEP,STEP=1,ACT=SKIP;

CHANGE-ACDRT:ART=100,TYPE=ARTSTEP,STEP=2,ACT=SKIP;

CHANGE-ACDRT:ART=100,TYPE=ARTSTEP,STEP=3,ACT=SKIP;

CHANGE-ACDRT:ART=100,TYPE=ARTSTEP,STEP=4,ACT=SKIP;

CHANGE-ACDRT:ART=100,TYPE=ARTSTEP,STEP=5,ACT=SKIP;

ADD-ACDRS:TYPE=DS,DSNUM=100,SHIFT=23-59,ART=100,EOS=NO,ARTDEF=100;

ADD-ACDRS:TYPE=RS,RCG=100,SUN=100,MON=100,TUE=100,WED=100,THU=100,FRI=100,SAT=100;

ADD-DNIT:TBL=DNI,INTRTDN=999900,ROUTING=DRTD,SARULE=0,DISPLAY="CMS RECORDER",ACD=YES,RCG=100,PRI=64,OVRPRI=0,AUDSRCID=0,THRSHLD=*,REVCHA=FORB;

- One CSTA port is required for each CMS recorder.

NOTE: TSLs: On each physical shelf, we have 8 system highways of 2 Mbps (32 timeslots per highway). A shelf is split in two halves, 128 timeslots on the left side and 128 on the right side. A board can access only timeslots from its own half.

For softgate this split is irrelevant, all 256 timeslots can be assigned to any board in any position.

Therefore, there are:

- 256 TSLs per softgate

- 128 + 128 TSLs per shelf

4 Configuring the OpenScape Business communication platform

This chapter describes how to configure the following communication platform to communicate with the OpenScape Contact Center system:

- OpenScape Business V2

IMPORTANT: Only properly trained personnel should configure the communication platform. Attempts to configure the communication platform by personnel who are not properly trained might adversely affect the operation of the OpenScape Contact Center system.

The examples provided in this chapter are designed to guide you through simple OpenScape Contact Center routing workflows, including backup routing. If you choose to configure more complex workflows or backup routing strategies, follow the examples provided in this chapter and then configure additional values. For more information, contact your service representative.

After you have completed the configuration tasks in this chapter, continue your implementation by following the guidelines in the *Installation Guide*.

NOTE: Only the scenarios described in Section 4.1, "Supported network setups for OpenScape Business" are supported.

4.1 Supported network setups for OpenScape Business

Only the setups described below are released in combination with OpenScape Business.

### 4.1.1 Single Node ISDN

- This configuration uses a single-node deployment of the OpenScape Business, which is connected to the public telephony network via ISDN.

- OpenScape Contact Center uses a CSTA connection to OpenScape Business.

- As IVR Voice Processor for the OpenScape Contact Center Call Director an OSCMS (OpenScape Contact Media Service) can be used.

- Agents normally work with HFA IP-phones, but also TDM phones can still be used. Agents cannot use SIP or CMI phones. Agents can use analogue phones on a project specific basis.
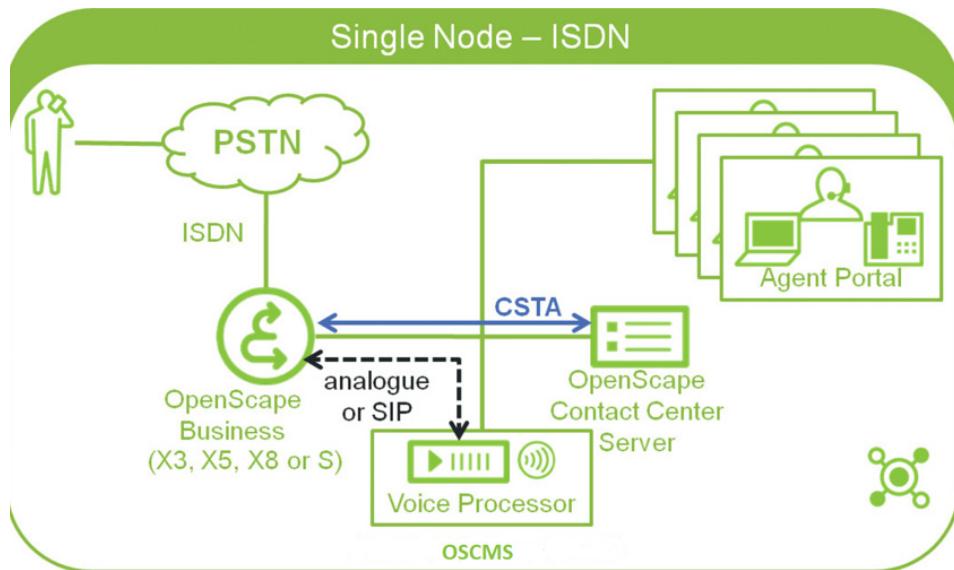
4.1.2 Single Node ITSP

- This configuration uses a single-node deployment of the OpenScape Business, which is connected to the Internet.

- OpenScape Contact Center uses a CSTA connection to OpenScape Business.

- As IVR Voice Processor for the OpenScape Contact Center Call Director an OSCMS (OpenScape Contact Media Service) can be used.

- Agents normally work with HFA IP-phones, but TDM phones can still be used. Analogue phones can be used on a project specific basis. Agents cannot use SIP or CMI phones.
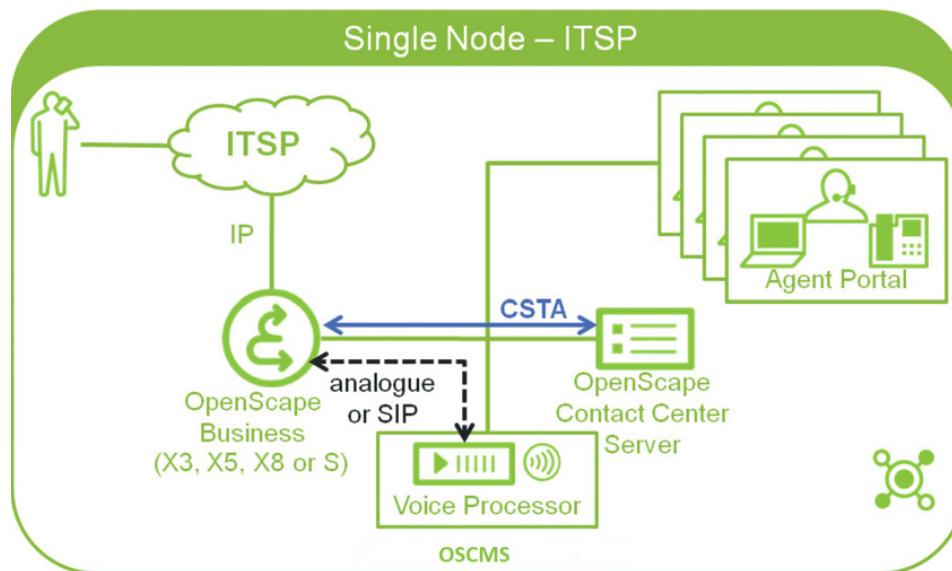
4.1.3 Multinode - OSCC to Slave

- This configuration uses a multi-node deployment of the OpenScape Business, which is connected to the public telephony network via ISDN, to the Internet or uses a mixture of both connection types on one or multiple nodes.

- Internal networking between the OpenScape Business nodes is done via SIP-Q.

- OpenScape Contact Center uses a CSTA connection to a slave node of this OpenScape Business network.

- As IVR Voice Processor for the OpenScape Contact Center Call Director an OSCMS (OpenScape Contact Media Service) can be used. This Voice Processor needs to be attached to the same OpenScape Business node, that is connected to OpenScape Contact Center via CSTA.

- Agents normally work with HFA IP-phones, but also TDM phones can still be used. Agents cannot use SIP or CMI phones. Agents can use analogue phones on a project specific basis. Agent Phones need to reside in the same OpenScape Business node, that is connected to OpenScape Contact Center via CSTA.
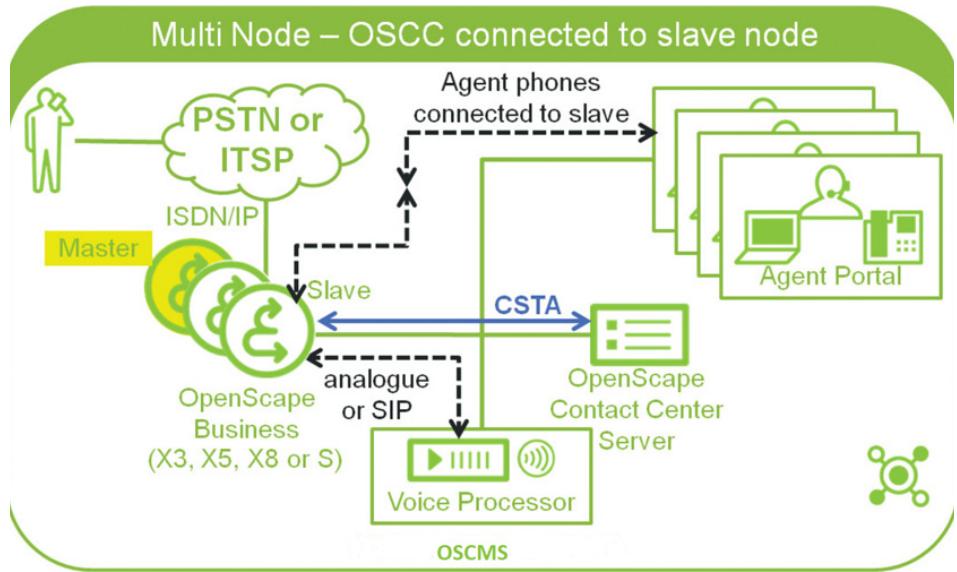

4.1.4 Multinode - OSCC to Master

- This configuration uses a multi-node deployment of the OpenScape Business, which is connected to the public telephony network via ISDN, to the Internet or uses a mixture of both connection types on one or multiple nodes.

- Internal networking between the OpenScape Business nodes is done via SIP-Q.

- OpenScape Contact Center uses a CSTA connection to the master node of this OpenScape Business network.

- As IVR Voice Processor for the OpenScape Contact Center Call Director an OSCMS (OpenScape Contact Media Service) can be used. This Voice Processor needs to be attached to the master node of the OpenScape Business network.

- Agents normally work with HFA IP-phones, but also TDM phones can still be used. Agents cannot use SIP or CMI phones. Agents can use analogue phones on a project specific basis. Agent Phones need to reside in the master node of the OpenScape Business network.
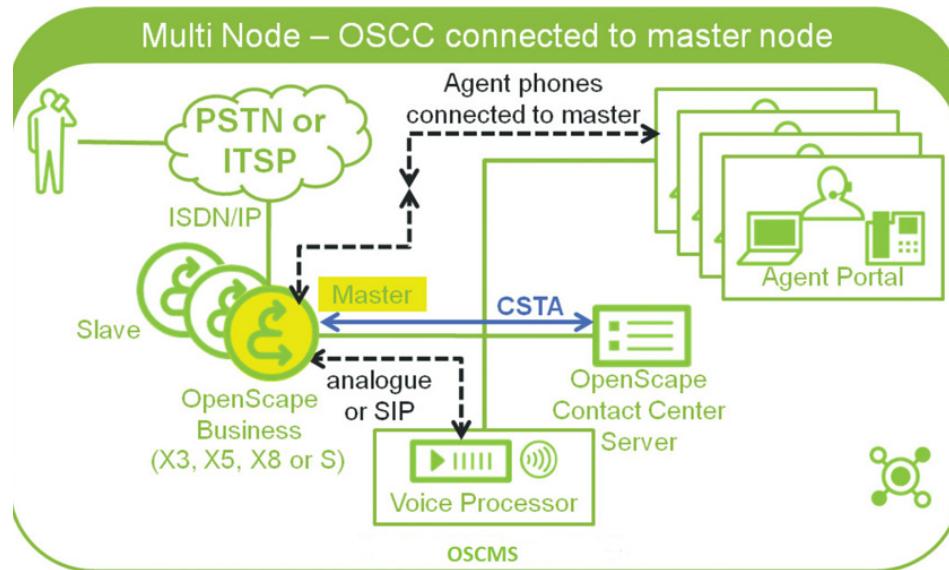
4.1.5 Multinode - OSCC to Master with distributed resources

- This configuration uses a multi-node deployment of the OpenScape Business, which is connected to the public telephony network via ISDN, to the Internet or uses a mixture of both connection types on one or multiple nodes.

- Internal networking between the OpenScape Business nodes is done via SIP-Q.

- OpenScape Contact Center uses a CSTA connection to the master node of this OpenScape Business network.

- As IVR Voice Processors for the OpenScape Contact Center Call Director up to 10 OSCMSes (OpenScape Contact Media Service) can be used. These Voice Processors can be distributed across the OpenScape Business network.

- Agents normally work with HFA IP-phones, but also TDM phones can still be used. Agents cannot use SIP or CMI phones. Agents can use analogue phones on a project specific basis. Agent Phones can be distributed across the OpenScape Business network.
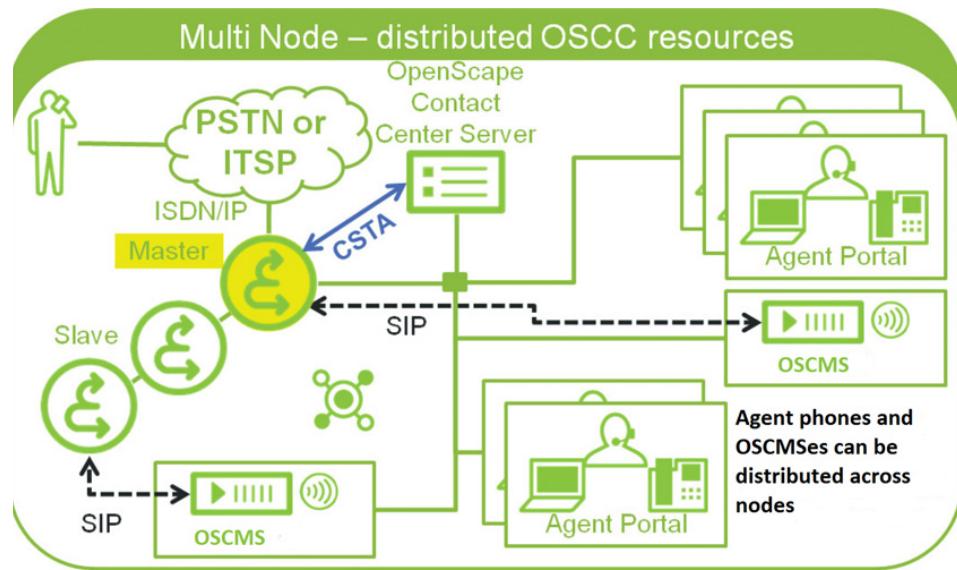
4.2 Before you begin

Before you can configure the communication platform, you must ensure that:

- The communication platform is operational and fully functional. Test the communication platform to ensure that it can make and receive external calls.

- You have administrative access to the communication platform.

- The communication platform is running the correct patch for the software level. For more information, contact your service representative.

4.3 Network configuration

This section describes how the OpenScape Contact Center system and the communication platform communicate.

4.3.1 OpenScape Business

OpenScape Contact Center is connected to OpenScape Business via LAN using the CSTA protocol. OpenScape Business X systems provide the CSTA interface either by embedded UC Booster card (OCAB) or by external UC Booster Server. OpenScape Business S systems provide CSTA interface directly. The CSTA interface is not licensed within OpenScape Business. For more information, see the OpenScape Business documentation.

The Call Director solution uses the Call Director feature with the OpenScape Contact Media Service voice processor.

For information on how to configure the OpenScape Contact Media Service, see Section 5.1, "Configuring the OpenScape Contact Media Service".

4.4 Understanding the basic configuration

This section describes some concepts related to the basic configuration.

4.4.1 UCD configuration

This section describes the UCD (Uniform Call Distributor) configuration. Table 1 identifies the flow required on the communication platform. The numbers in brackets are examples of numbers that can be used for the configuration. Each pilot number (or DNIS) must point to a specific Call Destination List (CDL).

NOTE: When setting up the UCD groups on the communication platform, each CDL created for a pilot number should contain two UCD groups: Target 1 UCD group with one virtual user (OpenScape Contact Center UCD group) and Target 2 UCD group with the users logged on (Backup UCD group).

For the pilot number receiving the most calls, assign the OpenScape Contact Center UCD group and backup targets as shown in Table 1. We recommend that UCD group 60 be used as the OpenScape Contact Center UCD group, as UCD group 60 will support up to 72 calls.

DNIS Number (pilot number) (2900)	Call Destination List (CDL)	Target 1	Target 2	Target 3	Target 4
		OpenScape Contact Center UCD group (60)	Backup UCD group (59) (2910)	Voice mail	Empty

Table 1 *UCD group configuration*

For each additional pilot number or backup target, you must configure an additional OpenScape Contact Center UCD group, as shown in Table 2.

DNIS Number (pilot number) (2901)	Second Call Destination List (CDL)	Target 1	Target 2	Target 3	Target 4
		Second OpenScape Contact Center UCD group (58)	Backup UCD group (59)[a] (2910)	Voice mail	Empty

Table 2   UCD group configuration for additional pilot numbers
a Can be set as a separate backup UCD group for the contact center.

NOTE: Each UCD group can be used only once in the first position of a CDL. For multiple pilot numbers to the same UCD group, you must use virtual devices that get forwarded to the UCD group via the CDL.

When planning the UCD group configuration, consider the following:

- Multiple pilot numbers are supported for a single CDL/OpenScape Contact Center UCD group.

- When the UCD groups are first defined, the call number should be the same number as the UCD group you chose for the CDL number. These numbers are monitored by OpenScape Contact Center.

- For each CDL, Target 1 should be a UCD group that OpenScape Contact Center will monitor.

- Set Target 2 of the CDL to a Backup UCD group (59) where the users log in. These groups are used for backup routing. For additional information on backup routing, see Section 4.4.3, "Heartbeat mechanism", on page 73.

- Set Target 3 of the CDL to voice mail or another destination. The final target of each call destination list used by OpenScape Contact Center must contain a valid internal destination. If the final target is a voice mail server, mailboxes must be set up to process the original set of digits received by the communication platform.

4.4.2 CDL configuration

The following important guidelines must be observed when configuring a Call Destination List (CDL):

- Use virtual devices for backup routing. In a situation where OpenScape Contact Center becomes unavailable, you must set up efficient rollover to backup routing. To do this, you must set up virtual users:

  – You must add a virtual user with a user ID to each OpenScape Contact Center UCD group. This virtual user only exists so that if there is a failure on the CSTA link between OpenScape Contact Center and the communication platform, then the calls will quickly move into Target 2 of the CDL (Backup UCD group 59).

  – The virtual user must be logged on to a virtual device.

  – The virtual user must **never** receive calls — it allows the communication platform to overflow calls in a backup UCD group should OpenScape Contact Center fail.

- Set up pilot numbers correctly. For the pilot number that will receive the most calls, set the pilot number to the CDL that points to the last UCD group in the communication platform. This is UCD group 60. This UCD group has a queue depth (number of queued calls) of 72.

  For each additional pilot number, set the pilot number to a different CDL that points to another UCD group (not UCD group 60). All other OpenScape Contact Center UCD groups on the communication platform should be set to have a queue depth of 30.

- Ensure that there is sufficient queue depth to handle calls returned from Call Director in queue processing scenarios.

4.4.3 Heartbeat mechanism

A heartbeat mechanism is used by the communication platform to determine if OpenScape Contact Center is functioning correctly. If the OpenScape Contact Center system is not functioning correctly, the communication platform routes calls using backup routing logic configured on the communication platform.

When OpenScape Contact Center is available, the heartbeat mechanism notifies the communication platform that it is routing calls for its monitored UCD groups on the communication platform. When the communication platform receives this notification, it does not route calls for these UCD groups.

To accomplish this, a Host Control Bit (HCB) is set on the UCD group to indicate that the routing of calls will be performed by OpenScape Contact Center rather than the communication platform. If OpenScape Contact Center becomes unavailable, the Host Control Bit is turned off and the communication platform no longer receives a heartbeat notification. At this point the communication platform takes over the routing of incoming calls. Since there are no physical users logged on to the first UCD target of the CDL, calls will automatically flow to the second UCD of the CDL where physical users are logged on.

4.5 Configuring the communication platform

This section describes how to configure the communication platform to communicate with the OpenScape Contact Center system. For detailed instructions, see the OpenScape Business documentation.

4.5.1 Configuring UCD groups

You must configure an OpenScape Contact Center UCD group for the pilot number that is expected to process the most incoming calls.

To configure UCD groups:

1. Locate and edit the last UCD group on the communication platform (for example, UCD group 60).

2. Configure the call number, direct inward dialing number, and name of the UCD group. The default call number is 2900.

3. Add a virtual user to the UCD group. We recommend using a user ID that is greater than 199 as theses IDs are not within the default range used by the OpenScape Contact Center system.

4.5.2 Configuring backup UCD groups

You must configure a backup UCD group that you want to use to process calls if the OpenScape Contact Center system is unable to route calls.

To configure backup UCD groups:

1. Locate and edit the UCD group that you want to use for backup routing (for example, UCD group 59).

2. Configure the call number, direct inward dialing number, and name of the UCD group. The default call number is 2910.

3. Add a virtual user to the UCD group. We recommend using a user ID between 100 and 199 as these IDs are within the default range used by OpenScape Contact Center.

NOTE: If more than one backup UCD group is required, place the users in the backup UCD group that corresponds to the second target of each pilot number.

4.5.3 Configuring UCD parameters

You must configure the parameters for the UCD groups that you created.

To configure UCD parameters

1. Locate and edit the OpenScape Contact Center UCD group (for example, UCD group 60) and backup UCD group (for example, UCD group 59).

2. Set the primary ring cycle for each OpenScape Contact Center UCD group that will be used for routing and queue identification purposes to **1 cycle**. The backup UCD group can remain at **3 cycles**.

   The secondary ring cycle timer controls how long the call will remain in the backup queue if the OpenScape Contact Center system is unable to route calls. The secondary ring cycle can have a value of 1 cycle (5 seconds) to 720 cycles (60 minutes).

3. Set the queued calls for the main OpenScape Contact Center UCD group to **72**. For each additional OpenScape Contact Center UCD group that you have configured, set the value to 30.

4. Set the overflow time to the maximum of **15240**. If you do not change the default of 600, calls will be disconnected after remaining in queue for 10 minutes.

4.5.4 Configuring call forwarding

You must configure call forwarding by updating the Call Destination List (CDL) for incoming calls and backup routing.

To configure call forwarding:

1. Locate and edit the Call Destination List (CDL) for incoming calls (for example, 740) as follows:

   a) Set target 1 to the OpenScape Contact Center UCD group that you configured (for example, #260).

   b) Set target 2 to the backup UCD group that you configured (for example, #259).

   c) Set target 3 to voice mail or another destination where you want to move calls when the contact center is closed.

2. Locate and edit the Call Destination List (CDL) for backup routing (for example, 739). Set target 1 to the backup UCD group that you configured (for example, #259).

3. Change the values of the **Day**, **Night**, and **Internal** settings for the call numbers that you configured to the corresponding CDL that you created. For example, 2900 would be 740 and 2910 would be 739.

4.5.5 Enabling CSTA applications

You must enable CSTA applications on the communication platform to ensure proper communication between the OpenScape Contact Center system and the communication platform.

To enable CSTA applications:

1. Ensure that all the equipped trunks in the system have been assigned a trunk identification code.

2. Edit the UCD parameters to ensure that the Allow UCD applications setting is enabled.

3. Ensure that the CSTA Plus product flag **Blind Transfer** is enabled. **Call Director** transfers are not working properly, if this flag is not enabled.

4.5.6 Configuring additional dialable numbers

Pilot numbers can be used to support network transit numbers and requeue targets in the OpenScape Contact Center system.

The communication platform supports multiple pilot numbers for a single CDL/OpenScape Contact Center UCD group. Pilot numbers must be set up as virtual devices that are assigned to a single CDL associated with the UCD. All calls to the UCD must always be sent through a virtual device number assigned to its CDL and not directly through the CDL number.

When configuring a UCD, the CDL call number should always be set to a virtual device number assigned to the CDL associated with the UCD.

4.5.7 Configuring stations

You must configure stations if you plan to use the Call Director feature to enable announcements or interactive messages for callers.

NOTE: You must also configure the Call Director stations and the voice processor. For details, see the *Manager Help*.

NOTE: Do not configure Call Director stations as agent auto logon because Call Director may fail.

4.5.7.1 Configuring virtual stations

You must configure a virtual station for each virtual user.

To configure virtual stations:

1. Configure the call number, direct inward dialing number, and name of the virtual station.

2. Ensure that the type is set to **Virtual Station**.

3. If you are using an OpenStage telephone, ensure that the **autom. connection, CSTA flag** is enabled.

NOTE: Log on each of the virtual users and make them available. To do this, locate the extension (the first extension entered on the communication platform) and type: `*83 [call no.] *401 [user ID]`

4.5.7.2 Configuring Call Director SIP stations

When using an OpenScape Contact Media Service voice processor, you must configure the SIP stations for Call Director on the communication platform. For more information on the OpenScape Contact Media Service see Section 5.1, "Configuring the OpenScape Contact Media Service".

It is only possible to configure interactive ports when using the OpenScape Contact Media Service voice processor. You must have a Call Director license to enable interactive messages.

The SIP stations do not require any special configuration besides the recommendation for extension recommendations on this guide. For more information on how to configure SIP stations on the communication platform, please consult the communication platform guides.

The Transport Type for the SIP stations used as CD ports must configured as TCP (on OpenScape Contact Media Service side and on OpenScape Business communication platform).

4.5.7.3 Configuring Call Director analog stations

This section describes how to configure analog Call Director stations on the communication platform.

An announcement is played to many callers simultaneously, whereas an interactive message is played to only one caller. You must have a Call Director license to enable interactive messages. You do not need an additional license to enable announcements - these are included with the OpenScape Contact Center license.

To set up announcement devices, you need to configure Call Director stations and associate them with device IDs, as shown in Figure . If you are not using announcements, then you do not need to associate stations with device IDs.

NOTE: OpenScape Business Assistant does not support configuration of all parameters mentioned below. Manager E tool is required for configuration of these parameters.

Configuring the communication platform

Note the following about announcement devices:

- The announcement device must be analog.

- A maximum of 30 callers can listen to the same announcement at one time.

- Bundling callers on a single port can be used to play an announcement to multiple callers.

To configure Call Director stations:

1. Ensure that the following system parameter flags are enabled:

    - **DTMF Automatic**

    - **Broadcast with connection.**

- **Line change for direct call**

- **Call forwarding after deflect call/single step transfer**

- **Follow call management in case of deflect call/single step transfer**

Ensure that the **Open numbering scheme** checkbox is not selected.

2. If you are using analog stations, you must configure each extension as either an announcement or an interactive device as follows:

   a) To configure an extension as an announcement device, set the type to **Answer Machine** and set the operating model to **16. SLA, ONS short**.

   b) To configure an extension as an interactive device, set the type to **Standard** and ensure that the external call and internal call ring tone settings are as follows:

      - Pulse 1 - Pulse = `1000` and Pause = `3000`

      - Pulse 2 - Pulse = `0` and Pause = `0`

      - Pulse 3 - Pulse = `0` and Pause = `0`

3. If you are using digital interactive stations (North America only), you must configure each extension as follows:

   a) Add a TMST1 board to the communication platform:

   b) Select as many ports as required (to the maximum of 24), based on how many digital interactive stations are being configured.

   c) Type an extension number for each port that you selected when you added the T1 board.

   d) Ensure that the following flags are enabled:

      - **Call waiting rejection on**

      - **FWD external permitted**

      - **Compress display data**

      - **Autom. connection, CSTA**

      - **Transit allowed via Hook-on**

   e) Set the operating mode to **16. SLA, ONS short**.

4.5.8 Additional configuration

In order to allow Transfer Nodes for external numbers, the OpenScape Business **SIP Prov. to SIP Prov. transit** flag must be enabled.

For more information, see *OpenScape Business Administrator Documentation*, chapter **Expert Mode > Basic Settings > System > System Flags**.

4.6 Configuring a user telephone

You must configure each telephone used by OpenScape Contact Center users to ensure that the deflect, reject, call forwarding unconditional (or all calls) and call forwarding on busy features are not enabled on the telephone.

NOTE: If the telephone has been configured to display the Contacts Waiting Indicator and the user is not logged on to the Client Desktop application, the Contacts Waiting lamp indicator on the telephone will notify the user when there are contacts waiting in the queue. The lamp indicator on the telephone is turned off when the user is logged on to the Client Desktop application.

NOTE: The buttons on the telephone indicate the user's routing state. If the user is not configured to use the Client Desktop application, and the user is in Post-processing handling state, the Work button on the telephone will be activated regardless of the user's routing state. In this case, to exit Post-processing handling state, the user can press one of the other buttons on the telephone, such as Available.

4.7 Configuring a multinode environment

In effect, OpenScape Contact Center considers a multinode cluster as one virtual communication platform. The CSTA hides all multinode specifics from OpenScape Contact Center. We strongly recommend that you connect the voice processor to the most powerful communication platform and to the platform which receives the most calls.

> *NOTE:* If the communication platforms are located in cities that have different area codes, the OpenScape Contact Center callback feature is not supported.

4.7.1 Configuring UCD groups

Configuring UCD groups in a multinode environment is similar to configuring UCD groups in a single-node environment, with a few notable exceptions:

● Each communication platform (node) must have a unique list of user IDs.

● Each communication platform (node) must have distinct stations and CDL call numbers for UCD groups.

For example, in a multinode environment with three nodes (A, B and C), you could configure the following user IDs and call numbers:

	Node A	**Node B**	**Node C**
User IDs	100 - 120	130 - 140	160 - 180
CDL Call Numbers	1000 - 1200	1300 - 1400	1600 - 1800

The following is a description of one potential multinode configuration for OpenScape Contact Center:

● The UCD group used by OpenScape Contact Center is configured on only one of the nodes, but all nodes have a UCD group for backup routing purposes.

● The unique user IDs are configured on each node separately.

- When configuring OpenScape Contact Center resources, all user IDs from all nodes that handle OpenScape Contact Center contacts are added to a logical UCD group. OpenScape Contact Center then distributes incoming calls to the available users.

NOTE: Other configurations are also possible where each node has its own basic UCD group and backup routing UCD group.

4.7.1.1 Configuring backup routing

Agent UCD call numbers are used only when the connection to the OpenScape Contact Center server is not operational. Calls are then routed to UCD groups based on the CDL configuration.

NOTE: This procedure must be performed on the node where the UCD resides.

To configure backup routing:

1. On the **Incoming call** menu, click the **Call Forwarding** tab.

2. In the **Call dest. list** definition table, add **target 1** as the basic UCD and **target 2** as the UCD.

3. To add target 3 as the UCD for another node, click **target 3**, and then select **External destination** from the list. The **External destinations** dialog box appears.

4. In the **Route** box, select the route to node 2.

5. In the **Call no.** box, type the UCD call number for node 2.

6. Click **OK**.

7. If you have other nodes, repeat this procedure.

8. Click **Apply**.

9. Save the changes.

4.7.2 Configuring announcements

When configuring announcements in a multinode environment, ensure that the announcement device IDs are consistent across all nodes.

NOTE: Announcements are not possible, when using OSCMS.

4.7.2.1 Configuring announcements for the node where the voice processor is connected

Configuring an announcement for the node where the voice processor is connected is the same for both multinode and single-node environments.

4.7.2.2 Configuring announcements in destination nodes

Announcements in the destination nodes are configured as described in this section.

To configure a subscriber announcement in a destination node:

1. In the left pane, under **Auxiliary equipment**, click **Announcement**.

2. Under **Announcement equipment**, click **External dest.** The **External destinations** dialog box appears.

3. In the **Route** list, select the route to the announcement device.

4. In the **Call no.** box, type the announcement extension number.

5. Click **OK**.

5 Configuring a voice processor

This chapter describes how to configure a voice processor that is used with the Call Director feature.

Call Director can be configured to use the following voice processor:

● OpenScape Contact Media Service - multiple voice processors can be configured.

5.1 Configuring the OpenScape Contact Media Service

The OpenScape Contact Media Service is a software-based voice processor that can be used with the Call Director feature to play interactive messages and announcements to callers. The system supports the use of multiple distributed OpenScape Contact Media Service voice processors.

NOTE: OpenScape Contact Media Service is supported only when the system is connected to an OpenScape Voice, OpenScape 4000 or OpenScape Business communication platform.

If the OpenScape Contact Center configuration is using Call Director and the OpenScape Contact Media Service for caller interactions, you must install and configure the OpenScape Contact Media Service voice processors. For details, see the *OpenScape Contact Media Service Installation Guide*.

When the OpenScape Contact Center system is connected to an OpenScape Voice communication platform, the OpenScape Contact Media Service voice processor supports multiple voice processors, with a maximum of 300 extensions across all voice processors.

When the OpenScape Contact Center system is connected to an OpenScape 4000 communication platform, the OpenScape Contact Media Service voice processor supports a maximum of 120 extensions. The OpenScape Contact Media Service must be connected to an STMI4 board, STMIX board or a SoftGate that has been configured to support SIP extensions.

When the OpenScape Contact Center system is connected to an OpenScape Business, the OpenScape Contact Media Service voice processor connects a maximum of 56 extensions.

When configuring the communication platform settings in the OpenScape Contact Media Service Web interface, you must specify the IP address of the STMI2/STMI4/STMIX board on the communication platform or the vSTMI on the SoftGate.

NOTE: For instructions on how to configure Call Director extensions on an OpenScape 4000 communication platform for use with the OpenScape Contact Media Service voice processor, see Section 3.4.5.2, "Configuring SIP extensions for Call Director".

NOTE: When the system is configured for high availability (warm standby), redundant OpenScape Contact Media Service voice processors are required. This means that you must install and configure a voice processor on the backup server machine for each voice processor on the primary server machine, and each pair of voice processors must be configured in the same voice processor region. You must also configure the Call Director extensions separately on each server machine. Finally, the .wav files are not replicated on the backup server machine, so you must manually copy the .wav files to the WaveFiles folder on the backup server machine, and ensure that the .wav files on the primary and backup server machines remain synchronized. For details on these procedures, see the *Manager Help*.

The Transport Type for the SIP extensions used as CD ports must configured as TCP (on OpenScape Contact Media Service side and on OpenScape Business communication platform).

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