A MITEL
PRODUCT
GUIDE

Unify OpenScape 4000 V10R1

Volume 0: Start Page

Start Page

Service Documentation
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Mitel

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1 Introduction and Important Notes

1.1 Product Overview

The Communication System OpenScape 4000 is a privat automatic switching system for connecting internal telephones, workstations/PCs, fax/data/vtx and other terminals. It enables mixed-mode communication, and provides the necessary interfaces to the public network exchanges.

The OpenScape 4000 is an SPC (stored program control) digital switching system. The integrated dependability and administration and maintenance functions enable the following:

- System Startup
- Administration
- Maintenance
- Troubleshooting

and

- Trouble recovery

using the tools integrated in the system and documentation provided with the Service Manual.

1.2 Target Group and Requirements

The targeted user group of the Service Manual consists of service engineers, system specialists, initial startup engineers and owner-maintenance personnel.

In order to carry out maintenance work on the PBX systems and resolve error states, a basic knowledge of telephony and some service experience is required.

1.3 Using this Manual

1.3.1 Manual Structure

The service documentation for OpenScape 4000 is subdivided into several documentations. You can find these documentations

- on the Intranet on E-Doku,

- in the Partner Portal
- optionally in the Internet

and

- in the **OpenScape 4000 Platform Administration (Portal)**, menu **Documentation**.

Volume 1: AMO Descriptions

Here you will find all for OpenScape 4000 V10 relevant AMO descriptions, sorted alphabetically.

IMPORTANT: Please note that all features for implementation are described in the AMO descriptions. Please refer to the individual product's release notes for the release dates.

Volume 2: System Components

The "System Components" section includes the following main topics:

- Hardware and Maintenance

  In this documentation you will find descriptions of the shelves FRUs, boards, power supplies, devices and adapters.

- Software

  In the section “Software” you will find information on the following topics:

  - OpenScape 4000 in the customer LAN
  - Hardware configurations
  - Simplex/Duplex
  - Supported interfaces
  - Port list
  - Applications, loading tables and selections
  - Hardware architecture table
  - Remote access (Secured Infratructure for Remote Access (SIRA) und Smart Services Delivery Platform (SSDP))
  - OpenScape 4000 Assistant
  - OpenScape 4000 CSTA

Volume 3: Feature Usage Examples

In this section you will find detailed descriptions of the procedure for configuring the different features.

IMPORTANT: Please note that all features for implementation are described in the feature usage examples. Please refer to the individual product's release notice for the release dates.

Volume 4: IP Solutions

In the IP Solutions you can find the documentation of all IP features, such as

- Gateways HG 3500 and HG 3575
- OpenScape 4000 SoftGate
- Separate LAN connectivity für administration and VoIP
- OpenScape Access
- RG 8350 a
- Large Enterprise Gatekeeper (LEGK)
- HiPath Feature Access (HFA)
- Mobile HFA
- IP Distributed Architecture (IPDA)
- Access Point Emergency (APE)
- Different time zones
- Signaling Survivability
- SIP Connectivity
- H323 / H323-A Connectivity
- Signaling and payload encryption
- Payload Switching DMC
- T.38 Fax
- IP terminals
- HiPath Cordless IP

Additionally the following documentations are available for OpenScape 4000:

- Installation, Configuration and Migration

- Conversion Guide for Networks
- Feature Description
- OpenScape 4000 CSTA and Phone Services
- Platform Administration (Portal)
- Troubleshooting (AlFe)
- Gateways HG 3500 and HG 3575
- vHG 3500 HFA for OpenScape 4000 SoftGate
- vHG 3500 SIP for OpenScape 4000 SoftGate
- vHG 3575 for OpenScape 4000 SoftGate
- OpenScape Access
- RG 8350 a
- SIU and DTR Tones
- Debug
- Empirical Formula for Estimating the Control Processor Load

1.3.2 Reference Manuals

For reference manuals please refer to E-Doku or Partner Portal.

1.3.3 Notational Conventions Used

This manual uses the following notational conventions:

Purpose	Style	Example
Special emphasis	Bold	**Name** must not be deleted.
User interface elements	Bold	Click **OK**.
Menu sequence	>	**File > Close**
Textual cross-references	Italic	For more information, see *Network*.
Output	Font with a fixed width such as Courier	`Command not found.`
Input	Font with a fixed width such as Courier	Enter `LOCAL` as the file name.
Key combinations	Font with a fixed width such as Courier	`<CTRL>+<ALT>+<ESC>`
Steps and subordinate steps in instructions	Numbered lists (using numbers and letters)	1. Set up the DSL telephony subscriber with the corresponding extension number. 2. Click **Add**. 3. In **DSL Telephony Subscriber**, enter the name of the DSL telephony subscriber.
Options in instructions	Bulleted list	• If you want to output amounts, select the **Output Amounts, Not Units** checkbox. • If you want to output units, deselect the **Output Amounts, Not Units** checkbox.

IMPORTANT: Identifies useful information.

1.4 Safety Information and Warnings

Work on communication systems and devices may **only** be carried out by qualified persons.

For the purposes of safety information and warnings, qualified persons are persons who are authorized to place into operation, ground, and label systems, devices, and lines in accordance with applicable safety procedures and standards.

It is absolutely essential that you read and understand the following safety information and warnings before starting installation and implementation work on the communication system or device.

You should also carefully read and observe all safety information and warnings on the communication systems and devices themselves.

Familiarize yourself with emergency numbers.

Always consult your manager before starting work in conditions where the necessary safety precautions do not appear to be in place.

Types of safety information and warnings

The following grades of safety information/warnings are used in this manual:

DANGER

Indicates an immediate danger that could result in death or serious injury.

WARNING

Indicates a general danger that could result in death or serious injury.

CAUTION

Indicates a danger that could result in injury.

NOTE: Indicates situations that could result in damage to property and/or loss of data.

Symbols for specifying the source of danger more exactly

The following symbols are not usually used in the manual. They explain symbols that may be depicted on the communication systems and equipment.

* electrostatically sensitive devices

1.4.1 Warning Sign: Danger

Risk of electric shock through contact with live wires

- Note: Voltages above 30 Vac (alternating current) or 60 Vdc (direct current) are dangerous.
- Only personnel with proper qualifications or qualified electricians should perform work on the low-voltage network (1000 Vac).

1.4.2 Warning Sign: Warning

Risk of electric shock through contact with live wires

An electric shock can be life-threatening or lead to serious injuries such as burns.

There are additional dangers even when working with low voltage and large cable cross-sections. Cables with a large cross-section generally have lower voltages, although the amperages are higher.

- Before starting any work, check that the circuits involved are de-energized. Never take it for granted that turning off a main switch or circuit breaker will reliably interrupt all circuits.
- Only use systems, tools, and equipment which are in perfect condition. Do not use equipment with visible damage.
- Replace any damaged safety equipment (covers, labels and ground wires) immediately.
- Replace the power cable immediately if you notice any damage.
- Only place systems or devices in protection class I into operation using a ground contact socket.
- Connect the communication system and, if necessary, the main distribution frame to the ground wire before starting up the system and connecting telephones and lines. Never operate the communication system without the required ground wire.
- Never touch live wires without ensuring adequate insulation.
- Do not carry out any hardware installation work on telecommunication systems and devices during a storm.
- Expect leakage current from the telecommunications network. Disconnect all telecommunication lines from the system before disconnecting the prescribed ground wire from the system.

Disconnection from power circuit(s)

A disconnect device can be a disconnecting switch (main switch), circuit breaker (fuse/cutout), or power plug that completely disconnects the telecommunication system and device from the power circuit.

- Before carrying out any work on the communication system or on the device, find out whether there is a disconnect device and locate it.
- When you need to disconnect the power supply to the communication system or device, you do so using the disconnect device.
- Secure the disconnect device mechanically so that it cannot be used by other persons and attach a sign reading DO NOT OPERATE to the disconnect device.
- Ensure that the communication system or device is not powered from an additional power source (for example, an uninterruptible power supply), or that it is protected by an additional fuse or an additional main switch.
- If you are performing work on circuits with hazardous voltages, always work together with a partner who is familiar with the location of the disconnect devices for the power supplies.
- Always disconnect the power supply when you are working directly next to a power supply unit or direct current converter, unless the work instructions expressly permit you to work without disconnecting the power supply.
- As long as the power supply is switched on, always observe the greatest caution when performing measurements on powered components and maintenance work on plug-in cards, PC boards and covers.
- Metallic surfaces such as mirrors are conductive. If you touch them, there is a risk of electric shocks or short circuits.

1.4.3 Warning Sign: Caution

Danger of injury:

- When working on an open communication system or device, make sure that it is never left unattended.
- Risk of injury resulting from heavy items or loads.
  Lifting heavy objects/loads can cause injury. Use appropriate aids to carry out such tasks.
- Risk of injury resulting from laser radiation.
  If there are any optical interfaces: In case of laser radiation,
  do not look directly into the beam. You could damage your eyes.

Risk of explosion if accumulators and batteries are not changed properly:

- Only use the approved battery pack and batteries.
- The lithium battery must be replaced only by an identical battery or one recommended by the manufacturer.

Risk of fire:

- Only telecommunications cables with a cable diameter of at least 0.4 mm (AWG 26) or larger may be used.
- The system cabinets must not be fitted with any third-party devices that have not been approved.
- Do not store any documents or similar flammable items in the system.

General risk of injury/accidents in the workplace:

- When maintenance work has been completed, always re-install all safety equipment in the right place. Also close all doors, covers, or the housing after completing test and maintenance work.
- Install cables in such a way that they do not pose a risk of accident (tripping), and cannot be damaged.
- Make sure that the work area is well lit and tidy.
- When working on the systems, never wear loose clothing and always tie back long hair.
- Do not wear jewelry, metal watchbands or clothes with metal ornaments or rivets. There is a risk of injury and short circuits.
- Always wear the necessary eye protection whenever appropriate.
- Always wear a hard hat where there is a risk of injury from falling objects.
- Check your tools regularly. Only use intact tools.

1.4.4 Important Information

Note the following information in order to avoid damage to property:

- Before placing the system into operation, check whether the nominal voltage of the power supply network corresponds to the nominal voltage of the communication system or device (type plate). If necessary, adjust the nominal voltage of the communication system or device appropriately.
- To protect electrostatically sensitive devices (ESD):
  - Always wear the wristband in the prescribed manner before performing any work on PC boards and modules.
  - Transport PC boards and modules only in suitable protective packaging.
  - Always place PC boards and modules on a grounded conductive base, and do not work on the PC boards anywhere else.
  - Only use grounded soldering irons.
- Use only original accessories. Failure to comply with this safety information may damage the equipment or violate safety and EMC regulations.
- Before starting wall assembly, check that the load-bearing capacity of the wall is adequate, Always use suitable installation and fixing material to make sure that the communication system is mounted safely.
- Condensation damage:
  If the temperature changes rapidly, air humidity can precipitate. If the communication system or device is moved from a colder to a warmer environment, moisture can precipitate. Wait until the temperature has adjusted to the ambient temperature and the communication system or device is completely dry before starting it up.

1.5 Emergencies

What to Do in an Emergency

- In the event of an accident, remain calm and controlled.
- Always switch off the power supply before you touch an accident victim.
- If you are not able to immediately switch off the power supply, only touch the victim with non-conductive materials (such as a wooden broom handle), and first of all try to isolate the victim from the power supply.

First Aid

- Be familiar with basic first aid procedures for electrical shock. A fundamental knowledge of the various resuscitation methods if the victim has stopped breathing or if the victim's heart is no longer beating, as well as first aid for treating burns, is absolutely necessary in such emergencies.
- If the victim is not breathing, immediately perform mouth-to-mouth or mouth-to-nose resuscitation.
- If you have appropriate training, immediately perform heart massage if the victim's heart is not beating.

Calling for Help

- Immediately call an ambulance or an emergency physician. Provide the following information in the following sequence:
  - Where did the accident happen?
  - What happened?
  - How many people were injured?
  - What type of injuries?
  - Wait for questions.

1.6 Reporting Accidents

- Immediately report all accidents, near accidents and potential sources of danger to your manager.
- Report all electrical shocks, no matter how small.

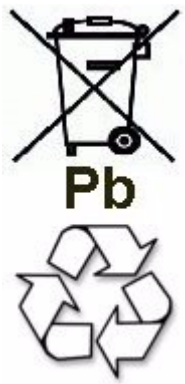
1.7 Proper Disposal and Recycling

All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.

The correct disposal and separate collection of your old appliance will help prevent potential negative consequences for the environment and human health. It is a precondition for reuse and recycling of used electrical and electronic equipment.

For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service, the shop where you purchased the product or your sales representative.

The statements quoted above are only fully valid for equipment which is installed and sold in the countries of the European Union and is covered by the Directive 2002/96/EC. Countries outside the European Union may have other regulations regarding the disposal of electrical and electronic equipment.



Used accumulators and batteries with this sign are valuable economic goods and must be recycled. Used accumulators and batteries that are not recycled must be disposed of as hazardous waste with full observance of all regulations.

1.8 Standards and Guidelines on Installation

1.8.1 Connection to the Power Supply

OpenScape communication systems are approved for connection to TN-S power supply systems. They can also be connected to a TN-C-S power supply system in which the PEN conductor is divided into a ground wire and a neutral wire. TN-S and TN-C-S systems are defined in the IEC 364-3 standard.

If work on the low-voltage network is required, it must be carried out by a qualified electrician. The installation work required to connect OpenScape communication systems must be carried out with full observance of IEC 60364 and IEC 60364-4-41 or the equivalent legal norms and national regulations (in the US and Canada, for example).

1.8.2 Fire Safety Regulations

Fire safety regulations are specified in country-specific building codes. Adhere to the relevant regulations.

To conform with the legal fire protection and EMC requirements, operate the OpenScape systems only when closed. You may open the system only briefly for assembly and maintenance work.

As regards their burning behavior, OpenScape system cables conform to the international standard IEC 60332-1. The following standards include equivalent requirements regarding the burning behavior of cables.

IEC 60332-1 ---------- Note: IEC 60332-1 corresponds to UL VW-1	EN 50265-1 with EN 50265-2-1 ---------- Note: EN 50265-1 and -2-1 replace HD 405.1	VDE 0482 parts 265-1 with VDE 0842 parts 265-2-1 ---------- Note: VDE 0482 parts 265-1 and -2-1 replace VDE 0472, part 804, test type B

The responsible project management and service departments must verify whether this standard satisfies the applicable building regulations and any other additional regulations.

1.8.3 Screened Lines for LAN, WAN, and DMZ Connections

The following prerequisites must be met in order to comply with CE requirements relating to the electromagnetic compatibility of the communication system and its LAN, WAN, and DMZ connections:

- The communication system may only be operated with screened connection cables. This means that a screened CAT.5 cable with a length of at least 3m must be used between the screened LAN, WAN, and DMZ connection sockets of the communication system and the connection to the building utilities or the connection to active external components. The cable screen on the cable end that connects to the building utilities or active external components must be grounded (building potential equalization connection).
- In the case of shorter connections with an active external component (LAN switch or similar), a screened CAT.5 cable must also be used. However, the active component must have a corresponding screened LAN connection with a grounded screened connector (building potential equalization connection).
- The screen properties of the cabling components must comply with the requirements of the European EN 50173-1 standard on generic cabling systems and with any requirements referenced therein. The European EN 50173-1 standard is derived from the global ISO/IEC 11801 standard.
- Building utilities that have integrated and screened symmetrical copper cabling in accordance with the requirements of class D of EN 50173-1 fulfill the condition above. Class D is also attained if components (cables, connection boxes, connection cables, etc.) of category 5 (CAT.5) are installed.
- In North America, UTP cabling is normally installed (US EIA/TIA 568A standard), and the following conditions apply to the LAN connections of communication systems there: The communication system may only be operated with screened connection cables. This means that a screened CAT.5 cable with a length of at least 3m must be used between the screened LAN, WAN, and DMZ connection sockets of the communication system and the connection to the building utilities or the connection to active external components. The cable screen on the cable end that connects to the building utilities or active external components must be grounded (building potential equalization connection).
- Note the information pertaining to the screened connection on the LTU frame exit point for the LAN connection to PC boards in LTUs.

1.8.4 Labeling

CE	This device complies with the EU Directive 1999/5/EC as confirmed by the CE certificate.

1.9 Data Protection and Data Security

This system processes and uses personal data for purposes such as call detail recording, displays, and customer data acquisition.

In Germany, the processing and use of such data is subject to various regulations, including those of the Federal Data Protection Law (Bundesdatenschutzgesetz, BDSG). For other countries, please follow the appropriate national laws.

The aim of data protection is to protect the rights of individuals from being adversely affected by use of their personal data.

In addition, the aim of data protection is to prevent the misuse of data when it is processed and to ensure that one's own interests and the interests of other parties which need to be protected are not affected.

The customer is responsible for ensuring that the system is installed, operated and maintained in accordance with all applicable labor laws and regulations and all laws and regulations relating to data protection, privacy and safe labor environment.

Employees of Unify GmbH & Co. KG are bound to safeguard trade secrets and personal data under the terms of the company's work rules.

In order to ensure that the statutory requirements are consistently met during service whether on-site or remote you should always observe the following rules. You will not only protect the interests of your and our customers, you will also avoid personal consequences.

A conscientious and responsible approach helps protect data and ensure privacy:

- Ensure that only authorized persons have access to customer data.
- Make the most of password restrictions: Do not allow unauthorized persons to find out passwords that you have noted down on paper, for example.
- Ensure that no unauthorized person is able to process (store, modify, transmit, disable, delete) or use customer data in any way.
- Prevent unauthorized persons from gaining access to storage media, such as backup CDs or log printouts. This applies to service calls as well as to storage and transport.
- Ensure that storage media which are no longer required are completely destroyed. Ensure that no sensitive documents are left unprotected.

Work closely with your customer contact; this promotes trust and reduces your workload.

1.10 Documentation Feedback

If you have questions that are not answered by this document:

- Internal employees should contact their National Support Center.
- Customers should contact their retailer or the Unify Customer Support Center.

When you call, state the title, ID number, and issue of the document.

Example:

- **Title:** OpenScape 4000 V7, Section 4 - IP Solutions, Service Documentation
- **ID number:** P31003H3170S104010020
- **Issue:** 1

1.11 General Information

Please take advantage of the opportunity (feedback or contact) to call our attention to errors or even missing documentation. Only in this way can we always provide information in an up-to-date and usable release.

IMPORTANT: Please note that a release that is available on the E-Doku and Partner Portal can be newer than the one in the **OpenScape 4000 Platform Administration (Portal)** in the menu **Documentation**.

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