A MITEL
PRODUCT
GUIDE

Unify OpenScape 4000

Enterprise Gateway

Service Documentation
08/2024

Mitel

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1 Introduction and Important Notes

1.1 Product Overview

The OpenScape 4000 communication system links all terminals and workstations internally, enables mixed communication and handles the connection to public communication networks.

OpenScape 4000 is a stored program controlled digital switching system. Thanks to the concept of integrated security and administration and maintenance,

- startup
- administration
- maintenance
- troubleshooting

and

- fault recovery

can be performed under normal conditions with the tools integrated in the system and the existing documentation.

1.2 Target Group and Requirements

These installation instructions are aimed at service engineers, startup specialists and self-maintainers.

The device is only intended for installation in restricted access locations.

Basic knowledge of telecommunications and OpenScape 4000 is required for setting up and installing the PBX system.

1.3 Using this Manual

1.3.1 Notational Conventions Used

This manual uses the following notational conventions:

Purpose	Style	Example
Special emphasis	Boldface	Name must not be deleted.
User interface elements	Boldface	Click OK.
Menu sequence	>	File > Close
Textual cross-references	Italics	For more information, see Network.

Purpose	Style	Example
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)	Set up the DSL telephony subscriber with the corresponding extension number. Click Add. 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.
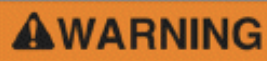
Familiarize yourself with emergency numbers.

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 i...
⚠ WARNING	Indicates a general danger that could result in death or serious injur...
⚠ CAUTION	Indicates a danger that could result in injury

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

1.4.1 Warning Sign: Danger

⚠ DANGER

NOTICE: Risk of electric shock through contact with live wires

NOTICE: Voltages above 30 Vac (alternating current) or 60 Vdc (direct current) are dangerous.

NOTICE: Only personnel with proper qualifications or qualified electricians should perform work on the low-voltage network (<1000 Vac) and all work must satisfy national/local requirements for electric connectors.

1.4.2 Warning Sign: Warning

⚠ WARNING

NOTICE: Risk of electric shock through contact with live wires

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

• 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 communication systems and devices during a storm.
- Expect leakage current from the communications network. Disconnect all communication lines from the system before disconnecting the prescribed ground wire from the system.

⚠ WARNING

NOTICE: Disconnection from power circuit(s)

The communication system and device are only disconnected fully from the power circuit by unplugging the power plug.

- The disconnect device must be easily accessible.
- Disconnect the communication systemâs power plug and ensure that the communication system or device is not powered from an additional power source (for example, an uninterruptible 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.

1.4.3 Warning Sign: Caution

⚠ 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 explosion if accumulators and batteries are not changed properly:

- The battery must be replaced only by an identical battery or one recommended by the manufacturer.

Risk of fire:

- Only communications cables with a cable diameter of at least 0.4 mm (AWG 26) or larger may be used.
- The ventilation openings must not be blocked by documents or similar inflammable objects.

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.
- Lay cables so as to prevent any risk of them being damaged or causing accidents, such as tripping.
- Make sure that the work area is well lit and tidy.
- Check your tools regularly. Only use intact tools.

1.4.4 Important Information

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

- Protection of 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.

- Use only original accessories. Failure to comply with this safety information may damage the communication system or violate safety and EMC regulations.
- 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.
- If there is no emergency power supply available or if switchover to analog emergency phones is not possible during a power failure, no more emergency calls can be made via the communication system if the power supply unit fails.

1.5 Normal Use

The communication system may only be used for the applications described in this documentation and only in conjunction with add-on devices and components recommended and approved by Unify GmbH & Co. KG. The prerequisites for the normal use of the communication system include appropriate transport, storage, installation and startup as well as meticulous operation and maintenance.

1.6 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.

1.7 Standards and Guidelines on Installation

1.7.1 Connection to the Power Supply

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 4000 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 U.S. and Canada, for example).

1.7.2 Fire Safety Regulations

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

1.7.3 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).

• For the LAN connection to boards in LTUs, the notes regarding the shielding connection at the opening of the LTU frame must be observed accordingly.

1.7.4 Labeling

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

> This device has been manufactured in accordance with our certified environmental management system (ISO 14001). This process ensures that energy consumption and the use of primary raw materials are kept to a minimum, thus reducing waste production.

1.8 Data Protection and Data Security

This telephone system uses and processes personal data, such as call detail recording, telephone displays and customer data records.

In Germany, the processing and use of such data is subject to various regulations, including those of the Federal Data Protection Law (Bundesdatenschutzgesetz, BDSG). Observe all applicable laws in other countries.

The objective of privacy legislation is to prevent infringements of an individualâs right to privacy based on the use or misuse of personal data.

By protecting data against misuse during all stages of processing, privacy legislation also protects the material interests of the individual and of third parties.

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 companyâs work rules.

It is imperative to observe the following rules to ensure that the statutory provisions relating to service (on-site or remote) are strictly followed. This safeguards the interests of the customer and offers added personal protection.

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

- Ensure that only authorized persons have access to customer data.
- Use the password features of the system with no exceptions. Never give passwords to an unauthorized person orally or in writing.
- Ensure that no unauthorized person can ever process (store, modify, transmit, disable or delete) or use customer data.
- 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.

2 Feature Description

OpenScape Enterprise Gateway is based on hardware and software of OpenScape 4000. It is successor of AP 3700-9 shelves with HG3575. The whole feature content of IP Distributed Architecture (IPDA) is available.

For more information please refer to the related service documentation:

- OpenScape 4000, IP Solutions >IP Distributed Architecture (IPDA)

- OpenScape 4000 vHG 3575 for SoftGate and Enterprise Gateway

2.1 Scenarios

OpenScape 4000 with OpenScape Enterprise Gateway
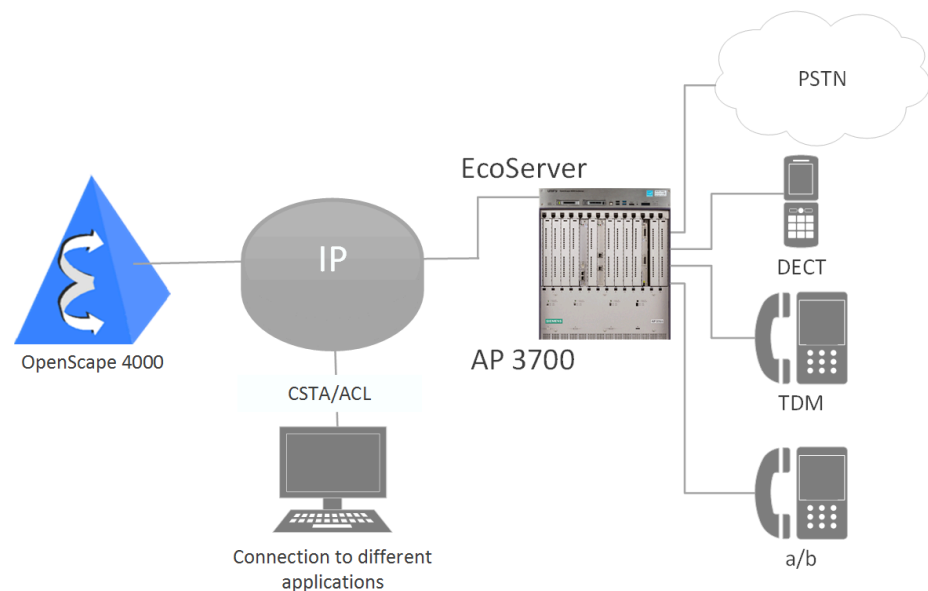
Figure 1: OpenScape 4000 with OpenScape Enterprise Gateway

> **NOTICE:** The survivable Unit is optional and will typically be hosted directly on the Enterprise Gateway using the deployment "Survivable Enterprise GW", however, any Survivable unit in the network can be utilized as an alternative.

2.1.1 Enterprise Gateway - second LTU shelf

Starting with V10R1, there is a new capability for customers who need more AP shelves in one location using OpenScape 4000 Enterprise Gateway: the usage of just one EcoServer with two LTU shelves.

> **NOTICE:**

It is possible to use connected LTUs of the same shelf type (AP3700-9 or AP3700-13) or a mix between them (AP3700-9 and AP3700-13).

AP3300 is not supported .

Shelves must be configured separately via AMO commands, but are controlled by the same unit (only one Softgate application, WBM, initialicfg.xml).

The signalling and payload IP address configured via AMO APRT and UCSU are the same for both shelves. A proxy mechanism for message distribution is implemented in the system and Softgate SW.

For more information about the generation and migration of the second shelf of Enterprise Gateway, see chapters Migration from a classic AP on page 19 and Configuration of EntGW to support a second LTU shelf (XEGW) on page 19

The loading of the shelves is implemented as a "pair" loading. The mechanism for multicast loading is implicitly triggered for the second shelf, therefore a different activation timing can be observed for the two shelves. The activation timing of the shelves depends on the system where the Enterprise Gateway is deployed, in terms of loading load at start-up (i.e. how many peripheral boards, which types of peripheral boards).

Once both shelves are up and running, they work independently based on telephony traffic. An exception in peripheral boards (including LTUCR error) will affect only the corresponding shelf itself.

The maintenance of Enterprise Gateway will affect both shelves (i.e. RESTART-USSU will restart both shelves). Peripheral board update or Loadware transfer work independently.

WBM is an unique instance but the Assistant Gateway Manager presents two instances as there are two LTU shelves configured via AMO (see Configuration of EntGW to support a second LTU shelf (XEGW) on page 19). A gateway restart from WBM will restart the whole Enterprise Gateway.

NOTICE:

The FA or LW exceptions reported in HISTA might not be clearly split between the shelves. For a deeper diagnosis, export the diagnostic data from the Enterprise Gateway.

2.2 Components

- OpenScape 4000 EcoServer

  - Enterprise GW deployment installed
  - optional APE (Survivable Enterprise GW)
- AP 3700-9

  - can be populated with one LTUCR board and up to 9 peripheral modules
- AP 3700-13

  - can be populated with one LTUCR board and up to 13 peripheral modules

- AP 3300
  - can be populated with one LTUCR board and up to 16 peripheral modules
- LTUCR control board
- optional Integrated SoftGate (supported with OpenScape 4000 V8 R2 and higher)

For more information on hardware please refer to Chapter 3, "Hardware".

2.3 Compatible Products

- All peripheral modules compatible with AP IPDA shelfs.

2.4 Restrictions

2.5 Reference Clock

The Enterprise GW supports all reference clock sources which are supported by traditional AP IPDA shelf with HG 3575:

- line reference from digital network
- front reference from external clock box

> **IMPORTANT:** If the front reference is used, it needs to be connected to EcoServer box unlike traditional AP IPDA shelf with HG 3575 where it is connected to the shelf. Cable with part number S30267-Z319-A150 is required. The Enterprise gateway supports all reference clock sources which are supported by traditional AP IPDA shelf with HG 3575:

The CMI ISS functionality is fully supported.

See Chapter 4, "Reference Clock" for more details.

3 Hardware

The OpenScape Enterprise Gateway consists of following hardware components :

1) EcoServer (see chapter OpenScape 4000 EcoServer in OpenScape 4000, System Components (Hardware, Software), Service Documentation)

   Combines a main processor module and the RTM functionality.

2) AP3700-13 or AP3700-09 or AP3300

   • AP3700-13 (see chapter 'AP 3700-9 Shelf' in 'OpenScape 4000, System Components (Hardware, Software), Service Documentation)'. The AP3700-13 is a peripheral shelf with an LTUCR - control board that can be installed as a standalone system or in a 19" cabinet system. The AP 3700-13 can be populated with up to 13 peripheral modules.

   • AP3700-09 (see chapter 'AP 3700-09' in 'OpenScape 4000, System Components (Hardware, Software), Service Documentation)'. The AP3700-09 is a peripheral shelf which can be populated with up to 9 peripheral modules.

   • AP3300 (see chapter 'L80XF Shelf' in 'OpenScape 4000, System Components (Hardware, Software), Service Documentation)'. The AP3300 is a peripheral shelf which can be populated with up to 16 peripheral modules.

3) LTUCR (see chapter LTUCR in OpenScape 4000, System Components (Hardware, Software), Service Documentation)

   The LTUCR (Line Trunk Unit Control Replacement) board is the interface between central and peripheral parts of the system. The LTUCR distributes them to the appropriate boards in the LTU. It can be one of the compact

or extended compact shelves). The LTUCR also receives signals from the peripheral boards and transmits them to the common control.
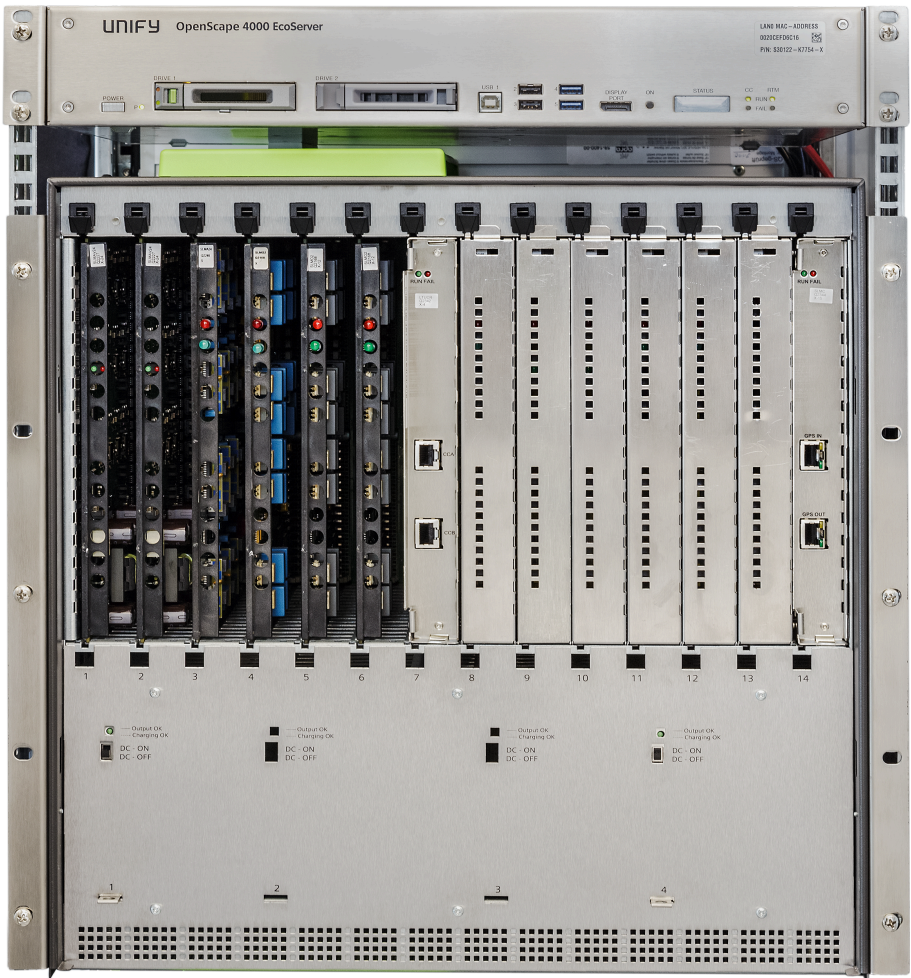
Figure 2: OpenScape 4000 Enterprise Gateway - EcoServer and AP 3700-13 with LTUCR board

⚠ **WARNING**

> **NOTICE:** Space between shelf and EcoServer must be kept by default plastic spacer as defined in the respective installation documentation of the AP shelves.

4 Installation, Configuration, Generation and Licensing

4.1 Overview

Step 1: Installation and Configuration

Step 2: Generation for OpenScape Enterprise Gateway (Example)

Step 3: Installing the License

4.2 Prerequisites

The following hardware prerequisites must be fulfilled:

- OpenScape 4000 EcoServer
- AP3700-13 or AP3700-09 or AP3300
- LTUCR
- USB-Media

Optional:

- USB keyboard
- Monitor

NOTICE: It is not possible to add AP3300 as a second shelf.

4.3 Installation and Configuration

For information on the installation please refer to the documentation **OpenScape 4000, Installation, Configuration and Migration**.

4.4 Generation for OpenScape Enterprise Gateway (Example)

4.4.1 OpenScape Enterprise Gateway

Configuration of Enterprise Gateway from AMOs point of view is similar with the configuration of the AP. The only exception is that in AMO UCSU branch ENTGW will be chosen (UNIT parameter).

In the following example, the AP3700-13 shelf will be used.

Preconditions:

1) Shelf AP3700-9 or AP3700-13 can be used

2) The board LTUCR Q2342-X has to be plugged in into the slot 6 or 7 of AP3700-9/13.

3) The LTUCR board has to be connected to port LTU1 of the RTMX in EcoServer.

Configuration Notes:

It is possible to migrate an existing IP Access Point (using an AP3700-9 or an AP3300 shelf) to an Enterprise Gateway via CHANGE-UCSU, as long as the Enterprise Gateway will be used with the same type of shelf.

Example:

LTU 17 is a regular IP Access Point that has to be migrated to an Enterprise Gateway.

To do so, deactivate the AP first via `DEACTIVATE-USSU:LTU=17;`.

Next, run `CHANGE-UCSU:UNIT=ENTGW,LTU=17;`.

Once the Enterprise Gateway is in place, run `ACTIVATE-USSU:UNIT=LTG,LTU=17;`.

NOTICE: Changing the shelf type is not possible through this step. If the shelf type needs to be also changed, then all relevant IP Access Point configuration has to be deleted and the Enterprise Gateway has to be configured from scratch.

The configuration of an Enterprise Gateway is done by following steps:

1) Configuration of the shelf as Enterprise Gateway using AMO UCSU

```
ADD-UCSU:UNIT=ENTGW,LTG=1,LTU=70,LTPARTNO="Q2347-X
 ",SRCGRP=22,FRMTYPE=AP370013,CONNTYPE=APDL,LSRTADDR=10.80.156.226,
APRTADDR=10.80.152.1,LOCID=999,LOCATION="HTS1-ECOAP22
 ",PLCHECK=YES,BCHLCNT=1,CONVLAW=NO,TCLASS=0,ALARMNO=0,IPMODE=IPV4,
DHCPV4=NO,DHCPV6=NO,SIUANN="1",SIUC="1",DTR="0",CNTRYCD="0",SIGMODE=HSRTCP;
```

2) Configuration of APRT entries
```
ADD-
APRT:TYPE=APNET,LTU=70,APIPADDR=10.156.22.1,NETMASK=255.255.255.248,TAIPADDR=0.0.0.0;
```

3) Startup connection
```
EXEC-USSU:MODE=CONFAP,LTU=70;
```

NOTICE: No need to ACT-USSU since the EXE-USSU:CONFAP will initiate also the loading process.

Example of BCSU output with successful installation and start up of OpenScape Enterprise Gateway:

```
LTG  1  LTU 70 SRCGRP 22 ALARMNO-LTU 0
-----+-----------+--------+---+-+-+---+-+-----------+-----------+-----------
     |           |        |   |S|H|AL-|N|           |           |
     | ASSIGNED  | MODULE |FCT|E|W|ARM|P| INSERTED  |    HW-    | MODULE
 PEN | MODULE    | TYPE   |ID |C|Y|NO |R| MODULE    |STATE INFO | STATUS
-----+-----------+--------+---+-+-+---+-+-----------+-----------+-----------
   1 | AVAILABLE                   0| | AVAILABLE  |           |
   2 | AVAILABLE                   0| | AVAILABLE  |           |
```

```
   3 | AVAILABLE                      0| | AVAILABLE |           |
   4 | AVAILABLE                      0| | AVAILABLE |           |
   5 | AVAILABLE                      0| | AVAILABLE |           |
   6 | AVAILABLE                      0| | AVAILABLE |           |
   7 | Q2347-X    EntGW    1          0| | Q2347-X   | 1  -09 - | READY
     |           LTUCR              | | Q2342-X   |           | READY
     +------------------------------+-+-----------+-----------+-----------
     | IP ADDRESS :  10. 80.156.226 B-CHANNELS :  11    BCHLCNT :    1
     | IP MODE    :     IPV4              DHCP V4  :   NO    DHCP V6 :   NO
     +------------------------------+-+-----------+-----------+-----------
   8 | AVAILABLE                      0| | AVAILABLE |           |
   9 | AVAILABLE                      0| | AVAILABLE |           |
  10 | AVAILABLE                      0| | AVAILABLE |           |
  11 | AVAILABLE                      0| | AVAILABLE |           |
  12 | AVAILABLE                      0| | AVAILABLE |           |
  13 | AVAILABLE                      0| | AVAILABLE |           |
  14 | AVAILABLE                      0| | AVAILABLE |           |
 +----+----+------------------------+-+-----------+-----------+--------+
 | NO SECURITY STATUS AVAILABLE, SINCE FEATURE SPE IS NOT ACTIVATED    |
 +---------+----------------------------------------------------------+
 AMO-BCSU -111     BOARD CONFIGURATION, SWITCHING UNIT
 DISPLAY COMPLETED;
```

4.4.2 Migration from a classic AP

Configuration Notes:

To do so, deactivate the AP first via :
`DEACTIVATE-USSU:UNIT=LTG,LTU=70;`

Change the configuration :
`CHANGE-UCSU:UNIT=ENTGW,LTU=70;`

After the RMX configuration hardware step should be made as follows :

1) Power off shelf
2) Change the NCUI with LTUCR
3) Connect the LTUCR LAN cable to ECO Server RTMX port 1
4) Power on shelf
5) Power on ECO server

After the EcoServer is up and running, activation from RMX is needed :
`ACTIVATE-USSU:UNIT=LTG,LTU=70;`

> **NOTICE:** Changing the shelf type is not possible through this step. If the shelf type needs to be also changed, then all relevant IP Access Point configuration has to be deleted and the Enterprise Gateway has to be configured from scratch.

4.4.3 Configuration of EntGW to support a second LTU shelf (XEGW)

It is possible to migrate an existing Enterprise Gateway (using an AP3700-9 or AP3700-13) to an Enterprise Gateway with two shelves.

NOTICE:

LTU represents the AP number of the LTU shelf. The possible values are in the range of 17 to 99.

XEGWID represents the internal ID. It is the same for both shelves. The possible values are in the range of 1 to 99.

XEGSHLF represents the fix ID: 1 is used for first shelf and 2 for the second shelf.

BCHLCNT represents the amount of B-channel. It is restricted to 120 channel and it must be configured with the same value for both shelves (overall value for both shelves).

Before changing the configuration it is **mandatory** to deactivate the already existing shelf.

Example:

```
DEACTIVATE-USSU:LTU=70;
EXEC-USSU:MODE=DELAP,LTU=70;
```

An Enterprise Gateway with two shelves is using the same APRT information for both shelves.

The existing one must be deleted and added again to configure the second shelf.

Before APRT delete, we recommend to save it with REG-APRT:

```
REG-APRT:APNET,70;
DEL-APRT:APNET,70;
```

Migration is done changing the configuration for the existing shelf:

```
CHANGE-UCSU:UNIT=ENTGW,LTU=70,XEGWID=7,XEGWSHLF=1;
```

And adding the second shelf:

```
ADD-UCSU:UNIT=ENTGW,LTG=1,LTU=71,LTPARTNO="Q2347-
X",SRCGRP=70,FRMTYPE=AP37009,CONNTYPE=APDL,LSRTADDR=10.9.0.176,APRTADDR=10.9.0.254,LOCID=070,LOCATI
 PLCHECK=NO,BCHLCNT=120,CONVLAW=NO,TCLASS=0,ALARMNO=0,IPMODE=IPV4,DHCPV4=NO,DHCPV6=NO,SIUANN="1",SI
 XEGWID=7,XEGWSHLF=2;
```

APRT configuration needs to be triggered only once (it is propagated automatically for the second shelf). It is mandatory to configure APRT **after** adding both shelves.

```
ADD-
APRT:TYPE=APNET,LTU=70,APIPADDR=192.168.109.70,NETMASK=255.255.255.0,TAIPADDR=0.0.0.0;
EXEC-USSU:MODE=CONFAP,LTU=70;
EXEC-USSU:MODE=CONFAP,LTU=71;
```

Migration of two IPDA Access points to an Enterprise-Gateway with two shelves:

Both shelves need to be deactivated and deleted in APRT. Afterwards, CHA-UCSU is sufficient:

Example:

```
CHANGE-UCSU:UNIT=ENTGW,LTU=70,XEGWID=7,XEGWSHLF=1;
CHANGE-UCSU:UNIT=ENTGW,LTU=71,XEGWID=7,XEGWSHLF=2;
```

AP Emergency:

Before deleting an AP shelf in APRT, it needs to be removed from the AP Emergency Group. Afterwards, only Shelf 1 needs to be added again. There is no need to add the second shelf.

> **IMPORTANT:**
> - The first Enterprise Gateway Shelf must be connected to RTMX port 1.
> - The second Enterprise Gateway Shelf must be connected to RTMX port 2.

Extended EntGW output:

```
DISP-BCSU:TBL,1,70;
H500:  AMO BCSU  STARTED


 LTG  1  LTU 70  SRCGRP 70   ALARMNO-LTU 0
-----+-----------+--------+---+-+-+---+-+-----------+-----------+-----------
     |           |        |   |S|H|AL-|N|           |           |
     | ASSIGNED  | MODULE |FCT|E|W|ARM|P| INSERTED  |   HW-     | MODULE
 PEN | MODULE    | TYPE   |ID |C|Y|NO |R| MODULE    |STATE INFO | STATUS
-----+-----------+--------+---+-+-+---+-+-----------+-----------+-----------
   1 | Q2324-X500 STMI4     1      0| | Q2324-X500 | 1 -G1 - | READY
     +-------------------------------+-+-----------+-----------+-----------
     | IP ADDRESS :  10. 9.  0.171       B-CHANNELS : 60    BCHLCNT :  60
     | IP MODE    :    IPV4              DHCP V4  :   NO    DHCP V6 :   NO
     | BLOCK NO   :  23                  PRERESERVED LINES ASSIGNED :   NO
     |  1. FUNCT  : HG3550     1 LINES   B-CHANNELS :  30    BCHLCNT :  30
     |  2. FUNCT  : HG3530   120 LINES   B-CHANNELS :  20    BCHLCNT :  20
     |  3. FUNCT  : SIP      120 LINES   B-CHANNELS :  10    BCHLCNT :  10
     +-------------------------------+-+-----------+-----------+-----------
   2 | Q2163-X    STMD2     1      0| | Q2163-X    | 1 -09 - | READY
   3 | Q2169-X100 SLMOP     1      0| | Q2169-X100 | 1 -11 - | READY
   4 | Q2168-X    SLMO24    1      0| | Q2168-X    | 1 -10 - | READY
   5 | Q2246-X    SLMA24          0| | Q2246-X    | 1 -10 - | READY
   6 | Q2347-X    EntGW     1      0| | Q2347-X    | 1 -09 - | READY
     |            LTUCR              | | Q2342-X    | 1 -04 - | READY
     +-------------------------------+-+-----------+-----------+-----------
     | IP ADDRESS :  10. 9.  0.176       B-CHANNELS : 120   BCHLCNT : 120
     | IP MODE    :    IPV4              DHCP V4  :   NO    DHCP V6 :   NO
     +-------------------------------+-+-----------+-----------+-----------
   7 | Q2169-X100 SLMOP     1      0| | Q2169-X100 | 1 -07 - | READY
   8 | Q2324-X510 STMI4     1      0| | Q2324-X510 | 1 -12 - | READY
     +-------------------------------+-+-----------+-----------+-----------
     | IP ADDRESS :  10. 9.  0.172       B-CHANNELS : 60    BCHLCNT :  60
     | IP MODE    :    IPV4              DHCP V4  :   NO    DHCP V6 :   NO
     | BLOCK NO   :  23                  PRERESERVED LINES ASSIGNED :   NO
     |  1. FUNCT  : HG3550     1 LINES   B-CHANNELS :  30    BCHLCNT :  30
     |  2. FUNCT  : HG3530   120 LINES   B-CHANNELS :  20    BCHLCNT :  20
     |  3. FUNCT  : SIP      120 LINES   B-CHANNELS :  10    BCHLCNT :  10
     +-------------------------------+-+-----------+-----------+-----------
```

```
      9 | AVAILABLE                      0| | AVAILABLE  |          |
     10 | Q2196-X   DIU-N2   1           0| | Q2196-X    | 1 -07 - | READY


     +----+----+-------------------------+-+-----------+-----------+--------+
     | NO SECURITY STATUS AVAILABLE, SINCE FEATURE SPE IS NOT ACTIVATED    |
     +---------+----------------------------------------------------------+
     AMO-BCSU -111      BOARD CONFIGURATION, SWITCHING UNIT
     DISPLAY COMPLETED;


     DISP-BCSU:TBL,1,71;
     H500: AMO BCSU  STARTED


      LTG  1  LTU 71  SRCGRP 70   ALARMNO-LTU 0
     -----+-----------+--------+---+-+-+---+-+-----------+-----------+------------
          |           |        |   |S|H|AL-|N|           |           |
          | ASSIGNED  | MODULE |FCT|E|W|ARM|P| INSERTED  |    HW-    | MODULE
     PEN  | MODULE    | TYPE   |ID |C|Y|NO |R| MODULE    |STATE INFO | STATUS
     -----+-----------+--------+---+-+-+---+-+-----------+-----------+------------
      1 | Q2316-X    STMI2    1           0| | Q2316-X   | 1 -07 - | READY
        +-------------------------------+-+-----------+-----------+------------
        | IP ADDRESS : 10. 9. 0.178       B-CHANNELS : 60   BCHLCNT :  60
        | IP MODE   :    IPV4             DHCP V4   :  NO   DHCP V6 :   NO
        | BLOCK NO  : 23                  PRERESERVED LINES ASSIGNED :   NO
        |  1. FUNCT : HG3550     1 LINES  B-CHANNELS : 30   BCHLCNT :  30
        |  2. FUNCT : HG3530   120 LINES  B-CHANNELS : 20   BCHLCNT :  20
        |  3. FUNCT : SIP      120 LINES  B-CHANNELS : 10   BCHLCNT :  10
        +-------------------------------+-+-----------+-----------+------------
      2 | Q2217-X    STMD3    1           0| | Q2217-X   | 1 -05 - | READY
      3 | Q2169-X100 SLMOP    1           0| | Q2169-X100| 1 -07 - | READY
      4 | Q2168-X    SLMO24   1           0| | Q2168-X   | 1 -10 - | READY
      5 | Q2191-X    SLMA3               0| | Q2191-X   | 1 -03 - | READY
      6 | Q2347-X    EntGW    1           0| | Q2347-X   | 1 -09 - | READY
        |            LTUCR              | | Q2342-X   | 1 -04 - | READY
        +-------------------------------+-+-----------+-----------+------------
        | IP ADDRESS : 10. 9. 0.176       B-CHANNELS : 120  BCHLCNT : 120
        | IP MODE   :    IPV4             DHCP V4   :  NO   DHCP V6 :   NO
        +-------------------------------+-+-----------+-----------+------------
      7 | Q2343-X   STMIX    1          0|*| |           |           | NPR
        +-------------------------------+-+-----------+-----------+------------
        | IP ADDRESS : 10. 9. 0.174       B-CHANNELS : 60   BCHLCNT :  60
        | IP MODE   :    IPV4             DHCP V4   :  NO   DHCP V6 :   NO
        | BLOCK NO  : 23                  PRERESERVED LINES ASSIGNED :   NO
        |  1. FUNCT : HG3550     1 LINES  B-CHANNELS : 30   BCHLCNT :  30
        |  2. FUNCT : HG3530   120 LINES  B-CHANNELS : 20   BCHLCNT :  20
        |  3. FUNCT : SIP      120 LINES  B-CHANNELS : 10   BCHLCNT :  10
        +-------------------------------+-+-----------+-----------+------------
      8 | Q2324-X500 STMI4    1           0| | Q2324-X500| 1 -11 - | READY
        +-------------------------------+-+-----------+-----------+------------
        | IP ADDRESS : 10. 9. 0.173       B-CHANNELS : 60   BCHLCNT :  60
        | IP MODE   :    IPV4             DHCP V4   :  NO   DHCP V6 :   NO
        | BLOCK NO  : 23                  PRERESERVED LINES ASSIGNED :   NO
        |  1. FUNCT : HG3550     1 LINES  B-CHANNELS : 30   BCHLCNT :  30
        |  2. FUNCT : HG3530   120 LINES  B-CHANNELS : 20   BCHLCNT :  20
        |  3. FUNCT : SIP      120 LINES  B-CHANNELS : 10   BCHLCNT :  10
        +-------------------------------+-+-----------+-----------+------------
      9 | AVAILABLE                      0| | AVAILABLE  |          |
```

```
  10 | Q2196-X    DIU-N2     1        0| | Q2196-X   | 1  -07 -  | READY


+----+----+--------------------------+-+-----------+-----------+--------+
| NO SECURITY STATUS AVAILABLE, SINCE FEATURE SPE IS NOT ACTIVATED     |
+---------+------------------------------------------------------------+
AMO-BCSU -111      BOARD CONFIGURATION, SWITCHING UNIT
DISPLAY COMPLETED;
```

Additional configuration examples

- Migration of two already configured Access Points (LTU 40 and 45) to an Enterprise Gateway, with two shelves:

```
DEACT-USSU:1,40;
DEACT-USSU:1,45;

CHANGE-UCSU:UNIT=ENTGW,LTU=40;
CHANGE-UCSU:UNIT=ENTGW,LTU=45;

EXEC-USSU:MODE=DELAP,LTU=40;
EXEC-USSU:MODE=DELAP,LTU=45;

REG-APRT:APNET,40;
ADD-APRT:APNET,40,10.7.159.146,255.255.224.0,0.0.0.0;

REG-APRT:APNET,45;
ADD-APRT:APNET,45,10.7.159.147,255.255.224.0,0.0.0.0;

DEL-APRT:APNET,40;
DEL-APRT:APNET,45;

CHANGE-UCSU:UNIT=ENTGW,LTU=40,XEGWID=40,XEGWSHLF=1;
CHANGE-UCSU:UNIT=ENTGW,LTU=45,XEGWID=40,XEGWSHLF=2;

ADD-APRT:APNET,40,10.7.159.146,255.255.224.0,0.0.0.0;

EXEC-USSU:MODE=CONFAP,LTU=40;
EXEC-USSU:MODE=CONFAP,LTU=45;
```

- Migration of an active AP (LTU 68) to an existing Enterprise Gateway (LTU 60):

```
DEACT-USSU:1,60;
DEACT-USSU:1,68;

CHANGE-UCSU:UNIT=ENTGW,LTU=68;

EXEC-USSU:MODE=DELAP,LTU=60;
EXEC-USSU:MODE=DELAP,LTU=68;

DEL-APRT:APNET,60;
DEL-APRT:APNET,68;

CHANGE-UCSU:UNIT=ENTGW,LTU=60,XEGWID=60,XEGWSHLF=1;
CHANGE-UCSU:UNIT=ENTGW,LTU=68,XEGWID=60,XEGWSHLF=2;

ADD-APRT:APNET,60,10.7.159.166,255.255.224.0;
```

```
EXEC-USSU:MODE=CONFAP,LTU=60;
EXEC-USSU:MODE=CONFAP,LTU=68;
```

- Migration of a new AP (LTU 68) to an existing Enterprise Gateway (LTU 60):

```
DEACT-USSU:1,60;

EXEC-USSU:MODE=DELAP,LTU=60;

REG-APRT:APNET,60;
DEL-APRT:APNET,60;

CHANGE-UCSU:UNIT=ENTGW,LTU=60,XEGWID=60,XEGWSHLF=1;
ADD-UCSU:ENTGW,1,68,"Q2347-
X",68,AP37009,APNW,10.9.0.254,10.7.159.254,068,"AP68",,,NO,120,NO,0,0,IPV4,NO,NO,1,1,0,,,0,HSRTC

ADD-APRT:APNET,60,10.7.159.166,255.255.224.0;

EXEC-USSU:MODE=CONFAP,LTU=60;
EXEC-USSU:MODE=CONFAP,LTU=68;
```

4.4.4 Revert configuration of EntGW to support a second LTU shelf (XEGW)

Precondition: both shelves are already configured as XEGW and OOS (Out Of Service). It is important to handle the trailer first.
```
CHA-UCSU:ENTGW,LTG = 1, LTU = <ap-trailer>,XEGWID=0;
CHA-UCSU:ENTGW,LTG = 1, LTU = <ap-bearer>,XEGWID=0;
```

Further to this configuration, the HW and IP addresses must be accordingly adapted in APRT.

4.4.5 Reference Clock

There are no changes to the AMO REFTA commands for setting up the reference clock table:
```
ADD-
REFTA:TYPE=CIRCUIT,PEN=1-19-3-1,PRI=74,BLOCK=N,READYASY=N;
ADD-
REFTA:TYPE=CIRCUIT,PEN=1-19-10-0,PRI=75,BLOCK=N,READYASY=N;
```

The DISPLAY-REFTA display is extended as follows however: Every selected reference clock record of a OpenScape Access module with a digital trunk connection is identified by an asterisk (*). The asterisk (*) is replaced by an X for the selected clock master with the highest priority.
```
DIS-REFTA:TYPE=CIRCUIT,KIND=ACT;

H500:  AMO REFTA STARTED

  +-------------------------------------------------------------------+
  |           R E F E R E N C E   C L O C K   C I R C U I T S         |
  +--------------+---------+----------+---+------+------+------+-----+------+
  | PEN          | MODULE  | DEVICE   |PRI|ERROR |BLOCK |SUPP. |READY|SRCGRP|
  |              |         |          |   |      |      |      |BUT  |      |
  |              |         |          |   |      |      |      |ASYN.|      |
```

```
+--------------+---------+----------+---+------+------+------+-----+------+
|  1-19-  3- 1 | DIUT2   | S2CONN   | 74| 16000|   N |    *| N |     2|
|  1-19- 10- 0 | DIUT2   | S2CONN   | 75| 16000|   N |    X| N |     2|
+--------------+---------+----------+---+------+------+------+-----+------+
AMO-REFTA-243        REFERENCE CLOCK TABLE

DISPLAY COMPLETED;
```

In the example, a reference clock has been activated on both DIUT2 modules by a connected AMT, which means that both records therefore get at least one *.

The activated record 1-19-10-0 has a higher priority than the activated record 1-19-3-1 and is therefore selected as the clock master (* -> X). The clock master supplies the synchronization for all OpenScape Access modules in the same shelf, which do not have their own trunk connection (e.g. OpenScape Access SLO, OpenScape Access SLA, ...).

This means that the OpenScape Access modules with their own clock generator fetch their own synchronization. The clock master supplies the OpenScape Access modules that do not have their own clock generator.

NOTICE: If an Enterprise Gateway is used with a second LTU shelf the reference clock can only be used from the first shelf.

4.4.6 SoftGate on OpenScape Enterprise Gateway

Starting with OpenScape 4000 V8 R2 it is possible to configure and start a SoftGate instance ("Integrated SoftGate" / "iSoftGate") on a running Enterprise Gateway be it Standalone Enterprise Gateway or Survivable Enterprise Gateway.

Configuration can be done the same way as a classic SoftGate. For more details please see **OpenScape 4000, Volume 4: IP Solutions, Service Documentation** and **OpenScape 4000, Installation, Configuration and Migration, Installation Guide**.

Important notes:

Direct SSH access to the integrated SoftGate on Enterprise Gateway is not possible for technical reasons.

Assistant Gateway Dashboard therefore offers SSH connection to the hosting Enterprise Gateway platform, where a direct shell to the iSG container can be established via command: `sg2d console`

At the end of the session you can leave the shell by typing the `exit` command or the console session by typing `CTRL A and D`.

iSoftGate can be disabled or reconfigured using the dedicated Portal menu.

4.5 Installing the License

For information on licensing please refer to the documentation **OpenScape 4000, Installation, Configuration and Migration**.

The OpenScape 4000 Enterprise Gateway has its own license type. It is comparable to a SoftGate Base license, but providing a different product ID.

The license is version dependent and valid forever (no expiry) and is checked out during LW startup (like a SG base license).

The license is based on ALI and contains a SIEL-ID.

A SLES update protection license is required in the host for each Enterprise Gateway.

In case the integrated SoftGate (iSG) is configured, no secondary SLES update protection license is required in the host, but nevertheless a normal SoftGate Base license is needed for the iSG.

License files shall be applied/uploaded to /opt/cla/import folder on EntGW Platform, via CLM or via WBM (Configuration -> Basic Settings -> License Import).

Assistant GW manager displays the SIEL-ID of each EntGW and Survivable EntGW.

5 Troubleshooting for OpenScape Enterprise Gateway

If a hardware error occurs, the entire component must be replaced. A reinstallation/configuration is then required.

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