



A MITEL
PRODUCT
GUIDE

MiVoice Office 400

Mitel Open Interfaces Platform

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About Mitel Open Interfaces Platform

1

This chapter contains the following sections:

- [Purpose and function](#)
- [Safety Information](#)
- [Data Protection](#)
- [About this Document](#)
- [Limited Warranty \(Australia only\)](#)

1.1 Purpose and function

Mitel Open Interfaces Platform (OIP) is a Windows-based server application. It extends MiVoice Office 400 communication solutions in the fields of unified communications, operator applications, call centre applications, directory servers and automation and alarm system connection. You can, for instance, integrate additional sector-specific applications through the OIP interfaces and OIP connectors.

MiVoice Office 400 is an open, modular and comprehensive communication solution for business with multiple communication servers of varying performance levels and expansion capacity, a comprehensive telephone portfolio and a large number of expansions. These include an application server for unified communications and multimedia services, a cloud solution for mobile phone integration, an open interface for application developers and a wide range of expansion cards and modules.

The business communication solution with all its components is designed to cover the communication needs of companies and organisations in a comprehensive, user-friendly and maintenance-friendly way. The individual products and parts are coordinated and cannot be used for other purposes or replaced by outside products or parts (except to connect up other authorized networks, applications and phones to the interfaces certified for that purpose).

1.1.1 User Groups

The phones, soft phones and PC applications of the MiVoice Office 400 communication solution are particularly user-friendly in design and can be used by all end users without any specific product training.

Phones and PC applications for professional applications such as operator consoles and call centre applications do require personnel training.

Specialist knowledge of IT and telephony is assumed for the planning, installation, configuration, commissioning, and maintenance. Regular attendance at product training courses is strongly recommended.

1.1.2 User Information

MiVoice Office 400 is supplied complete with safety and product information, quick user's guides and user's guides.

These and all other user documents such as system manuals are available for download from the Document Center. Some user documents are accessible only via a partner login.

It is your responsibility as a specialist retailer to keep up to date with the scope of functions, the proper use and operation of the MiVoice Office 400 and communication solution and to inform and instruct your customers about all user-related aspects of the installed system.

- Make sure that you have all the user documents required to install, configure and commission a MiVoice Office 400 communication system and to operate it efficiently and correctly.
- Make sure that the versions of the user documents comply with the software version of the MiVoice Office 400 used and that you have the latest editions.
- Always read the user documents first before you install, configure and put an MiVoice Office 400 communication system into operation.
- Ensure that all end users have access to the user's guides.

1.1.3 Conformity

Mitel hereby declares that the MiVoice Office 400 products

- conform to the basic requirements and other relevant stipulations of EMC (2014/30/EU) and LVD(2014/35/EU) directives.
- are manufactured in conformity with RoHS according to Directive 2011/65/EU.

You can find the product-specific information at www.mitel.com/regulatory-declarations.

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1.1.5 Use of Third-party Software

MiVoice Office 400 comprises, or is partially based on, third-party software products. The license information for these third-party products is given in the user's guide of the MiVoice Office 400 product in question.

1.1.6 Exclusion of Liability

(Not valid for Australia. See section "[Limited Warranty \(Australia only\)](#)", on the limited warranty in Australia.)

All parts and components of the MiVoice Office 400 communication solution are manufactured in accordance with ISO 9001 quality guidelines. The relevant user information has been compiled with the utmost care. The functions of the MiVoice Office 400 products have been tested and approved after comprehensive conformity tests. Nonetheless errors cannot be entirely excluded. The manufacturers shall not be liable for any direct or indirect damage that may be caused by incorrect handling, improper use, or any other faulty behavior. Potential areas of particular risk are signaled in the appropriate sections of the user information. Liability for loss of profit shall be excluded in any case.

1.1.7 The Environment

MiVoice Office 400 products are supplied in recycled corrugated cardboard packaging free from chlorine. Inside the cardboard packaging, the components are packed in a protective layer of polyethylene foam or polyethylene sheeting. The packaging is to be disposed of in accordance with statutory regulations.

MiVoice Office 400 products contains plastics based on pure ABS, aluminium-zinc coated or galvanized steel sheeting and circuits boards made from epoxy resin. These materials are to be disposed of in accordance with statutory regulations.

MiVoice Office 400 products should only be dismantled by unscrewing screw connections.

1.2 Safety Information

The following safety information applies to the MiVoice Office 400 communication solution and Mitel Open Interfaces Platform.

1.2.1 Reference to Hazards

Hazard warnings are affixed whenever there is a risk that improper handling may put people at risk or cause damage to the MiVoice Office 400 product. Please take note of these warnings and follow them at all times. Take careful note of the hazard warnings in the user information.

1.2.2 Operating Safety

MiVoice Office 400 communication servers are operated on 115 VAC or 230 VAC mains power. Neither communication servers nor connected components (for example, phones) will function if the power supply fails. Interruptions in the power supply will cause the entire system to restart. A UPS system has to be connected up-circuit to ensure an uninterrupted power supply. Up to a specific performance limit, a Mitel 470 communication server can also be operated redundantly using an auxiliary power supply. For more information, refer to your communication server's system manual.

When the communication server is started for the first time, all the configuration data is reset. You are advised to backup your configuration data on a regular basis as well as before and after any changes.

1.2.3 Installation and Operating Instructions

Before you begin with the installation of the MiVoice Office 400 communication server:

- Check that the delivery is complete and undamaged. Notify your supplier immediately of any defects; do not install or put into operation any components that may be defective.
- Check that you have all the relevant user documents at your disposal.
- During the installation follow the installation instructions for your MiVoice Office 400 product and observe to the letter the safety warnings they contain.

Any servicing, expansion or repair work is to be carried out only by technical personnel with the appropriate qualifications.

1.3 Data Protection

1.3.1 Protection of User Data

During operation the communication system records and stores user data (for example, call data, contacts, voice messages, and so on). Protect this data from unauthorized access by using restrictive access control:

- For remote management, use SRM (Secure IP Remote Management) or set up the IP network in such a way that only authorized persons have external access to the IP addresses of the MiVoice Office 400 products.
- Restrict the number of user accounts to the minimum necessary and assign to the user accounts only those authorization profiles that are actually required.
- Instruct system assistants only to open remote maintenance access to the communication server for the duration of the necessary access.
- Instruct users with access authorizations to change their passwords regularly or keep them under lock and key.

1.3.2 Protection Against Listening in and Recording

The MiVoice Office 400 communication solution comprises features which allow calls to be monitored or recorded without the call parties noticing. Inform your customers that these features may only be used in compliance with national data protection provisions.

Unencrypted phone calls made on the IP network can be recorded and played back by anyone with the right resources:

- Use encrypted voice transmission whenever possible.
- For WAN links used for transmitting calls from IP or SIP phones, use as a matter of preference either the customer's own dedicated leased lines or VPN encrypted connection paths.

1.4 About this Document

This document describes the technical scope of performance of the Mitel Open Interfaces Platform and supplements the OIP WebAdmin online help.


The document is meant for planners, installers and phone system managers. It requires in-depth knowledge of telephone systems, CTI, Microsoft Windows and relevant expertise in the area of application.

The system manual is available in Acrobat Reader format and can be printed off if necessary. You can navigate the PDF using the bookmarks, the table of contents, the cross-references and the index.

Referenced menu items and parameters on terminal displays and in the user interfaces of the configuration tools are italicised and marked in colour to help navigation.

1.4.1 General Highlighting

Special symbols for additional information and document references.

 **Note:**

Failure to observe information identified in this way can lead to equipment faults or malfunctions or affect the performance of the system.

See also




Reference to another section in the same document or to other documents.

Mitel Advanced Intelligent Network

Specific points to note in AIN.

1.4.2 Safety highlighting

Special hazard alert messages with pictograms are used to signal areas of particular risk to people or equipment.

| | |
|---|---|
|  Hazard | Failure to observe information identified in this way can put people and hardware at risk (electric shocks and short-circuits). |
|  Caution | Failure to observe information identified in this way can cause a module to malfunction. |
|  Warning | Failure to observe information identified in this way can lead to damage from electrostatic discharge. |

1.5 Limited Warranty (Australia only)

The benefits under the Mitel Limited Warranty below are in addition to other rights and remedies to which you may be entitled under a law in relation to the products.

In addition to all rights and remedies to which you may be entitled under the Competition and Consumer Act 2010 (Commonwealth) and any other relevant legislation, Mitel warrants this product against defects and malfunctions in accordance with Mitel's authorized, written functional specification relating to such products during a one (1) year period from the date of original purchase ("Warranty Period"). If there is a defect or malfunction, Mitel shall, at its option, and as the exclusive remedy under this limited warranty, either repair or replace the product at no charge, if returned within the warranty period.

1.5.1 Exclusions

Mitel does not warranty its products to be compatible with the equipment of any particular telephone company. This warranty does not extend to damage to products resulting from improper installation or operation, alteration, accident, neglect, abuse, misuse, fire or natural causes such as storms or floods, after the product is in your possession. Mitel will not accept liability for any damages and/or long distance charges, which result from unauthorized and/or unlawful use.

To the extent permitted by law, Mitel shall not be liable for any incidental damages, including, but not limited to, loss, damage or expense directly or indirectly arising from your use of or inability to use this product, either separately or in combination with other equipment. This paragraph, however, is not intended to have the effect of excluding, restricting or modifying the application of all or any of the provisions of Part 5-4 of Schedule 2 to the Competition and Consumer Act 2010 (the ACL), the exercise of a right conferred by such a provision or any liability of Mitel in relation to a failure to comply with a guarantee that applies under Division 1 of Part 3-2 of the ACL to a supply of goods or services.

This express warranty sets forth the entire liability and obligations of Mitel with respect to breach of this express warranty and is in lieu of all other express or implied warranties other than those conferred by a law whose application cannot be excluded, restricted or modified. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage.

You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

1.5.2 Repair Notice

To the extent that the product contains user-generated data, you should be aware that repair of the goods may result in loss of the data. Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods. If it is necessary to replace the product under this limited warranty, it may be replaced with a refurbished product of the same design and colour.

If it should become necessary to repair or replace a defective or malfunctioning product under this warranty, the provisions of this warranty shall apply to the repaired or re-placed product until the expiration of ninety (90) days from the date of pick up, or the date of shipment to you, of the repaired or replacement product, or until the end of the original warranty period, whichever is later. Proof of the original purchase date is to be provided with all products returned for warranty repairs.

1.5.3 Warranty Repair Services

Procedure: Should the product fail during the warranty period and you wish to make a claim under this express warranty, contact the Mitel authorized reseller who sold you this product (details as per the invoice) and present proof of purchase. You will be responsible for shipping charges, if any.

Limitation of liability for products not of a kind ordinarily acquired for personal, domestic or household use or consumption (for example, goods/services ordinarily supplied for business-use).

Limitation of liability

1. To the extent permitted by law and subject to clause 1.2 below, the liability of Mitel to you for any non-compliance with a statutory guarantee or loss or damage arising out of or in connection with the supply of goods or services (whether for tort (including negligence), statute, custom, law or on any other basis) is limited to:
 - a. in the case of services:
 - i. the resupply of the services; or
 - ii. the payment of the cost of resupply; and
 - b. in the case of goods:
 - i. the replacement of the goods or the supply of equivalent goods; or
 - ii. the repair of the goods; or
 - iii. the payment of the cost of replacing the goods or of acquiring equivalent goods; or
 - iv. the payment of the cost of having the goods repaired.
2. Clause 1.1 is not intended to have the effect of excluding, restricting or modifying:
 - a. the application of all or any of the provisions of Part 5-4 of Schedule 2 to the Competition and Consumer Act 2010 (the ACL); or
 - b. the exercise of a right conferred by such a provision; or
 - c. any liability of Mitel in relation to a failure to comply with a guarantee that applies under Division 1 of Part 3-2 of the ACL to a supply of goods or services.

1.5.4 After Warranty Service

Mitel offers ongoing repair and support for this product. If you are not otherwise entitled to a remedy for a failure to comply with a guarantee that cannot be excluded under the Australian Consumer Law, this service provides repair or replacement of your Mitel product, at Mitel's option, for a fixed charge. You are responsible for all shipping charges. For further information and shipping instructions contact:

Manufacturer:

Mitel South Pacific Pty Ltd ("Mitel") Level 1, 219
Castlereagh Street Sydney, NSW2000, Australia

Phone: +61 2 9023 9500

Repairs to this product may be made only by the manufacturer and its authorized agents, or by others who are legally authorized. Unauthorized repair will void this express warranty.

Mitel Open Interfaces Platform (OIP)

2

This chapter contains the following sections:

- [OIP Services](#)
- [OIP Applications](#)
- [Areas of Operation](#)
- [Features](#)

The wide-range of OIP functions significantly broadens the use of the communication server and offers a seamless connection of PC and telephony applications.

With the OIP-integrated applications you can implement more demanding Unified Communications solutions. OIP offers a versatile trunk group with sustainable extensions, together with operator applications and call center functions.

You can integrate, for instance, additional sector-specific applications via the OIP interfaces and OIP connectors.

OIP is also a directory server which, in addition to the directories of connected communication servers, integrates external directories into the communications landscape.

OIP can be deployed:

- on a PC (Windows operating system)
- via the application server CPU2-S.

The application server CPU2-S is a PC plug-in card for the Mitel 470 communication server and is pre-installed ex works with OIP and other extensions.

- as Virtual Appliance on VMware ESXi or Microsoft Hyper-V
- as a container application on the Mitel SMBC platform.

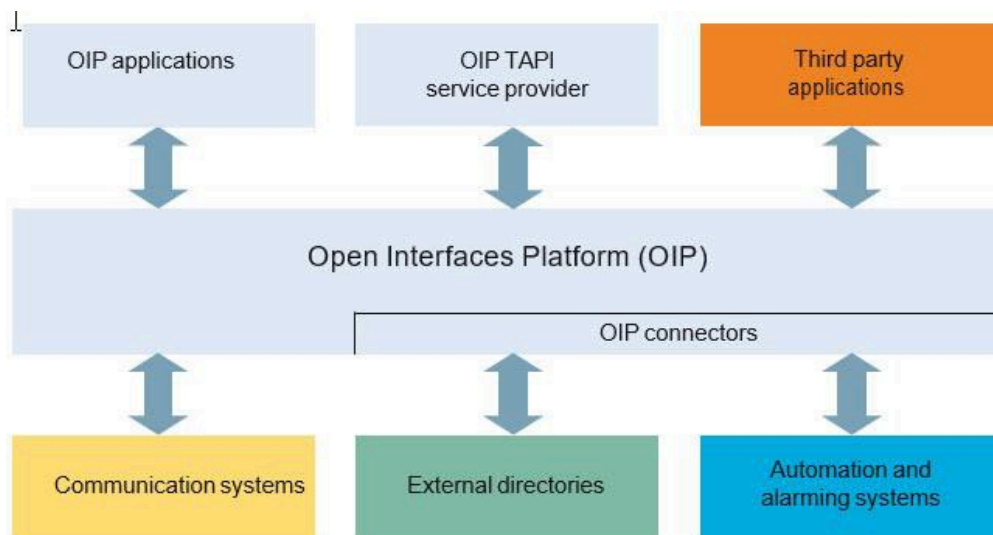


Figure 1: OIP as a link for communication systems, directories and applications.

2.1 OIP Services

The OIP services are the central components of OIP. They are used to control the system and make the OIP features and interfaces available. Thanks to the modular organization and vast configuration possibilities, versatile and customer-specific solutions can be set up.

2.2 OIP Applications

Sophisticated Softphones are available as OIP applications and are controlled as clients via OIP.

- Mitel OfficeSuite is a rich-client application, which significantly broadens the range of functions of the coupled fixed and cordless phones.
- MiVoice 1560 PC Operator is an operator application which can be used either as rich-client application together with a fixed, TDM DECT phone or Softphone.

2.3 Areas of Operation

2.3.1 OIP as Directory Server

Already available directories, databases and phone books are linked to OIP and made useful for name dialing and identification.

Integration is compatible with many standard databases such as Microsoft Exchange, Microsoft Outlook, Microsoft Active Directory, communication server directories, LDAP and electronic phone books.

Moreover, Microsoft Exchange directories can be directly synchronized.

2.3.2 Unified Communications - OIP as Telephony Server

When OIP is used as a telephony server, telephony integrates in a scalable manner into IT communication: Top-class Softphones, presence-controlled call, voice mail control and calendar coupling via presence profiles, name dialing and call number identification via all linked company directories, synchronization of Microsoft Exchange contacts, e-mail notifications, and so on facilitate daily communication.

2.3.3 OIP as Operator Centre

Several multi-functional operator applications can be organised with call centre functions in operator groups.

2.3.4 OIP as Call Center

The Mitel 400 Call Center is an integral part of OIP and provides all the main features such as flexible routing algorithms (cyclical, linear, longest time available, CLIP-based, last agent), skill-based agent groups

and an analysis of the call centre data (online and offline) with chart-based evaluation. In the event of a network interruption the emergency routing ensures the maximum availability of the system.

The agent functionality is available on all system phones including Softphones. This applies equally to home workstations and to all the users in an Mitel Advanced Intelligent Network. The one number user concept can also be set up for agents, which provides the staff of a Call Center with maximum mobility within the company.

The Mitel 400 Call Center is easy to manage and configure thanks to OIP WebAdmin. Various monitoring functions, simple statistical evaluations and work group control can be comfortably implemented using the administration interface.

Mitel 400 CCS is an extension of the Mitel 400 Call Center and offers several possibilities of statistically evaluating the call centre operation. Offline and online reports enable the call center operator to analyse and optimize call centre operations.

2.3.5 OIP as Automation and Alarm System

External alarm systems and building automation equipment (for example, KNX) are easily monitored through the connection to the communication system. This allows information to be exchanged in a simple way between the systems. In this way, the user can use their system phone for voice communications and for monitoring external systems.

The I/O service offers a wide range of features which allows very flexible uses and versatile applications. Some of its examples are listed below:

- Alarming equipment for maintenance personnel
- Monitoring of production processes
- Forwarding messages as e-mails
- Connection to building automation systems (KNX)

With the graphical interface (tree structure) events and the relevant actions are easily linked with one another.

2.3.6 OIP in a Networked Environment

An OIP server can also be used in an AIN. To do so, it will be linked to the Master. In addition, several communication systems can also be connected to an OIP server. It is then possible for instance to obtain network-wide call logging for all the systems, to display call charge information on the system phones or to display status in the presence indicator field of a PC operator console for all the users connected.

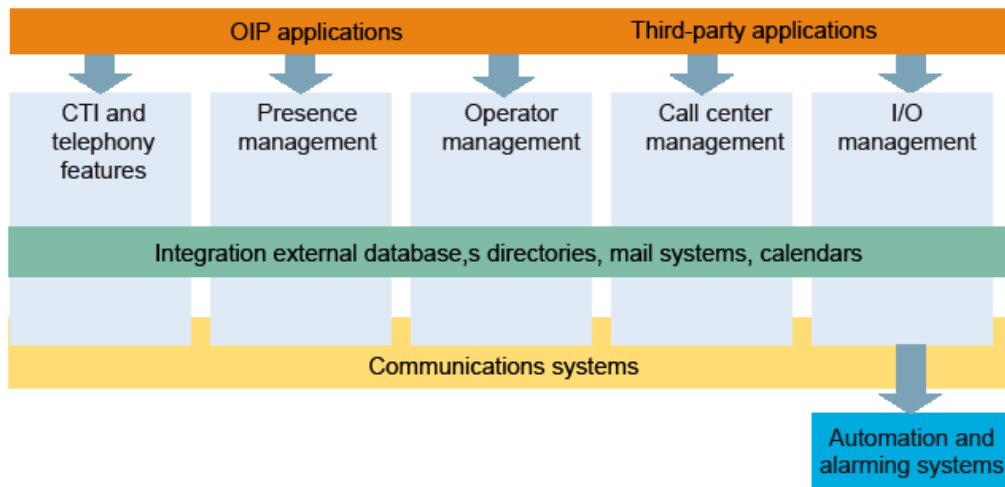


Figure 2: Functions and interfaces

2.4 Features

Overview of available OIP features:

Table 1: Telephony functions/CTI

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|---|--------------------|--------------------------------|--------------------------|
| Telephony functions/CTI for system phones: | | | |
| Outgoing dialing | X | X | CTI Third-party Basic |
| Call waiting | X | X | CTI Third-party Standard |
| Rejecting a call during the ringing phase | X | X | CTI Third-party Standard |
| Answer call | X | X | CTI Third-party Basic |
| End call | X | X | CTI Third-party Basic |
| Fetch call | X | X | CTI Third-party Basic |

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|---|--------------------|--------------------------------|--------------------------|
| Deflecting a call during the ringing phase (Call Deflection) | X | X | CTI Third-party Standard |
| Calling line identification (CLIP) | X | X | CTI Third-party Basic |
| Call forwardings: Unconditional (CFU), no response (CFNR), busy (CFB), do not disturb | X | X | CTI Third-party Standard |
| Frequency dialing (DTMF) | X | X | CTI Third-party Basic |
| Call charge information | X | X | CTI Third-party Basic |
| Call transfer without prior notice | X | X | CTI Third-party Standard |
| Call transfer | X | X | CTI Third-party Standard |
| Hold | X | X | CTI Third-party Standard |
| Conference | X | X | CTI Third-party Standard |
| Brokering | X | X | CTI Third-party Standard |
| Message to busy user | X | X | CTI Third-party Standard |
| Park | X | X | CTI Third-party Standard |
| Call back | X | X | CTI Third-party Standard |
| Announcement to user | X | | CTI Third-party Standard |
| User-defined functions (macros/function commands) | X | X | CTI Third-party Standard |

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|---|--------------------|--------------------------------|-----------------------|
| Telephony functions/CTI for analogue phones: | | | |
| Outgoing dialing | | | CTI Third-party Basic |

1. The Office Suite license contains all features and functions of the Basic CTI and Standard CTI license.

2. For more information about the licenses, refer to ["System limits and licensing"](#)

Table 2: Presence profiles

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|--|--------------------|--------------------------------|----------------------|
| Presence profiles: | | | |
| Create several presence profiles | X | X | Profiles Presence |
| Set presence status | X | X | Profiles Presence |
| Forwarding destinations (CFx) for internal calls | | X | Profiles Presence |
| Forwarding destinations (CFx) for external calls | | X | Profiles Presence |
| CFU (unconditional) forwarding destinations | X ¹ | X | Profiles Presence |
| CFB forwarding destinations (on busy) | X ³ | X | Profiles Presence |
| CFNR forwarding destinations (on no answer) | X ³ | X | Profiles Presence |
| Display profiles | X | X | Profiles Presence |

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|---|--------------------|--------------------------------|--|
| Voice mail profiles | X | X | Profiles Presence |
| Notification profiles | X | X | Profiles Presence |
| Display profiles | X | X | Profiles Presence |
| Audio profiles | X | X | Profiles Presence |
| Control via OIP calendar or external calendar (for example, Microsoft | X | X | Microsoft Exchange Connector/Profiles Presence |

1. The Office Suite license contains all features and functions of the Basic CTI and Standard CTI license.
2. For more information about the licenses, refer to ["System limits and licensing"](#)
3. Only a CFx type possible at the same time

Table 3: Call Centre and Work groups

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|--|--------------------|--------------------------------|---------------------------------------|
| Mitel 400 Call Center: | | | |
| Agent management (login and log out, pause, wrap-up) | X | | Call Centre Agents |
| Call routing (cyclic, linear, PBX cyclic, skill, CLIP, last agent) | X | | Call Centre Base / Call Centre Groups |
| Online and offline call centre statistic (export to Microsoft Excel), with graphic display | X | | Call Centre Base / Call Centre Groups |
| Expansion with the Mitel 400 CCS evaluation application | X | | see "The OIP licenses" |

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|-----------------------------------|--------------------|--------------------------------|---------------------------------------|
| Emergency Routing | X | | Call Centre Base / Call Centre Groups |
| Business hours | X | | Call Centre Base / Call Centre Groups |
| Login and log out, pause, wrap-up | X | | Call Centre Agents |
| Call tickets | X | | Call Centre Base / Call Centre Groups |

1. The Office Suite license contains all features and functions of the Basic CTI and Standard CTI license.
2. For more information about the licenses, refer to ["System limits and licensing"](#).

Table 4: OIP server and communication server link

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|--|--------------------|--------------------------------|-----------------------|
| OIP server: | | | |
| Configuration of system phones | X | X | CTI Third-party Basic |
| Call lists (e-mail notification in the case of unanswered calls) | X | X | CTI Third-party Basic |
| PUM - Personal User Mobility (multi-user workstation sharing) | X | | CTI Third-party Basic |
| Time synchronization with the communication server | X | | CTI Third-party Basic |
| Presence Indicator: | | | |

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|---|--------------------|--------------------------------|--|
| Presence Indicator via all OIP users | X | X | CTI Third-party Basic / Office Suite |
| Synchronization of the presence states with the communication server | X | X | - |
| Synchronization of the presence states with Outlook using Microsoft Exchange | X | X | Microsoft Exchange Connector |
| Synchronization of the presence states with local Outlook using Mitel OfficeSuite | | X | Local Outlook Connector |
| Absence message at caller with system phones | X | | Microsoft Exchange Connector |
| User access control: | | | |
| User management (licenses, access rights) | X | | CTI Third Party Basic |
| User group management | X | | CTI Third Party Basic |
| Communications server link: | | | |
| Connection to stand-alone systems | X | | Connection to <communication server> / CTI Connection to <communicationserver> |
| Connection to QSIG-networked systems | X | | |
| Connection to an AIN | X | | |

1. The Office Suite license contains all features and functions of the Basic CTI and Standard CTI license.
2. For more information about the licenses, refer to "[System limits and licensing](#)".

Table 5: Notification

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|--|--------------------|--------------------------------|--------------------------------------|
| Notification of the following events: | | | |
| Answered and unanswered calls | X | X | CTI Third-party Basic / Office Suite |
| Voice mail messages from the standard voice mail system | X | X | CTI Third-party Basic / Office Suite |
| Text messages received | X | X | Profiles Presence |
| E-mail message | X | X | Microsoft Exchange Connector |
| Calendar events | X | X | Microsoft Exchange Connector |
| I/O Events: | X | X | Profiles Presence |
| Display on a phone (ATAS) | X | X | CTI Third-party Basic / Office Suite |
| Text message | X | X | CTI Third-party Basic / Office Suite |
| E-mail message | X | X | CTI Third-party Standard |
| E-mail message with attached voice mail message of the standard voice mail system (wav or mp3) | X | X | CTI Third-party Standard |
| Triggering of an I/O event | X | X | Profiles Presence |
| Notification: Other features | | | |

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|-------------------------------|--------------------|--------------------------------|----------------------|
| Allocation of filtering rules | X | X | Profiles Presence |

1. The Office Suite license contains all features and functions of the Basic CTI and Standard CTI license.
2. For more information about the licenses, refer to ["System limits and licensing"](#).

Table 6: OIP applications and OIP configuration

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|---|--------------------|--------------------------------|---|
| OIP applications: | | | |
| Mitel OfficeSuite: PC control and configuration application for hard phones connected to the system | X | | Office Suite |
| Operator applications MiVoice 1560 PC Operator | | | MiVoice 1560 / MiVoice 1560 IP |
| Telephony, CTI, agent control via OIP WebAdmin | X | | CTI Third-party Basic or CTI Third-party Standard |
| OIP configuration: | | | |
| Configuration via OIP WebAdmin | X | | No license required |

1. The Office Suite license contains all features and functions of the Basic CTI and Standard CTI license.
2. For more information about the licenses, refer to ["System limits and licensing"](#).

Table 7: Call logging

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|---|--------------------|--------------------------------|-----------------------|
| Outgoing (OCL) | X | | CTI Third-party Basic |
| Incoming (ICL) | X | | CTI Third-party Basic |
| Individual charge counting (ICC) | X | | CTI Third-party Basic |
| Cost centres | X | | CTI Third-party Basic |
| Exchange line circuit counter | X | | CTI Third-party Basic |
| Call charge display on system phones (throughout the network) | X | | CTI Third-party Basic |
| Call data analysis | X | | CTI Third-party Basic |
| Data export (in csv format) | X | | CTI Third-party Basic |

1. The Office Suite license contains all features and functions of the Basic CTI and Standard CTI license.

2. For more information about the licenses, refer to ["System limits and licensing"](#).

Table 8: Directories and databases

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|------------------------------------|--------------------|--------------------------------|-------------------------|
| Connection and access: | | | CTI Third-party Basic |
| Connecting OpenComdirectories | | | CTI Third-party Basic |
| Local Microsoft Outlook connection | | X | Local Outlook Connector |

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|--|--------------------|--------------------------------|--|
| Connection of Microsoft Exchange | X | | Microsoft Exchange Connector |
| Connection to LDAP directories | X | | Phonebook Connector |
| Access to the Das Telefonbuch external phone-book directory (DE). | X | | Phonebook Connector |
| Access to the global address list of the Active Directory | X | | Phonebook Connector |
| Import/export of other directories | | X | CTI Third Party Basic |
| Directory functions: | | | |
| Search in directories with dialing by name | X | | Phonebook Connector/ Microsoft Exchange Connector |
| Search in directories with Quickdial dialing by name | X | | Phonebook Connector/ Microsoft Exchange Connector |
| Name display | X | X | Phonebook Connector/ Microsoft Exchange Connector |
| Synchronization of communication server directories– Microsoft B-Channels on PRI Cards directories | X | X | Microsoft Exchange Connector |
| Outlook connection via Microsoft Exchange or locally via Mitel OfficeSuite: | | | |

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|---|--------------------|--------------------------------|---|
| Data source for private contacts. | X | | Microsoft Exchange Connector or Local Outlook Connector |
| Integration of the public contact folders | X | | Microsoft Exchange Connector or Local Outlook Connector |
| Integration of the private calendar | X | | Microsoft Exchange Connector or Local Outlook Connector |
| Integration of e-mails | X | | Microsoft Exchange Connector or Local Outlook Connector |

1. The Office Suite license contains all features and functions of the Basic CTI and Standard CTI license.

2. For more information about the licenses, refer to ["System limits and licensing"](#).

Table 9: OIP TAPI service provider (CTI)

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|--|--------------------|--------------------------------|---|
| Microsoft TAPI 2.1 | X | | CTI Third-party Standard or CTI Third-party Standard |
| Telephony functions | X | | CTI Third-party Standard or CTI Third-party Standard |
| Call centre functions | X | | Call Centre Base / Call Centre Groups / Call Centre Agents / CTI Third-party Standard |
| Key telephone functions (see "Key telephones, PC operator consoles and phones") | X | | CTI Third-party Standard |

| Features | MiVoice Office 400 | Mitel OfficeSuite ¹ | License ² |
|---|--------------------|--------------------------------|--------------------------|
| Operator console functions (see "Key telephones, PC operator consoles and phones") | X | | CTI Third-party Standard |

1. The Office Suite license contains all features and functions of the Basic CTI and Standard CTI license.
2. For more information about the licenses, refer to ["System limits and licensing"](#).

Table 10: Automation and Alarm Systems

| Features | MiVoice Office 400 | License ¹ |
|--|--------------------|---|
| ATAS gateways with extended functional scope | X | ATAS Gateway ³ / CTI Third-party Basic |
| DECT locating | X | ATASproGateway ² |
| Evaluate and forward the communication server (for example, as e-mail) | X | ATASGateway ² |
| Bidirection alarm interface (phone to external, external to phone) | X | ATASGateway ² |
| KNX interface (European Installation Bus) | X | ATASGateway ² |
| I/O system with extended system functions for customized adaptations | X | ATASGateway ² |

1. For more information about the licenses, refer to ["System limits and licensing"](#).
2. For MiVoice Office 400 activate the ATAS Gateway and ATASpro Gateway licenses on the communication server. OIP then takes the licenses.
3. Only with a single radio unit

Table 11: Key telephones, PC operator consoles and phones

| Features | MiVoice Office 400 | License ¹ |
|--|--------------------|-------------------------------|
| Key telephones: | | |
| Outgoing dialing from line keys | X | CTI Third-party Standard |
| Answering calls on line keys | X | CTI Third-party Standard |
| Operator consoles and PC operator consoles: | | |
| Outgoing dialing from line keys | X | CTI Third-party Standard |
| Answering incoming calls from a queue | X | CTI Third-party Standard |
| Parking calls in the queue | X | CTI Third-party Standard |
| Logging on, logging off, wrap-up, break | X | CTI Third-party Standard |
| Operator groups | X | Call Centre Base/ Call Centre |

1. For more information about the licenses, refer to ["System limits and licensing"](#).

This chapter contains the following sections:

- [Planning Instructions](#)
- [PC Requirements](#)
- [Further PC Requirements](#)
- [IP Requirements](#)
- [Firewall Management](#)
- [System Limits and Licensing](#)
- [System Limits](#)
- [Handling OIP Licenses](#)
- [The OIP Licenses](#)
- [Installation](#)
- [CPU2-S Application Card \(Mitel 470 only\)](#)
- [OIP on an External Microsoft Windows Host](#)
- [Configuring the Communication Server](#)
- [Deploying OIP as Virtual Appliance](#)
- [OIP on SMBC](#)
- [OIP Services](#)
- [OIP Export Data](#)
- [Call Centre Statistics Data](#)
- [Call data](#)
- [I/O Data](#)

In this chapter you will find all information on how to set up and put the OIP server into operation. Moreover, all central OIP services and features are described.

3.1 Planning Instructions

3.1.1 Signalling and Signalling Paths

The OIP server communicates with the communication server via Ethernet. OIP server and communication server exchange both time-critical signalling and control data and information data such as voice mail data. The OIP server itself does not process any real-time media data. The media stream flows directly between the communication server and the terminals, the OIP applications or the CTI applications of third-party manufacturers.

OIP applications and CTI applications also communicate with the OIP server via Ethernet.

OIP IP softphones are handled in the same way as IP system phones by the communication server:

- Voice transmission is effected via the VoIP channels.
- The media stream flows directly between IP softphone and communication server.

- The user data is stored in the communication server.

But unlike IP system phones the OIP server signals and controls the OIP IP softphones itself. The OIP server also handles the IP addressing of the IP softphones in the communication server, making manual configuration superfluous.

OIP Rich Client applications that are coupled with a system phone do not themselves process any media data, and the media stream flows between the coupled system phone and the communication server.

When an OIP server is operated in an Mitel Advanced Intelligent Network the OIP server communicates with the Master node only.

3.2 PC Requirements

3.2.1 PC for OIP Server

The following requirements and limitations must be taken into consideration to guarantee safe and high-availability of the OIP server. Note that the system and performance limits of OIP also depend on the performance of the server PC (see ["System limits"](#)).

Table 12: OIP client PC requirements and limitations

| Criterion | Requirement/recommendation |
|--|--|
| System specifications for operation with a client operating system | The minimum requirement is the requirement of the operating system used. |
| System specifications for operation with a server operating system | The minimum requirement is the requirement of the operating system used. |
| Supported operating systems | See Release Notes. |
| Use of a server operating system | Permissible in principle. Applications with substantial RAM and computing power requirements should be operated on a different PC in order not to affect the performance of OIP. |
| Use of other applications on the same PC | Not recommended, to ensure OIP server availability and avoid compatibility problems |
| IIS installation on the same server | The minimum requirement is the requirement of the operating system used. |

| Criterion | Requirement/recommendation |
|---|---|
| Real-time search for antivirus software | To be deactivated for the OIP directory |

3.2.2 PC for OIP Clients

Make sure an OIP client PC meets with the following requirements.

Table 13: OIP client PC requirements and limitations

| Criterion | Requirement/recommendation |
|-----------------------------|--|
| System specifications | The minimum requirement is the requirement of the operating system used. |
| Supported operating systems | See Release Notes. |
| Use on a virtual client | Not allowed |

For the installation of an IP-Softphone the PC has to be equipped with a headset or handset.

3.3 Further PC Requirements

3.3.1 Installing Microsoft Security Updates

It is urgently recommend the installation of Microsoft security updates for all PCs on which Mitel applications are installed.

3.3.2 Updating Java Runtime Environment (JRE) on Server and Client PCs

(Automatic) update of Java Runtime Environment (JRE) with CTI applications is not recommended on server PCs. Applications are optimised on specific JRE versions. Although it is possible for several JRE versions to run on the same PC, in reality, a JRE update often results in errors and, thus, to support cases. This is especially the case if new application components are installed or if already installed components are updated.

The CTI server applications provided by Mitel are normally always compatible with the latest JRE version available at the time of product release. The used JRE version is clearly defined. However, hitch-free

operation with other JRE versions cannot be fully guaranteed. Therefore, it is advisable to use only the recommended JRE version without updating it.

You can update JRE on client PCs without worry.

3.3.3 Using Antivirus Software on Server PCs

Basically, the use of antivirus software on server PCs with CTI server applications is conflict-free and recommended. Nevertheless, the antivirus software must be configured in such a way that all data concerned by real-time processing is not scanned. For example, the operating MYSQL directory of the OIP server database must be excluded from OIP operations. The same exclusion applies, among others, to the Open Desk and Open Messaging applications. We also recommend excluding from the scanned directory the call data and ACD statistics written by the application.

Using several antivirus programs from different manufacturers should not pose any problems.

3.4 IP Requirements

Note that a network environment must only be optimized a competent network technician.

Check the following points before installing the OIP server and integrating it into your IP network:

- The DNS is correctly configured.

Integrating OIP in the existing IP network requires additional bandwidth.

3.4.1 Communications between OIP Server and Communication Server

Communications between OIP server and the communication server take place

- when the OIP server is started,
- when the OIP server synchronizes with the communication server,
- during the runtime.

The required bandwidth depends on the following factors:

- The size of the communication server configuration during startup and synchronization
 - The number of internal users
 - The number of call distribution elements (CDE)
 - The entries in the abbreviated dialing list/PISN users
 - The entries in the private phone books
- The number of internal and external calls made (calls per hour)

The average network load during runtime can be influenced by the settings used for the various synchronization intervals. The synchronization intervals can be configured in the OIP Services.

Table 14: OIP server – PBX synchronization

| Synchronization interval | OIP Service | Default setting |
|---|----------------------------------|-----------------|
| <i>OIP server PBX configuration</i> | <u>PBX Manager</u> | all 15 min |
| <i>OIP server PBX abbreviated dialing directory</i> | <u>Public Directory Service</u> | all 60 min |
| <i>OIP server PBX private phone books</i> | <u>Private Directory Service</u> | all 60 min |

3.4.2 Communications between the OIP Server and the OIP Applications

For the communication between the OIP server and the OIP applications during the runtime, the bandwidth depends on the following factors:

- The number of internal and external calls made (calls per hour)
- The number of monitored users for each application (for example, Presence Indicator)
- Number of configuration modifications via OIP WebAdmin.

3.4.3 Communications between OIP server and Microsoft Exchange Server

For communications between OIP server and the Microsoft Exchange Server the bandwidth depends on the following factors:

- Number of abbreviated dialing list entries.
- The number of entries in the private phone books.
- The number of entries in the public contacts folder on the Microsoft Exchange Server.
- The number of entries in the private Microsoft Outlook address books.

The synchronization intervals between PBX, OIP Server and Microsoft Exchange Server are set in the OIP Services, see [Communication between OIP sever and Communication server](#)".

3.4.4 Communications between IP-Softphone and PBX

To achieve a high voice quality when using IP Softphones, it is important to dimension and plan the IP network carefully with the same care as when planning IP Hardphones or an AIN system (MiVoice Office 400).

3.4.5 Connection via WAN Links

WAN connections should be implemented via virtual private networks (VPN) to protect the call data and due to the problems with firewalls (dynamic port allocations).

3.5 Firewall Management

When firewalls are used between communication sections of PBX, OIP server and OIP clients, some ports must be opened.

3.5.1 Firewall in front of the Communication Server

If the communication server is behind a firewall, the following ports must be opened incoming:

Table 15: MiVoice Office 400 IP ports:

| Interface | TCP port |
|------------------------------|-----------------------------|
| Configuration | 1061/1062/1080 ¹ |
| OIP Name Server | 1070 |
| Telephony | 1074 |
| Alarming | 1088 |
| Ascotel OIP Information Link | 1112 |

1. Ports for outputting event messages and call charge data can be configured in the communication server with WebAdmin. The values specified here are the default values of the PBX.

3.5.2 Firewall on the OIP Server

If the OIP server is protected by a firewall, the following ports must be opened incoming:

Table 16: IP Ports OIP Server

| OIP server component | TCP port |
|----------------------|-----------------|
| OIP server | 2809 |
| OIP Web server | 80 ¹ |
| PBX alarms | 1062 |
| Call charge data | 1080 |
| OIP database | 3308 |

1. The port for the OIP web server can be defined when the OIP server is installed. The value specified here is the default value.

3.5.3 Network Bandwidth

When dimensioning the network bandwidth in LAN environments it is important to make sure that the LAN environments are implemented or adapted with switches instead of hubs.

WAN links in particular are critical during the dimensioning process.

3.5.4 Firewall on an OIP Client

If an OIP client (PC with an OIP application) is protected by a firewall, the following ports must be opened incoming:

Table 17: IP ports OIP applications, OIP TAPI service provider and OIP connectors

| OIP application | TCP Ports |
|---------------------------------|------------------------|
| <i>I/O Manager</i> | Free port ¹ |
| <i>Mitel OfficeSuite</i> | Free port |
| <i>MiVoice 1560 PC Operator</i> | Free port |

| OIP application | TCP Ports |
|-----------------------------------|---------------|
| <i>OIP TAPI service provider</i> | Free port |
| <i>OIP VoIP media driver</i> | 60201 - 60300 |
| <i>OIP action server</i> | 60801 - 60900 |
| <i>OIP exchange driver</i> | 60001 - 60100 |
| <i>OIP ODBC/JDBC driver</i> | 63001 - 63010 |
| <i>OIP Das Telefonbuch driver</i> | 60111 - 60120 |
| <i>OIP ISDN media driver</i> | 60901 - 60910 |
| <i>OIP ATAS Gateways</i> | 61001 - 61010 |
| <i>OIP KNX driver</i> | 60501 - 60600 |

1. A free port is searched for and occupied

3.6 System Limits and Licensing

The finely tuned licensing policy used for the OIP applications, OIP functions and OIP connections means that OIP's powerful functionality can be tailored precisely to requirements, and its costs optimized.

3.7 System Limits

The system limits of OIP depend on the PC used and the operating system. The following values are approximate and intended as a guideline. It is recommend that you contact Support if the system load exceeds one or more of the following values.

Table 18: OIP system limits

| | Integrated | Basic | Standard | Complete configuration |
|--------------------------|---|---------------------------------------|-------------------------------------|-------------------------------------|
| OIP user | 200 | 50 | 300 | 1'200 |
| Calls per hour | 1'000 ¹ and 500 ² | 1'000 | 2'000 | 3'000 |
| CTI clients | 200 ¹ | 50 | 300 | 1'200 |
| Mitel OfficeSuite | 200 ¹ | 50 | 300 | 1'200 |
| MiVoice 1560 PC Operator | 5 ¹ and 3 ² | 5 | 16 | 32 |
| CTI agents/skills | 50/501) and 20/502) | 50/50 | 100/100 | 150/150 |
| PC | Applications card (CPU2) ¹ and Docker container ² | Intel Dual Core 1.2 GHz, 1 GB RAM, | Intel Dual Core 2 GHz, 2 GB RAM, | Intel Quad Core 3 GHz, 4 GB RAM, |
| Operating system | Integrated | Client operating system | Server operating system | Server operating system |

1. Mitel 470

2. SMBC

i Note:

The communication servers connected also influence the system limits: Smaller communication servers (for example, Mitel 415) or several communication servers lower the OIP system limits. You can offset this by using a more powerful PC.

| Maximum number... | OIP | Remarks |
|-------------------|------|---|
| CTI user | 1200 | This is the maximum value of OIP. The maximum value during operation depends on the connected communication system. |
| Agents | 250 | |

3.8 Handling OIP Licenses

You can obtain OIP licenses directly via the license server or through your dealer. You will receive a license file which contains, in addition to the license key, a list of all activated OIP licenses. The OIP server reads the license code from the license file and manages the licenses independently of the communication server licenses.

To read the license information into OIP, proceed as follows:



Note:

Ensure that the license you use is for OIP 9.x or a later version.



Note:

OIP 9.0 is not compatible with 8.x license and vice-versa. After an OIP upgrade from OIP 8.x to 9.0 or later version, a new OIP license needs to be created on the license server and uploaded to OIP 9.0.

If you have not yet installed OIP:

1. Copy the OIP license file to your PC.
2. Start the OIP installation and follow the instructions of the installation assistant.
3. At a certain stage of the installation process, you will be prompted to indicate the storage location of the OIP license file.
4. Indicate the storage location of the OIP license file then continue with the installation.
5. The OIP license file is copied to the OIP basic directory. When OIP is started, the licence number is loaded and the available OIP licenses are activated.

If you have already installed OIP:

1. Store the OIP license file in your file system.
2. Load the OIP license file with OIP WebAdmin (*Licenses* view) on the OIP server and restart the OIP server.

- Click *Upload* then, in the following dialogue, allow the OIP server to restart. The OIP server restarts with the new license information.

3.9 The OIP Licenses

3.9.1 Basic Operation

The basic operation of the OIP server requires a fully operational, permanently assigned communication server and an OIP license which enables the connection to the communication server. Any other communication server on the same OIP server requires an additional connection license.

The CTI connection license restricts the scope of functions to TSP applications.

Table 19: Communications server connection licenses

| License | Description |
|---|--|
| <i>Connection to <communication server></i> | License for operating one or more communication server with OIP. The systems are specified in the license file with their EID number (MiVoice Office 400). The license is valid only for the specified communication server systems. |
| <i>CTI Connection to <communication server></i> | Same as Connection to <communication server> but restricted to TSP applications with OIP (CTI third party). |
| <i>PBX Master</i> | This is not a purchasable license: The communication server added first is declared as the PBX Master. The PBX Master must be permanently connected with OIP so that the other licensed communication servers remain enabled for operation with OIP. The OIP server checks the connection every 24 hours. If the communication server is not connected with the OIP server during two successive checks, all the connected communication servers are disconnected from the OIP server. |



Note:

TSP does not support KT-Lines on Mitel SIP Phones.

3.9.2 OIP Applications

The OIP applications are available on the OIP server and can be installed from it, providing the relevant licences have been acquired. The OIP application licences contain all the rights required to operate the application in its basic function.

The license of an OIP application enables all the OIP features required for its operation.

Table 20: Licenses for operator applications

| License | Description |
|------------------------|--------------------------------|
| <i>Office Suite</i> | Mitel OfficeSuite user license |
| <i>MiVoice 1560</i> | MiVoice 1560 user license |
| <i>MiVoice 1560 IP</i> | MiVoice 1560 IP user license |

3.9.3 Connecting External Directories

The following licenses activate the access to various directories from third-party manufacturers.

Table 21: Licenses for connecting directories and specific third-party applications

| License | Description |
|----------------------------|--|
| <i>Phonebook Connector</i> | <p>License for connecting the following electronic directories to OIP:</p> <ul style="list-style-type: none"> • "Das Telefonbuch", phone book for Germany • Microsoft Active Directory as directory database. • LDAP databases as directory databases. • Search.ch <p>You need a license for each directory type you want.</p> <p>Activating the license also activates the name server. This allows not only OIP but also the communication server access to the connected directories.</p> |

| License | Description |
|-------------------------------------|--|
| <i>Microsoft Exchange Connector</i> | <p>License for connecting a Microsoft Exchange server to synchronize contacts, calendar entries, presence states to OIP, and for e-mail integration.</p> <p>Activating this license also activates the name server. This allows not only OIP but also the communication server access to the connected directories.</p> |
| <i>Local Outlook Connector</i> | <p>License for connecting a locally installed Outlook for synchronizing contacts, calendar entries, presence statuses on OIP and for the e-mail connection. The name server is not activated with this license. To allow the communication server direct access to the Outlook directory, you must also activate either the Microsoft Exchange Connector license or Phonebook Connector license. The communication server's access to the Outlook directory is required, for instance, to allow name dialing or the CLIP solution on a phone via the Outlook directory.</p> <div> <p>Note:</p> <p>OIP applications, such as Mitel OfficeSuite or MiVoice 1560 PC Operator, have access to the Outlook directory without name server.</p> </div> |

3.9.4 Call Centre - Operation

Activating the following licenses allows the OIP to be used as call centre.

Table 22: Call centre licenses

| License | Description |
|------------------------|--|
| <i>Mitel CCS agent</i> | <p>This license allows a call centre agent to be monitored. The license is firmly attached to an agent. Therefore, you will need one license for each agent.</p> |

| License | Description |
|-----------------------------|--|
| <i>Mitel CCS supervisor</i> | One supervisor client can be used with one of these licenses. |
| <i>Mitel CCS wall board</i> | One wall board view can be used with one of these licenses. To use the wall board view, the creation of online reports must be activated (<i>Mitel CCS online</i> license). |

| License | Description |
|---------------------------|---|
| <i>Call Centre Base</i> | Activates the call centre functions in OIP and the ACD queue. |
| <i>Call Centre Groups</i> | Each license allows an agent group to be set up (skill). |
| <i>Call Centre Agents</i> | This license activates a call centre agent. You need a license for each simultaneously active agent. Example: If 30 agents are working three shifts and a maximum of 8 agents are active in each shift, they need 8 licenses. |

Activating the following licenses allows the Mitel 400 CCS application to be used.

Table 23: Mitel 400 CCS Licenses

| License | Description |
|--------------------------|--|
| <i>Mitel CCS offline</i> | This license is part of the basic package. It activates the offline statistics function and is used to create offline reports. |
| <i>Mitel CCS online</i> | The online report creation function is activated with this license. |

3.9.5 CTI Third-party Applications

Activating the following licenses allows CTI third-party applications to be deployed together with the OIP server.

Table 24: Third-party CTI licenses

| License | Description |
|---------------------------------|---|
| <i>CTI Third-party Basic</i> | Activates the connection to the TSP and the basic telephony features. Supports the telephony functions for a simple CTI application (for instance phone book CD). |
| <i>CTI Third-party Standard</i> | Activates the connection to the TSP, the basic telephony feature. Supports the necessary telephony functions of a standard CTI application. |

These licenses are also required to operate third-party applications which communicate directly with the OIP server and not via TSP.

3.9.6 Presence Profiles

Activating the following licenses extends the OIP function with presence profiles.

Table 25: Licenses for OIP features

| License | Description |
|--------------------------|---|
| <i>Profiles Presence</i> | Allows (the required number of) presence profiles to be set up. |

3.9.7 KNX Connection

Activating the following licenses extends the OIP function with presence profiles.

Table 26: Licenses for KNX connection

| License | Description |
|-----------------------|------------------------------------|
| <i>KNX Connection</i> | Allows connection to a KNX system. |

3.9.8 Alarm and Location Functions

Activating the following licenses extends the OIP function with alarm and localization functions.

| License | Description |
|------------------------|--|
| <i>ATAS Gateway</i> | License for activating the alarm server function. This license is also required if an external alarm server is connected to the OIP server (activates the ATAS gateway). |
| <i>ATASpro Gateway</i> | Additional license for <i>ATAS Interface</i> . Releases the OIP DECT location feature and the personal protection function (safeguard). |

3.9.9 Trial License

The trial license can only be activated for a limited period. It is used to acquaint oneself with the OIP server and its performance scope.

Table 27: Trial license

| License | Description |
|---|--|
| <i>Trial License, Office 1560x, CTI</i> | The trial license enables all the OIP licenses for a period of 60 days (see "The OIP licenses"). It is used to test the OIP function. |

3.9.10 License Transfer during Upgrade of earlier OIP Versions

After an upgrade of OIP, a license file that supports the new OIP software version is required.

Note:

OIP 8.9.3 requires a new license file in all cases as 8.9.2 licenses are not supported with this version. Additionally, OIP 8.9.3 license file is not compatible with earlier OIP releases.

3.10 Installation

OIP can be made available as the following variants:

- By installing a CPU2-S Application card for Mitel 470
- By installing OIP on an external MS Windows host

- By deploying OIP as Virtual Appliance on:
 - VMWare ESCXi
 - MS-HyperV
- By installing OIP as a container application on SMBC

3.11 CPU2-S Application Card (Mitel 470 only)

Instead of installing OIP on your own server, you can also use a CPU2-S application card (Mitel 470 only). OIP and selected additional applications are pre-installed and preconfigured on the application card. The higher level of integration simplifies both the commissioning and the maintenance.

For more details about installation card see *CPU2-S Application Card Installation Guide*.

3.11.1 Log in to OIP WebAdmin

To log in as OIP WebAdmin administrator, enter *cpu2-emmc* as username and use the password which was defined during the initial setup via MiVO400 Multimedia menu.

3.12 OIP on an External Microsoft Windows Host

3.12.1 Installation Scope

The following software components are installed during the OIP server installation:

- Microsoft .Net Framework
- MySQL database server
- Java Runtime Environment (JRE)
- Tomcat Web Server
- OIP server
- OIP installation components (optional)

3.12.1.1 MySQL database server

The MySQL database server is required for the OIP database. The MySQL database server is installed on Port 3308 instead of on the default port 3306. This means that the installation of the OIP server should be independent of an already installed MySQL database. Nonetheless if necessary, check before installing the OIP server that the port is not occupied by another instance of a MySQL database server.

As a matter of principle save a back-up of any existing MySQL databases before installing the OIP server.

The MySQL database server is installed in the directory *OIP Database<OIP-directory>\mysql*. The MySQL database server is started as a Windows service .

More detailed information on the MySQL database server can be found in the MySQL documentation at <http://www.mysql.com>.

3.12.1.2 Java Runtime Environment (JRE)

It is possible to install and run different versions of Java Virtual Machine on one PC. This ensures that programs already installed continue to run stably during the installation of OIP. If a Java Virtual Machine is already installed on the PC, a check is carried out to see whether it is suitable for the operation of OIP. If not, the supplied version is also installed.

OIP has migrated from Oracle JDK to Adopt Open JDK.

3.12.1.3 OIP Installation Components

Experienced administrators, who already know prior to OIP installation which directories they wish to connect or which features they wish to use, can already start with it during the OIP installation. For this, during the installation and in the OIP installation components dialogue window, choose the components you need. The following installation procedure will take you through the configuration of the selected components.

You can activate and configure the features and services only after the installation.

Table 28: OIP installation components

| Components | Description |
|---|--|
| <i>Synchronization of the OIP and PBX directories</i> | OIP synchronizes the OIP directories with the directories of all the connected communication servers. Further information is available in "Directories Synchronization" . |
| <i>OIP Name Server (Dial by name)</i> | With the OIP Name Server it is possible to access the directories connected to the OIP server from the system phones. Further information is available in "OIP name server" . |
| <i>Connection to a Microsoft Exchange Server</i> | <p>OIP supports the connection of a Microsoft Exchange server to synchronize directories (public contact folders as well as the personal Outlook address books), to access the users' calendars and their e-mail boxes.</p> <p>Depending on the version of the Microsoft Exchange Server the corresponding OIP Exchange driver needs to be installed. Further information is available in "Microsoft Exchange Server directories".</p> |

| Components | Description |
|--|--|
| <i>Connection of external phone-book directories</i> | OIP supports the connection of external phone-book directories. The corresponding OIP phone-book driver has to be installed on the phone-book directory server. Further information is available in "Connecting external phone-book directories" . |
| <i>Alarm logging</i> | The event and alarm reports are stored in the OIP database. |
| <i>Call logging</i> | The communication server call data are stored in the OIP database. Further information is available in "Call data" . |
| <i>Display Server (ATAS over OIP)</i> | The Display Server is required for controlling the displays of the system phones (e.g. calendar reminders, RSS feeds) and for the alarming and messaging functionality. |
| <i>Connection of the Active Directory</i> | OIP supports the connection of the Active Directory. Further information is available in "Connecting Active Directory" . |
| <i>Connection to LDAP directories</i> | OIP supports the connection of an LDAP directory. Further information is available in "Connecting LDAP directories" . |
| <i>Connection to an SMTP mail server</i> | Connection of an external SMTP e-mail server for sending e-mails. Further information is available in "E-mail connection via an SMTP mail server" . |
| <i>OIP test manager</i> | The OIP Test Manager is used to create scripts to test the functionality of the OIP server (subject to the maintenance personnel). |
| <i>Connection of KNX systems</i> | Connection of KNX systems to the building services automation. Further information is available in "KNX connection" . |

3.13 Configuring the Communication Server

3.13.1 Preparing MiVoice Office 400 for the OIP connection

A user account and a user profile has to be set up for the OIP server before the OIP server is installed on the communication server.

1. Create a new user account for OIP server access in the communication server. Choose "OIP", for instance, as the user name.
2. Assign the user profile *OIP* to the user account that you have just created. The authorisation profile *OIP* is available in the default communication server installation. You can also open it yourself if necessary. Check that the authorisation profile's username is *OIP* and only assign the interface access *OIP*.
3. Save the new user account in the communication server.

3.13.2 OIP Server Installation

The OIP server can be installed on Windows Professional/Server operating systems, see release notes.

To install the OIP server you must have local administrator rights on the server.

3.13.2.1 Installation Instructions

To install the OIP server, proceed as follows:

1. Have a valid license file *oip.lic* ready (see ["System limits and licensing"](#)).
2. Start installation by double-clicking on the installation file *oipsetup.exe* and follow the instructions of the installation wizard.
3. During the installation procedure you will be prompted to enter the communication server to be connected. Enter the communication server on which the OIP server is to be operated by clicking *Add communication server*. For access data use the OIP user account opened in the communication server (see ["Configuring the communication server"](#)). If you want to operate more than one communication server on this OIP server, insert the PBX master as the first communication server (see also ["Basic operation"](#)), followed by the others.
4. During the next installation procedure, you have the possibility to select OIP installation components (see ["OIP installation components"](#)). Change the default selection only as an experienced administrator. You can also make all the directory connections mentioned here after the installation and set up all the listed features after the installation.
5. In a next installation step, you can enter the license file (*oip.lic*).
6. Before the end of the installation you can decide whether the OIP Windows services should be started. Choose yes and complete installation. If you prefer to start the OIP Windows services manually, start with the Windows service *OIP Database*, followed by the Windows service *OIP WebConfig Server* and *OIP Web Server*. Finally, start the Windows service *OIP Server*.
7. End the installation procedure and read the OIP version instructions carefully. It may contain some information about your OIP version, which is only contained here.
8. Now log on via a browser to OIP WebAdmin to start configuring the OIP server (see next section).

3.13.3 Login to OIP WebAdmin

You can log in to OIP WebAdmin using the internal call number or OIP username. Enter as password the PIN or OIP password. The OIP password must first be saved in the user settings.

Before you can access OIP WebAdmin an appropriate license file has to be loaded into the system. This could be done during the installation (see above) or via the login screen (click on **License file**).

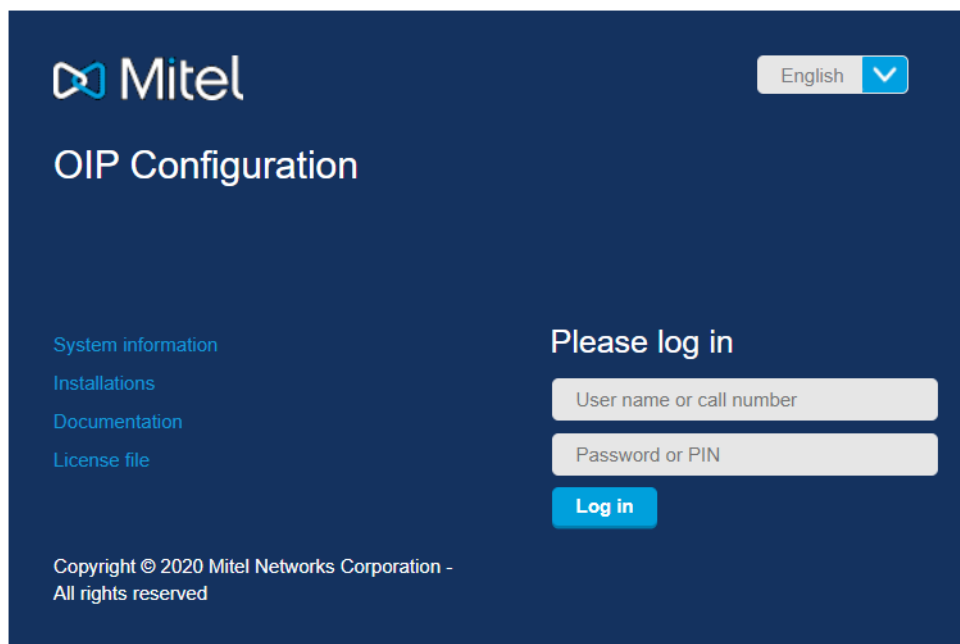
For your first access as administrator, use **oipadmin** as the username and **oipadmin** as the password. You will then be asked to change the password.

The available views depend on the user group to which the logged on user belongs.

3.13.4 Java Runtime Environment (JRE) for the OIP Toolbox

In order to run the OIP Toolbox, you must install IcedTea-Web for OIP Toolbox. Follow the steps to install IcedTea-Web for OIP Toolbox:

1. From your browser, open the OIP Web application.

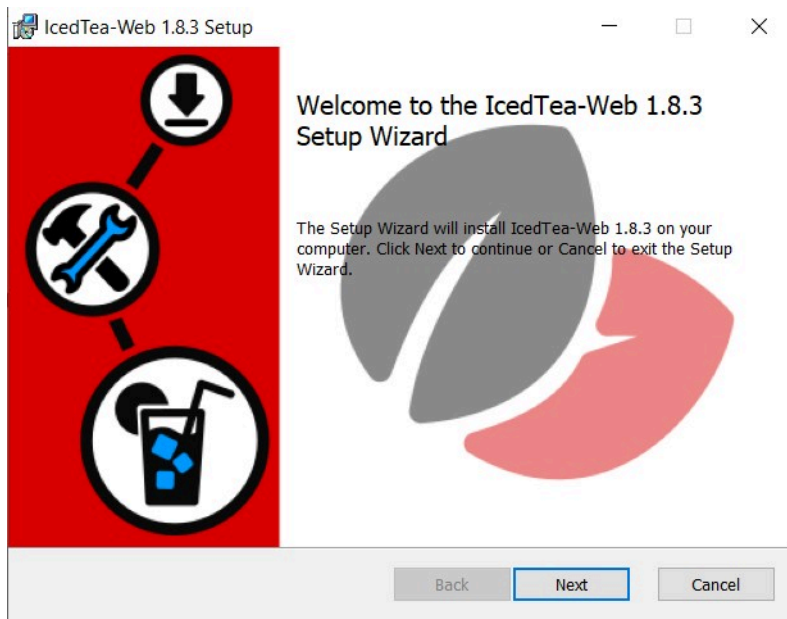


The screenshot shows the Mitel OIP Configuration web application interface. At the top left is the Mitel logo. At the top right is a language dropdown menu set to 'English'. The main heading is 'OIP Configuration'. On the left side, there is a vertical list of links: 'System information', 'Installations', 'Documentation', and 'License file'. On the right side, under the heading 'Please log in', there are two input fields: 'User name or call number' and 'Password or PIN'. Below these fields is a blue 'Log in' button. At the bottom left, the copyright notice reads: 'Copyright © 2020 Mitel Networks Corporation - All rights reserved'.

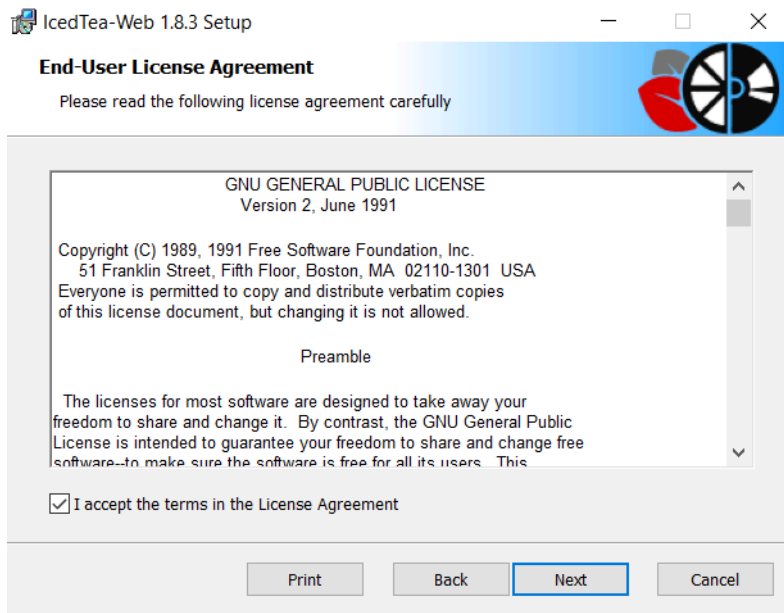
2. Click **Installations**. A new window OIPWebConfig :: Installations is displayed.

| Environment |
|--|
| Java SE Runtime Environment 1.8.0_232-b09 (64-bit) |
| Microsoft .Net Framework 4.6.2 |
| IcedTea-Web for OIP Toolbox |

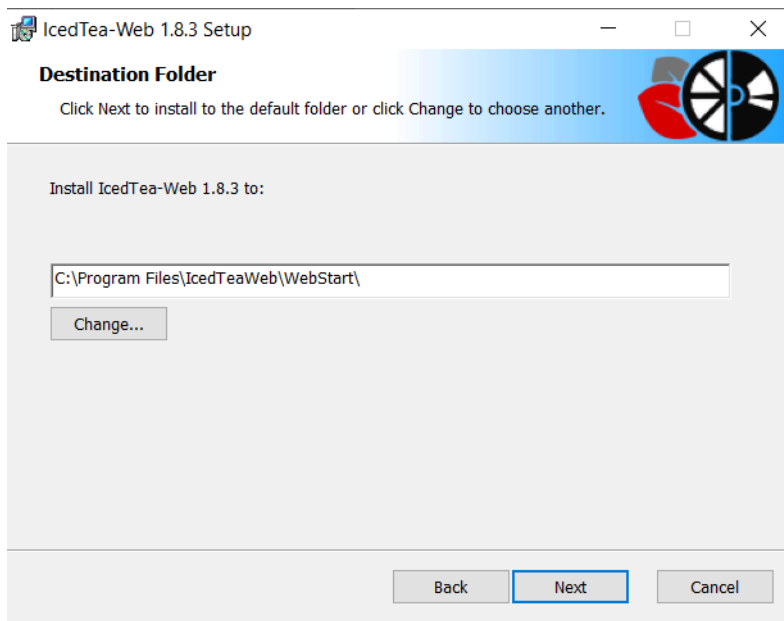
3. Click **IcedTea-Web for OIP Toolbox**. An installation setup is downloaded. Run the setup.



- Click **Next**. End-User License Agreement wizard is displayed.



- Select the check box **I accept the terms in the License Agreement** and click **Next**. Destination Folder wizard is displayed.



- Click **Next**.
- Click **Install** to install the IcedTea-Web.
- Click **Finish**.

3.13.4.1 Uninstalling OIP Server

The OIP server is uninstalled using Control Panel \ Software in the Windows operating system.

The Java Runtime Environment (JRE) is not uninstalled as it may be required by other applications. If you no longer require JRE, you can uninstall it using *Control Panel \ Software*.

When uninstalling OIP and JRE completely, make sure you uninstall all the OIP applications and the OIP server first and then the JRE.

3.14 Deploying OIP as Virtual Appliance

OIP Virtual Appliance can be deployed on the following virtualization platforms:

- VMware ESXi
- Microsoft Hyper-V

3.14.1 Deploying on VMware

For information about supported server system see, VMware compatibility list. Follow the below steps to deploy OIP on VMware:

1. Open the vSphere Client / vSphere Web Client.
2. Select **Deploy OVF Template ...** and browse for the **OIP9.X.X.X.ova** file which can be downloaded from the Mitel Software Download Center.
3. Enter a name for the virtual machine and select the installation folder.
4. Select **Thick Provision Lazy Zeroed** as virtual disk format.
5. (Optional) Select storage for the configuration and disk files.
6. Select the appropriate network, where the vm should be connected to.
7. Review the summary and click **Finish** to start the deployment process.

3.14.2 Deploying on Hyper-V

3.14.2.1 Hyper-V hardware requirements:

For Hyper-V server hardware and host OS requirements refer to Microsoft.com ©.

Follow the below steps to deploy OIP on Hyper-V:

1. Open the Hyper-V Manager.
2. Navigate to **Action > New** to create a new virtual machine.
3. Enter a name for the virtual machine.
4. Select **Generation 1**.
5. Assign at least 2048 MB memory (max 4096 MB).
6. Select the appropriate network, where the vm should be connected to.
7. Select **Use an existing virtual hard disk** and browse for the **OIP9.X.X.X.vhd** file which can be downloaded from the Mitel Software Download Center.
8. Review the summary and click **Finish** to start the deployment process.

3.14.3 Initial Configurations of OIP Virtual Appliance

On vSphere client / Hyper-V Manager select the virtual machine. Open a console and start the virtual machine.

The Mitel Standard Linux (MSL) operating system is booted. Follow the below initial steps:

1. Select your keyboard layout.
2. A menu to enter the Application record ID is displayed. Click **Next** to login into the Mitel Standard Linux.
3. Use the default username as admin and the default password as **msloip123** to login. A menu list is displayed.

Note:

For older OIP VA deployments(that is before release 8.8.0.9), the default password is *password*.

4. Select point 2 **Configure this sever** and do the settings step by step:
 - a. Set the “primary domain name” xxx.local (e.g. whateveryouwant.local)
 - b. Set a system name (what you need to recognize the system)
 - c. Set the “Local networking parameter” -> the desired IPaddress of the OIP Virtual Appliance and set the corresponding subnet mask.
 - d. Set enable IPv6 protocol to No.
 - e. Set the gateway IP address
 - f. Set the DNS server address (this is mandatory here, ignore what is written on the screen)
 - g. Set **Resolve** primary domain to **Corporate**.
5. At this point the operating system asks to reboot to take over the settings, click on **Yes**.
6. After the reboot you will be at the same place as above (Application record ID). Click **Next** and login again with the default credentials if you need to setup trusted networks.
7. Select point 8. **Manage trusted networks** and do the settings step by step:
8. Select **Add IPv4 trusted networks** to the gateway address of this virtual machine.

The configuration of your virtual operating system is now completed, you can exit the setup menu.

In case your time zone is different than Central European Time, you need to change the time zone of the virtual machine. You can do this using web-based configuration tool accessible via http://<server_address>:8080, where <server_address> is the address of the Virtual Appliance specified in previous steps. After opening the web-based configuration navigate to “Configuration / Date and Time” and adjust the time zone.

The next step is to configure the OIP Virtual Appliance.

3.14.4 Configuring the Communication Server

Preparing MiVoice Office 400 for the OIP connection.

A user account and a user profile has to be set up for the OIP server before the OIP server is connected to the communication server.

Create a new user account for OIP server access in the communication server. Choose

OIP, for instance, as the username.

Assign the user profile OIP to the user account that you have just created.

The authorization profile OIP is available in the default communication server installation. Save the new user account in the communication server.

3.14.5 Login to OIP WebAdmin

Before you can access OIP WebAdmin an appropriate license file has to be loaded into the system. On the login screen click **License file** to upload a license.

For your first access as administrator, the default OIP Webadmin username is *oipadmin*, the default password *oipadmin*. You will then be asked to change the password. The new password which you enter here has to follow the MSL password rules. A warning is prompted if the password is too weak.

The password entered for the “*oipadmin*” account is also used for the admin and root account on the underlying MSL.

To connect OIP to MiVoice Office 400 navigate to **Configuration > Server > Communication server**. Click the plus (+) icon and enter the relevant data.

A successful connection is established as soon as all MiVoice Office 400 user are automatically listed under **Configuration > Users > User list > Section**: Communication server users.

3.14.6 System Update

Existing OIP Virtual Appliance can be updated using the update package (zip file) available on download server. Use “Maintenance / System update” menu point in OIP WebAdmin to select the update package and perform the update.

To update to a newer MSL, save a backup of the oip-server and oip-client data (optional save pictures and other data), perform a new deployment of the .ova / .vhd file and restore the backups.

3.14.7 Migration from CPU2-s to Virtual Appliance or external Windows hosts only

Purchase of a new connection license is mandatory! Transfer of Master EID is possible by Mitel License Server Support (No automated OIP migration process but re-use of existing OIP feature licenses possible by request to Mitel License Server Support.)

3.14.8 Call Center Supervision (CCS)

Currently, it is mandatory that CCS is running on the same server as OIP. Since CCS is not a Linux application, this is not possible! Hence, CCS 2.0 is not compatible with OIP as Virtual Appliance

3.15 OIP on SMBC

MiVoice Office 400 Release 6.3 and later releases support integrating Open Interfaces Platform (OIP) as a container application on the SMBC platform along with MiVoice Office 400 and CloudLink Gateway. For earlier releases of MiVoice Office 400, OIP must be installed on a separate external server. Installing OIP on a separate external server will continue to be supported for MiVoice Office 400 Release 6.3 and later releases.

It is mandatory, that SMBC is running with the Mitel Embedded Linux Distribution 1.2.5.10 (or higher) before OIP is installed on it.

3.15.1 System Limits

The following table contains the device/connection limits for this deployment.

Table 29: Summary of support for users, configuration, and call centre agents

| Specific properties | Maximum supported |
|---------------------|--|
| OIP users | Up to 200 (including PBX users imported to OIP) |
| Calls per hour | <ul style="list-style-type: none"> Up to 500 CPH on the ACD Up to 1000 CPH on the SMBC including ACD calls (when OIP is installed on SMBC) |
| ACD | Up to 20 call centre agents / 50 skills |
| PC Operators | Up to three (1560 or 1560 IP) |

| Specific properties | Maximum supported |
|--|--|
| External directory sources | Up to three |
| I/O Team Call | 50 users |
| TAPI connectors | Up to 50 users |
| Call manager | Supports only the call manager that runs on the same SMBC. |
| OfficeSuite and local Outlook connection | Up to 50 users |

3.15.2 Installation or Upgrade Instructions

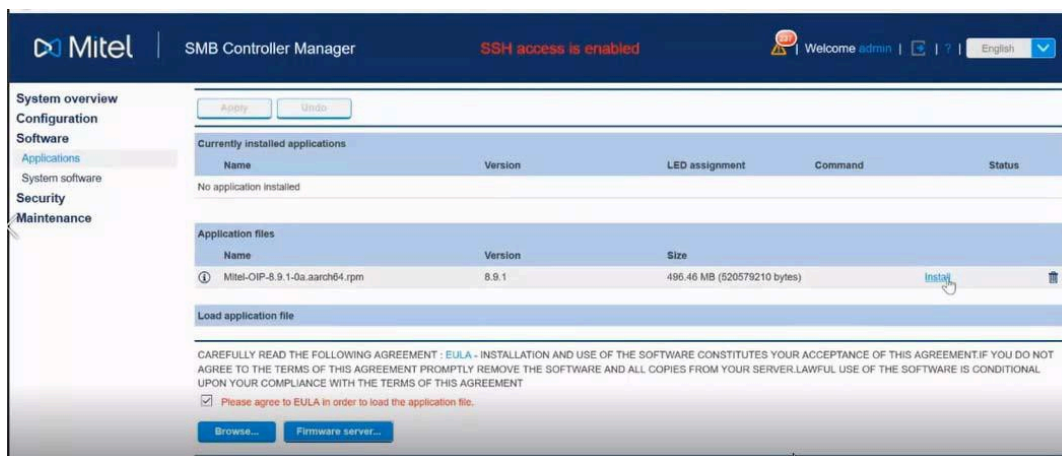
To install or upgrade OIP on SMBC server, proceed as follows:



Note:

You are advised to backup your configuration data before an upgrade of OIP.

1. Log in to SMBC Controller Manager Web GUI.
2. On the left pane, navigate to **Software > Applications**.
3. Select the **Please agree to EULA in order to load the application file** check box.
4. Click **Firmware server**. A new window opens, displaying a list of available .rpm files for download.
5. Select the OIP .rpm file and click **Load**.
6. Under **Application files**, click **Install**. The OIP will be installed/upgraded on the SMBC server.



After installing/upgrading OIP on the SMBC server, the application will be available on <SMB- C_IP>:9443.

The next available LED group is F3/F4 or F5/F6 is assigned. The LED group assignments can be changed.



Note:

After an upgrade of OIP, a license file that supports the new OIP software version is required.

For information about configuring Mitel OfficeSuite for OIP on SMBC, refer **Mitel OfficeSuite (Rich Client)**.

For information about configuring MiVoice 1560 for OIP on SMBC, refer **Installing and Setting up the Operator Application**.

3.15.3 Configuring the communication server

Preparing MiVoice Office 400 for the OIP connection.

A user account and a user profile has to be set up for the OIP server before the OIP server is connected to the communication server.

Create a new user account for OIP server access in the communication server. Select

OIP, for instance, as the username.

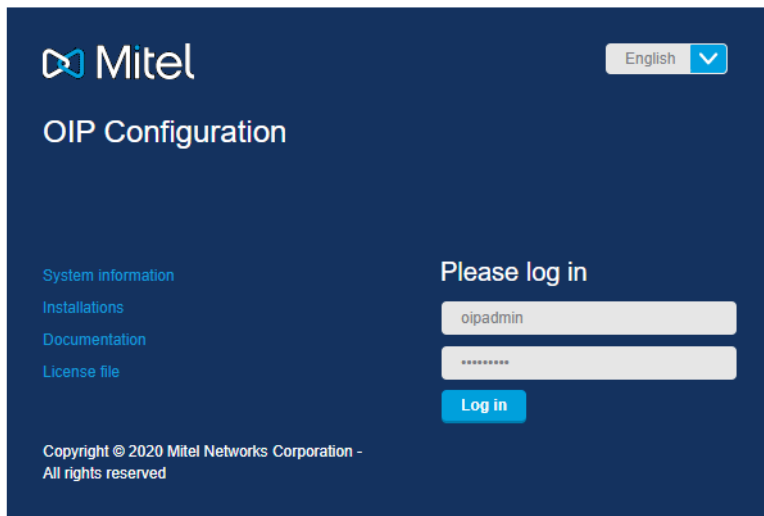
Assign the user profile "OIP" to the user account that you have just created.

The authorization profile OIP is available in the default communication server installation. Save the new user account in the communication server.

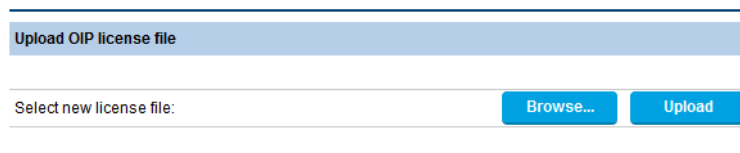
3.15.4 Uploading License and Login to OIP WebAdmin

After the installation, upload the license required to run the OIP application on the SMBC server. Proceed as follows:

1. Open the OIP WebAdmin login page available on <https://<SMBC-IP>:9443>. An alert is displayed **NO LICENSE FILE FOUND. PLEASE UPLOAD IT.**



2. Click **License file**. The Upload OIP license file window is displayed.



3. Click **Browse**.
4. Select the license file and click **Upload**.

For your first access as administrator, the OIP Webadmin username is **oipadmin**, and the default password **oipadmin**. You will then be asked to change the password.

To connect OIP to MiVO400 navigate to **Configuration > Server > Communication server**. Click the plus (+) icon and enter the relevant data.

A successful connection is established as soon as all MiVO400 user are automatically listed under **Configuration > Users > User list > Section: Communication server users**.

3.15.5 Mitel SMBC LED Indicators

There are nine LEDs on the Mitel SMBC's front panel to indicate system states. They are labeled PWR, F0 through F6, and SYS. Each system application can use two of the F1 through F6 LEDs. The assignment of

the LEDs can be configured in the SMBC Manager. The LEDs used by OIP are referred to as LED-A and LED-B.

Table 30: LED A: The following table shows the status for OIP Container.

| Container status | LED status color |
|--------------------|------------------|
| Container down | Red |
| Container starting | Yellow |
| Container ready | Green |

Table 31: LED B: The following table shows the status of the OIP server and the OIP web server:

| Server status | LED status color |
|---|------------------|
| The OIP server and the OIP web server are both up and running | Green |
| Either the OIP server or the OIP web server is down | Red |

3.15.6 Uninstalling OIP Server

To uninstall OIP on SMBC server, proceed as follows:

1. Log in to SMBC Controller Manager Web GUI.
2. On the left pane, navigate to **Software > Applications**.
3. Navigate to **Currently installed applications** section.
4. Select Uninstall from the drop-down list under **Command**, for **Mitel OIP**.



3.16 OIP Services

The core of the OIP server are the OIP services in which the individual functions are implemented. The OIP services are functionally dependent on three levels:

- The Driver level components are the OIP services which establish the communication between the connected communication servers and the OIP server. The various protocols for the OIP services of the Manager and Service levels are translated there. OIP applications cannot directly access these OIP services (internal OIP services).
- The Manager level contains the OIP services in which the logic of the individual functionalities of the OIP server is implemented. OIP applications cannot directly access these OIP services (internal OIP services). The Service level has the OIP services which provide the OIP applications with the individual functionalities of the OIP server. Access is controlled via the OIP user groups and the access rights assigned accordingly.

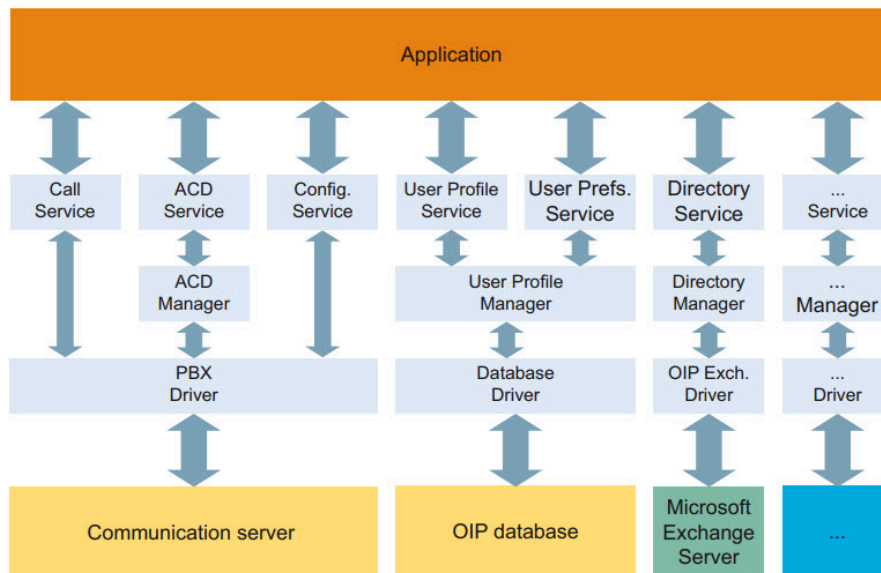


Figure 3: Organisation of the OIP services

The basic settings of the OIP services are chosen in such a way that the system can run without any intervention in the configuration.

The following describes the individual OIP services and the setting options. Any changes made should be carried out meticulously so that the system's functionality is not impaired.

The specific properties depend on the individual OIP services. Specific properties cannot be set for every OIP service.

During user group configuration, access rights can be configured to the allocated OIP Services. These access rights are inherited to the users assigned to the user group. If a user is assigned to several user groups within part identical OIP Services, the user always has the highest access right to the OIP Service which he has inherited through the user group.

The below table lists the possible access rights.

Table 32: OIP Services access rights

| Access right | Description |
|--------------------|---|
| <i>admin</i> | Full access to the corresponding OIP Service. |
| <i>group admin</i> | The access right allows the OIP Services of all users in the same user group to be started. |
| <i>super user</i> | The access right allows the OIP Services of all users to be started. |
| <i>user</i> | The access right allows only those OIP Services assigned to the user to be started. |
| <i>guest</i> | Reserved for expansions. |
| <i>none</i> | No access to the corresponding OIP Service. |

Not all OIP Services make a distinction between the different access rights. If the corresponding OIP service does not specify access rights, the OIP services can be started with the user access right.

Most changes to the settings in the OIP Services can be made while the server is running. If the OIP server has to be restarted, a message appears to prompt a restart of the OIP server.

An overview of the OIP services is given in the following table. Details and settings for the OIP services can be found in the following sections.

Table 33: OIP services

| OIP Service | Description |
|------------------------|---|
| <u>Account Service</u> | The Account Service is responsible for booking call charges to specific cost centres. |
| <u>ACD Log Manager</u> | ACD Log Manager (internal OIP service) is responsible for managing and generating ACD statistics. |
| <u>ACD Log Service</u> | ACD Log Service is responsible for the access to ACD statistics. |

| OIP Service | Description |
|---------------------------------------|---|
| <u>ACD Manager</u> | ACD Manager (internal OIP service) is responsible for managing and configuring the ACD queue. |
| <u>ACD Service</u> | ACD Service is responsible for the access to ACD queue. |
| <u>Active Directory Service</u> | The Active Directory Service (internal OIP service) is responsible for managing the Active directories. |
| <u>Agent Manager</u> | The Agent Manager (internal OIP service) is responsible for the central management of the ACD agents. |
| <u>Agent Service</u> | Agent Service is responsible for the access to ACD agents. |
| <u>Alarm Driver</u> | You can use the Alarm Driver service to control communication server event and alarm reports on OIP and to store them in the OIP database. The event and alarm reports can be further processed with the I/O system or they can be used in external applications. A view or protocol file is not available. |
| <u>Alarm Service</u> | You can also use the Alarm Service service to store the communication server's user-specific reports and alarms in the OIP database. Requirement: The alarm log in the Alarm Driver service is enabled. |
| <u>Alpha & Quick Dial Service</u> | The Alpha & Quick Dial Service (internal OIP service) is responsible for the name resolution, which is sent to the communication server when dialing with names. |
| <u>Buddy Manager</u> | Buddy Manager (internal OIP service) is responsible for the central management of the user fields. |

| OIP Service | Description |
|---|---|
| <u>Buddy Service</u> | The Buddy Service is responsible for accessing the presence indicator and for displaying the status information. |
| <u>Calendar Manager</u> | Calendar Manager is responsible for the central management of calendar entries. |
| <u>Calendar Service</u> | Calendar Service is responsible for accessing and controlling the calendar functionality. |
| <u>Calendar Synchronization Service</u> | The Calendar Synchronization Service (internal OIP service) is responsible for synchronizing the local Microsoft Outlook contacts with the Mitel OfficeSuite. |
| <u>Call Logging Driver</u> | You can use the Call Logging Driver service to control communication server call data on OIP and to store it in the OIP database. |
| <u>Call Logging Manager</u> | Call Logging Manager (internal OIP service) is responsible for managing the call data. |
| <u>Call Logging Service</u> | Call Logging Service is responsible for accessing and distributing charge data. |
| <u>Call Service</u> | Call Service is responsible for managing the telephony features. |
| <u>Client Utility Service</u> | Client Utility Service provides OIP-specific functions to applications. |
| <u>CLIP Service</u> | The CLIP Service (internal OIP service) is responsible for the number resolution of incoming calls in the configured directories. |
| <u>Configuration Profile Manager</u> | Configuration Profile Manager (internal OIP service) is responsible for managing the presence profiles. |

| OIP Service | Description |
|---|--|
| <u>Configuration Profile Service</u> | Configuration Profile Service is responsible for accessing the presence profiles of the OIP users. |
| <u>Configuration Service</u> | Configuration Service is responsible for managing the OIP services. |
| <u>DasTelefonbuch Directory Service</u> | The DasTelefonbuch Directory Service (internal OIP service) is responsible for managing the external phone-book directories of "DasTelefonbuch Deutschland". |
| <u>Database Driver</u> | The Database Driver (internal OIP service) is the interface adapter used for accessing the OIP database. |
| <u>Directory Manager</u> | Directory Manager is responsible for managing the directories. |
| <u>Directory Service</u> | Directory Service is responsible for the access to directories. |
| <u>Display Manager</u> | Display Manager (internal OIP service) is responsible for the management of the access to the system phones' displays. |
| <u>Display Service</u> | Display Service is responsible for display control of the system phones. |
| <u>Event Service</u> | Event Service (internal OIP service) is responsible for distributing the events in the system. |
| <u>Fax Manager</u> | Fax Manager (internal OIP service) is responsible for managing the fax functionality. |
| <u>Fax Service</u> | Fax Service is responsible for the access to the fax functionality. |

| OIP Service | Description |
|----------------------------------|--|
| <u>Feature Service</u> | The Feature Service provides functions depending on the phone, the CTI license and the communication server type applications. |
| <u>Flow Manager</u> | Flow Manager (internal OIP service) is responsible for managing the call sequences. |
| <u>Flow Service</u> | Flow Service is responsible for the access to licenses. |
| <u>Function Key Manager</u> | Function Key Manager (internal OIP service) is responsible for managing the function keys. |
| <u>Function Key Service</u> | Function Key Service is responsible for the access to the function keys. |
| <u>I/O Manager</u> | I/O Manager is responsible for the central management of the I/O groups. |
| <u>I/O Service</u> | I/O Service is responsible for managing actors. |
| <u>Jabber Driver</u> | The Jabber Driver (internal OIP service) is the interface adapter used for accessing the external Jabber/XMPP Instant Messaging systems. |
| <u>Journal Manager</u> | Journal Manager (internal OIP service) is responsible for managing the journal entries. |
| <u>Journal Service</u> | Journal Service is responsible for managing and deflecting the call lists to the applications. |
| <u>Key Configuration Service</u> | Key Configuration Service is responsible for key configuration of the system phones. |
| <u>LDAP Directory Service</u> | LDAP Directory Service (internal OIP service) is responsible for managing the LDAP directories. |

| OIP Service | Description |
|-------------------------------|---|
| <u>License Manager</u> | License Manager (internal OIP service) is responsible for managing the licenses. |
| <u>License Service</u> | License Service is responsible for the access to licenses. |
| <u>Line Service</u> | Line Service is responsible for managing key telephone features. |
| <u>Load Balancing Service</u> | Load Balancing Service (internal OIP service) is responsible for the load distribution within the OIP Server Networks. |
| <u>Location Manager</u> | Location Manager (internal OIP service) is responsible for managing the cordless phone localisation. |
| <u>Location Service</u> | The Location Service is used to locate cordless phones on the covered premises. |
| <u>Log Service</u> | Log Service is responsible for the central management and recording of the log files. |
| <u>Login Service</u> | Login Service is responsible for managing the login to the OIP server. |
| <u>Media Manager</u> | Media Manager (internal OIP service) is responsible for managing the OIP Media Driver. |
| <u>Message Manager</u> | Message Manager (internal OIP service) is responsible for managing messages. |
| <u>Message Service</u> | Message Service is responsible for sending and receiving messages. |
| <u>Naming Service</u> | The Naming Service (internal OIP service) is responsible for the global management of services in OIP server network systems. |

| OIP Service | Description |
|------------------------------------|--|
| <u>Notepad Service</u> | Notepad Service is responsible for managing the note entries and redial lists. |
| <u>Notification Manager</u> | Notification Manager (internal OIP service) is responsible for managing the notifications. |
| <u>Notification Service</u> | Notification Service is responsible for accessing and distributing the notifications. |
| <u>ODBC/JDBC Directory Service</u> | The ODBC/JDBC Directory Service is responsible for managing connected ODBC or JDBC directories. |
| <u>Operator Service</u> | Operator Service is responsible for managing the operator queue. |
| <u>PBX Driver Ascotel</u> | PBX Driver Ascotel (internal OIP service) is the interface adapter used for accessing the communication server. |
| <u>PBX Information Service</u> | PBX Information Service provides information about the connected communication server; for example, the communication server name and users. |
| <u>PBX Manager</u> | PBX Manager (internal OIP service) is responsible for managing of the communication servers connected to the OIP server. |
| <u>PBX Setup Manager</u> | PBX Setup Manager (internal OIPservice) is responsible for the configuration of the communication servers connected to the OIP server. |
| <u>PBX Setup Service</u> | PBX Setup Service is responsible for managing the communication server configuration. |
| <u>PISN Directory Service</u> | PISN Directory Service (internal OIP service) is responsible for managing the PISN users. |

| OIP Service | Description |
|---------------------------------------|---|
| <u>Private Card Directory Service</u> | The Private Card Directory Service (internal OIP service) is responsible for the central management of the communication server private phone book. |
| <u>Private Directory Service</u> | Private Directory Service (internal OIP service) is responsible for managing the private contacts. |
| <u>Public Directory Service</u> | Public Directory Service (internal OIP service) is responsible for managing the public contacts. |
| <u>PUM Manager</u> | PUM Manager (internal OIP service) is responsible for managing the Personal User Mobility function. |
| <u>PUM Service</u> | PUM Service is responsible for access to the Personal User Mobility data and configuration. |
| <u>Registration Manager</u> | Registration Manager (internal OIP service) is responsible for managing the registered applications. |
| <u>Registration Service</u> | Registration Service is responsible for registering applications. |
| <u>Routing Manager</u> | The Routing Manager (internal OIP service) is responsible for managing the call distribution in the communication server. |
| <u>Routing Service</u> | The Routing Service is responsible for accessing the call distribution in the communication server. |
| <u>RSS Driver</u> | The RSS Driver (internal OIP service) is the interface adapter used for accessing the RSS Feeds. |
| <u>Security Service</u> | The Security Service (internal OIP service) provides the encryption and decryption algorithms of security-relevant data for OIP Services. |

| OIP Service | Description |
|---|---|
| <u>Server Utility Service</u> | Server Utility Service (internal OIP service) provides internal tools for OIP Services. |
| <u>Service Manager</u> | Service Manager (internal OIP service) is responsible for the local management of the Services on the OIP server. |
| <u>Shortdial Directory Service</u> | Shortdial Directory Service (internal OIPservice) is responsible for managing the communication server Abbreviated dialing. |
| <u>SMTP Driver</u> | The SMTP Driver (internal OIP service) is the interface adapter for sending e-mails and text messages (e-mail to text message). |
| <u>Subscriber Directory</u> | Subscriber Directory Service (internal OIP service) is responsible for managing the internal private contacts. |
| <u>Subscriber Configuration Manager</u> | Subscriber Configuration Manager (internal OIP service) is responsible for managing the user settings. |
| <u>Subscriber Configuration Service</u> | Subscriber Configuration Service is responsible for user and terminal settings. |
| <u>System User Directory Service</u> | System User Directory Service (internal OIP service) is responsible for managing all the registered users on the OIP server. |
| <u>Test Manager</u> | The Test Manager (internal OIP service) is responsible for the execution of OIP/ communication server test orders. |
| <u>Test Service</u> | The Test Service is responsible for managing the OIP/ communication server test orders. |
| <u>Time Service</u> | Ticket Service is responsible for managing the call tickets. |

| OIP Service | Description |
|---------------------------------|--|
| <u>Ticket Service</u> | Time Service (internal OIP service) is responsible for managing time synchronization. |
| <u>User Preferences Service</u> | User Preferences Service is responsible for managing the user customized settings. |
| <u>User Profile Manager</u> | User Profile Manager (internal OIP service) is responsible for global OIP user management. |
| <u>User Profile Service</u> | User Profile Service is responsible for the access to OIP users. |
| <u>User Service</u> | User Service is responsible for controlling and monitoring applications. |
| <u>Voice Mail Manager</u> | Voice Mail Manager (internal OIP service) is responsible for managing the voice mails. |
| <u>Voice Mail Service</u> | Voice Mail Service is responsible for managing the mailboxes. |
| <u>WEB Server Service</u> | WEB Server Service (internal OIP service) is responsible for managing the Tomcat Web Server. |

3.16.1 Account Service

The Account Service is responsible for booking call charges to specific cost centres.

3.16.2 ACD Log Manager

ACD Log Manager (internal OIP service) is responsible for managing and generating ACD statistics.

Table 34: ACD Log Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|-----------------------|----------------|---------------------------|
| <i>Call centre ID</i> | Call centre ID | <i>OIP Call centre</i> |

| Specific properties | Description | Default setting /Settings |
|---|--|---|
| <i>File format</i> | Output format for the ACD statistic data. | <i>standard</i> |
| <i>ACD statistic data file directory</i> | Directory in which the ACD statistics are stored. The basic directory is the OIP installation directory. | <i>acdlog</i> |
| <i>File name for the Call Centre calls data</i> | File name for the Call Centre call statistics. | <i>acdcall-@DATE-@TIME.txt</i> |
| <i>File name for the Call Centre status data</i> | File name for the Call Centre status statistics. | <i>callcenter-@DATE-@TIME.txt</i> |
| <i>Agent states data file name</i> | File name for the agent status statistic file. | <i>agentstatus-@DATE-@TIME.txt</i> |
| <i>Agent calls data file name</i> | File name for the agent call statistic file. | <i>agentcall-@DATE-@TIME.txt</i> |
| <i>Creation interval ACD statistic data files</i> | Interval at which new ACD statistic data files are created. | 1d 1m - each minute 1h - each hour 1d - each day |
| <i>File name for the Call Centre calls data</i> | File name for the Call Centre call statistics. | <i>acdcall-@DATE-@TIME.txt</i> |
| <i>File name for the Call Centre status data</i> | File name for the Call Centre status statistics. | <i>callcenter-@DATE-@TIME.txt</i> |
| <i>Agent states data file name</i> | File name for the agent status statistic file. | <i>agentstatus-@DATE-@TIME.txt</i> |

| Specific properties | Description | Default setting /Settings |
|---|---|--|
| <i>Creation time ACD statistic data files</i> | Time at which the ACD statistics files are created if the creation interval is configured to daily. | 23:30 |
| <i>Call centre status data interval</i> | Interval (in seconds) in which the Call Centre status data (snapshot) are created. | 60 |
| <i>Save ACD statistics in database</i> | Number of days during which the ACD statistics entries are stored in the database. | 30 0 – Database entries are not deleted |
| <i>Save ACD statistic data file</i> | Number of days during which the ACD statistic files are stored | 30 0 – Files are not deleted |

The ACD statistics are erased from the OIP database at the time listed in ["OIP database reorganization times"](#) see also ["Reorganize OIP database"](#).

The OIP service ACD Log Manager is started only if the option ACD statistics logging was selected when the OIP server was installed.

3.16.3 ACD Log Service

ACD Log Service is responsible for the access to ACD statistics.

Table 35: ACD Log Service Access right

| Access right | admin | group admin | superuser | user | guest | none |
|---------------------|-------|----------------|-----------|------|----------------|------|
| Retrieve statistics | | A ¹ | | | O ² | |
| Delete statistics | | A | | | | |

¹ A – Statistics of all Skills

² O – Statistics of Skills assigned to the agent

| Access right | admin | group admin | superuser | user | guest | none |
|---|-------|-------------|-----------|------|-------|------|
| Highlight the statistics record as Retrieved. | | A | | | | |

3.16.4 ACD Manager

ACD Manager (internal OIP service) is responsible for managing and configuring the ACD queue.

Table 36: ACD Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|---|--|---------------------------|
| <i>Call deletion delay</i> | Time interval (in seconds) in which the answered ACD calls are displayed in the Call Center Manager/Call monitoring. | 15 0 - deactivated |
| <i>CDE/DDI synchronization interval</i> | Time interval (in minutes) in which the CDE/DDI are synchronized with the communication server. | 5 0 - deactivated |

3.16.5 ACD Service

ACD Service is responsible for the access to ACD queue.

Table 37: ACD Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|----------------|-------|-------------|-----------|------|-------|------|
| Open ACD queue | X | | | | | |
| Create Skills | X | | | | | |
| Delete Skills | X | | | | | |

| Access right | admin | group admin | superuser | user | guest | none |
|---------------------------|-------|-------------|-----------|------|-------|------|
| Change Skills | X | | | | | |
| Create pause codes | X | | | | | |
| Delete pause codes | X | | | | | |
| Change pause codes | X | | | | | |
| Create Wrap-up codes | X | | | | | |
| Delete Wrap-up codes | X | | | | | |
| Modify Wrap-up codes | X | | | | | |
| Administer business hours | X | | | | | |

3.16.6 Active Directory Service

The Active Directory Service (internal OIP service) is responsible for managing the Active directories.

Table 38: Active Directory Service Specific Properties

| Specific properties | Description | Default setting /Settings |
|--|--|---------------------------|
| <i>Active Directory server address</i> | DNS name or IP address of the Active Directory server. | |
| <i>Active Directory Port</i> | Port of the Active Directory server | <i>LDAP</i> |

| Specific properties | Description | Default setting /Settings |
|---------------------------------------|---|---|
| <i>User name</i> | <p>User authentication on the Active Directory server</p> <p>Sample inputs: CN=OIP AD Administrator, CN=Users, DC=mitel, DC=com or oip_ad_ad-min@mitel.com</p> | LDAP, Global catalogue |
| <i>Password</i> | Password for the user authentication on the Active Directory server. | |
| <i>Active Directory Base-DN</i> | <p>Active Directory root directory</p> <p>Sample inputs: CN=OIP AD Administrator, CN=Users, DC=mitel, DC=com</p> | |
| <i>Active Directory Search filter</i> | <p>Search filters enable you to define search criteria to confine the search request. Entered search filters overwrite the configuration of the LDAP object class.</p> <p>Sample inputs: ((&(objectCategory=person)(telephonenumber=*))</p> | <Definition of LDAP filter according to RFC 2254> |
| <i>Follow LDAP referrals</i> | The search of objects in a distributed domain structure will be extended to the reference domain controllers. | <i>Disabled</i> |
| <i>Number of call number digits</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 7 |

| Specific properties | Description | Default setting /Settings |
|---------------------------------|---|---------------------------|
| <i>First data merging delay</i> | <p>The user data from the Active Directory can be merged in the OIP user directory if the Windows username is configured in the OIP user profile.</p> <ul style="list-style-type: none"> The first directory data merge will be delayed about the configured start time (in minutes) after a restart of the OIP server. The setting '0' disables the data merge. | 0 |
| <i>Data merging interval</i> | <ul style="list-style-type: none"> The setting '0' disables the data merge. | 0 |
| <i>Data merging time</i> | <ul style="list-style-type: none"> The user data will be merged at the configured time. The setting '00:00' disables the data merge. | 00:00 |
| <i>Manual data merging</i> | <ul style="list-style-type: none"> If the manual user data merge is activated, the data merging can be executed manually in the OIP user directory in the Directory Manager. | <i>Disabled</i> |

Technical information about Active Directory is available on the internet, on the Microsoft development page.

3.16.7 Agent Manager

The Agent Manager (internal OIP service) is responsible for the central management of the ACD agents.

Table 39: Agent Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|------------------------------|---|---------------------------|
| <i>Automatic agent login</i> | All agents are logged in automatically when the OIP server starts up. | <i>Disabled</i> |

| Specific properties | Description | Default setting /Settings |
|---------------------------|---|---------------------------|
| <i>Start wrap-up time</i> | If a call to the Call Centre is processed by several agents as a result of forwarding, you can set whether the wrap-up time should be started with the last agent or with all the agents. | <i>Last agent</i> |

3.16.8 Agent Service

Agent Service is responsible for the access to ACD agents.

Table 40: Agent Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|-----------------------------|----------------|----------------|----------------|------|-------|------|
| Change Skills settings | A ³ | G ⁴ | | | | |
| Create agent | A | G | | | | |
| Remove agent | A | G | | | | |
| Activate agent in a Skill | A | G | O ⁵ | | | |
| Deactivate agent in a Skill | A | G | O | | | |
| Log agent in | A | G | | | | |
| Log agent out | A | G | | O | | |
| Start agent pause | A | G | | O | | |
| End agent pause | A | G | | O | | |

³ A – Management of all agents in all Skills

⁴ G – Management of all agents in assigned Skills

⁵ O – Management of own agent functionality

| Access right | admin | group admin | superuser | user | guest | none |
|------------------------|-------|-------------|-----------|------|-------|------|
| End agent wrap-up time | A | G | | O | | |

3.16.9 Alarm Driver

You can use the *Alarm Driver* service to control communication server event and alarm reports on OIP and to store them in the OIP database. The event and alarm reports can be further processed with the I/O system or they can be used in external applications. A view or protocol file is not available.

Here the settings for the destination of the event and alarm reports on OIP and the synchronization interval for checking this setting can be made with this communication server.

Table 41: Alarm Driver Specific Properties

| Specific properties | Description | Default setting /Settings |
|---------------------------------------|--|--|
| <i>IP port</i> | IP port | 1062 |
| <i>Save alarm entries in database</i> | Storage duration (days) for the event and alarm reports in the OIP database | 10 0 – Database entries are not deleted |
| <i>Alarm logging</i> | Store event and alarm reports in OIP. | <i>Disabled</i> |
| <i>Synchronization interval</i> | Synchronization interval (in minutes) in which the settings of the alarm destination are checked on the communication server. | 60 |
| <i>Link timeout</i> | Timeout (in seconds) after which the OIP server stops the connection to the communication server, once the last alarms have been sent by the communication server. | 60 |

| Specific properties | Description | Default setting /Settings |
|----------------------|---|---------------------------|
| <i>Maximum links</i> | Maximum number of connections in parallel | 10 |

The event and alarm reports are erased from the OIP database at the time listed in ["OIP database reorganization times"](#)

3.16.10 Alarm Service

You can also use the Alarm Service service to store the communication server's user-specific reports and alarms in the OIP database. Requirement: The alarm log in the Alarm Driver service is enabled.

Table 42: Alarm Service Specific Properties

| Specific properties | Description | Default setting /Settings |
|---------------------|-------------------------------------|---------------------------|
| <i>User alarm</i> | Show user alarms in the alarm list. | <i>Enabled</i> |

3.16.11 Alpha & Quick Dial Service

The Alpha & Quick Dial Service (internal OIP service) is responsible for the name resolution, which is sent to the communication server when dialing with names.

Table 43: Alpha & Quick Dial Service Specific Properties

| Specific properties | Description | Default setting /Settings |
|-------------------------|--|---|
| <i>Root directories</i> | Directories where the name resolution is searched. | <i>Public OIP directory / Private OIP directories/ OIPuser directory / PBX abbreviated dialing directory / Private PBX phonebook / PBX user directory /PISN user directory/ Active Directory / LDAP- directory /External phone book directories</i> |

| Specific properties | Description | Default setting /Settings |
|--------------------------------|---|---|
| <i>Extended directories</i> | Expanded directories where the name resolution is searched. For the search in expanded directories the search prefix must be configured and made to precede the dialing by name. | <i>Public OIP directory / Private OIP directories/ OIPuser directory / PBX abbreviated dialing directory / Private PBX phonebook / PBX user directory /PISN user directory/ Active Directory / LDAP- directory /External phone book directories</i> |
| <i>Search prefix</i> | Search prefix which must be made to precede the dialing by name in expanded directories. Multiple entries must be separated by ";". | 0;* |
| <i>Search order</i> | Search order in which the entries are searched in the directories. | First name; Last name; Company |
| <i>Maximum cache entries</i> | Maximum number of entries stored in cache. | 30 |
| <i>Maximum cache time</i> | Maximum amount of time (in minutes) during which the entries are stored in the cache. | 5 |
| <i>Maximum search entries</i> | Maximum number of search entries which are displayed in dialing by name. | 30 |
| <i>Advanced name searching</i> | <p>Activated: Finds the character string at the beginning of each word in the contact entry. Example: The character string 'MAR' finds MAREnt Peter as well as Kessler MARTin (but not AnneMARie Lustig). Slows down the search.</p> <p>Disabled: Finds character strings only in the first word; in the example it would find only MAREnt Peter.</p> | <i>Enabled</i> |

| Specific properties | Description | Default setting /Settings |
|---------------------------------------|---|---------------------------|
| <i>Maximum name length</i> | Maximum name length of the entries. | 20 |
| <i>Business number extension</i> | Extension added to the name of the business call number. | <i>BUS</i> |
| <i>Business fax number extension</i> | Extension added to the name of the business fax call number. | <i>NOTUSED</i> |
| <i>Private number extension</i> | Extension added to the name of the private call number. | <i>PRIV</i> |
| <i>Private fax number extension</i> | Extension added to the name of the private fax call number. | <i>NOTUSED</i> |
| <i>Mobile number extension</i> | Extension added to the name of the mobile number. | <i>GSM</i> |
| <i>Pager number extension</i> | Extension added to the name of the pager number. | <i>NOTUSED</i> |
| <i>Main phone extension</i> | Extension added to the name of the main phone number. | <i>NOTUSED</i> |
| <i>List only default phone number</i> | Lists only the default phone number. | <i>Disabled</i> |
| <i>Display extension</i> | The extension, which is added to the name of the number is displayed, if more than one number are assigned to the entry (disabled). | <i>Disabled</i> |
| <i>Simultaneous search requests</i> | Maximum number of simultaneous search requests. | 100 |
| <i>Alpha Service</i> | Activates or deactivates the Alpha & Quick Dial Service. | <i>Disabled</i> |

3.16.12 Buddy Manager

Buddy Manager (internal OIP service) is responsible for the central management of the user fields.

Table 44: Buddy Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|--|--|---------------------------|
| <i>Absence timeout</i> | Standard time (in minutes) after which automatic call forwarding should become active. | 0 |
| <i>Permanent monitoring</i> | Activates the permanent monitoring of subscribers, even if they are not logged in. | <i>Enabled</i> |
| <i>Show calendar entries</i> | Time (in seconds) in which an existing calendar entry of a called user, who did not answer the call, is displayed on the system phone. | 0 |
| <i>Display existing calendar entry at status</i> | Status of the calling subscriber, when an existing calendar entry of a called subscriber should be displayed. | <i>Free</i> |

3.16.13 Buddy Service

The Buddy Service is responsible for accessing the presence indicator and for displaying the status information.

Table 45: Buddy Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|-----------------------------|----------------|-------------|-----------|----------------|-------|------|
| Administer absence messages | A ⁶ | | | O ⁷ | | |

⁶ A – All users

⁷ O – Own user

| Access right | admin | group admin | superuser | user | guest | none |
|--------------|-------|----------------|-----------|------|-------|------|
| Monitor line | A | | A | O | | |
| Control line | A | G ⁸ | | | | |

3.16.14 CLIP Service

The CLIP Service (internal OIP service) is responsible for the number resolution of incoming calls in the configured directories.

Table 46: CLIP Service Specific Properties

| Specific properties | Description | Default setting Settings |
|--|---|---|
| <i>Root directory</i> | Directories where the number resolution is searched. | <i>Public OIP directory / Private OIP directories/ OIPuser directory / PBX abbreviated dialing directory / Private PBX phonebook / PBX user directory / PISN user directory/ Active Directory / LDAP- directory / External phone book directories</i> |
| <i>Maximum cache entries</i> | Maximum number of entries stored in cache. | 30 |
| <i>Maximum cache time</i> | Maximum amount of time (in minutes) during which the entries are stored in the cache. | 2 |
| <i>Search results in directory order</i> | Search results are displayed in directory order. | <i>Enabled</i> |
| <i>Simultaneous search requests</i> | Maximum number of simultaneous search requests. | 100 |

⁸ G – Agents in the same Skill

| Specific properties | Description | Default setting Settings |
|---------------------|--|--------------------------|
| <i>CLIP Service</i> | Activates or deactivates the CLIP Service. | <i>Enabled</i> |

3.16.15 Calendar Manager

Calendar Manager is responsible for the central management of calendar entries.

Table 47: Calendar Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|--|--|--|
| <i>Save calendar entries in database</i> | Number of days during which the calendar entries are stored in the database | 10 0 – Database entries are not deleted |
| <i>OIP Exchange driver address</i> | DNS name or IP address of the OIP Exchange driver. | |
| <i>Heartbeat OIP Exchange driver</i> | Heart beat interval (in minutes) between the OIP server and the OIP Exchange driver. | 1 |

The calendar entries are erased from the OIP database at the time listed in ["OIP database reorganization times"](#) see also ["Reorganize OIP database"](#)

3.16.16 Calendar Service

Calendar Service is responsible for accessing and controlling the calendar functionality.

Table 48: Calendar Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|-----------------------|----------------|-------------|-----------|-----------------|-------|------|
| Create calendar entry | A ⁹ | | A | O ¹⁰ | | |
| Delete calendar entry | A | | A | O | | |
| Change calendar entry | A | | A | O | | |
| View calendar entry | A | | A | O | | |

Access rights concern the use of the calendar function via an OIP application or the connected application from a certified third-party manufacturer.

3.16.17 Calendar Synchronization Service

The Calendar Synchronization Service (internal OIP service) is responsible for synchronizing the local Microsoft Outlook contacts with the Mitel OfficeSuite.

3.16.18 Call Logging Driver

You can use the Call Logging Driver service to control communication server call data on OIP and to store it in the OIP database.

The call data are stored as text file for further use. They can also be processed with the I/O system. A view with the connection data is not available.

Here the settings for the destination of the call data on OIP and the synchronization interval for checking this setting can be made with this communication server.

⁹ A – Calendar entries of all users
¹⁰ O – Own calendar entries

Table 49: Call Logging Driver Specific Properties

| Specific properties | Description | Default setting /Settings |
|---------------------------------|---|---------------------------|
| <i>Call logging</i> | Store the communication server connection data in OIP. | <i>Disabled</i> |
| <i>Synchronization interval</i> | Synchronization interval (in minutes) in which the settings of the call data destination are checked on the communication server. | 60 |
| <i>IP port</i> | IP port | 1080 |
| <i>Link timeout</i> | Timeout (in seconds) after which the OIPserver stops the connection to the communication server, once the last call charge data have been sent by the communication server. | 60 |
| <i>Maximum links</i> | Maximum number of connections in parallel | 10 |

3.16.19 Call Logging Manager

Call Logging Manager (internal OIP service) is responsible for managing the call data.

Table 50: Call Logging Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|--|--|--|
| <i>Save call data in database</i> | Storage duration (days) for the call data in the OIP database | 10 0 – Database entries are not deleted |
| <i>Save call data files in file system</i> | Storage duration (days) of the call datafile in the file system. | 0 0 – Files are not deleted |

| Specific properties | Description | Default setting /Settings |
|---------------------------------------|--|---|
| <i>Call data file extension</i> | Text file extension with the call data | <i>tax</i> |
| <i>Call data file directory</i> | Directory in which the text files are stored with the call data. | <i>tax</i> |
| <i>Create call data files</i> | Number of days after which the call data is written from the database to the text file. | 1 0 – No file written. 1 to 5, depending on the data volume |
| <i>Data protection business calls</i> | Number of phone number digits stored at the end of the call number for business calls. | 0 0 to 7 |
| <i>Data protection private calls</i> | Number of phone number digits stored at the end of the call number for private calls. | 0 0 to 7 |
| <i>Merge call data tickets</i> | Interconnected entries in the network are merged and stored as an entry in the database. | <i>Enabled</i> |
| <i>Logging external calls</i> | Store external outgoing call entries in the database. | <i>Enabled</i> |
| <i>Logging internal calls</i> | Store entries for internal calls and calls inside the network in the database. | <i>Disabled</i> |
| <i>Logging incoming calls</i> | Incoming CL tickets are logged. | <i>Enabled</i> |
| <i>Logging outgoing calls</i> | Outgoing CL tickets are logged. | <i>Enabled</i> |

| Specific properties | Description | Default setting /Settings |
|---------------------------------|---|---------------------------|
| <i>Show display text</i> | Display duration (in seconds) of charge information on the system phone. | 0 |
| <i>Display text format</i> | Format of the display text. The text can be adapted using variables, according to the following table. | |
| <i>Gateway PBX call charges</i> | Call charge information is shown on the system phone if the outgoing call is made via a gateway communication server. The ATASlicense is required to display call charges from the gateway communication server. see "The OIP licenses" | <i>Enabled</i> |
| <i>Update journal entry</i> | The corresponding journal entry will be updated Enabled with the call charge data. | Enabled |
| <i>CLIP prefix</i> | If the DDI does not correspond to the internal call number (e.g. DDI 32655xxxx, internal call number xxxx), "32655" has to be entered as the CLIP prefix so that the call data in the QSIG network can be assigned to the extension. Multiple entries must be separated by ";". | |

Table 51: Display text variables

| | |
|--------------------------|--------------------|
| <i>@SUBSCRIBERNAME</i> | User name |
| <i>@SUBSCRIBERNUMBER</i> | Call number |
| <i>@COSTCENTRE</i> | Cost centre number |

| | |
|---------------------|---|
| @STARTDATE | Date of start of connection |
| @STARTTIME | Time of start of connection |
| @TIMETOANSWER | Response time |
| @DURATION | Duration of connection |
| @TAXCHARGES | Call charges |
| @TAXPULSES | Metering pulses |
| @CALLERID1 | Caller identification 1 |
| @CALLERID2 | Caller identification 2 |
| @DESTINATIONNUMBER1 | Destination number 1 |
| @DESTINATIONNUMBER2 | Destination number 2 |
| @ORIGINSUBSCRIBER | call number from which the call is set up |
| @CURRENCY | Currency value |

In the standard settings the following character sequence is displayed on the system phone as the display text:

Currency unit call charges/call duration sec.

The export file of call data is created at the configured interval at the time listed in ["Export data create times"](#) see also ["OIP Export data"](#)

The call data is erased from the OIP database at the time listed in ["OIP database reorganization times"](#) see also ["Reorganize OIP database"](#)

3.16.20 Call Logging Service

Call Logging Service is responsible for accessing and distributing charge data.

Table 52: Call Logging Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|--|-------|-------------|-----------------|-----------------|-------|------|
| Administer call data settings | X | | | | | |
| Retrieve call data | | | A ¹¹ | O ¹² | | |
| Delete call data | | | A | | | |
| Highlight call data record as Retrieved. | | | A | | | |
| Resetting the charge counter | | | A | | | |

3.16.21 Call Service

Call Service is responsible for managing the telephony features.

Table 53: Call Logging Manager Specific Properties

| Specific properties | Description | Default setting Settings |
|------------------------------|--|--------------------------|
| <i>Direct blind transfer</i> | Calls can be transferred during call proceeding. | <i>Disabled</i> |

3.16.22 Client Utility Service

Client Utility Service provides OIP-specific functions to applications.

¹¹ A – Call data of all users
¹² O – Own call data

Table 54: Client Utility Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|---|-------|-----------------|-----------------|-----------------|-------|------|
| Start the OIP services | | G ¹³ | A ¹⁴ | O ¹⁵ | | |
| Start OIP services for users with monitoring rights on their line | | X | | | | |
| Start OIP services for users with control rights on their line | X | | | | | |

3.16.23 Configuration Profile Manager

Configuration Profile Manager (internal OIP service) is responsible for managing the presence profiles.

3.16.24 Configuration Profile Service

Configuration Profile Service is responsible for accessing the presence profiles of the OIP users.

Table 55: Configuration Profile Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|--------------------------------------|-----------------|----------------------------------|-----------|------|-------|------|
| Read presence profile | A ¹⁶ | P ¹⁷ /O ¹⁸ | P/O | P/O | P/O | |
| Activate/deactivate presence profile | A | P/O | P/O | P/O | | |

¹³ G – User in the same user group

¹⁴ A – All users

¹⁵ O – OIP services assigned to the user

¹⁶ A - All: Access right applies to the presence profiles of all users

¹⁷ P - Public: Access right applies to the public presence profiles

¹⁸ O - Own: Access right applies to the personal, private presence profiles

| Access right | admin | group admin | superuser | user | guest | none |
|-------------------------|-------|-------------|-----------|------|-------|------|
| Create presence profile | A | | O | | | |
| Delete presence profile | A | | O | | | |
| Modify presence profile | A | | O | | | |

3.16.25 Configuration Service

Configuration Service is responsible for managing the OIP services.

3.16.26 DasTelefonbuch Directory Service

The DasTelefonbuch Directory Service (internal OIP service) is responsible for managing the external phone-book directories of “DasTelefonbuch Deutschland”.

Table 56: DasTelefonbuch Directory Service Specific Properties

| Specific properties | Description | Default setting /Settings |
|-------------------------------------|--|---------------------------|
| <i>Phone book server address</i> | DNS name or IP address of the server on which the external phone-book directories are installed. | |
| <i>Number of call number digits</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 0 |
| <i>Alias name order</i> | Format of the alias name. | Last name - first name |

| Specific properties | Description | Default setting /Settings |
|------------------------------------|--|---------------------------|
| <i>Use generated default alias</i> | Generates a default alias (display name) for each contact defined in the ContactNameOrder setting. | <i>Enabled</i> |
| <i>Data source</i> | Display the used version of DasTelefonbuch Germany. | |

3.16.27 Database Driver

The Database Driver (internal OIP service) is the interface adapter used for accessing the OIP database.

This is where the settings for backing up the OIP database and the OIP configuration file are made.

Table 57: Database Driver Specific Properties

| Specific properties | Description | Default setting /Settings |
|---------------------------------------|---|-------------------------------------|
| <i>Database type</i> | Database type | <i>rdbms</i> |
| <i>Database path</i> | Path to the database. | <i>jdbc:mysql://localhost/AXPDB</i> |
| <i>Password</i> | Password for database access. | |
| <i>User</i> | User for database access. | |
| <i>Database driver</i> | Database driver | <i>org.gjt.mm.mysql.Driver</i> |
| <i>Communication channels</i> | Number of communication channels possible in parallel | 10 |
| <i>Maximum rows in database table</i> | Maximum number of entries, which are returned with data base queries. | 10000 |
| <i>Backup directory</i> | Directory for the OIP data backup. | <i>backup</i> |

| Specific properties | Description | Default setting /Settings |
|--|--|---|
| <i>Backup time</i> | Directory for the OIP data backup. | <i>backup</i> |
| <i>Save OIP backup files</i> | Number of days the OIP backup files are stored in the file system. | 5 0 – OIP backup files are not deleted |
| <i>Database heartbeat</i> | Heartbeat interval (in minutes) between the OIP server and the OIP database. | 1 |
| <i>Deletion interval database table entries</i> | Interval in which the database table entries will be deleted, if the configured maximum number of entries is exceeded. | 1d 1m - each minute 1h - each hour 1d - each day |
| <i>Deletion time database table entries</i> | Time at which the database table entries will be deleted, if the deletion interval is set to daily. | 03:45 |
| <i>Maximum number entries in database table (global)</i> | Global setting for the maximum number of entries in each database table. | 50000 |
| <i>Maximum number of entries in log database table</i> | Setting for the maximum number of entries in the log database table. | 50000 |
| <i>Database version</i> | Database version | 1 |

Backing up the OIP configuration is done once after starting the OIP Windows services after one hour. Thereafter the backup is carried out daily at the listed time, see also ["Backing up the OIP configuration"](#)

3.16.28 Directory Manager

Directory Manager is responsible for managing the directories.

Table 58: Directory Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|-------------------------------|---|--|
| <i>Root directory</i> | Directories where entries are searched. | <i>Public OIP directory / Private OIP directories / OIPuser directory / PBX abbreviated dialing directory / Private PBX phone book/ PBX user directory / PISN user directory / Active Directory / LDAP directory / External phone book directories</i> |
| <i>Refresh directory list</i> | Time interval (in minutes) in which the availability of the configured directories are checked. The connection to directories which cannot be reached is then automatically restored as soon as these directories can be reached again. | |

3.16.29 Directory Service

Directory Service is responsible for the access to directories.

Table 59: Directory Service Specific Properties

| Specific properties | Description | Default setting /Settings |
|-----------------------|---|--|
| <i>Root directory</i> | Directories where entries are searched. | <i>Public OIP directory / Private OIP directories / OIPuser directory / PBX abbreviated dialing directory / Private PBX phone book/ PBX user directory / PISN user directory / Active Directory / LDAP directory / External phone book directories</i> |

Table 60: Directory Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|------------------------------------|-------------------|-------------------|------------------|-------------------|-------|------|
| PISN users | R ¹⁹ | R | R | R | R | |
| Private PBX phone book directories | R/W ²⁰ | R/W ²¹ | R/W ^c | R/W ^c | | |
| Private OIP directories | R/W | R/W ^c | R/W ^c | R/W ^c | | |
| Public OIP directories | R/W | R/W | R/W | R | R | |
| PBX abbreviated dialing directory | R/W | R/W | R/W | R | R | |
| PBX subscriber directory | R | R | R | R | R | |
| OIP subscriber directory | R/W | R/W | R/W | R/W ²² | R | |
| Active Directory | R | R | R | R | R | |
| LDAP directories | R | R | R | R | R | |
| External phone book directories | R | R | R | R | R | |

3.16.30 Display Manager

Display Manager (internal OIP service) is responsible for the management of the access to the system phones' displays.

¹⁹ Read rights to the directory

²⁰ Read and write rights to all private directories

²¹ Read and write rights to one's own directory only

²² Write rights for own contact only

3.16.31 Display Service

Display Service is responsible for display control of the system phones.

3.16.32 Event Service

Event Service (internal OIP service) is responsible for distributing the events in the system.

Table 61: Event Service Specific Properties

| Specific properties | Description | Default setting /Settings |
|-----------------------|---|---------------------------|
| <i>Server address</i> | DNS name or IP address of the server on which the Event Service is installed. | <i>localhost</i> |
| <i>IP port</i> | IP port of the Event Service. | 2500 |

3.16.33 Fax Manager

Fax Manager (internal OIP service) is responsible for managing the fax functionality.

Table 62: Fax Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|----------------------------------|--|---------------------------|
| <i>Maximum number of redials</i> | Maximum number of last-number redials if the number is unobtainable. | 3 |
| <i>Redial interval</i> | Interval (in minutes) in which the fax is resend. | 1 |

3.16.34 Fax Service

Fax Service is responsible for the access to the fax functionality.

Table 63: Fax Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|-------------------------|-----------------|-------------|-----------|-----------------|-------|------|
| Create fax box | A ²³ | | | | | |
| Delete fax box | A | | | | | |
| Modify fax-box settings | A | | | | | |
| Send/receive faxes | A | | | O ²⁴ | | |

3.16.35 Feature Service

The Feature Service provides functions depending on the phone, the CTI license and the communication server type applications.

3.16.36 Flow Manager

Flow Manager (internal OIP service) is responsible for managing the call sequences.

3.16.37 Flow Service

Flow Service is responsible for the access to licenses.

Table 64: Flow Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|-----------------------|-------|-------------|-----------|------|-------|------|
| Create call sequences | X | | | | | |
| Delete call sequences | X | | | | | |

²³ A – All users

²⁴ O – Own fax box

| Access right | admin | group admin | superuser | user | guest | none |
|-----------------------|-------|-------------|-----------|------|-------|------|
| Modify call sequences | X | | | | | |

3.16.38 Function Key Manager

Function Key Manager (internal OIP service) is responsible for managing the function keys.

3.16.39 Function Key Service

Function Key Service is responsible for the access to the function keys.

3.16.40 I/O Manager

I/O Manager is responsible for the central management of the I/O groups.

Table 65: I/O Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|--|--|---------------------------|
| <i>Server address</i> | DNS name or IP address of the server on which the driver for the OIP KNX Service is installed. | |
| <i>Double-click interval</i> | Time interval for double-click evaluation. | 300 |
| <i>Long-click interval</i> | Time interval for long-click evaluation. | 500 |
| <i>Save action entries in database</i> | Number of days during which the protocol entries are stored in the database. | 10 |
| <i>Creating protocol log files</i> | Number of days after which the logged actions are written from the database in the file. | |

The export file of logged actions is created at the configured interval at the time listed in ["Export data create times"](#) see also ["OIP Export data"](#).

The action entries are erased from the OIP database at the time listed in ["OIP database reorganization times"](#) see also ["Reorganize OIP database"](#).

3.16.41 I/O Service

I/O Service is responsible for managing actors.

3.16.42 Jabber Driver

The Jabber Driver (internal OIP service) is the interface adapter used for accessing the external Jabber/XMPP Instant Messaging systems.

3.16.43 Journal Manager

Journal Manager (internal OIP service) is responsible for managing the journal entries.

Table 66: Journal Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|---|--|--|
| <i>Save journal entries in database</i> | Number of days during which the journal entries are stored in the database | 10 0 – Database entries are not deleted |
| <i>Logging operator calls</i> | Create journal entries for operator calls. | <i>Enabled</i> |

The journal entries are erased from the OIP database at the time listed in ["OIP database reorganization times"](#) see also ["Reorganize OIP database"](#).

3.16.44 Journal Service

Journal Service is responsible for managing and deflecting the call lists to the applications.

3.16.45 Key Configuration Service

Key Configuration Service is responsible for key configuration of the system phones.

Table 67: Key Configuration Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|--|-----------------|-------------|-----------------|------|-------|------|
| Manage system phone settings | A ²⁵ | | O ²⁶ | | | |
| Manage keys on the system phone | A | | O | | | |
| Manage locked keys on the system phone | A | | | | | |

3.16.46 LDAP Directory Service

LDAP Directory Service (internal OIP service) is responsible for managing the LDAP directories.

Table 68: LDAP Directory Service Specific Properties

| Specific properties | Description | Default setting /Settings |
|----------------------------|--|--|
| <i>LDAP server address</i> | DNS name or IP address of the LDAP server. | |
| <i>LDAP port</i> | IP port of the LDAP server. | |
| <i>Username</i> | User authentication on the LDAP server. | Example: <i>CN=DirectoryManager</i> |
| <i>Password</i> | Password for user authentication on the LDAP server. | |
| <i>LDAP base DN</i> | LDAP base directory | |

²⁵ A – All system phones
²⁶ O – Own system phone

| Specific properties | Description | Default setting /Settings |
|---------------------------------------|---|---|
| <i>LDAP object class</i> | LDAP object class | user / user / inetOrgPerson / organizationalPerson / person / contact |
| <i>LDAP search filters</i> | Search filters enable you to define search criteria to confine the search request. Entered search filters overwrite the configuration of the LDAP object class. | |
| <i>Follow LDAP referrals</i> | The search for objects in a distributed directory structure will be extended to the reference LDAP servers. | <i>Disabled</i> |
| <i>First name</i> | | DEFAULT-MAPPING |
| <i>Middle Names</i> | | DEFAULT-MAPPING |
| <i>Last name</i> | | DEFAULT-MAPPING |
| <i>Home address - Street</i> | | DEFAULT-MAPPING |
| <i>Home address - Postal code</i> | | DEFAULT-MAPPING |
| <i>Home address - City</i> | | DEFAULT-MAPPING |
| <i>Home address - State</i> | | DEFAULT-MAPPING |
| <i>Home address - Country</i> | | DEFAULT-MAPPING |
| <i>Business address - Street</i> | | DEFAULT-MAPPING |
| <i>Business address - Postal code</i> | | DEFAULT-MAPPING |

| Specific properties | Description | Default setting /Settings |
|-----------------------------------|-------------|---------------------------|
| <i>Business address - City</i> | | DEFAULT-MAPPING |
| <i>Business address - State</i> | | DEFAULT-MAPPING |
| <i>Business address - Country</i> | | DEFAULT-MAPPING |
| <i>Business call number</i> | | DEFAULT-MAPPING |
| <i>Business fax number</i> | | DEFAULT-MAPPING |
| <i>Private call number</i> | | DEFAULT-MAPPING |
| <i>Private fax number</i> | | DEFAULT-MAPPING |
| <i>Mobile phone</i> | | DEFAULT-MAPPING |
| <i>Pager number</i> | | DEFAULT-MAPPING |
| <i>Company number</i> | | DEFAULT-MAPPING |
| <i>Alias</i> | | DEFAULT-MAPPING |
| <i>Company</i> | | DEFAULT-MAPPING |
| <i>Position</i> | | DEFAULT-MAPPING |
| <i>E-mail</i> | | DEFAULT-MAPPING |
| <i>Private e-mail</i> | | DEFAULT-MAPPING |
| <i>E-mail mobile</i> | | DEFAULT-MAPPING |

| Specific properties | Description | Default setting /Settings |
|------------------------------|--|---------------------------|
| <i>Web page</i> | | DEFAULT-MAPPING |
| <i>Manager's name</i> | | DEFAULT-MAPPING |
| <i>Assistant's name</i> | | DEFAULT-MAPPING |
| <i>Department</i> | | DEFAULT-MAPPING |
| <i>User-defined 1</i> | | DEFAULT-MAPPING |
| <i>User-defined 2</i> | | DEFAULT-MAPPING |
| <i>User-defined 3</i> | | DEFAULT-MAPPING |
| <i>User-defined 4</i> | | DEFAULT-MAPPING |
| <i>User-defined 5</i> | | DEFAULT-MAPPING |
| <i>Notes</i> | | DEFAULT-MAPPING |
| Number of call number digits | Number of phone number digits from back which are used to compare with the entries in the directory. | 7 |

In the default setting, the attributes listed in ["Default allocation of LDAP attributes"](#) are used for DEFAULT MAPPING. Depending on the object class selected, the attributes of the subordinate object class are used.

Table 69: Default allocation of LDAP attributes

| Specific properties | Attribute | Object class |
|---------------------|-----------|--|
| <i>First name</i> | givenName | organizationalPerson/ contact/ user / inetOrgPerson |

| Specific properties | Attribute | Object class |
|---------------------------------------|--------------------------|--|
| <i>Middle Names</i> | middleName | user / inetOrgPerson |
| <i>Last name</i> | sn | person / organizationalPerson / contact / user / inetOrgPerson |
| <i>Home address - Street</i> | | |
| <i>Home address - Postal code</i> | | |
| <i>Home address - City</i> | | |
| <i>Home address - State</i> | | |
| <i>Home address - Country</i> | | |
| <i>Business address - Street</i> | streetAddress | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>Business address - Postal code</i> | postalCode | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>Business address - City</i> | l | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>Business address - State</i> | st | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>Business address - Country</i> | c | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>Business call number</i> | telephoneNumber | person / organizationalPerson / contact / user / inetOrgPerson |
| <i>Business fax number</i> | facsimileTelephoneNumber | organizationalPerson/ contact/ user / inetOrgPerson |

| Specific properties | Attribute | Object class |
|----------------------------|---------------------|---|
| <i>Private call number</i> | home Phone | user / inetOrgPerson |
| <i>Private fax number</i> | | |
| <i>Mobile phone</i> | mobile | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>Pager number</i> | pager | user / inetOrgPerson |
| <i>Company number</i> | | |
| <i>Alias</i> | display Name | person / organizationalPerson / contact / user / inetOrgPerson |
| <i>Company</i> | company | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>Position</i> | title | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>E-mail</i> | mail | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>Private e-mail</i> | mail | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>E-mail mobile</i> | mail | organizationalPerson/ contact/ user / inetOrgPerson |
| <i>Web page</i> | WWWHomePage manager | user |
| <i>Manager's name</i> | | inetOrgPerson |
| <i>Assistant's name</i> | | |

| Specific properties | Attribute | Object class |
|-----------------------|------------|--|
| <i>Department</i> | department | organizationalPerson contact User inetOrgPerson |
| <i>User-defined 1</i> | | |
| <i>User-defined 2</i> | | |
| <i>User-defined 3</i> | | |
| <i>User-defined 4</i> | | |
| <i>User-defined 5</i> | | |
| <i>Notes</i> | notes | contact |

3.16.47 License Manager

License Manager (internal OIP service) is responsible for managing the licenses.

Table 70: License Manager Specific Properties

| Specific properties | Description | Default setting /Settings |
|--------------------------|--|---------------------------|
| <i>Licenses log file</i> | Directory in which the log file for the licenses registered in the system are stored. The basic directory is the OIP installation directory. | .logs/license.txt |

3.16.48 License Service

License Service is responsible for the access to licenses.

3.16.49 Line Service

Line Service is responsible for managing key telephone features.

Table 71: Line Service Specific Properties

| Specific properties | Description | Default setting /Settings |
|---|--|---------------------------|
| <i>Automatic parking of private calls</i> | If during the call on the private line a call is answered on the line key, the private call is parked. | <i>Enabled</i> |
| <i>Synchronization interval</i> | Interval (in minutes) in which the line key configuration is synchronized with the communication server. | 10 |

Table 72: Line Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|--------------------------------------|-------|-------------|-----------|------|-------|------|
| Create line key | X | | | | | |
| Clear line key | X | | | | | |
| Configure CDE | X | | | | | |
| Bar phone configuration | X | | | | | |
| Configure outgoing barring | X | | | | | |
| Configure terminating line | X | | | | | |
| Configure ring settings for line key | X | | | X | | |

| Access right | admin | group admin | superuser | user | guest | none |
|---------------------------------------|-------|-------------|-----------|------|-------|------|
| Configure incoming / outgoing seizure | X | | | X | | |
| Configure priority | X | | | X | | |
| Configure call list | X | | | X | | |

3.16.50 Load Balancing Service

Load Balancing Service (internal OIP service) is responsible for the load distribution within the OIP Server Networks.

3.16.51 Location Manager

Location Manager (internal OIP service) is responsible for managing the cordless phone localisation.

Table 73: Location Manager Specific Properties

| Specific properties | Description | Default setting/ Settings |
|---|--|--|
| <i>Number of parallel search requests</i> | Number of parallel requests for locating DECT handsets | 10 |
| <i>Storage time</i> | Time during which the requests for locating cordless phones are buffered | 10s 1s – every second 1m - each minute |

3.16.52 Location Service

The Location Service is used to locate cordless phones on the covered premises.

3.16.53 Log Service

Log Service is responsible for the central management and recording of the log files.

Table 74: Log Service Specific Properties

| Specific properties | Description | Default setting/ Settings |
|--|---|--|
| <i>Days, log entries</i> | Number of days during which the log entries are stored in the database | 10 0 – Database entries are not deleted |
| <i>Exception output destination</i> | Output destination for the exception log entries. | Database / Screen / File / System |
| <i>Output destination, error</i> | Output destination for the error log entries. | Database / File |
| <i>Output destination, warning</i> | Output destination for the warning log entries. | Database / File |
| <i>Output destination, security</i> | Output destination for the security log entries. | Database / File |
| <i>Output destination, information</i> | Output destination for the information log entries. | <i>File</i> |
| <i>Output destination, debug</i> | Output destination for the debug log entries. | <i>File</i> |
| <i>Log details</i> | Level of detail for the log entries | <i>All</i> |
| <i>Log file size</i> | Maximum size of the log files (in bytes). | 10000000 min. 1025 |
| <i>Log file days</i> | Number of days during which the log files are stored in the file system | 5 |

| Specific properties | Description | Default setting/ Settings |
|---------------------|--|--|
| <i>Log Memory</i> | Interval (in seconds) in which the status of the used and allocated memory is written in the log file. | 0 0 - deactivated >1 - activated |

The log entries are erased from the OIP database at the time listed in ["OIP database reorganization times"](#) see also ["Reorganize OIP database"](#).

3.16.54 Login Service

Login Service is responsible for managing the login to the OIP server.

Table 75: Login Service Specific Properties

| Specific properties | Description | Default setting/ Settings |
|------------------------|--|---------------------------|
| <i>Automatic login</i> | Enables or disables automatic login to the OIP server. | <i>Enabled</i> |

3.16.55 Media Manager

Media Manager (internal OIP service) is responsible for managing the OIP Media Driver.

Table 76: Media Manager Specific Properties

| Specific properties | Description | Default setting/ Settings |
|-----------------------|--|---------------------------|
| <i>Server address</i> | DNS name or IP address of the server on which the Media Service driver is installed. | |

| Specific properties | Description | Default setting/ Settings |
|--------------------------|---|---------------------------|
| <Address>:60901@CAPi#<n> | <Address>: DNS name or IP address <n>=ISDN interface No.) The installed ISDN interfaces are displayed. Depending on which communication server the ISDN interfaces are connected, the communication server ID has to be specified. In the OIP Configuration Manager reach communication server ID can be determined via the menu item communication server network. | <Communicationsserver ID> |

3.16.56 Message Manager

Message Manager (internal OIP service) is responsible for managing messages.

Table 77: Message Manager Specific Properties

| Specific properties | Description | Default settings /Settings |
|--------------------------------------|--|--|
| <i>Save messages in database</i> | Number of days during which the messages are stored in the database | 10 0 – Database entries are not deleted |
| <i>Create journal entry</i> | Creates for each incoming and outgoing message a journal entry. | Enabled |
| <i>OIP Exchange driver address</i> | DNS name or IP address of the OIP Exchange driver. | |
| <i>Heartbeat OIP Exchange driver</i> | Heartbeat interval (in minutes) between the OIP server and the driver for the Microsoft Exchange server. | 1 |

| Specific properties | Description | Default settings /Settings |
|------------------------------|---|----------------------------|
| <i>E-mail sender address</i> | Standard e-mail sender address used when sending e-mails. If you do not specify the domain (<sender> instead of < sender@domain.xxx >), the domain from the settings in the SMTP Driver or the e-mail domain of the Microsoft Exchange Server is used. | <i>OIP no reply</i> |
| <i>Send messages to all</i> | Messages which are sent to all the users of the communication server are sent to all users in the network which are connected to the OIP server. | <i>Enabled</i> |

The message entries are erased from the OIP database at the time listed in ["OIP database reorganization times"](#) see also ["Reorganize OIP database"](#).

3.16.57 Message Service

Message Service is responsible for sending and receiving messages.

3.16.58 Microsoft Exchange Driver Java WebServices

The OIP service Microsoft Exchange Driver Java WebServices is an integrated driver used to connect the Microsoft Exchange Server to OIP. It gives access to the domain users' public contact folders and mailboxes (personal Outlook address book, calendar and e-mail folder). Alternatively, the external OIP Exchange driver can also be used. For new installations we recommend the use of the integrated driver.

Thanks to the access to the domain user's mailboxes, the contact entries of the personal Outlook address book can be synchronized with the private OIP directory. Moreover, existing calendar entries can be displayed in the presence display.

The presence status of Microsoft Outlook calendar entries is displayed in the OIP calendar by the OIP presence status.

Access to the e-mail folder is required to store voice mails as e-mail in the Inbox.

Table 78: Microsoft Exchange Driver Java WebServices

| Parameter | Description |
|--|---|
| <i>Microsoft Exchange Server version</i> | <ul style="list-style-type: none"> Microsoft Exchange Server 2013 for Microsoft Exchange Server 2013 and Office 365 Microsoft Exchange Server 2013 SP1 for Microsoft Exchange Server 2013 SP1 and Office 365 |
| <i>Microsoft Exchange server address</i> | <p>DNS name or IP address of the Microsoft Exchange Server. If there are several Microsoft Exchange Servers on the network, the address of the server defined in the Client Access Server (CAS) role must be indicated.</p> <p>Note:</p> <p>Please leave this field empty in Office 365.</p> |
| <i>Domain</i> | <p>Domains assigned to the Microsoft Exchange Server, e.g. company.com.</p> <p>Note:</p> <p>Please leave this field empty in Office 365.</p> |
| <i>User name</i> | User name of the OIP Exchange administrator. In Office 365 the OIP Exchange administrator's e-mail address is entered as user name. |
| <i>Password</i> | Password of the OIP Exchange administrator. |
| <i>Notification interval</i> | Interval within which the OIP Exchange driver checks the modifications on the Microsoft Exchange Server. |

3.16.59 Naming Service

The Naming Service (internal OIP service) is responsible for the global management of services in OIP server network systems.

Table 79: Naming Service Specific Properties

| Specific properties | Description | Default Settings |
|----------------------------------|--|------------------|
| <i>Time to live</i> | Time to live, number of hops. | 128 |
| <i>Multicast host IP address</i> | Multicast host IP address | 234.5.6.7 |
| <i>Multicast IP port</i> | Multicast IP port. | 9001 |
| <i>Heartbeat interval</i> | Heartbeat interval (in milliseconds) with the clients. | 300000 |
| <i>Garbage Collection</i> | Clears the main memory. | <i>Enabled</i> |

3.16.60 Notepad Service

Notepad Service is responsible for managing the note entries and redial lists.

Table 80: Notepad Service Specific Properties

| Specific properties | Description | Default Settings |
|--|---|------------------|
| <i>Number of note entries</i> | Number of note entries. | 20 |
| <i>Delete duplicated note entries</i> | Deletes duplicated note entries. | <i>Enabled</i> |
| <i>Number of redial list entries</i> | Number of redial list entries. | 20 |
| <i>Delete duplicated redial list entries</i> | Deletes duplicated redial list entries. | <i>Enabled</i> |

3.16.61 Notification Manager

Notification Manager (internal OIP service) is responsible for managing the notifications.

3.16.62 Notification Service

Notification Service is responsible for accessing and distributing the notifications.

3.16.63 ODBC/JDBC Directory Service

The ODBC/JDBC Directory Service is responsible for managing connected ODBC or JDBC directories.

Table 81: ODBC/JDBC Directory Service Specific Properties

| Specific properties | Description | Default Settings |
|------------------------------------|--|-------------------------------|
| <i>Phone book server address</i> | DNS name or IP address of the server on which the OIP ODBC/JDBC Driver is installed. | |
| <i>Number of call numbers</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 0 |
| <i>Alias name order</i> | Format of the alias name | <i>Last name - First name</i> |
| <i>Use generated default alias</i> | Generates a default alias (display name) for each contact defined in the ContactNameOrder setting. | <i>Enabled</i> |
| <i>Data source</i> | Displays the source of the data | |

3.16.64 Operator Service

Operator Service is responsible for managing the operator queue.

Table 82: Operator Service Specific Properties

| Specific properties | Description | Default Settings |
|---|--|------------------|
| <i>Automatic parking of private calls</i> | If an operator call is answered during a call on the private line, the private call is parked. | <i>Enabled</i> |

3.16.65 PBX Driver Ascotel

PBX Driver Ascotel (internal OIP service) is the interface adapter used for accessing the communication server.

Table 83: PBX Driver Ascotel Specific Properties

| Specific properties | Description | Default Settings |
|---|--|------------------|
| <i>IP port</i> | IP port | 1061 |
| <i>PBX authentication level</i> | Authorization level with which the OIP server communicates with the communication server. This setting is no longer significant. | <i>Attendant</i> |
| <i>OIP name server</i> | The OIP Name Server is enabled. | <i>Enabled</i> |
| <i>Display Server</i> | Activates the ATAS messaging/ alarming interface on the OIP server. | <i>Enabled</i> |
| <i>Ascotel OIP Information Link</i> | The Ascotel OIP Information Link is activated on the OIP server. | <i>Enabled</i> |
| <i>Number of parallel search requests</i> | Number of parallel requests for locating cordless phones | 10 |

| Specific properties | Description | Default Settings |
|--------------------------------------|--|--|
| <i>Storage time</i> | Time during which the requests for locating cordless phones are buffered | 10s 1s – every second 1m - each minute |
| <i>Maximum search entries</i> | Maximum number of search entries which are displayed in dialing by name | 30 |
| <i>Maximum name length</i> | Maximum name length of the entries. | 20 |
| <i>Business number extension</i> | Extension added to the name of the business call number. | <i>BUS</i> |
| <i>Business fax number extension</i> | Extension added to the name of the business fax call number. | <i>NOT USED</i> |
| <i>Private number extension</i> | Extension added to the name of the private call number. | <i>PRIV</i> |
| <i>Private fax number extension</i> | Extension added to the name of the private fax call number. | <i>NOTUSED</i> |
| <i>Mobile number extension</i> | Extension added to the name of the mobile number. | <i>GSM</i> |
| <i>Pager number extension</i> | Extension added to the name of the pager number. | <i>NOTUSED</i> |
| <i>Main phone extension</i> | Extension added to the name of the mainphone number. | <i>NOTUSED</i> |
| <i>VoIPnumber extension</i> | Extension added to the name of the VoIP number. | <i>NOTUSED</i> |

| Specific properties | Description | Default Settings |
|---------------------------------------|--|--------------------------------|
| <i>Extension PBX internal number</i> | Extension added to the name of the PBX internal number. | <i>NOTUSED</i> |
| <i>List only default phone number</i> | Lists only the default phone number. | <i>Disabled</i> |
| <i>Display extension</i> | The extension, which is added to the name of the number is displayed, if more than one number are assigned to the entry (disabled). | <i>Disabled</i> |
| <i>Ignored journal entries</i> | All journal entries beginning with the configured prefix are deleted from the journal. Example: If '*06' is configured, the following journal entries are deleted: '*061234*216789#'. Multiple entries must be separated by ",". | <i>*33;#33;*47;#36;#46;*06</i> |

Only the standard call number is synchronized in the standard setting. If all the call numbers of a contact are to be synchronized, you need to deactivate the Synchronize standard call number setting. A name extension for the various call number types should also be configured so that all the call numbers do not appear under one name in the communication server's private directory. For example, for the business call number under Synchronize business call number, enter the setting _B. Make sure the name extension you choose is not too long as the length of names is limited in the communication server. If a call number type is not to be synchronized, enter the setting NOSYNC.

3.16.66 PBX Information Service

PBX Information Service provides information about the connected communication server, e.g. the communication server name and users.

3.16.67 PBX Manager

PBX Manager (internal OIP service) is responsible for managing of the communication servers connected to the OIP server

Table 84: PBX Manager Specific Properties

| Specific properties | Description | Default Settings |
|--|---|------------------|
| <i>Synchronization interval</i> | Synchronization interval with the communication server (in minutes). | 15 |
| <i>Minimum length external numbers</i> | All phone numbers which are equal to or longer than the configured length will be dialled as external number from the application (for example, Mitel OfficeSuite), i.e. the external access code will be added automatically. The setting '0' deactivates this function. | 5 |

3.16.68 PBX Setup Manager

PBX Setup Manager (internal OIP service) is responsible for the configuration of the communication servers connected to the OIP server.

3.16.69 PBX Setup Service

PBX Setup Service is responsible for managing the communication server configuration.

Table 85: PBX Setup Service / PBX Setup Manager Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|--|-------|-------------|-----------|------|-------|------|
| Manage date and time settings | X | | X | | | |
| Administer time synchronization settings | X | | | | | |
| Execute time synchronization | X | | | | | |

3.16.70 PISN Directory Service

PISN Directory Service (internal OIP service) is responsible for managing the PISN users.

Table 86: PISN Directory Service Specific Properties

| Specific properties | Description | Default Settings |
|-------------------------------------|--|----------------------------------|
| <i>Synchronization interval</i> | Synchronization interval with the communication server (in minutes). | 30 0 – No synchronization |
| <i>Name order</i> | Format of the name entries in the communication server's PISN users directory. | <i>First name - last name</i> |
| <i>Number of call number digits</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 7 |

3.16.71 PUM Manager

PUM Manager (internal OIP service) is responsible for managing the Personal User Mobility function.

3.16.72 PUM Service

PUM Service is responsible for access to the Personal User Mobility data and configuration.

Table 87: PUM Service Access rights

| Access right | admin | group admin | superuser | user | guest | none |
|---------------------------------|-------|-------------|-----------|------|-------|------|
| Create a PUM workstation | X | | | | | |
| Delete a PUM workstation | X | | | | | |
| Modify PUM workstation settings | X | | | | | |
| Create PUM users | X | | | | | |
| Delete PUM users | X | | | | | |

| Access right | admin | group admin | superuser | user | guest | none |
|---------------------------|-------|-------------|-----------|------|-------|------|
| Modify PUM users settings | X | | | | | |

3.16.73 Private Card Directory Service

The Private Card Directory Service (internal OIP service) is responsible for the central management of the communication server private phone book.

Table 88: Private Card Directory Service Specific Properties

| Specific properties | Description | Default Settings |
|-------------------------------------|---|-------------------------------|
| <i>Synchronization interval</i> | Synchronization interval (in minutes) in which the private communication server directories are cached in the OIP database. | 30 0 – No synchronization |
| <i>Name order</i> | Format of the name entries in the private communication server directories. | <i>First name - last name</i> |
| <i>Number of call number digits</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 7 |

3.16.74 Private Directory Service

Private Directory Service (internal OIP service) is responsible for managing the private contacts.

The settings for synchronization with the private directories of the communication server and the private contacts in the OIP database or the private Outlook address books on the Microsoft Exchange Server can be made here.

Table 89: Private Directory Service Specific Properties

| Specific properties | Description | Default Settings |
|--------------------------------------|--|---|
| <i>OIP Exchange driver address</i> | DNS name or IP address of the OIP Exchange driver. | |
| <i>Heartbeat OIP Exchange driver</i> | Heart beat interval (in minutes) between the OIP server and the driver for the Microsoft Exchange server. | 1 |
| <i>First synchronization delay</i> | Start time (in minutes) after which the first synchronization begins after a restart of the OIP server. | 5 |
| <i>PBX synchronization</i> | Synchronizes private OIP directories with private communication server directories. The OIP directories are the master directories. | <i>OIP master</i> |
| <i>Synchronization interval</i> | Interval in which the private OIP directories are synchronized with the private communication server directories. If a Microsoft Exchange Server is connected the personal Outlook address books are also synchronized with the private OIP directories. | 1d 1m - each minute 1h - each hour 1d - each day |
| <i>Synchronization time</i> | Time at which the private OIP directories are synchronized with the private communication server directories if the synchronization interval is set to daily. If a Microsoft Exchange Server is connected the personal Outlook address books are also synchronized with the private OIP directories. | 01:30 |

| Specific properties | Description | Default Settings |
|---|---|-------------------------------|
| <i>Delete entries in external directories</i> | Deleting entries in the communication server's private directories also deletes the entries in the OIP database or in the private Outlook address book (depending on the connection). | <i>Disabled</i> |
| <i>Name order</i> | Format of the name entries in the private directories. | <i>Last name - first name</i> |
| <i>Number of call number digits</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 7 |

3.16.75 Public Directory Service

Public Directory Service (internal OIP service) is responsible for managing the public contacts.

The settings for synchronization with the abbreviated dialing list on the one hand and the public contacts in the OIP database or the public contacts folder on the Microsoft Exchange Server on the other can be made here.

Table 90: Public Directory Service Specific Properties

| Specific properties | Description | Default Settings |
|---------------------------------------|---|------------------|
| <i>OIP Exchange driver address</i> | DNS name or IP address of the OIP Exchange driver. | |
| <i>Standard public contact folder</i> | Public contact folder on the Microsoft Exchange Server in which new contacts are stored if they are not entered in Microsoft Outlook. | |
| <i>Heartbeat OIP Exchange driver</i> | Heart beat interval (in minutes) between the OIP server and the driver for the Microsoft Exchange server. | 1 |

| Specific properties | Description | Default Settings |
|--|---|------------------|
| <i>Synchronization, business call number</i> | Extension added to the name of the business call number during synchronization with the abbreviated dialing list. | |
| <i>Synchronization, business fax number</i> | Extension added to the name of the business fax number during synchronization with the abbreviated dialing list. | <i>NOSYNC</i> |
| <i>Synchronization, private call number</i> | Extension added to the name of the private call number during synchronization with the abbreviated dialing list. | <i>NOSYNC</i> |
| <i>Synchronization, private fax number</i> | Extension added to the name of the private fax number during synchronization with the abbreviated dialing list. | <i>NOSYNC</i> |
| <i>Synchronization mobile phone</i> | Extension added to the name of the Mobile number during synchronization with the abbreviated dialing list | <i>NOSYNC</i> |
| <i>Synchronization pager</i> | Extension added to the name of the Pager number during synchronization with the abbreviated dialing list. | <i>NOSYNC</i> |
| <i>Synchronization company number</i> | Extension added to the name of the main phone number during synchronization with the private card file. | <i>NOSYNC</i> |
| <i>Default phone number</i> | Call number type set by default during search, for instance, in call management. | <i>Business</i> |
| <i>Synchronize defaultphone number</i> | Synchronize only the default phone number. | <i>Enabled</i> |

| Specific properties | Description | Default Settings |
|---|--|---|
| <i>Maximum name length</i> | Maximum name length of the abbreviated dialling entries in the communication server. | 17 |
| <i>First synchronization delay</i> | Start time (in minutes) after which the first synchronization begins after a restart of the OIP server. | 10 |
| <i>PBX synchronization</i> | Setting for synchronizing the public OIP directory with the abbreviated dialing list. | <i>Enabled</i> |
| <i>Synchronization interval</i> | Interval in which the public OIP directory is synchronized with the abbreviated dialing list. If a Microsoft Exchange Server is connected the configured public contact folders are also synchronized with the public OIP directory. | 1d 1m - each minute 1h - each hour 1d - each day |
| <i>Synchronization time</i> | Time at which the public OIP directory is synchronized with the abbreviated dialing list if the synchronization interval is set to daily. If a Microsoft Exchange Server is connected the configured public contact folders are also synchronized with the public OIP directory. | 01:30 |
| <i>Delete entries in external directories</i> | Deleting entries in the abbreviated dialing list also deletes the entries in the OIP database or in the public contacts folder on the Microsoft Exchange server (depending on the connection). | <i>Disabled</i> |
| <i>Synchronize public contact folder</i> | List of public contact folders on the Microsoft Exchange Server which are to be synchronized with the public OIP directory. | |

| Specific properties | Description | Default Settings |
|-------------------------------------|---|-------------------------------|
| <i>Name order</i> | Format of the name entries in the public directory. | <i>Last name - first name</i> |
| <i>Number of call number digits</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 7 |
| <i>Display extension</i> | The extension, which is added to the name of the number is displayed, if more than one number are assigned to the entry (disabled). | <i>Disabled</i> |

Only the standard call number is synchronized in the standard setting. If all the call numbers of a contact are to be synchronized, you need to deactivate the Synchronize standard call number setting. A name extension for the various call number types should also be configured so that all the numbers do not appear under one name in the communication server's private directory. For example, for the business call number under Synchronize business call number, enter the setting `_B`. Make sure the name extension you choose is not too long as the length of names is limited in the communication server. If a call number type is not to be synchronized, enter the setting `NOSYNC`.

3.16.76 RSS Driver

The RSS Driver (internal OIP service) is the interface adapter used for accessing the RSS Feeds.

3.16.77 Registration Manager

Registration Manager (internal OIP service) is responsible for managing the registered applications.

Table 91: License Manager Specific Properties

| Specific properties | Description | Default Settings |
|---|--|-------------------------------------|
| <i>Registered applications log file</i> | Directory in which the log file with the applications registered on the OIP server is stored. The basic directory is the OIP installation directory. | <code>.logs/registration.txt</code> |

3.16.78 Registration Service

Registration Service is responsible for registering applications.

3.16.79 Routing Manager

The Routing Manager (internal OIP service) is responsible for managing the call distribution in the communication server.

3.16.80 Routing Service

The Routing Service is responsible for accessing the call distribution in the communication server.

3.16.81 SMTP Driver

The SMTP Driver (internal OIP service) is the interface adapter for sending e-mails and text messages (e-mail to text message).

The settings for connecting to the external e-mail server are made here.

Table 92: SMTP Driver Specific Properties

| Specific properties | Description | Default Settings |
|----------------------------|---|------------------|
| <i>SMTP server address</i> | DNS name or IP address of the SMTP mail server. | |
| <i>IP port</i> | IP port of the SMTP mail server. | 25 |
| <i>User name</i> | User name for authentication on the SMTP mail server. | |
| <i>Password</i> | Password for authentication on the SMTP mail server. | |
| <i>SMS server address</i> | DNS name or IP address of the alternative SMS mail server if not identical with the SMTP mail server. | |
| <i>SMS Server IP Port</i> | IP port of the alternative SMTP mail server. | |

| Specific properties | Description | Default Settings |
|----------------------------|---|------------------|
| <i>SMS Gateway Address</i> | SMS gateway address which is added to the mobile number to form the e-mail address (...@example.com). | |

3.16.82 Security Service

The Security Service (internal OIP service) provides the encryption and decryption algorithms of security-relevant data for OIP Services.

3.16.83 Server Utility Service

Server Utility Service (internal OIP service) provides internal tools for OIP Services.

3.16.84 Service Manager

Service Manager (internal OIP service) is responsible for the local management of the Services on the OIP server.

Table 93: Service Manager Specific Properties

| Specific properties | Description | Default Settings |
|--|---|------------------|
| <i>Maximum memory</i> | Limiting the memory in the clients for OIP supporting applications (in megabytes) | 128m |
| <i>Register OIP server on the client under the IP address.</i> | Activated: The OIP server registers with the client under the IP address and not with the host name. OIP Restart the server to apply the set- ting. | Disabled |

3.16.85 Shortdial Directory Service

Shortdial Directory Service (internal OIP service) is responsible for managing the communication server Abbreviated dialing.

The setting for the range of the common abbreviated dialing in the MiVoice Office 400 network can be made here.

Table 94: Shortdial Directory Service Specific Properties

| Specific properties | Description | Default Settings |
|--|---|---|
| <i>Synchronization interval</i> | Synchronization interval (in minutes) in which the abbreviated dialing list is cached in the OIP database. | 30 0 – No synchronization |
| <i>Synchronization range</i> | Range of shared abbreviated dialing numbers in the communication server | 7000-7999 |
| <i>Name order</i> | Format of the name entries in the communication server abbreviated dialing directory. | <i>Last name - first name</i> |
| <i>Number of call number digits</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 7 |
| <i>Call number shown with name dialing</i> | This setting lets you specify whether the abbreviated dialing number or the call number is displayed during a name search in the public communication server directory. | Abbreviate dialing no.(default value), Call number. |

3.16.86 Subscriber Directory Service

Subscriber Directory Service (internal OIP service) is responsible for managing the internal private contacts.

Table 95: Subscriber Directory Service Specific Properties

| Specific properties | Description | Default Settings |
|---------------------|--|------------------------|
| <i>Name order</i> | Format of the name entries in the communication server subscriber directory. | First name - last name |

| Specific properties | Description | Default Settings |
|-------------------------------------|--|------------------|
| <i>Number of call number digits</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 7 |

3.16.87 Subscriber Configuration Manager

Subscriber Configuration Manager (internal OIP service) is responsible for managing the user settings.

3.16.88 Subscriber Configuration Service

Subscriber Configuration Service is responsible for user and terminal settings.

3.16.89 System User Directory Service

System User Directory Service (internal OIP service) is responsible for managing all the registered users on the OIP server.

| Specific properties | Description | Default Settings |
|-------------------------------------|--|-------------------------------|
| <i>Name order</i> | Format of the name entries in the OIP user directory. | <i>First name - Last name</i> |
| <i>Number of call number digits</i> | Number of phone number digits from back which are used to compare with the entries in the directory. | 7 |

3.16.90 Test Service

The Test Service is responsible for managing the OIP/ communication server test orders.

Table 96: Test Service Specific Properties

| Specific properties | Description | Default Settings |
|---------------------|-------------|------------------|
| <i>dummy</i> | | |

3.16.91 Ticket Service

Ticket Service is responsible for managing the call tickets.

| Specific properties | Description | Default Settings |
|--|---|--|
| <i>Save ticket entries in database</i> | Number of days during which the call tickets are stored in the database | 10 0 – Database entries are not deleted |

The call tickets are erased from the OIP database at the time listed in ["OIP database reorganization times"](#) see also ["Reorganize OIP database"](#).

3.16.92 Time Service

Time Service (internal OIP service) is responsible for managing time synchronization.

Table 97: Time Service Specific Properties

| Specific properties | Description | Default Settings |
|---|--|--------------------------------|
| <i>Time synchronization</i> | Activate or deactivate the time synchronization between the communication server and OIP server. | <i>Disabled</i> |
| <i>Synchronization interval</i> | Interval (in hours) in which the time synchronization is carried out. | 24 1 to 24 |
| <i>Time synchronization from the OIP server</i> | Activate or deactivate whether the OIP server is linked to the time synchronization. | <i>Disabled</i> |
| <i>Synchronization command</i> | Command for the time synchronization on the OIP server. | date dd.mm.yyyy; time hh:mm:ss |

If no time master is configured in the communication server settings, the OIP server is automatically activated as time master.

3.16.93 User Preferences Service

User Preferences Service is responsible for managing the user customized settings.

3.16.94 User Profile Manager

User Profile Manager (internal OIP service) is responsible for global OIP user management.

Table 98: User Profile Manager Specific Properties

| Specific properties | Description | Default Settings |
|------------------------------|---|--|
| <i>Data source user name</i> | The user name data source can be configured. The user name will be adapted in the OIP and internal user directory according to the setting. | Active Directory / OIP subscriber directory / PBX user directory |

3.16.95 User Profile Service

User Profile Service is responsible for the access to OIP users.

3.16.96 User Service

User Service is responsible for controlling and monitoring applications.

Table 99: User Service Specific Properties

| Specific properties | Description | Default Settings |
|---------------------------|---|------------------|
| <i>Heartbeat interval</i> | Heartbeat interval (in milliseconds) between OIP and application. | 60000 |

3.16.97 Voice Mail Manager

Voice Mail Manager (internal OIP service) is responsible for managing the voice mails.

Table 100: Voice Mail Manager Specific Properties

| Specific properties | Description | Default Settings |
|-------------------------|---|------------------|
| <i>Save voice mails</i> | Number of days the voice mails are stored | 10 |

| Specific properties | Description | Default Settings |
|--|--|------------------|
| <i>Voice mail file type</i> | Type (wav or mp3) of the voice mail file. Bit rate for mp3 voice mail file | |
| <i>Bit rate for mp3 voice mail file</i> | Bit rate for mp3 voice mail file | |
| Voice mail number PBX <communication server ID> | Voice mail number in the communication server | |

3.16.98 Voice Mail Service

Voice Mail Service is responsible for managing the mailboxes.

3.16.99 WEB Server Service

WEB Server Service (internal OIP service) is responsible for managing the Tomcat Web Server.

The web server port can be changed here if the OIP server is started in console mode. If the port is changed, remember that the OIP server has to be restarted and all the OIP Clients re-installed or re-configured.

| Specific properties | Description | Default Settings |
|-----------------------|---------------------------------------|-------------------------------|
| <i>IP port</i> | IP port of the OIP Web server. | <defined during installation> |
| <i>Root directory</i> | Root directory of the OIP web server. | <i>exp</i> |

3.17 OIP Export Data

The export data is created or deleted at the times listed in the following table. If so configured in the OIP services.

Table 101: Export data create times

| Export data | OIP Service | Time |
|-----------------------|---------------------|---------------------------------|
| <i>ACD statistics</i> | ACD Log Manager | Configurable in ACD Log Manager |
| <i>Call data</i> | Call Logging Driver | 23:45 |
| <i>I/O Data</i> | I/O Manager | 01:00:00 if configured daily |

3.18 Call Centre Statistics Data

The Call centre statistics data are stored in four files on the OIP server if so selected during the user-defined installation of the OIP server.

- Call centre status data (callcenter-@DATE-@TIME.txt)
- Call centre call data ([acdcall-@DATE-@TIME.txt](#))
- Agent status data (agentstatus-@DATE-@TIME.txt)
- Agent call data (agentcall-@DATE-@TIME.txt)

In the default settings, a new file is written daily to the directory <OIP-directory>\acd- log. The files are created in .txt format. The file names contain time variables so that the time stamp is added each time a new file is created. With fixed file names no new file is created before the existing file is deleted from the folder.

The Call centre statistics data can be provided in the OIP service ACD Log Manager.

3.18.1 Call Centre Status Data

A snapshot of the call centre is mapped in the call centre status data. The snapshot interval can be configured in the OIP Service ACD Log Manager.

Table 102: Designator for the Call Centre status data

| Designator | Description |
|------------------------|--|
| <u>CallCenterID</u> | Call centre ID The Call Centre ID can be set in the ACD Log Manager. |
| <u>LogID SkillID</u> | Unique log ID Skill ID |
| <u>Date</u> | Date of the snapshot. |
| <u>Time</u> | Time of the snapshot. |
| <u>AgentsLoggedIn</u> | Number of agents logged on. |
| <u>AgentsReady</u> | Number of agents whose status is Available. |
| <u>AgentsRinging</u> | Number of agents whose status is Ringing. |
| <u>AgentsConnected</u> | Number of agents whose status is Connected. |
| <u>AgentsPause</u> | Number of agents whose status is Pause. |
| <u>AgentsWrapUp</u> | Number of agents whose status is Wrap up. |
| <u>CallsWaiting</u> | Number of calls waiting in the ACD queue. |

3.18.2 Call Centre Call Data

In the call centre calls data each incoming call to the call centre is listed in the ACD Queue.

Table 103: Designator for the call centre call data

| Designator | Description |
|-----------------------|--|
| <u>DisconnectTime</u> | Time at which the call in the ACD Queue was completed. |

| Designator | Description |
|----------------------------|---|
| <u>DDI</u> | DDI dialled by the caller. |
| <u>CLIP</u> | Caller CLIP. |
| <u>SkillID</u> | Skill ID of the called Skill. |
| <u>CallStateBeforeIdle</u> | Status of the call to the call centre before it switches to available. 0 - unknown / 1 - available / 2 – call to ACD queue / 3 - connected / 4 – on hold/ 5 – call to agent |
| <u>ExtWaitDuration</u> | Caller ringing time in (in seconds) before the call centre call was answered. |
| <u>ExtCopyDuration</u> | Caller call duration (in seconds) |
| <u>CallCenterID</u> | Call centre ID The Call Centre ID can be set in the ACD Log Manager. |
| <u>LogID</u> | Clear protocol ID |
| <u>Date</u> | Date of the call to the call centre. |
| <u>RingTime</u> | Time at which the call in the ACD Queue is first signalled. |
| <u>AgentConnectTime</u> | Time at which the call is signalled to the first agent. |
| <u>AgentRingTime</u> | Time at which the call in the ACD Queue was answered. If Courtesy is activated, the call is considered answered when Courtesy starts up. |
| <u>AnswerTime</u> | Time at which the call was answered by the agent. |

3.18.3 Agent States Data

The agent status data lists every change in agent status.

Table 104: Designator of the agent status data

| Designator | Description |
|-----------------------|---|
| <u>CallCenterID</u> | Call centre ID The Call Centre ID can be set in the ACD Log Manager. |
| <u>LogID</u> | Clear protocol ID |
| <u>UserID</u> | Unique OIP user ID of the agent. |
| <u>AgentCallLogID</u> | Reference to the Log ID in the agent call data. |
| <u>Date</u> | Date |
| <u>Time</u> | Time |
| <u>State</u> | Agent status after status change 0 – logged out / 1 – logged in / 2 - busy (call centre or private call) / 3 - pause / 4 – wrap-up / 5 - unknown |
| <u>WrapupCode</u> | Wrap-up code - 0 if no wrap-up code is defined. |
| <u>PauseCode</u> | Pause code - 0 if no pause code is defined. |
| <u>SkillID</u> | Skill ID assigned to the call. |
| <u>ReadyAgents</u> | Number of agents logged on and ready at the time of the agent status change. |

| Designator | Description |
|-------------------|---|
| <u>LoginState</u> | 0 - Agent logged on during status change / 1 - Agent was logged on during status change / 2 - Agent logged out during status change / 3 - Agent was logged out during status change |

3.18.4 Agent Calls Data

In the agent call data each incoming call centre call of the agents is listed.

Table 105: Designator of the agent call data

| Designator | Description |
|-----------------------|--|
| <u>CallCenterID</u> | Call centre ID The Call Centre ID can be set in the ACD Log Manager. |
| <u>LogID</u> | Unique log ID |
| <u>UserID</u> | Unique OIP user ID. |
| <u>AcdCallID</u> | Unique call centre Call ID. |
| <u>Date</u> | Date |
| <u>RingTime</u> | Ringling time of the call on the ACD Queue. |
| <u>AnswerTime</u> | Time at which the call was answered. |
| <u>DisconnectTime</u> | Time at which the call was completed. |
| <u>WrapupTime</u> | Time at which the wrap-up time was completed. |
| <u>WrapupCode</u> | Wrap-up code - 0 if no wrap-up code is defined. |

| Designator | Description |
|----------------------------|--|
| <u>CallStateBeforeIdle</u> | Status of the call to the call centre with the agent before change to available. 0 - available / 1 – dialing tone / 2 - dialing / 3 – ringing phase / 4 - proceeding / 5 - busy / 6 - connected / 7 - hold / 8 – on hold / 9 – incoming call / 10 – call deleted / 11 - conference / 12 - callback / 13 – reminder call / 14 – incoming announcement / 15 – outgoing announcement / 16 – function successfully completed / 17 – park / 18 - intrusion / 19 - unknown |
| <u>SkillID</u> | Skill ID assigned to the call. |
| <u>DDI</u> | DDI dialled by the caller. |
| <u>CLIP</u> | Caller CLIP. |
| <u>RingDuration</u> | Ringing time with the agent (in seconds) |
| <u>ConvDuration</u> | Duration of the call centre call (in seconds) |
| <u>WrapupDuration</u> | Duration of the wrap-up time of the call centre call (in seconds) |

3.19 Call data

The call data is stored as a file on the OIP server if so selected during the user-defined installation of the OIP server.

In the default settings, a new file is written daily to the directory *<OIP-directory>tax*. The files are created in .csv format. The file name is *taxdata-yyyy-mm-dd.tax*, with yyyy-mm-dd representing year-month-day.

The Call Logging settings can be made in the OIP service Call Logging Driver.

The following table lists the designators of the call data records. The column Designator PC5 format lists the relevant data fields of the PC5 format. More details on the PC5 format can be found in the MiVoice Office 400 System Manuals.

Table 106: Designators of the call data records

| Designator | Description | Designator PC5format |
|-------------------------|---|----------------------|
| <i>Ticket ID</i> | Unique Ticket ID | |
| CS name | Name/ID of the communication server on which the user is created. | |
| <i>Serial ID</i> | <p>While the serial number is unique for each communication server, it can be assigned several times within the network.</p> <p>If, in the OIP configuration in the OIP service, Call Logging Driver the option Update journal entry is activated, the call ID is added instead of the serial ID.</p> | SERIALNO. |
| <i>Sequence number</i> | While the sequence number is unique for each communication server, it can be assigned several times within the network. | SEQ.NO. |
| <i>Call number</i> | Call number | No. |
| <i>User ID</i> | ID of the user on the OIP server. | |
| <i>User name</i> | User name | |
| <i>Cost centre</i> | Cost centre number | CC |
| <i>Direction</i> | Call direction: 0 - unknown / 1 - incoming / 2 - outgoing | SZ x |
| <i>Call destination</i> | Destination or source network: 0 - unknown / 1 - exchange / 2 - PISN | SZ x |

| Designator | Description | Designator PC5format |
|-----------------------------|--|-------------------------|
| <i>Call type</i> | Network access type: 0 - unknown / 1 – network access, business, transferred / 2 – network access, business, subscriber dialled / 3 - incoming / 4 – incoming to ACD destination / 5 - PISN transit / 6 – network access with cost centre selection, transferred / 7 – network access with cost centre selection, subscriber dialled / 8 – network access, private, transferred/ 9 – network access, private, subscriber dialled | SZ y |
| <i>Call handling</i> | <p>Call Handling Incoming calls:</p> <p>0 - unknown/ 1 - transferred/ 2 – answered directly / 3 - unanswered / 4 - answered / 5 – transferred to network / 6 – data service call / 7 – rejected call</p> <p>Call Handling Outgoing Calls:</p> <p>0 - unknown / 1 – normal call / 2 – transferred by CFU/CFNR/CD to network / 3 – transferred by internal user / 4 – data service call / 5 – booth call / 6 – room call</p> | SZ z |
| <i>Start date</i> | Date of start of connection | DATE |
| <i>Start time</i> | Time of start of connection | TIME |
| <i>Duration</i> | Duration of connection | DURATION |
| <i>Time to answer (TTA)</i> | Call duration until the call was answered | TTA |
| <i>Call charges</i> | Call charges | CHARGE |
| <i>Metering pulses</i> | Metering pulses | METPUL |
| <i>CS name interface</i> | Home communication server | |

| Designator | Description | Designator PC5format |
|----------------------------------|---|-------------------------|
| <i>Node</i> | AIN node ID | |
| <i>Interface card</i> | Card on the home communication server | EXCH |
| <i>Interface port</i> | Port on the home communication server | EXCH |
| <i>Channel group</i> | Channel group on the home communication server | EXCH |
| <i>Caller ID 1</i> | Caller identification 1 | ID1 |
| <i>Caller ID 2</i> | Caller identification 2 | ID2 |
| <i>Destination number 1</i> | Destination number 1 | DEST1 |
| <i>Destination number 2</i> | Destination number 2 | DEST2 |
| <i>Gateway CS</i> | The communication server connected with the public exchange as a gateway. | |
| <i>Gateway nodes</i> | AIN nodes via which to access the network. | |
| <i>Gateway interface card</i> | Network card via which to access the network. | |
| <i>Gateway port</i> | Port via which to access the network. | |
| <i>Gateway channel group no.</i> | Channel group via which to access the network. | |
| <i>Number of hops</i> | Number of communication servers that sent call data records for the ticket. | |

| Designator | Description | Designator PC5format |
|---------------------------|---|-------------------------|
| <i>Origin CS</i> | Communication server on which the call was made. | |
| <i>Origin call number</i> | Call number on which the call was made. | |
| <i>Origin user name</i> | User who made the call. | |
| <i>CL data records</i> | Number of individual call data records from which the ticket was created. | |
| <i>Completed</i> | Ticket state: <i>0 (false)- not completed / 1 (true) - completed</i> | |
| <i>Confirmed</i> | <i>0 (false)- not confirmed / 1 (true) - confirmed</i> | |
| <i>Ticket date</i> | Ticket issue date | |
| <i>Ticket time</i> | Ticket issue time | |

3.20 I/O Data

The I/O Manager can be used to set for each configured action whether the action in question should be monitored. If monitoring is activated, a new file is written daily to the directory. *<OIP-directory>\iolog*. The files are created in .csv format. The file name is *iolog-dd-mm-yyyy-hh-mm-ss*, with *<dd-mm-yyyy>* representing day-month-year and *<hh-mm-ss>* for hour-minute-second.

The settings for creating the I/O data can be made in the OIP service I/O Manager. The following table lists the designators for the I/O data records.

Table 107: Designation for the I/O data records

| Designator | Description |
|-------------|---|
| Date | Date on which the action was carried out. |
| Time | Time at which the action was carried out. |
| ActionId | Action ID of the action carried out. |
| DataType | Data type |
| DataSubType | Other data type if action is supported. |
| Data | Data sent with the action. |

OAuth Token Authentication Procedure for Microsoft Exchange

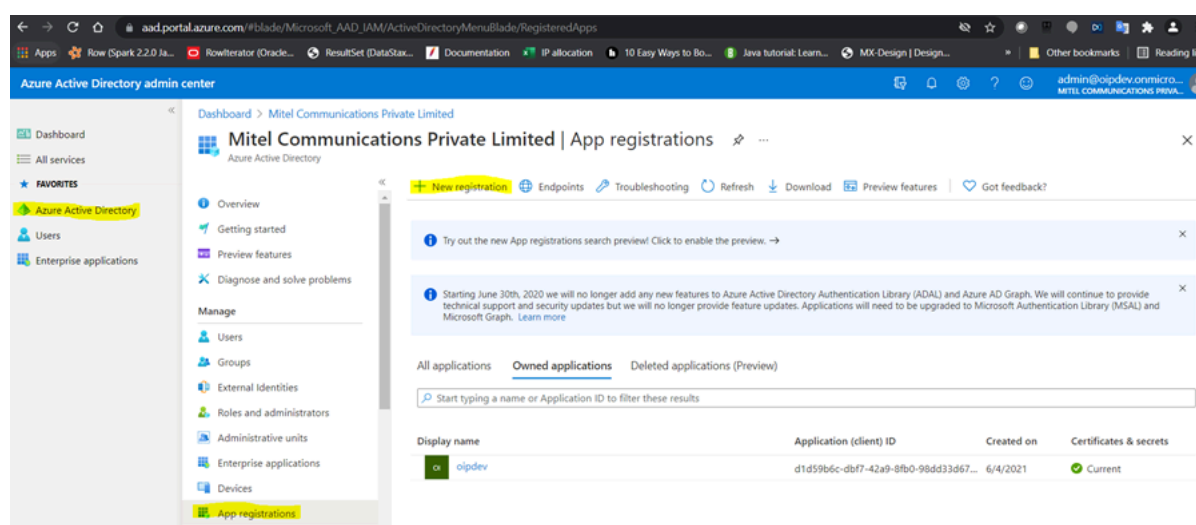
4

This chapter describes the procedure to authenticate Microsoft Office 365 services by enabling OAuth token.

Register your application

To receive the OAuth Token from Microsoft, the application must be registered in the Azure Active Directory. To use OAuth, an application must have an application ID issued by Azure Active Directory. In the following procedure, it is assumed that the application is a console application and you need to register your application as a public client with Azure Active Directory. You can register an application in the Azure Active Directory admin center or by using Microsoft Graph.

1. In the browser, navigate to the **Azure Active Directory** admin center [Azure Active Directory admin center](#) and log in using a personal account (also known as Microsoft Account) or work or school account.
2. Select **Azure Active Directory** in the left navigation panel, and then select **App registrations** under **Manage** as shown in the following image:



3. Select **New registration**.

The **Register an application** page is displayed.

Azure Active Directory admin center

Dashboard > Mitel Communications Private Limited >

Register an application

oipdev

Supported account types

Who can use this application or access this API?

- ☒ Accounts in this organizational directory only (Mitel Communications Private Limited only - Single tenant)
- ☐ Accounts in any organizational directory (Any Azure AD directory - Multitenant)
- ☐ Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Personal Microsoft accounts only)

[Help me choose...](#)

Redirect URI (optional)

We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional, but a value is required for most authentication scenarios.

Public client/native (mobile & desktop) urn:ietf:wg:oauth:2.0:oob

Register an app you're working on here. Integrate gallery apps and other apps from outside your organization by adding fr

[By proceeding, you agree to the Microsoft Platform Policies](#)

Register

4. On the **Register an application** page, enter the following:

- Enter a name for your application.
- Select **Supported account types** of your choice.
- For **Redirect URI (optional)**, select **Public client (mobile & desktop)** from the drop-down list and set the value to `urn:ietf:wg:oauth:2.0:oob`.

5. Click **Register**. The **Application (client) ID** and **Directory (tenant) ID** are generated as shown in the following image. Copy the values and save them as you need the values later.

Azure Active Directory admin center

Dashboard > Mitel Communications Private Limited >

oipdev

Search (Ctrl+J)

Overview

Essentials

Display name
oipdev

Application (client) ID
g1d59b6c-dbf7-42a9-8fbc-98dd33d67e54

Object ID
06dc51e0-4085-4adf-b375-2f53b590284c

Directory (tenant) ID
2dcf09da-5c8a-451f-9112-af22e365d67

Supported account types
My organization only

Client credentials
0 certificate, 1 secret

Redirect URIs
0 web, 0 spa, 1 public client

Application ID URI
Add an Application ID URI

Managed application in local directory
oipdev

Configure for app-only authentication

This procedure must be completed to use application permissions.

1. Select **Manifest** in the left navigation panel under **Manage**.

2. Locate the `requiredResourceAccess` property in the **Manifest** and add the following inside the square brackets ([]):

JSONCopy

```
{

"resourceAppId": "00000002-0000-0ff1-ce00-000000000000",

"resourceAccess":

[

{

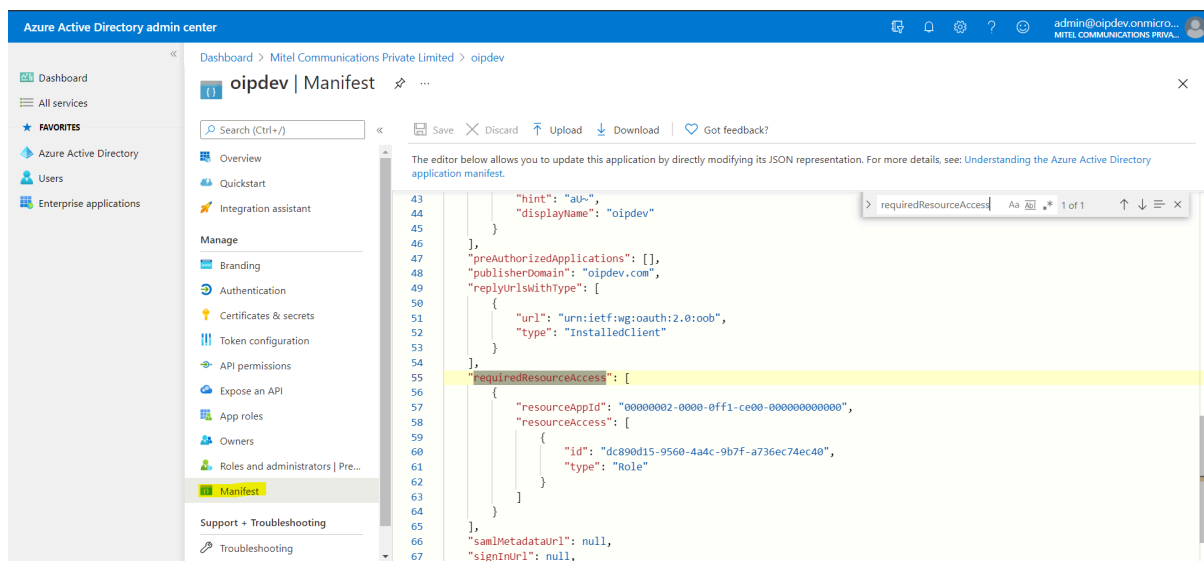
"id": "dc890d15-9560-4a4c-9b7f-a736ec74ec40",

"type": "Role"

}

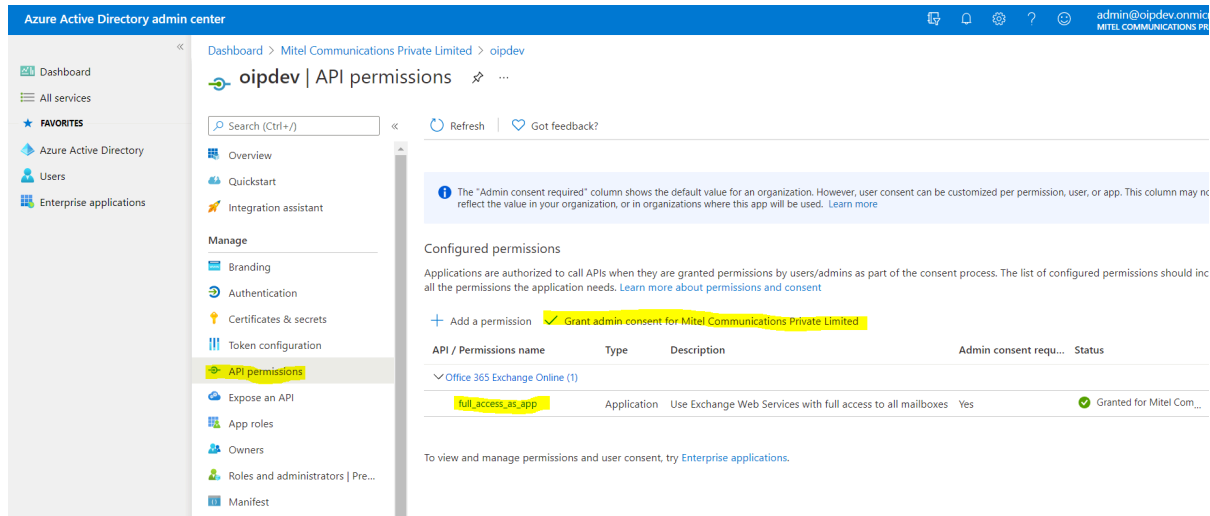
]

}
```

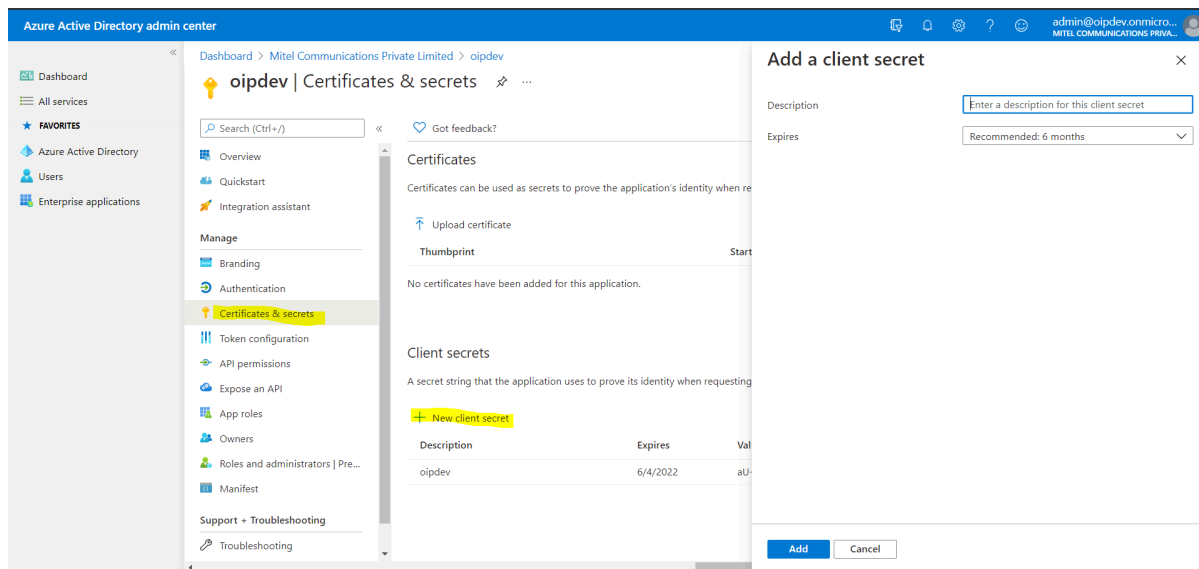


3. Click **Save**.

4. Select **API permissions** under **Manage**. Confirm that the **full_access_as_app** permission is granted as shown in the following image.



5. Select **Grant admin consent for org** and accept the consent dialog.
6. Select **Certificates & secrets** in the left navigation panel under **Manage**.
7. Select **New client secret**, enter a short description, and click **Add** as shown in the following image.



8. Copy the value of the **Secret ID** that you added client secret and save it as you will need it later.


Note:

The value is visible only when you first create the client secret code. Make sure to copy it.

The following values are used for Microsoft Office 365 OAuth authentication in the OIP Exchange Configuration:

1. Application Client ID (Application (client) ID generated in step 5 of the **Register your application** procedure.
2. Application Tenant ID (Directory (tenant) ID generated in step 5 of the **Register your application** procedure.
3. Client secret code (Secret ID generated in the step 8 of the **Configure for app-only authentication** procedure.

Configure Microsoft Office 365 with OIP

1. To configure Microsoft Office 365 on OIP Web Admin, go to **Configuration > Exchange connection**.
2. Select Microsoft Exchange Office 365 from the **Microsoft Exchange version** drop-down list.
3. Enter values in the other fields.



Note:

It is mandatory to enter the **User name**.

Make sure to enter the values of Application Client ID, Application Tenant ID, and Client secret code generated in the preceding procedures.

Directories

5

This chapter contains the following sections:

- [Configuring the Directory Connection](#)
- [Connecting Microsoft Exchange directories](#)
- [Connecting Active Directory](#)
- [Connecting external phone-book directories](#)
- [Directories Synchronization](#)
- [Communications Server Directories](#)
- [Microsoft Exchange Server](#)
- [Searching in directories](#)
- [OIP name server](#)
- [OIP image server](#)

Attached directories can be used, for name dialing or name identification of incoming calls.

Apart from the directories of the attached communication server, you can also attach Microsoft Exchange, LDAP and ODBC directories and Microsoft Active Directory and commercial electronic phone books.

The following figure provides an overview of the various directories.

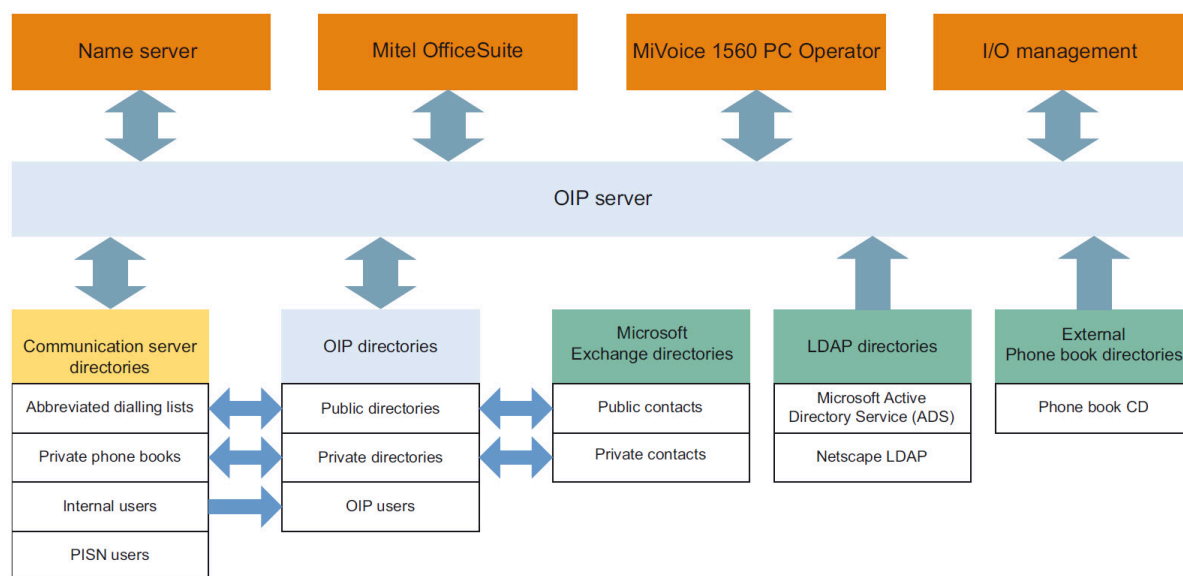


Figure 4: Overview of the directories

The OIP server has direct access to the communication server directories, OIPdirectories, Active Directory, LDAP directories and external telephone directories. The Microsoft Exchange directories are accessed indirectly via the OIP directories by being synchronized with one another.

The communication server, OIP and Microsoft Exchange directories have not just read rights but also write rights so that new contact entries can be created and existing entries edited. The OIP server only has read rights on

LDAP directories and external telephone directories. You can configure users' access rights to the individual directories by assigning the users to user groups to which the OIP service Directory Service has been assigned.

5.1 Configuring the Directory Connection

No configuration is required on the communication server to connect a communication server to the OIP server. When several communication servers are connected, check that the abbreviated dialing on all communication servers are identically defined.

When external directories are connected, an appropriate OIP driver must be installed.

The OIP driver is installed, and the connection configured via OIP WebAdmin. You can find configuration and installation instructions in the OIP WebAdmin Online help.

5.2 Connecting Microsoft Exchange directories

By connecting Microsoft Exchange Server to OIP it is possible to access the following Microsoft Exchange directories:

- Public Contacts Folders
- Mailboxes of the domain user
 - Personal Outlook address book
 - Calendar
 - E-mail folder

Thanks to the access to the domain user's mailboxes, the contact entries of the personal Outlook address book can be synchronized with the private OIP directory. Moreover, existing calendar entries can be displayed in the presence display.

The presence status of Microsoft Outlook calendar entries is displayed in the OIP calendar by the OIP presence status (see ["Presence status in the OIP"](#))

Access to the e-mail folder is required to store voice mails as e-mail in the Inbox.

The settings for connecting a Microsoft Exchange Server can be made in the Configuration / Microsoft Exchange view.

The Microsoft Exchange Server can be connected either via the platform-independent integrated Microsoft Exchange driver or via the Windows-based external OIP Exchange driver.

5.3 Connecting Active Directory

The Active Directory connection provides the possibility of connecting the Active Directory to the OIP server.

The Active Directory is accessed in read only mode, i.e. it is not possible to modify the data in the Active Directory.

The contact data is made available to the communication servers via the OIP Name Server, see ["OIP name server"](#)

Port 636 allows a secure connection from OIP to LDAPS and Active Directory. To connect to AD using secure LDAP follow the steps:

1. Log in to OIP WebAdmin.
2. Navigate to **Configuration > Directories > Configuration**

The screenshot shows the Mitel OIP WebAdmin interface. The left sidebar contains a navigation menu with categories: System overview, Configuration, and Maintenance. Under Configuration, there are links for Server, Users, Call centre, Directories, Configuration (highlighted), Search, Contacts, Exchange connection, and ATAS. The main content area is titled 'Active Directory' and shows a status of 'available'. Below this, there are configuration fields for Active Directory: Active Directory server address (10.211.159.98), Active Directory port (LDAPS (port 636)), Active Directory base DN (ou=,dc=pmsnm,dc=com), User name (administrator@pmsnm.com), Password (masked), and Minimum alpha search chunks (1). A dropdown menu for the Active Directory port is open, showing options: LDAPS (port 636), LDAP (port 389), LDAPS (port 636) (selected), Global catalog (port 3268), and administrator@pmsnm.com. Below the Active Directory section, there are links to expand other directory services: LDAP directory, TwixTel (CH), DasTelefonbuch (D), ODBC directory, and Search.ch (online), all of which are currently 'not configured'.

3. Expand Active Directory.
4. From the drop-down list of Active Directory port select LDAPS (port 636) and click **Apply**.

This is a close-up of the 'Active Directory port' dropdown menu. The menu is open, displaying a list of options. The option 'LDAPS (port 636)' is highlighted in blue. Other visible options include 'LDAP (port 389)', 'Global catalog (port 3268)', and 'administrator@pmsnm.com'. A mouse cursor is visible over the highlighted option.

The LDAP Directory Service allows you to connect external LDAP directories to the OIP server. To access the LDAP directories, you need, while installing the OIP server, to select the option Connection of LDAP directories.

The LDAP directories are accessed in read mode, i.e. it is not possible to modify the data in the LDAP directory. One LDAP directory can be connected per OIP server.

The contact data is made available to the communication servers via the OIP Name Server, see ["OIP name server"](#)

The users can enter port 636 in the port field to have a secure connection from OIP to LDAPS and Active Directory.

To enter the LDAP IP port follow the steps:

1. Log in to OIP WebAdmin.
2. Navigate to **Configuration > Directories > Configuration**.
3. Expand **LDAP directory** and select the check box **LDAP directory**.

The screenshot shows the OIP WebAdmin configuration interface. On the left is a navigation menu with categories: System overview, Configuration, Server, Users, Call centre, Directories, Configuration (highlighted), Search, Contacts, Exchange connection, ATAS, and Maintenance. The main content area has 'Apply' and 'Undo' buttons at the top. Below them, there are two expandable sections: 'Active Directory' (status: available) and 'LDAP directory' (status: not configured). The 'LDAP directory' section is expanded, showing a table with the following rows: 'LDAP directory' with a checked checkbox, 'LDAP server address' with an empty text field, 'LDAP IP port' with a text field containing '636', and 'LDAP base DN' with an empty text field.

4. Enter 636 in **LDAP IP port** and click **Apply**.

Note:

The FQDN of the Active Directory must be resolvable from the OIP server.

5.4 Connecting external phone-book directories

External telephone directory connection to OIP refers to phone book CDs or ODBC directories, for instance, from spreadsheet applications.

To access the external phone-book directories, while installing the OIP server, you need to select the option Connection of external phone book directories (phone book CD).

The settings for connecting the phone book CD server in the OIP server can be made either when the OIP server is installed or later in the OIP service Phonebook Directory Service.

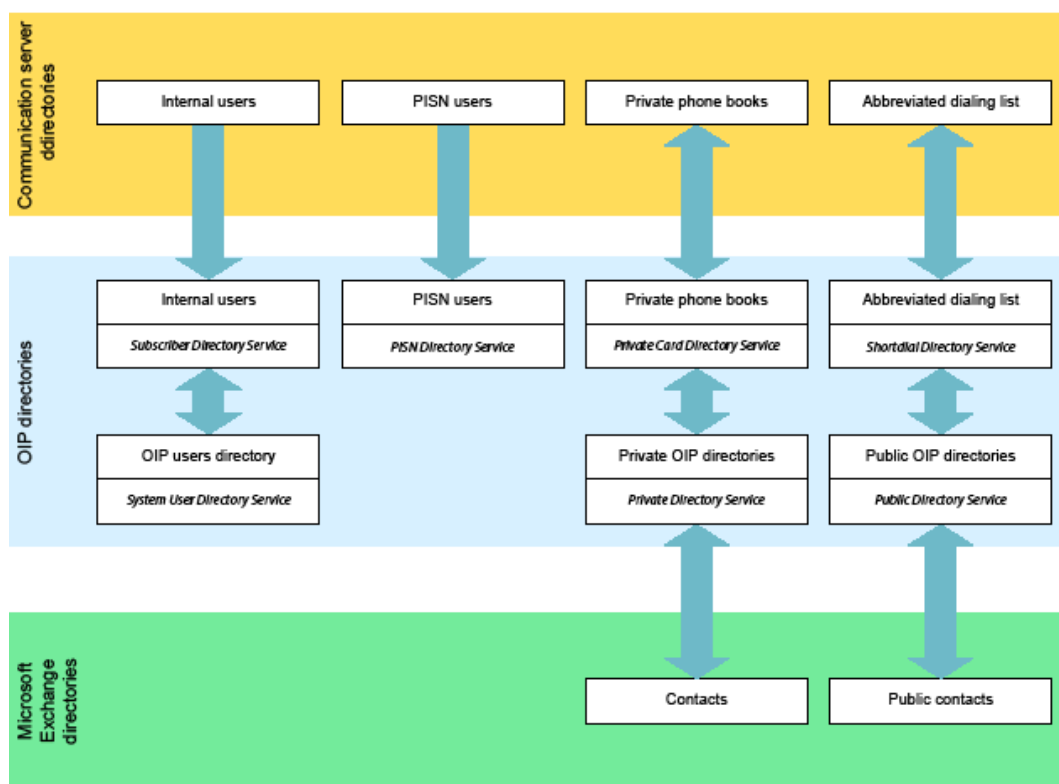
Not all phone-book CD manufacturers provide an interface on which the OIP server can access. As a result only those phone-book CDs that have an appropriate interface can be connected. External phone-book CDs are connected via a corresponding driver, which has to be installed on the PC on which the phone-book CD is placed in the CD-ROM drive or has been installed.

5.5 Directories Synchronization

The directories of the connected communication servers are synchronized with the OIP directories. If a Microsoft Exchange Server is connected, the Outlook directories are also synchronized with the OIP directories. Connected LDAP directories, external telephone directories and Active Directory are not synchronized.

The following figure shows the synchronization of the directories, and the relevant OIP services.

Figure 5: Directories Synchronization



Contact entries in the synchronized directories are managed via Mitel OfficeSuite, operator applications, OIP WebAdmin or via Microsoft Outlook. Synchronized directories of networked communication servers are managed via OIP WebAdmin.

5.6 Communications Server Directories

The communication server and OIP directories are synchronized via the communication server directories temporarily stored on the OIP server (see **Fig. 5.2**). The synchronization interval can be defined in the OIP services *Shortdial Directory Service*, *Private Card Directory Service* and *PISN Directory Service* through the *Synchronization interval* option. The default setting is 30 minutes. Within this interval, modifications in the communication server directories are imported and synchronized with the OIP directories. On the other hand, modifications in the OIP directories are directly reflected in the communication server directories.

The option *Synchronization of OIP and PBX directories* is activated in the default OIP server installation. During operation, you can activate, deactivate and configure synchronization via OIP WebAdmin in the Configuration / Server / General view.

The first synchronization after OIP server start takes place after a configurable start delay. For the synchronization of public directories, set the synchronization delay in the OIP service *Public Directory Service*. For the synchronization of private directories, set the synchronization delay in the OIP service *Private Directory Service*. If multiple communication servers or a communication server network are connected, synchronization is carried out sequentially.

Check that the number of possible entries in the communication server directories is limited so that, under certain circumstances, not all the OIP directory contact entries can be synchronized in the communication server directories. You can increase the number of synchronized contacts if you are only synchronizing a certain number of call number types. You can make the settings in the OIP services *PBX Driver Ascotel* and *Public Directory Service*. Only the business call number is synchronized in the standard settings.

5.6.1 Public Directories

An OIP folder is created in the public OIP directory for synchronizing abbreviated dialing lists. The folder name can be changed if necessary. Contact entries in the public OIP directory including entries in the sub-folders are also synchronized in the abbreviated dialing list.

In a networked environment with several communication servers, the abbreviated dialing lists must be identically defined in all the networked communication servers.

5.6.1.1 Private directories

Contacts in the private communication server phone books are synchronized in the private OIP directory. Contact entries in the private OIP directories including entries in the sub-folders are also synchronized in the private communication server phone books.

5.7 Microsoft Exchange Server

5.7.1 Synchronizing Public Contacts Folders

The public contact folders on the Microsoft Exchange Server can be synchronized with the public OIP directories. The Outlook contact folders to be synchronized can be configured in the OIP service *Public Directory Service* under the Synchronize public contact folder option. The folder structure of the public folders on the Microsoft Exchange Server is transferred to the public OIP directories.

To also synchronize a public Outlook contact folder on the Microsoft Exchange Server with the communication server abbreviated dialing list, enter the name of the public Outlook contact folder in the OIP service *Public Directory Service* in the Public default contact folder option. If it is located in a sub-folder, enter the corresponding path. Only a public Outlook contact folder can be synchronized with the communication server's abbreviated dialing lists.

5.7.1.1 Synchronizing private Outlook address books

The private Outlook contacts, together with the sub-folders, are synchronized with the private OIP directories. The folder structure of the sub-folder is copied in the process.

5.8 Searching in directories

There are three different ways of searching through directories:

- With the Full-text search the string of search characters entered is searched for in all the contact data fields.
- With the Contact search the string of search characters entered is searched for in the name fields.
- With the CLIP search a contact corresponding to a known phone number is searched for.

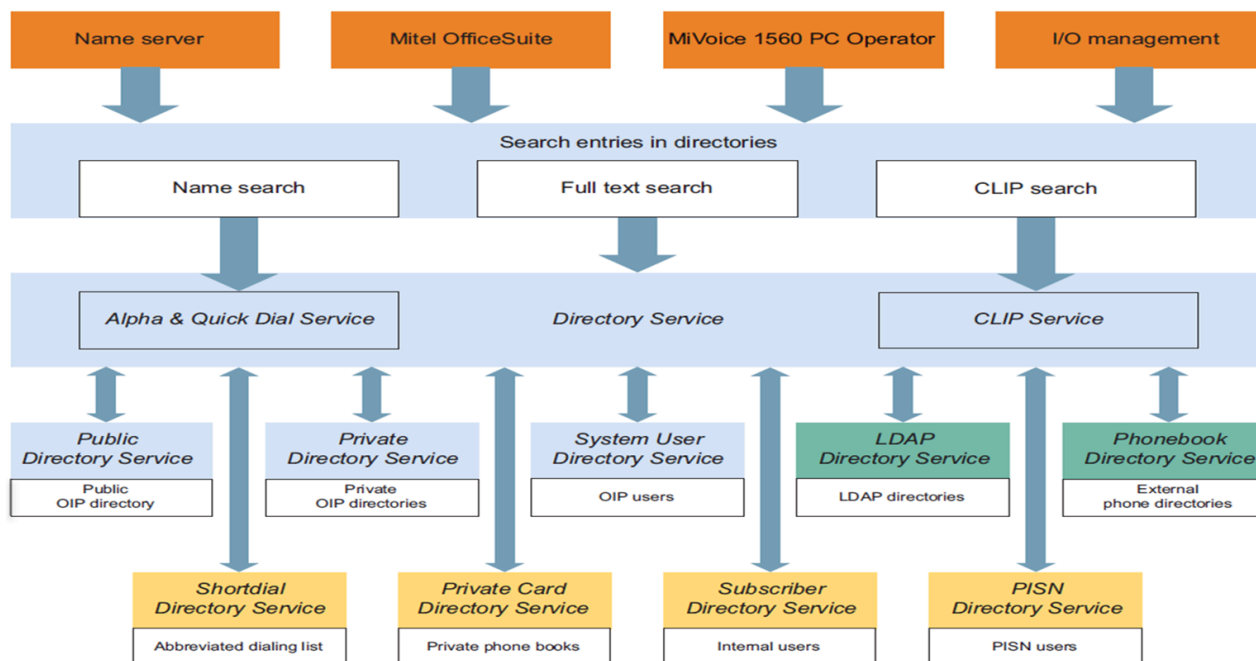


Figure 6: Search in directories

All the search requests are sent to the OIP service *Directory Service*. With a full-text search the search request is forwarded directly to the configured directories. With the contact and CLIP search the search request is made via the OIP services *Alpha & Quick Dial Service* and *CLIP Service*. The sequence of the string of search characters (e.g. Name-First name) can be configured in the corresponding OIP services.

5.8.1 The search in OIP applications

OIP applications search in the directories which are globally entered in the OIP service *Directory Service*. The setting for the *OIP Name Server* is made accordingly in the OIP services *Alpha & Quick Dial Service* and *CLIP Service*. In the OIP applications the global setting can be restricted further for each user, where configurable.

5.9 OIP name server

The OIP name server gives the communication server access to the directories managed by OIP. This means that name searching when dialing from system phones is not limited to just the communication server directories; depending on the connection it can be complemented with external OIP directories, Microsoft Exchange directories, LDAP directories and external phone book directories.

5.9.1 Dialing by name

The directories covered by the name search and the sequence in which the directories are to be searched can be configured in the OIP service *Alpha & Quick Dial Service*. The user is shown all the possible entries that are found in the various directories.

Dialing by name can be carried out in two ways on the system phone to minimize the list of search results, e.g. for frequent internal name searches.

- A name dial search without search prefix only searches in the basic directories defined in the OIP service *Alpha & Quick Dial Service*. In the default setting those directories are the OIP and communication server directories, depending on the installation.
- A name dial search with search prefix only searches in the extended directories defined in the OIP service *Alpha & Quick Dial Service*. The search prefix is also defined in the OIP service *Alpha & Quick Dial Service*.

If the OIP directories are synchronized with the communication server directories, while selecting the basic directories, check that name search is only allowed on one of the directories.

5.9.2 CLIP analysis

To evaluate the incoming call CLIPs, the directories configured in the OIP service is accessed *CLIP Service*. The user is shown the first match.

If the OIP directories are synchronized with the communication server directories, while selecting the basic directories, check that CLIP evaluation is only allowed on one of the directories.

The search sequence depends on the settings in the OIP service *CLIP Service*.

The OIP Name Server is automatically activated when the OIP server is started. No settings are required in the communication server.

5.10 OIP image server

Applications and phones which support contact images can obtain these from the OIP image server. The OIP image server can be synchronized with an image server in the cloud or via a connected Microsoft Exchange Server.

The image server downloads the images to a local directory on the OIP computer. Any image file in the cloud can be used as an image source. If Microsoft Exchange is connected, then the images in the public contacts are used as an additional source. The images are updated at the set intervals.

OIP that support contact images download the images directly from the OIP image server. The image size is adjusted automatically here.

The communication server can be connected to the OIP image server. As soon as the OIP image server is activated, OIP enters the address of the OIP image server in the communication server. Applications and phones on the communication server that support contact images also download the images from the OIP image server in this way. However, the image size is not adjusted here. The images should already have been stored with the appropriate dimensions and format.

OIP only enters the address of the OIP image server in the communication server when no other image server is configured there.

Table 108: Information about the OIP image server

| Configuration element | Description |
|--|---|
| File path of the images | <OIP directory>\webapps\axpl\images\contacts |
| Image format and size | PNG, 150 x 200 pixels |
| Configuring the image server in the communication server | WebAdmin in expert mode, Configuration / IP network / Image server view |

This chapter contains the following sections:

- [Presence status in the OIP:](#)
- [Defining and activating presence profiles](#)
- [General profile features and sub-profiles](#)
- [General profile features](#)
- [Functions sub-profile](#)
- [Call forwarding sub-profile](#)
- [Notification sub-profile](#)
- [Audio sub-profile](#)
- [Display sub-profile](#)
- [Profile switch](#)

6.1 Presence status in the OIP:

Presence states such as Available, Busy or Absent are specified states which provide information on the current presence and availability of an OIP user. A user's own presence status is indicated, for example, in the Mitel OfficeSuite phone window.

Presence profiles can be defined via the OIP applications.

6.1.1 Synchronization with communication server and Outlook

The OIP presence states are synchronized with the presence state in the communication server. If OIP is connected to a Microsoft Exchange Server or if Mitel OfficeSuite is connected to a local Outlook, OIP also synchronizes the presence states with Outlook if required. For this, two settings are available at the user level. The table below shows the synchronization responses based on these settings.

Table 109: Settings for synchronizing the presence states

| A | B | Exchange/ localOutlook | | OIP application (e. g. Mitel OfficeSuite) | | | | Communication server |
|-------------------------------------|--------------------------|---------------------------|---|--|---|------------------------|---|------------------------------|
| <input type="checkbox"/> | | Outlook | ↔ | Calendar | ✕ | OIPusers ²⁷ | ↔ | Internal users ²⁸ |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Outlook | ↔ | Calendar | ⇒ | OIP users | ↔ | Internal users |

²⁷ e.g. display of the presence states in the Mitel OfficeSuite phone window or in the presence indicator
²⁸ display of the presence states on the phone or to the calling party








| A | B | Exchange/ localOutlook | | OIP application (e. g. Mitel OfficeSuite) | | | | Communication server |
|---|---|---------------------------|---|--|---|------------|---|-------------------------|
|  |  | Outlook |  | Calendar |  | OIP users |  | Internal users |
| | | Calendar-based | | | | User-based | | |

Table 110: Legend explanation:

| | |
|---|--|
| A | Outlook to communication server setting |
| B | Communication server to Outlook setting |
|  | Presence states are synchronised on both sides. |
| x | Presence states are not synchronised. |
|  | Presence states are synchronised unilaterally from Calendar to user. Non-matching states are overwritten by the Calendar |

The synchronization interface with Outlook is located between the user-based and the calendar-based presence states. This means that in non-synchronized operations the Calendar may indicate a different presence state to the one set with the user.

Example:

Configuration with Exchange connection; synchronization is deactivated. The user manages his appointments with Outlook and the Mitel OfficeSuite Calendar. The user has entered an appointment in Outlook and the presence status is Occupied (the term used in the Mitel OfficeSuite calendar is Busy). This means the user's presence state is not coupled and may have a completely different value or be set differently.

6.1.2 Available presence states

OIP has more presence statuses than Outlook; some of the designations used are also different. The table below shows how the terms are assigned:

Table 111: Designation and assignment of presence states in Outlook, OIP / Mitel OfficeSuite and PBX

| Outlook | | OIP (notvisible) | | Mitel OfficeSuite | | Communication server |
|-------------------------|---|---------------------|---|----------------------|---|-----------------------------|
| <i>Absent</i> | ↔ | <i>Absent</i> | ↔ | <i>Absent</i> | ↔ | <i>Absent</i> |
| <i>Absent</i> | ⇐ | <i>Meeting</i> | ↔ | <i>Meeting</i> | ↔ | <i>Meeting</i> |
| <i>Absent</i> | ⇐ | <i>Unknown</i> | ↔ | <i>Unknown</i> | | Previous status is retained |
| <i>Withreservations</i> | ↔ | <i>Available</i> | ↔ | <i>Available</i> | ↔ | <i>Available</i> |
| <i>Busy / Occupied</i> | ↔ | <i>Busy</i> | ↔ | <i>Busy</i> | ↔ | <i>Busy</i> |
| <i>Free</i> | ↔ | <i>Available</i> | ↔ | <i>Available</i> | ↔ | <i>Available</i> |

Table 112: Legend

| | |
|---|---|
| ↔ | Presence states are exchanged (where synchronised). |
| ⇐ | There is no equivalent in Outlook for the OIP presence states. The presence state entered is assigned instead (where synchronised). |

6.1.3 Setting the presence states

The presence states can be set by different instances (manually on the Mitel Office- Suite or on the phone, using a synchronized calendar, by the OIP presence profiles or by the OIP I/O Manager). There are no priorities between the instances and an instance will in each case overwrite the current state.

6.1.4 Terminating a meeting prematurely

A user has the possibility of resetting the end time for an ongoing meeting appointment to the current time by switching the presence status on his phone manually to Available. This also applies to serial appointments, in which case only the end time of the current appointment is reset.

Example:

Configuration with Exchange connection; synchronization is activated. The user manages his appointments with Outlook and the Mitel OfficeSuite Calendar. A user returns sooner than expected from a meeting which in his calendar is scheduled to run until 10:30. His phone indicates the Busy presence status. At 10:04 he switches the state to Available. As a result the end time for the appointment entry in Outlook is set to 10:04.

6.1.5 Using presence profiles

You have two possibilities for working with presence profiles and therefore for influencing routing for example:

- With the presence profiles in the communication server you can store a CFU under each presence state, assign a personal call routing to each presence state and select the voice mail welcome text.
- The presence profiles in the communication server are activated and deactivated by the user-based presence state.
- With the help of license-based OIP presence profiles you can set up a comprehensive presence management that allows you not only to control the routing but also other actuators (such as lighting installations or actuating motors for operating blinds or windows). You can also compile adaptable and far-reaching notification rules.
- The OIP presence profiles have two interfaces for the presence states. OIP presence profiles can set the user-based presence state; they can also be activated and deactivated by the calendar-based presence status using the profile switch. Further information is available in ["Presence profiles"](#)

The presence profiles of the communication server and the OIP presence profiles are independent of other running features. Decide which ones you want to use and avoid using both. If both presence profiles are activated nonetheless, only the presence profile of the communication server is taken into account.

6.1.6 Nested and Private calendar entries

If there are nested calendar inputs in Outlook, OIP takes over the presence status according to the following order of priority: Absent, Tentative, Busy.

Calendar entries in Outlook with a Free presence status are used in the same way as other calendar entries. If a calendar entry in Outlook is also marked as Private, the subject text will not be displayed in the OIP calendar.

It is also possible to activate and deactivate presence profiles automatically based on the current presence state.

Presence profiles can be assigned to all OIP users. However they work first and foremost with OIP users with an assigned user as calls are never routed to an OIP user, but always to an user.

6.2 Defining and activating presence profiles

Presence profiles can be defined via the OIP applications.

No presence profiles are available in the standard configuration. For users to define and use presence profiles, you must activate the Presence Profile license.

Exactly one presence profile is always active for each user. If a profile is already active when a presence profile is activated, the active profile is deactivated.

There are several possibilities for activating a presence profile:

- The user activates the required presence profile manually via his OIP application or via OIP WebAdmin (User list, Active Presence profiles).
- The user manually activates the presence profile he wants, using a preconfigured key (Redkey function) on his system phone.
- A presence profile is activated from the profile switch, depending on the presence status (see under ["Profile switch"](#)).

Activating a presence profile applies all the settings stored under that profile.

6.3 General profile features and sub-profiles

Function, notification, voice mail and display profiles are all subprofiles allocated to a presence profile.

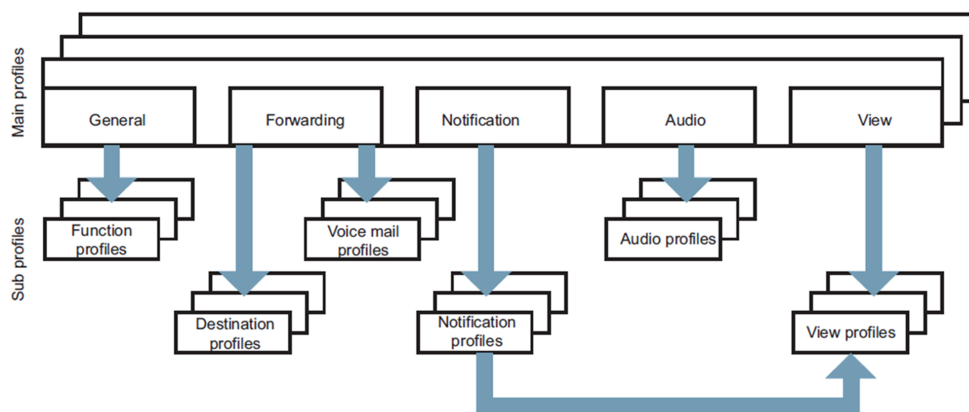


Figure 7: Presence profiles and allocated subprofiles

6.4 General profile features

The General profile features contain information about the profile, regulates the profile availability, the presence status and the allocation of the function profiles which are activated when the profile is activated/deactivated.

Table 113: General profile features

| Parameter | Description |
|-------------|---------------|
| <i>Name</i> | Profile title |

| Parameter | Description |
|---|--|
| <i>Owner</i> | Indicates the name of the OIP user who created the profile. |
| <i>Profile availability</i> | <ul style="list-style-type: none"> • A private profile is available only to its owner. • A public profile is available to all OIP users. • The template of a profile acts as a copy template when creating a profile. The template itself cannot be used directly as a profile and therefore cannot be activated. |
| <i>Deactivation locked for profile switch</i> | The profile can only be deactivated manually and not using the profile switch (see "Profile switch"). |
| <i>Presencestatus</i> | Sets the required presence state when the profile is activated. |
| <i>Absencereason</i> | Displayed in a precise indicator (e.g. on the Mitel OfficeSuite or an OIP operator application). |
| <i>Message</i> | Displayed in a precise indicator (e.g. on the Mitel OfficeSuite or an OIP operator application). |
| <i>City</i> | Displayed in a precise indicator (e.g. on the Mitel OfficeSuite or an OIP operator application). |
| <i>Function profiles</i> <ul style="list-style-type: none"> • <i>On profile activation</i> • <i>On profile deactivation</i> | <p>The selected function profile is activated when the presence profile is activated.</p> <p>The selected function profile is deactivated when the presence profile is deactivated.</p> <p>See "Functions sub-profile"</p> |

6.5 Functions sub-profile

A Functions sub-profile contains one or more predefined communication server functions. When the sub-profile is activated, the functions are either activated or deactivated in the sorting order. Some functions require a number of additional arguments for their execution.

6.6 Call forwarding sub-profile

A Call forwarding sub-profile contains call forwarding settings for each call forwarding type.

Table 114: Call forwarding sub-profile settings

| Parameter | Description |
|-------------------------------------|--|
| <i>Use call forwarding settings</i> | This call forwarding is also activated/deactivated whenever the presence profile is activated/deactivated. If there is not check mark, the settings are ignored and the call forwarding is not activated/deactivated. |
| <i>Internal calls</i> | Activates the call forwarding configuration for internal calls. |
| <i>External calls</i> | Activates the call forwarding configuration for external calls. |
| Force settings of the profile | Prevents other instances from altering the call forwarding settings specified here as long as this presence profile is activated. Other instances include: User interaction via the system phone or a softphone, call forwarding destinations of the Presence Indicator, the Mitel OfficeSuite or a softphone, default call forwarding destinations defined in the communication server. |
| Call forwarding type | Selecting the call forwarding type. |
| Call number | Destination number for the call forwarding. You can only enter the destination number if a destination profile has not yet been assigned. The call number specified creates a destination profile which is assigned automatically. |
| Destination profile | Call forwarding to the destination stored in the destination profile (see "Managing destinations"). |

6.7 Notification sub-profile

A Notification sub-profile records whether a certain event is to be notified, and if so, how. To this end, the various events are assigned information destinations. For example you can specify that an e-mail message is to be generated if a call goes unanswered.

Table 115: General notification sub-profile settings

| Parameter | Description |
|-------------------------------|--|
| <i>Notification profile</i> | Assigning a notification profile. |
| <i>Force profile settings</i> | Prevents other instances from altering the settings specified by the selected notification profile as long as this presence profile is activated. Other instances include: I/O events, settings in the Presence Indicator. |
| <i>External calls</i> | Activates the call forwarding configuration for external calls. |

6.7.1 Managing events

You can create new notification event profiles or edit existing ones, provided the profile availability allows you to do so.

Table 116: Manage events (Notification sub-profile)

| Parameter | Description |
|---------------------|---|
| <i>Name</i> | Event name |
| <i>Availability</i> | Availability of the notification event profiles: <ul style="list-style-type: none"> • Private: Available only to its owner. • Public: Available to all OIP users. • System: Is created by an OIP service and cannot as a rule be modified. |
| <i>Event</i> | Selecting the event type |

| Parameter | Description |
|--|--|
| Unanswered calls: <ul style="list-style-type: none"> • <i>from all call numbers</i> • <i>Call number</i> | The event is an unanswered call <ul style="list-style-type: none"> • The event is true for all unanswered calls • The event is true for an unanswered call with the specified call number |
| Answered calls: <ul style="list-style-type: none"> • <i>from all call numbers</i> • <i>Call number</i> | The event is an answered call <ul style="list-style-type: none"> • The event is true for all answered calls • The event is true for an answered call with the call number specified |
| Text messages: <ul style="list-style-type: none"> • <i>All text messages</i> • <i>to the current user</i> | The event is a text message <ul style="list-style-type: none"> • The event is true for all text messages. • The event is true for the current user. |
| Calendar: <ul style="list-style-type: none"> • <i>All calendar entries</i> • <i>Entry type</i> • <i>Presence status</i> | The event is a calendar entry <ul style="list-style-type: none"> • The event is true for all calendar entries. • The event is true for the selected type of calendar entry. • The event is true for the selected presence state |
| I/O event: <ul style="list-style-type: none"> • <i>All I/O events</i> • <i>Parameter</i> | The event is an I/O event <ul style="list-style-type: none"> • The event is true for any I/O event. |

6.7.2 Managing destinations

You can create new notification destination profiles or edit existing ones, providing the profile availability allows you to do so.

Table 117: Manage destinations (Notification sub-profile)

| Parameter | Description |
|--|--|
| <i>Name</i> | Destination name |
| <i>Availability</i> | <p>Availability of the notification destination profiles:</p> <ul style="list-style-type: none"> • Private: Available only to its owner. • Public: Available to all OIP users. • System: Is created by an OIP service and cannot as a rule be modified. |
| <i>Visibility</i> | The notification is made with the chosen information content. |
| <p>Call</p> <ul style="list-style-type: none"> • <i>to the current user</i> • <i>Call number</i> | <p>The event is notified with a call:</p> <ul style="list-style-type: none"> • The destination for the call is the current user. • The call destination is the user whose call number is specified. |
| <p>Text message:</p> <ul style="list-style-type: none"> • <i>to the current user</i> • <i>Call number</i> | <p>The notification is made by means of a text message on the terminal:</p> <ul style="list-style-type: none"> • The destination for the text message is the current user. • The destination for the text message is the user whose call number is specified. |
| <p>Message Waiting:</p> <ul style="list-style-type: none"> • <i>to the current user</i> • <i>Call number</i> | <p>Notification on the terminal using the Message Waiting function:</p> <ul style="list-style-type: none"> • Message Waiting is activated on the terminal of the current user. • Message Waiting is activated on the terminal of the selected user. |
| <p>Printer:</p> <ul style="list-style-type: none"> • <i>Printer name</i> | <p>Notification by means of a hard-copy printout on a printer:</p> <ul style="list-style-type: none"> • The printout is made on the selected printer. |

6.8 Audio sub-profile

A subject text sub-profile specifies the ring type on the terminal and the volume of the open-listening speaker and handset speaker.

Table 118: Audio sub-profile settings

| Parameter | Description |
|----------------------|-----------------------------|
| <i>Audio profile</i> | Assigning an audio profile. |

6.9 Display sub-profile

A Display sub-profile specifies how an event should be displayed on a terminal depending on its priority.

Table 119: General display sub-profile settings

| Parameter | Description |
|-------------------------------|---|
| <i>Display profile</i> | Assigning a display profile. |
| <i>Force profile settings</i> | Prevents other instances from altering the settings specified by the selected display profile as long as this presence profile is activated. Other instances include: I/O events, settings in the Presence Indicator. |

Table 120: Display sub-profile settings

| Parameter | Description |
|---------------------|--|
| <i>Name</i> | Name of the display profile |
| <i>Availability</i> | Availability of display profiles: <ul style="list-style-type: none"> • Private: Available only to its owner. • Public: Available to all OIP users. • System: Is created by an OIP service and cannot as a rule be modified. |

| Parameter | Description |
|---|---|
| Priority: <ul style="list-style-type: none"> • Signalling settings (Volume, Speed, Melody, Vibra, Ring time, Repeat time, LED, Beep) | Specify here the priority with which the display is to be made on the terminal. <ul style="list-style-type: none"> • You can specify your own signalling settings for each priority. |

6.10 Profile switch

The profile switch is used to activate and deactivate presence profiles depending on the presence state of the OIP calendar. If the OIP calendar is connected to Microsoft Outlook, the presence profiles are switched depending on the Outlook presence state.

Example:

Microsoft Outlook sets the presence state to Busy based on the calendar entry. The profile switch deactivates the current profile and activates the presence profile assigned to the Busy presence status.

Each OIP user has one profile switch at his disposal.

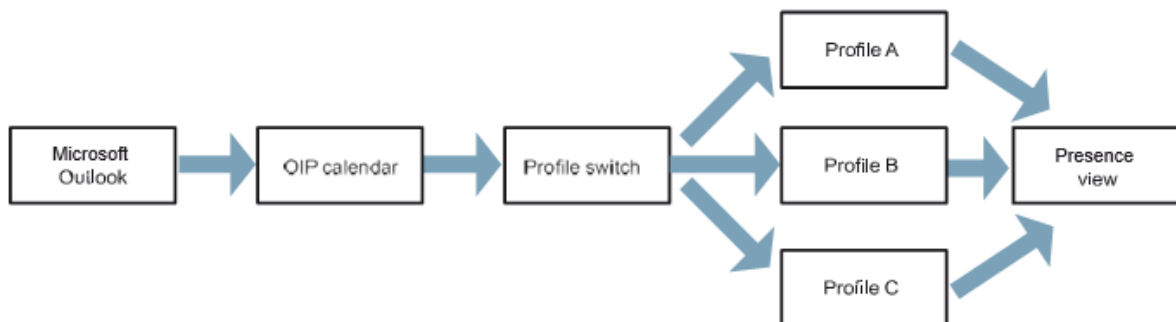


Figure 8: Activating a profile based on the OIP calendar presence state

6.10.1 Setting up the profile switch

To set up the profile switch, proceed as follows.

1. Set up a presence profile for each presence status used, as indicated under [Defining and activating presence profiles](#) on page 160.
2. In the navigation tree right-click the OIP user and select Profile switch. The Profile switch window appears.
3. Assign one of the newly created profiles to each of the presence states.
4. Save the settings and close the Profile switch window.

Table 121: Settings for automatic profile activation

| Parameter | Parameter value | Description |
|---|--|---|
| Presence status: <ul style="list-style-type: none"> Available/Meeting/Busy/Notavailable/Absent | <Profile> | Presence state of the OIP calendar. <ul style="list-style-type: none"> The current presence state activates the assigned presence profile. |
| Application event: <ul style="list-style-type: none"> On login On logout | <ul style="list-style-type: none"> <..> <..> | <..> <ul style="list-style-type: none"> <..> <..> |

Table 122: Linking of the presence states of different instances using the profile switch

| Microsoft Exchange | | OIP Calendar | | Presence Profiles | | Presence Indicator |
|---|---|-----------------|---|---|---|--|
| Linking rules for the presence states of different instances: | | | | | | |
| Exchange status | ↔ | Calendar Status | ↙ | Profile Status | ⇒ | Profile Status |
| Exchange status | ↔ | Calendar Status | ↙ | <blank> | ⇒ | Calendar Status |
| Linking rules for specific presence states: | | | | | | |
| Free | ↔ | Available | ↙ | Available | ⇒ | Available |
| Absent | ↔ | Unknown | | <No profile can be switched with this status> | | <Status profile of the currently active profile> |
| Absent | ⇐ | Meeting | ↙ | Meeting | ⇒ | Meeting |
| Booked | ⇐ | Busy | ↙ | Busy | ⇒ | Busy |
| With reservations | ↔ | Not available | ↙ | Not available | ⇒ | Not available |
| Absent | ↔ | Absent | ↙ | Absent | ⇒ | Absent |

| Microsoft Exchange | | OIP Calendar | | Presence Profiles | | Presence Indicator |
|--|---|-------------------|---|-------------------|---|--------------------|
| Linking rules for specific subject texts: | | | | | | |
| Exchange subject | ↔ | Calendar subject | ↵ | Profile subject | ⇒ | Profile subject |
| Exchange subject | ↔ | Calendar subject | ↵ | <blank> | | Calendar subject |
| Linking rules for specific location texts: | | | | | | |
| Exchange location | ↔ | Calendar location | ↵ | Profile location | ⇒ | Profile location |
| Exchange location | ↔ | Calendar location | ↵ | <blank> | | Calendar location |

Table 123: Legend

| | |
|---|---|
| ↔ | The presence state of the OIP calendar is firmly coupled with the presence state of Microsoft Outlook, providing that Microsoft Outlook is synchronised. |
| ⇒ | There is no equivalent in Microsoft Exchange for the OIP calendar's presence status. The presence status Absent is assigned during synchronisation. |
| ↵ | The presence state of the OIP calendar determines the presence profile using the profile switch. A presence state is configured in the presence profile. |
| ⇒ | When a presence profile is activated, its presence state is forwarded to the presence indicator. It can however also be overwritten by a different instance (see also Presence status in the OIP). |

This chapter contains the following sections:

- [Mitel OfficeSuite \(Rich Client\)](#)
- [OIP operator applications](#)
- [Configuring the Communication server](#)
- [Installing and Setting up the Operator Application](#)
- [Setting up a cordless phone as an operator console](#)
- [Setting up operator groups](#)
- [Configuration steps in the operator application](#)
- [OIP TAPI service provider](#)
- [Connection to the OIP Server](#)
- [Customized Settings](#)
- [General settings](#)

7.1 Mitel OfficeSuite (Rich Client)

The Mitel OfficeSuite has a broad functional scope and covers a wide range of applications. As a personal cockpit it can be used not just as an added-features phone with direct access to external directories and groupware such as Microsoft Outlook. The user also has the possibility of using presence profiles to configure his personal and presence-related call routing and to obtain individual notifications of events he wishes to be kept informed of.

7.1.1 Installation Requirements

Microsoft .Net Framework must already be installed on the PC before the Mitel OfficeSuite can be installed. If applicable, the installation can be made from the OIP WebAdmin installation view.

To install the Mitel OfficeSuite, you have to have local administrator rights.

MiVoice 5300 series digital system phones and Mitel 600 DECT series DECT system phones can be used as media devices.

7.1.2 Installation Instructions

Start the installation via the OIP WebAdmin Installations view. To install Mitel Office- Suite, proceed as follows:

1. On the computer on which you wish to install Mitel OfficeSuite open a browser and log on to the OIP WebAdmin of your OIP server.
2. Navigate to the installation view and load the installation file on the PC, by clicking the *Mitel OfficeSuite* installation link.

3. Start the downloaded setup file by double-clicking on it and follow the instructions given in the installation procedure.

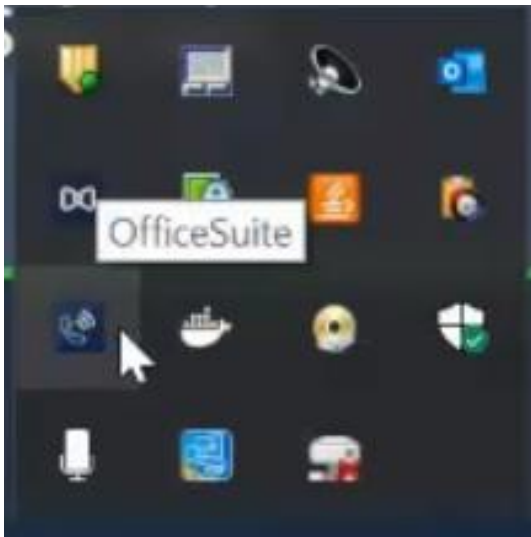
Mitel OfficeSuite is uninstalled using Control Panel \ Software in the Windows operating system.

7.1.3 Mitel OfficeSuite configure

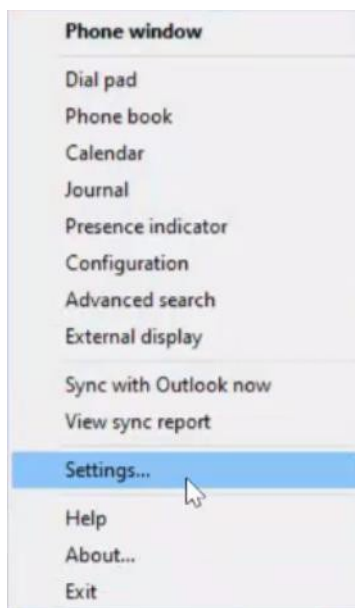
Once you have started the Mitel OfficeSuite you can carry out the configuration using the Mitel OfficeSuite icon in the info area of the taskbar. Open the context menu and click Settings.

For OIP on SMBC, you must configure the right port in the application. Follow the steps to configure the right port:

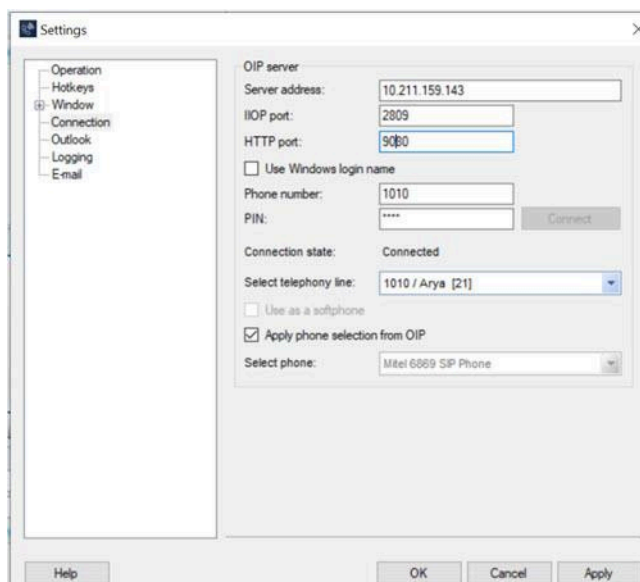
1. Open Mitel OfficeSuite application.
2. Right click OfficeSuite tray icon.



3. Click **Settings...** A new settings window opens.



4. Click **Application settings**. A new settings window opens.
5. Enter IP of the OIP server as the **Server address**.
6. Enter **9080** as the **HTTP port**.



7. Click **Apply** to save the setting.

7.1.4 Local Outlook connection

You can also synchronize Mitel OfficeSuite with a local Outlook installation. You will need a *Local Outlook Connector* license. This license enables the synchronization interface between Mitel OfficeSuite and Outlook. The OIP Name Server is not automatically activated in the process.

Without an active OIP Name server private Outlook contacts are directly synchronized with the communication server directory. The maximum number of contacts which can be managed that way depends on the communication server: 350 OIP contacts at most. With an active OIP Name server contacts are synchronized via the OIP directory and more contacts can be managed.

You can activate the OIP name server by activating a *Phonebook Connector* or a *Microsoft Exchange Connector* license.

7.2 OIP operator applications

The OIP application MiVoice 1560 PC Operator is a PC-based operator console. Two versions are available. The IP version (MiVoice 1560 IP) is a fully fledged IP softphone with integrated media, the other version operates as Rich Client together with a system phone.

7.2.1 General

7.2.1.1 Information on use and restrictions

OIP operator applications are available for MiVoice Office 400 communication systems only.

For each OIP operator application, one of the *MiVoice 1560*, *MiVoice 1560 IP* licenses must be available.

MiVoice 1560 PC Operator cannot be operated simultaneously on the same PC with an Mitel OfficeSuite CTI Rich Client or an MiVoice 2380 IP IP softphone.

Mitel SIP phones, digital MiVoice 5300 series system phones and Mitel 600 DECT series DECT system phones can be used as CTI Rich Client Version media devices (MiVoice 1560) (see "[Setting up a cordless phone as an operator console](#)").

The system phone of an MiVoice 1560 CTI Rich Client used as a media device must not be configured as a key telephone. It must also not be configured as an operator phone in an operator group (see "[Working with operator groups](#)").

Any PC on which the MiVoice 1560 IP softphone is to be operated must be equipped with media devices (e.g. a headset).

In an MiVoice Office 400 network one OIP PC operator console can be used across the network. The only requirement is that all the network's communication servers are connected to the same OIP server.

Note:

Deactivate the screensaver on computers with an installed MiVoice 1560 PC Operator: The operation of an MiVoice 1560 PC Operator on a computer with an activated screensaver can lead to unexpected behaviour when displaying an incoming call.

7.2.1.2 Working with operator groups

You can group several OIP operator applications into operator groups. Operator groups have the following properties:

- In addition to the global operator number you can also specify a separate operator number for each operator group.
- Besides operator features members of operator groups also have a number of agent features at their disposal, e.g. log on, log off or break.

Information on how to set up operator groups can be found here: ["Setting up operator groups"](#).

7.3 Configuring the Communication server

The configuration in the communication server specifies which users are to be set up as a PC operator console. You also specify whether an OIP operator application is used as an IP softphone or as a Rich Client.

7.3.1 Using an OIP operator application as a Rich Client

If set up as Rich Client, a system phone is used as a media device:

1. Open a user in WebAdmin and assign it the required phone.

Note:

The phone must be configured as an ordinary phone. It must not be configured as a key telephone. It must also not be configured as an operator phone in an operator group.

2. Assign the user the status of a PC operator console by setting PC operator console to Yes (WebAdmin: View User, Parameter group Multimedia).

The user is now set up as a PC operator console and calls to the operator number will be routed through to that extension.

You can carry out the assignment of the OIP operator application to the user later on when setting the application up on the computer.

3. Configure the user's other properties.

7.3.2 Using an OIP operator application as an IP softphone

In an IP softphone setup, the media is transmitted between communication server and computer via the IP network, and in the communication server the softphone is configured as an IP system phone. Proceed as follows:

1. Set up the necessary VoIP channels.
2. Open a user in the communication server and assign it an IP system phone of the type MiVoice 1560 IP.
3. Define an unobtainability destination for the user. Calls will then be routed to that destination whenever the softphone is not in operation.
4. Assign the user the status of a PC operator console by setting PC operator console to Yes (WebAdmin: View User, Parameter group Multimedia).

The user is now set up as a PC operator console and calls to the operator number will be routed through to him.

You can carry out the assignment of the OIP operator application to the user later on when setting the application up on the computer.

5. Configure the user's other properties.

7.4 Installing and Setting up the Operator Application

The installation is carried out regardless of whether you set up the operator application as a softphone or as a CTI Rich Client.

7.4.1 Installation Requirements

To be able to install an OIP operator application you must have local administrator rights.

You need to equip the computers on which the OIP operator application is to run as an IP softphone with the necessary media devices.

Acquire all the necessary licenses and update the OIP license file. *oip.lic*.

7.4.2 Installation Instructions


Start the installation via the OIP WebAdmin Installations view. To install MiVoice 1560 PC Operator, proceed as follows:

1. On the computer on which you wish to install MiVoice 1560 PC Operator open a browser and log on to the OIP WebAdmin of your OIP server.
2. Navigate to the installation view and load the installation file on the PC, by clicking the *MiVoice 1560 PC Operator* installation link.

3. Start the downloaded setup file by double-clicking on it and follow the instructions given in the installation procedure.

MiVoice 1560 PC Operator is installed using *Control Panel \ Software* in the Windows operating system.

For OIP on SMBC, you must configure the right port in the application. Follow the steps to configure the right port:

1. Open MiVoice 1560 application.
2. Click Settings icon  on the task bar. A new settings window opens.
3. Click **Connection**.
4. Enter **9080** as **HTTP port**.
5. Click **Apply** to save the setting.

Setting up an operator application

Proceed as follows to set up an operator application:

1. Start the OIP operator application. The login dialog box is displayed.
2. Enter the login and connection data as indicated in the following table then click **OK**.
3. The operator application opens and attempts to establish a connection with the user.
4. If the connection to the user fails, check the advanced settings (menu **Settings...**, view **Connection**) as indicated in the following table.
5. If you are operating the operator application as an IP softphone, indicate the installed output devices next and select the audio files used for signalling calls or system messages. More detailed information can be found in the operator application's Online Help.
6. The operator application is now ready for operation. The online Help contains all the information you need to operate correctly.

Table 124: Login dialogue box and connection parameters

| Parameter | Description |
|-------------------|--|
| Server address | Enter here the host name or IP address of the OIP server. |
| Windows user name | <input checked="" type="checkbox"/> The application automatically opens with the Windows login data. Requirement: The user's name and password in the OIP configuration must match his Windows login data. <input type="checkbox"/> The user logs in using his call number and PIN. |

| Parameter | Description |
|-----------------------------------|---|
| Call number | User's phone number |
| PIN | User's phone number |
| Save PIN | PIN of the user |
| Advanced connection settings: | |
| • Connection status | Indicates the current call connection status |
| • Select phone line | |
| • Use terminal selection from OIP | <input checked="" type="checkbox"/> The phone assignment is carried out in accordance with the settings in OIP. <input type="checkbox"/> The phone assignment is carried out manually using the following setting. |
| • Select terminal | Assign the operator application to the phone of your choice. |

7.5 Setting up a cordless phone as an operator console

The user wants to be able to operate the PC operator console via cordless phone too (only for SB-4 and SB-8 driven DECT systems).

You have the possibility of setting up DECT system phones (operated via SB-4 or SB-8 base stations only) that are coupled with an operator application as an operator console. You will need the *ATAS Interface* license.

To set up the DECT system phone in twin mode as an operator phone, proceed as follows:

1. In the communication server, check whether the *ATAS Interface* license is activated.
2. Activate the OIP service *Display Driver* (*Services* view).
3. Add the user to the *OPERATORS* user group (*User groups* view).
4. Assign the user the DECT system phone (user's detail view, setting *Twinpartner*) and activate automatic terminal selection (setting *automatic terminal selection*).

5. On the DECT system phone, set the ringing time, repeat time and the audio properties of the ringing signal. Calls in the queue are not signalled individually. The ring settings refer to the queue as a whole. If for example you set a 10-second ringing time and a 60-second repeat time, the user is signalled every minute that there are still calls on the queue.

The DECT system phone is now configured as an operator console.

7.6 Setting up operator groups

An operator group is a call centre application with operator consoles.

7.6.1 Configuration steps on the Communication server

1. In the communication server create a call distribution element with the direct dialing number and the internal call number under which the new operator group is to be reached.
2. Select ACD as the CDE destination for all switch positions.

7.6.2 Configuration steps on the OIP server

An operator group is a skill in the call centre configuration and the assigned agents have an operator application.

1. Check whether an operator application has been set up for the users planned to serve as agents.
2. Assign all the users the default CTI license.
3. Start the call centre management and open a new skill with the name of the new operator group.
4. Configure the skill and add the users as agents.
5. For the agents enter the direct dialing number as the Alternative number for transferring to this operator group.

7.7 Configuration steps in the operator application

1. Start the operator application and click the Operator groups symbol.
2. Configure which operator calls (Own or All) are to be signalled.
3. Open the menu Settings/Configure Signalling ... and configure the colours to be used to display the operator calls.

All the information you need to operate the operator applications correctly can be found in the Online Helps.

7.7.1 Setting up redundant operator groups

To ensure that operator calls can be distributed in the operator group even in the event of an OIP server failure, the operator group needs to be replicated in the form of user groups in the communication server.

For this, open the operator group skill and select a user group from the dropdown menu in the Communication server section under Use emergency routing. The following configuration is made in the communication server:

- The user group is given the same name as the operator group.
- The agents of the operator group are added to the user group as members of the group.
- The agent statuses logged on/logged out in the operator group are assigned to the members in the user group.
- A new call distribution element with the call destination on the newly set up user group is created. It is given the name "ER - <Name of the operator group>"
- (ER = Emergency Routing).
- In the operator group's call distribution element, the newly created call distribution element is entered under CDE if no answer.

7.8 OIP TAPI service provider

The OIP TAPI service provider is connected to the OIP server via Ethernet. The OIP TAPI service provider can be installed on both application servers and on workstation PCs, see ["Application Examples"](#).

7.8.1 Installation

7.8.1.1 Installation Requirements

To install the OIP TAPI Service provider, you have to have local administrator rights.

7.8.1.2 Installation Instructions

In a MiVoice Office 400 network, the OIP TAPI service provider must be installed only once. The OIP server handles the administration of the network communication servers and, depending on the configuration of the access rights, provides all the lines to OIP TAPI service providers. Alternatively you can also install the OIP TAPI service provider on each user PC.

The OIP TAPI service provider is started with the Windows Telephony service. The AgentProxySvc Windows service for the agent functionality is also installed along with the installation of the OIP TAPI service provider.

Start the installation via the OIP WebAdmin Installations view. To install OIP TAPI service provider, proceed as follows:

1. On the computer on which you wish to install the OIP TAPI service provider open a browser and log on to the OIP WebAdmin of your OIP server.

2. Navigate to the installation view and load the installation file on the PC, by clicking the *OIP* TAPI service provider installation link.
3. Start the downloaded setup file by double-clicking it then follow the instructions given in the installation procedure.
4. Configure the OIP TAPI service provider (see the section ["Connection to the OIP Server"](#)) then finish the installation.

The OIP TAPI service provider is uninstalled using Control Panel \ Software of the Windows operating system.

7.9 Connection to the OIP Server

To connect the OIP TAPI service provider to the OIP server, proceed as follows:

1. Enter the OIP server address if it is not already automatically entered during installation. Make sure you specify the DNS name or the IP address of the OIP server as the OIP server address.
2. Click Connect with Server, to set up the connection with the OIP server.
3. Log on to the OIP server.
4. Logging on to the OIP server is done via the Windows user name, via a user name configured in the OIP server, or using the internal phone number with the terminal PIN, see ["Login to OIP WebAdmin"](#).

Logging on with the Windows username is dynamic. This means that for different Windows user names one's own TSP user profile can be saved. Depending on which Windows username the PC is logged on, the corresponding TSP user profile is loaded.

Logging on via a username configured in the OIP server or using the internal phone number with the terminal PIN is a fixed setting. This means that the configured TSP user profile is always loaded independently of the Windows username.

7.10 Customized Settings

7.10.1 Available Lines

User-specific settings are made in the User profile tab:

1. Select the type of logon and enter the corresponding user data.
2. Click Read out lines to display the available lines.
3. If required, carry out any user-defined settings.
4. Save the configuration for the specified user in the TSP user profile by clicking Save.

If you want to save additional TSP user profiles for Windows users, repeat the steps above. This is necessary if you as the Administrator want, for example, the OIP TAPI Service provider to be available to Windows users who do not have local administrator rights.

The lines configured in the for the specified users are displayed in the logon data.

Listed next to the name and number of the lines are the terminal type and the access right to the line.

Table 125: Terminal types

| Terminal type | Description |
|---------------------------|---|
| Digital/ <i>Mitel</i> SIP | The line is assigned to a system phone |
| <Systemphone>+ | Set as agent |
| <i>ISDN</i> | The line is assigned an ISDN terminal |
| <i>Analogue</i> | The line is assigned an analogue terminal |
| <i>Voicemail</i> | The line is assigned an internal voice mail line |
| <i>DECT GAP</i> | The line is assigned a GAP-compatible DECT terminal |

Table 126: Access rights to telephony lines

| Access right | Description |
|--------------------|---|
| <i>Controlling</i> | Full access rights to the line (controlling and monitoring) |
| <i>Monitoring</i> | Monitoring rights to the line only |

7.10.2 Properties

At least one line has to be selected before you can modify the line settings. The Select all button can be used to select all the lines.

It is possible to configure the call number format to be displayed for incoming calls (CLIP) and connected calls (COLP).

The supported call number formats are listed in the following table:

Table 127: Call number formats

| Setting | Description | Example |
|---------------------------------------|--|------------------|
| <i>Keep exchange access prefix</i> | Exchange access prefix-phone number | 0-004132655xxxx |
| <i>Remove exchange access prefix</i> | Call number | 004132655xxxx |
| <i>Replace exchange access prefix</i> | Exchange access prefix-phone number | 9-004132655xxxx |
| <i>Use canonical format</i> | +Country code (area code) phone number | +41 (32) 655xxxx |

There are two interaction options for calls to busy internal users. You can send a call waiting tone to a busy subscriber or you can intrude on a busy user. For both functions the user rights settings have to be configured in the communication server in each case. Microsoft TAPI does not support parallel use of these two functions. So, to call a busy internal user you can configure whether the call waiting function or the intrusion function is used.

If the user is an ACD-Agent of an external TAPI-ACD application, the Control of agent status changes on the terminal option can be used to hand over agent monitoring operation to the application. This means that each status modification made on the system phone must be confirmed by the external application.

7.11 General settings

The global settings apply to all saved TSP profiles.

7.11.1 Extended settings

The OIP TAPI service provider supports the use of key telephones. Whether and how the functionality is implemented depends on the CTI application. When the system phone is used, calls on the private line are disconnected when calls on the KT line are answered. You can configure that calls on the private line are automatically parked when a call is answered via the CTI application. As before, active calls on the KT line can be displayed as Connected (LINECALLSTATE_CONNECTED) or Idle (LINECALLSTATE_IDLE). Ask your application manufacturer which setting is correct for your CTI application.

The OIP TAPI service provider supports the use of Operator Consoles. Whether and how the functionality is implemented depends on the CTI application. When the system phone is used, active calls on the private line are disconnected when calls on the operator line are answered. You can configure that calls on the private line are automatically parked when a call is answered via the CTI application.

Parked calls can be signaled to the CTI application as idle or parked. This setting is dependent on the used CTI application. Ask your application manufacturer which setting is correct for your CTI application.

The signaling on the ACD queue can be set whenever the ACD functionalities of the OIP TAPI service provider are used. Ask your application manufacturer which setting is correct for your CTI application.

7.11.2 Debug Settings

The settings for the log files can be made here for maintenance purposes. In normal operation the debug mode should be deactivated as otherwise it affects the system's performance.

For debug output, the options Standard Debug Output and Log File must be activated. In the Log Directory field, specify the path to the log files (default setting c:\debug\).

Check that with this entry the directory is not automatically added. The folder itself has to be created separately, for example using Windows Explorer. You can also specify the maximum log file size and the number of days after which the log files are to be deleted automatically.

Two log files are created when the debug mode is activated:

- intf<mmddhhmm>.log
- tspa<mmddhhmm>.log

<mmddhhmm> stands for the month, day, hour, and minute on which the log file was created.

Debug Level is used to specify the information to be logged. Normally all the options should be activated.

This chapter contains the following sections:

- [I/O system](#)
- [I/O Manager](#)
- [I/O actions:](#)
 - [OIP I/O actions](#)
 - [KNX connection](#)
 - [OIP KNX driver](#)
 - [OIP ATAS Gateways](#)

OIP offers the possibility of expanding the internal MiVoice Office 400 messaging and alarming interfaces into a comprehensive automation and alarm systems.

The various I/O applications are structured and configured in the I/O Manager. The I/O applications consist of one or more action trees in which the individual actions are logically linked with one another.

The OIP KNX driver is used to connect external KNX systems to OIP, see ["KNX connection"](#)

8.1 I/O system

The OIP I/O system is based on I/O actions. Each I/O action is a chip with inputs and outputs and a specific functional logic. Individual I/O actions can be interconnected and hierarchically linked.

The I/O actions work according to the IPO principle. They have an input part, a processing part and an output part. The logical processing of the incoming events is based on the defined actions. The results of the processing are sent on as results either to the subordinate actions or to addressed actions within the same action tree or in other action trees.

An input event may be, for instance, the character string of a redkey function configured on a system phone or a specific communication server event message. Further examples are calendar inputs which should be evaluated using some specific criteria in case of integration with a Microsoft Exchange Server or sensor data in a KNX environment.

Output events may be, for instance, a display on the system phone, an e-mail or file. In a KNX environment, output events may be directly transformed into in-house installation actions such as opening and closing blinds.

8.2 I/O Manager

The I/O Manager is used to create, modify and delete I/O actions of the OIP I/O system.

The I/O Manager is a Java application. You can open it via the *Toolbox* hyperlink on the top right side of the OIP WebAdmin user surface.

The configured actions are displayed in a tree structure on the left-hand side. To add a new action to the tree, select a higher-order action, open the context menu and click Add action. Select the new action and carry out the settings on the right-hand side.

The Details tab is used for specifying the settings of the respective action. Details about the actions types can be found in ["Automation and Alarm Systems"](#).

Table 128: Actions details

| Actions details | Description |
|---------------------|---|
| <i>Action ID</i> | Unique ID assigned by the system |
| <i>Action name</i> | Action designation. |
| <i>Action type</i> | Defined action type. |
| <i>Monitoring</i> | The actions carried out are logged and stored in the database. |
| <i>Remark</i> | Remarks relating to the action can be added here. |
| <i>Data type</i> | Each I/O action corresponds to one or more data types. |
| <i>Data subtype</i> | Data types may contain subtypes. |
| <i>Data</i> | Current internal status of the I/O action. The Set value interface can be used to change the current internal status of the I/O action. |

The *Parameter* tab is used to configure the parameter of the actions, see ["Automation and Alarm Systems"](#).

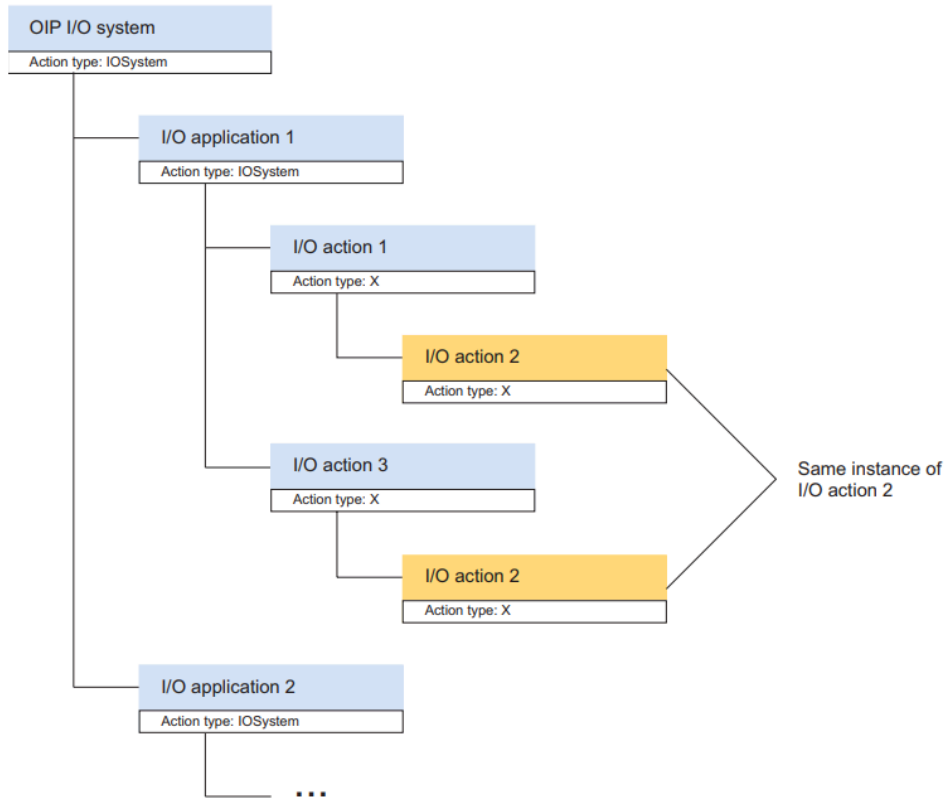
You will find a general block diagram of the action on the View tab. You can also replace this image with your own, specific image by changing the relevant image file in the image directory of the server.

To move the sequence of actions, select the action you want, open the shortcut menu and click Move Down or Move Up.

To delete an action, select the relevant action, open the context menu and click Remove action.

For a better overview and layout of the tree structure, you should start every I/O application with the action IO System under the output action. This ensures that the individual I/O applications are separated from each other and any unwanted interactions are avoided.

Figure 9: Layout of the I/O applications



There may be several instances of one and the same action in the tree. Changes to the action need only be made once. To make another instance of the action available in the tree, select the action you want, press the <Strg> key and drag the action to the destination action you want, keeping the <Strg> key pressed down. When you delete, only the selected instance of the action is deleted.

8.3 I/O actions:

An I/O action is a logic module with various inputs and outputs. Events are processed on the inputs based on the implemented logic and configured parameters.

The following figure shows the general functional diagram of an I/O action.

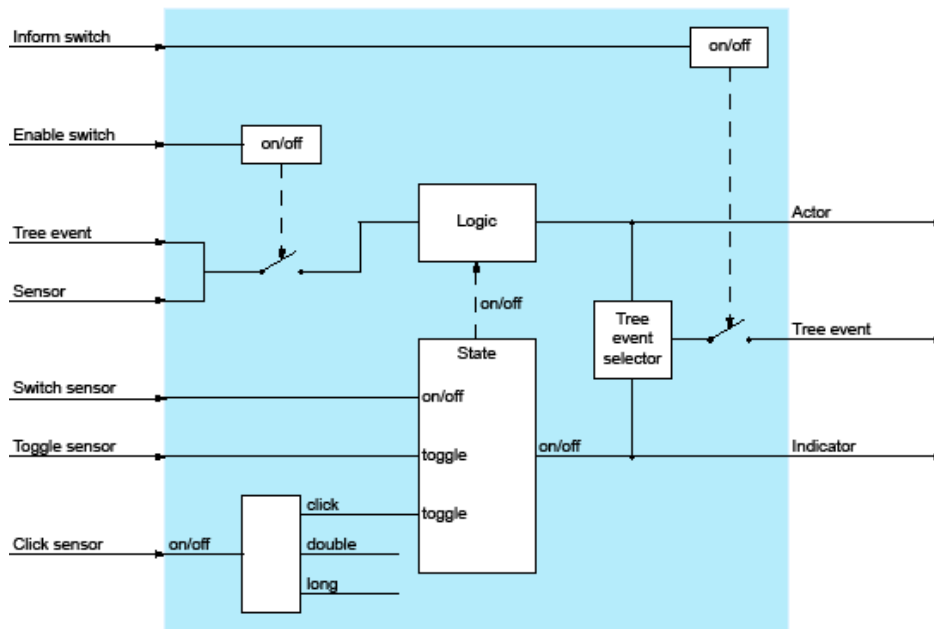


Figure 10: Functional diagram of an I/O action

The meaning of the general inputs and outputs shown in the following figure and their parameters are identical in all the actions. They are listed in the following table. The action-specific inputs and outputs are described in the individual actions, see ["OIP I/O actions"](#).

Table 129: General parameter of an I/O action

| Parameter | Description |
|-------------------|--|
| <i>Owner</i> | This parameter is not used at moment and should be left empty. |
| <i>Tree event</i> | The Tree event is both an input and an output. The events are sent from one action to another in the action tree with the Tree event. The Tree event can send the state of the action (indicator), the result of the action (actor) or both. |

| Parameter | Description |
|----------------------------|--|
| <i>Tree event selector</i> | <p>The Tree event selector is a switch that defines which event is sent along the tree. The following settings are possible:</p> <ul style="list-style-type: none"> • No event • Actor • Indicator • Actor and Indicator <p>There is no entry corresponding to the No event setting.</p> |
| <i>Inform switch</i> | <p>The Inform switch is an input that operates as a switch. It switches the sending of the Tree event on or off. If the Inform switch receives a 0 (off) from the specified address, sending of the Tree event is switched off. If it receives a 1 (on), sending of the Tree event is switched on. If no address is specified, the sending of the Tree event is switched on.</p> |
| <i>Enable switch</i> | <p>The Enable switch is an input that operates as a switch. It switches processing of the Tree event and the Sensor on or off. If the Enable switch receives a 0 (off) from the specified address, processing of the Tree event and the Sensor is switched off. If it receives a 1 (on), processing of the Tree event and the Sensor is switched on. If no address is specified, processing of the Tree event and the Sensor is switched on.</p> |
| <i>Sensor</i> | <p>The Sensor is an input. It receives events with the specified address from other actions (e.g. from other action trees, from actions which are not directly above the receiving action or from external systems like KNX).</p> |
| <i>Switch sensor</i> | <p>The Switch sensor is an input that operates as a switch. If the Switch sensor receives a 0 (off) from the specified address, the status of the action is switched to 0 (off); if it receives a 1 (on), the status of the action is switched to 1 (on).</p> |

| Parameter | Description |
|----------------------|---|
| <i>Toggle sensor</i> | The Toggle sensor is an input that operates as a toggle switch. Irrespective of the value received from the specified address, the Toggle sensor toggles the state of the action (from 1 (on) to 0 (off) and vice versa). |
| <i>Click sensor</i> | The Click sensor is a special input for receiving multi-click events from KNX switches. The KNX switch must send a 1 (on) if pressed and a 0 (off) if released. |
| <i>Actor</i> | The Actor is an output. It sends the result of the action to the specified address (e.g. to other action trees, to actions which are not directly below the sending action or to external systems like KNX). |
| <i>Indicator</i> | The Indicator is an output. It sends the status of the action to the specified address (e.g. to other action trees, to actions which are not directly below the sending action or to external systems like KNX). |

8.3.1 I/O events

Data is exchanged between I/O actions or between I/O actions and sensors/actors with events. In KNX terminology, events are telegrams. I/O events are structured as follows:

Table 130: Constituent part of an event

| Constituent part | Description |
|------------------|--|
| <i>Address</i> | The address can have a number of different formats see the " Possible address formats ". In a tree structure, it is the action ID if no explicit address has been specified. |
| <i>Data</i> | This is the event's actual data. There are different types of data. |

| Constituent part | Description |
|-------------------|--|
| <i>User ID</i> | This is the OIP internal user ID. It is used if an event was successfully assigned to an OIP user (e.g. PBXUserCommand or PBXRedKey); if not, it is blank. |
| <i>Monitoring</i> | The I/O Manager can be used to set for each configured action whether the action in question should be monitored. |

8.3.2 Addressing

Events can be sent and received via the tree structure or the direct addressing of an action.

No addresses need to be defined within the same action tree as the events are sent from the higher-level action to the subordinate action.

An address is required if events are to be sent to actions that are outside the action tree, that are not directly below the sending action or that are part of a KNX device. The same applies to receiving events.

The events sent by the actions consist of the following parts.

Table 131: Possible address formats

| Address | Description |
|--|--|
| Freely selectable character string e.g. MYEVENT | Use the freely selectable character string to send events to actions that are not linked as subordinate actions. |

| Address | Description |
|---|--|
| <p><i>Action ID</i></p> | <p>Each action has its own unique ID within the system. Use the action ID as the address if events are to be sent to a specific action.</p> <div data-bbox="850 443 1463 716"> <p>i Note:</p> <p>Direct addressing of an action ID can result in hidden errors following a change. This address format should therefore only be used in exceptional cases.</p> </div> |
| <p><i>Action type</i></p> | <p>The action type should be used if events are to be sent to a specific action type. In this case the events are sent to all the actions of the same type within the system.</p> <div data-bbox="850 1020 1463 1293"> <p>i Note:</p> <p>Addressing an action type can result in hidden errors following a change. This address format should therefore only be used in exceptional cases.</p> </div> |
| <p><i>KNX group address</i></p> <p>e.g. KNX:5/3/8</p> | <p>Use this address format if the destination is a KNX device or multiple KNX devices. A KNX group address is like a line to which you can connect one or more KNX devices. The KNX group address can be a two-level or three-level address; three-level notation is now more common. The syntax is Ma/Mi/S, where Ma is the main group, Mi the middle group and S the subgroup. The value range of the group parts is as follows: Ma from 0 to 13, Mi from 0 to 7 and S from 0 to 255</p> |

Multiple entries of group addresses or user numbers are possible; they must be separated with ";".

The events can correspond to different types of data.

Table 132: Data types

| Datatype | Description | DTP ²⁹ | EIS ³⁰ | Format | Range d=decimal/ b=binary |
|---------------------|--|-------------------|-------------------|-------------------|--|
| <i>Switching</i> | Switching | DPT 1 | EIS | 1 bit | (0.1)b |
| <i>Dimming</i> | Dimming (position/ control/value) | DPT 3 | EIS 2 | 1/4/8 bits | (1000...0111)b |
| <i>Time</i> | Time in the format hh:mm:ss:ms | DPT 10 | EIS 3 | 3 bytes | |
| <i>Date</i> | Date in the format dd/mm/ yyyy | DPT 11 | EIS 4 | 2 bytes | |
| <i>Value</i> | 2-byte floating point value | DPT 9 | EIS 5 | 2 bytes | |
| <i>Scaling</i> | Relative value | DPT 5/6 | EIS 6 | 1 byte | (0...255)d (0...100%)d (0...360°)d |
| <i>DriveControl</i> | Drive control | DPT 1 | EIS 7 | 1 bit | (0.1)b |
| <i>Priority</i> | Force control | DPT 2 | EIS 8 | 1/2 bit | |
| <i>Float</i> | Positive or negative floating point value (IEEE 754) | DPT 14 | EIS 9 | 4 bytes | |

²⁹ Data point type³⁰ EIB Interworking Standard

| Datatype | Description | DTP ²⁹ | EIS ³⁰ | Format | Range d=decimal/ b=binary |
|---------------------|--|-------------------|-------------------|-----------------|--|
| <i>Counter16Bit</i> | 16-bit value | DPT 7/8 | EIS 10 | 2 bytes | (-32768... +32767)d (0...65535)d |
| <i>Counter32Bit</i> | 32-bit value | DPT 12/13 | EIS 11 | 4 bytes | 0..494967295 - 2147483648 .. 2147483647 |
| <i>Access</i> | Access control | DPT 15 | EIS 12 | 4 bytes | |
| <i>Char</i> | ASCII characters (A, B, 1, ä, etc.) | DPT 4 | EIS 13 | 2 bytes | |
| <i>Counter8Bit</i> | 8-bit value | DPT 5/6 | EIS 14 | 1 byte | 0 .. 255 -128 .. 127 |
| <i>String</i> | String; can contain variables and separators | DPT 16 | EIS 15 | 14 bytes | |

The data types Char, Time, Date, Value, Scaling, Counter8Bit, Counter16Bit, Counter32Bit, Dimming, DriveControl, Priority and Access are of relevance only to the KNX extension.

If no user is specified for user-related actions (e.g. *PBXDisplay*, *PBXACDAgentState*, etc.), the event's user ID is used as default user.

In texts of the data type String, you can use variables that are then set with the corresponding value during runtime. The string data type is normally used if the result of the action (actor) is forwarded. How to use the variables correctly is detailed in each action. A list of available variables can be found here: in the following table.

A text of the data type String can be divided into a maximum of three substrings using separators. Only one separator or character combination is possible. The semicolon (;) is the standard separator. However,

²⁹ Data point type

³⁰ EIB Interworking Standard

you can if required also use the following characters instead: a-Z, 0-9 and special characters such as , - _ ; # *. A space is not allowed and will automatically be replaced with the standard separator, the semicolon.

Table 133: Variables

| Variable | Description |
|-----------------------|---|
| <i>@ALARMNAME</i> | PBX alarm name |
| <i>@ALARMTYPE</i> | PBX Alarm ID |
| <i>@CALLSTATE</i> | <p>Call status output as value:</p> <p>0 - Idle</p> <p>1 - Ringing</p> <p>2 - Busy</p> <p>3 - Alerting</p> <p>4 - Connected</p> <p>5 - Conference</p> <p>Current date</p> <p>End date of the calendar entry End time of the calendar entry Address of the event</p> |
| <i>@CALLSTATENAME</i> | Call state output as text, see description of values for the variable <i>@CALL- STATE</i> . |
| <i>@DATE</i> | Current date |
| <i>@ENDDATE</i> | End date of the calendar entry |
| <i>@ENDTIME</i> | End time of the calendar entry |
| <i>@GROUP</i> | Address of the event |

| Variable | Description |
|--------------|--|
| @KEYID | Character string configured for the Redkey |
| @LF | Adds a line feed |
| @LOCATION | Location of the calendar entry |
| @MESSAGE | Message text |
| @NAME | Action name configured in the I/O Manager. |
| @NODEID | AIN node ID |
| @NODENAME | AIN node name |
| @PARAM1 | PBX alarm parameter 1 |
| @PARAM2 | PBX alarm parameter 2 |
| @PARAM3 | PBX alarm parameter 3 |
| @PARAMTITLE1 | Title, PBX alarm parameter 1 |
| @PARAMTITLE2 | Title, PBX alarm parameter 2 |
| @PARAMTITLE3 | Title, PBX alarm parameter 3 |
| @PARAMTEXT | Data field of the event as text. With the string data type, it's the text; with the switching data type, it's on or off. |
| @PARAMVALUE | Data field of the event as value. With the string data type, it's the text; with the switching data type, it's 1 or 0 |

| Variable | Description |
|-----------------------|---|
| <i>@PBXID</i> | OIP PBX ID |
| <i>PBXNAME</i> | OIP PBX name |
| <i>@PRESENCENAME</i> | Presence state output as text, see description of values for the variable <i>@PRESENCESTATE</i> . |
| <i>@PRESENCESTATE</i> | Presence state output as value: 0 - Unknown 1 - Available 2 - Meeting 3 - Busy 4 - Not available 5 - Absent |
| <i>@SENDERID</i> | User ID of the sender of a message |
| <i>@SENDERNAME</i> | User name of the sender of a message |
| <i>@SENDERNUMBER</i> | User number of the sender of a message |
| <i>@STARTDATE</i> | Start date of the calendar entry |
| <i>@STARTTIME</i> | Start time of the calendar entry |
| <i>@STATE</i> | State of the action as value (0/1). |
| <i>@STATENAME</i> | State of the action as text (on/off). |

| Variable | Description |
|--------------------------|---|
| <i>@SUBJECT</i> | Text in the subject line of a calendar entry or subject line of an e-mail. |
| <i>@SUBSCRIBERID</i> | User ID |
| <i>@SUBSCRIBERNAME</i> | User name |
| <i>@SUBSCRIBERNUMBER</i> | User number |
| <i>@SUBTYPETEXT</i> | Data subtype output as text, see description of values for the variable <i>@SUB- TYPEVALUE</i> . |
| <i>@SUBTYPEVALUE</i> | Data subtype output as value: 0 - Unknown 1 - DimPosition 2 - DimControl 3 - DimValue 4 - CtrlMove 5 - CtrlStep 6 - PrioPosition 7- PrioControl 8 - CtrSigned 9 - CtrUnsigned |
| <i>@TAB</i> | Inserts a horizontal space |
| <i>@TEXTPARAM1</i> | First substring (from the start of the string to the first separator) |

| Variable | Description |
|---------------------|--|
| @ <i>TEXTPARAM2</i> | Second substring (between the first and second separator) |
| @ <i>TEXTPARAM3</i> | Third substring (from the second substring to the end of the string) |
| @ <i>TIME</i> | Current time |
| @ <i>TYPETEXT</i> | Data type output as text, see description of values for the variable @ <i>TYPE-VALUE</i> . |

| Variable | Description |
|------------|---|
| @TYPEVALUE | Data type output as value: 0 - Unknown 1 - Switching 2 - Dimming 3 - Time 4 - Date 5 - Value 6 - Scaling 7 - DriveControl 8 - Priority 9 - FloatValue 10 - CounterValue16Bit 11 - CounterValue32Bit 12 - Access 13 - Char 14 - CounterValue8Bit 15 - String |

There are also special variables that contain certain functions or which can retrieve detailed information by means of identification.

Table 134: Special variables

| Variable | Description |
|----------|--------------------------|
| @EMPTY | Forwards a blank string. |

| Variable | Description |
|-----------------------|--------------------------------|
| <i>@OFF</i> | Corresponds to value 0. |
| <i>@ON</i> | Corresponds to value 1. |
| <i>@PARTNERNAME</i> | Caller's name, if known. |
| <i>@PARTNERNUMBER</i> | Caller's CLIP, if transmitted. |

| Variable | Description |
|--------------|--|
| @PARTNERTYPE | <p>Type of call in relation to the caller:</p> <ul style="list-style-type: none"> 0 - Unknown 1 - internal 2 - external 3 - CDE 4 - CDE/DDI 5 - UG 6 - CFU 7 - CFNR 8 - CFB 9 - DND 10 - CFU Text 11 - CFU Pager 12 - CFNR Pager 13 - Follow Me 14 - deflected 15 - Pick up 16 - CFU first 17 - Call transferred 18 - Firm 19 - Dialed number 20 - Operator |

| Variable | Description |
|-------------|---|
| @SUBSTRINGx | Contains the embedded substring from the higher-order string. |

If a blank string is sent, for instance to clear a terminal display through an action of the type PBXDisplay, the variable @EMPTY must be used.

With the variables @ON and @OFF, it is possible to activate or deactivate an action using a string or to influence the status of an action. If, for example, the string "@ON 220" is sent to the action of the type PBXPUMState, user 220 is logged on to the terminal configured in the action.

If a substring of the string sent is to be used in a new string, the variable @SUB- STRINGx is used. Here x is replaced by a number from 1 to 10. In other words up to ten substrings can be transmitted. The substrings must be identified as follows in the original string: @<Substring>@. The start designator "@<" and the end designator "@>" are mandatory. @SUBSTRING1 references the first substring in the original string, etc.

@PARTNERNUMBER, @PARTNERNAME, @PARTNERTYPE contain further information on telephone calls. They are used in actions that concern phone calls (e.g.

PBXCallState). With these variables the required partner information can be specified by adding a number.

With external calls three different information segments can be called up:

- @PARTNERNUMBER1: Caller CLIP
- @PARTNERNUMBER2: Called CDE/DDI
- @PARTNERNUMBER3: Redirect info

With internal calls two different information segments can be called up:










- @PARTNERNUMBER1: Caller CLIP
- @PARTNERNUMBER2: Redirect info











The same information can be accessed accordingly for the variables @PARTNER- NAME and @PARTNERTYPE.










8.4 OIP I/O actions










The following table gives an overview of the OIP I/O actions.











Table 135: List of OIP I/O Actions










| Symbol | Action | Description | License |
|---|-----------------------------|--|---------|
|  | Area | The Area action is used to group different geographic areas (e.g. premises, buildings, storeys or individual rooms). The events entered are sent on to all the sub-actions. Events can also be forwarded recursively to specific types of sub-actions. | |
|  | AstroCalendar | The AstroCalendar action calculates sunrise and sunset times for the configured location based on astronomic calculations | |
|  | Blinker | The Blinker action activates or deactivates actions depending on the time interval. | |
|  | CalendarEntry | The CalendarEntry action evaluates calendar entries according to the start and end time. | |
|  | CalendarNotification | The CalendarNotification action evaluates calendar reminders. | |
|  | ConfigurationProfile | The ConfigurationProfileaction is bidirectional. It is used to activate predefined presence profiles and can be triggered by presence profiles. | |
|  | ConfigurationProfileDisplay | The ConfigurationProfileDisplay action is used to display and select the set presence profiles on the system phones. | |
|  | EmailMessage | The EmailMessage action sends an e-mail to a defined group of recipients. | |
|  | EmailTrigger | The EmailTrigger action evaluates received e-mails according to their content. | |











| Symbol | Action | Description | License |
|---|------------------|---|---------|
|  | Enabler | The Enabler action activates or deactivates the actions directly subordinated to this action, depending on the parameters supplied. | |
|  | Execute | The Execute action starts an external application. | |
|  | FileWriter | The FileWriter action writes the data received to the configured I/O export data file. | |
|  | Filter | The Filter action compares incoming events with the configured filter criteria. If they match up, the events are forwarded. | |
|  | FloatingValue | The FloatingValue action sends floating point numbers in accordance with the IEEE754 standard with an accuracy of 4 bytes. | |
|  | Heartbeat | The Heartbeat action periodically sends a switch-on message to the defined I/O group. | |
|  | Initializer | The Initializer action is activated after the configured delay once the OIP server is started. | |
|  | Inverter | The Inverter action inverts Boolean-type input signals (true ® false or false ® true). | |
|  | IOSystem | The IOSystem action is a placeholder for creating new node points for a clearer overview. | |
|  | IP Text Listener | The IP Text Listener action evaluates text strings that are sent to a specified IP address. | |








| Symbol | Action | Description | License |
|---|--------------------------|---|---------|
|  | JabberAccount | <p>The JabberAccount action sets up a connection to an external Jabber/XMPP-compatible instant messaging account (e.g. Google Talk).</p> <p>The presence status in OIP (Absent, Meeting,...) is transmitted on the instant messaging status and vice versa. Chat messages can be received as system messages.</p> | |
|  | LogicAND | The LogicAND action checks input signals for "AND operation" and sends the output signals for activating and deactivating actions. | |
|  | LogicNOT | The LogicNOT action checks input signals for "NOT operation" and sends the output signals for activating and deactivating actions. | |
|  | LogicOR | The LogicOR action checks input signals for "OR operation" and sends the output signals for activating and deactivating actions. | |
|  | LogicXOR | The LogicXOR action checks input signals for "EXCLUSIVE-OR operation" and sends the output signals for activating and deactivating actions. | |
|  | MessageWaitingIndication | The action MessageWaitingIndication | |
|  | Notification | The action Notification | |
|  | ParameterSetup | The ParameterSetup action allows the properties of actions directly subordinated to it to be adapted during runtime. | |
|  | PBXACDAgentCall | The PBXACDAgentCall action is used to trigger an action based on the agent status. | |





| Symbol | Action | Description | License |
|---|--------------------|--|---------|
|  | PBXACDAgentSkill | The PBXACDAgentSkill action changes the status (activated, deactivated) of the agent for the configured skill. If the configured agent is activated or deactivated in a Skill, the status is forwarded accordingly. | |
|  | PBXACDAgentState | The PBXACDAgentState action sets and evaluates the status of the OIP call centre agent. If the agent status received corresponds to the configured status, the corresponding events are forwarded. If an event is received, the agent status can be set for the configured user. | |
|  | PBXACDSkillCalls | The PBXACDSkillCalls action monitors the number of unanswered calls in the ACD queue for the configured skill. | |
|  | PBXACDSkillState | The PBXACDSkillState action changes the status (open, closed) for the configured skill. If the status of the configured (open, closed) is modified, the status is forwarded accordingly. | |
|  | PBXActiveTerminal | The PBXActiveTerminal action is used to determine the currently active phone in a One Number or parallel switch configuration. | |
|  | PBXAlarm | The PBXAlarm action evaluates received PBX alarms in accordance with the parameters. | |
|  | PBXApplication | The PBXApplication action is used to define a menu which can be displayed on a system phone using the PBXApplicationMenu action. | |
|  | PBXApplicationMenu | The PBXApplicationMenu action is used to call up a menu defined in the PBXApplication action and to display the menu on a system phone. | |
|  | PBXCallDeflect | The PBXCallDeflect action evaluates the incoming CLIP and forwards the call to the specified destination. | |

| Symbol | Action | Description | License |
|---|---------------------|--|-----------------------|
|  | PBXCallRecording | The PBXCallRecording action is for starting and stopping the recording function of a user. | |
|  | PBXCallState | The PBXCallState action evaluates the call status of the configured users. | |
|  | PBXChargeContact | The PBXChargeContact action evaluates the charge contact of the configured DECT handsets. | ATAS |
|  | PBXClipSetup | The PBXClipSetup action configures the outgoing CLIP number for the configured user | |
|  | PBXControlOutput | The PBXControlOutput action evaluates the status of the control output (relay) and can also set it. | |
|  | PBXDectSubscriber | The PBXDectSubscriber action evaluates the location data of a DECT handset in a configured area. | ATASpro |
|  | PBXDectSystemBase | The PBXDectSystemBase action is used to display a DECT radio unit connected to the communication server. | ATAS pro ^a |
|  | PBXDestinationState | The PBXDestinationState action sets or evaluates the CFU state of an user. | |
|  | PBXDisplay | The PBXDisplay action controls the display of the system phone. | ATAS |
|  | PBXDisplayOption | The PBXDisplayOption action is responsible for displaying and evaluating the foxkeys An action of the PBXDisplayOption action type is always a subordinate action of the PBXDisplay action type. | ATAS |

| Symbol | Action | Description | License |
|---|----------------------|--|---------|
|  | PBXGreeting | The PBXGreeting activates the configured greeting. | |
|  | PBXMacro | The PBXMacro action sends PBX macros configured in the parameters. | |
|  | PBXMessage | The PBXMessage action sends a message to the configured users. | |
|  | PBXMessageIndication | The PBXMessageIndication action responds to MWI events from the communication server(e.g. receipt or deletion of a voice mail). | |
|  | PBXMessageToMail | The PBXMessageToMail action evaluates text messages that are sent over the communication server text message system to forward them as e-mails or SMS. | |
|  | PBXMessageTrigger | The PBXMessageTrigger action evaluates text messages that are sent over the communication server text message system. | |
|  | PBXNetworkMessage | The PBXNetworkMessage action sends messages to the QSIG network. | |
|  | PBXPresenceKey | The PBXPresenceKey action indicates the presence status on a configured redkey. | |
|  | PBXPresenceState | The PBXPresenceState action evaluates the presence status of the configured user. The presence status can also be set. | |
| PUM | PBXPUMState | The PBXPUMState action sets and evaluates the PUM status of the configured user. | ATAS |

| Symbol | Action | Description | License |
|---|-----------------------------|---|---------|
|  | PBXRedKey | ThePBXRedKey action evaluates the received character string stored on a programmed red key, and sends Boolean-type output signals to the addressed actions. | |
|  | PBXRedKeyLED | The PBXRedKeyLED action controls the LED for the configured redkey function on the system phone. | ATAS |
|  | PBXSubscriber | The PBXSubscriber action forwards the status (on/off) of a configured PBX user.. The status might be a particular call status or a new voicemail. The status can be used for the chart display. | |
|  | PBXSwitchGroup | The PBXSwitchGroup action sets and evaluates the status of the switch position (day,night, weekend). | |
|  | PBXTeamCall | The PBXTeamCall action allows the configuration of teams. All the team members see on the display of the system phone the calls made to the team members and can use the foxkey to fetch the calls. | ATAS |
|  | PBXTeamKey | The PBXTeamKey action simulates a team key that is available in the QSIG network. | |
|  | PBXTerminalEvent | The PBXTerminalEvent action evaluates safeguard alarms from the DECT cordless phones. | ATAS |
|  | PBXTimeCall | The PBXTimeCall action is used to generate a time alarm call in the case of one or more users. | |
|  | PBXUserCommand ^a | The PBXUserCommand action evaluates alarms sent via the *77xxxx# function code. | |
|  | PBXUserGroup | The PBXUserGroup action sets and evaluates the status of the configured users in the user group. | |

| Symbol | Action | Description | License |
|---|-------------------------|--|---------|
|  | PBXVoiceMa ^a | The PBXVoiceMail action responds to voice mails received by the configured user. | |
|  | RandomSwitch | The RandomSwitch action activates or deactivates the status of any subordinated actions randomly in the configured time interval. | |
|  | Routing | The Routing action is used to change the dynamic routing of calls in the Routing Manager. | |
|  | RSSNews | The RSSNews action indicates messages in RSS file format on the display of the system phone. | ATAS |
| 50% | ScalingValue | The ScalingValue action sends a configured floating point number to a configured I/O group. | |
| 1 2 3 | Sequence | The Sequence action activates the subordinated actions in sequence. | |
| 0.1 | SmallFloatValue | The SmallFloatValue action sends floating point numbers in accordance with the IEEE754 standard with an accuracy of 2 bytes. | |
|  | State | The action State action indicates the status of the action. | |
|  | StringFilter | The StringFilter action compares messages received with the configured filter criteria. If they match, the configured text is forwarded. | |
|  | StringTrigger | The StringTrigger action evaluates messages received according to their content. | |

| Symbol | Action | Description | License |
|---|----------------|--|---------|
| Text | StringValue | The StringValue action sends configured character strings to the corresponding actions. | |
|  | Switching | The Switching action receives and sends events depending on the internal status of the action. | |
| true | SwitchingValue | The SwitchingValue action sends Boolean type values if events are received. | |
|  | Timeout | The Timeout action delays the sending of output signals. | |
|  | TimerSwitch | The TimerSwitch action is a timer switch that activates or deactivates the addressed actions at specific times. | |
|  | WebPage | The WebPage action is used to display a website in the Mitel OfficeSuite of the user who is logged in. Application example: Webcam view of a door intercom | |

8.4.1 Area



The *Area* action is used to group different geographic areas (e.g. premises, buildings, storeys or individual rooms). The events entered are sent on to all the sub-actions.

Events can also be forwarded recursively to specific types of sub-actions.

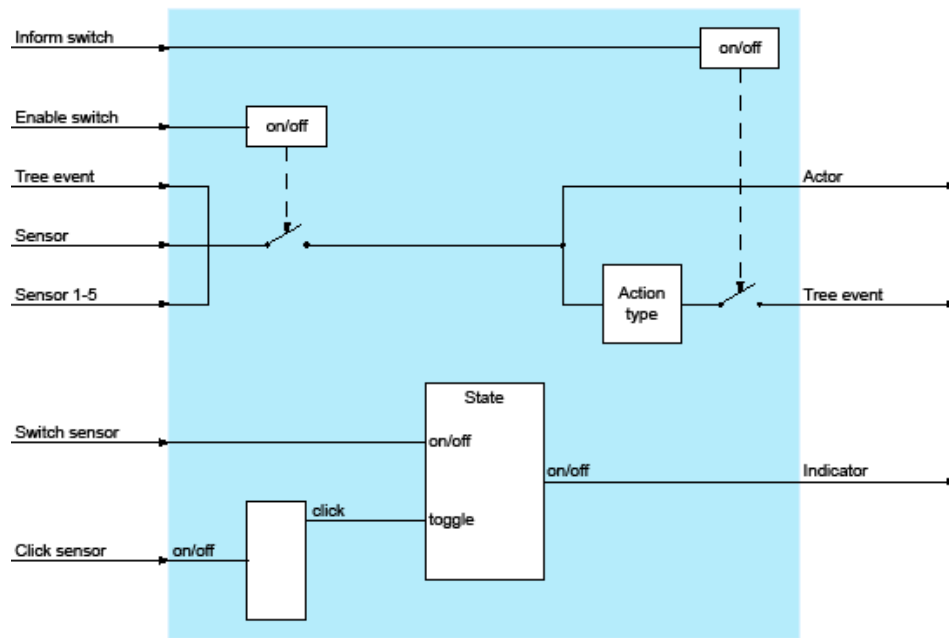


Figure 11: I/O Action Area

Example:

All the lights on a particular storey should be switched off using a configured Redkey on the system phone.

8.4.2 AstroCalendar



The *AstroCalendar* action calculates sunrise and sunset times for the configured location based on astronomic calculations

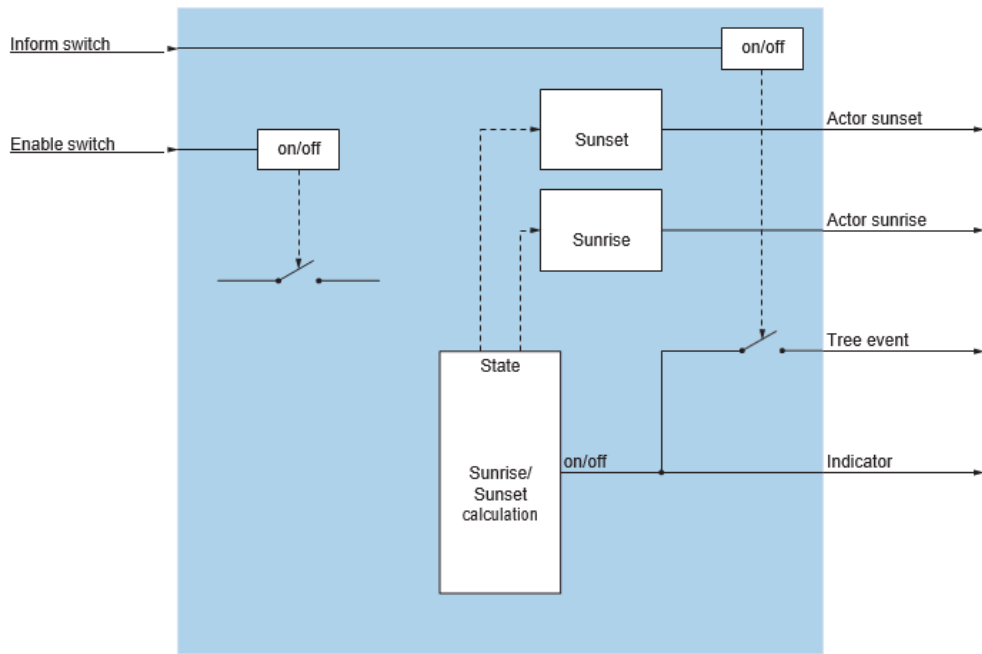


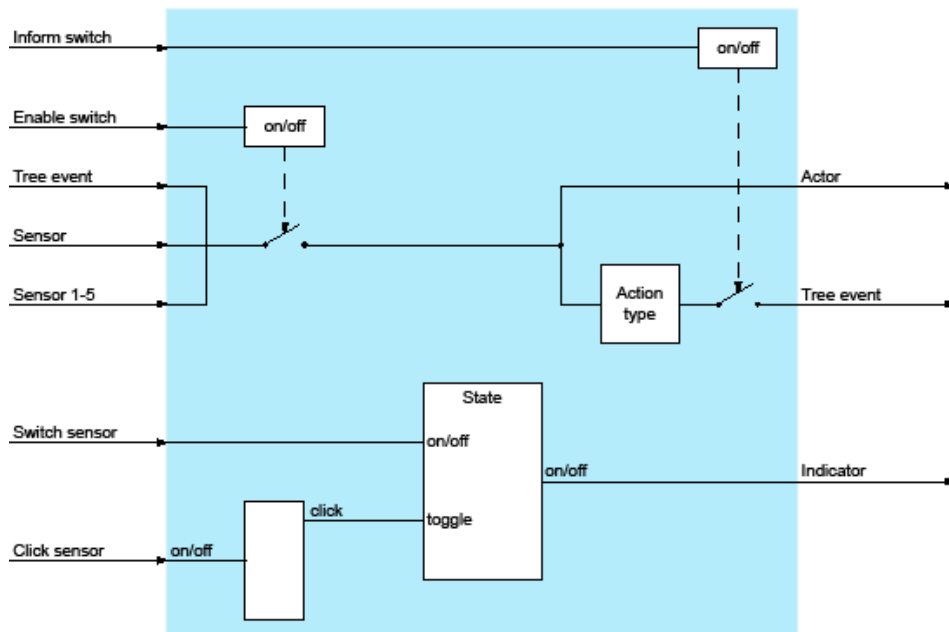
Figure 12: I/O Action AstroCalendar

8.4.3 Blinker



The *Blinker* action activates or deactivates actions depending on the time interval.

Figure 13: I/O Action Blinker

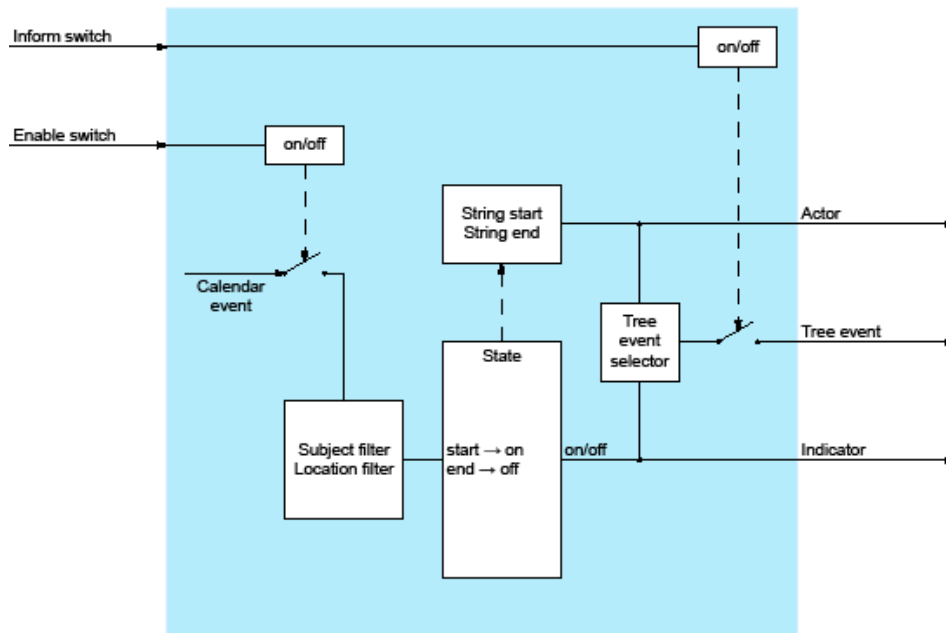


8.4.4 CalendarEntry



The *CalendarEntry* action evaluates calendar entries according to the start and end time.

Figure 14: I/O Action CalendarEntry



8.4.5 CalendarNotification



The *CalendarNotification* action evaluates calendar reminders.

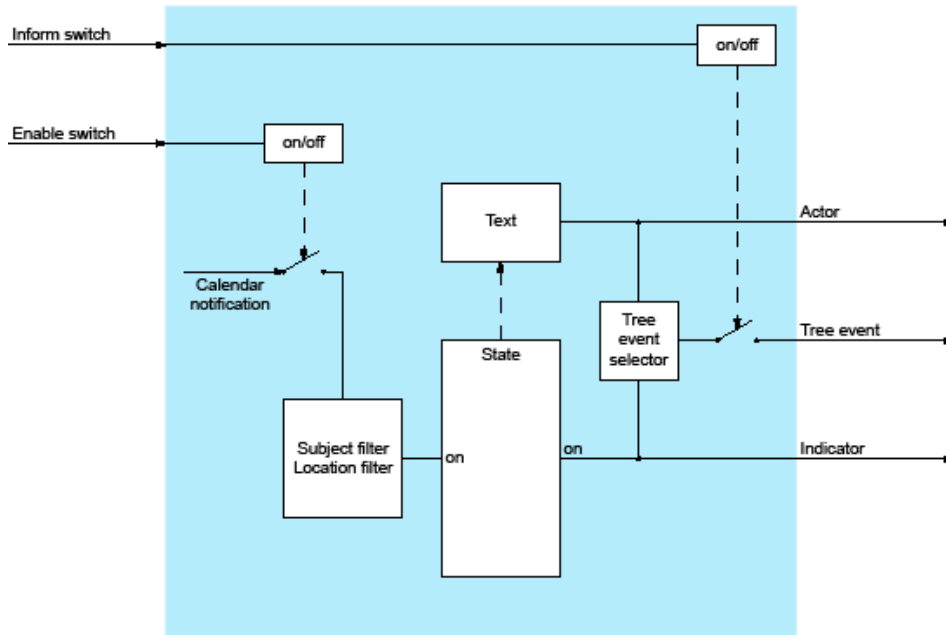


Figure 15: I/O Action CalendarNotification

Example:

Using a specific calendar entry the system phone can automatically be forwarded to a configured destination and presence status set accordingly.

8.4.6 EmailMessage



The *EmailMessage* action sends an e-mail to a defined group of recipients.

For the *EmailMessage* action, the installation component *Connection to an SMTP mail server* must be selected and configured during installation of the OIP server.

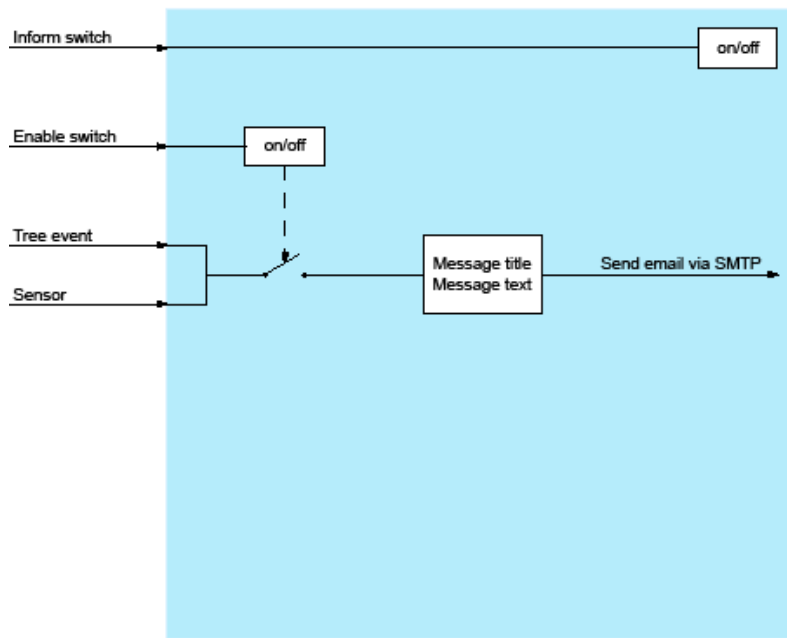


Figure 16: I/O Action EmailMessage

8.4.7 EmailTrigger



The *EmailTrigger* action evaluates received e-mails according to their content.

The analysis of received e-mails is available only with the connection to a Microsoft Exchange server the user's mailbox must also be configured in the user profile.

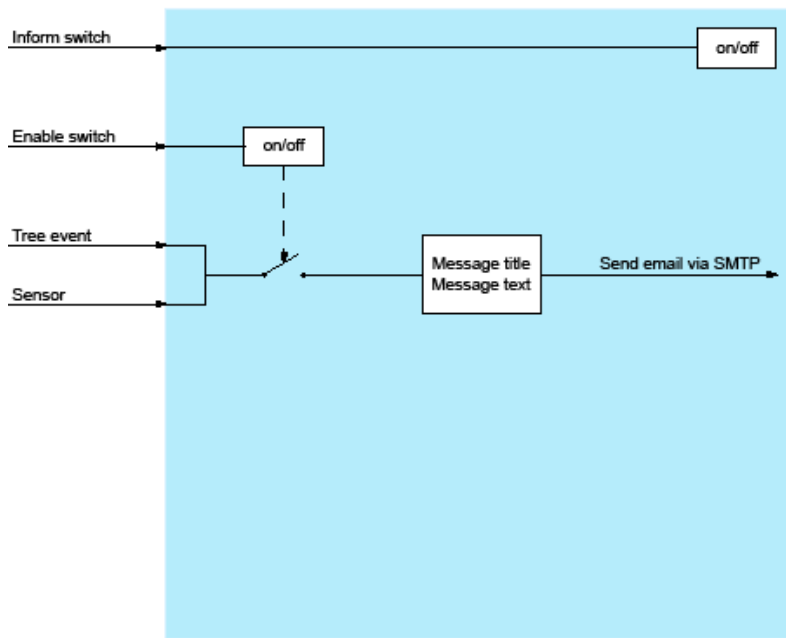


Figure 17: I/O Action EmailTrigger

8.4.8 Enabler



The *Enabler* action activates or deactivates the actions directly subordinated to this action, depending on the parameters supplied.

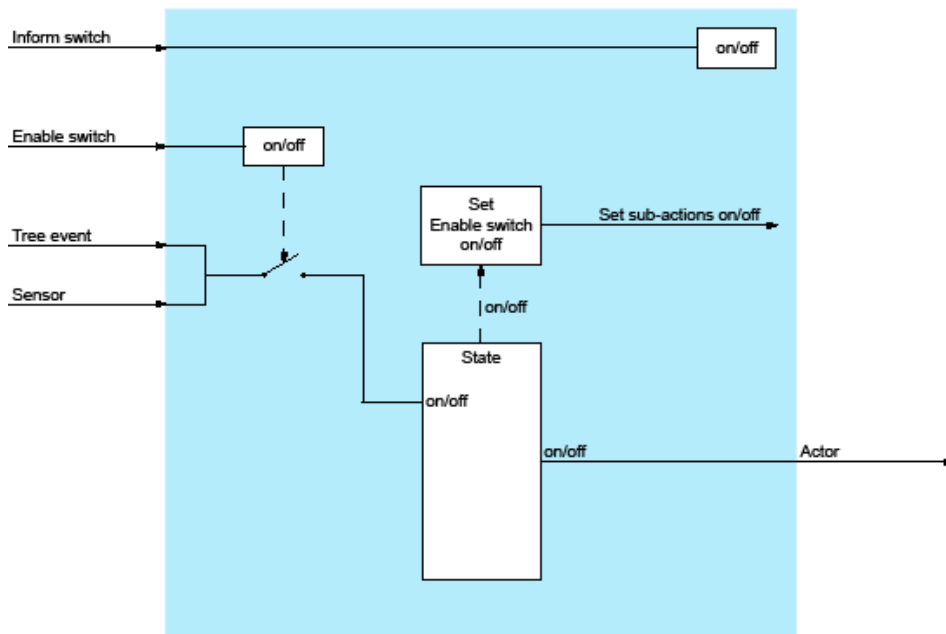


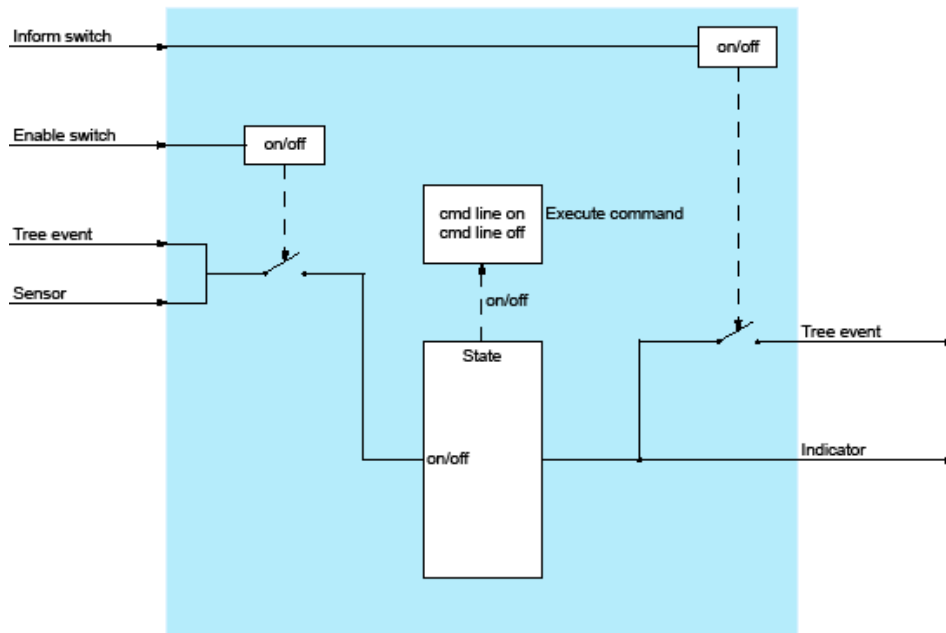
Figure 18: I/O Action Enabler

8.4.9 Execute



The *Execute* action starts an external application.

Figure 19: I/O Action Execute



8.4.10 FileWriter



The *FileWriter* action writes the data received to the configured I/O export data file.

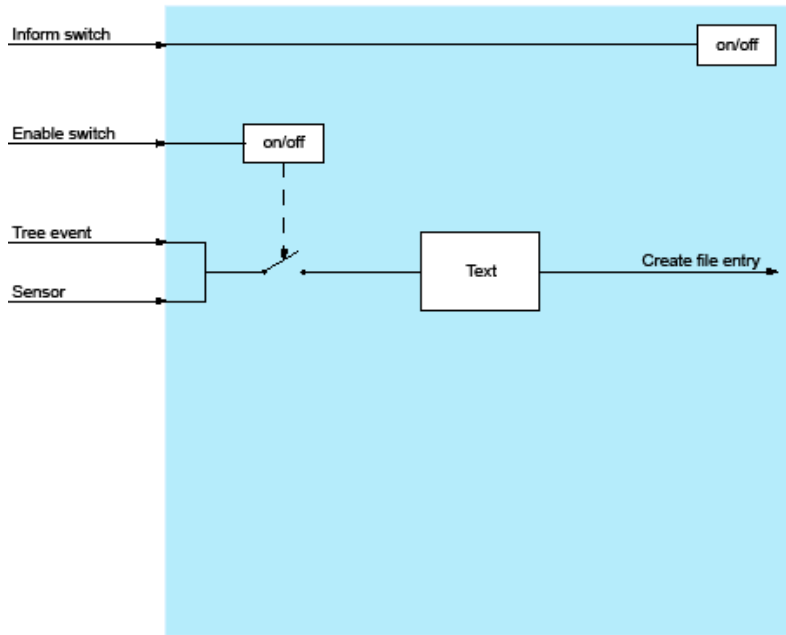


Figure 20: I/O Action FileWriter

8.4.11 Filter



The *Filter* action compares incoming events with the configured filter criteria. If they match up, the events are forwarded.

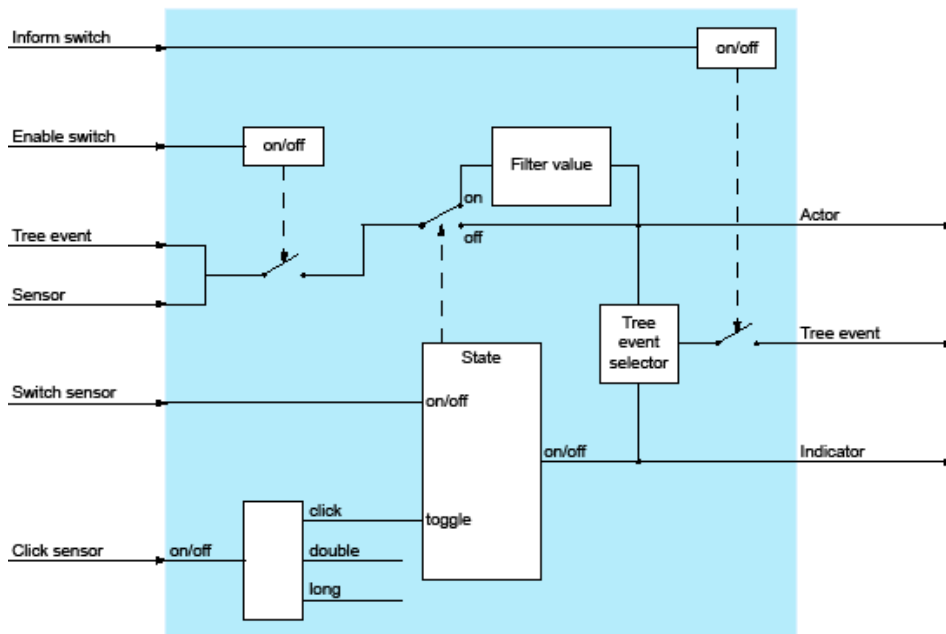


Figure 21: I/O Action Filter

8.4.12 FloatingValue

0.01

The *FloatingValue* action sends floating point numbers in accordance with the IEEE754 standard with an accuracy of 4 bytes.

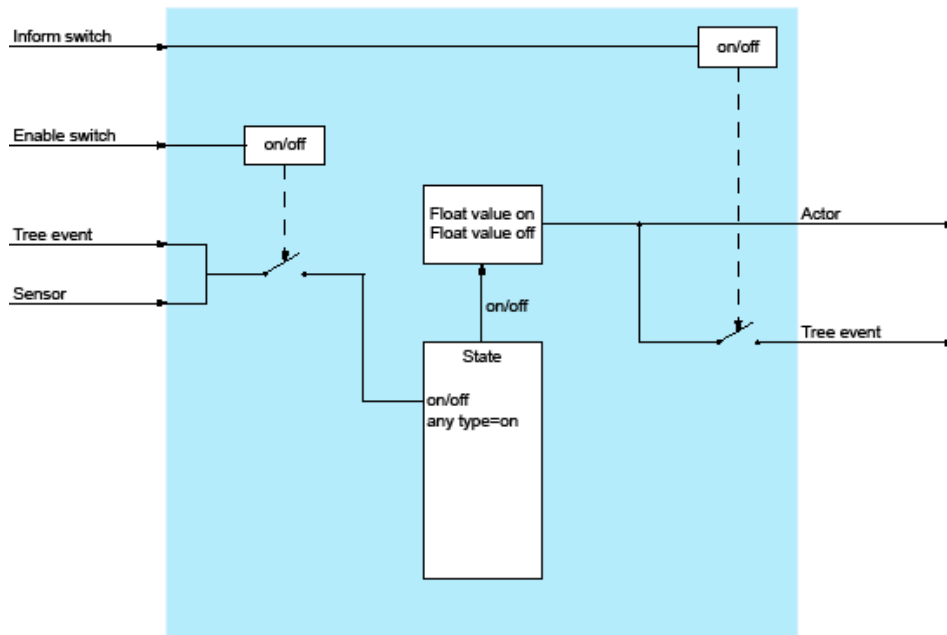


Figure 22: I/O Action FloatingValue

8.4.13 Heartbeat



The *Heartbeat* action periodically sends a switch-on message to the defined I/O group.

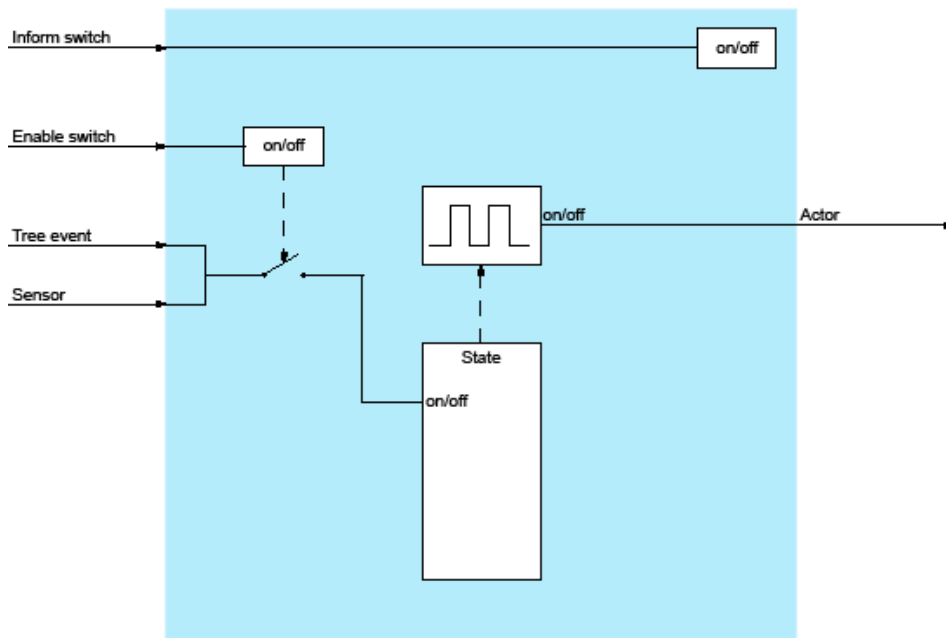


Figure 23: I/O Action Heartbeat

8.4.14 Initializer



The *Initializer* action is activated after the configured delay once the OIP server is started.

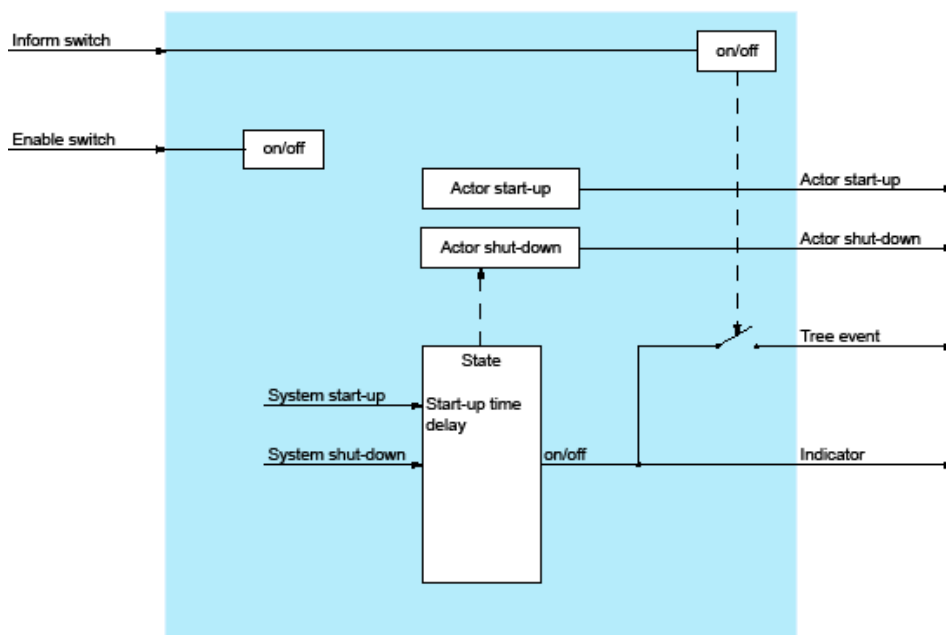


Figure 24: I/O Action Initializer

8.4.15 Inverter



The *Inverter* action inverts Boolean-type input signals (true -> false or false -> true).

8.4.16 IOSystem



The *IOSystem* action is a placeholder for creating new node points for a clearer overview.

Events sent to the action via the tree structure or by addressing are not routed through by the action. This means that the action tree is interrupted at this point.

8.4.17 IP Text Listener



The *IP Text Listener* action evaluates text strings that are sent to a specified IP address.

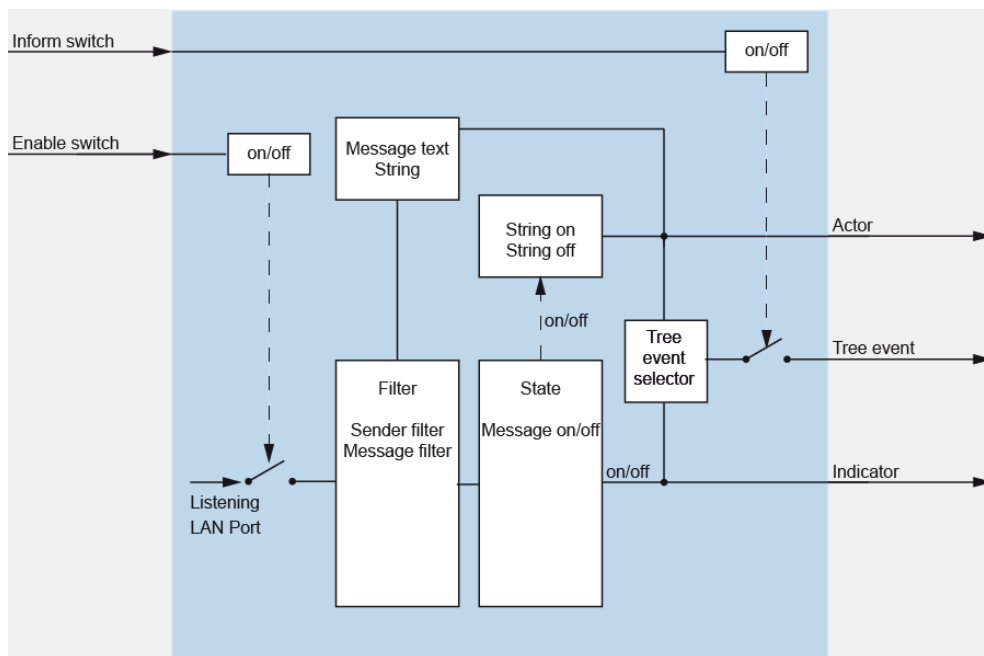


Figure 25: I/O Action IPTextListner

8.4.18 JabberAccount



The *JabberAccount* action sets up a connection to an external Jabber/XMPP-compatible instant messaging account (e.g. Google Talk). The presence status in OIP (Absent, Meeting, ...) is transmitted on the instant messaging status and vice versa. Chat messages can be received as system messages.

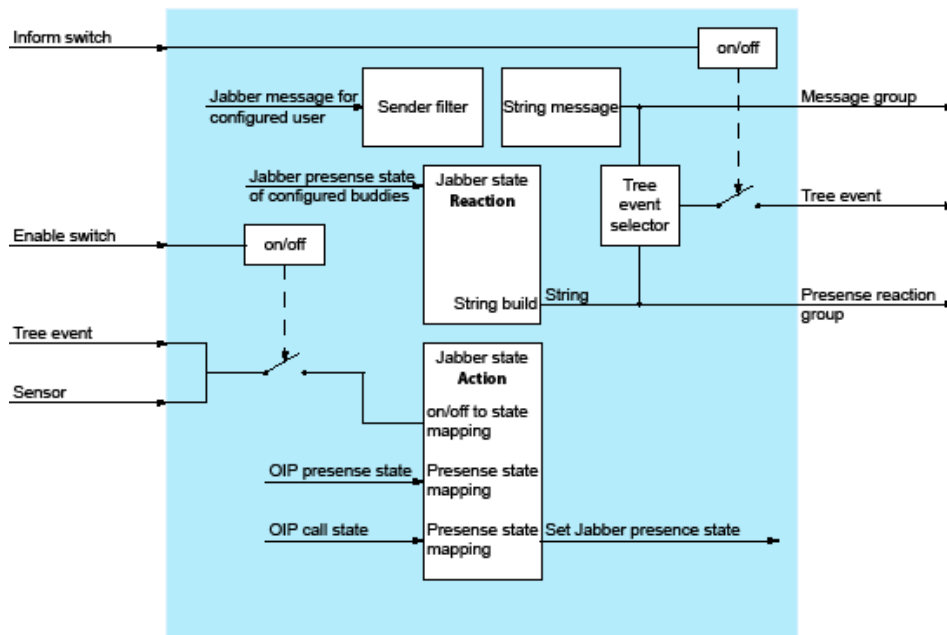


Figure 26: I/O Action JabberAccount

8.4.19 LogicAND



The *LogicAND* action checks input signals for "AND operation" and sends the output signals for activating and deactivating actions.

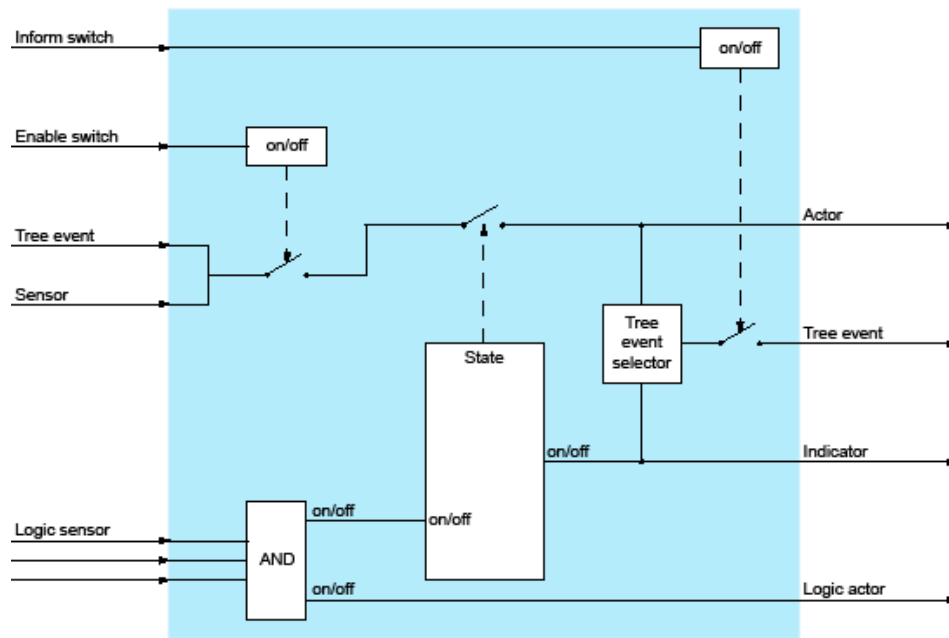


Figure 27: I/O Action LogicAND

8.4.20 LogicNOT



The *LogicNOT* action checks input signals for "NOT operation" and sends the output signals for activating and deactivating actions.

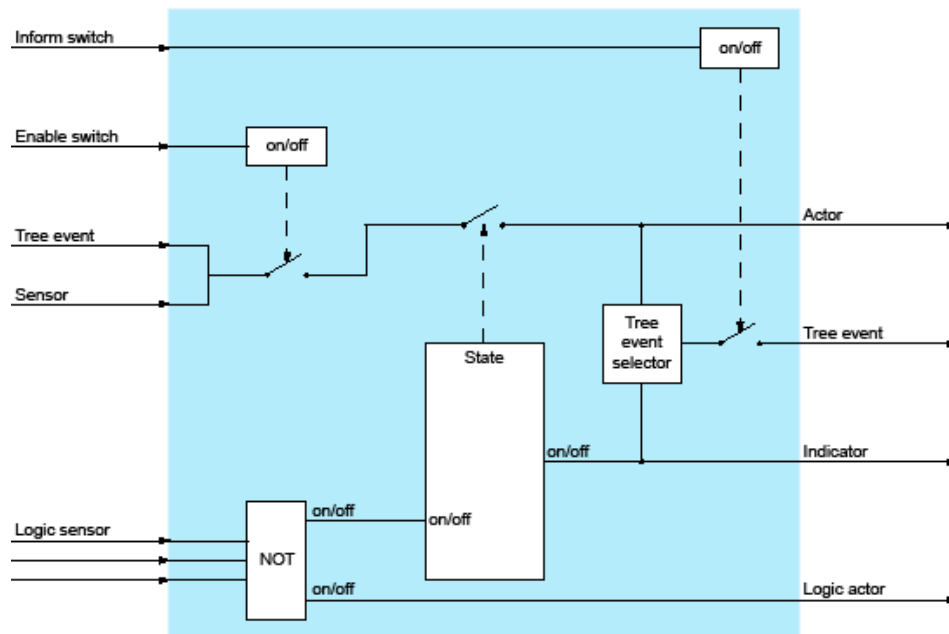


Figure 28: I/O Action LogicNOT

8.4.21 LogicOR

OR

The *LogicOR* action checks input signals for "OR operation" and sends the output signals for activating and deactivating actions.

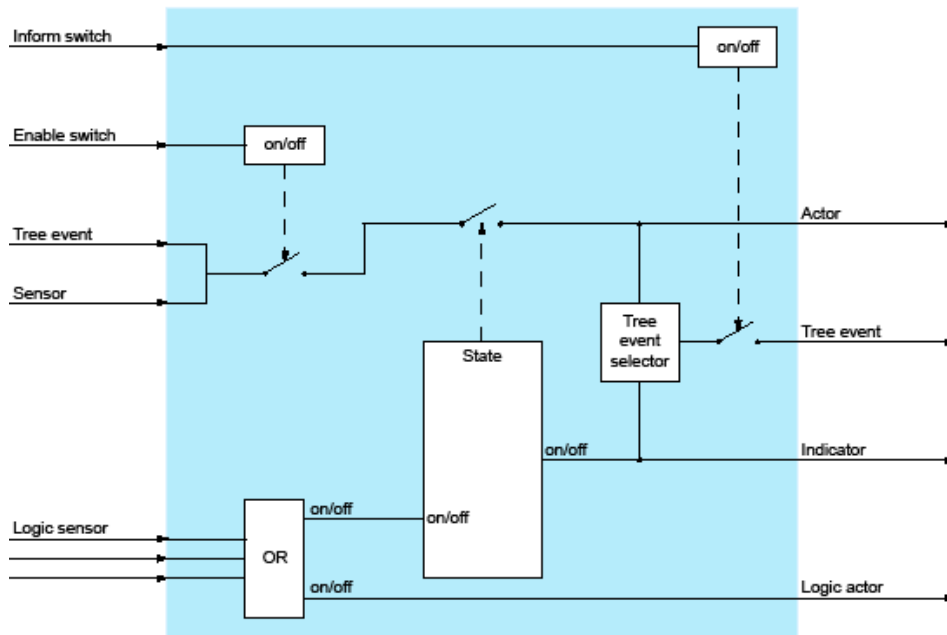


Figure 29: I/O Action LogicOR

8.4.22 LogicXOR

X

The *LogicXOR* action checks input signals for "EXCLUSIVE-OR operation" and sends the output signals for activating and deactivating actions.

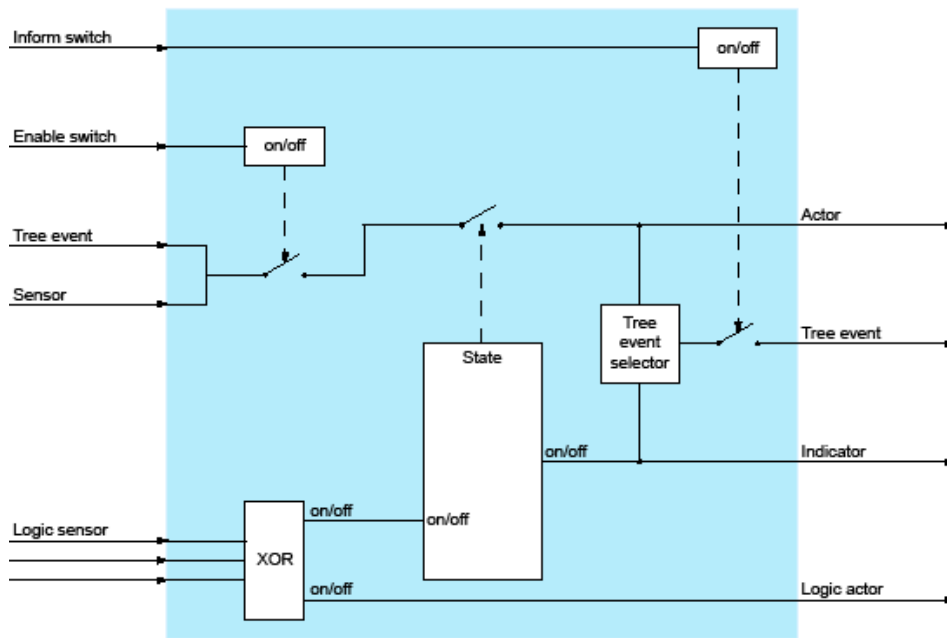


Figure 30: I/O Action LogicXOR

8.4.23 MessageWaitingIndication



The action *MessageWaitingIndication*

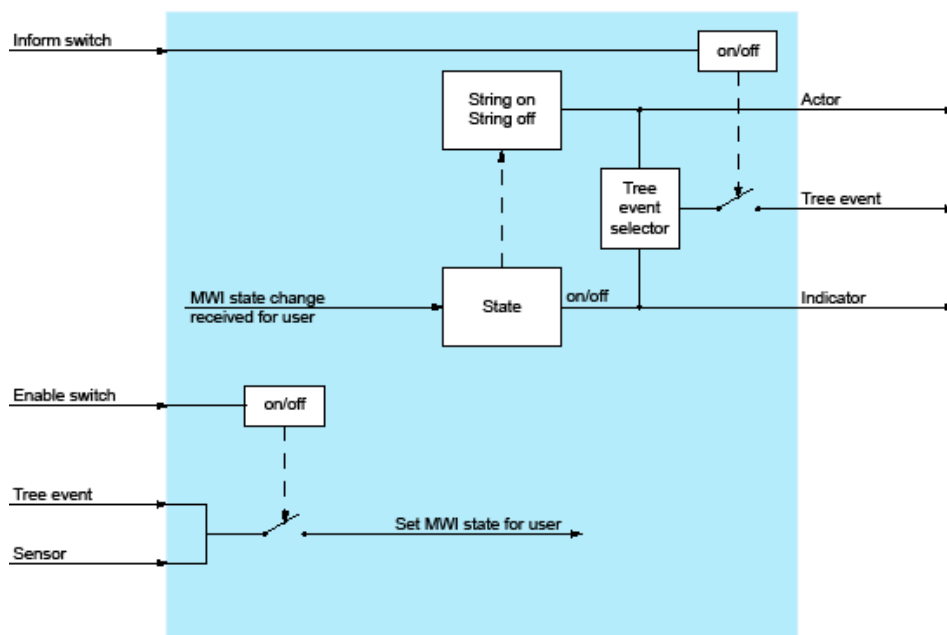


Figure 31: I/O Action MessageWaitingIndication

8.4.24 Notification



The action *Notification*

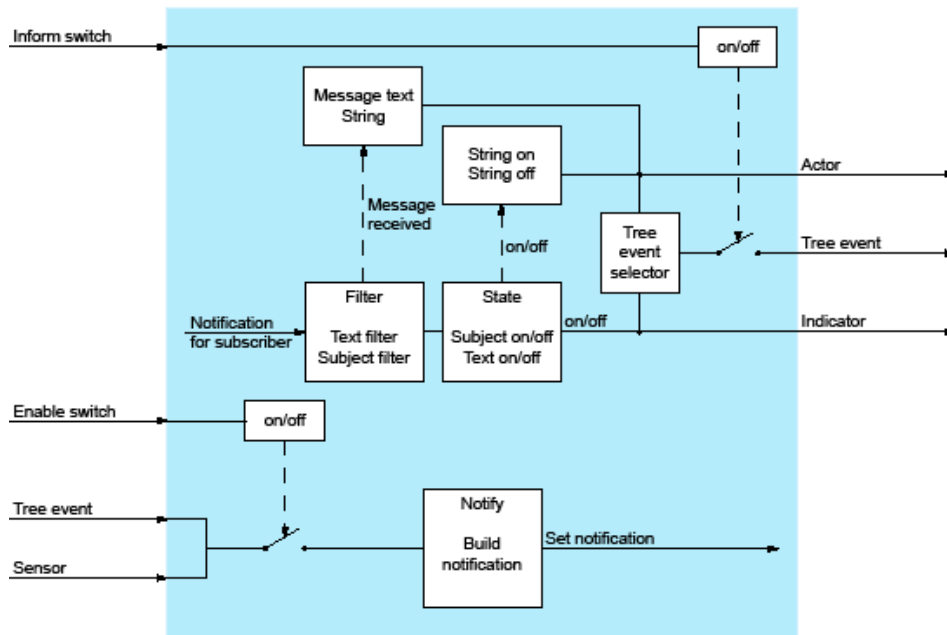


Figure 32: I/O Action Notification

8.4.25 ParameterSetup



The *ParameterSetup* action allows the properties of actions directly subordinated to it to be adapted during runtime.

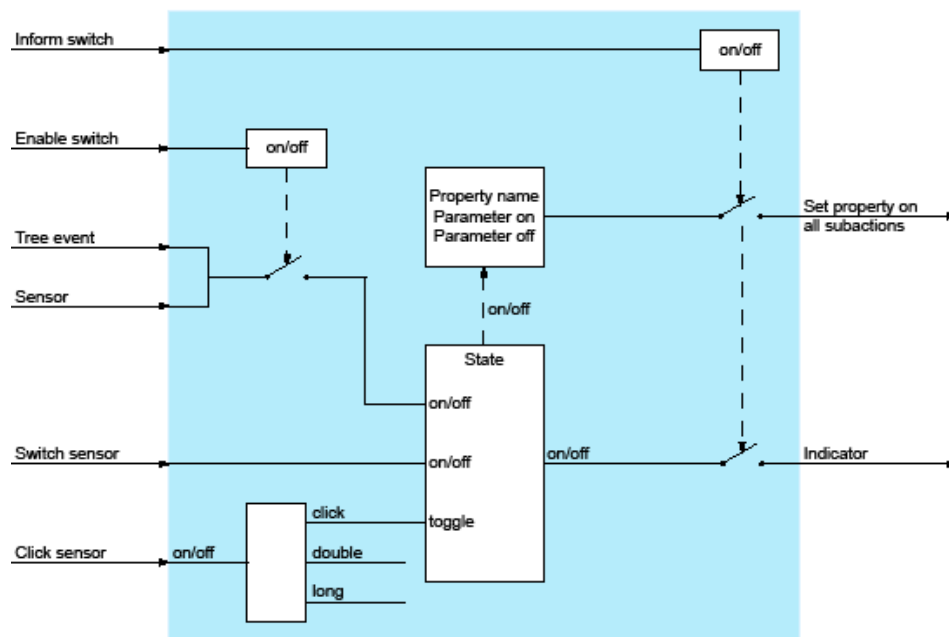


Figure 33: I/O Action ParameterSetup

8.4.26 PBXACDAgentSkill



The *PBXACDAgentSkill* action changes the status (activated, deactivated) of the agent for the configured skill. If the configured agent is activated or deactivated in a Skill, the status is forwarded accordingly.

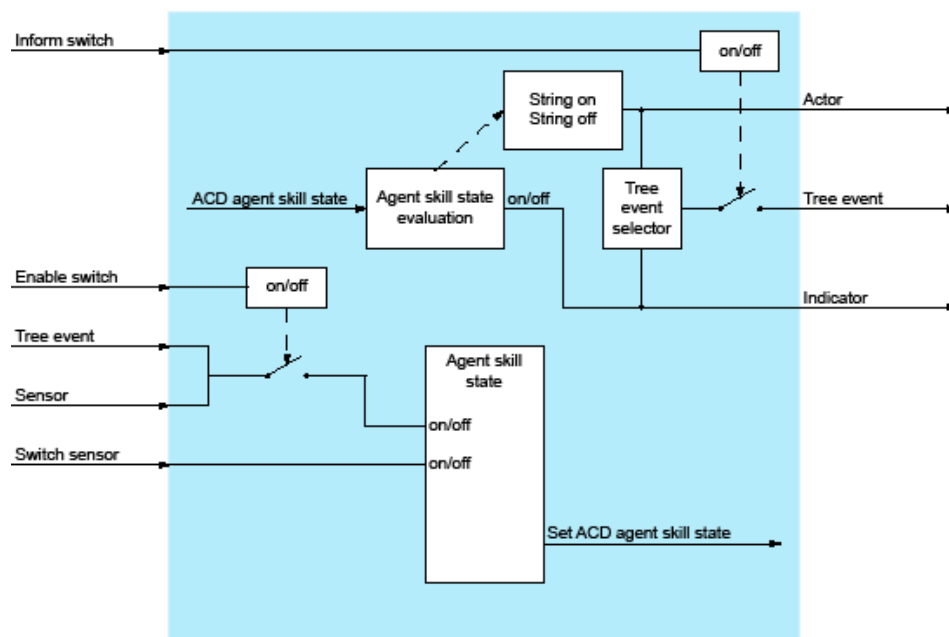


Figure 34: I/O Action PBXACDAgentSkill

8.4.27 PBXACDAgentState



The *PBXACDAgentState* action sets and evaluates the status of the OIP call centre agent. If the agent status received corresponds to the configured status, the corresponding events are forwarded. If an event is received, the agent status can be set for the configured user.

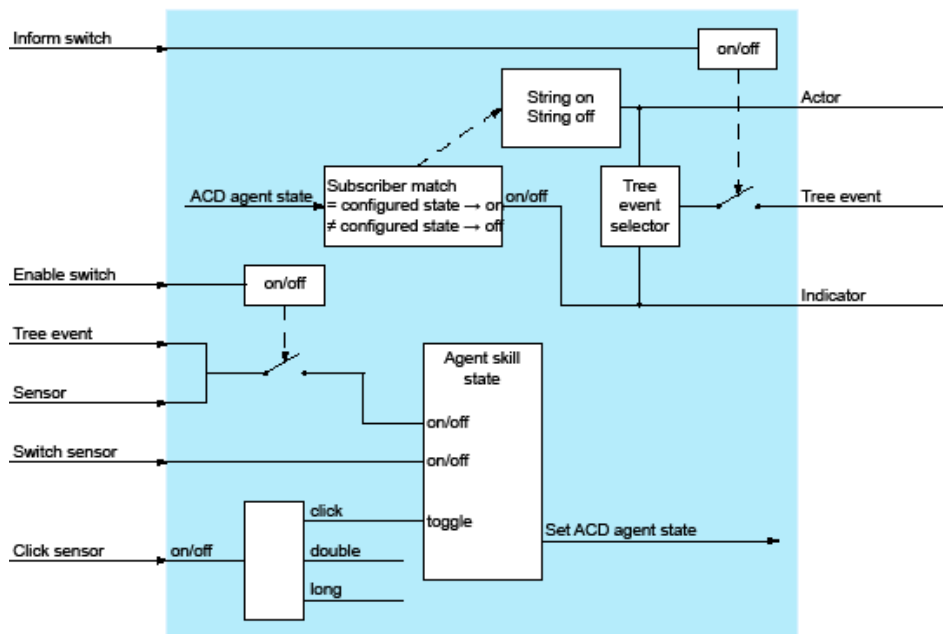


Figure 35: I/O Action PBXACDAgentState

8.4.28 PBXACDSkillCalls



The *PBXACDSkillCalls* action monitors the number of unanswered calls in the ACD queue for the configured skill.

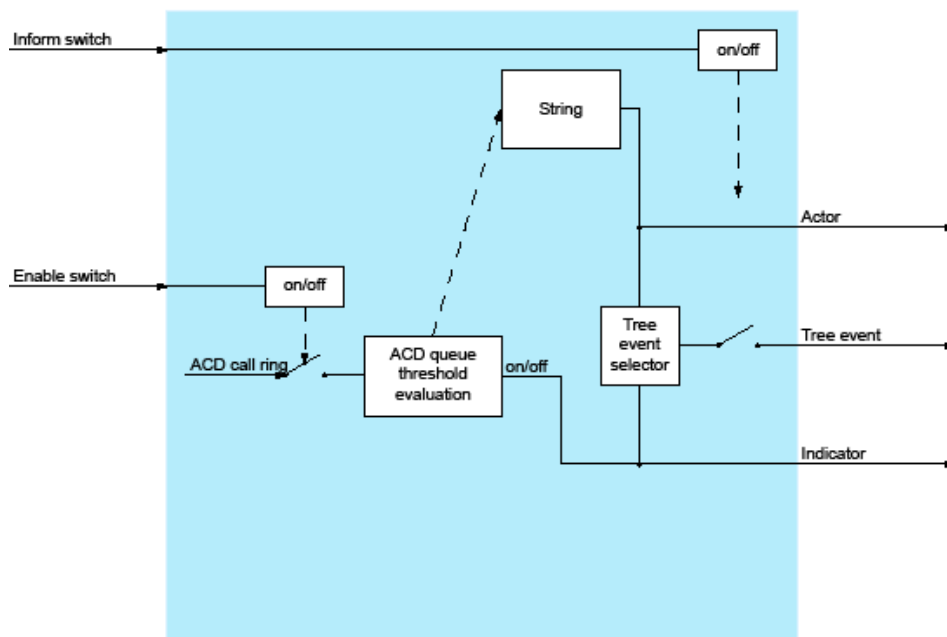


Figure 36: I/O Action PBXACDSkillCalls

8.4.29 PBXACDSkillState



The *PBXACDSkillState* action changes the status (open, closed) for the configured skill. If the status of the configured (open, closed) is modified, the status is forwarded accordingly.

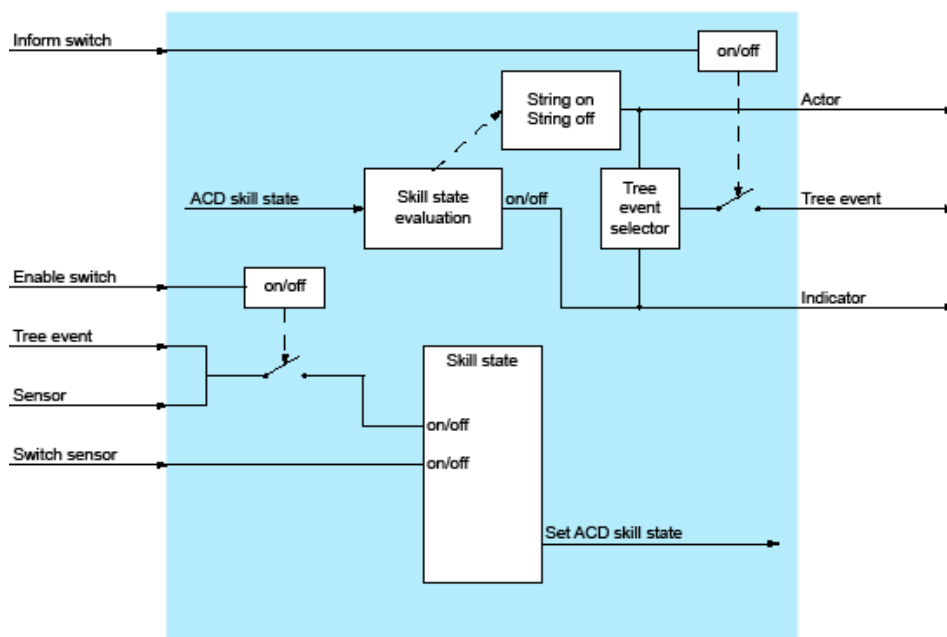


Figure 37: I/O Action PBXACDSkillState

8.4.30 PBXAlarm



The *PBXAlarm* action evaluates received PBX alarms in accordance with the parameters.

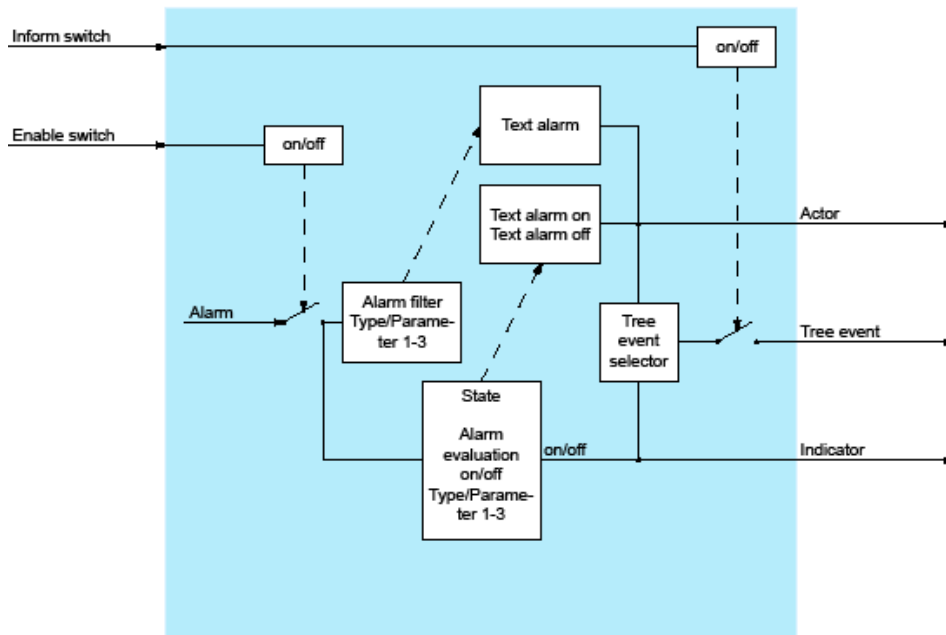


Figure 38: I/O Action PBXAlarm

8.4.31 PBXCallDeflect



The *PBXCallDeflect* action evaluates the incoming CLIP and forwards the call to the specified destination.

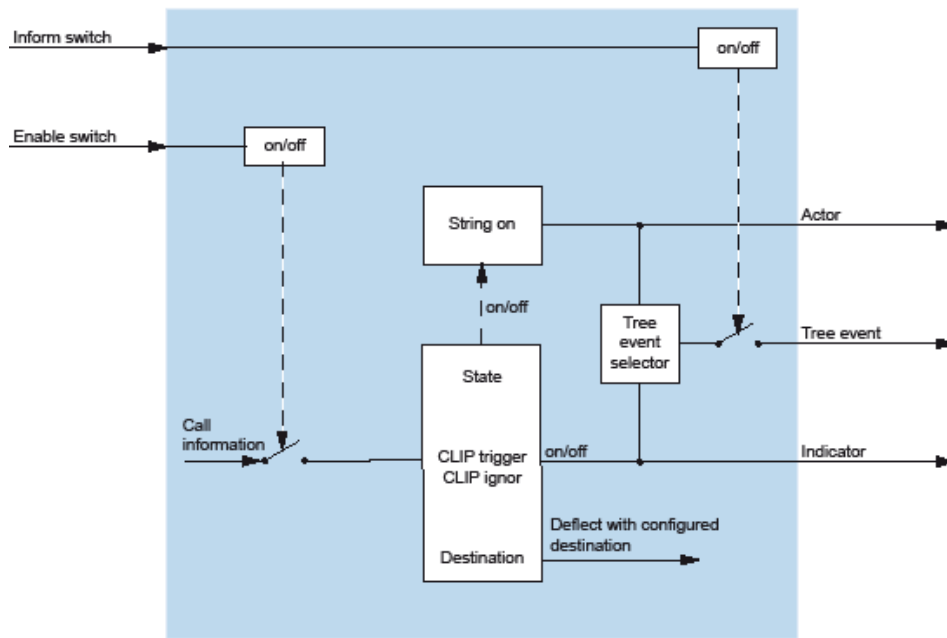


Figure 39: I/O Action PBXCallDeflect

8.4.32 PBXCallRecording



The *PBXCallRecording* action is for starting and stopping the recording function of a user.

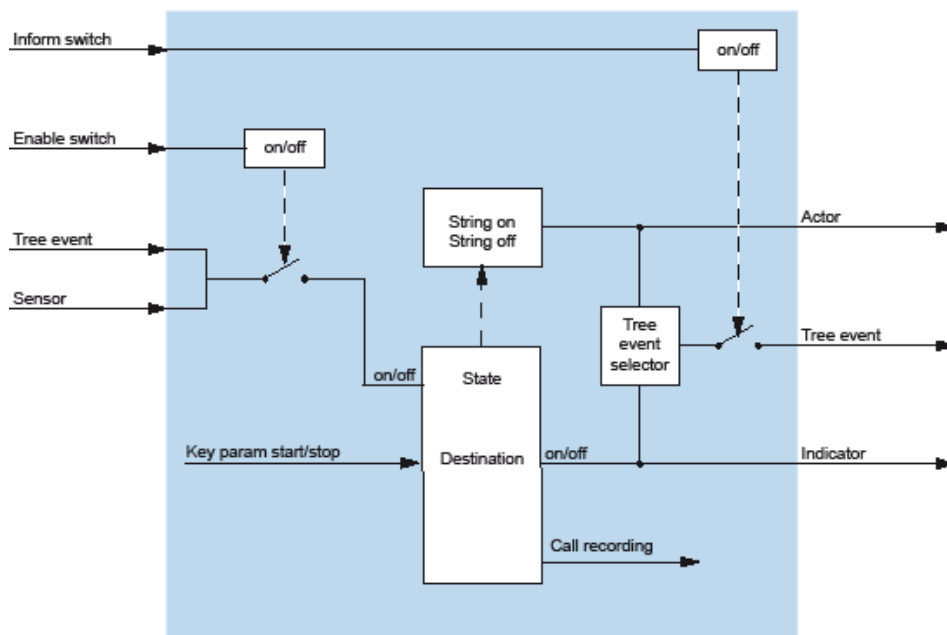


Figure 40: I/O Action PBXCallRecording

8.4.33 PBXCallState



The *PBXCallState* action evaluates the call status of the configured users.

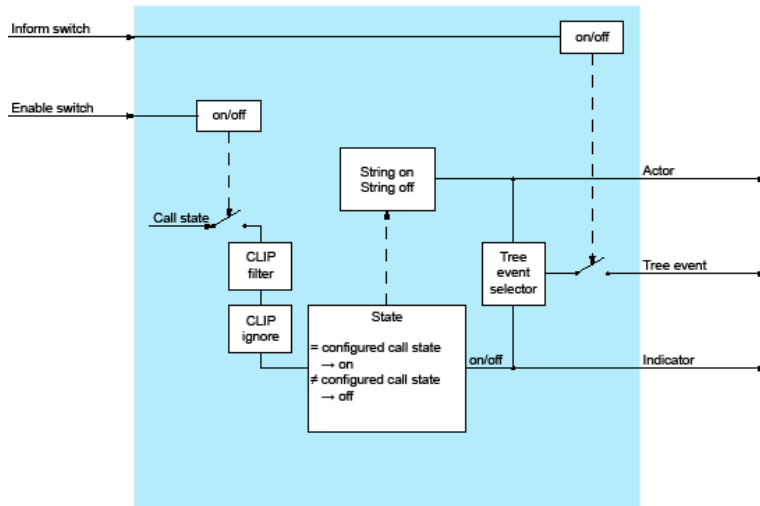


Figure 41: I/O Action PBXCallState

8.4.34 PBXChargeContact



The *PBXChargeContact* action evaluates the charge contact of the configured DECT handsets.

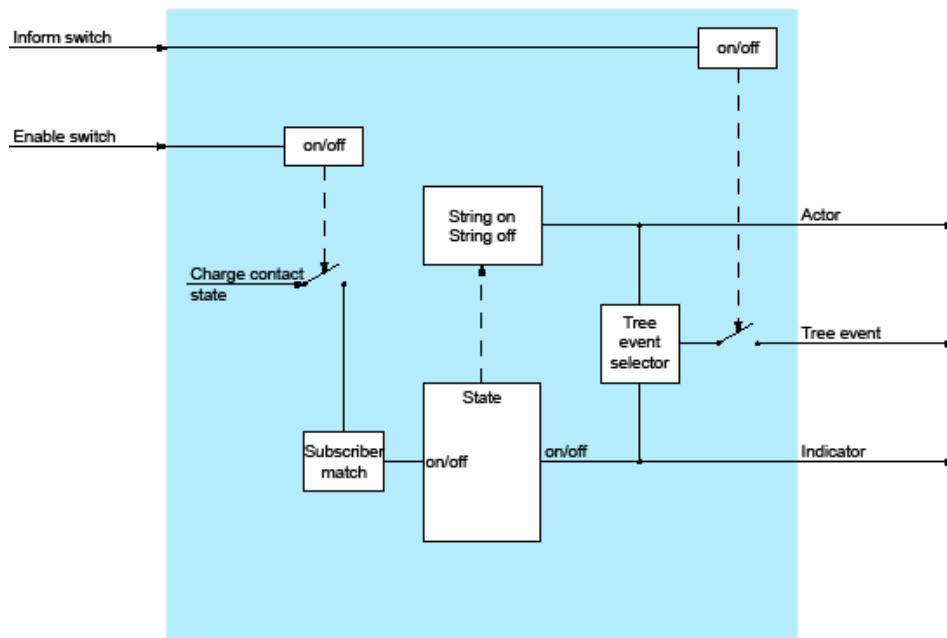


Figure 42: I/O Action PBXChargeContact

8.4.35 PBXClipSetup

+41

The *PBXClipSetup* action configures the outgoing CLIP number for the configured user

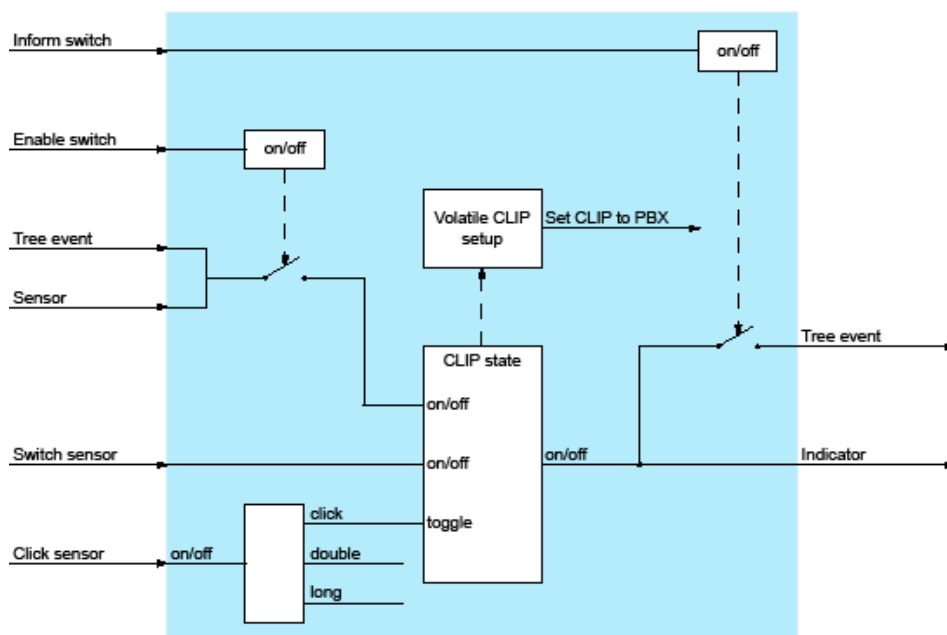


Figure 43: I/O Action PBXClipSetup

8.4.36 PBXControlOutput



The *PBXControlOutput* action evaluates the status of the control output (relay) and can also set it.

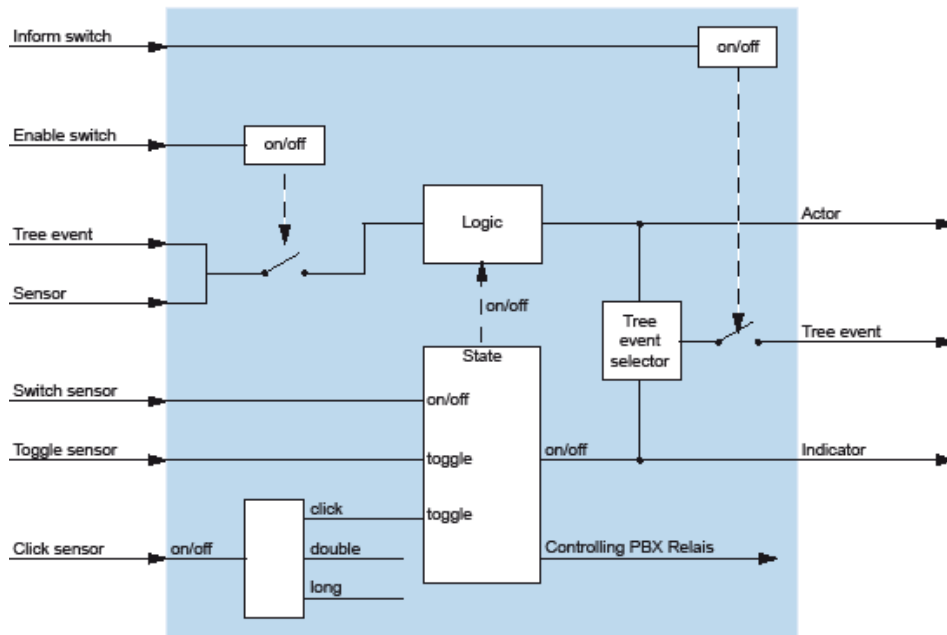


Figure 44: I/O Action PBXControlOutput

8.4.37 PBXDectSubscriber



The *PBXDectSubscriber* action evaluates the location data of a DECT handset in a configured area.

The *PBXDectSubscriber* action is available only if at least three DECT radio units are connected to the communication server.

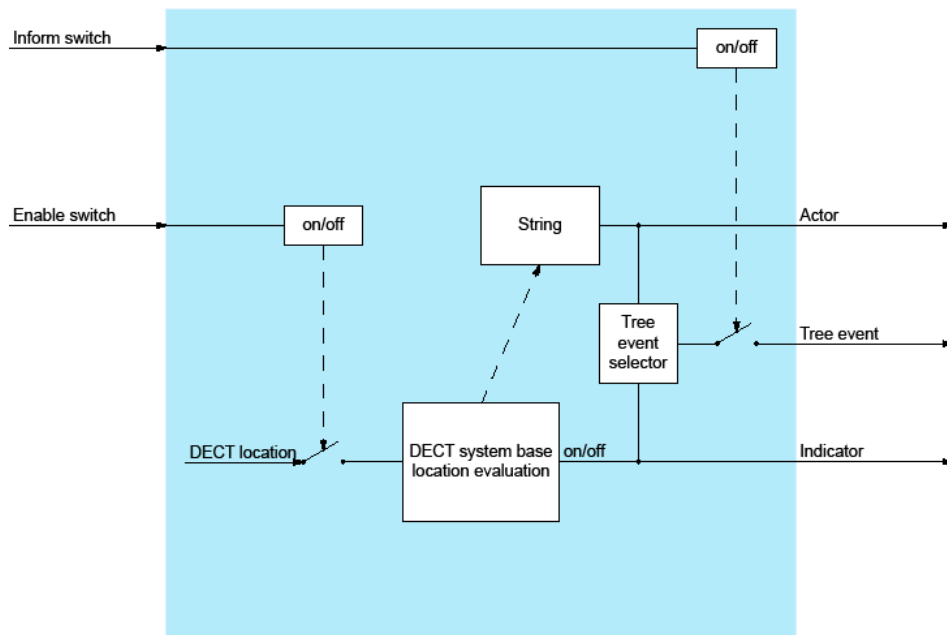


Figure 45: I/O Action PBXDectSubscriber

In the interval configured in the action, the location of the DECT handset is calculated using the data from the three strongest DECT radio units. The availability of the DECT handset (e.g. DECT deactivated, outside the configured area, DECT in the charger) can also be determined and forwarded.

The PBXDectSubscriber action can be displayed in the chart view, see also "**DECT locating**"

8.4.38 PBXDectSystemBase



The *PBXDectSystemBase* action is used to display a DECT radio unit connected to the communication server.

The PBXDectSystemBase action is available only if at least three DECT radio units are connected to the communication server.

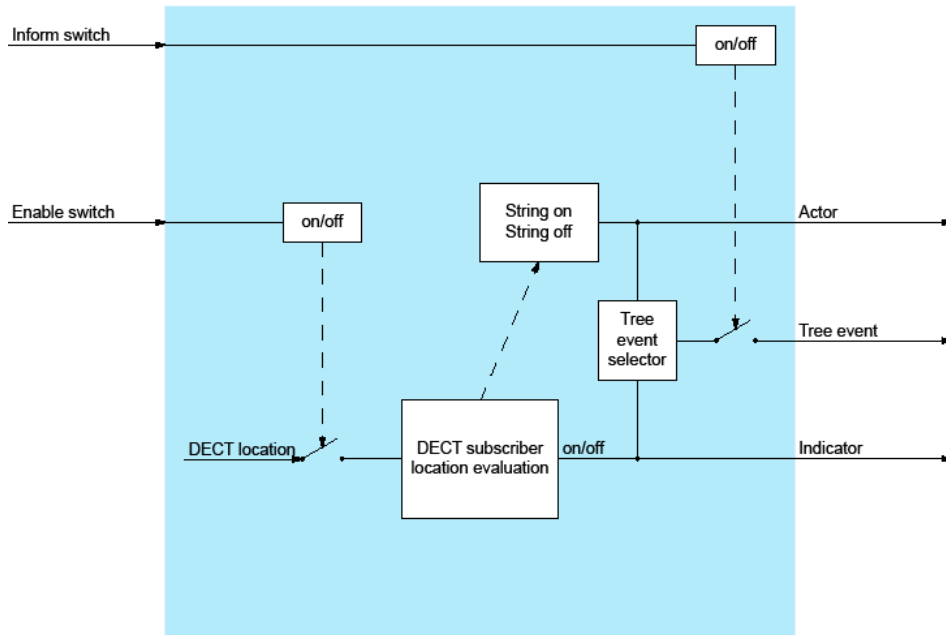


Figure 46: I/O Action PBXDectSystemBase

In conjunction with the DECT localization this action is shown or hidden if a configured DECT handset is located in the area of the DECT radio unit.

The PBXDectSystemBase action can be displayed in the chart view, see also "**DECT locating**".

8.4.39 PBXDestinationState



The *PBXDestinationState* action sets or evaluates the CFU state of an user.

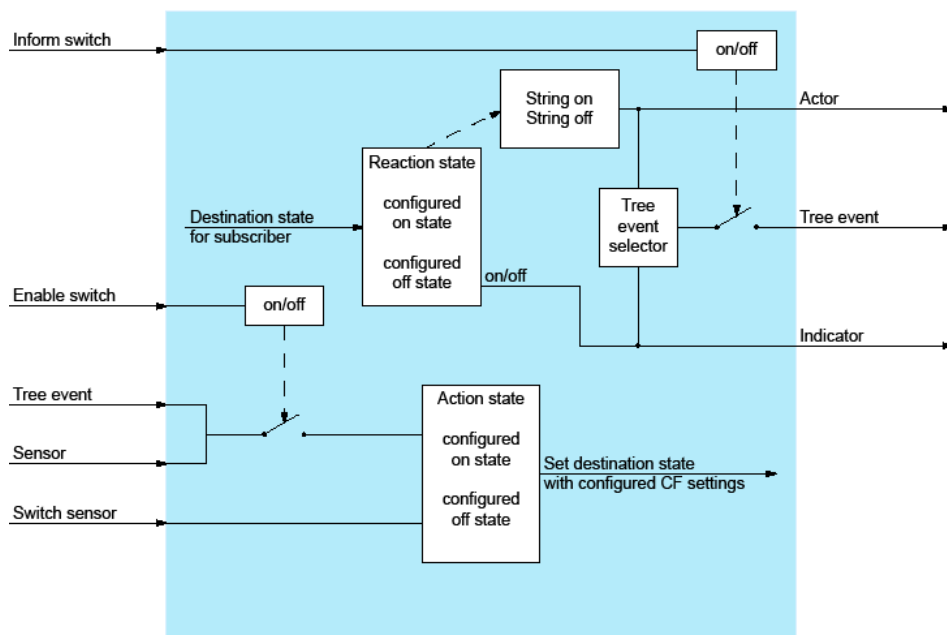


Figure 47: I/O Action PBXDestinationState

8.4.40 PBXDisplay



The *PBXDisplay* action controls the display of the system phone.

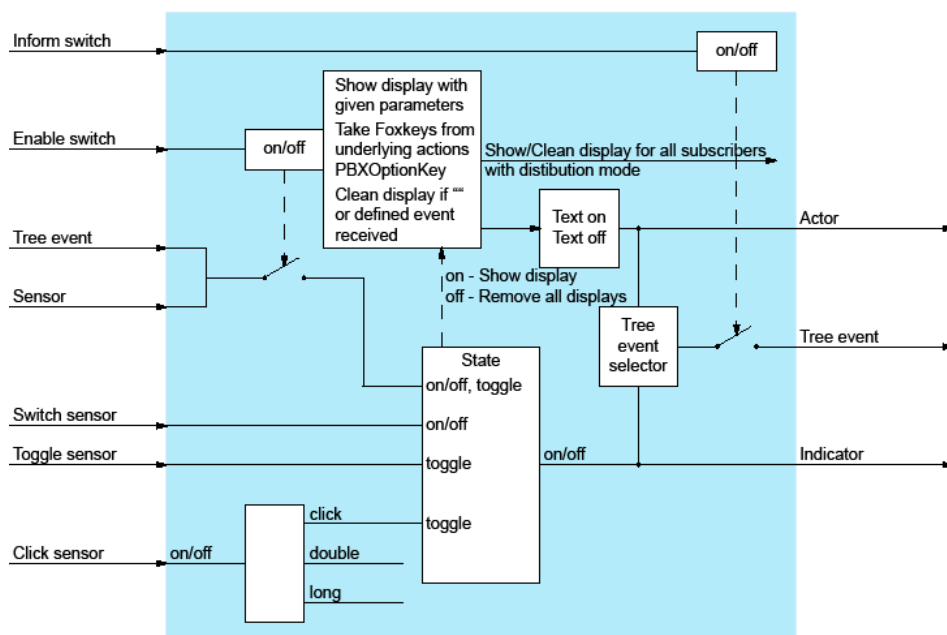


Figure 48: I/O Action PBXDisplay

8.4.41 PBXDisplayOption



The *PBXDisplayOption* action is responsible for displaying and evaluating the foxkeys. An action of the *PBXDisplayOption* action type is always a subordinate action of the *PBXDisplay* action type.

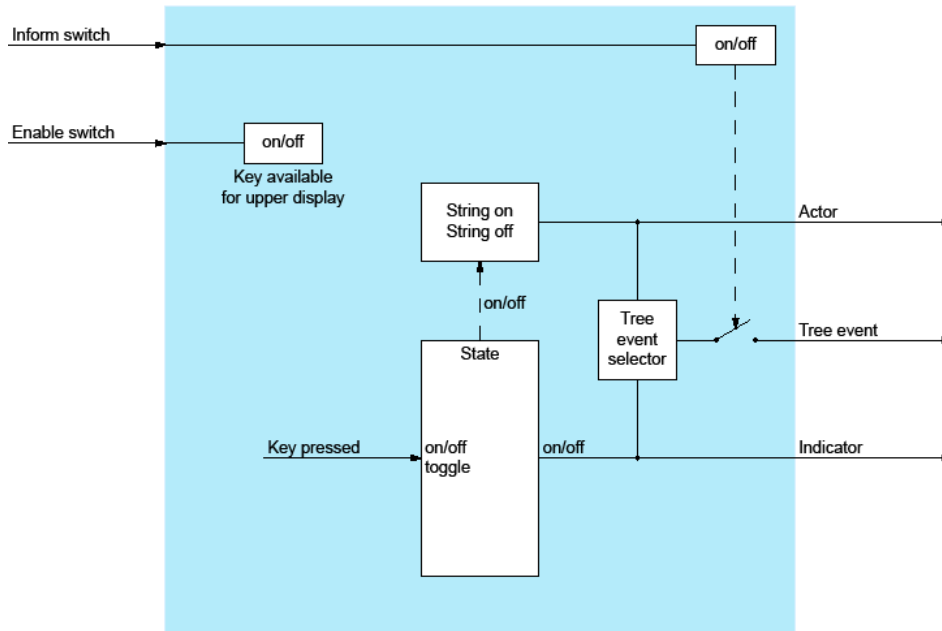


Figure 49: I/O Action PBXDisplayOption

8.4.42 PBXMacro



The *PBXMacro* action sends PBX macros configured in the parameters.

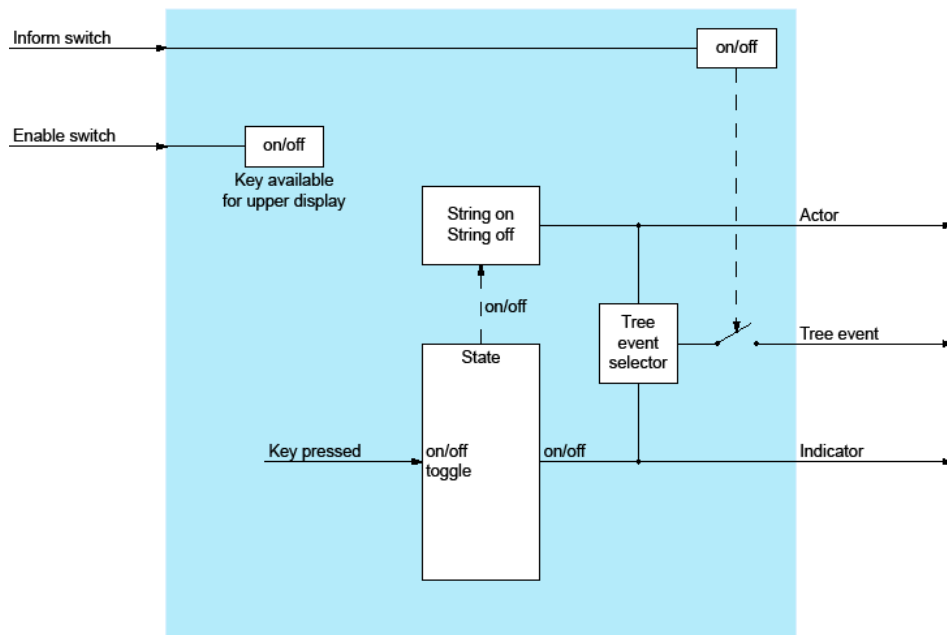


Figure 50: I/O Action PBXMacro

8.4.43 PBXMessage



The *PBXMessage* action sends a message to the configured users.

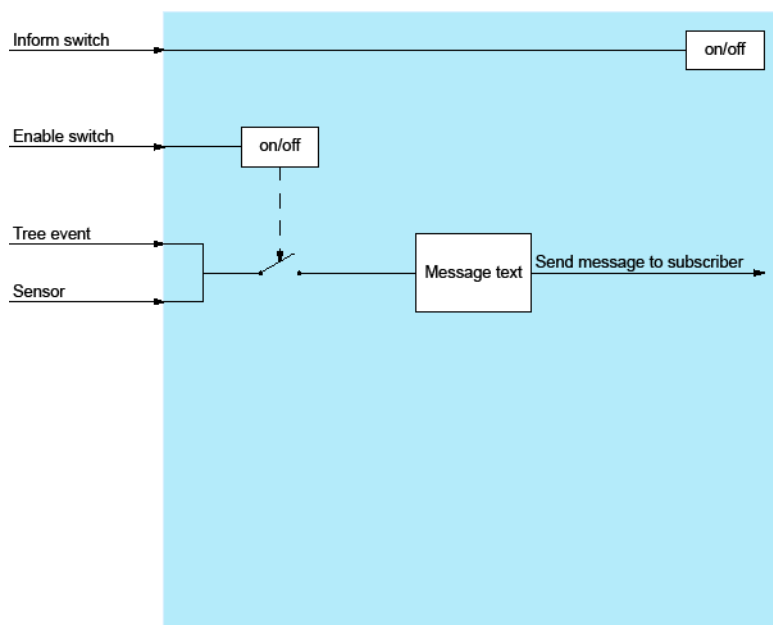


Figure 51: I/O Action PBXMessage

8.4.44 PBXMessageIndication



The *PBXMessageIndication* action responds to MWI events from the communication server (e.g. receipt or deletion of a voice mail).

The OIP internal MWI status can be set based on the events received and forwarded accordingly.

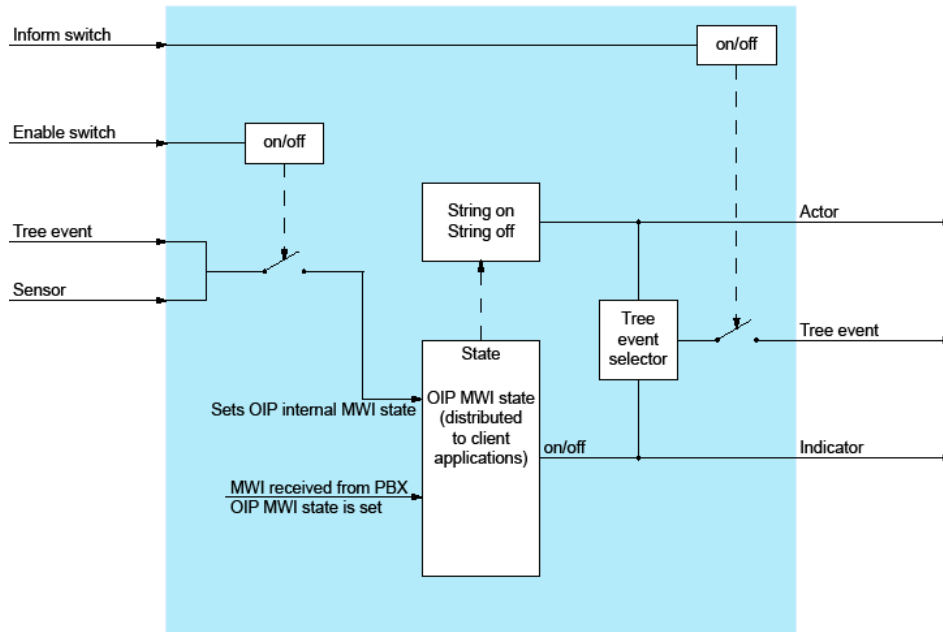


Figure 52: I/O Action PBXMessageIndication

8.4.45 PBXMessageToMail



The *PBXMessageToMail* action evaluates text messages that are sent over the communication server text message system to forward them as e-mails or SMS.

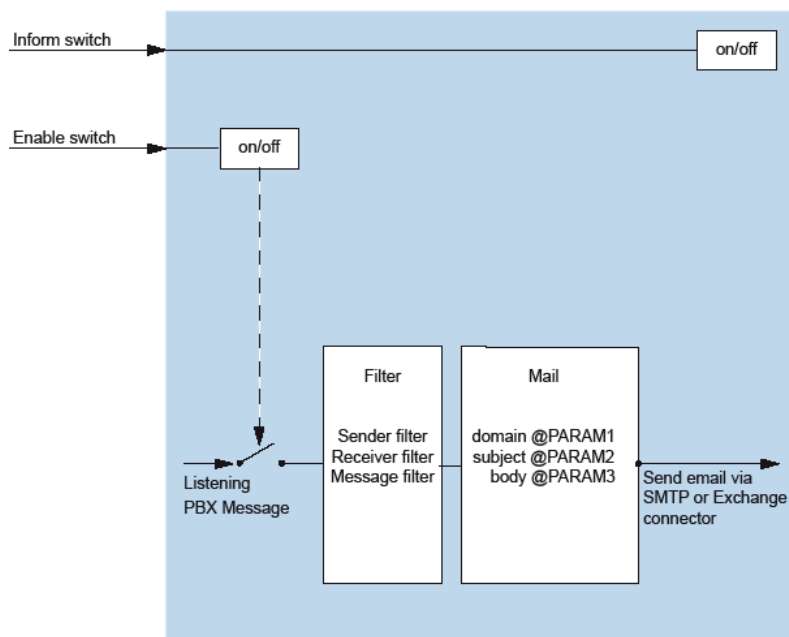


Figure 53: I/O Action PBXMessageToMail

8.4.46 PBXMessageTrigger



The *PBXMessageTrigger* action evaluates text messages that are sent over the communication server text message system.

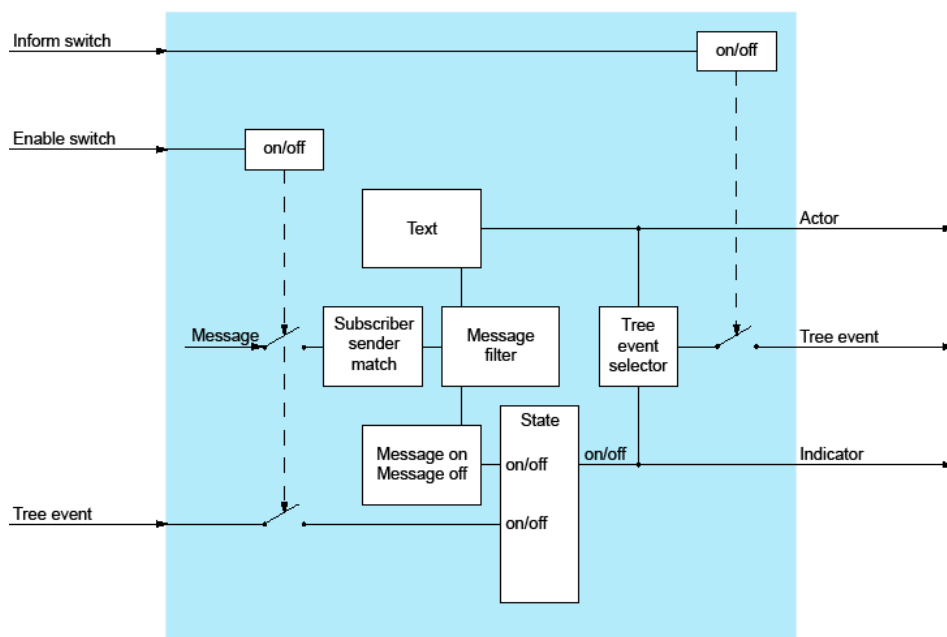


Figure 54: I/O Action PBXMessageTrigger

8.4.47 PBXNetworkMessage



The *PBXNetworkMessage* action sends messages to the QSIG network.

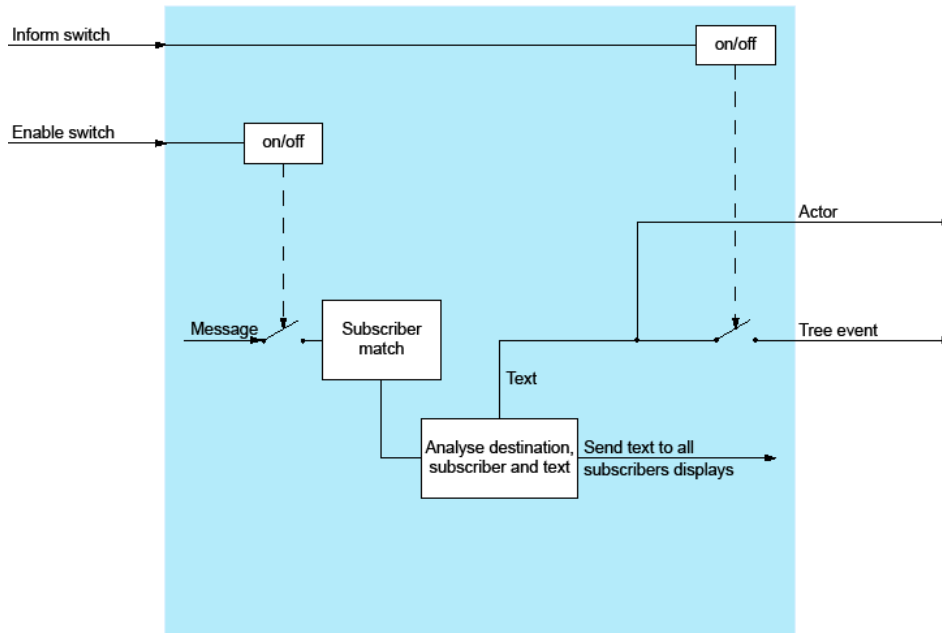


Figure 55: I/O Action PBXNetworkMessage

8.4.48 PBXPresenceKey



The *PBXPresenceKey* action indicates the presence status on a configured redkey.

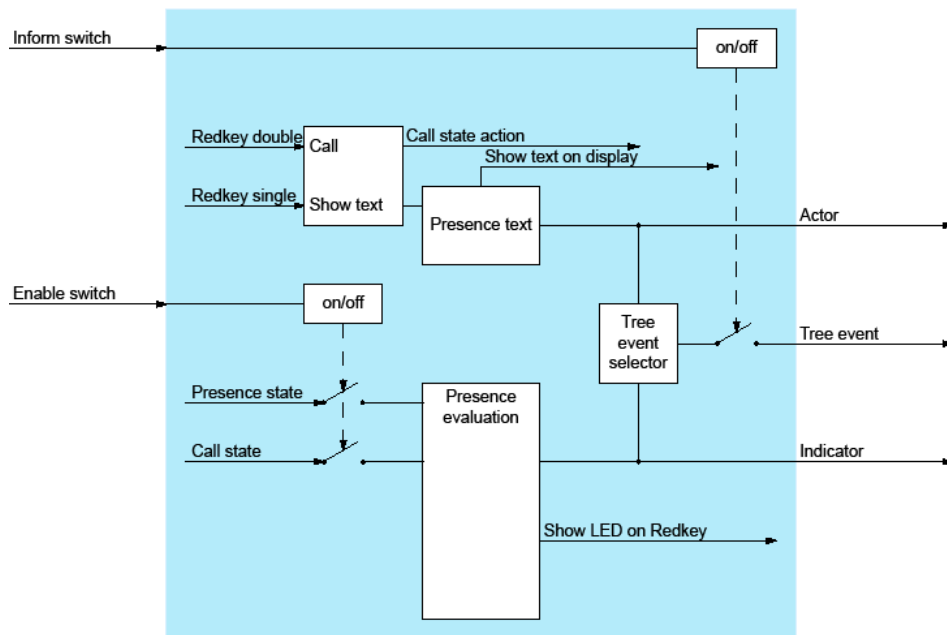


Figure 56: I/O Action PBXPresenceKey

8.4.49 PBXPresenceState



The *PBXPresenceState* action evaluates the presence status of the configured user. The presence status can also be set.

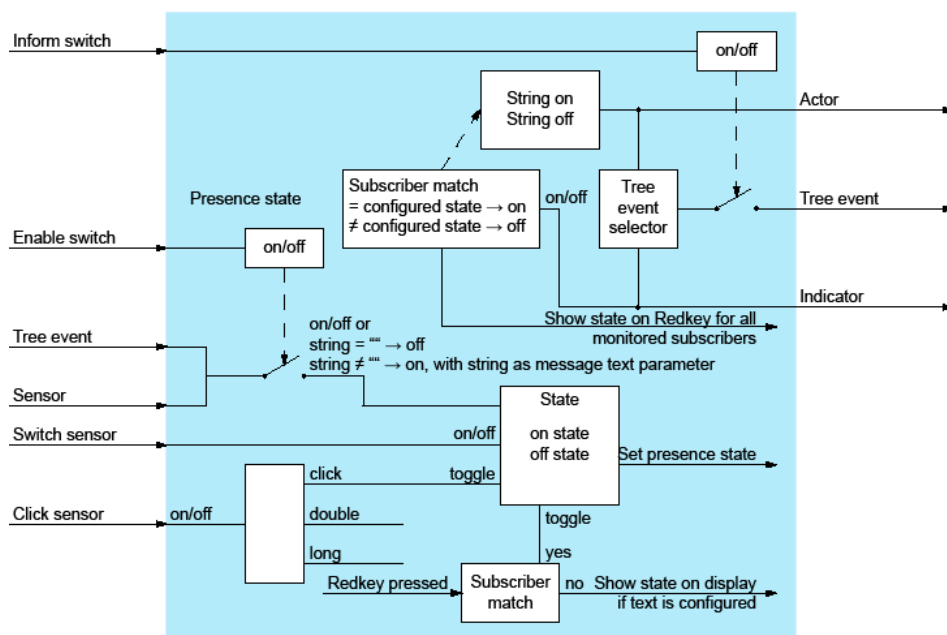


Figure 57: I/O Action PBXPresenceState

8.4.50 PBXPUMState

PUM

The *PBXPUMState* action sets and evaluates the PUM status of the configured user.

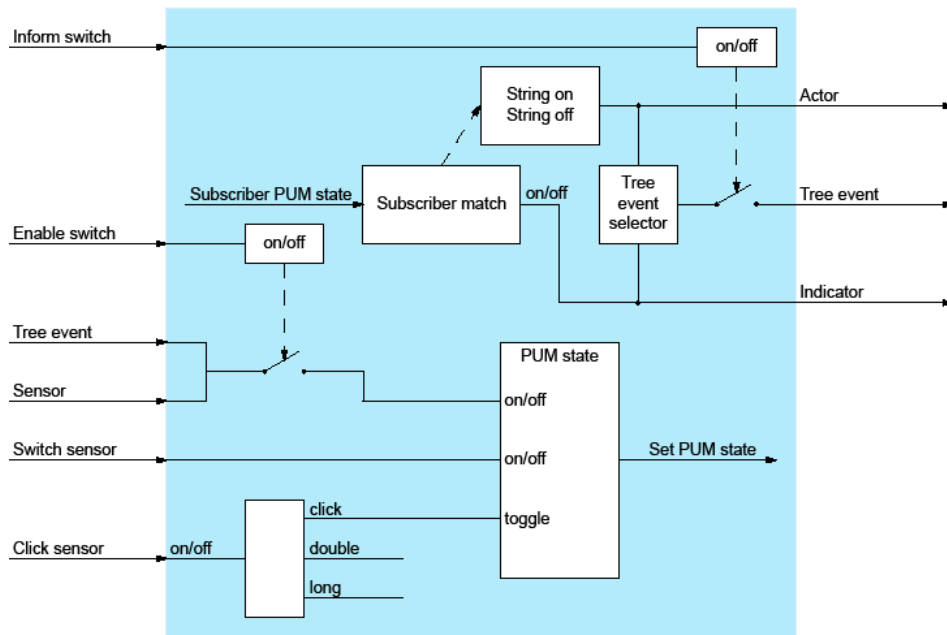


Figure 58: I/O Action PBXPUMState

8.4.51 PBXRedKey



The *PBXRedKey* action evaluates the received character string stored on a programmed redkey, and sends Boolean-type output signals to the addressed actions.

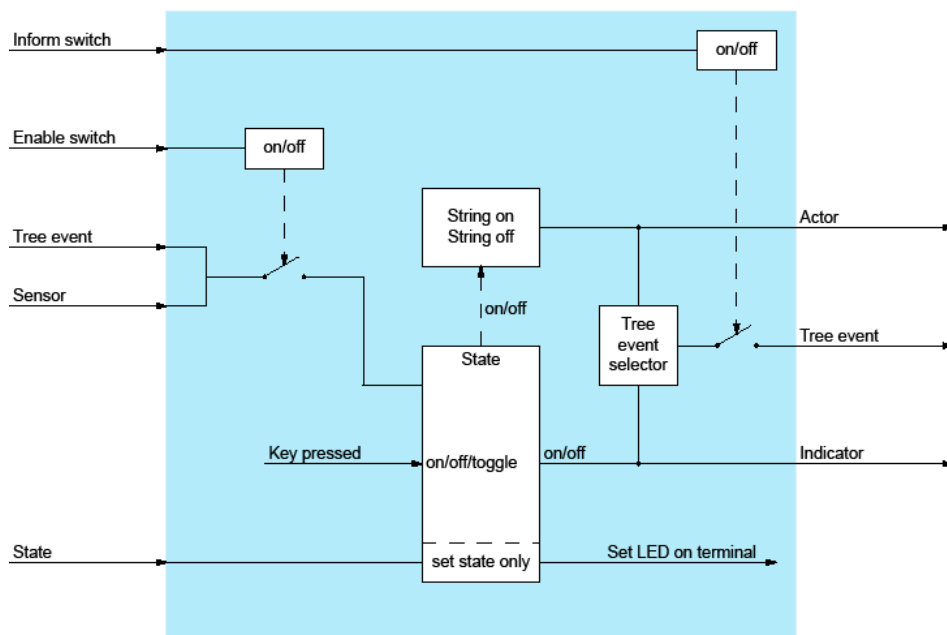


Figure 59: I/O Action PBXRedKey

8.4.52 PBXRedKeyLED



The *PBXRedKeyLED* action controls the LED for the configured redkey function on the system phone.

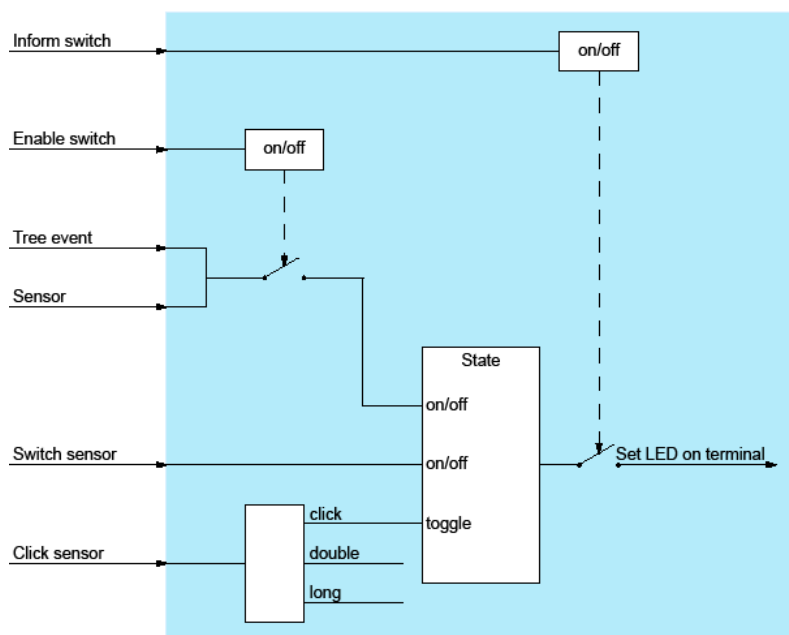


Figure 60: I/O Action PBXRedKeyLED

8.4.53 PBXSubscriber



The *PBXSubscriber* action forwards the status (on/off) of a configured PBX user. The status might be a particular call status or a new voice mail. The status can be used for the chart display.

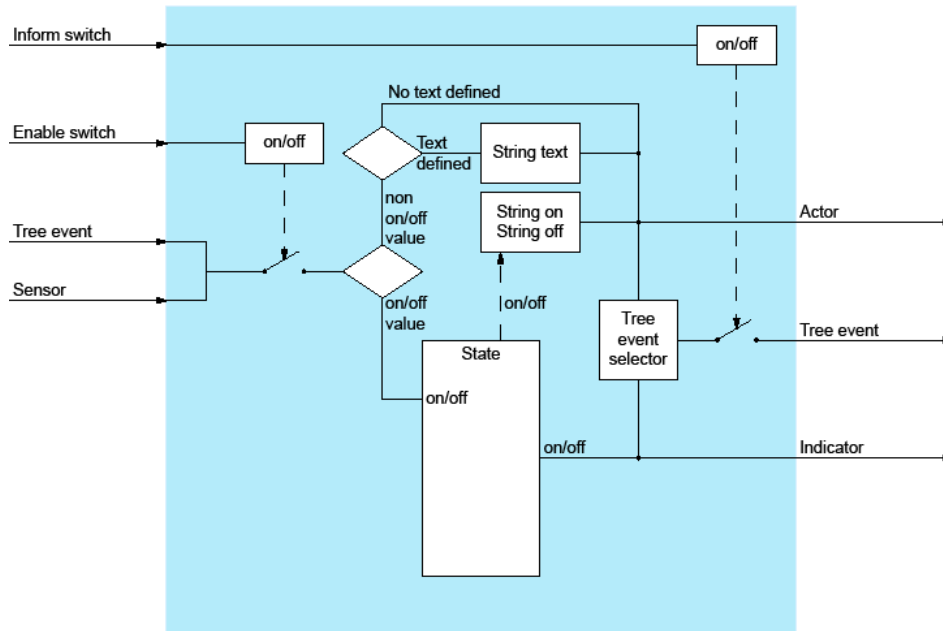


Figure 61: I/O Action PBXSubscriber

8.4.54 PBXSwitchGroup



The *PBXSwitchGroup* action sets and evaluates the status of the switch position (day, night, weekend).

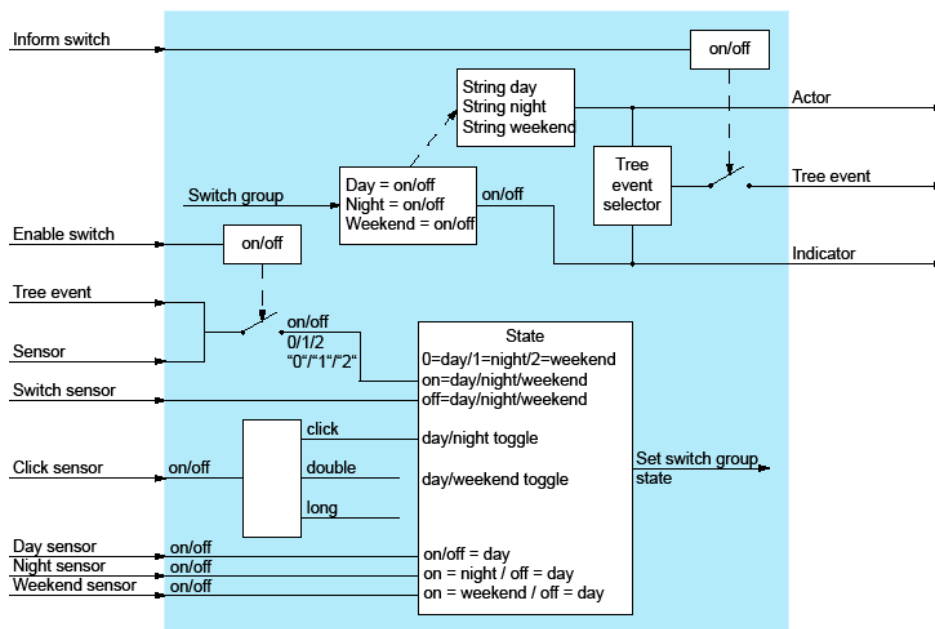


Figure 62: I/O Action PBXSwitchGroup

8.4.55 PBXTeamCall



The *PBXTeamCall* action allows the configuration of teams. All the team members see on the display of the system phone the calls made to the team members and can use the foxkey to fetch the calls.

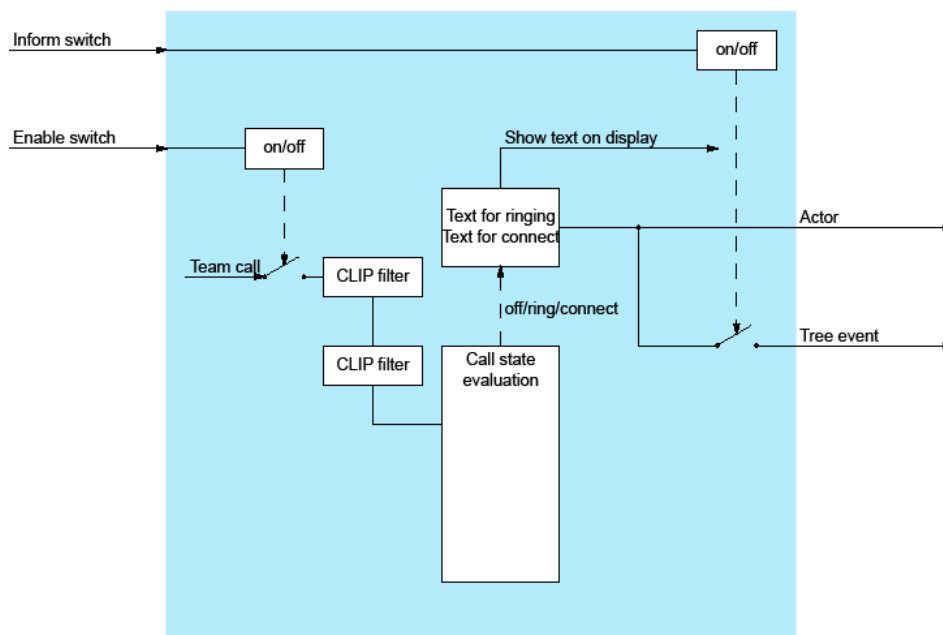


Figure 63: I/O Action PBXTeamCall

8.4.56 PBXTeamKey



The *PBXTeamKey* action simulates a team key that is available in the QSIG network.

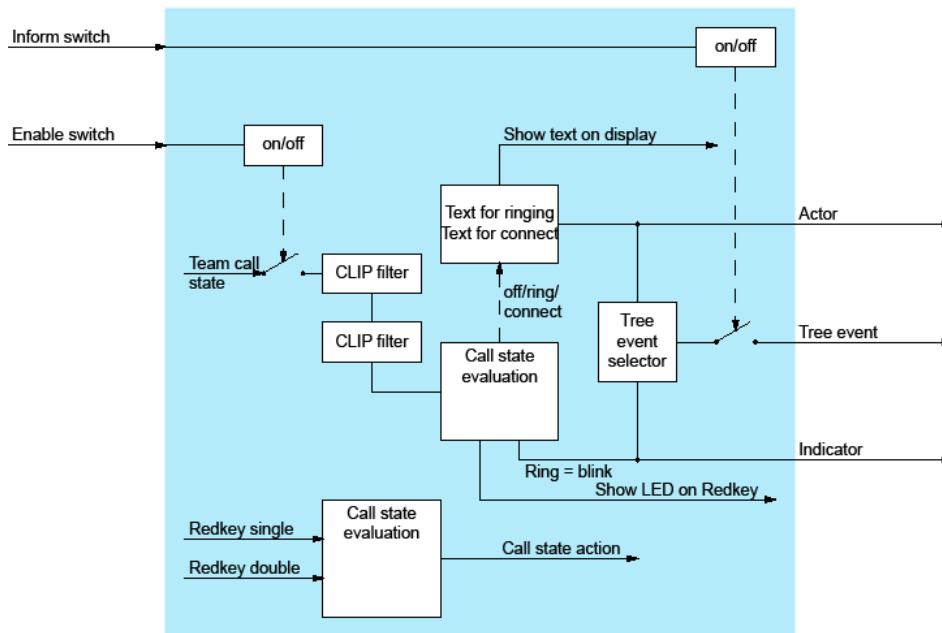


Figure 64: I/O Action PBXTeamKey

8.4.57 PBXTerminalEvent



The *PBXTerminalEvent* action evaluates safeguard alarms from the DECT cordless phones.

The following alarm criteria are recognised: redkey, man-down alarm, no-movement alarm, escape alarm, test alarm and room monitoring (Noise).requires an ATAS licence.

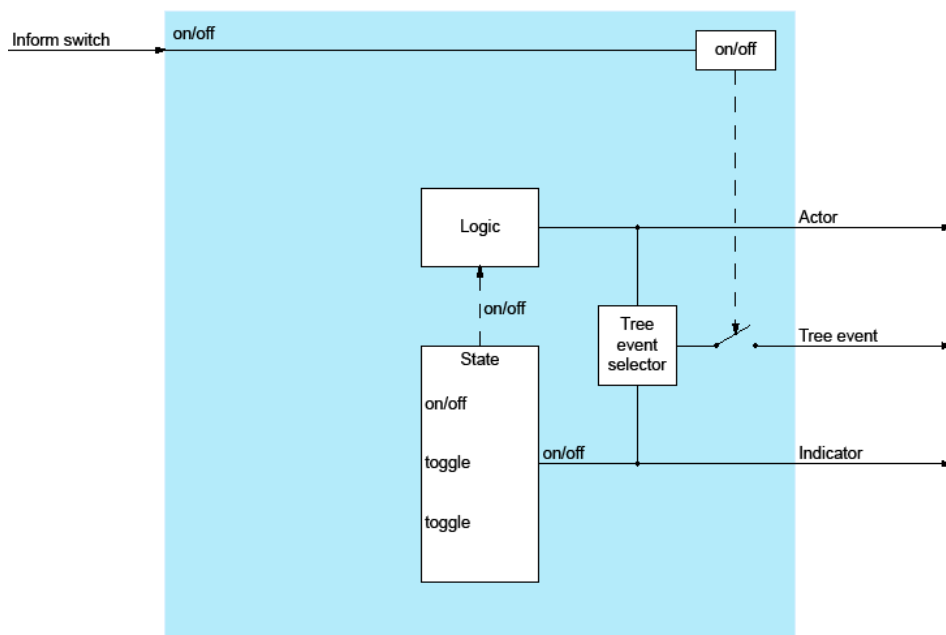


Figure 65: I/O Action PBXTerminalEvent

8.4.58 PBXUserCommand

***77**

The *PBXUserCommand* action evaluates alarms sent via the **77xxxx#* function code.

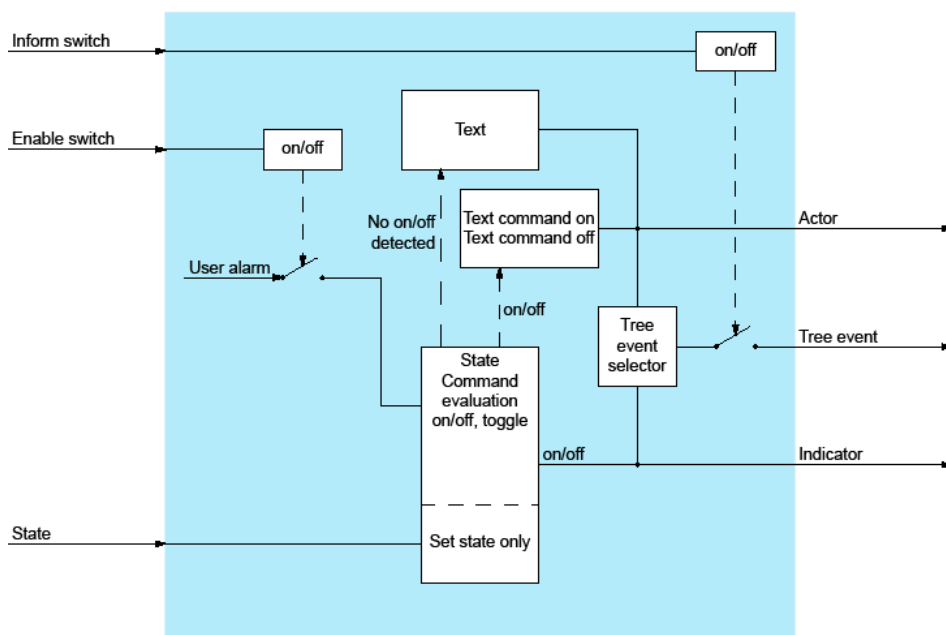


Figure 66: I/O Action PBXUserCommand

8.4.59 PBXUserGroup



The *PBXUserGroup* action sets and evaluates the status of the configured users in the user group.

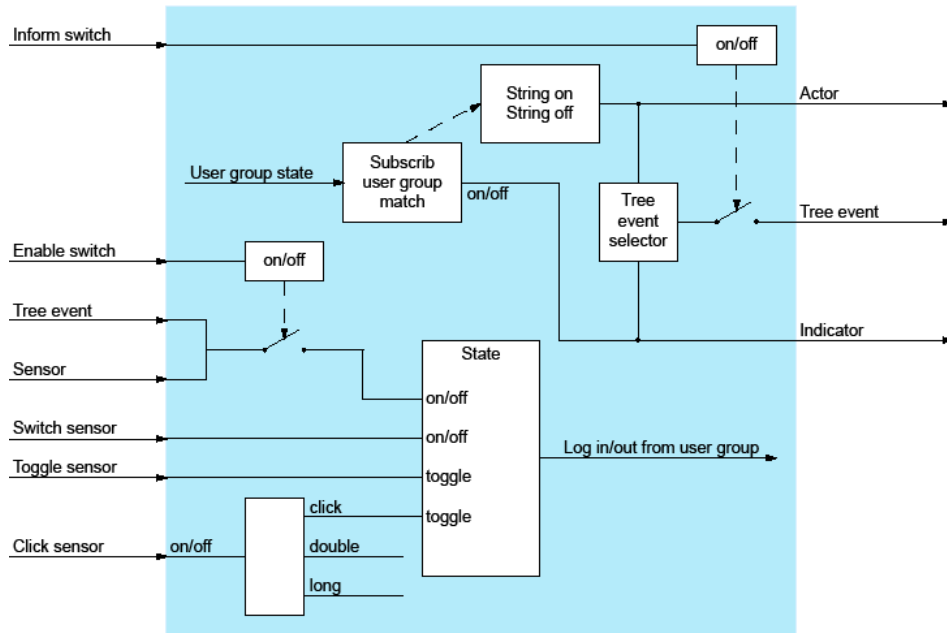


Figure 67: I/O Action PBXUserGroup

8.4.60 PBXVoiceMail



The *PBXVoiceMail* action responds to voice mails received by the configured user.

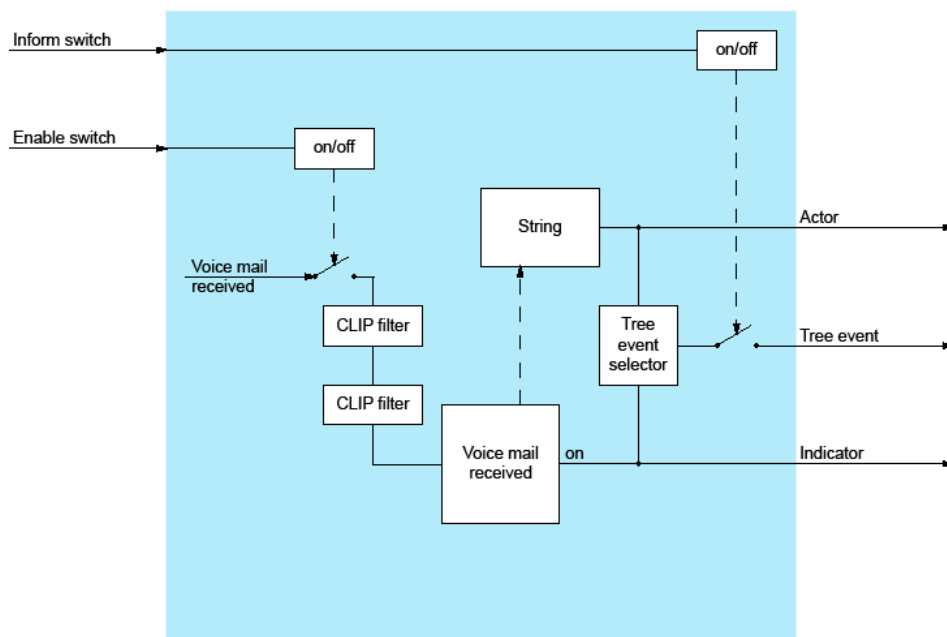


Figure 68: I/O Action PBXVoiceMail

8.4.61 RandomSwitch



The *RandomSwitch* action activates or deactivates the status of any subordinated actions randomly in the configured time interval.

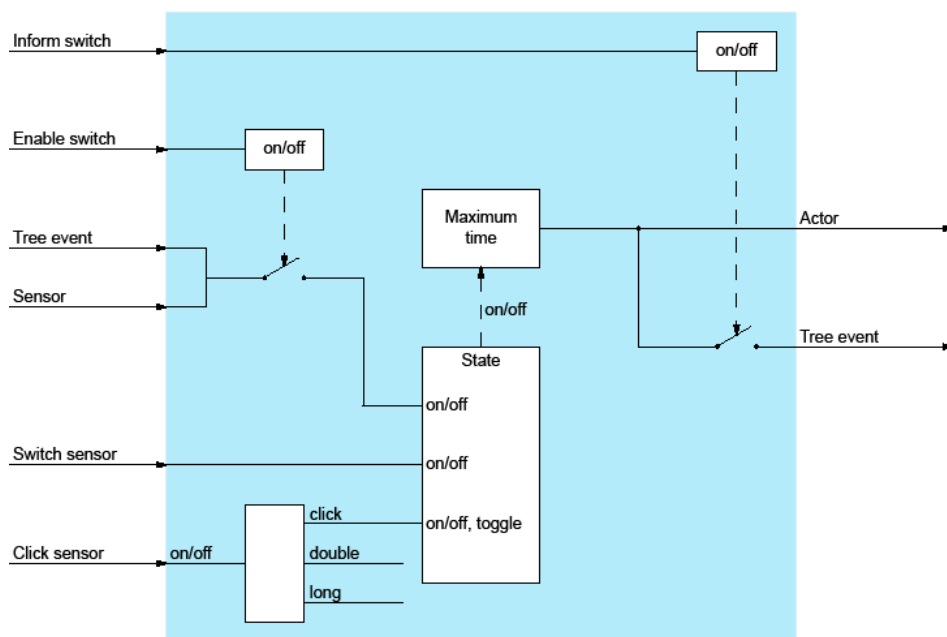


Figure 69: I/O Action RandomSwitch

Example:

During an absence the lights in various rooms of a house are to be switched on and off again randomly.

8.4.62 RSSNews



The *RSSNews* action indicates messages in RSS file format on the display of the system phone.

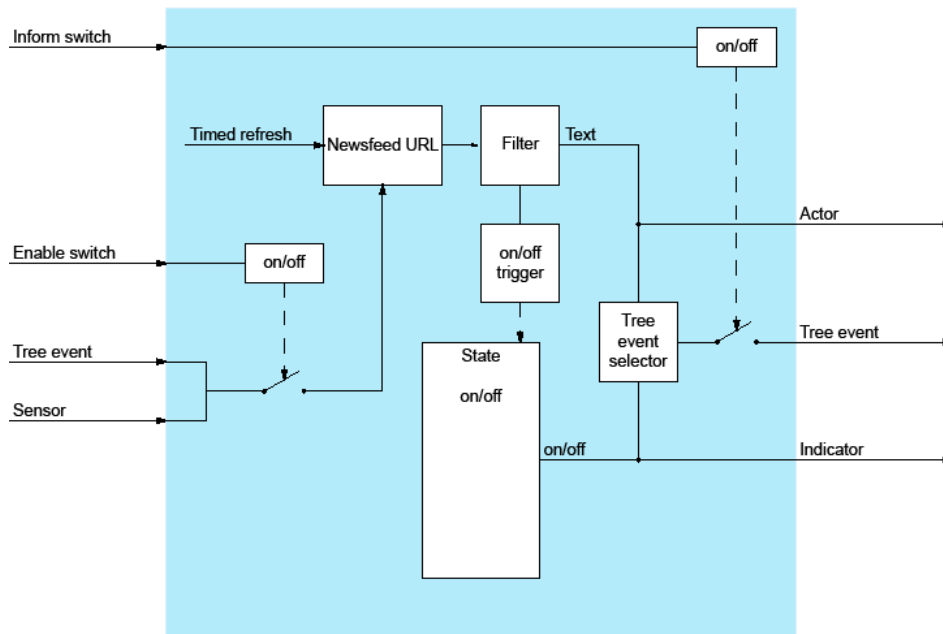


Figure 70: I/O Action RSSNews

8.4.63 ScalingValue

50%

The *ScalingValue* action sends a configured floating point number to a configured I/O group.

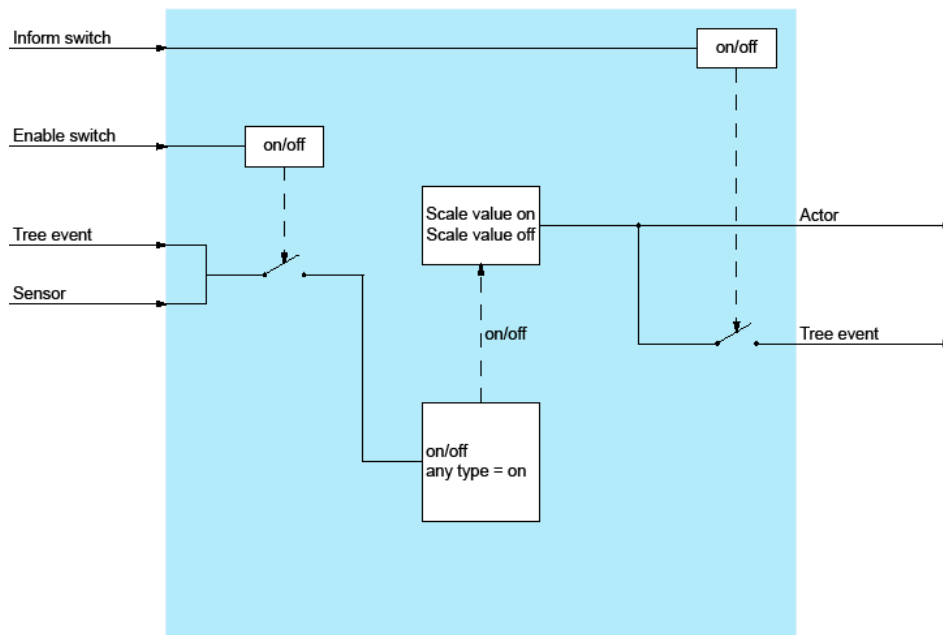


Figure 71: I/O Action ScalingValue

8.4.64 Sequence

12

The *Sequence* action activates the subordinated actions in sequence.

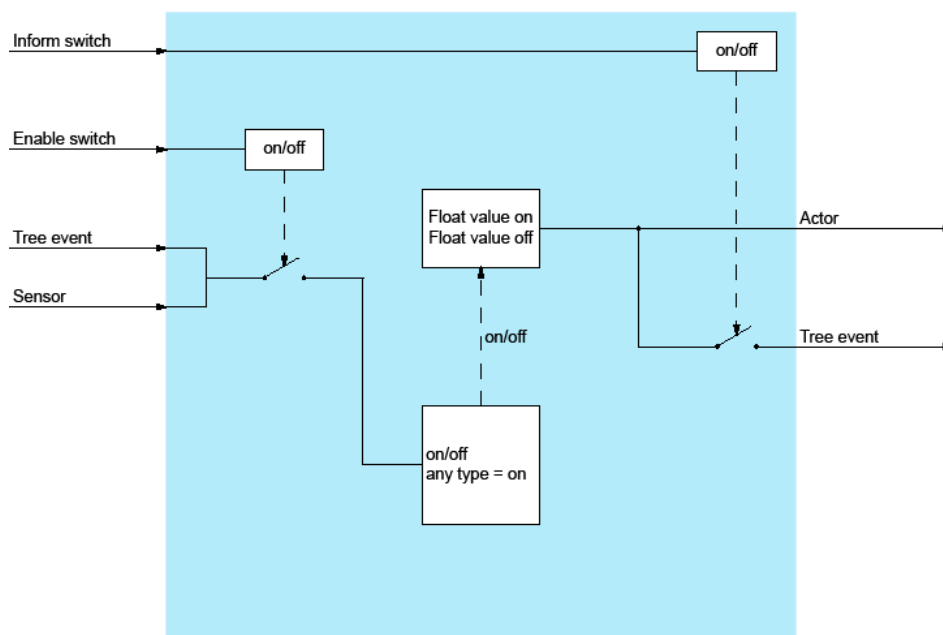


Figure 72: I/O Action Sequence

8.4.65 SmallFloatValue

0.1

The *SmallFloatValue* action sends floating point numbers in accordance with the IEEE754 standard with an accuracy of 2 bytes.

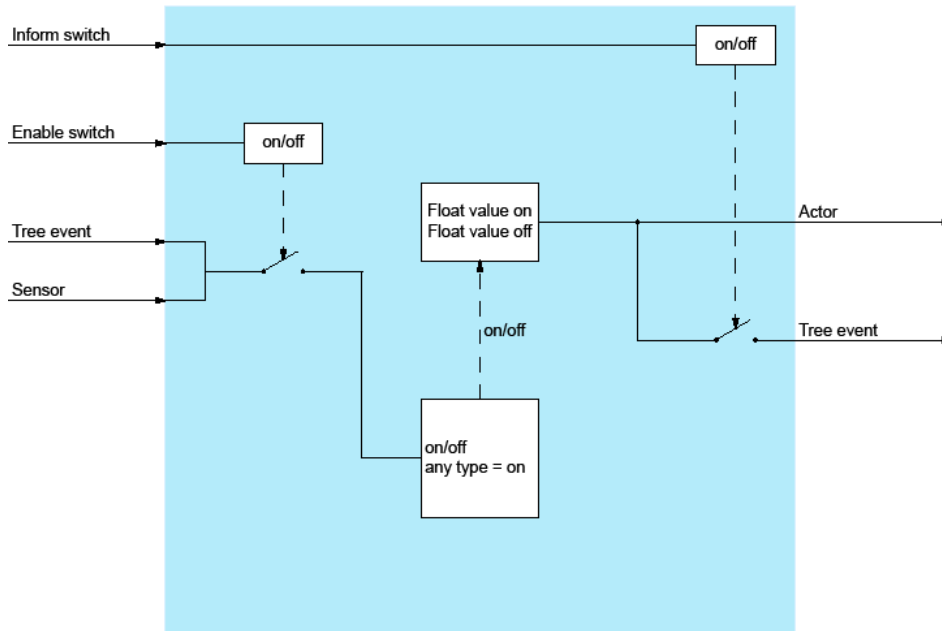


Figure 73: I/O Action SmallFloatValue

8.4.66 State



The action *State* action indicates the status of the action.

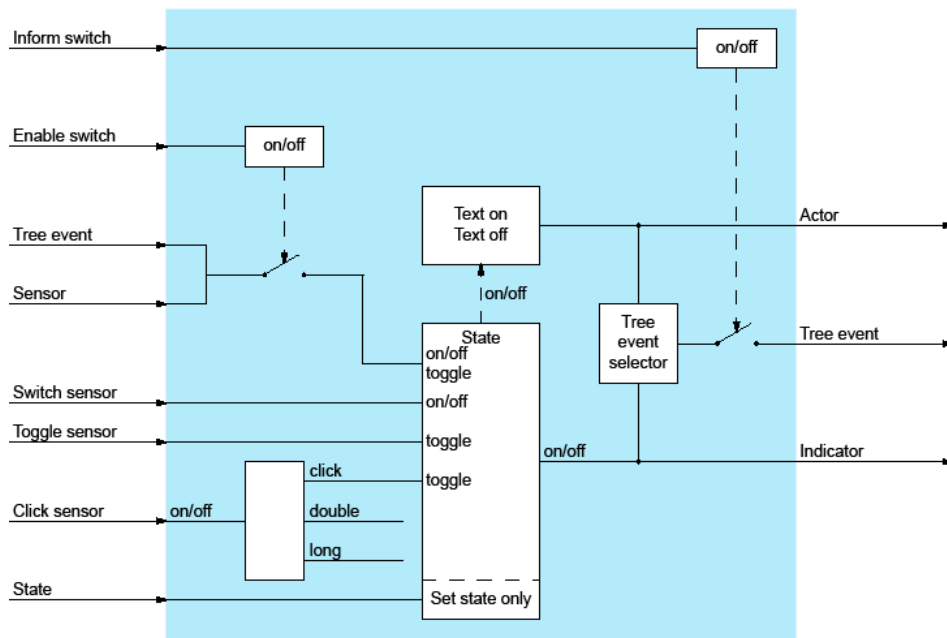


Figure 74: I/O Action State

8.4.67 StringFilter



The *StringFilter* action compares messages received with the configured filter criteria. If they match, the configured text is forwarded.

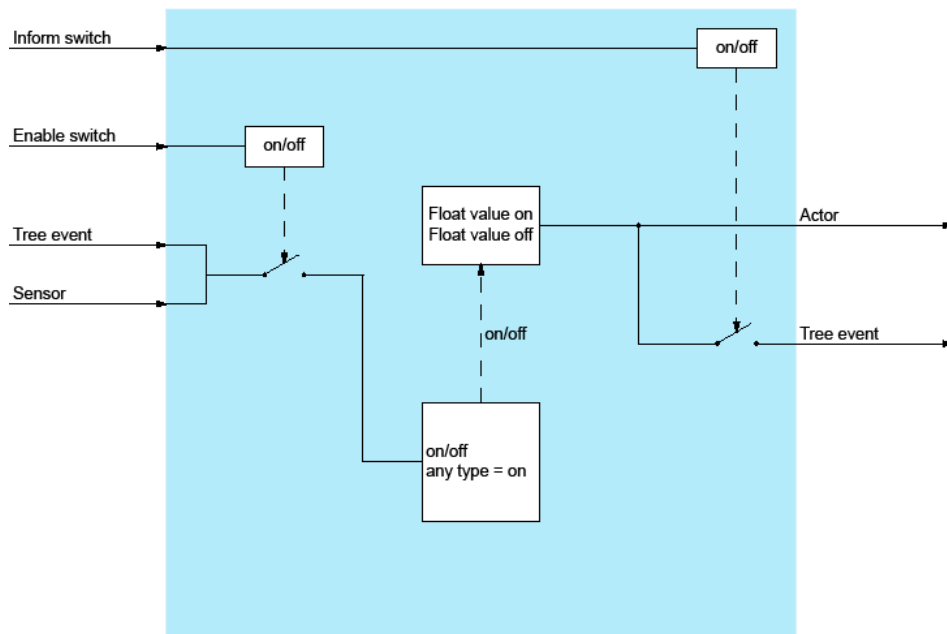


Figure 75: I/O Action StringFilter

8.4.68 StringTrigger



The *StringTrigger* action evaluates messages received according to their content.

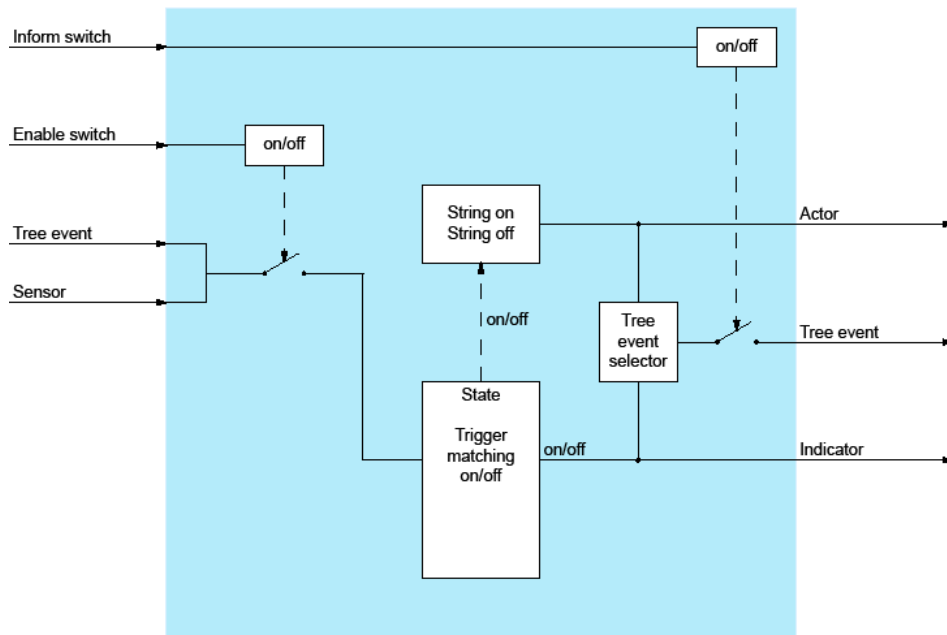


Figure 76: I/O Action StringTrigger

8.4.69 StringValue

Text

The *StringValue* action sends configured character strings to the corresponding actions.

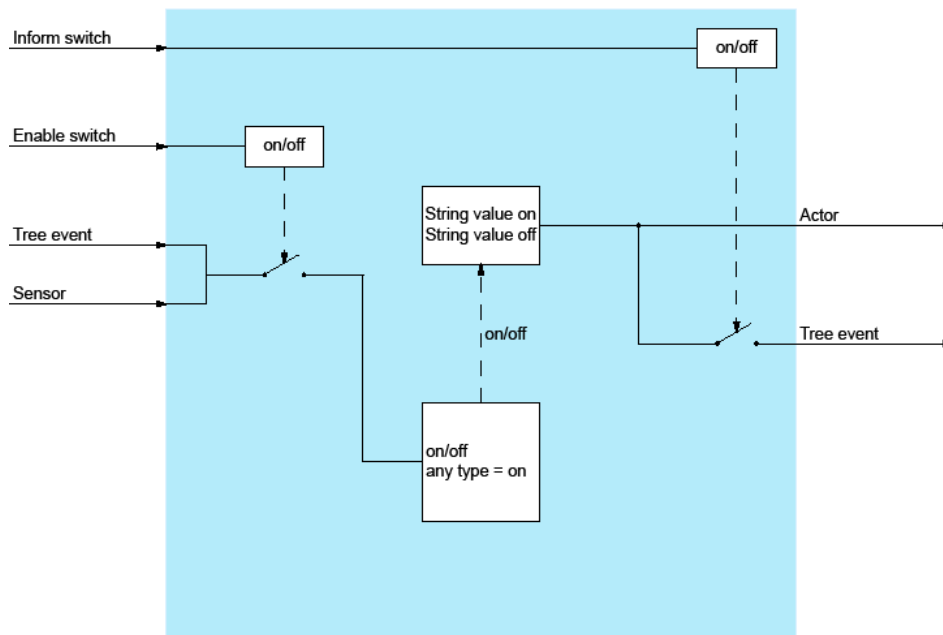


Figure 77: I/O Action StringValue

8.4.70 Switching



The *Switching* action receives and sends events depending on the internal status of the action.

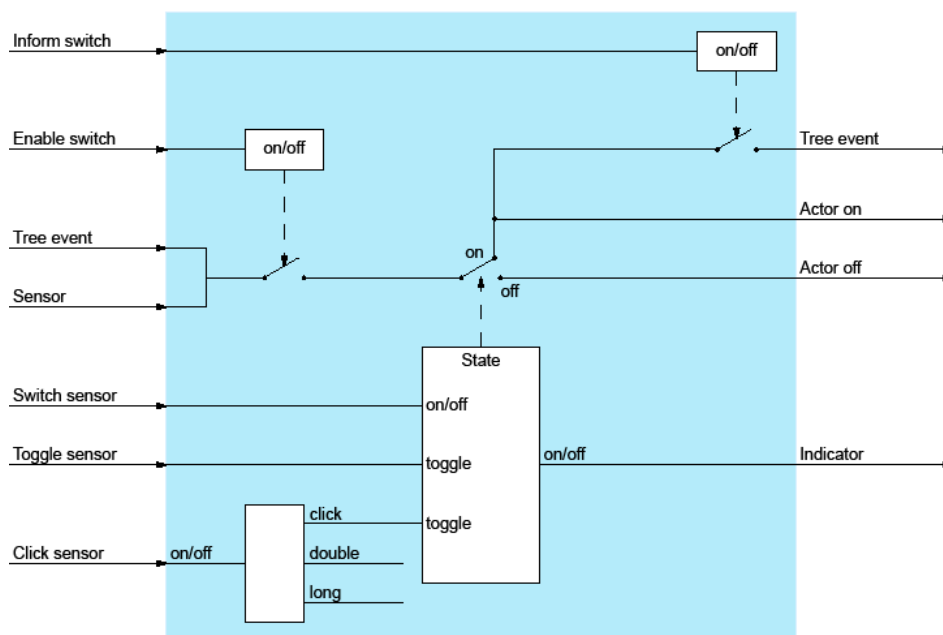


Figure 78: I/O Action Switching

8.4.71 SwitchingValue

true

The *SwitchingValue* action sends Boolean-type values if events are received.

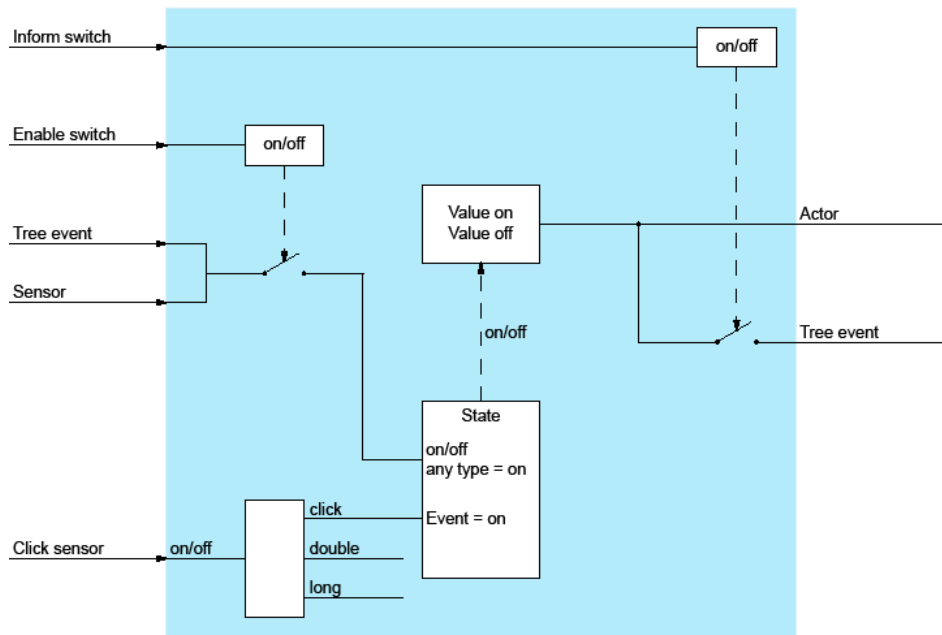


Figure 79: I/O Action SwitchingValue

8.4.72 Timeout



The *Timeout* action delays the sending of output signals.

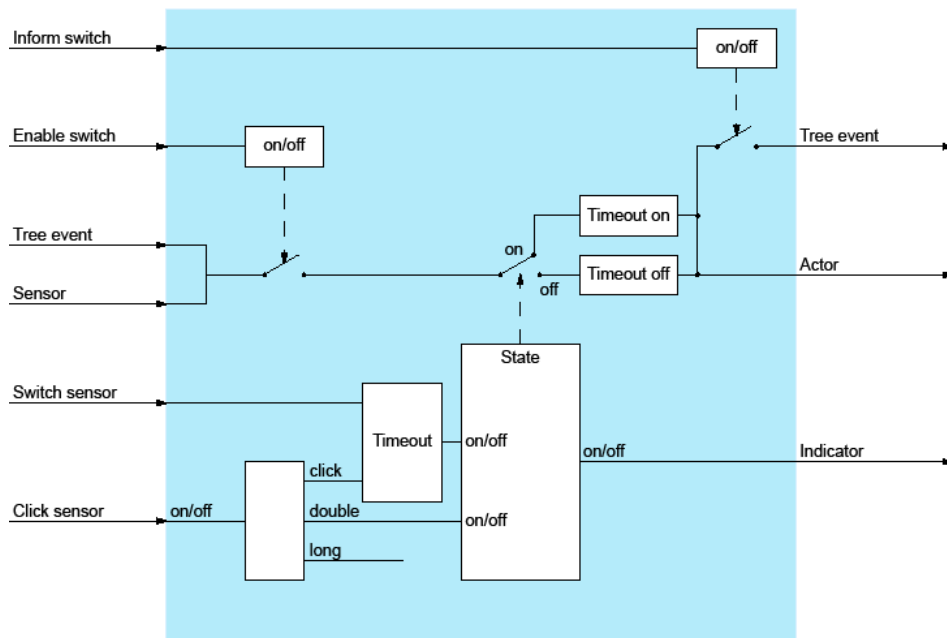


Figure 80: I/O Action Timeout

8.4.73 TimerSwitch



The *TimerSwitch* action is a timer switch that activates or deactivates the addressed actions at specific times.

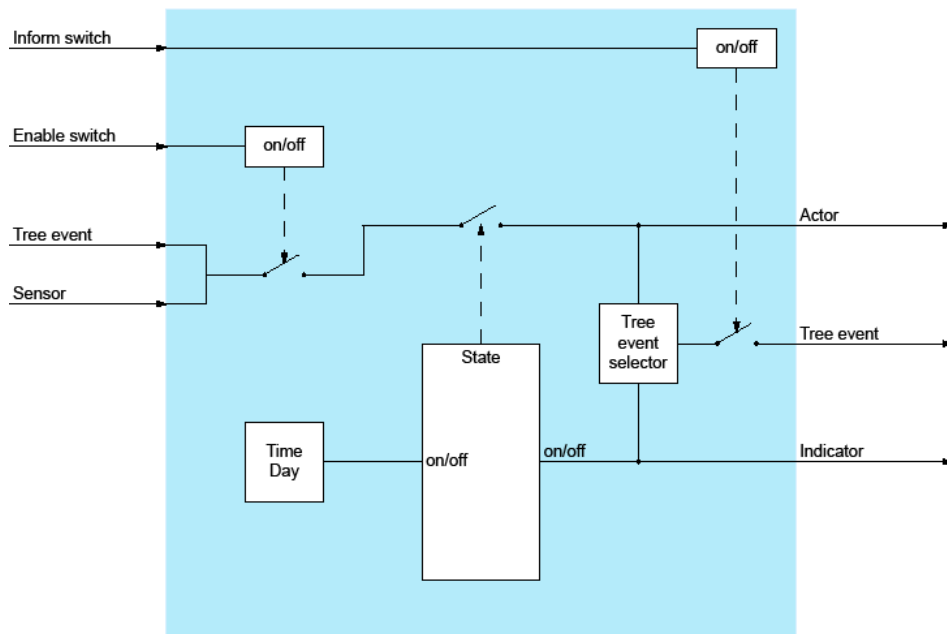


Figure 81: I/O Action TimerSwitch

8.5 KNX connection

Building management systems integrate intelligent computer systems for controlling and monitoring electric building equipment. The connection is based on the European KNX standard (KNX=Konnex), which ensures that systems by different manufacturers are mutually compatible.

KNX is configured via I/O actions in the I/O manager. Specific KNX I/O actions are available. The names of KNX actions start with "KNX". Some actions can only be performed with these specific I/O actions (for example the I/O action *KNXLightControl*).

Control is via the KNX group addresses, for instance 1/7/2.

The licenses *KNX Connection*, *ATAS Gateway* (*ATASpro Gateway* for Opencom systems) and *CTI Third Party Basic* are required for KNX use.

KNX systems are connected to OIP via the OIP KNX driver, installed on the OIP server. The installation instructions are available in [OIP KNX driver](#) on page 267.





An overview of standardised DPT and EIS data types is available here: [Table - Data types](#)














You will find further information about configuration in the description of individual I/O actions under OIP I/O actions and KNX I/O.



8.5.1 KNX I/O Actions

The following table lists an overview of the KNX I/O actions.

Table 136: List of KNX I/O Actions

| | | |
|---|-----------------|--|
|  | KNXAbsence | The KNXAbsence action monitors the status of the configured I/O group. The action is activated if the I/O group remains inactive during the configured time. |
|  | KNXBell | The KNXBell action controls bell systems with short impulses if the action is activated. |
|  | KNXBlindControl | The KNXBlindControl action controls the KNX blind actors. |
|  | KNXBrightness | The KNXBrightness action evaluates the brightness values using the configured values. |

| | | |
|---|-----------------|---|
|  | KNXDimValue | The KNXDimValue action sends the settings for KNX dimmers. |
|  | KNXHeatDevice | The KNXHeatDevice action controls heating systems for example. |
|  | KNXHeatValve | The KNXHeatValve action controls KNX heating valves depending on the values received. |
|  | KNXLevelControl | The KNXLevelControl action controls the water level. |
|  | KNXLightControl | The KNXLightControl action controls KNX light actors. |
|  | KNXPresence | The KNXPresence action controls PIR sensors. |
|  | KNXPump | The KNXPump action controls external devices (e.g. pumps). |
|  | KNXRainSensor | The KNXRainSensor action evaluates the rain status using I/O group events. |
|  | KNXScene | The KNXScene action activates all configured actions and sub-actions. |
|  | KNXSunblind | The KNXSunblind action is a control action for sun blinds. |
|  | KNXTemperature | The KNXTemperature action evaluates the temperature received. |
|  | KNXTextListener | The KNXTextListener action evaluates text strings that are sent from a groupaddress. |
|  | KNXVentilator | The KNXVentilator action controls the on and off times of fans. |

| | | |
|---|--------------|--|
|  | KNXWatering | The KNXWatering action controls the automatic garden sprinkler system based on the data from the rainwater and humidity sensors, temperature and/or configured time intervals. |
|  | KNXWindSpeed | The KNXWindSpeed action evaluates the wind speed. |

8.5.1.1 KNXAbsence



The KNXAbsence action monitors the status of the configured I/O group. The action is activated if the I/O group remains inactive during the configured time.

8.5.1.2 KNXBell



The KNXBell action controls bell systems with short impulses if the action is activated.

8.5.1.3 KNXBlindControl



The KNXBlindControl action controls the KNX blind actors.

In scene mode, the telegrams received are forwarded to the subordinate I/O actions. Group addresses are therefore optional.

8.5.1.4 KNXBrightness



The KNXBrightness action evaluates the brightness values using the configured values.

8.5.1.5 KNXDimValue



The KNXDimValue action sends the settings for KNX dimmers.

8.5.1.6 KNXHeatDevice



The KNXHeatDevice action controls heating systems for example.

8.5.1.7 KNXHeatValve



The KNXHeatValve action controls KNX heating valves depending on the values received.

8.5.1.8 KNXLevelControl



The KNXLevelControl action controls the water level.

8.5.1.9 KNXLightControl



The KNXLightControl action controls KNX light actors. KNXLightControl supports switching, dimming, dim value and scene.

In scene mode, the telegrams received are forwarded to the subordinate I/O actions. Group addresses are therefore optional.

8.5.1.10 KNXPresence



The KNXPresence action controls PIR sensors.

8.5.1.11 KNXPump



The KNXPump action controls external devices (e.g. pumps).

8.5.1.12 KNXRainSensor



The KNXRainSensor action evaluates the rain status using I/O group events.

8.5.1.13 KNXScene



The KNXScene action activates all configured actions and sub-actions.

8.5.1.14 KNXSunblind



The KNXSunblind action is a control action for sun blinds.

8.5.1.15 KNXTemperature



The KNXTemperature action evaluates the temperature received.

8.5.1.16 KNXTextListener



The KNXTextListener action evaluates text strings that are sent from a group address.

If the text string consists of multiple substrings, you can use individual substrings (a maximum of three) as triggers with the @TEXTPARAMn variables. The substrings must be separated with a valid separator.

8.5.1.17 KNXVentilator



The KNXVentilator action controls the on and off times of fans.

8.5.1.18 KNXWatering



The KNXWatering action controls the automatic garden sprinkler system based on the data from the rainwater and humidity sensors, temperature and/or configured time intervals.

8.5.1.19 KNXWindSpeed



The KNXWindSpeed action evaluates the wind speed.

8.6 OIP KNX driver

KNX systems are connected to OIP via the OIP KNX driver, installed on the OIP server. The driver is installed via the installation view of OIP WebAdmin. You will require local administrator rights for installation.

The installation program required Java Runtime Environment (JRE). If JRE is not installed, also install JRE in the OIP WebAdmin installation view.

KNX connection can be set up via an Ethernet connector.

8.6.1 Restoring the default values of the BCU component

To restore the default values of the BCU component, proceed as follows:

1. Power off the bus.
2. Short-circuit PIN5 and PIN6 with a bridge.
3. Press the PROG key and power on the bus at the same time.
4. Release the PROG key after 3 seconds.
5. Remove the bridge between PIN5 and PIN6. Then restart the OIP KNX driver in Windows service.

8.6.2 Installation with Ethernet connector

Before you begin with the installation, make sure you have the following information:

- DNS name or, if no DNS server, IP address of the OIP server.
- IP port of the OIP web server if it differs from the standard IP port.
- IP address of the KNX LAN module used

Start the installation via the OIP WebAdmin installation view. To install the OIP KNX driver, proceed as follows:

1. On the computer on which you wish to install the OIP KNX driver, open a browser and log on to the OIP WebAdmin of your OIP server.
2. Navigate to the installation view and load the installation file on the PC by clicking on the *OIP KNX driver* installation link.
3. Start the downloaded setup file by double-clicking it then follow the instructions given in the installation procedure.

Note:

JRE must be installed for driver installation. If the installation procedure cannot be started, first install JRE. You will find a JRE installation link in the installation view of OIP WebAdmin.

4. Choose the interface type NetVersion and enter the IP address of the KNX LAN module.
5. Finish the installation procedure.
6. The OIP KNX driver is started as a Windows service.
7. Check in the OIP server log whether the service has been installed and whether the KNX module is working.
8. Open OIP WebAdmin and navigate to the Configuration / Server /Services / I/O Manager.
9. Under Server address, enter the IP address of the KNX server.

The OIP KNX driver is uninstalled via the Windows control panel (*Programs and functions*) of the Windows operating system.

8.7 OIP ATAS Gateways

With the OIP ATAS Gateways it is possible to use the ATAS functionality of the OIP server (display server) and one or more external ATAS applications in parallel.

8.7.1 OIP Installing ATAS Gateways

To connect external ATAS applications, an OIP ATAS gateway must be installed for each application. OIP makes available a version of the OIP ATAS gateway for the network connection.

- OIP ATAS Gateway TCP/IP

The following settings have to be made on the communication and the OIP server to be able to use the OIP ATAS Gateways.

1. Activate an ATAS Gateway license.

Note:

You can also activate the licenses in the communication server (recommended). OIP reads it out from the communication server then activates the Gateway.

2. Create a new OIP user for the ATAS administrator (e.g. atasadmin). Enter the access data and indicated (username and password).

Note:

For emergency operation, enter the access data set by the application in the communication server.

3. Assign the following user groups to the ATAS administrator:
 - *ATAS_ADMINISTRATORS*
 - *OIP_ADMINISTRATORS*
 - *OIP_USER*
 - *TAPI_ADMINISTRATORS* (only if CTI commands are used on the ATAS Gateway).
4. Add the following lines in the Lines window:
 - Lines of all users seen as alarm targets.
 - Lines of all users which should otherwise be controlled via the application
5. Save the settings.

8.7.2 Installing OIP ATAS gateways

Installation Requirements:

- To install the driver, you must have local administrator rights.
- The web-based installation of the ATAS Gateway driver requires an installed Java Runtime Environment (JRE) on the PC. If necessary, this can be installed from the installation view of OIP WebAdmin.

You will need the following information during the installation procedure:

- DNS name or, if no DNS server, IP address of the OIP server.
- You need the IP port for the ATAS Gateway TCP/IP. IP port 1088 must be used if you also set the application for emergency operation.

Start the installation via the OIP WebAdmin installation view. To install an OIP ATAS Gateways, proceed as follows:

1. On the computer on which you wish to install the OIP ATAS Gateways open a browser and log on to the OIP WebAdmin of your OIP server.

2. Activate ATAS (Configuration / ATAS view).
3. Navigate to the installation view and load the installation file of the desired ATAS Gateways on the PC, by clicking the installation link.
4. Start the downloaded setup file by double-clicking on it and follow the instructions given in the installation procedure.
5. For the priority of the messages sent from the external ATAS application enter a value between 1 and 8, since priorities 0 and 9 cannot be over or under-controlled. The OIP ATAS Gateway is started as a Windows service.

The OIP ATAS gateway is uninstalled over Control panel \ Software of the Windows operating system.

Start the installation via the OIP WebAdmin installation view.

8.7.3 Using OIP ATAS-Gateways

When you start a connection the external ATAS application must log on with the OIP server. To do so, enter the user data of the ATAS administrator you created.

This chapter contains the following sections:

- [Using OIP Server as Telephony Server](#)
- [Setting up the Mitel 400 Call Center](#)
- [External TAPI Client Server applications](#)
- [Citrix and terminal server environment](#)
- [E-Mail notification for voice mail](#)
- [DECT locating](#)
- [RSS News on system phones](#)

9.1 Using OIP Server as Telephony Server

To use the OIPserver as a telephony server you do not need to specify any other settings on the OIP server as in the OIP default settings all the users are assigned their own telephony line with Controlling rights. Whenever Twin Comfort mode (MiVoice Office 400) is activated, the DECT line is also assigned control rights.

In each case the OIP users must be assigned the corresponding CTI license in the user profiles.

The OIP TAPI service provider has to be installed on the Client PC. Carry out the installation as indicated in ["OIP TAPI service provider"](#). As login information enter the Windows user name if it is configured on the OIP server in the user profiles. If not, log in using the internal call number and the PIN.

Access to other telephony lines has to be carried out in the user profile of the corresponding user.

9.2 Setting up the Mitel 400 Call Center

To set up the Mitel 400 Call Center carry out the following steps in sequence:

1. In the communication server create a call distribution element with the direct dialing number and the internal call number under which the ACD skill is to be reached.
2. Select ACD as the CDE destination for all switch positions.
3. Start the OIP WebAdmin application Call centre management to open a new skill and configure the agents.
4. In OIP WebAdmin create a Skill and configure the general skill settings.
5. In the skill settings in the section Communications server assign the skill to the previously created CDE element.
6. Add the agents to the skill.
7. To monitor the call centre operation, select a group administrator and assign him the ACD_SUPERVISOR user group.

The Mitel 400 Call Center has now been set up as basic call centre with a skill. Extend the configuration as needed. OIP-Softphones or OIP Rich-Client applications of the setup agents now have, for the call centre operation, extended operating elements and the group administrator can monitor the call centre operation in the OIP WebAdmin call centre views.

Extend the configuration as needed.

9.3 External TAPI Client Server applications

For external TAPI Client-Server applications the application server has to be provided with the necessary lines by the OIP server.

Proceed as follows to set up the OIP for an external TAPI client-server application:

1. Activate the necessary CTI licenses.
2. Assign the TAPI administrator (user `tapiadmin`) all necessary lines and give the Controlling access rights on all lines
3. Assign the corresponding CTI License to the lines you have added to the TAPI administrator. The TAPI administrator himself does not need any CTI license.
4. Install on the application server the OIP TAPI service provider in accordance with ["OIP TAPI service provider"](#). To log on to the OIP server enter the user data of the TAPI administrator.
5. If the external TAPI client-server application has to be used as ACD application, set it as indicated in ["Setting up the Mitel 400 Call Center"](#).
6. If the external ACD application is to take charge of agent status changes such as login and logout, in the OIP TAPI service provider in the line settings, the option Control of agent status changes on the terminal must be activated.

9.4 Citrix and terminal server environment

The OIP server can be integrated into a Citrix or terminal server environment. If so, the OIP server should not be installed on the terminal server for performance reasons.

To make telephone lines available via TAPI to terminal server users and applications, the OIP TAPI service provider has to be installed on the terminal server. To do so, carry out the steps described in the ["External TAPI Client Server applications"](#).

For safety reasons you should also activate the Microsoft telephony server on the terminal server so that terminal server users do not have access to the lines provided by the OIP TAPI service provider. For the configuration of the Microsoft telephony server please refer to the documentation of the corresponding Windows server operating system.

9.5 E-Mail notification for voice mail

With OIP users can send their voice mail messages on the communication server as e-mail. Requirement: Their OIP administrator must have set up the OIP SMTP Client or Microsoft Exchange-Server for the e-mail connection.

As a user, proceed as follows:

1. Log on to OIP WebAdmin with your username or call number and PIN or password.
2. Navigate in the menu tree to the Configuration / User / Personal settings view.
3. In the Notifications section, activate the setting E-mail notification for voice mails.

The voice mail messages are attached to the notification e-mail as .wav file. If necessary, you can as administrator change the file type to MP3 in the service settings *Voice Mail Manager*.

As administrator, you can configure the e-mail sender address for notification e-mails in the service settings *Message Manager* (Default address: oip-noreplay).

9.5.1 E-mail connection via an SMTP mail server

1. Check in the list of services (Configuration / Server / Services view) whether the service SMTP driver is available. If it is not, start the OIP installation procedure and select the service in the OIP component selection.
2. Activate the OIP SMTP client (Configuration / Server / General view).
3. Enter the server address as well as the access data.
4. Check whether the e-mail addresses have been recorded at the users.

9.5.2 E-mail connection via a Microsoft Exchange Server

1. Check whether the Microsoft Exchange-Server is connected and whether the connection is working.
2. In the user settings enter the users' mailbox addresses.

9.6 DECT locating

Note:

TDM-DECT systems uses only SB-4 and SB-8 base stations.

DECT locating is used to locate handsets on the DECT system of a communication server. The signal strength of the various radio units can be called up on the device. It is important to note that there has to be at least three radio units. An external application uses the data to calculate the position and to display it. This position is for information purposes only and is not guaranteed to ensure personal safety.

The I/O Manager can be used to implement the example of DECT locating inside a building using visual means.

To do so proceed as follows:

1. The building's situation plan has to be available as an image file in gif format. The size of the image file should be adapted to the screen size and its resolution. Make sure the file name does not contain any spaces and is identical with the action name in the I/O Manager.
2. Copy the situation plan to the OIP server installation directory ...<OIP-Verzeich- nis>\webapps\exp\images\io.
3. Start the OIP I/O Manager application and add an action of the type IO system then give this I/O application the name DECT locating.
4. Under the I/O application add an action of the type Area then give it, for instance, the name Situation plan. The action name must be identical to the file name of the situation plan.
5. Add the DECT radio units that are to be integrated in DECT locating as follows: highlight your newly created action in the navigation tree, open the shortcut menu and select *Advanced \ DECT radio unit*. It is not necessary to perform settings at this point.
6. Under the I/O application add another action of the type IO system then name it, for instance, DECT terminal.
7. Highlight the action, open the shortcut menu and use *Special \ Add DECT terminal* to add the DECT terminal to be included in DECT locating.
8. Add the DECT terminals that are to be integrated in DECT locating as follows: high- light the newly created action in the navigation tree, open the shortcut menu and select *Advanced \ Add DECT terminals*.
9. Define the monitoring signal interval of the DECT terminals added (setting Request interval). The shorter the monitoring interval is set, the greater the load on the DECT system.
10. To deactivate DECT locating: while the DECT terminal is in the charger, set the Handle charging bay setting to Yes (default value).
11. Highlight the action Situation plan then right-click the View tab. The situation plan should now be displayed. Use the mouse to drag the DECT radio units one by one into the situation plan and position them according to your location.
12. Next drag the DECT terminals one by one to your location in the situation plan. As soon as the system recognises the location of the DECT terminals, the DECT terminals are positioned accordingly. Alternatively you can also position the DECT terminals on the edge of the screen so that the situation plan only displays those DECT terminals that are not in the charging bay.

9.7 RSS News on system phones

RSS News (Really Simple Syndication) is used to retrieve information (news, weather, etc.) from web sites and display it on system phones.

1. Start the OIP application I/O Manager.
2. Add another action of the type IO system then name it, for instance, RSS news.

3. Under the I/O application add an action of the type RSS news then give it, for instance, the RSS provider's name.

4. In the Parameter tab configure the following parameters:

- Refresh time
- RSS location
- Subscribers
- Display time
- Ring time

At the time interval configured under Refresh time OIP reads the provider's RSS file and displays the newly added messages.

This chapter contains the following sections:

- [Reorganize OIP database](#)
- [Maintenance of the OIP Server](#)
- [Restore OIP Configuration](#)
- [Changes on the communication server](#)
- [Hardware modifications on the communication server](#)
- [Locating a malfunction](#)
- [Overload](#)
- [Connection monitoring](#)
- [OIP server performance](#)
- [Backing up log files](#)
- [Malfunction during Installation](#)
- [Malfunction during the runtime](#)

10.1 Reorganize OIP database

The OIP server reorganizes the database at set times. Depending on the configuration in the corresponding OIP services the older entries are then deleted. The following table lists the times at which the database reorganization of the individual OIP services takes place.

Table 137: OIP database reorganization times

| Database entries | OIP Service | Time |
|-------------------------|-----------------------------|----------|
| <i>ACD statistics</i> | <i>ACD Log Manager</i> | 02:17:00 |
| <i>Alarms</i> | <i>Alarm Driver</i> | 00:55 |
| <i>Calendar entries</i> | <i>Calendar Manager</i> | 01:00 |
| <i>Call data</i> | <i>Call Logging Manager</i> | 01:15 |
| <i>Actions entries</i> | <i>I/O Manager</i> | 01:17 |
| <i>Journal entries</i> | <i>Journal Manager</i> | 01:55 |

| Database entries | OIP Service | Time |
|------------------------|------------------------|-------|
| <i>OIP Log data</i> | <i>Log Service</i> | 00:50 |
| <i>Message entries</i> | <i>Message Manager</i> | 00:35 |
| <i>Call tickets</i> | <i>Ticket Service</i> | 01:09 |

10.2 Maintenance of the OIP Server

10.2.1 Backing up the OIP configuration

The OIP database is automatically backed up once a day. In OIP WebAdmin in the Data backup view, you can manually create a backup file using the Create backup button. The backup consists of the following files, stored in the default directory *<OIP directory>\backup*:

- *axpconfig* (xml)
- *axpdb* (sql)
- *clients* (zip) - contains a file each for MiVoice 1560 PC Operator and Mitel Office- Suite.

The backup copies are also compressed in the .zip file *oipBackup*. A copy of this .zip file is stored in the directory *<OIP directory>\webapps\axp\backup*.

By default, each backup is kept for 5 days. You can modify this duration in the OIP service *Database Driver*.

The times for automatic file backup are indicated in **Tab. 60**.

If necessary, the storage location can also be changed in the OIP service *Database Driver*. If the backup files are to be stored on the network, the Windows Service *OIP Server* must be started under a user account that has access to these network resources. In this case, you need to specify the network path in the OIP service *Database Driver*.

10.3 Restore OIP Configuration

You can find information on how to restore the OIP configuration in the OIP WebAdmin online help.

10.4 Changes on the communication server

Changes to the communication server configuration are automatically adopted by the OIP server during the next synchronization with the communication server. The synchronization interval with the communication server can be set in the OIP service *PBX Manager*.

Changes to the following PBX settings could result in unintended data changes in the OIP database:

- IP address of the PBX
- Name of the PBX
- System ID

As long as the communication server's system ID remains the same, the OIP server handles the communication server as a known communication server. This means that the IP address and name of the communication server can be changed.

If the communication server's IP address and name remain the same and if only the communication server's system ID is changed, the OIP server also handles the communication server as a known communication server.

All other combinations will result in the OIP server handling the communication server as a different communication server and creating the PBX's users as new data records in the OIP database.

10.4.1 Changing the IP Address of the communication server

To change the IP address of the PBX, proceed as follows:

1. Change the IP address of the communication server and restart it.
2. Log on to the OIP server using the OIP Administrator (oipadmin).
3. Open the OIP configuration and in the PBX network menu select the communication server whose IP address you wish to change. You can change the IP address only after the communication server has been deactivated. After making the changes, re- activate the communication server and save the changes.
4. Exit and restart the Windows service *OIP Server*.

10.4.2 First Start of the PBX

If the first start is performed on the communication server, you should proceed as follows to avoid any data loss:

1. Exit the Windows service *OIP Server* on the OIP server.
2. Carry out the first-start of the communication server and the upload of the PBX configuration.
3. Start the Windows service *OIP Server* on the OIP server.

10.5 Hardware modifications on the communication server

It is possible to replace the hardware of a communication server or a license chip without changing the OIP configuration, provided the criteria under **"Changes on the communication server"** are met.

To modify the hardware on a communication server connected with OIP, proceed as follows:

- Exit the Windows service *OIP Server* on the OIP server.
- Make the changes on the communication server hardware.
- If necessary, update the communication server software and configuration.
- Start the OIP Windows service *OIP Server* on the OIP server.

10.6 Locating a malfunction

In the following chapters you will find the instructions on how to locate a malfunction.

10.7 Overload

If the dimension and performance of the OIP server do not match the operational requirements, this may lead to malfunction. That is why utmost care has to be taken during planning to ensure that the infrastructure complies with the requirements.

10.8 Connection monitoring

The OIP server's communications with the communication server, the OIP database, the OIP applications and the OIP Connectors are monitored using Heartbeats, see the following figure.

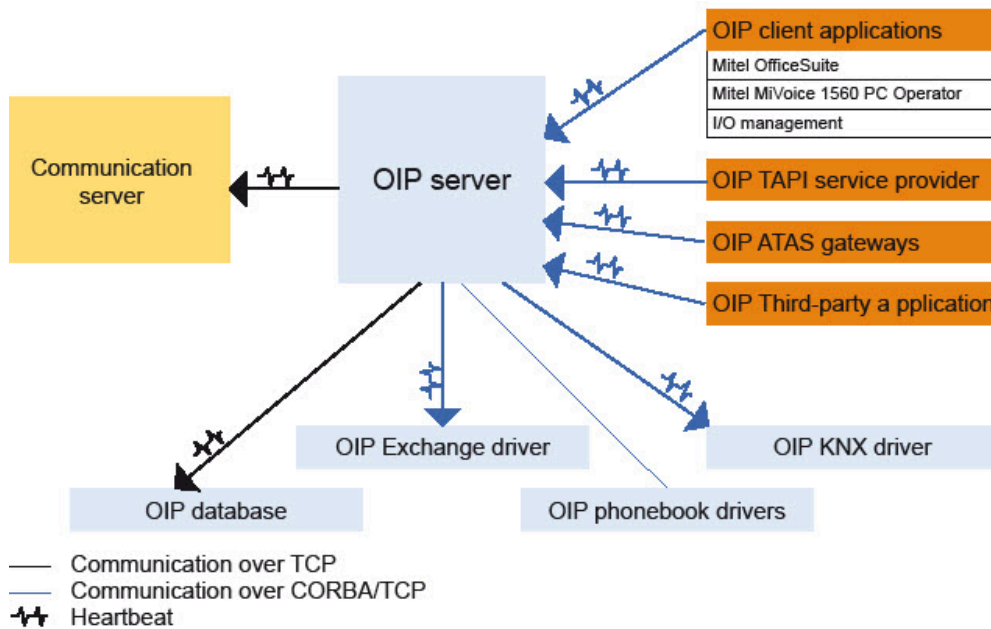


Figure 82: Heartbeat between Client and Server

The heartbeat is sent by the Client periodically and checked on the server. If the Client cannot send a heartbeat, the Client automatically sets up the new connection¹⁾.

The OIP server can act either as a Client or as a server. With the following connections the OIP server is the Client and therefore sends the heartbeat to the:

- OIP server – communication server
- OIP server – OIP database
- OIP server – OIP Exchange Driver
- OIP server – OIP KNX driver

By contrast with the following connections the OIP server is the server, which means it receives the heartbeats from the:

- OIP applications – OIP server³¹
- OIP TAPI service provider – OIP server
- OIP ATAS Gateways – OIP server
- OIP third-party applications – OIP server

Connection interruptions can occur on the TCP layer or on the CORBA layer. In the event of interruptions on the TCP layer (e.g. network cable disconnected), the connections between Client and server are cleared down immediately. By contrast short-term interruptions of up to 10s are caught at the CORBA layer whenever possible.

The OIP services started by the Clients on the OIP server are automatically terminated by the OIP server after a connection interruption due to the missing heartbeat.

Connection interruptions in which the OIP server is the Client are entered in the log file

³¹ The operator applications must be restarted.

<OIPServer-jjjj-mm-dd_hh-mm-ss.log>. Connection interruptions in which the OIP server is the server are entered in the log file of the corresponding Client.

A alarm can be configured on the communication server so that it generates an alarm in the event of a connection interruption between the OIP server and the communication server. The following alarm messages can be configured:

- ACD server out of service
- ATAS: connection lost/established
- CTI third party: connection lost/established

For an overview of the log files of the OIP components during the runtime please refer to ["Backing up log files"](#).

10.9 OIP server performance

The following factors can cause the OIP server to perform below par:

10.9.1 Slow OIP databases

OIP is a real-time application that relies on fast, high-level availability on the part of the database. The number of entries in the individual tables of the database, in which data matches are carried out even during the runtime, increases the CPU load on the OIP database service and the performance of the OIP server can be diminished as a result.

Use the Windows Task Manager to check the CPU load of the OIP database service. Only a permanent load of more than 30% should be considered as critical.

In this case check the amount of time the following data is stored in the database:

- Call centre statistics data
- Call journals (logs)
- Call data
- Log data

In this case change the amount of time the data is stored in the database. The Call Centre statistics data and the call data can be accessed via the stored files. If the data is still required in database form, you should duplicate the OIP database in an offline database. More details can be found on the MySQL web pages (<http://www.mysql.com>).

10.9.2 Insufficient memory

In the system information view under Memory usage you can see the current OIP server memory usage. If the average storage space used is above 200 MB, the PC should have a main memory of at least 1 GB.

10.9.3 Unsuccessful connection setup attempts

If the OIP server regularly tries without success to set up a connection with the OIP Connector drivers, this limits the OIP server performance. Check the OIP server's main log file <OIPServer-jjjj-mm-dd_hh-mm-ss.log> to see whether there are any entries about this behaviour (see also ["Connection monitoring"](#)).

10.9.4 Too many activated OIP services

Deactivate all OIP services you need.

For an overview of the log files of the OIP components during the runtime please refer to ["Backing up log files"](#).

10.10 Backing up log files

For an analysis of the malfunction you should save the relevant log files and send them to your support organisation along with an exact description of the fault as a .zip file.

10.11 Malfunction during Installation

Any error during installation is recorded in the following log files.

10.11.1 OIP server

From the OIP server installation directory, save the log files with the file extension **.log*.

10.11.2 OIP applications

From the installation directory of the OIP application, save the log files with the file extension **.log*.

10.11.3 OIP TAPI service provider

Save the log files of the Windows event display.

If the malfunction occurs during configuration, see ["Malfunction during the runtime"](#), Section ["OIP TAPI service provider"](#).

10.11.4 OIP Connectors

From the installation directory of the driver of the OIP Connector, save the log files with the file extension **.log*.

10.12 Malfunction during the runtime

Any malfunction during the runtime is recorded in the corresponding log file. The following figure gives an overview of where the various log files are created.

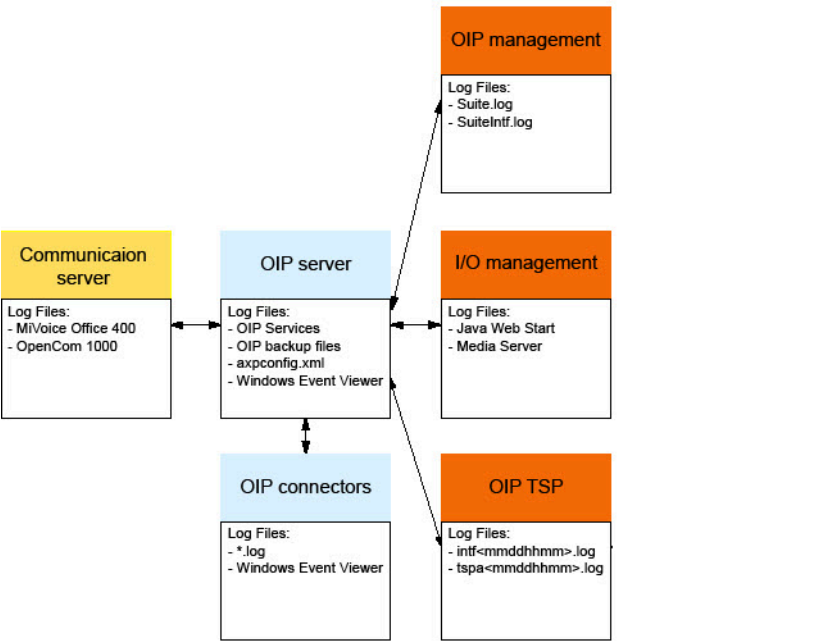


Figure 83: Log file overview

10.12.1 MiVoice Office 400

Table 138: MiVoice Office 400log files

| Log file | Remarks |
|---|-----------------------------|
| MiVoice Office 400 log files: | |
| <ul style="list-style-type: none"><i>I-bus</i> | Switch on the Benni Monitor |
| <ul style="list-style-type: none"><i>ATPC3</i> | |
| <ul style="list-style-type: none"><i>Error logs</i> | |

10.12.2 OIP server

On the OIP server there are two levels of log files. The upper level comprises the log files that log the general status of the OIP server. They include the log files listed in the following table.

Table 139: Level 1 Log files

| Log file | Description |
|--------------------------------------|--|
| OIPServer-yyyy-mm-dd_hh-mm-ss.log | Log file of the OIP server |
| OIPWebServer-yyyy-mm-dd_hh-mm-ss.log | Log file of the OIP web server |
| AXP-Logfile-yyyy-mm-dd_hh-mm-ss.log | Log file of the OIP server with detailed information |
| axpusers.log | Log file of the OIP users configured in the OIP server |

The second level comprises the log files of the individual OIP services. These log files are created or filled with log entries only if the corresponding OIP service has been set to debug. The following table lists the OIP services and the relevant log files.

Table 140: Level 2 Log files

| OIP Service | Log file |
|------------------------|--|
| <i>Account Service</i> | AccountService_<OIPuserID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>ACD Log Manager</i> | ACDLogManager_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>ACD Log Service</i> | ACDLogService_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>ACD Manager</i> | ACDManager_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>ACD Service</i> | ACDService_<OIP user ID>_yyyy-mm-dd_hh-mm-ss_0.log |

| OIP Service | Log file |
|---|--|
| <i>Active Directory Service</i> | ActiveDirectoryService_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Agent Manager</i> | AgentManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Agent Service</i> | AgentService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Alarm Driver</i> | AlarmReceiver_YYYY-MM-DD_HH-MM-SS_0.log TCP-IN-<PBX IP-address>-ON-1062.log |
| <i>Alarm Service</i> | AlarmService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Alpha & Quick Dial Service</i> | AlphaService_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Buddy Manager</i> | BuddyManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Buddy Service</i> | BuddyService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Calendar Manager</i> | CalendarManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Calendar Service</i> | CalendarService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i><Default Font>Calendar Synchronization Service</i> | CalendarService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Call Logging Driver</i> | TaxReceiver_YYYY-MM-DD_HH-MM-SS_0.log TCP-IN-<PBX IP-address>-ON-1080.log |
| <i>Call Logging Manager</i> | TaxManager_YYYY-MM-DD_HH-MM-SS_0.log |

| OIP Service | Log file |
|---|--|
| <i>Call Logging Service</i> | TaxService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Call Service</i> | CallService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Client Utility Service</i> | UtilsService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>CLIP Service</i> | CLIPService_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Configuration Profile Manager</i> | ConfigProfileManager_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Configuration Profile Service</i> | ConfigProfileService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Configuration Service</i> | ConfigurationService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>DasTelefonbuch Directory Service</i> | ThePhoneDirectoryService_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Database Driver</i> | DatabaseDriver_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Directory Manager</i> | DirectoryManager_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Directory Service</i> | DirectoryService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Display Manager</i> | DisplayManager_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Display Service</i> | DisplayService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Event Service</i> | EventService_yyyy-mm-dd_hh-mm-ss_0.log |

| OIP Service | Log file |
|----------------------------------|--|
| <i>Fax Manager</i> | FaxManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Fax Service</i> | FaxService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Feature Service</i> | FeatureService_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Flow Manager</i> | FlowManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Flow Service</i> | FlowService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Function Key Manager</i> | FunctionKeyManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Function Key Service</i> | FunctionKeyService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>I/O Manager</i> | IO-Manager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>I/O Service</i> | IO-Service-<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Jabber Driver</i> | JabberDriver_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Journal Manager</i> | JournalManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Journal Service</i> | JournalService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Key Configuration Service</i> | KeyService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>LDAP Directory Service</i> | LDAPDirectoryService_YYYY-MM-DD_HH-MM-SS_0.log |

| OIP Service | Log file |
|-------------------------------|--|
| <i>License Manager</i> | LicenseManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>License Service</i> | LicenseService_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Line Service</i> | LineService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Load Balancing Service</i> | LoadBalancingService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Location Manager</i> | LocationManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Location Service</i> | LocationService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Log Service</i> | Log_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Login Service</i> | SystemLogin_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Media Manager</i> | MediaManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Message Manager</i> | MessageManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Message Service</i> | MessageService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Naming Service</i> | DistributedNameService_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Notepad Service</i> | NotepadService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Notification Manager</i> | NotificationManager_YYYY-MM-DD_HH-MM-SS_0.log |

| OIP Service | Log file |
|------------------------------------|--|
| <i>Notification Service</i> | NotificationService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>ODBC/JDBC Directory Service</i> | JDBCDirectoryService_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Operator Service</i> | OperatorService<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>PBX Driver Ascotel</i> | ASNMP-<PBX IP-address>_yyyy-mm-dd_hh-mm-ss_0.log ATNS-<PBX IP-address>_yyyy-mm-dd_hh-mm-ss_0.log ATNSDriver-<PBX IP-address>_yyyy-mm-dd_hh-mm-ss_0.log CTIDriverAscotel-<PBX IP-Adress>_yyyy-mm-dd_hh-mm-ss_0.log DisplayDriver_yyyy-mm-dd_hh-mm-ss_0.log PBXConfigDriver-<PBX IP address>_yyyy-mm-dd_hh-mm-ss_0.log PBXDriverAFP-<PBXIPaddress>_yyyy-mm-dd_hh-mm-ss_0.log PBXDriverAscotel-<PBXIPaddress>_yyyy-mm-dd_hh-mm-ss_0.log PBXDriverInfolink-<PBX IP address>_yyyy-mm-dd_hh-mm-ss_0.log TCP-OUT-<PBXIPaddress>-1061_yyyy-mm-dd_hh-mm-ss_0.log TCP-OUT-<PBXIPaddress>-1070_yyyy-mm-dd_hh-mm-ss_0.log TCP-OUT-<PBXIPaddress>-1074_yyyy-mm-dd_hh-mm-ss_0.log TCP-OUT-<PBXIPaddress>-1088_yyyy-mm-dd_hh-mm-ss_0.log |

| OIP Service | Log file |
|--------------------------------|---|
| <i>PBX Driver OpenCom 1000</i> | ANETProvider-<PBX IP-Address>_yyyy-mm-dd_hh-mm-ss_0.log ANVZDriver-<PBX IP-Address>_yyyy-mm-dd_hh-mm-ss_0.log CI-Provider-<PBX IP-Address>_yyyy-mm-dd_hh-mm-ss_0.log CTIDriver-<PBX IP-Address>_yyyy-mm-dd_hh-mm-ss_0.log OC1000DisplayDriver-<PBX IP-Address>_yyyy-mm-dd_hh-mm-ss_0.log PBXConfigDriver-<PBX IP address>_yyyy-mm-dd_hh-mm-ss_0.log TAMI-Provider-<PBX IP-Address>_yyyy-mm-dd_hh-mm-ss_0.log TCP-OUT-<PBX IP address> -8092_yyyy-mm-dd_hh-mm-ss_0.log TCP-OUT-<PBX IP address> -8095_yyyy-mm-dd_hh-mm-ss_0.log TCP-OUT-<PBX IP-Address>-880x_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>PBX Information Service</i> | PBXInfoService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>PBX Manager</i> | PBXManager_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>PBX Setup Manager</i> | PBXSetupManager_<OIP-user ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>PBX Setup Service</i> | PBXSetupService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>PISN Directory Service</i> | PISNSubscriberDirectoryService_yyyy-mm-dd_hh-mm-ss_0.log |

| OIP Service | Log file |
|---------------------------------------|---|
| <i>Private Card Directory Service</i> | PhoneCardDirectoryService_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Private Directory Service</i> | PrivateDirectory_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Public Directory Service</i> | PublicDirectory_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>PUM Manager</i> | PUMManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>PUM Service</i> | PUMService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Registration Manager</i> | RegistrationManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Registration Service</i> | RegistrationService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Routing Manager</i> | RoutingManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Routing Service</i> | RoutingService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>RSS Driver</i> | RSSDriver_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Security Service</i> | SecurityService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Server Utility Service</i> | UtilityService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Service Manager</i> | axpservices-YYYY-MM-DD_HH-MM-SS.log |
| <i>Shortdial Directory Service</i> | ShortDialDirectoryService_YYYY-MM-DD_HH-MM-SS_0.log |

| OIP Service | Log file |
|---|--|
| <i>SMTP Driver</i> | SMTPDriver_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Subscriber Configuration Manager</i> | SubscriberConfigManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Subscriber Configuration Service</i> | SubscriberConfig_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Subscriber Directory Service</i> | SubscriberDirectoryService_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>System User Directory Service</i> | SystemUserDirectoryService_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Test Manager</i> | TestManger_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Test Service</i> | TestService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Ticket Service</i> | TicketService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>Time Service</i> | TimeService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>TTS Manager</i> | TTSTManager_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>User Preferences Service</i> | UserPreferences_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>User Profile Manager</i> | UserProfileManager_YYYY-MM-DD_HH-MM-SS_0.log |
| <i>User Profile Service</i> | UserProfileService_<OIP-user-ID>_YYYY-MM-DD_HH-MM-SS_0.log |

| OIP Service | Log file |
|---------------------------|---|
| <i>User Service</i> | UserServices-<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Voice Mail Manager</i> | VoiceMailManager_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>Voice Mail Service</i> | VoiceMailService_<OIP-user-ID>_yyyy-mm-dd_hh-mm-ss_0.log |
| <i>WEB Server Service</i> | Output on console if the OIP server is started in console mode. |

1. Activate the debug mode for all OIP services. The log level should be set to debug. Please note that activating the debug mode restricts the runtime behaviour of the OIP server.
2. From the installation directory of the OIP server, save the entire *logs* directory.
3. From the installation directory of the OIP server, save the entire *backup* directory.
4. From the OIP server installation directory, save the OIP configuration file *axpcon-fig.xml*.
5. Save the log files of the Windows event display.

10.12.3 Mitel OfficeSuite

1. Activate debug mode.
2. Backup the log files Suite.log and SuiteIntf.log from the following directory :c:\Us-ers\<User name>\AppData\Local\Mitel\Suite\Log\

10.12.4 MiVoice 1560 PC Operator

1. Activate debug mode.
2. Back up the log files Mitel1560.log and Mitel1560_Intf.log from the directory c:\User\<User name>\AppData\Local\Mitel\Mitel1560\Log\

10.12.5 Java-based OIP applications

1. Delete the temporary internet files in the Java Control Panel (Control Panel\Java). Deleting the Temporary Internet Files deletes all downloaded applications; the next time you start up the OIP application, the application files will again be downloaded.
2. From the Java Control Panel activate debugging from the Advanced tab.
3. Reproduce the malfunction.
4. From the user profile directory ...\\Sun\\Java\\Deployment\\log, save the log file javaws*.log.

10.12.6 Operator applications

1. Activate debug mode.
2. From the user profile directory ...\\Documents and Settings\\All Users\\Application Data\\Mitel, save the entire Logs directory.

10.12.7 Media Server

The Media Server is installed with an OIP softphone: From the user profile directory save the log file media.log.

10.12.8 OIP TAPI service provider

1. Activate the debug mode of the OIP TAPI service provider.
2. Restart the Windows Telephony Service.
3. Save the configured Log directory.
 - intf<mmddhhmm>.log
 - tspa<mmddhhmm>.log

If an error occurs, the event messages in the following table may be displayed when connecting with the OIP server and when reading out the lines.

Table 141: Event messages

| Event message | Cause/solution |
|--|---|
| <i>No lines configured for the user.</i> | Use the OIP server to check whether the user has been assigned lines. |

| Event message | Cause/solution |
|---|---|
| <i>List of available lines cannot be loaded.</i> | <ul style="list-style-type: none"> • Use the OIP server to check whether the user has been assigned the necessary access rights. • Check whether the OIP server is running fault-free. Restart the OIP server if necessary. |
| <i>OIP server software is not compatible.</i> | Check the OIP version notes to see whether the version of the OIPTAPI service provider is compatible with the OIP server. |
| <i>Log in to OIP server failed. Please check your user name and password.</i> | <ul style="list-style-type: none"> • Use the OIP server to check whether the user name is correct. • Use the internal phone number and terminal PIN for the login; check whether the terminal PIN has been changed. |
| <i>Log in to OIP server failed. Please check the server address.</i> | Check whether the correct address of the OIP server has been entered. If you have no success with the DNS name, re-try the connection setup with the OIP server IP address. If this attempt also fails, contact your OIP Administrator. |
| <i>Initialisation of the CORBA interface failed. Installation aborted.</i> | The connection to the OIP server cannot be set up. Contact your OIP Administrator. |
| <i>Connection disconnected by the user.</i> | You have disconnected the connection setup to the OIP server. |

10.12.9 OIP Exchange drivers for Microsoft Exchange Server 2007 and 2010

If you did not activate the debug mode after installing the OIP Exchange driver, start the configuration via the Start menu entry.

Reproduce the malfunction and save the log files: Windows XP:

`c:\Documents and Settings\All Users\Application Data\Mitel\Oip\MsxDrv\Log\`

Windows Server 2008/2008 R2 and Windows 7/Vista:

`c:\ProgramData\Mitel\Oip\MsxDrv\Log\`

1. On the PC on which the OIP Exchange driver is installed, save the log files from the following directories:

- Windows XP:

c:\Document and Settings\All Users\ApplicationData\Mitel\Oip\MsxDrv\Log

- Windows Server 2008/2008 R2 and Windows 7/Vista:

c:\ProgramData\Mitel\Oip\MsxDrv\Log

2. On Microsoft Exchange Server, save the Windows event display log files.

10.12.10 OIP Exchange drivers for Microsoft Exchange Server 2003 & 2007

To activate debug mode, first end the Windows service OIP Exchange Service on the Microsoft Exchange Server and then proceed as follows.

1. From the installation directory of the *OIP Exchange driver*, open the configuration file *msxchangedriverconfig.oip* using a text editor.
2. Change the entry *oip.exchangeconnector.debug=0* to *oip.exchangeconnector.debug=1* and save the change.
3. Start the Windows service

OIP Exchange Service.

Reproduce the malfunction and save the following log files:

4. On Microsoft Exchange Server, from the installation directory save the log files:

- delprivate.log
- delpublic.log
- regprivate.log
- regpublic.log
- regresult.txt

5. On Microsoft Exchange Server, save the Windows event display log files.

10.12.11 OIP phone book driver (phone book CDs)

The information listed here refers to the following OIP phone book drivers:

- OIP Phone Book Drivers (D)

To activate the debug mode first exit the Windows System Service of the corresponding OIP phone book driver and proceed as described here.

1. From the installation directory of the OIP phone book driver open the configuration file *...config.OIP* with a text editor.
2. In the paragraph [Config], change the entry *DebugLevel=0* to *DebugLevel=1* and save the change.

3. Start the Windows service of the corresponding OIP phone book driver.

Reproduce the malfunction and save the following log files:

1. On the PC on which the OIP phone book driver is installed, save the log file "...driver.log" from the installation directory.
2. On the PC on which the driver of the OIP phone book is installed, save the log files of the Windows event display.

10.12.12 OIP phone book driver (ODBC/JDBC)

The information listed here refers to the OIP phone book driver OIP ODBC/JDBC driver.

The debug mode is activated while the OIP ODBC/JDBC driver is being installed.

1. On the PC on which the OIP ODBC/JDBC driver is installed, save the entire *logs* directory from the installation directory.
2. On the PC on which the driver of the OIP ODBC/JDBC is installed, save the log files of the Windows event display.

10.12.13 OIP ATAS-Gateways

The debug mode is activated while the OIP ATAS-Gateway is being installed.

1. On the PC on which the OIP ATAS gateway is installed, save the entire *logs* directory from the installation directory.
2. On the PC on which the driver of the OIP phone book is installed, save the log files of the Windows event display.

10.12.14 OIP KNX driver

The debug mode is activated while the OIP KNX driver is being installed.

1. On the PC on which the OIP KNX driver is installed, save the entire *logs* directory from the installation directory.
2. On the PC on which the driver of the OIP KNX is installed, save the log files of the Windows event display.

