Unify OpenScape Branch

OpenScape Branch V10

Installation Guide
12/2024

Mitel

Notices

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1 OpenScape Branch – Introduction

OpenScape Branch is a Session Initiation Protocol (SIP) based appliance used in a Voice over IP enterprise communication environment for OpenScape Voice solutions to empower the remote branch office.

1.1 About This Guide

This book guides installation personnel through the process of installing the hardware and software up to and including the point where provisioning can begin and the expanded network components can be installed and verified. The user must refer to the provisioning and expanded network component document (s) to support that phase of the system installation process.

Intended Audience

Prerequisite Knowledge

The audience for this guide is Unify Professional Services and Back Level Support personnel. Note that this does not preclude other Unify personnel, customers, or third-party service providers who have the necessary prerequisite knowledge from using the guide.

This guide is written to the user who has:

- Successfully completed the Unify OpenScape Voice installation and technical training courses.
- Advanced SuSE Linux (OpenSuSE) operating system and Microsoft Windows operating systems knowledge and experience.
- Basic knowledge of the third-party platforms and equipment used for OpenScape Voice including: their physical characteristics, their assembly, their documentation (installation, service, and troubleshooting), and the documentation web sites associated with the third-party platform and equipment manufacturers.
- Basic knowledge of the industry standards and specifications utilized by OpenScape Voice and associated equipment.

1.2 Security Information

Refer to the OpenScape Branch Security Checklist - Planning Guide for the measures to be taken to secure OpenScape Branches.

> **IMPORTANT:**
>
> It is of vital importance that security measures outlined in the Security Checklist are executed.

In addition, other security measures should be taken to secure the network used for the OpenScape Voice solution.

1.3 Safety Information

The procedures in this documentation require an understanding of and adherence to local safety practices, the safety practices identified in this documentation, and the safety practices identified in the third-party documentation.

Special Notices

Safety

General Safety

Potentially dangerous situations and information of special importance are noted throughout this documentation. The following alert indicators are used:

IMPORTANT:

An important notice calls attention to conditions that, if not avoided, may damage or destroy hardware or software, or may result in unrecoverable data loss

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NOTICE:

A notice calls attention to important additional information

The following information is included in this publication for the use and safety of installation and maintenance personnel:

- Do not attempt to lift objects that you think are too heavy for you.
- Do not wear loose clothing; tie back your hair while working on machines.
- Wear eye protection when you are working in any conditions that might be hazardous to your eyes.
- After maintenance, reinstall all safety devices such as shields, guards, labels, and ground wires. Replace worn safety devices.
- If you feel any action is unsafe, notify your manager before proceeding.
- Do not use a telephone to report a gas leak while in the vicinity of the leak.

Safety with Electricity

General Installation

High Voltage

CAUTION

- Risk of Explosion if Battery is replaced by an incorrect type

  Dispose of used batteries according to the instructions
- Only qualified service personnel should install this device. Users should not attempt to perform this function themselves. The installer must ensure that the equipment is permanently connected equipment, pluggable type B or connected to a socket-outlet that has been checked to ensure that it is reliably earthed in accordance with national electric codes.

- The power outlet socket must be located near the equipment and must be easily accessible.
- Size a length of green-with- yellow stripe copper ground wire to run from protective earth marked terminal to the existing or planned grounding system. The ground wire must be a minimum of 18 AWG recommended for runs up to 45m (~150ft)
- Caution: to reduce the risk of fire, use only No. 26 AWG or larger UL Listed or CSA Certified telecommunication line cord

- Observe all safety regulations and read the warnings, cautions, and notes posted on the equipment.
- Find the switch to power off the cabinet. Read the posted instructions.
- Ensure that a machine cannot be powered on from another source or controlled from a different circuit breaker or disconnecting switch.
- When a procedure requires that you power off the system:

  – Lock the wall box-switch in the off position.
  – Attach a DO NOT OPERATE tag to the wall box-switch.
- Do not work alone. Work with another person who knows the locations of the power-off switches, especially if you are working with exposed electrical circuits.
- Follow the instructions in the manual carefully, especially when working with circuits that are powered. Disconnect power when instructed to do so in the procedures
- Disconnect all power before working near power supplies unless otherwise instructed by a maintenance procedure.
- Disconnect all power before installing changes in machine circuits unless otherwise instructed by a maintenance procedure.
- High voltages capable of causing shock are used in this equipment. Be extremely careful when measuring high voltages and when servicing cards, panels, and boards while the system is powered on.
- Do not wear jewelry or other metal objects.
- When possible, work with one hand so that a circuit is not created. Keep the other hand in your pocket or behind your back.
- Use caution when installing or modifying telephone lines. Never install telephone wiring during an electrical storm.
- Never install a telephone jack where it can get wet unless the jack is specifically designed for wet conditions.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Avoid using a telephone (other than the cordless type) during an electrical storm due to the remote risk of shock from lightning.

Equipment Room

- Look for hazards in your area and eliminate them. Examples are moist floors, ungrounded power extension cables, power surges, and missing safety grounds.
- Rubber electrostatic mats will not protect you from electrical shock. Do not use them for this purpose. Stand on suitable rubber mats to insulate you from grounds such as metal floor strips and machine frames.
- Do not use tools covered with a soft material that does not insulate you when working with powered circuits. Use only tools and testers suitable for the job, approved by Unify.
- Do not use worn or broken tools or testers; inspect them regularly.

- Set controls on testers correctly and use approved probe leads and accessories intended for that tester.
- The surface of a mirror is conductive. Do not touch powered circuits with a mirror. To do so can cause personal injury and machine damage.
- Do not store combustible gases or flammable materials in cabinets near the site.

Emergencies

What to Do in and Emergency

- In the event of an accident, use caution and remain calm and controlled.
- Always switch of the power supply before touching the victim.
- If you are not able to disconnect the power supply, use a nonconductive object, such as a wooden rod, to push or pull the victim away from electrical contact.
- Administer **First Aid**.
- Immediately **Call for Help**.

First Aid

- Be familiar with basic first aid procedures for electrical shock. A fundamental knowledge of 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 are trained and certified, administer cardiac compression if the victim's heart is not beating.

Call for Help

- Immediately call a rescue group, ambulance or hospital. 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

Reporting Accidents

- Report to your manager all accidents, near accidents, and possible hazards to ensure their causes are resolved as soon as possible.
- Report any electric shock, no matter how small.

1.4 Labelling

	The compliance of the equipment according to EU directives is confirmed by the CE mark. This Declaration of Conformity and, where applicable, other existing declarations of conformity as well as further information on regulations that restrict the usage of substances or affect the declaration of substances used in products can be found in the Unify Expert WIKI at http://wiki.unify.com under the section "Declarations of Conformity".
CE	

1.5 OpenScape Branch — Overview

The OpenScape Branch appliance operates in several deployment modes and runs on different hardware platforms depending on the number of users. OpenScape Branch Assistant is a tool to manage functions specific to the OpenScape Branch platform.

Functional Overview

The OpenScape Branch is a Unify developed SIP based Voice over IP appliance that empowers the remote branch offices on an OpenScape Voice network by leveraging the benefits of an open architecture VoIP enterprise environment. The main objective of the OpenScape Branch is to assure continued communications services to the branch with a rich feature set of survivability capabilities at the remote branch location during the loss or degradation of service between the remote branch and the main office.
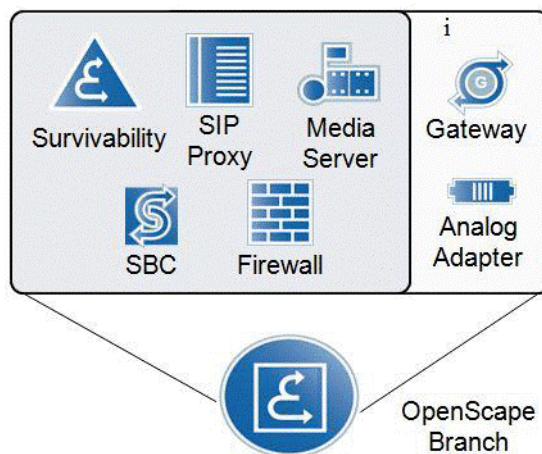
In addition to survivability, all OpenScape Branch models include Proxy, Media Server, Branch Session Border Controller (SBC), and Branch SIP Trunking functionality. The OpenScape Branch 50i available in V1 R3 and later also provides the additional functionality of integrated Analog Adapter and PSTN Gateway (GW). All of these functions that are now also available locally at the branch increase the value of the branch and at the same time reduces the bandwidth requirement to the central location.

- The **OpenScape Branch 500i** (OpenScape Branch V2 and later) supports up to 4 or 8 E1/T1 PRI/CAS interfaces without the need of an external gateway unit. The OSB 500i also supports SIP registered lines, Integrated Media Server and Auto Attendant features; and does not support FXS or FXO interfaces.

- The local **Media Server** supports tones, announcements and conferencing which reduces the bandwidth needed to provide the same resources from a central location, hence yielding direct operational cost savings.

- The **Session Border Controller** (SBC) provides security functions like Firewall and Virtual Private Network (VPN) while interfacing with a public network. It also provides the functional templates of Branch SBC for a secure remote branch and central location communication. Additionally the support of SIP Trunking provides direct interface to SIP Service Providers (SSP) from the remote branch.

- The **OpenScape Branch 50i** has the additional functionality of integrated Gateway that provides the efficient inter-connectivity of the OpenScape Branch 50 to the public network via BRI S0, Analog or PRI (OpenScape Branch V1R4 and later) trunk interfaces without the need of an external gateway unit.

  It also supports the **integrated Analog Adapter** to interconnect to analog phones or FAX machines without the need of an additional external unit. Thus being a very attractive solution for the small branch with up to 80 registered lines.

- The OpenScape Branch is fully manageable via a local web based Graphical User Interface (GUI) or via the **Common Management Platform** (CMP) as a single network element on the inside LAN network, making it easy to manage together with the other OpenScape solution components that comprise the Enterprise Network.

- The OpenScape Branch currently shares common support tools with OpenScape Session Border Controller.

- The OpenScape Branch is offered on several **HW platforms** allowing a wide range of maximum user capacities of 80, 250, 1000 and 6000 registered lines.

> **NOTICE:**
>
> Please note that primary lines, secondary call appearances and phantom lines need to be included in the total count.

- Up to **3000 OpenScape Branch** units can be supported in an OpenScape Voice network. The OpenScape Voice network will support a maximum of 100,000 lines. The total number of users can not exceed the number of users supported by an OpenScape voice system.

Software Licensing

OpenScape Session Branch deployment requires licensing of the product. A CAPEX licensing model and OPEX model (OpenScape Branch V2 and later) is used for Enterprise and hosted environments.

1) **CAPEX Licensing**

   CAPEX licensing is used for Enterprise environments where the customer owns the licenses and does not wish to lease the licenses on a monthly basis. The following license type are associated with OpenScape Branches:

   • **OpenScape Branch Base**
   • **OpenScape Branch User**
   • **Auto Attendant feature**
   • **Backup ACD feature**
   • **OpenScape SBC Session License** (used for OpenScape Branch and OpenScape SBC)

2) **OPEX Licensing**

   OPEX licensing is used for Enterprise environments where the customer wishes to lease the licenses on a monthly basis and consists of two parts:

   • **Product Instance** - The Product Instance is purchased once for each product and consists of all of the licenses necessary to equip a product for its maximum capacity, including all major features. The Product Instance enables the Monthly Subscription Licenses for the OpenScape Branch and applications.
   • **Subscription License**-The Subscription License is the monthly charge for a single user to use a single product. If a single user has voice, voice mail and Unified Communications (UC), then they would pay for 3 Subscription Licenses – one for OpenScape Voice, one for OpenScape Branch and one for OpenScape UC. The Subscription Licenses are based upon the product usage that is reported monthly and the billing is calculated on actual service consumption.

OpenScape Branch in the Network

The following overview shows networking scenarios for OpenScape Branches. In addition, OpenScape Branch V1R4 and later supports the capability to configure multiple OpenScape Branch 50i servers in a single branch/remote branch. This allows support of a greater number of analog trunks to meet the customers' required capacity.
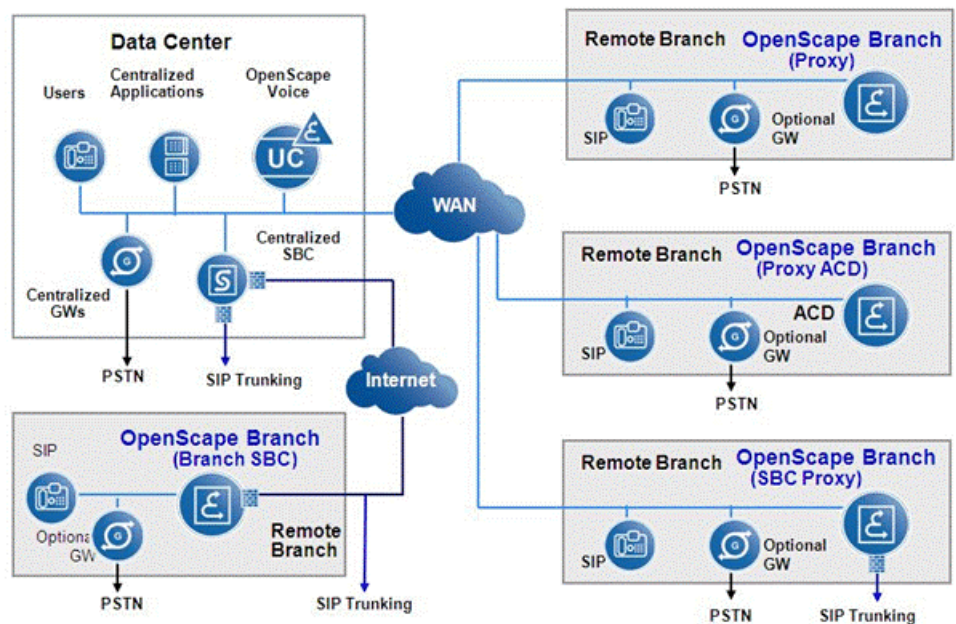
Operating Modes — Overview

The OpenScape Branch has the flexibility to support, depending on the network topology, four different operating modes:

• **Proxy**
• **Proxy ATA**
• **Proxy ACD**
• **SBC Proxy**
• **Branch SBC**

The OpenScape Branch can be configured via the configuration interface (CMP or local GUI) to work in one of the above mentioned modes.

The OpenScape Session Border Controller V1 R1 requires mode "Central SBC" defined under OpenScape Branch configuration. Refer to OpenScape Session Border Controller documentation for details.

• **Central SBC**

Proxy Operating Mode
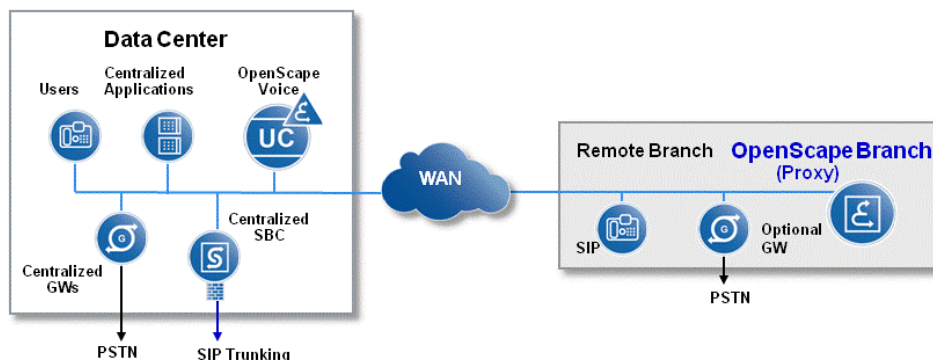
The Proxy mode is for regular proxy usage when the branch is connected via a private network.

Proxy ATA Operating Mode

There are several OpenScape 50i Proxy ATA applications (Version 2).

OpenScape 50i Proxy ATA Connected via a Proxy OpenScape Branch:

In the figure below, the upstream device is shown as an OpenScape Branch with an external gateway. An alternative to this arrangement would be to use an OpenScape Branch 50i with an internal gateway. The OpenScape Branch is connected to the OpenScape Voice over a corporate WAN, but it could also be connected over a LAN if the Remote Branch is co-located with the OpenScape Voice.

The Proxy ATA registers with only one OpenScape Branch. The Proxy ATA will not support SIP Service Provider trunks.

In this application, the OpenScape Voice can be either in simplex node, or a pair of nodes operating as a cluster (co-located).

If Survivability is required for the OpenScape Branch 50i A024/A048, it will require another upstream device to provide its connectivity to the PSTN. In this configuration, it is required that the upstream device be in the same physical location as the OpenScape Branch 50i A024/A048.

Connected via a Proxy OpenScape Branch
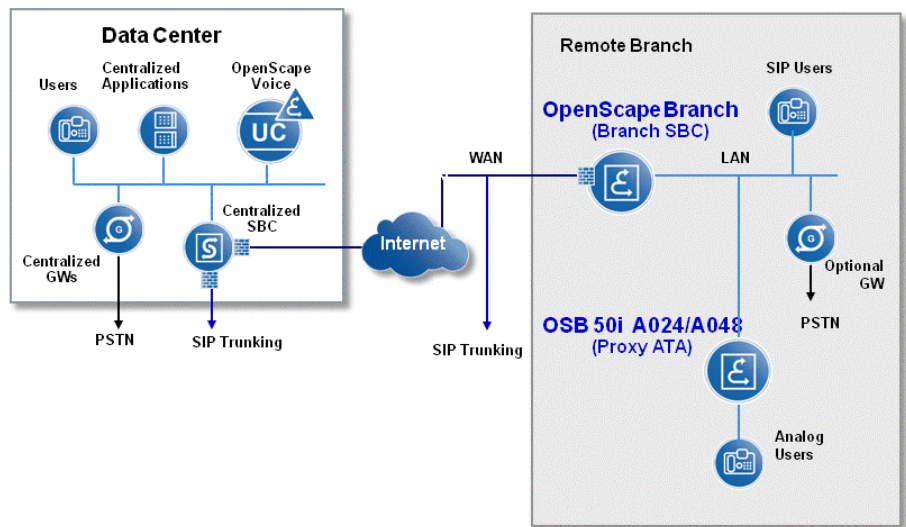
OpenScape 50i Proxy ATA Connected Directly to OpenScape Voice:

The OpenScape Branch 50i A024/A048 can also be utilized as an Analog Terminal Adapter (ATA) connected directly to an OpenScape Voice. The figure below, shows the configuration where the connection to the OpenScape Voice is across a WAN.

Connected Directly to OpenScape Voice
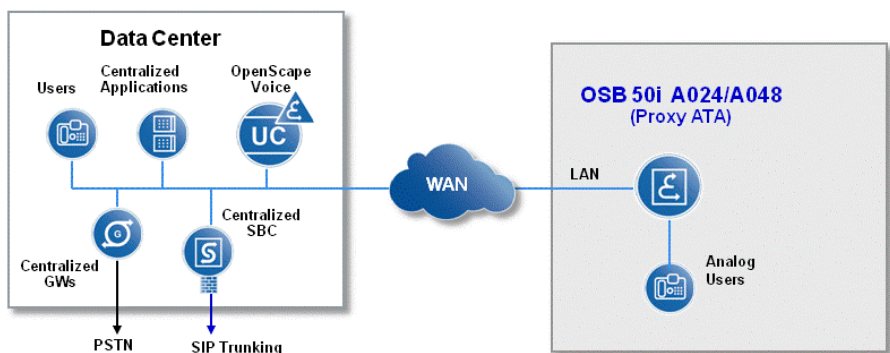
OpenScape 50i Proxy ATA Connected to OpenScape Branch 50i in Branch SBC Mode:

This application shows the OpenScape Branch 50i A024/A048 connected to a OpenScape SBC via another OpenScape Branch running in Branch SBC mode.

Connected to OpenScape Branch 50i in Branch SBC Mode
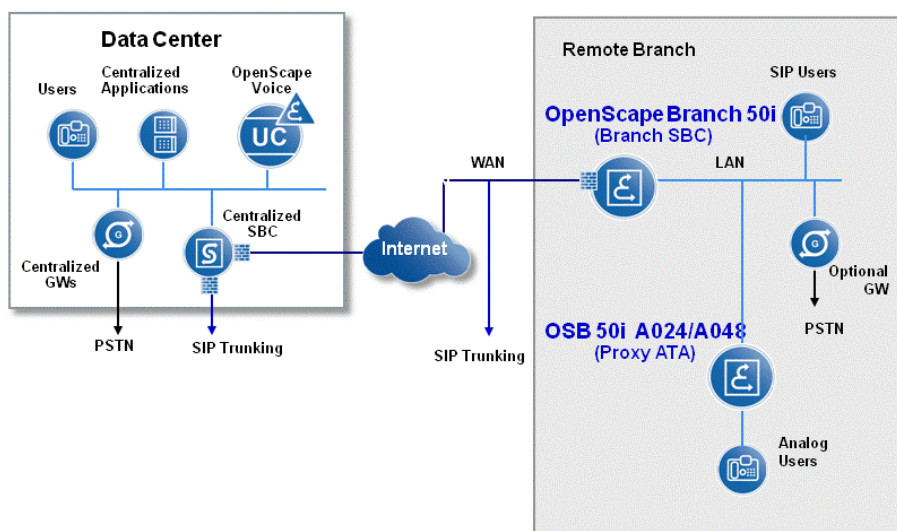
Proxy ACD Operating Mode
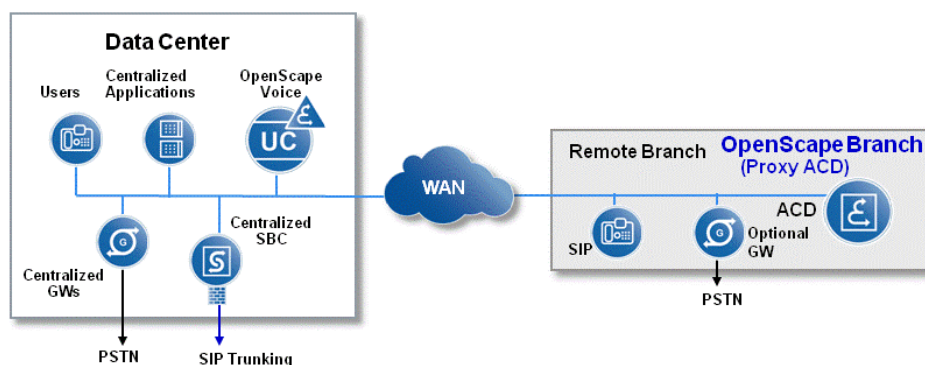
The Proxy ACD (Automatic Call Distribution) mode is for regular proxy connected via a private network and the capability to provide ACD functionality during survivability.

Session Border Controller (SBC)

• Supported Templates

The OpenScape Branch currently supports 2 Session Border Controller (SBC) templates.

– Branch SBC
– Branch SBC SIP Trunking

The diagram below illustrates the two supported templates. Please note that Branch SBC is only supported at the Branch SBC operating mode while

the Branch SBC SIP trunking is supported at Branch SBC and SBC Proxy operating modes.
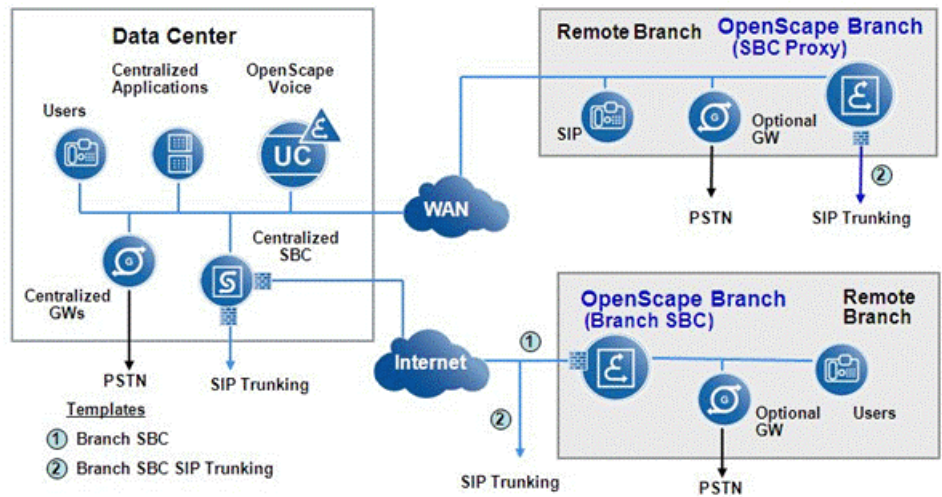
Please note that the OpenScape Branch does not support the Remote Worker template. This function is normally supported by a centralized SBC.

• Supported Capacities

The SIP Trunking capacity varies per OpenScape Branch model. The table below illustrates the maximum number of SIP Trunks and SIP Trunking sessions per OpenScape Branch model.

	50i	50i Axxx	50/250	500i	1000	6000
Max. number of SIP Trunks	1	0	1	1	10	10
Max. number of SIP Service Provider Profiles	1	0	1	1	10	10
Max. number of SIP Trunking Sessions	20	0	30	60	120	400

Please note that SBC Session licenses are required for each SIP Trunking session that is supported by the OpenScape Branch.

• Supported SIP Service Provider (SSP)

The table below lists the currently tested SIP Service Provides with which the OpenScape Branch has been tested with.

SIP Service Providers	Comments
BT HUCS	Tested
BT 21CN	Tested
Gamma (UK)	Tested - minor exceptions
Global Crossing	Tested
Skype Connect	Certified

SIP Service Providers	Comments
Verizon	Verizon does not require Global Certification, however for each installation it needs to be go through the Verizon Field Trial process prior the cut-over.

Please note that, despite the effort to keep the document current, this list may become obsolete as new SIP Service Providers are tested. There is a Published Wiki page (at http://wiki.dev.global-intra.net/publishwiki/index.php/Collaboration_with_VoIP_Providers) where all the SIP Testing status is maintain. Please consult there if there is already an activity with the SSP that you are looking for.

The interconnection of the OpenScape Branch to other not listed SIP Service Provides needs to be first tested and verified for any interoperability issue. Please start the process with the submission of an OSIRIS Project Specific Request (PSR) including the project and SSP name for development support on this activity.

Survivability

Depending on the network operating state, the OpenScape Branch can be in either one of these three Operational states:

• **Normal**
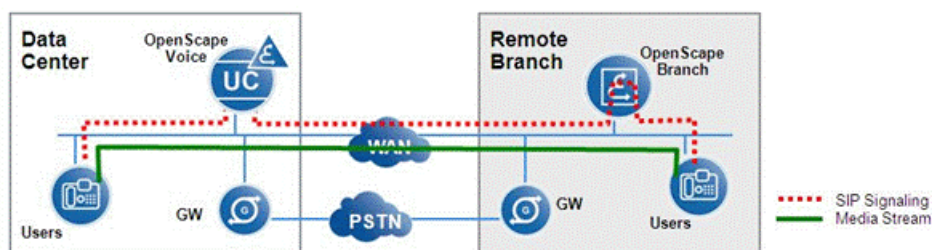
In this state the OpenScape Branch has full access to the OpenScape Voice and Applications. The OpenScape Branch relays all the messages to the OpenScape Voice, which provides all the features to the remote SIP users. Certain features e.g., basic call, consult, transfer, call waiting for analog subscribers are provided by the Asterisk application within the OpenScape Branch. The payload for inter-branch calls goes through the WAN. In the diagram above we see the signaling and media stream path for a call from a user in the branch to a user in the data center.

- **Survivable**
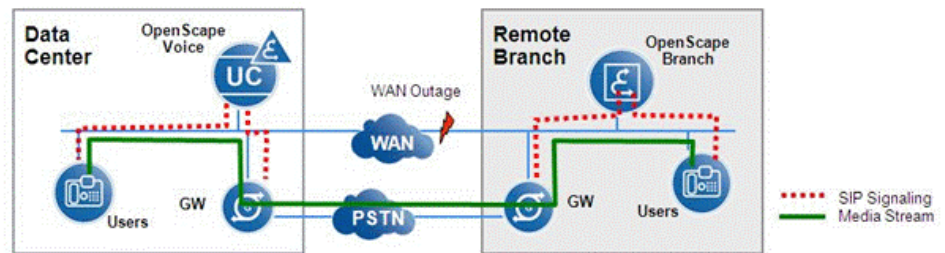
The OpenScape Branch enters in this operational state when there is a partial or complete WAN failure. This state can be reached when a certain number of messages between the OSB and OSV get lost or are not replied to, indicating a WAN failure. At this point the OpenScape Branch continues the service to the remote users by its own survivability features, but having a limited feature set compared to the OpenScape Voice features. In addition, for OpenScape Branch V1R4 and later, music on hold over the survivable gateway/PSTN is supported. All inter-branch calls go through the PSTN. The diagram above shows the signaling and media stream path for a call from a user in the branch to a user in the data center.

- **Backup**
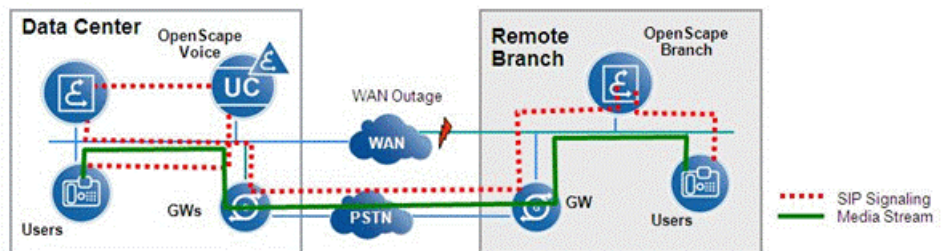
In this state, when the network is configured to support the Backup Signalling Link, the remote OpenScape Branch establishes a new path via the PSTN for signalling traffic to the OpenScape Voice to continue to provide the OpenScape Voice feature set to the remote users. This functionality is currently available to the OpenScape Branch 50 and 50i models. To support this operational state, an OpenScape Branch unit also needs to be deployed at the Data Center to interconnect with the OpenScape Voice. The diagram above shows the signaling and media stream path for a call from a user in the branch to a user in the data center.

OpenScape Branch V1R4 and later versions, provides for multiple backup links. This allows a larger number of connections to be supported via backup links in case of a WAN failure.

> **NOTICE:**
>
> To support Backup mode, the gateway channels must be ISDN B channels as clear channel signaling is used. The Data Center Access Router must support a VPN/GRE Tunnel to the branch for supervision of the link status on the WAN. Upon a WAN failure the Access Router sends a SNMP trap to the OpenScape Voice system, which in turn sets the

CAC policy for that branch to zero. The Access Router must also support failover route set, meaning VPN OK, routing through the WAN and on VPN failure, routing to the BLS (Backup Link Server). The OpenScape Branch by detecting options not being responded via the WAN link, establishes the backup link to the Data Center.

Redundancy

OpenScape Branch Redundancy allows redundancy of an OpenScape Branch unit by having a second unit located on the same subnet having exactly the same database. A communication channel between the two OSB units is used to keep call state information synchronized between the active and standby unit, in order to provide failover with minimal impact on active calls. Some calls may be lost depending on the timing of the failover relative to the calls' SIP signaling activity, particularly when a connection oriented protocol (TCP or TLS) is used for the SIP signaling transport.
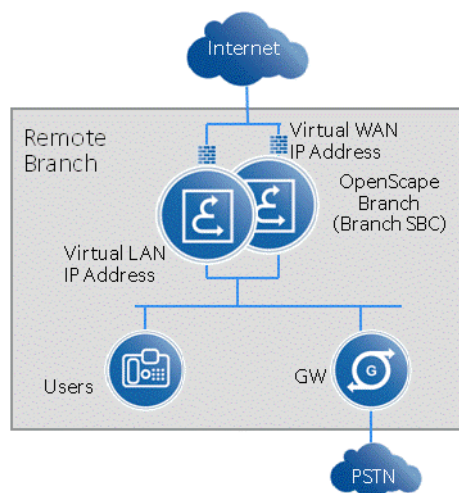
OpenScape Branch can be managed via the Virtual IP address; active node synchronizes the DB/XML to the standby node. In OpenScape Branch V1R3 the standby node of OSB is not synchronized immediately during administration of the active node. Therefore, switch over from the active node to the standby node may result in loss of functionality, if the standby node was not updated prior to switch over.

In OpenScape Branch V1R4 and later releases, the standby node of OSB will be synchronized after the changes are applied to the active node and the active node is stable. Therefore, switch over from the active node to the standby node shall result in little to no loss of functionality. Alarms will be handled appropriately with two physical nodes reporting separately.

OpenScape Branch Management and Monitoring

Management Access to Hosted OpenScape Branch via VPN

The OpenScape Branch can be managed centrally by the Common Management Platform (CMP) / OpenScape Branch Assistant using SOAP and XML. It also supports a local management via a web based Graphical User Interface (GUI) using HTTPS.

Alarms are supported via SNMP traps to the CMP/ Assistant and to a Network Management Server.

The OpenScape Branch supports secure file handling when transferring files using the Secure File Transfer Protocol (SFTP).
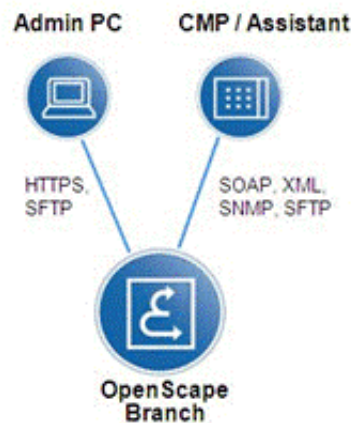
OpenScape Branch V8 introduces secure OpenScape Branch management application access within a hosted OpenScape Voice solution.

To ensure secure management access within an insecure hosted network environment, VPNs are used while VoIP communications continues to utilize the existing SIP and RTP transport security protocols.

Prorocols

The OpenScape Branch supports multiple interfaces and protocols. The diagram below illustrates their usage in the network.
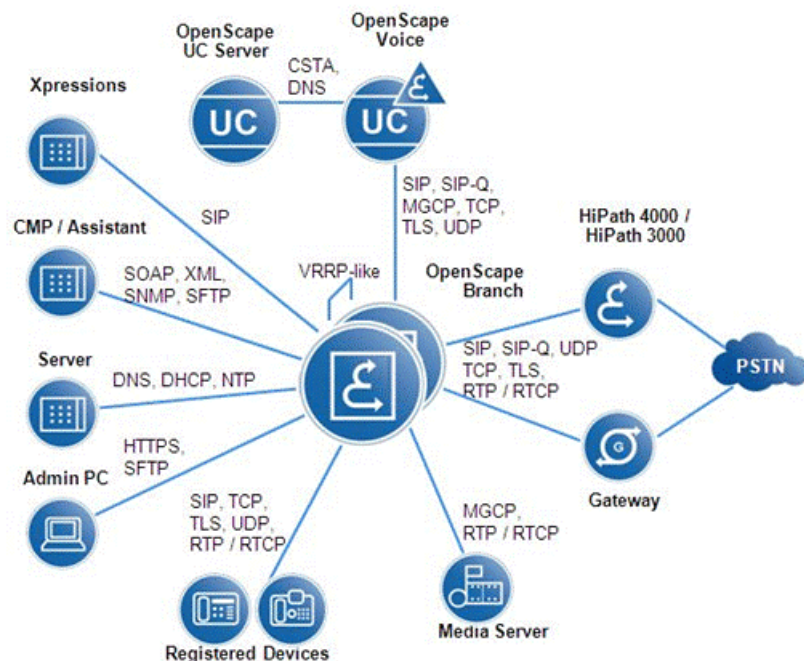
1.5.1 Features

The OpenScape Branch appliance supports an abundance of features in normal operating mode and in survivability mode. Available features vary based on the OpenScape Branch version, operating mode and model.

Normal Operation

For a quick identification of the supported features, the table below lists alphabetically sorted by name the available features. The table also includes the OpenScape Branch Version in which the feature became available and the availability for the various OpenScape Branch models.

Feature Name	Version	50i	500i	50	250	1000	6000
Alarming	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Assistant Profiles for Branches	V1 R4	Yes	Yes	Yes	Yes	Yes	Yes
Asterisk Restart Improvements	V7 R1	Yes	Yes	Yes	Yes	Yes	Yes
Auto Attendant	V1 R3	Yes	Yes	Yes	Yes	Yes	Yes
Auto Attendant and ACD working together	V7R1	Yes	Yes	Yes	Yes	Yes	Yes
Auto Attendant Custom Digits	V7R1	Yes	Yes	Yes	Yes	Yes	Yes
Automatic OSB SSL Reporting	V7	Yes	Yes	Yes	Yes	Yes	Yes
Backup ACD for Genesis	V1 R2	Yes	No	Yes	Yes	Yes	Yes
Backup ACD for OpenScape Contact Center	V1 R3	Yes	No	Yes	Yes	Yes	Yes
Backup and Restore	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Backup Data Channel for free Media Choice	V1 R3	Yes	Yes	Yes	No	No	No
Backup Data Channel for free Media Choice (Multiple Channels)	V1 R4	Yes	Yes	Yes	Yes	Yes	Yes
Branch Redundancy on the same Subnet	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Branch SBC	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Branch SIP Trunking with internal SBC	V1 R3	Yes	Yes	Yes	Yes	Yes	Yes

Feature Name	Version	50i	500i	50	250	1000	6000
Call Detailed Records (CDR)	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Call Forwarding	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Call Hold	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Call Routing	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Call Transfer	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
CMP Integrated Management	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Company Name Assignment	V7 R1	Yes	Yes	Yes	Yes	Yes	Yes
Continuous Tracing	V1 R2	Yes	Yes	Yes	Yes	Yes	Yes
DHCP Server	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
DNS Server/Client	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
E1/T1 Redundancy Splitter Box	V7 R1	No	Yes	No	No	No	No
E911 Callback in Survivable Mode	V7	Yes	Yes	Yes	Yes	Yes	Yes
E911 Enhancement	V1 R3	Yes	Yes	Yes	Yes	Yes	Yes
Emergency Calls	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
End-of-Dial for FXS	V1 R4	Yes	No	No	No	No	No
Ethernet Port Configuration	V7 R1	Yes	Yes	Yes	Yes	No	No
Firewall	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
FXS Dial Maps	V7R1	Yes	No	No	No	No	No
Hookflash for FXS	V1 R4	Yes	No	No	No	No	No
Individual Settings for Analog Lines	V7	Yes	No	No	No	No	No
Integrated Media Server	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
IPV6 Support	V7	Yes	Yes	Yes	Yes	Yes	Yes
Keyset	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Licensing	V2	Yes	Yes	Yes	Yes	Yes	Yes
Local Management	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Logging	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Master DNS Server	V7	Yes	Yes	Yes	Yes	Yes	Yes
Multi-line Hunt Group (MLHG)	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes

Feature Name	Version	50i	500i	50	250	1000	6000
MLHG Data Synchronization with OSV	V7	Yes	Yes	Yes	Yes	Yes	Yes
Multiple OpenScape Branch in a Branch	V1 R4	Yes	Yes	Yes	Yes	Yes	Yes
Multiple OpenScape Branch in a Branch - Step 2	V2	Yes	Yes	Yes	Yes	Yes	Yes
Music on Hold	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Music on Hold via an Internet link (e.g. Internet Radio) / local File	V9	Yes	Yes	Yes	Yes	Yes	Yes
Music on Hold during Survivability	V1 R4	Yes	Yes	Yes	Yes	Yes	Yes
No Call Waiting on FAX Lines	V7 R1	Yes	Yes	Yes	Yes	Yes	Yes
NTP Server/Client	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
OSB 50i Enhancements	V2	No	No	Yes	No	No	No
OScAR Connectivity	V7	Yes	No	Yes	Yes	No	No
Private IP Address on IPsec	V7 R1	Yes	Yes	Yes	Yes	Yes	Yes
Proxy	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
RADIUS Support	V7	Yes	Yes	Yes	Yes	Yes	Yes
Redundancy Enhancements	V2	Yes	Yes	Yes	Yes	Yes	Yes
Secure Management	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Secure Management for Hosted OSB	V7	Yes	Yes	Yes	Yes	Yes	Yes
Settings for SIP Service Providers	V1 R4	Yes	Yes	Yes	Yes	Yes	Yes
Simplified Installation	V2	Yes	Yes	Yes	Yes	No	No
SSDP Partition	V7	Yes	Yes	Yes	Yes	Yes	Yes
SSH with PKI	V7 R1	Yes	Yes	Yes	Yes	Yes	Yes
Standalone Video	V1 R2	Yes	Yes	Yes	Yes	Yes	Yes
Storage of Phone SW Loads	V2	Yes	Yes	No	No	Yes	Yes

Feature Name	Version	50i	500i	50	250	1000	6000
Support of IBM x 3250 M3	V1 R3	No	No	No	No	Yes	No
Support of IBM x 3250 M5	V7 R1	No	No	No	No	Yes	No
Support of IBM x 3550 M4	V7 R1	No	No	No	No	No	Yes
Support of Fujitsu RX200 S6	V1 R3	No	No	No	No	No	Yes
Support of Fujitsu RX200 S7	V7 R1	No	No	No	No	No	Yes
Support of OSB 500i	V2	No	No	No	No	No	No
Survivability	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
SW download via sFTP	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
System Call Forwarding during Survivability	V1 R4	Yes	Yes	Yes	Yes	Yes	Yes
TLS/SRTP	V1 R1	Yes *	Yes *	Yes	Yes	Yes	Yes
Traffic Control	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes
Trunk Group Office Codes Assignment	V7 R1	Yes	Yes	No	No	No	No
Virtualization on VMware ESXi	V7	No	No	No	Yes	Yes	Yes
VPN	V1 R1	Yes	Yes	Yes	Yes	Yes	Yes

* Note: Yes for non-integrated Gateway interfaces e.g., SIP phones. No for Integrated Gateway interfaces.

Features by Operating Mode

For a quick identification of the supported features by Operating Mode i.e., Proxy, Proxy ACD, SBC Proxy and Branch SBC, the table below lists alphabetically sorted by name the available features.

Feature Name	Version	Proxy	Proxy ACD	SBC Proxy	Branch SBC
Alarming	V1 R1	Yes	Yes	Yes	Yes
Assistant Profiles for Branches	V1 R4	Yes	Yes	Yes	Yes
Auto Attendant	V1 R3	Yes	No	Yes	Yes
Backup and Restore	V1 R1	Yes	Yes	Yes	Yes
Automatic OSB SSL Reporting	V7	No	Yes	No	No
Backup ACD for Genesis	V1 R2	No	Yes	No	No

Feature Name	Version	Proxy	Proxy ACD	SBC Proxy	Branch SBC
Backup ACD for OpenScape Contact Center	V1 R3	No	Yes	No	No
Backup and Restore	V1 R1	Yes	Yes	Yes	Yes
Backup Data Channel for free Media Choice	V1 R3	Yes	Yes	Yes	Yes
Backup Data Channel for free Media Choice (Multiple Channels)	V1 R4	Yes	Yes	Yes	Yes
Branch Redundancy on the same Subnet	V1 R1	Yes	Yes	Yes	Yes
Branch SBC	V1 R1	No	No	No	Yes
Branch SIP Trunking with internal SBC	V1 R3	No	No	Yes	Yes
Call Detailed Records (CDR)	V1 R1	Yes	Yes	Yes	Yes
Call Forwarding	V1 R1	Yes	Yes	Yes	Yes
Call Hold	V1 R1	Yes	Yes	Yes	Yes
Call Routing	V1 R1	Yes	Yes	Yes	Yes
Call Transfer	V1 R1	Yes	Yes	Yes	Yes
CMP Integrated Management	V1 R1	Yes	Yes	Yes	Yes
Continuous Tracing	V1 R2	Yes	Yes	Yes	Yes
DHCP Server	V1 R1	Yes	Yes	Yes	Yes
DNS Server/Client	V1 R1	Yes	Yes	Yes	Yes
E911 Enhancement	V1 R3	Yes	Yes	Yes	Yes
Emergency Calls	V1 R1	Yes	Yes	Yes	Yes
End-of-Dial for FXS	V1 R4	Yes	Yes	Yes	Yes
Firewall	V1 R1	No	No	Yes	Yes
Hookflash for FXS	V1 R4	Yes	Yes	Yes	Yes
Integrated Media Server	V1 R1	Yes	Yes	Yes	Yes
Keyset	V1 R1	Yes	Yes	Yes	Yes
Licensing	V2	Yes	Yes	Yes	Yes
Local Management	V1 R1	Yes	Yes	Yes	Yes
Logging	V1 R1	Yes	Yes	Yes	Yes
Master DNS Server	V7	Yes	No	Yes	Yes
Multi-line Hunt Group (MLHG)	V1 R1	Yes	No	Yes	Yes
MLHG Data Synchronization with OSV	V7	Yes	Yes	Yes	No
Multiple OpenScape Branch in a Branch	V1 R4	Yes	Yes	Yes	No

Feature Name	Version	Proxy	Proxy ACD	SBC Proxy	Branch SBC
Music on Hold	V1 R1	Yes	Yes	Yes	Yes
Music on Hold during Survivability	V1 R4	Yes	Yes	Yes	Yes
NTP Server/Client	V1 R1	Yes	Yes	Yes	Yes
OScAR Connectivity	V7	Yes	Yes	Yes	Yes
Proxy	V1 R1	Yes	Yes	Yes	Yes
RADIUS Support	V7	Yes	Yes	Yes	Yes
Redundancy Enhancements	V2	Yes	Yes	Yes	Yes
Secure Management	V1 R1	Yes	Yes	Yes	Yes
Secure Management for Hosted OSB	V7	Yes	Yes	Yes	Yes
Settings for SIP Service Providers	V1 R4	No	No	Yes	Yes
Standalone Video	V1 R2	Yes	Yes	Yes	Yes
SSDP Partition	V7	Yes	Yes	Yes	Yes
Support of IBM x 3250 M3	V1 R3	Yes	Yes	Yes	Yes
Support of IBM x 3250 M5	V71 R1	Yes	Yes	Yes	Yes
Support of IBM x 3550 M3	V1 R3	Yes	Yes	Yes	Yes
Support of IBM x 3550 M4	V7 R1	Yes	Yes	Yes	Yes
Support of Fujitsu RX200 S6	V1 R3	Yes	Yes	Yes	Yes
Support of Fujitsu RX200 S7	V7 R1	Yes	Yes	Yes	Yes
Support of OSB 500i	V2	V2	No	No	No
Survivability	V1 R1	Yes	Yes	Yes	Yes
SW download via sFTP	V1 R1	Yes	Yes	Yes	Yes
System Call Forwarding during Survivability	V1 R4	Yes	Yes	Yes	Yes
TLS/SRTP	V1 R1	Yes	Yes	Yes	Yes
Traffic Control	V1 R1	Yes	Yes	Yes	Yes
Virtualization on VMware ESXi	V7	Yes	Yes	Yes	Yes
VPN	V1 R1	No	No	Yes	Yes

Survivability Features

The table below lists alphabetically sorted by name the features available during survivability mode.

Feature Name	Version
Alarming (via local GUI)	V1 R1
Auto Attendant	V1 R3

Feature Name	Version
Backup ACD for Genesis	V1 R2
Backup ACD for OpenScape Contact Center	V1 R3
Backup and Restore (via local GUI)	V1 R1
Backup Data Channel for free Media Choice (Multiple Channels (V1R4))	V1 R3
Branch Redundancy on the same Subnet	V1 R1
Branch SIP Trunking with internal SBC	V1 R3
Call Detailed Records (CDR)	V1 R1
Call Forwarding	V1 R1
Call Hold	V1 R1
Call Routing	V1 R1
Call Transfer	V1 R1
Continuous Tracing	V1 R2
DHCP Server	V1 R1
DNS Server	V1 R1
Emergency Calls	V1 R1
End-of-Dial	V1 R4
Firewall	V1 R1
Hookflash	V1 R4
Integrated Media Server	V1 R1
Local Management	V1 R1
Logging	V1 R1
Multi-line Hunt Group (MLHG)	V1 R1
Music on Hold during	V1 R4
NTP Server	V1 R1
Proxy	V1 R1
Secure Management	V1 R1
SRTP	V2
Standalone Video	V1 R2
SW download via sFTP	V1 R1
System Call Forwarding during Survivability	V1 R4
TLS	V1 R1
Traffic Control	V1 R1
VPN	V1 R1

New Features by Release

New Features in OpenScape Branch V7R1

New Features in OpenScape Branch V7

New Features in OpenScape Branch V2

New Features in OpenScape Branch V1 R4

New Features in OpenScape Branch V1 R3

New Features in OpenScape Branch V1 R2

New Features in OpenScape Branch V1 R1

This section provides an overview of what features and functions were introduced for a new release.

End-User Features

- **Simultaneous Auto-Attendant and Backup ACD** – In V7R1 and later, both Auto Attendant and ACD features can be configured and used simultaneously.
- **No Call Waiting on Fax Lines** – In V7R1 and later, a Fax line can be identified with a Fax parameter. Once the line is identified as a Fax; the line is restricted from receiving a call waiting.

Application Network Features

- **OpenScape Branch Ethernet Port Configuration** –This feature introduces the capability to configure the port configuration of the Ethernet ports of an OpenScape Branch. Port speed, duplex mode and MTU size of an Ethernet packet can be configured in addition to the current parameters.

System/Architectural Features

- **OpenScape Branch Redundancy - Splitter box for E1/T1 Redundancy** – This feature introduces redundancy to the OpenScape Branch 500i E1/T1 PRI interfaces by utilizing a splitter box. The splitter box eliminates the need to physically move cables, when entering failover mode by providing a more automated mechanism. This feature is supported when the OpenScape Branch 500i is operating in either Proxy, Proxy ACD or SBC Proxy mode.

    > **IMPORTANT:** Splitter box is not supported for OSB 550 models.

- **Asterisk Restart Improvements** – Integrated gateway running on the OpenScape Branch 50i and 500i are supported by Asterisk and DAHDI. When configuring Integrated Gateway parameters; improvements were made to support Asterisk reload capabilities that do not cause calls to be dropped. Additionally, restart of individual objects (e.g. a single PRI link) is used where possible, instead of restarting the OpenScape Branch, Asterisk, or all PRIs. The Administrator will be prompted to confirm changes that will require reload or will affect ongoing calls.

Security Features

- **SSH with Public-Key-Infrastructure** –This feature introduces an SSH with PKI mechanism that allows external users to log into other systems, such

as PCs or other Linux servers, to execute scripts or other commands on an OpenScape Branch without having to explicitly log into the OpenScape Branch. This is done by storing the external user's public key on the OpenScape Branch.

Also introduced is the capability to allow customers to conveniently change https certificates and maintain the communications between the CMP and the OpenScape Branch.

• **Private IP Address on IPSec** – Allows the capability to create a VPN tunnel to transport SIP, MGCP and (S)RTP messages through IPSec with a private IP address. Configuration will allow multiple OpenScape Branches to be added to the network and communicate to the data center over the VPN tunnel; without additional configuration.

Management and Administration

• **OpenScape Branch 50i FXS Dial Maps for Enhanced Number Input** – This feature introduces the capability to configure dial maps on FX ports that will limit the digits the user can dial when accessing that port. This configuration is used to enforce Fax devices to dial the area code to perform external calls, independent of the destination being local or outside the area.

• **Custom Digits for Auto Attendant** – This feature provide multiple capabilities for Auto Attendant call processing. The Auto Attendant menu provides the extended capability to use * and # for announcements. A further enhancement allows the caller the option of repeating the current menu or going back to a previous menu to select options to complete the connection. The third capability allows the customer to route all Auto Attendant calls to a particular announcement and then forward to a destination as an alternative to extension dialing or digit selection mechanisms to redirect an incoming call.

• **Assignment of Office Codes to Trunk Group** – Allows the capability to create a relationship between and extension number and its corresponding Office Code and outgoing gateway on the OpenScape Branch 50i and 500i. A subscriber in one office code will be able to dial another subscriber in a different office code by simply dialing the extension number.

When a subscriber makes a call over the PSTN or some other external device, the call will utilize the trunk group that is associated with the that belongs to that subscriber. This capability is described as source-based routing.

This capability applies to both normal and survivable modes.

• **Assignment of Company Name** – Allows the capability to modify the company name and product to a customer provided name associated with the OpenScape Branch via the local Branch Management tool. The name configured will appear on the OpenScape Branch local GUI.

End-User Features

• **Individual Settings for Analog Lines** – Analog Ports, also known as FXS or a/b lines, supported by the OpenScape Branch 50i models can be individually configured for FAX (T.38) or modem and control of Call Waiting feature.

Application Network Features

• **E911 Callback in Survivable mode** – This enhancements allows the Public Safety Answering Point (PSAP) to call back the user that placed the emergency call also when the OpenScape Branch is during survivability mode. When establishing the call in survivable mode, the OpenScape

Branch adds the Location Identification Number (LIN) and a call back number when the emergency call is routed out.

System/Architectural Features

- **OpenScape Branch 50i A024/48** – These two new OpenScape Branch models support up to 24 and up to 48 Analog Adapter (4x FXS) in the Analog Terminal Adapter (ATA) operating mode. These Analog Phones via the OSB 50i A024/48 can be supported directly by the OpenScape Voice or having branch survivability by connecting to another OpenScape Branch unit. This OSB in ATA mode does not require OSB User survivability licenses.
- **OpenScape Branch 500i DP4/8** – These two new OpenScape Branch models support up to 500 SIP registered lines in addition to up to 4 or 8 E1/T1 PRI interfaces. These two models are now and alternative to provide higher capacity gateway functionality for OpenScape Voice networks. The support of redundancy for these units is provided via a splitter box.
- **OSB as Master DNS Server** - This feature provides the flexibility to also configure the OSB as a Master DNS Server allowing the upload and backup (export) of a customer created DNS configuration file. Up to now the OSB DNS had only a factory predefined configuration and therefore could not be used as Master DNS server.
- **Virtualization on VMware ESXi** – With this feature the OpenScape Branch can be deployed on a virtualized VMware ESXi (V4.0, V4.1, V5.0 / V5.1,V6, V6.1, V6.5) environment. The Virtualized OpenScape Branch is available in the following sizes: Virtual OSB 250, Virtual OSB 1000 and Virtual OSB 6000.

Security Features

- **Secure Management for Hosted OSB** - This feature allows the deployment of OSB in Hosted environment by allowing VPN connectivity from CMP for secure management, SNMP and centralized phone SW supply.

Management and Administration

- **Automatic OSB SSL Reporting** - With OSB V7 it is implemented the automatic reporting of OpenScape Branch User usage to the CMP for Software Subscription Licensing accounting.
- **MLHG Data synchronization with OSV** - This feature allows the data synchronization of MLHG and Emergency list, when provisioned on the OpenScape Voice via the OSV Assistant, to the OpenScape Branch. This capability eliminates the separate provisioning at the OSV and the OSB and enhances the validity of the entered data.
- **OScAR Connectivity** - Provides the connectivity to OpenScape Alarming and Response (OScAR) system to obtain information about OpenScape Branch status (Normal, Backup, Survivable or Transition) to ensure proper call routing.
- **Radius Support** - Provides the capability to fulfill the client role in a RADIUS Client/Server configuration. The RADIUS authentication can be performed for CLI, SSH and Web accesses of the OpenScape Branch.
- **SSDP Partition** - This allows the support of the Smart Service Delivery Platform (SSDP) which enables a common link for remote services and outbound customer controlled access.

Application Network Features

- **Simplified Installation** – This feature allows an alternate method of installation to the OpenScape Branch in a network targeted for mass deployment and with reduced installer on site interaction.

System/Architectural Features

- **OpenScape Branch 500i** (OpenScape Branch V2 and later) supports up to 4 or 8 E1/T1 PRI/CAS interfaces without the need of an external gateway unit. The OSB 500i also supports SIP registered lines, Integrated Media Server and Auto Attendant features; and does not support FXS or FXO interfaces.
- **Storage for Phone SW loads** - This feature allows the local storage of the OpenStage phone SW load to the OpenScape Branch. With this capability a software load is only downloaded once to the branch instead of having multiple downloads for each of the phones at the branch. It is very useful when limited bandwidth is available to the branch. Please note that this capability is not supported on the older servers Acrosser AR-ES5495SM (OSB 50) and Advantech FWA-710SIME (OSB 250) due to memory size.
- **OSB 50i Enhancements** –Various enhancements are brought to the OSB 50i. This includes the support of SRTP, G.729 Codec, CAS trunk signaling including CAS MFC-R2 for Brazil and higher capacity - up to 80 registered lines for the OSB 50i A84, D44 and DP14 models. The support of hookflash capability allows the end user on analog devices connected to the Analog Ports (FXS) of the OpenScape Branch 50i, to invoke features via hook flash.
- **Multiple OpenScape Branch in a Branch - Step 2** – This feature allows the deployment of multiple OpenScape Branches in a single branch forming a mesh configuration where all branch users can intercommunicate to each other even during survivable mode and sharing the available resources. Now TLS, Redundancy, Backup ACD, AA and Backup Link are also supported.
- **Redundancy Enhancements** – With this feature Auto Attendant, Backup ACD, OSV Geographical Redundancy and Backup link are now also supported for a redundant OpenScape Branch configuration.
- **OpenScape Branch 50i A024/A048** – This new OpenScape Branch 50i model is targeted for the support of a larger number of Analog Adapter users. The A024 supports up to 24 analog users (FXS) and the A048 up to 48 analog users (FXS).

Management and Administration

- **Licensing** – This feature implements the License enforcement to the OpenScape Branch. The OpenScape Branch license file is maintained centrally in the CMP (Common Management Platform) and the licenses are managed as a pool for all OSB in the network. This license file contains the total number of:

  - OSB Base License (per OpenScape Branch)
  - OSB Registered Line License (per User)
  - OSB Backup ACD License (per OpenScape Branch)
  - OSB Auto Attendant License (per OpenScape Branch)
  - OpenScape SBC Session License (per Session)

  As an OpenScape Branch (OSB) unit gets added to the network, it draws the appropriate number of licenses depending on the database assigned to this unit. For example, an OSB 50i D44 with 30 SIP users and 4 analog lines, and with the Auto Attendant feature would draw: 1x OSB Base Licenses, 34x OSB Registered Line Licenses and 1x OSB Auto Attendant License. These

values are deducted from the total values at the license file and reduced according the total capacity for the remaining OSB in the same network.

If a user gets deleted from the OSB, its OSB Registered Line License is returned to the pool and made available to be used in any OSB of the network for the creation of the next supported user.

If the pool of OSB Registered Line Licenses is exhausted (no additional OSB Registered Line License is available), no additional user can be created. The purchase of additional OSB Registered Line License is required and that will generate an update to the license file.

The OSB License file is created during the order processing of the OSB V2 licenses or the licenses to upgrade to V2. They are made available at the Common License Server (CLS) to be applied to the CMP. The MAC Address of the CMP is the unique identifier to the OSB License file.

End-User Features

- **System Forward during Survivability** - This feature allows the OpenScape Branch when during Survivability mode to forward calls when calls are not answered, subscriber being busy or error scenarios. This capability can be used for forwarding calls to Voice Mail servers.
- **HookFlash** – This feature allows the end user on analog devices connected to the Analog Ports (FXS) of the OpenScape Branch 50i, to invoke features via hook flash.
- **End-of-Dial** – This feature allows the end user on analog devices connected to the Analog Ports (FXS) of the OpenScape Branch 50i to signal the end of dial and therefore result in faster establishment of calls compared to digit timeout.

Application Network Features

- **Backup Data Channel for free Media Choice (Multiple Channels)** – This capability allows the activation of multiple alternate back-up links to the OpenScape Voice through the PSTN network for the event of an inter-connectivity failure of the existing data network. This functionality requires an OpenScape Branch unit collocated with the OpenScape Voice.

  > **NOTICE:**
  >
  > The Data Center Access Router must support a VPN/GRE Tunnel to the branch for supervision of the link status on the WAN. Upon a WAN failure the Access Router sends a SNMP trap to the OpenScape Voice system, which in turn sets the CAC policy for that branch to zero. The Access Router must also support failover route set, meaning VPN OK, routing through the WAN and on VPN failure, routing to the BLS (Backup Link Server). The OpenScape Branch by detecting options not being responded via the WAN link, establishes the backup link to the Data Center.

System/Architectural Features

- **Multiple OpenScape Branches in a Branch** - This feature allows the deployment of multiple OpenScape Branches in a single branch forming a mesh configuration where all branch users can intercommunicate to each other even during survivable mode and sharing the available resources.

- **OpenScape Branch 50i DP14E** - This new OpenScape Branch model now supports up to 80 registered lines at a remote branch and with the integrated functionality of a Gateway (1x E1 PRI) and Analog Adapter (4x FXS) into this single box small branch solution. This makes a very attractive single box solution for the very small remote site.
- **OpenScape Branch 50i DP14T** - This new OpenScape Branch model now supports up to 80 registered lines at a remote branch and with the integrated functionality of a Gateway (1x T1 PRI) and Analog Adapter (4x FXS) into this single box small branch solution. This makes a very attractive single box solution for the very small remote site.
- **OpenScape Branch 50i** - This new OpenScape Branch model supports up to 250 registered lines at a remote branch and with no integrated Gateway and Analog Adapter. This server, which is also used in the other OSB 50i models, replaces the previous OSB 50 and OSB 250 servers resulting in a portfolio simplification.
- **Music on Hold during Survivability** - The OpenScape Branch uses the internal media server to provide Music on Hold to a call. This is now also supported when the OpenScape Branch is in Survivable Mode. The music file needs to be in wav format.

Management and Administration

- **Assistant Profiles for Branches** – This feature allows the creation of multiple branch profiles at OSB Assistant. Multiple OpenScape Branch can be assigned to a single profile. This simplifies the provision and management of large number of OpenScape Branches in a network.
- **Settings for SIP Service Providers** – This feature allows customizing and storage of SIP Service Provider profiles settings for the interworking with SIP Service Providers.

End-User Features

- **Auto Attendant** – This feature provides the functionality of Automatic Attendant (AA) to the remote branch. This allows automatically answering, providing basic information and redirecting the call to destinations based on user DTMF input. This functionality is available during normal and survivable states. Please note that this feature can not be activated at the same branch together with Backup ACD for V1R3 through V2. In V7 and later, auto attendant and Backup ACD can be activated at the same time.

Application Network Features

- **Backup Data Channel for free Media Choice** – This capability allows the activation of an alternate back up link to the OpenScape Voice through the PSTN network for the event of an interconnectivity failure of the existing data network. This functionality requires an OpenScape Branch unit collocated with the OpenScape Voice. At OpenScape Branch V1 R3 only one single Trunk (64 kbps) per remote OpenScape Branch is supported at this time and released only to OpenScape Branch 50 and 50i.

NOTICE:

The Data Center Access Router must support a VPN/GRE Tunnel to the branch for supervision of the link status on the WAN. Upon a WAN failure the Access Router sends a SNMP trap to the OpenScape Voice system, which in turn sets the CAC policy for that branch to zero. The Access Router must also support failover route set, meaning VPN OK, routing

through the WAN and on VPN failure, routing to the BLS (Backup Link Server). The OpenScape Branch by detecting options not being responded via the WAN link, establishes the backup link to the Data Center.

- **E911 Enhancement** – With this enhancement multiple emergency number are supported by the OpenScape Branch and as such identified as emergency numbers and having the preferential treatment.
- **Backup ACD for OpenScape Contact Center** – This feature provides the continuance of service of Automatic Call Distribution (ACD) to the agents of the remote branch location when the site experiences a WAN outage or network uplink failure and therefore in survivable state. The OpenScape Branch provides a basic ACD functionality for up to 250 agents and with up to 100 queues. Please note that this feature can not be activated at the same branch together with Multiline Hunt Group (MLHG) or Auto Attendant.

System/Architectural Features

- **OpenScape Branch 50i A84** - This new OpenScape Branch model now supports up to 80 registered lines at a remote branch and with the integrated functionality of a Gateway (8x FXO) and Analog Adapter (4x FXS) into this single box small branch solution. This makes a very attractive single box solution for the very small remote site.
- **OpenScape Branch 50i D44** - This new OpenScape Branch model now supports up to 80 registered lines at a remote branch and with the integrated functionality of a Gateway (4x BRI) and Analog Adapter (4x FXS) into this single box small branch solution. This makes a very attractive single box solution for the very small remote site.
- **Branch SIP Trunking with internal SBC** - This capability allows the direct interconnection to a SIP Service Provider (SSP) from the remote branch. It provides the functionality of SIP Header Manipulation for topology hiding. Please note that SBC Session license is required for each SIP Trunking session that is supported by the OpenScape Branch.
- **Support of IBM x3250 M3** – The OpenScape Branch 1000 V1 R3 is now supported also on the IBM x3250 M3 platform. This is the successor of the IBM x3250 M2 server.
- **Support of IBM x3250 M5** – The OpenScape Branch 1000 V1 R3 is now supported also on the IBM x3250 M3 platform. This is the successor of the IBM x3250 M3 server.
- **Support of IBM x3250 M6** – The OpenScape Branch 1000 V1 R3 is now supported also on the IBM x3250 M6 platform. This is the successor of the IBM x3250 M5 server.
- **Support of IBM x3550 M3** – The OpenScape Branch 6000 V1 R3 is now supported also on the IBM x3550 M3 platform. This is the successor of the IBM x3550 M2 server.
- **Support of IBM x3550 M4** – The OpenScape Branch 6000 V7 R1 is now supported also on the IBM x3550 M4 platform. This is the successor of the IBM x3550 M3 server.
- **Support of Lenovo x3550 M5** – The OpenScape Branch 6000 V7 R1 is now supported also on the Lenovo x3550 M5 platform. This is the successor of the IBM x3550 M4 server.
- **Support of Lenovo SR530** – The OpenScape Branch 6000 V7 R1 is now supported also on the Lenovo SR530 platform.
- **Support of Fujitsu RX200 S6** – The OpenScape Branch 6000 V1 R3 is also supported on the Fujitsu RX200 S6 platform. This is the successor of the Fujitsu RX330 S1 server.

- **Support of Fujitsu RX200 S7** – The OpenScape Branch 6000 V7 R1 is also supported on the Fujitsu RX200 S7 platform. This is the successor of the Fujitsu RX330 S6 server.

End-User Features

- **Backup ACD for Genesis** – This feature provides the continuance of basic automatic call distribution functionality to the agents at a remote branch by the management of agents and call queues during the loss of communication with the main call servers at the central location (survivable operating mode of the OpenScape Branch). This functionality is provided for Genesis Call Centers.

Application Network Features

- **Standalone Video** – This feature enables the support of the OpenScape Video solution by the OpenScape Branch in a standalone environment. This allows the deployment of the Video calls without the OpenScape Voice server and having the video calls controlled by the OpenScape Branch server.

System/Architectural Features

- **OpenScape Branch 50** - This model is targeted for the very small remote branches and it supports up to 50 registered lines at a remote branch. Please note that key appearances are also to be counted as registered lines.
- **OpenScape Branch 6000** - This model is targeted for the very large remote branches and it supports up to 6000 registered lines at a remote branch. Please note that Key Appearances are also to be counted as registered lines.

Management and Administration

- **Continuous Tracing** – This feature adds the capability to the OpenScape Branch to support continuous tracing function to be used in conjunction with the OpenScape Voice Trace Manager (OSV-TM) V1 R3.

End-User Features

- **Survivability** – This feature allows the continuance of communication services to the users of a remote branch even after the failure of the branch uplink to the OpenScape Voice server.
- **Call Hold** - This feature allows the remote branch user to place current call on hold while the user is enabling another call feature while the branch is in survivable mode.
- **Call transfer** - This feature allows the remote branch user to transfer calls while the branch is in survivable mode.
- **Call forwarding** - This feature allows the remote branch user to forward calls while the branch is in survivable mode.
- **Multi Line Hunt Group (MLHG)** - This feature allows the handling of call in a multi line hunt group (MLHG) while the branch is in survivable mode.
- **Keyset** - This feature supports the keyset functionality for remote branch users the branch is in survivable mode.
- **Emergency Calls** - This feature supports the handling of emergency calls while the branch is in survivable mode.

Application Network Features

- **Proxy** – This capability allows the local registry to the OpenScape Branch of the local users and devices. This allows the proxying of the OpenScape Voice by the OpenScape Branch and to provide local survivability functions

when the uplink to the OpenScape Voice server is lost. It also supports Error Code based SIP Routing and SIP Digit Manipulation. This operating mode is for private link connectivity between the Branch and the Data Center.

- **Branch SBC** - At the Branch SBC operating mode, the OpenScape Branch supports SIP header manipulation for topology hiding, port mapping, address translation for SIP and Media, and session aware RTP Proxy for VoIP NAT support. This operating mode is for public network connectivity between the Branch and the Data Center.
- **DHCP Server** – The OpenScape Branch can operate as a Dynamic Host Configuration Protocol (DHCP) server.
- **DNS Server/Client** – The OpenScape Branch has an internal slave Domain Name System (DNS) server that automatically updates with a master DNS server.
- **NTP Server/Client** – The OpenScape Branch also has an internal Network Time Protocol (NTP) server.

System/Architectural Features

- **OpenScape Branch 250** - This model is targeted for the medium and small remote branches and it supports up to 250 registered lines at a remote branch. Please note that key appearances are also to be counted as registered lines.
- **OpenScape Branch 1000** - This model is targeted for the large remote branches and it supports up to 1000 registered lines at a remote branch. Please note that key appearances are also to be counted as registered lines.
- **Integrated Media Server** - The OpenScape Branch includes and local integrated media server for tones, announcements and Station Controlled Conference. This capability reduces the required remote branch uplink bandwidth.
- **Branch Redundancy on the same Subnet** - This capability allows the redundancy of an OpenScape Branch unit by having a similar second unit located on the same subnet having exactly the same database. A communication channel based on protocol similar to Virtual Router Redundancy Protocol (VRRP-like) is used between the two OSB units to keep call state information synchronized between the active and standby unit, in order to provide failover with minimal impact on active calls. Some calls may be lost depending on the timing of the failover relative to the calls SIP signaling activity, particularly when a connection oriented protocol (TCP or TLS) is used for the SIP signaling transport.
- **Call Routing** - The OpenScape Branch supports Priority based Routing, Static routing, Source Based Routing and SIP error code routing.
- **Traffic Control** – The OpenScape Branch assures quality of service (QoS) by supporting Differentiated Services Code Point (DSCP) settings for different traffic types like Signaling, Media and Management traffic.
- **Music on Hold** – With this feature the OpenScape Branch can provide locally the resources for Music on Hold when needed.

Security Features

- **TLS/SRTP** – This feature allows the OpenScape Branch to support secure calls by the usage of encrypted signaling (Transport Layer Security) and encrypted traffic (Secure Real-Time Transport Protocol) for communication.
- **Firewall** – The OpenScape Branch provides an internal firewall for securing the communication and performs stateful Network Address Translation/ Port Address Translation (NAT/PAT) inspection. It supports intrusion detection, Strict TCP Validation to ensure TCP session state enforcement, validation

of sequence and acknowledgement numbers, rejection of bad TCP flag combinations.

- **Secure Management** – The OpenScape Branch provides secure access and file transfer via the use of Secure Shell (SSH).
- **Secure Software Download** – The OpenScape Branch supports secure software download via sFTP.
- **VPN** – The OpenScape Branch supports Virtual Private Network (VPM) connections based on IPSec and key generation based on OpenSSL. Supported message digest are MD2, MD5, MDC2, RMD-160, SHA, SHA-1, SHA-224, SHA-256, SHA-384, SHA-512. Supported encoding and Cipher are: Base64 Encoding, Blowfish, CAST, CAST5, DES, Triple-DES, IDEA, RC2, RC4, RC5.

Management and Administration

- **Alarming** – The OpenScape Branch provides SNMP traps to the assistant for alarm monitoring.
- **Backup and Restore** – Upon download of a new software load OpenScape Branch supports automatic backup of the previous software load. The local management interface allows the Service Engineer to return to the previous software load if needed. Note: Once the previous software load is restored, the new load is no longer available.
- **Call Detail Records (CDR)** - During normal operating mode it is the OpenScape Voice that generates the CDRs for the calls at the Branch. The OpenScape Branch generates some CDR when in Survivability Mode. These CDRs are similar to the format generated by the OSV but in a simplified form where only the used fields are populated. The OpenScape Branch generated CDRs are deliverable via sFTP to up to two a recording centers via two transfer methods: Push and Pull. In the PUSH mode the transfer is triggered by either maximum configurable interval to deliver, or by maximum configurable file size. In Pull mode, it is triggered by the CDR server.
- **CMP Integrated Management** – The OpenScape Branch supports integrated management via the CMP together with the Assistant as for other OpenScape Solution network elements.
- **Local Management** – OpenScape Branch supports an integrated local management interface using a web GUI.
- **Logging** – The OpenScape Branch has the capability to collect Log data for all services and for Rapidstat.

1.5.2 OpenScape Voice Integration

The OpenScape Branch V7 was tested and released to operate with OpenScape Voice Versions V5, V6, V7 and V8.

OpenScape Voice to Branch Cross-Reference

The table below illustrates the supported OpenScape Voice versions across the OpenScape Branch software versions.

Feature Name	OSV V3.1 R3	OSV V4 R1	OSV V5	OSV V6	OSV V7	OSV V8
OSBranch V1 R1	Yes	No	No	No	No	No

Feature Name	OSV V3.1 R3	OSV V4 R1	OSV V5	OSV V6	OSV V7	OSV V8
OS Branch V1 R2	Yes	Yes	No	No	No	No
OS Branch V1 R3	Yes	Yes	Yes	Yes	Yes	No
OS Branch V1 R4	Yes	Yes	Yes	Yes	Yes	Yes
OS Branch V2	No	No	Yes**	Yes	Yes	Yes
OS Branch V7	No	No	Yes*	Yes*	Yes	Yes
OS Branch V8	No	No	Yes	Yes	Yes	Yes

NOTICE:

* Delayed Availability

** Limited availability - If there is OS UC in the network, OS UC needs to be at V6.

1.5.3 Gateways and Adapters

The OpenScape Branch supports interworking with various external gateways. In addition, the OpenScape Branch 50i offers an integrated Gateway and an integrated Analog Adapter.

External Gateway Interworking

The OpenScape Branch V2 supports the interworking with the following external Gateways:

• RG8700 (V1.3 R3)
• RG8300 (V4.4)
• RG2700 (V1 R2)
• HiPath 4000 (V4, V5 and V6)
• HiPath 3000 (V8)
• Mediatrix 4402 and 4404
• Mediatrix 363x

Analog Adapter Interworking

The interworking with the following Analog Adapters is also supported:

• Mediatrix 1204
• Mediatrix 41xx

Integrated Gateways and Adapters

Please keep in mind that newer versions of the gateways are tested as they become available and therefore please verify with Product Management if a newer version is approved to interwork with the OpenScape Branch. The OpenScape Branch 50i is the only model that offers an integrated gateway

and an integrated analog adapter. The currently available options of supported interfaces are:

- OpenScape Branch 50i **A84** (**A**nalog - **8** ports FXO + **4** ports FXS)
- OpenScape Branch 50i **D44** (**D**igital - **4** ports BRI + **4** ports FXS)
- OpenScape Branch 50i **DP14E** (**D**igital - **1** **P**RI **E**1 + **4** ports FXS)
- OpenScape Branch 50i **DP14T** (**D**igital - **1** **P**RI **T**1 + **4** ports FXS)
- OpenScape Branch 50i **A024** (**A**nalog - **24** ports FXS)
- OpenScape Branch 50i **A048** (**A**nalog - **48** ports FXS)
- OpenScape Branch 500i **DP4** (**D**igital - **4** **P**RI **E**1/T1)
- OpenScape Branch 500i **DP8** (**D**igital - **8** **P**RI **E**1/T1)

Supported IP Service Providers (SSP)

The table below lists the currently tested SIP Service Provides with which the OpenScape Branch has been tested with.:

SIP Service Provider	Comments
BT 21CN	Tested
Gamma (UK)	Tested - minor exceptions
Global Crossing	Tested
Skype Connect	Certified
Verizon	Verizon does not require Global Certification, however for each installation it needs to be go through the Verizon Field Trial process prior the cut-over.

Please note that, despite the effort to keep the document current, this list may become obsolete as new SIP Service Providers are tested. There is a Published Wiki page (at http://wiki.dev.global-intra.net/publishwiki/index.php/Collaboration_with_VoIP_Providers) where all the SIP Testing status is maintain. Please consult there if there is already an activity with the SSP that you are looking for.

The interconnection of the OpenScape Branch to other not listed SIP Service Provides needs to be first tested and verified for any interoperability issue. Please start the process with the submission of an OSIRIS Project Specific Request (PSR) including the project and SSP name for development support on this activity.

1.5.4 Integrated Media Server

The OpenScape Branch offers an integrated Media Server based on the OpenScape Media Server to provide local resources for tones, announcements and Station Controlled Conference instead of being provided from a central location and therefore reducing the bandwidth need between the branch and central location. That results in direct savings to the customer operating expenses.

Capacities

The integrated Media Server capacity varies between the various OpenScape Branch models and they are shown in the table below.

	OSB 50i	OSB 50i A024/A048	OSB 500i	OSB 50/250	OSB 1000	OSB 6000
Max. number of Announcement ports	5	0	16	16	32	100
Max. number of Conference ports	12	0	28	28	32	60
Max. Number of Supported Languages	2	0	2	2	5	5

Notes:

Please note that if SRTP is used, conference port capacity decreases by approximately 15%. If OpenScape Branch is mixing a conference with multiple codecs, the conference port capacity decreases by approximately 25%.

The OpenScape integrated Media Server ports have dedicated functions. Announcements ports can not be used for conference or vice-versa.

The maximum number of conference ports, means the maximum number of ports (parties) can be distributed between one or more conferences. A single conference may use all ports, or multiple conferences may three or more ports until the maximum number of conference ports are in use.

If additional media server resources are required at a branch, an additional external Media Server can be assigned to the branch.

The integrated Media Server of the OpenScape Branch supports the G.711 A-law, G.711 mu-law and G.729 audio codecs.

1.5.5 OpenScape Branch Capacities

Dependent upon the OpenScape Branch model and operating mode; there is a maximum number of registered lines, trunks, media ports and traffic that can be supported.

Model Capacities

Capacities for OpenScape Branch without integrated PSTN Gateways

Capacities for OpenScape Branch with Integrated PSTN Gateways

The maximum number of OpenScape Branch units supported in a network is 3000.

The following table shows the characteristics and limits of the OpenScape Branch without a gateway installed:

> **NOTICE:**
>
> Please note that the overall maximum number of registered lines can be reduced due to higher traffic or feature usage. If SRTP is used, conference port capacity decreases by approximately 15%. If OpenScape Branch is mixing a conference with

multiple codecs, the conference port capacity decreases by approximately 25%. Please consult the OpenScape Branch performance tool when assessing capacity and performance.

	OSB 50/250	OSB 1000	OSB 6000
Max. number of registered lines *	250	1000	6000
Max. number of concurrent Sessions (simultaneous calls)	50	250	2400
Max. number of call per second (continuous)	3 cps	5 cps	30 cps
Max. Registrations per second (background)	10	20	40
Max. Registrations per second (peak)	250	1000	6000
Max. number of Announcement ports	16	32	100
Max. number of Conference ports	28	32	60
Max. number of SIP Trunks (+)	1	10	10
Max. number of SIP Trunking Sessions (+)	30	120	400
Max. number of Management Sessions	5	5	5

NOTICE:

* Registered lines includes primary lines, secondary call appearances and phantom lines.

The following table shows the characteristics and limits of the OpenScape Branch models with integrated gateways:

NOTICE:

Please note that the overall maximum number of registered lines can be reduced due to higher traffic or feature usage. If SRTP is used, conference port capacity decreases by approximately 15%. If OpenScape Branch is mixing a conference with multiple codecs, the conference port capacity decreases by approximately 25%. Please consult the OpenScape Branch performance tool when assessing capacity and performance.

	OSB 50i	OSB 50i A024/ A048	OSB 500i DP4/DP8	OSB 50/250	OSB 1000	OSB 6000
Max. number of registered lines *	80	24/48	500	50** / 250	1000	6000
Max. number of concurrent Sessions (simultaneous calls)	40	24/40	120/240	40** / 50	200	2400
Max. number of call per second (continuous)	1 cps	1 cps	5 cps	1** / 3 cps	5 cps	30 cps
Max. Registrations per second (background)	5	5	10	5** / 10	20	40
Max. Registrations per second (peak)	50	24/48	500	50** / 250	1000	6000
Max. number of Announcement ports	4	0	10	4** / 7	16	50
Max. number of Conference ports	12	0	30	12** / 28	32	60
Max. Number of Supported Languages	2	0	2	2	5	5
Max. number of Backup ACD Agents	10	0	50	10** / 50	250	250
Max. number of SIP Trunks (+)	1	0	1	1	10	10
Max. number of SIP Service Provider Profiles (+)	1	0	1	1	10	10
Max. number of Simultaneous SIP Service Providers	1	0	1	1	1	1
Max. number of SIP Trunking Sessions (+)	20	0	60	20** / 30	120	400

	OSB 50i	OSB 50i A024/ A048	OSB 500i DP4/DP8	OSB 50/250	OSB 1000	OSB 6000
Max number of concurrent G.711 integrated GW calls	8*** / 23**** /30*****	NA/NA	120/240	N/A	N/A	N/A
Max. number of concurrent FXS calls	4	24/48	NA/NA	N/A	N/A	N/A
Max. number of Management Sessions	5	5	5	5	5	5

NOTICE:

* Registered lines includes primary lines, secondary call appearances and phantom lines.

NOTICE:

** For OpenScape Branch 50 based on Acrosser AR-ES5495SM server.

NOTICE:

*** For OpenScape Branch 50i A84 and OSB 50i D44.

NOTICE:

**** For OpenScape Branch 50i DP14T.

NOTICE:

***** For OpenScape Branch 50i DP14E.

NOTICE:

(+) OpenScape Trunking capacities apply to OpenScape Branches operating SBC Proxy or Branch SBC modes and varies based on the OpenScape Branch model.

OpenScape Branch does not support the Remote Worker template. This function is normally supported by a centralized SBC e.g, OpenScape Session Border Controller.

SBC Session licenses (L30220-D601-A355) are required for each SIP Trunking session that is supported by the OpenScape Branch.

OpenScape 500i Performance Call Model:

The OpenScape 500i (OSB 500i) call model uses a 60 seconds mean holding time (MHT). With a maximum of 240 B-channels, this translates to 4 calls per second. This assumes 100% occupancy of the trunks, which is not typical. A better figure is 80-90%. Therefore, for the purposes of setting targets, 4 calls per second (cps) for PRI traffic is used.

Other useful calculations:

- 500 registered lines, making 3 calls per hour (cph) = 1500 BHCA = 0.41 cps
- 0.41 cps with 60 seconds MHT = 25 Concurrent Calls
- 1 min MHT with 3 cph = 3 minutes of usage per hour = 0.05 Erlangs/ Subscriber
- 500 registered lines using 0.05 Erl = 25 Erl (which is the same as concurrent calls, as expected)
- 8 PRIs, 240 E1 channels, 80% occupancy = 192 Erlangs (216 at 90% occ) hence 4 cps
- 8 PRIs, 184 T1 channels, 80% occupancy = 147 Erlangs (165 at 90% occ) hence 3 cps

Since the registered lines hosted on the OSB 500i are expected to generate only 25 Erlangs of traffic, the remaining capacity will be available to be used by calls to the PSTN from other OSBs.

1.5.6 Countries and Languages

An abundance of countries and languages are supported by the OpenScape Branch appliance.

Availability of Countries

The OpenScape Branch is currently available to many countries and is based on model. The availability of the OpenScape Branch to additional countries is contingent to the generic hardware certifications like UL, FCC and CE, while other countries have some country specific certification like Anatel for Brazil, CCC for China, VCCI for Japan and others.

There are various different hardware platforms. The larger OpenScape Branch models (1000 and 6000) are based on IBM and Fujitsu servers and these vendors already have certified their servers to many countries that require additional certifications. The smaller servers that are used in the OpenScape Branch 50i and 50/250, models are more specific and they all have at a minimum UL, FCC and CE certifications. These certifications cover a great majority of the countries, including the European Union. As additional specific certification becomes available to these models, they will be updated to the country availability.

The table below illustrates the various OpenScape Branch model availability at the time of the publishing of this document. Please note that additional country specific certifications for the OpenScape Branch models are taking place and that as they get finalized this table gets updated. Please verify with the Sales Representative for the latest availability.

Country	Dir	Ind	50i A84	50i D44	50i D14E	50i D14T	500i D4/D8	50/250	1000	6000 (x3550 M3/ M4/M5)	6000 (RX200 S6/S7)
Afghanistan		x	No	No	No	No	No	No	No	No	No
Albania		x	Yes	Yes	Yes	No	Yes	Yes	No	No	No
Algeria		x	No	No	No	No	No	No	No	No	No
Angola		x	No	No	No	No	No	No	No	No	No
Argentina	x	x	Yes	No	No	No	No	Yes	Yes	Yes	No
Armenia		x	No	No	No	No	No	No	No	No	No
Australia		x	No	No	No	No	No	No	Yes	Yes	Yes
Austria	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Azerbaijan		x	No	No	No	No	No	No	No	No	No
Bahrain		x	No	No	No	No	No	No	No	No	No
Bangladesh		x	Yes	Yes	Yes	No	Yes	No	No	No	No
Belarus		x	No	No	No	No	No	No	No	No	No
Belgium	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Benin		x	No	No	No	No	No	No	No	No	No
Bolivia		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Bosn/Herzeg.		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Botswana		x	No	No	No	No	No	No	No	No	No
Brazil	x	x	No	No	No	No	No	Yes	Yes	Yes	Yes
Bulgaria		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Burkina Faso		x	No	No	No	No	No	No	No	No	No
Burundi		x	No	No	No	No	No	No	No	No	No
Cameroon		x	Yes	Yes	Yes	No	Yes	No	No	No	No
Canada	x	x	No	No	No	No	No	No	Yes	Yes	Yes
Central African Republic		x	No	No	No	No	No	No	No	No	No
Chad		x	No	No	No	No	No	No	No	No	No
Chile		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
China	x	x	No	No	No	No	No	Yes	Yes	Yes	No
Colombia	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Congo		x	No	No	No	No	No	No	No	No	No
Costa Rica		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Cote d'Ivoire		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Croatia		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Cyprus		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes

Country	Dir	Ind	50i A84	50i D44	50i D14E	50i D14T	500i D4/D8	50/250	1000	6000 (x3550 M3/ M4/M5)	6000 (RX200 S6/S7)
Czech Republic	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Denmark	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Djibouti		x	No	No	No	No	No	No	No	No	No
Dominican Republic		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Ecuador		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Egypt		x	No	No	No	No	No	No	No	No	No
El Salvador		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Eritrea		x	No	No	No	No	No	No	No	No	No
Estonia		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Ethiopia		x	No	No	No	No	No	No	No	No	No
Finland	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
France		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Gabon		x	No	No	No	No	No	No	No	No	No
Gambia		x	No	No	No	No	No	No	No	No	No
Georgia		x	No	No	No	No	No	No	No	No	No
Germany	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Ghana		x	No	No	No	No	No	No	No	No	No
Greece		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Guatemala		x	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Honduras		x	Yes	Yes	Yes	No	Yes	No	No	No	No
Hong Kong	x	x	Yes	No	No	No	No	Yes	Yes	Yes	Yes
Hungary		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Iceland		x	No	No	No	No	No	No	No	No	No
India	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Indonesia		x	No	No	No	No	No	Yes	Yes	Yes	Yes
Iraq		x	No	No	No	No	No	No	No	No	No
Ireland		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Israel		x	No	No	No	No	No	No	No	No	No
Italy	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Japan		x	No	No	No	No	No	No	Yes	Yes	Yes
Jordan			No	No	No	No	No	No	No	No	No
Kazakhstan		x	No	No	No	No	No	No	No	No	No
Kenya		x	No	No	No	No	No	No	No	No	No

Country	Dir	Ind	50i A84	50i D44	50i D14E	50i D14T	500i D4/D8	50/250	1000	6000 (x3550 M3/ M4/M5)	6000 (RX200 S6/S7)
Kuwait		x	No	No	No	No	No	Yes	Yes	Yes	Yes
Kyrgyzstan		x	No	No	No	No	No	No	No	No	No
Latvia		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Lebanon		x	No	No	No	No	No	No	No	No	No
Lesotho		x	No	No	No	No	No	No	No	No	No
Liberia		x	No	No	No	No	No	No	No	No	No
Libya		x	No	No	No	No	No	No	No	No	No
Lithuania		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Luxembourg	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Macedonia		x	No	No	No	No	No	No	No	No	No
Madagascar		x	No	No	No	No	No	No	No	No	No
Malawi		x	No	No	No	No	No	No	No	No	No
Malaysia		x	No	No	No	No	No	No	Yes	Yes	Yes
Maldives		x	No	No	No	No	No	No	No	No	No
Mali		x	No	No	No	No	No	No	No	No	No
Malta		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Mauritius		x	No	No	No	No	No	No	No	No	No
Mexico	x	x	No	No	No	No	No	No	Yes	Yes	No
Moldova		x	No	No	No	No	No	No	No	No	No
Monaco		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Morocco		x	No	No	No	No	No	No	Yes	Yes	Yes
Mozambique		x	No	No	No	No	No	No	No	No	No
Namibia		x	No	No	No	No	No	No	No	No	No
Nepal		x	No	No	No	No	No	No	No	No	No
Netherlands	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
New Zealand		x	No	No	No	No	No	No	Yes	Yes	Yes
Nicaragua		x	Yes	Yes	Yes	No	Yes	Yes	No	No	No
Niger		x	No	No	No	No	No	No	No	No	No
Nigeria		x	No	No	No	No	No	No	No	No	No
Norway		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Oman		x	No	No	No	No	No	No	No	No	No
Pakistan		x	No	No	No	No	No	No	No	No	No
Palestinian Territory		x	No	No	No	No	No	No	No	No	No

Country	Dir	Ind	50i A84	50i D44	50i D14E	50i D14T	500i D4/D8	50/250	1000	6000 (x3550 M3/ M4/M5)	6000 (RX200 S6/S7)
Panama		x	Yes	Yes	Yes	No	Yes	Yes	No	No	No
Paraguay		x	Yes	Yes	Yes	No	Yes	Yes	No	No	No
Peru		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Philippines		x	No	No	No	No	No	Yes	Yes	Yes	Yes
Poland	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Portugal		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Qatar		x	No	No	No	No	No	No	No	No	No
Romania		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Russia	x	x	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes
Rwanda		x	No	No	No	No	No	No	No	No	No
Saudi Arabia		x	No	No	No	No	No	No	No	No	No
Senegal		x	No	No	No	No	No	No	No	No	No
Serbia		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Singapore		x	No	No	No	No	No	Yes	Yes	Yes	Yes
Slovakia		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Slovenia		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Somalia		x	No	No	No	No	No	No	No	No	No
South Africa		x	No	No	No	No	No	No	Yes	Yes	No
South Korea		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Spain	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Sri Lanka		x	No	No	No	No	No	No	No	No	No
Sweden	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Switzerland		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Taiwan		x	No	No	No	No	No	No	No	No	No
Tajikistan		x	No	No	No	No	No	No	No	No	No
Tanzania		x	No	No	No	No	No	No	No	No	No
Thailand		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Togo		x	No	No	No	No	No	No	No	No	No
Tunisia		x	No	No	No	No	No	No	No	No	No
Turkey		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Turkmenistan		x	No	No	No	No	No	No	No	No	No
Uganda		x	No	No	No	No	No	No	No	No	No
Ukraine		x	No	No	No	No	No	No	No	No	No

Country	Dir	Ind	50i A84	50i D44	50i D14E	50i D14T	500i D4/D8	50/250	1000	6000 (x3550 M3/ M4/M5)	6000 (RX200 S6/S7)
United Arab Emirates		x	No	No	No	No	No	No	Yes	Yes	Yes
United Kingdom	x	x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
United States	x	x	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Uruguay		x	Yes	Yes	Yes	No	Yes	Yes	No	No	No
Uzbekistan		x	No	No	No	No	No	No	No	No	No
Venezuela		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Vietnam		x	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Yemen		x	No	No	No	No	No	No	No	No	No
Zambia		x	No	No	No	No	No	No	No	No	No
Zimbabwe		x	No	No	No	No	No	No	No	No	No

NOTICE:

Dir - Direct, Ind - Indirect

Languages

Two languages are supported for the Common Management Platform (CMP) / Assistant, the Local Management Portal and Media Server.

The Management of the OpenScape Branch is available in the following languages:

- Common Management Platform (CMP) / Assistant

    English

    German

- Web based local GUI

    English

The OpenScape Branch integrated Media Server is based on the OpenScape Media Server that supports announcements for the following countries and languages:

Country	Language		Country	Language
Argentina	Spanish (Argentina)		Korea	English (U.S.)
Australia	English (UK)		Latvia	Latvian
Austria	German		Lithuania	English (UK)
Belgium	French, German, Dutch		Malaysia	English (U.S.)
Bosnia and Herzegovina	Serbian		Mexico	Spanish (Mexico)
Brazil	Portuguese (Brazil)		Morocco	French

Country	Language	Country	Language
Bulgaria	Bulgarian	Netherlands	Dutch
Canada	French (Canada)	Norway	Norwegian
Chile	Spanish (Argentina)	Peru	Spanish (Mexico)
China	Chinese	Philippines	English (U.S.)
Colombia	Spanish (Mexico)	Poland	Polish
Croatia	Croatian	Portugal	Portuguese
Czech Republic	Czech	Romania	Romanian
Denmark	Danish	Russia	Russian
Ecuador	Spanish (Mexico)	Serbia	Serbian
Estonia	Estonian	Singapore	English (U.S.)
Finland	Finnish	Slovakia	Slovakian
France	French	Slovenia	Slovenian
Germany	German	South Africa	English (UK)
Great Britain	English (UK)	Spain	Spanish
Greece	Greek	Sweden	Swedish
Hong Kong	English (U.S.)	Taiwan	English (U.S.)
Hungary	Hungarian	Thailand	English (U.S.)
India	English (UK)	Turkey	Turkish
Indonesia	English (U.S.)	United Arab Republic	Arabic
Ireland	English (UK)	USA	English (U.S.)
Italy	Italian	Venezuela	Spanish (Mexico)
Japan	English (U.S.)	Vietnam	English (U.S.)

2 General Installation - Overview

This chapter describes the options for installing software and hardware for OpenScape Branches. In OpenScape Branch Version 2 simplified installation procedures were introduced. In addition, general configuration was added to OpenScape Branch Assistant to configure functions for communicating between OpenScape Branch Assistant and OpenScape Voice Assistant used during installation. In OpenScape Branch Version 7 a feature was introduced to allow secure OpenScape Branch management application access within the hosted OpenScape Voice solution (Option 5).

OpenScape Branch Assistant Configuration

"General Settings" is used to configure a secure method of transport between OpenScape Branch Assistant and the OpenScape Voice Assistant for the purpose of transferring files.

Installation Options

There are two types of installation procedures: "Simplified Installation" and "Basic Installation".

Simplified Installation provides five options:

- **Option 1 (LAN MAC Address):**

  The OpenScape server hardware is pre-loaded with the required installation software prior to shipping to the customer. The installation does not require a USB stick. The LAN MAC address is pre-configured in the OpenScape Branch Assistant and is used to communicate from the OpenScape hardware to the OpenScape Branch Assistant to fetch software and configuration data.

  DHCP servers are used to communicate the pre-configured Common Management Platform (CMP) URL to the OpenScape server hardware. DHCP also provides a temporary IP address to the OpenScape server to be used during the download process. The OpenScape Branch Assistant must be configured with the software load required for this particular server.

  NOTICE:

  The OpenScape Branch and OpenScape SBC are configured to run on the first network interface (LAN interface) and will accept the first DHCP Offer that contains Option 43 with a CMP FQDN or IP Address. If on the first network interface (LAN) a DHCP Offer is not returned or is returned but does not contain Option 43, then the OpenScape Branch or OpenScape SBC will send a DHCP Discover message out the second network interface (WAN interface) if configured. If that DHCP offer contains Option 43 with a CMP FQDN or IP Address, the OpenScape Branch or OpenScape SBC will then accept that DHCP Offer from the second network interface (WAN) and use that interface to contact the CMP. If attempting to bring the OpenScape Branch up as Branch-SBC mode, then only have the DHCP Server configured to provide Option 43 on the WAN side interface of the OpenScape Branch. The OpenScape Branch

and OpenScape SBC ignore any DHCP Offers which do not contain Option 43.

- • **Option 2 (Local Logical ID):**

The OpenScape Branch server hardware requires a USB stick for installation. The USB stick is pre-loaded with required installation software including the Logical ID information for the OpenScape Branch Office prior to shipping to the customer. The Logical ID information is comprised of <name of the OpenScape Voice connected to> : <business group name> : <branch name> and is used to communicate from the OpenScape hardware to the OpenScape Branch Assistant to fetch software and configuration data.

DHCP servers are used to provide the temporary IP address, as well as, to communicate the pre-configured Common Management Platform (CMP) URL to the OpenScape server hardware.

The OpenScape Branch Assistant must be configured with the software load required for this particular server.

- • **Option 3 (Local CMP URL)**:

The OpenScape Branch server hardware requires a USB stick for installation. The USB stick is pre-loaded with required installation software including the Logical ID information for the OpenScape Branch Office and the CMP URL prior to shipping to the customer.

Pre-configuration of the DHCP servers is required when using this option. A temporary dynamic IP is set up for communication between the DHCP server and the OpenScape hardware.

The OpenScape Branch Assistant must be configured with the software load required for this particular server.

- • **Option 4 (Local xml Config File)**:

The OpenScape Branch server hardware requires a USB stick for installation. The USB stick is pre-loaded with required installation software including an xml configuration file for the OpenScape Branch Office prior to shipping to the customer. The xml file contains the Logical ID, Static IP address and address of the CMP to be used.

Pre-configuration of the DHCP servers is not required when using this option. The Static IP is used to communicate between the CMP and the OpenScape hardware.

- • **Option 5 (Management Access to Hosted OpenScape Branch via VPN)**:

To ensure secure management access within an insecure hosted network environment, VPNs shall be used while VoIP communications continues to utilize the existing SIP and RTP transport security protocols.

The OpenScape Branch server hardware requires a USB stick for installation. The USB stick is pre-loaded with required installation software including the Logical ID information for the OpenScape Branch Office, the CMP URL and Boot VPN information prior to shipping to the customer.

In addition, the xml file contains an Administration IP address to identify the gateway address (VPN network) to be used for routing IP packets.

Pre-configuration of the DHCP servers is not required when using this option. The Temporary Dynamic IP is used to communicate between the CMP and the OpenScape hardware.

Basic Installation:

The OpenScape Branch "Basic Installation" is the pre-Version 2 OpenScape Branch installation method. Installation requires the use of a memory stick with the current software load and the assigned IP address for the system. In addition, any of the media files associated with the Media Server language, ACD and Auto Attendant must be uploaded to the OpenScape Branch device explicitly.

Refer to the **OpenScape Branch Hardware - Overview** chapter for detailed installation steps.

2.1 OpenScape Branch Assistant - Configuration

This chapter describes configuration for the OpenScape Branch Assistant.

General Settings

The "General Settings" option is used to configure a secure method of transport between OpenScape Branch Assistant and the OpenScape Voice Assistant for the purpose of transferring configuration, ACD Music on Hold (MoH), ACD and Attendant media files.

2.2 Simplified Installation Steps

This chapter describes the general steps for OpenScape Branch simplified installation of software and hardware.

General Steps Checklist

The following is a checklist of general steps. Some steps may only apply to certain installation options as indicated.

1) **Download Installation Files Into the CMP:**

    Download all installation files to the Common Management Platform (CMP). Installation files include:

    Mandatory files:

    *   SPA file
    *   Software load image
    *   Configuration file (XML file)

    Optional files:

    *   Media server files

    The downloaded files are used to install multiple OpenScape Branch servers.

    *   Required for Option 1-5

2) Pre-configure the DHCP Server:

Pre-configure the URL associated with the Common Management Platform (CMP) into the DHCP server.

• Required for Option 1-2

The DHCP server must return a "temporary" IP address to be used for downloading the OpenScape Branch.

• Required for Option 1-3, 5

> **NOTICE:**
>
> OpenScape SBC during DHCP server discovery sends out a DHCP Discover message with Option 60 Vendor Class Identifier automatically set to "OpenScapeBranch" (without the quotes).

> **NOTICE:**
>
> The DHCP Server must be configured to contain the matching Vendor Class Identifier Option 60 so that the associated Option 43 parameters specific to this vendor class can be provided to the OpenScape Branch from the DHCP Server. The Option 43 parameters returned to the OpenScape Branch in a DHCP Offer will include the Common Management Platforml FQDN(s) or IP Address(es) so that the OpenScape Branch can contact it to authenticate and download the necessary files to begin the installation procedure. In order to provide the correct Option 43 Vendor Specific Information to the OpenScape Branch in a DHCP Offer, the DHCP Server must not only be provisioned with Option 60, but also be provisioned with Option 43 containing the Common Management Platform FQDN(s) or IP Address(es).

3) Add the OpenScape Branch to OpenScape Voice Assistant:

Add the OpenScape Branch into the Common Management Platform (CMP), OpenScape Voice Assistant.

• Required for Option 1-5

4) • Required for Option 1-5

5) Configure the Software Load, Hardware Type and Media Server Files for the OpenScape Branch:

Configure the Software Load to be downloaded to the server, the Hardware Type of the server and Media Server Language files for the OpenScape Branch in the Common Management Platform (CMP), OpenScape Branch Assistant.

> **NOTICE:**
>
> If desired, the full configuration associated with each device, may also be downloaded to the CMP. If this is done,

the download will include the "config.xml" file and the device will boot up with this configuration database.

- Required for Options 1-5

6) Configure ACD Announcement files, ACD Music on Hold files Auto Attendant files and the Data Configuration File for the OpenScape Branch:

ACD announcement and Music on Hold files and Auto attendant files can be downloaded to the OpenScape Branch server. A Data configuration file can also be downloaded to the OpenScape Branch using the Common Management Platform (CMP), OpenScape Branch Assistant.

- Optional for Options 1-5

7) Add the LAN MAC Address to the OpenScape Branch Assistant:

Add the OpenScape Branch into the Common Management Platform (CMP), OpenScape Branch Assistant.

- Required for Option 1 only

8) Connect the OpenScape Hardware to the Network:

Install the OpenScape server onto the network. Plug in the USB stick into the OpenScape Branch server and power up the server. Upon power up installation information is exchanged between the CMP and the OpenScape Branch server. The list of installation files includes the software load, configuration file and possibly media files and config.xml file for the database. In OpenScape Branch Version 7, Boot VPN information will be included for Option 5. The device may boot up to three times during the process of downloading and installation.

- USB stick not required for Option 1
- USB stick required for Option 2-5

> **NOTICE:**
>
> OpenScape Branch/SBC Access to CMP (unsecured port 4709) must be configured in the OpenScape Branch Assistant prior to powering up the server. This is required to allow authentication, configuration and licensing information.

9) Troubleshooting Installation Errors and Alarming:

The OpenScape Branch server will log errors and produce alarms when possible, if errors occur during installation. Resolve errors and re-install.

10) Confirmation Installation is complete:

The OpenScape Branch Assistant can be used to view the status of all the OpenScape Branch and SBC devices as they are being installed. The status will indicate the current state of the installation process including if the OpenScape device was successfully installed, the failure state, and reason (when provided). Once an OpenScape device has been

successfully installed the state shown in the OpenScape Branch Assistant will be "normal".

Should the OpenScape Branch or SBC software need additional updates, the normal OpenScape Branch Batch processing functions can be used.

The OpenScape Branch or SBC server will signal that installation is complete by audible alert. Audible alarm as are also used to signal installation issues.

2.2.1 How to Download Installation Files Into the CMP

Proceed as follows to install files to the repository to the Common Management Platform (CMP). The downloaded files can be used to install multiple OpenScape Branch servers. Files include product software loads, media server software, ACD software, and Auto Attendant software.

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Maintenance tab** > **Inventory** within the Navigation Bar in Common Management Platform.

   The system presents the **Nodes & Application** Navigation Tree.

2) Select **Repository** from the Navigation tree.

   The **Software Repository** window appears with a list of software.

   > **NOTICE:**
   >
   > Note that effective with OpenScape Branch V8 the software versions use the 'Fit4more' format. For example,
   >
   > 08.00.03.00-2 (V8 R0.3.0)
   >
   > 08.00.04.00-1 (V8 R8.4.0)

3) Click the **Add...** button, in the work area navigation bar.

   The **Add to software repository** window appears.

4) Select the **Browse...** button to search and select a file. One to ten files can be downloaded at one time. These files can be individual files or zip files. It is required to download the SPA file and software image.tar file for software updates.

   > **NOTICE:**
   >
   > The SPA file for software update which contains the meta information **must be the first file** in the download list.

   The **browser** window appears, for search and selection of a file.

5) Select the file from the browser and **open** to add the file to the list to be loaded.

The **Add to software repository** window is updated with the selected file information.

6) Click the **Add** button next to **Add another file** to add additional files when greater than 10 files are required.

The **Add to software repository** window appears.

7) Click the **Save** button to update the CMP software repository.

The **Add software repository** window closes and the Software repository window appears with the updated software file information.

NOTICE:

Media server files (for OpenScape Branch) are transferred to the following directories in the CMP:

---

*   **Offboard** (separate server used for CMP): /opt/siemens/openbranch/ob_config/ms_languages
*   **Onboard** (aka Integrated, CMP runs in the same OSV server)/img/enterpriseimg/primary/openbranch/ob_config/ms_languages

---

NOTICE:

ACD (for OpenScape Branch), Auto Attendant (for OpenScape Branch) and Configuration files are transferred to the following directories in the CMP:

---

*   **Offboard** (separate server used for CMP):

ACD Announcement directory: (OpenScape Branch)

```
/opt/siemens/openbranch/ob_config/<Logical_ID>/
ACD_Announcements
```

Auto Attendant directory: (OpenScape Branch)

```
/opt/siemens/openbranch/ob_config/<Logical_ID>/
AutoAttendant_Announcements
```

Configuration File directory:

```
/opt/siemens/openbranch/ob_config/<Logical_ID>/
Configuration_File
```

*   **Onboard** (aka Integrated, CMP runs in the same OpenScape Voice server):

ACD Announcement directory: (OpenScape Branch)

```
/img/enterpriseimg/primary/openbranch/ob_config/
<Logical_ID>/ACD_Announcements
```

Auto Attendant directory: (OpenScape Branch)

```
/img/enterpriseimg/primary/openbranch/ob_config/
<Logical_ID>/AutoAttendant_Announcements
```

Configuration File directory:

```
/img/enterpriseimg/primary/openbranch/ob_config/
Configuration_File
```

8) The CMP repository now has the required installation software.

The software in the CMP repository can now be used to install multiple OpenScape severs.

2.2.2 How to Configure a Windows DHCP Server

OpenScape device DHCP client will Broadcast a DHCP discovery Request with Option 60 Vendor Class Identifier automatically set to "OpenScapeBranch". The DHCP Server shall acknowledge with information via Option 43 containing the Common Management Platform FQDN(s) or IP Address(es). Proceed as follows to configure a Windows DHCP server with Common Management Platform (CMP) information used for Simplified Installation Options 1-2:

Prerequisites

Adequate administrative permissions.

DHCP Servers are available to the OpenScape devices in the customers network and used for temporary Dynamic IP address retrieval.

Step by Step

1) Configure Option 60: Enter the following information into the DHCP server.

   a) Open the DHCP Console in Windows Server 2003/2008

   b) Select (highlight) the DHCP Server in the navigation tree, right click on it and select **Define Vendor Classes**.

      The **DHCP Vendor Classes** window appears.

   c) Click the **Add** button.

      The **New Class** window appears.

   d) Enter the following Vendor Class Information: **Display Name**e.g., OSB_VCI, **Description**e.g., OpenScape Branch Vendor Class Identifier.

   e) Click the field under the **ASCII** column in the table and enter the value "OpenScapeBranch" (without quotes) in the field.

   f) Click the **OK** button when finished.

      The **New Class** window closes and the **DHCP Vendor Classes** window appears with the new vendor class displayed.

   g) Click the **Close** button.

      Option 60 is configured.

2) Configure Option 43: Enter the following information into the DHCP server.

a) Open the DHCP Console in Windows Server 2003/2008 (may be currently opened)

b) Select (highlight) the DHCP Server in the navigation tree, right click on it and select **Predefine Options**.

The **Predefined Options and Values** window appears.

c) Select the option class previously created (OSB_VCI) from the **Option class** field list.

The **Add** button becomes active.

d) Click the **Add** button.

The **Option Type** window appears.

e) Enter the option type name in the **Name** field e.g., OSB-Opt43-for-CMP.

f) Select data type **String** in the **Data type** field list.

g) Enter **1** for the code in the **Code** field. This will return Type 01 in Option 43 which the OpenScape Branch/SBC requires.

h) Enter description in the **Description** field (optional) e.g., OSB Opt43 for CMP FQDN/IP.

i) Click the **OK** button when finished.

The **Option Type** window closes and the **Predefined Options and Values** window appears with the new Opton name displayed.

j) Enter the IP Address of the Common Management Platform (CMP) in the **Value** field. This could also consist of a single FQDN if desired, two FQDNs or two IP Addresses if CMP redundancy exists, which all can resolve to the Common Management Platform IP Addresses.

Example: String value is a single IP Address for CMP: 10.245.4.52

Example: String value contains two CMP IP Addresses: 10.245.4.52,10.245.4.62

Example: String value is a single FQDN for the CMP: cmp52.simpinst.com

Example: String value contains two FQDNs (comma separated): cmp52.simpinst.com,cmp52.simpinst.com62

k) Click the **OK** button.

Option 43 is configured and the **DHCP** main window appears.

3) Assign Option 43 to the DHCP Scope: Enter the following information into the DHCP server.

   a) Open the DHCP Console in Windows Server 2003/2008 (may be currently opened)

   b) Select (highlight) the DHCP Server in the navigation tree, right click on it and select **Configure Options**.

   The **Scope Options** window appears.

   c) Select the **Advanced** tab.

   The **Advanced** work area appears.

   d) Select the vendor class previously created (OSB_VCI) from the **Vendor class** field list.

   The **Available Options and Description** is populated in the table.

   e) Checkmark the option previously created for Option 43 in the checkbox.

   The **Data entry String value** is automatically updated with the CMP IP or FQDN information.

   f) Click the **OK** button.

   Option 43 is assigned and the **DHCP** main window appears.

4) Pre-configuration of the DHCP server is complete.

The OpenScape Branch is configured to run on the first network interface (LAN interface) and will accept the first DHCP Offer that contains Option 43 with a CMP FQDN or IP Address. If on the first network interface (LAN) a DHCP Offer is not returned or is returned but does not contain Option 43, then the OpenScape Branch will send a DHCP Discover message out the second network interface (WAN interface) if configured. If that DHCP offer contains Option 43 with a CMP FQDN or IP Address, the OpenScape Branch or then accept that DHCP Offer from the second network interface (WAN) and use that interface to contact the CMP. If attempting to bring the OpenScape Branch up as Branch-SBC mode, then only have the DHCP Server configured to provide Option 43 on the WAN side interface of the OpenScape Branch. The OpenScape Branch and OpenScape SBC ignore any DHCP Offers which do not contain Option 43.

After the DHCP server is configured additional simplified installation steps are required prior to installation of an OpenScape Branch or OpenScape Session Border Controller.

2.2.3 How to Configure a LINUX DHCP Server

OpenScape device DHCP client will Broadcast a DHCP discovery Request with Option 60 Vendor Class Identifier automatically set to "OpenScapeBranch". The DHCP Server shall acknowledge with information via Option 43 containing the Common Management Platform FQDN(s) or IP Address(es). Proceed as follows to configure a LINIUX DHCP server with Common Management Platform (CMP) information used for Simplified Installation Options 1-2:

Prerequisites

Adequate administrative permissions.

DHCP Servers are available to the OpenScape devices in the customers network and used for temporary Dynamic IP address retrieval.

Step by Step

1) The following details the specific configuration parameters that are required to provision a Linux DHCP Server for Simplified Installation with the OpenScape Branch. The parameters below refer to the specific settings needed for the Simplified Installation with the OpenScape Branch outside of the typical DHCP server settings already existing in the customer environment if using a Linux DHCP Server (DHCP Address Pools, Reservations, Default Gateway, DNS server addresses, etc. as this depends on the customer infrastructure)

   a) Only the "option Vendor.swsupply" line should be used and can be populated with either a single FQDN, a single IP Address, two FQDNs or two IP Addresses (separated by a comma) for representing CMP redundancy

   The "option Vendor.swsupply2" (code 2) should not be used, as the OpenScape Branch only recognizes and accepts Option 43 responses with Type Code 01. The "option Vendor.swsupply2" uses Type Code 02 which the OpenScape Branch does not accept for representing a CMP address

   b) If the DHCP Discover message sent by the OpenScape Branch upon bootup contains Option 60 Vendor Class Identifier equal to the value "OpenScapeBranch", the DHCP Server will return in the DHCP Offer Option 43 with one of the values not commented out in "option Vendor.swsupply" under the "Vendor" class.

   c) In the example below, the DHCP Server will return in the DHCP Offer Option 43 with 10.234.3.35, which represents the Common Management Platform IP Address

   Only one value in "option Vendor.swsupply" can be active at a time within this dhcp.conf file. In the example below, having either of the "option Vendor.swsupply" values active (not commented out) will return in Option 43 the associated entries (the first returns a single IP Address, the second returns a single FQDN, the third returns two IP Addresses (separated by a comma), and the fourth returns two FQDNs (separated by a comma)

Example data:

- the customer domain is simpinstall.com
- the customer is providing addresses via DHCP for network 10.20.1.0/24 GW: 10.20.1.1
- the customer's DHCP Scope is for addresses 10.20.1.10 thru 10.20.1.100
- the customer's two DNS Servers are 10.20.4.230 and 10.20.5.230
- the customer's CMP is at IP Address 10.234.3.35 based on "option Vendor.swsupply"

DHCP Server settings in the /etc/dhcpd.conf file:

```
option space Vendor;

option Vendor.swsupply code 1 = string;

option domain-name "simpinstall.com";
```

```
option domain-name-servers 10.20.4.230, 10.20.5.230;

option routers 10.20.1.1;

#
```

class "Vendor" {

option Vendor.swsupply "10.234.3.35";

```
# option Vendor.swsupply "cmp35.simpinstall.com";

# option Vendor.swsupply "10.234.3.35,10.234.2.206";

# option Vendor.swsupply "cmp35.simpinstall.com";

# option Vendor.swsupply
  "cmp35.simpinstall.com,cmp36.simpinstall.com";
```

**match if option vendor-class-identifier =
 "OpenScapeBranch";**

vendor-option-space Vendor:

```
}

subnet 10.20.1.0 netmask 255.255.255.0 {

range 10.20.1.10 10.20.1.100;

default-lease-time 86400;

max-lease-time 1800;

}
```

2) Pre-configuration of the DHCP server is complete.

The OpenScape Branch is configured to run on the first network interface (LAN interface) and will accept the first DHCP Offer that contains Option 43 with a CMP FQDN or IP Address. If on the first network interface (LAN) a DHCP Offer is not returned or is returned but does not contain Option 43, then the OpenScape Branch will send a DHCP Discover message out the second network interface (WAN interface) if configured. If that DHCP offer contains Option 43 with a CMP FQDN or IP Address, the OpenScape Branch will then accept that DHCP Offer from the second network interface (WAN) and use that interface to contact the CMP. If attempting to bring the OpenScape Branch up as Branch-SBC mode, then only have the DHCP Server configured to provide Option 43 on the WAN side interface of the OpenScape Branch. The OpenScape Branch ignores any DHCP Offers which do not contain Option 43.

After the DHCP server is configured additional simplified installation steps are required prior to installation of an OpenScape Branch.

2.2.4 How to Configure a Cisco Router Utilizing the DHCP Server

OpenScape device DHCP client will Broadcast a DHCP discovery Request with Option 60 Vendor Class Identifier automatically set to "OpenScapeBranch". The DHCP Server shall acknowledge with information via Option 43 containing the Common Management Platform FQDN(s) or IP Address(es). Proceed as follows to configure a Cisco Router Utilizing the DHCP server with Common Management Platform (CMP) information used for Simplified Installation Options 1-2:

Prerequisites

Adequate administrative permissions.

DHCP Servers are available to the OpenScape devices in the customers network and used for temporary Dynamic IP address retrieval.

Step by Step

1) The steps needed to set up a Cisco Router to act as a DHCP Server can be obtained from the Cisco Web Site. The following provides the specific configuration parameters necessary for the Simplified Installation to work with the OpenScape Branch with a Cisco Router DHCP Server.

2) Configure Option 60: Enter the following information into the "ip dhcp pool".

   - **option 60 hex 4f70.656e.5363.6170.6542.7261.6e63.68**

     NOTICE:

     in hex this string is equal to: OpenScapeBranch

3) Configure Option 43: Enter the following information into the "ip dhcp pool".

   - Option 43 hex string is assembled by concatenating TLV values (Type + Length + Value)
   - For whatever string value is desired for the FQDN(s) or IP Address(es) for the Common Management Platform, the Option 43 must begin with the first byte being "01" for Type Code 01, the second byte representing the length in bytes of the actual value, followed by the representative string value bytes.

   Example 1:

   Add the following to the configured "ip dhcp pool" for a CMP IP Address of 10.234.2.206:

   ```
   option 43 hex 010c.3130.2e32.3334.2e32.2e32.3036
   ```

   Actual representation of bytes:

   ```
   01 = Type code 01

   0C = Length 12 (12 bytes make up the IP Address
    10.234.2.206)
   ```

```
10.234.2.206 in hex = 31 30 2e 32 33 34 2e 32 2e 32 30
 36
```

Example 2:

Add the following to the configured "ip dhcp pool" for a CMP FQDN of cmp35.jgmb.com:

`option 43 hex 010c.3130.2e32.3334.2e32.2e32.3036`

Actual representation of bytes:

```
01 = Type code 01

0E = Length 14 (14 bytes make up the FQDN
 cmp35.jgmb.com)

cmp35.jgmb.com in hex = 63 6d 70 33 35 2e 6a 67 6d 62 2e
 63 6f 6d
```

4) Pre-configuration of the DHCP server is complete.

After the DHCP server is configured additional simplified installation steps are required prior to installation of an OpenScape Branch or OpenScape Session Border Controller.

2.2.5 How to Add an OpenScape Branch Office to OpenScape Voice

Proceed as follows to add an OpenScape Branch to OpenScape Voice for Simplified Installation Options 1-5:

Prerequisites

Endpoint Profile must be created.

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** > **OpenScape Voice** and select the **Business Group icon** within the Navigation Bar in Common Management Platform.

2) Select the **<Business Group>** in the **Available Business Groups** pull-down associated the Branch to be viewed.

   The Business Group selected appears in the Available Business Groups pull-down.

3) Select the **Members** > **Endpoints** in the Navigation Tree.

   The system presents the **Endpoints** view in the Work Area with a current list of all endpoints (e.g., SBCs and branch offices) associated with the selected Business Group.

4) Proceed as follows to create a new OpenScape Branch endpoint:

a) Click the **Add...** button.

The **General tab** dialog is displayed by default.

b) Fill in the **Name**, select the **Registered** checkbox (indicates static Registered), select an Endpoint Profile in the **Profiles** selection list and configure **other required** fields in the general tab work area.

The register checkbox will be grayed out until the Type to be selected is "**Static**" on the **SIP** tab.

The Endpoint Profile must be configured before adding an endpoint.

c) Navigate to the **SIP tab** and configure the appropriate fields in the work area.

"Scenario where Digest Authentication is enabled in the OSV but challenges are NOT desired for SIP requests on this OSB endpoint to the OSV". Configure the Endpoint as "Trusted" for all ports. OSV parameter Srx/Sip/AuthTraverseViaHdrs can be set to "RtpFalse" since the Endpoint is configured as "Trusted" for all ports and no challenges for requests on this Endpoint will be issued from the OSV with Digest Authentication enabled.

"Scenario where Digest Authentication is enabled in the OSV and challenges are desired for SIP requests on this OSB endpoint to the OSV". On the Endpoint, configure as "Trusted" only the specific port SIP OPTIONS will be using to communicate with the OSV. OSV parameter Srx/Sip/AuthTraverseViaHdrs would be set to "RtpTrue" to traverse the header for the trusted port being used by OPTIONS. OSV will issue challenges for all SIP requests on this Endpoint for ports which are not trusted (all except for the port using OPTIONS). Also make sure in the OSB configuration the SIP OPTIONS are set to use this specific port as well

For Option 5: Enter the IP address (IPv4 or IPv6) or FQDN associated with access to the hosted OpenScape Branch, in the **Management Address** field. The address is used by all CMP management application requiring access to the hosted OpenScape Branch.

d) Navigate to the **Attributes tab** and checkmark the appropriate attributes in the work area.

Example: To create an endpoint the following parameters must be configured:

- **SIP Proxy** - Checked
- **Route via Proxy** - Checked
- **Allow Proxy Bypass** - Unchecked
- **Public/Offnet Traffic** - Checked
- **Enable Session Timer** - Checked

e) Navigate to the **Aliases tab** and configure the Alias IP address. If using OpenScape Branch with Redundancy then Alias must include redundant IP and Physical IP addresses for both OpenScape Branch nodes.

f) Continue as described in the *Managing Branch Offices* chapter in the *OpenScape Voice Assistant* documentation.

The Branch Office **endpoint** is now created.

The OpenScape "Branch" must now be further configured in the OpenScape Voice Assistant database.

5) To configure the OpenScape Branch in the OpenScape Voice Assistant database, select the **Branch Office List** > in the Navigation Tree.

The system presents the **Branch Office List** view in the Work Area with a current list of all SBCs and branch offices associated with the selected Business Group.

6) Proceed as follows to create a new branch office:

a) Click the **Add...** button.

The **<BG name> - Add Branch Office** dialog is displayed.

b) Fill in the **Branch Office** Name and **Representative Endpoint** fields.

c) Select a numbering plan for the branch office from the **Numbering Plan** selection list.

d) Select an office code from the **Office Code** selection list.

e) Select the routing area of the branch office in the **Routing Area** selection list.

f) Check the **This is a Branch Office of type OpenScape Branch** checkbox in the OpenScape Branch Type field area in the **General** tab.

g) Continue as described in the *Managing Branch Offices* chapter in the *OpenScape Voice Assistant* documentation.

When the Branch Office of the OpenScape Branch type is added to the OpenScape Voice Assistant, a record will be added to the OpenScape Branch Assistant's database. From that point the OpenScape Branch Assistant will be able to administer this Branch Office.

NOTICE:

The OpenScape Branch Assistant Overview work area will display the OpenScape Branch **Status** as **Inventory**.

---

7) Proceed as follows to remove an existing branch office from the Branch Office list:

a) Click the **Delete** button.

The corresponding record will be deleted from the OpenScape Branch Assistant's database.

2.2.6 How to Configure the Software Load and Hardware Type

Proceed as follows to configure the Software Load to be downloaded to the server and the Hardware Type of the server for the OpenScape Branch for Simplified Installation Options 1-5:

Prerequisites

The software load to be downloaded to the server, must be pre-loaded to the Common Management Platform (CMP) Software Repository.

The **Allowed to request a security Authentication Statement** parameter (**Configuration** > **OpenScape Branch** > **Administration** > **Branch Office List** > Edit an existing OpenScape Branch/SBC > **Configuration Installation button**) must be enabled to allow communication between the CMP and OpenScape Branch.

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

   The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) Select the OpenScape Branch or SBC from the **OpenScape Branch Overview** in work area by checking the associated checkbox.

   The Edit button becomes active the **Branch Office Overview** Work Area.

4) Click the **Edit...** button in work area.

   The **Edit OpenScape Branch** dialog becomes active.

5) Click the **Configure Installation** button.

   The **Installation info** dialog becomes active.

6) Select the **Software load** from the pull-down menu in the general work area e.g., V2R0.01.12.

   Note that effective with OpenScape Branch V8 the software versions use the 'Fit4more' format. For example,

   08.00.03.00-2 (V8 R0.3.0)

   08.00.04.00-1 (V8 R8.4.0)

7) Select the **Hardware Type** from the pull-down menu in the general work area. Possible values are based on the current hardware supported e.g., Advantech, Advantech 50i, X3250, X3550, RX330, RX200.

8) Checkmark the **Installation** checkbox if the simplified installation method is to be used to install Hardware. Setting of this flag is mandatory for simplified installation.

   > **NOTICE:**
   >
   > The **Communicating over secured channel** checkbox in the General Tab is unchecked by default the first time. When the installation is completed, this parameter is set automatically. This parameter must be unchecked manually if the server is to be reinstalled.

9) Click the **OK** button.

   The **Installation info** dialog closes and the **Edit OpenScape Branch** dialog appears.

10) Click the **OK** button.

   The **Edit OpenScape Branch** dialog closes and the **OpenScape Branch Overview** window appears and the OpenScape Branch is now updated.

2.2.7 How to Add Media Server Language Files to the CMP Repository

Proceed as follows to add media server language files to the Media Server Language Files Repository in the Common Management Platform (CMP) These files are used for OpenScape Branch for Simplified Installation Options

1-5. Language files must be placed into the Media Server Language Files Repository prior to being assigned to an individual OpenScape Branch.

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **General Settings** in the Navigation Tree under Administration.

   The system presents the **General Settings** dialog with the **Installation** tab display as the default.

3) Click the **Add...** button in the **Media Server language files** work area.

   The **Add language files to Media server** dialog is displayed.

4) Click the **Browse...** button in the work area.

   The browser dialog is displayed.

5) Select a Media Server Language file.

   The file format must be RPM (.rpm). The maximum size of a single file should not exceed 70 MB and is limited to 2 files.

6) If additional files are required Click the **Browse...** button for associated with the next file to be added and browse to select another Media Server Language file.

7) Click the **Save** button.

   The **Add language files to Media sever** dialog closes and the **General Settings** dialog is updated with the current language files in the Media Server Language Repository.

8) Click the **Save** button in the **General Settings** dialog to complete saving of the selected files.

   The **General Settings** dialog closes and the **OpenScape Branch Overview** window appears and the Media Server Language Repository in the Common Management Platform (CMP) is now updated.

2.2.8 How to Configure Media Server Language Files for an OpenScape Branch

Proceed as follows to configure Media Server Language files to an OpenScape Branch for Simplified Installation Options 1-5:

Prerequisites

Language files to be assigned to an OpenScape Branch must be placed into the Media Server Language Files Repository.

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

   The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) Select the OpenScape Branch from the **OpenScape Branch Overview** in work area by checking the associated checkbox.

   The Edit button becomes active the **Branch Office Overview** Work Area.

4) Click the **Edit...** button in work area.

   The **Edit OpenScape Branch** dialog becomes active.

5) Click the **Configure Installation** button.

   The **Installation info** dialog becomes active.

6) Select the **Media Server languages files** tab.

   The **Media server language** dialog is displayed with a list of files for the OpenScape Branch.

7) Click the **Add...** button in the **Media Server language files** work area.

   The **Add Media Server language files** dialog is displayed with a list of available languages.

8) Select a media server language files from the list of files. A maximum of one languages can be selected at a time.

9) Click the **OK** button.

   The **Media Server languages files** dialog is updated with the selected media server language file displayed.

10) Repeat the add MS Language files steps to add additional media server language files.

11) Click the **OK** button.

    The **Installation info** dialog closes and the **Edit OpenScape Branch** dialog appears.

12) Click the **OK** button.

    The **Edit OpenScape Branch** dialog closes and the **OpenScape Branch Overview** window appears and the OpenScape Branch is now updated.

2.2.9 How to Configure ACD Announcement Files

Proceed as follows to configure ACD announcement files for the OpenScape Branch for Simplified Installation Options 1-5:

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) Select the OpenScape Branch from the **OpenScape Branch Overview** in work area by checking the associated checkbox.

The Edit button becomes active the **Branch Office Overview** Work Area.

4) Click the **Edit...** button in work area.

The **Edit OpenScape Branch** dialog becomes active.

5) Click the **Configure Installation** button.

The **Installation info** dialog becomes active.

6) Select the **ACD announcement files** tab.

The **ACD announcement files** dialog is displayed with a list of available announcements for the OpenScape Branch.

7) Click the **Add...** button in the **ACD announcement files** work area.

The **Add Files to ACD Announcement** dialog is displayed.

NOTICE:

File must adhere to the following format: Only WAV audio files (.wav) with Bit Rate 128 kbps, Audio Sample Size:16 bit, Channels: Mono. Sampling Rate: 8 KHz, Audio Format: PCM. The maximum file size must not exceed 50 MB per file. The maximum total size for ACD announcements must not exceed 100 MB.

---

8) Click the **Browse...** button in the work area.

The browser dialog is displayed.

9) Select an ACD announcement file.

10) Add additional files as required. If additional files are required Click the "Add another File" **Add** button and browse to select another ACD announcement file.

11) Click the **Save** button.

The **ACD announcement files** dialog is updated and the **ACD announcement files**dialog (tab) appears with the selected ACD announcment files displayed.

12) Click the **OK** button.

The **Installation info** dialog closes and the **Edit OpenScape Branch** dialog appears.

13) Click the **OK** button.

The **Edit OpenScape Branch** dialog closes and the **OpenScape Branch Overview** window appears and the OpenScape Branch is now updated.

2.2.10 How to Configure ACD Music on Hold Files

Proceed as follows to configure ACD Music on Hold files for the OpenScape Branch.

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

According to the V9 Music on Hold (MoH) feature, the following file formats are supported:

- **Incoming Streaming File Formats for Internet Radio**

  Content Type: HTTPAudio Format: Mp3Playback Lists: PLS or M3U

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

   The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) Select the OpenScape Branch from the **OpenScape Branch Overview** in work area by checking the associated checkbox.

   The Edit button becomes active the **Branch Office Overview** Work Area.

4) Click the **Edit...** button in work area.

   The **Edit OpenScape Branch** dialog becomes active.

5) Click the **Configure Installation** button.

   The **Installation info** dialog becomes active.

6) Select the **ACD music on Hold files** tab.

   The **ACD music on Hold files** dialog is displayed with a list of available announcements for the OpenScape Branch.

7) Click the **Add...** button in the **ACD music on Hold files** work area.

   The **Add Files to ACD Music on hold** dialog is displayed.

   > **NOTICE:**
   >
   > File must adhere to the following format: Only WAV audio files (.wav) with Bit Rate 128 kbps, Audio Sample Size:16 bit, Channels: Mono. Sampling Rate: 8 KHz, Audio Format: PCM. The maximum file size must not exceed 50 MB per file. The maximum total size for ACD Music on hold must not exceed 100 MB.

8) Click the **Browse...** button in the work area.

   The browser dialog is displayed.

9) Select an ACD music on Hold file.

10) Add additional files as required. If additional files are required Click the "Add another File" **Add** button and browse to select another ACD music on Hold file.

11) Click the **Save** button.

The **ACD Music on Hold files** dialog is updated and the **ACD music on Hold files** dialog (tab) appears with the selected ACD music on Hold files displayed.

12) Click the **OK** button.

The **Installation info** dialog closes and the **Edit OpenScape Branch** dialog appears.

13) Click the **OK** button.

The **Edit OpenScape Branch** dialog closes and the **OpenScape Branch Overview** window appears and the OpenScape Branch is now updated.

2.2.11 How to Configure Auto Attendant Announcement Files

Proceed as follows to configure Auto attendant announcement files for the OpenScape Branch for Simplified Installation Options 1-5:

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) Select the OpenScape Branch from the **OpenScape Branch Overview** in work area by checking the associated checkbox.

The Edit button becomes active the **Branch Office Overview** Work Area.

4) Click the **Edit...** button in work area.

The **Edit OpenScape Branch** dialog becomes active.

5) Click the **Configure Installation** button.

The **Installation info** dialog becomes active.

6) Select the **Auto attendant announcement files** tab.

The **Auot attendant announcement files** dialog is displayed with a list of available announcements for the OpenScape Branch.

7) Click the **Add...** button in the **Auto attendant announcement files** work area.

The **Add Files to Auto attendant announcement** dialog is displayed.

NOTICE:

File must adhere to the following format: Only WAV audio files (.wav) with Bit Rate 128 kbps, Audio Sample Size:16 bit, Channels: Mono. Sampling Rate: 8 KHz, Audio Format: PCM. The maximum file size must not exceed 50 MB per file. The maximum total size for Auto attendant announcements must not exceed 100 MB.

---

8) Click the **Browse...** button in the work area.

The browser dialog is displayed.

9) Select an Auto attendant announcement file.

10) Add additional files as required. If additional files are required Click the "Add another File" **Add** button and browse to select another Auto attendant announcement file.

11) Click the **Save** button.

The **Auto attendant announcement files** dialog is updated and the **Auto attendant announcement files**dialog (tab) appears with the selected Auto attendant announcment files displayed.

12) Click the **OK** button.

The **Installation info** dialog closes and the **Edit OpenScape Branch** dialog appears.

13) Click the **OK** button.

The **Edit OpenScape Branch** dialog closes and the **OpenScape Branch Overview** window appears and the OpenScape Branch is now updated.

2.2.12 How to Configure the Data Configuration File

Proceed as follows to configure the data configuration file for the OpenScape Branch for Simplified Installation Options 1-5:

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) Select the OpenScape Branch from the **OpenScape Branch Overview** in work area by checking the associated checkbox.

The Edit button becomes active the **Branch Office Overview** Work Area.

4) Click the **Edit...** button in work area.

The **Edit OpenScape Branch** dialog becomes active.

5) Click the **Configure Installation** button.

The **Installation info** dialog becomes active.

6) Select the **Data Configuration File** tab.

The **Data Configuration File** dialog is displayed with the current data configuration file displayed for the OpenScape Branch.

7) Click the **Browse...** button in the work area.

The browser dialog is displayed.

8) Select an Data Configuration file.

Only one data file can be used by the OpenScape Branch.

NOTICE:

File must adhere to the following format: Only WAV audio files (.wav) with Bit Rate 128 kbps, Audio Sample Size:16 bit, Channels: Mono. Sampling Rate: 8 KHz, Audio Format: PCM. The total size must not exceed 10 MB.

Only XML files are allowed (no WAV files).

---

9) Click the **Add...** button in the **Data Configuration File** work area.

The **Data Configuration File** dialog is updated with the selected Data Configuration file.

10) Click the **OK** button.

The **Installation info** dialog closes and the **Edit OpenScape Branch** dialog appears.

11) Click the **OK** button.

The **Edit OpenScape Branch** dialog closes and the **OpenScape Branch Overview** window appears and the OpenScape Branch is now updated.

2.2.13 How to Install Hardware for Simplified Installation

Proceed as follows to install an OpenScape Branch Hardware using Simplified Installation:

Prerequisites

The OpenScape hardware is pre-loaded with all required installation software based on the installation option.

The Common Management Platform (CMP) and Branch Assistant is pre-loaded with all required installation software and Configuration file.

The USB stick is pre-loaded with all required installation software (Options 2-5).

The URL associated with the Common Management Platform (CMP) is pre-configured into the DHCP server (Option 1-2).

The DHCP server is configured and operational (Options 1-3,5).

The MAC address (LAN MAC) in configured in the OpenScape Branch Assistant (Option 1 only).

The OpenScape Branch is configured in OpenScape Voice.

The Simplified **Installation** parameter (checkbox) is checkmarked in the **Configure Installation> Installation Info** dialog.

The **Communicating over secured channel** checkbox in the **Edit OpenScape Branch > General Tab** is unchecked.

The OpenScape Branch is configured in OpenScape Branch Assistant with a Unique ID (MAC Address for Option 1, Logical ID for options 2-5), Software load, Hardware type, Media Server and Language files.

OpenScape Branch/SBC Access to CMP (unsecured port 4709) must be configured in the OpenScape Branch Assistant prior to powering up the server. This is required to allow authentication, configuration and licensing information.

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Connect the OpenScape Server to the customer's network.
2) Plug the USB stick into the OpenScape server. Required for Options 2-5).
3) Power up the OpenScape Server.

The following installation functions take place:

- OpenScape Branch will send a DHCP Request (Options 1-3, 5)
- Once DHCP data is received it will reboot to apply temporary IP address and connect to the network.
- Once the temporary IP address is set, the OpenScape Branch or SBC will contact the CMP server.
- The Branch or SBC device is validated by the OpenScape Branch Assistant. For Option 1 the MAC address (LAN MAC) is used for validation and for Options 2-5, the logical ID is used for validation.
- The Branch or SBC sends a request for a list of installation files to the OpenScape Branch Assistant.
- The OpenScape Branch Assistant validates the request and returns a list of file names, paths and information about the http server (e.g., CMP) from which to retrieve the files. The file list can include file information related to sw load version, configuration file name, any media files associated with the Media Server languages (other than the default languages), and any ACD/Auto Attendant files that need to be downloaded by the OpenScape device. OpenScape Branch Assistant also updates the device state in the GUI.
- The OpenScape device Server installs the files using HTTP(s) based on information in the file provided by OpenScape Branch Assistant.
- Once the EZ-Install has completed normal operation, for Option 5 (Hosted Management via VPN) the VPN connection, used for hosted management operation, will be established to be used by the OpenScape Branch.
- A final boot is required to apply the xml file data and activate the software (SW) version download from the CMP.
- The OpenScape device logs the error cases and will also send alarms if possible.

4) Monitor installation progress using the OpenScape Branch Assistant. Select the **Configuration tab** > **OpenScape Branch** > **Branch Office list** in the navigation tree. Refresh the OpenScape Branch Overview work area display.

   a) Click the **Refresh All** button to update the OpenScape Branch Overview status information.

   b) Or, Select the device of interest in the work area and click the **Refresh Selected** button to update the OpenScape Branch Overview status information.

The following values are displayed in the Status column of the OpenScape Branch Overview work area:

- **Inventory** - Indicates the OpenScape Branch system is configured in the Assistant but not installed.
- **Authenticated** – Indicates the OpenScape Branch platform has contacted the OpenScape Branch Assistant with all appropriate credentials.
- **Installation started** – Indicates that the OpenScape Branch has all the data necessary and started the installation process.
- **File Transfer Started** - Indicates that the File Transfer has been started by the OpenScape Branch.
- **File Transfer Successful**.
- **File Transfer failed**: <filename>-<HttpErrorCode> - Indicates that one of the file has failed to transfer.
- **Booting** - Indicates the Boot of the OpenScape Branch has started.
- **Boot Failed** (and reason if provided) - Indicates that the OpenScape Branch failed to come up after the boot. No communication is possible.
- **Normal/Survival** - The appliance has successfully been installed and ready for the call handling.
- **Unreachable** – check alarms.

5) Troubleshoot and correct any errors or alarms during installation and reinstall.

6) The OpenScape device alerts when the installation is complete. If the Installation is successful the OpenScape Device will beep once, pause, and repeat. Beeps will occur for 10 cycles.

After the process is concluded the OpenScape device is installed and operational.

2.2.14 How to Troubleshoot Installation Errors and Alarms

The OpenScape Branch and Assistant will provide error log information locally. This information must be retrieved manually. The OpenScape device will provide audible beeps, if hardware supports, to the installer so the installer can determine the nature of the problem. If the OpenScape device knows the CMP URL it will also try to send alarms. Proceed as follows to troubleshoot audible alarm sequences that occur during Simplified Installation:

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Troubleshoot and correct any alarms during installation and reinstall.

> **NOTICE:**
>
> If an error condition occurs, the OpenScape Branch will abort installation and fallback to the default IP 192.168.0.1 (park state). After the issues are resolved, the OpenScape Branch can be restarted and the simplified installation process will be restarted.

2) 2 Beeps, pause and repeat for 10 cycles represent the following alarms:

- Cannot contact DHCP
- DHCP server did not return temporary dynamic IP for the OpenScape device
- DHCP server not configured to return CMP URL

3) 3 Beeps, pause and repeat for 10 cycles represent the following alarms:

- MAC not pre-configured in CMP
- Logical ID not pre-configured in CMP
- Lack of NW connectivity
- Cannot contact CMP

> **NOTICE:**
>
> Logical ID consists of: <OpenScape Voice Name>:<Business Group Name>:<Branch Office/SBC Name>

4) 4 Beeps, pause and repeat for 10 cycles represent the following alarms:

- Installation Info unavailable
- File Transfer unsuccessful
- Boot Failure
- SOAP Responses received with negative acks
- No Response to SOAP Requests sent by the OpenScape device
- SOAP Requests received that have invalid data

5) Troubleshoot and correct any errors indicated on the OpenScape Branch Assistant during installation and reinstall. Select the **Configuration tab** > **OpenScape Branch** > **Branch Office list** in the navigation tree. Refresh the OpenScape Branch Overview work area display.

   a) Click the **Refresh All** button to update the OpenScape Branch Overview work area information.

b) Or, Select the device of interest in the work area and click the **Refresh Selected** button to update the OpenScape Branch Overview work area information.

The following values are displayed in the Status column of the OpenScape Branch Overview work area:

- **Inventory** - Indicates the OpenScape Branch system is configured in the Assistant but not installed.
- **Authenticated** – Indicates the OpenScape Branch platform has contacted the OpenScape Branch Assistant with all appropriate credentials.
- **Installation started** – Indicates that the OpenScape Branch has all the data necessary and started the installation process.
- **File Transfer Started** - Indicates that the File Transfer has been started by the OpenScape Branch.
- **File Transfer Successful**.
- **File Transfer failed**: <filename>-<HttpErrorCode> - Indicates that one of the file has failed to transfer (error log file only).
- **Booting** - Indicates the Boot of the OpenScape Branch has started.
- **Boot Failed** - Indicates that the OpenScape Branch failed to come up after the boot. No communication is possible.
- **Normal/Survival** - The appliance has successfully been installed and ready for the call handling.
- **Unreachable** – check alarms.

Information related to file transfer failure is displayed in the error log file including the name of the file that failed and the HTTP reasons for the file transfer failure returned by OSB which can include:

- 400 Bad Request
- 401 Unauthorized
- 403 Forbidden
- 404 Not Found
- 405 Method Not Allowed
- 406 Not Acceptable
- 408 Request Timeout
- 409 Conflict
- 410 Gone
- 413 Request Entity Too Large
- 414 Request-URI Too Long
- 415 Unsupported Media Type
- 422 Unprocessable Entity
- 423 Locked
- 426 Upgrade Required
- 444 No Response
- 499 Client Closed Request
- 500 Internal Server Error
- 501 Not Implemented
- 503 Service Unavailable

Error Log File Locations:

- Common Management Platform (CMP) log file name is **symphonia.log** under the following directories

- Offboard: **/var/siemens/common/log/**

- Onboard: **/log/**

- OpenScape Branch log file name is **autoinstall.log** under the following directory **/opt/siemens/openbranch/var/log/openbranch/**

6) Power up the OpenScape Server once the errors have been corrected.

The **Communicating over Secured channel** checkbox for the OpenScape Branch configuration in the OpenScape Branch Assistant must be unchecked (Unsecured mode) to allow installation and reinstall an OpenScape SBC.

7) The OpenScape device alerts when the installation is complete. If the Installation is successful the OpenScape Device will beep once, pause, and repeat. Beeps will occur for 10 cycles.

After the process is concluded the OpenScape device is installed and operational.

3 The OpenScape Branch Hardware – Overview

The OpenScape Branch appliance can operate on different hardware platforms depending on the number of users.

OpenScape Branch Models and Hardware Platforms

OpenScape Branch is supported on various platforms and can be divided into two groups:

• Without Integrated Gateway and Analog Adapters
• With Integrated Gateway and Analog Adapters

The diagram below illustrates the various models for each group and their maximum capacity in registered lines.
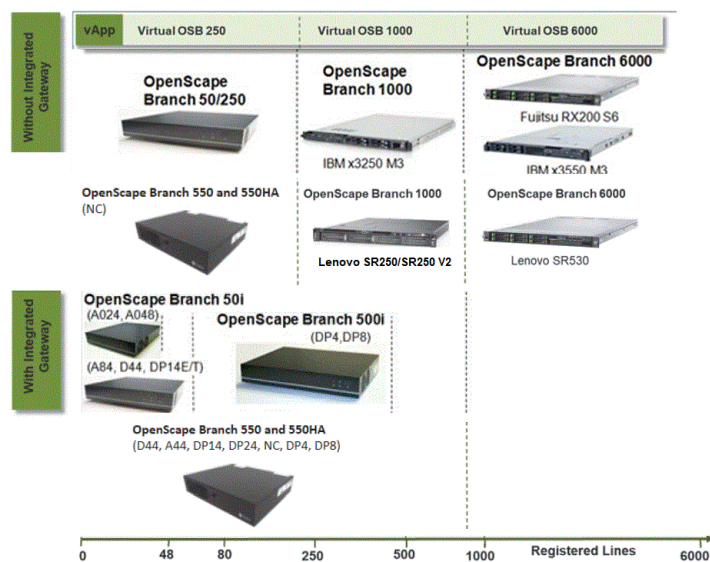
OpenScape Branch servers Without Integrated Gateway and Analog Adapters

• **OpenScape Branch 50/250** – supported by Advantech SYS-2USM12-6M01E server without any Gateway and Analog Adapter interfaces. This Advantech SYS-2USM12-6M01E server supports up to 250 registered lines. This server is the successor of the Acrosser AR-ES5495SM server that supports up to 50 registered lines and the Advantech FWA-710SIME server that supports up to 250 registered lines.

   These two servers are no longer available for new orders, however they continue to be supported on OpenScape Branch V2 and are not upgradable to later versions e.g. V7.
• **OpenScape Branch 550 and 550HA (NC)**-based on Kontron KISS 2US V3 CFL model server for up to 500 registered lines.
• **OpenScape Branch 1000** – (IBM x3250 M3/M5/M6 or Lenovo SR250/ SR250 V2 servers) for up to 1,000 registered lines.
• **OpenScape Branch 6000** – (IBM x3550 M3/M4/M5 or Fujitsu Primergy RX200 S6/S7 or Lenovo SR530 or Lenovo SR630 V2 servers) for up to 6000 registered lines.

OpenScape Branch servers With Integrated Gateway and Analog Adapters

- **OpenScape Branch 50i** – (Advantech SYS-2USM12-6M01E server) supports up to 80 registered lines with Integrated Gateway and Analog Adapter interfaces. The following combinations of integrated gateways and analog adapters are supported:

  – OpenScape Branch 50i **A84** (**A**nalog - **8** ports FXO + **4** ports FXS)

  – OpenScape Branch 50i **D44** (**D**igital - **4** ports BRI + **4** ports FXS)

  – OpenScape Branch 50i **DP14E** (**D**igital - **1 P**RI **E**1 + **4** ports FXS)

  – OpenScape Branch 50i **DP14T** (**D**igital - **1 P**RI **T**1 + **4** ports FXS)

  – OpenScape Branch 50i **DP24** (**D**igital - **2 P**RIs/CAS E1 - FXS or 2 PRIs/CAS T1 - FXS)

- **OpenScape Branch 50i** – (Advantech SYS-2USM01-6M01E server) for up to 24 or 48 registered lines. This server is longer in size when compared to the Advantech SYS-2USM12-6M01E. This server supports higher density of Integrated Analog Adapter interfaces and is available in two flavors:

  – OpenScape Branch 50i **A024** (**A**nalog - **24** ports FXS)
  – OpenScape Branch 50i **A048** (**A**nalog - **48** ports FXS)

- **OpenScape Branch 550**- (Kontron KISS 2US V3 CFL model server) for up to 500 registered lines with Integrated Gateway and Analog Adapter interfaces. The following combinations of integrated gateways and analog adapters are supported:

  – OpenScape Branch 550/550HA **A44** (**A**nalog - **4** ports FXO + **4** ports FXS)

  – OpenScape Branch 550/550HA **D44** (**D**igital - **4** ports BRI + **4** ports FXS)

  – OpenScape Branch 550 **DP14E** (**D**igital - **1** PRI **E**1 + **4** ports FXS)

  – OpenScape Branch 550 **DP14T** (**D**igital - **1 P**RI **T**1 + **4** ports FXS)

  – OpenScape Branch 550/550HA **DP24** (**D**igital - **2 P**RI **T**1 + **4** ports FXS)

OpenScape Branch servers With Integrated Gateway

- **OpenScape Branch 500i** – (Advantech SYS-2USM**03**-6M01E server) supports up to 500 registered lines with Integrated Gateway interfaces. The following combinations of integrated gateways are supported:

  – OpenScape Branch 500i **DP4** (**D**igital - **4 P**RI E1/T1)

  – OpenScape Branch 500i **DP8** (**D**igital - **8 P**RI E1/T1)

- **OpenScape Branch 550HA** – (Kontron KISS 2US V3 CFL model server) for up to 500 registered lines up to 500 registered lines with Integrated Gateway interfaces. The following combinations of integrated gateways are supported:

  – OpenScape Branch 550/550HA **DP4** (**D**igital - **4 P**RI E1/T1)

  – OpenScape Branch 550/550HA **DP8** (**D**igital - **8 P**RI E1/T1)

OpenScape Branch Legacy Servers

The following servers are also available for upgrades to OpenScape Branch V2:

- **OpenScape Branch 50** – Acrosser AR-ES5495SM (V1 and V2 only)
- **OpenScape Branch 250** – Advantech FWA-710SIME (V1 and V2 only)
- **OpenScape Branch 1000** – IBM x3250 M2 (V1 and later)
- **OpenScape Branch 6000** – IBM x3550 M2, Fujitsu Primergy RX330 S1

3.1 The OpenScape Branch 50i Servers

OpenScape Branch 50i is based on the Advantech SYS-2USM12-6M01E and the Advantech SYS-2USM01-6M01E servers. OpenScape Branch 50i contains integrated gateway and analog adapter functionality so that in comparison with OpenScape Branch 50/250 no external TDM Gateway and Analog adapter is needed.

OpenScape Branch 50i Advantech SYS-2USM12-6M01E

Specification:

*   Advantech SYS-2USM12-6M01E
*   Physical Dimension (W x H x D): 300 x 65 x 300 mm (11.8" x 2.6" x 11.8")
*   Weight: up to 4.5 Kg (9.9 lb)
*   Rated Power: 100~240 V AC, 50-60 Hz, 60W
*   Average Power Consumption: 25W
*   Rated Heat Emission: 216.2 kJ/h (204.8 BTU)
*   Operating Temperature: 0-40C (32-104F)

Part Numbers:

*   ADA561 / L30220-D600-561 (FXO/FXS) (A84)
*   ADA562 / L30220-D600-562 (BRI/FXS) (D44)
*   ADA563 / L30220-D600-563 (E1 PRI/FXS) (DP14E)
*   ADA564 / L30220-D600-564 (T1 PRI/FXS) (DP14T)
*   ADA564 / L30220-D600-564 (T1 PRI/FXS) (DP24)
*   BZF101 / L30280-Z600-F101 (Power Cord, USA Variant)
*   BZF102 / L30280-Z600-F102 (Power Cord, UK Variant)
*   BZF105 / L30280-Z600-F105 (Power Cord with Straight Appliance Connector, EURO Variant)
*   BZF107 / L30280-Z600-F107 (Power Cord, BRA Variant)
*   BZF108 / L30280-Z600-F108 (Power Cord, ARG Variant)

The following configurations can be ordered for the OSB 50i:

- OpenScape Branch 50i D44: 4 BRI + 4 FXS Ports
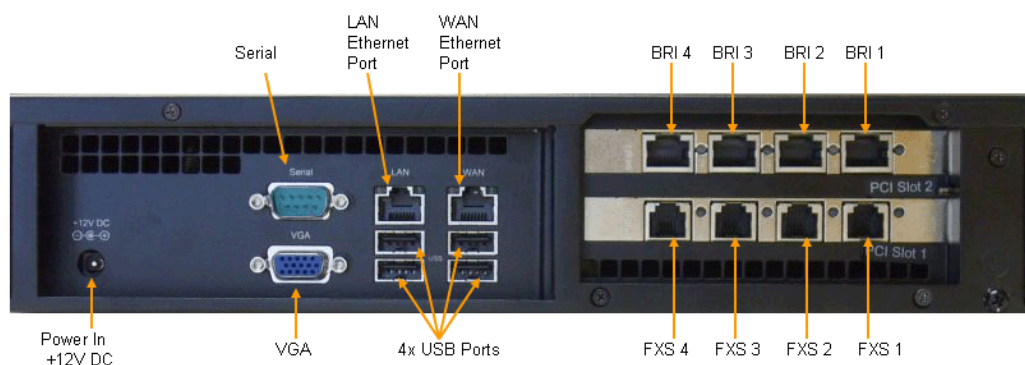
- OpenScape Branch 50i A84: 8 FXO (analog) + 4 FXS Ports
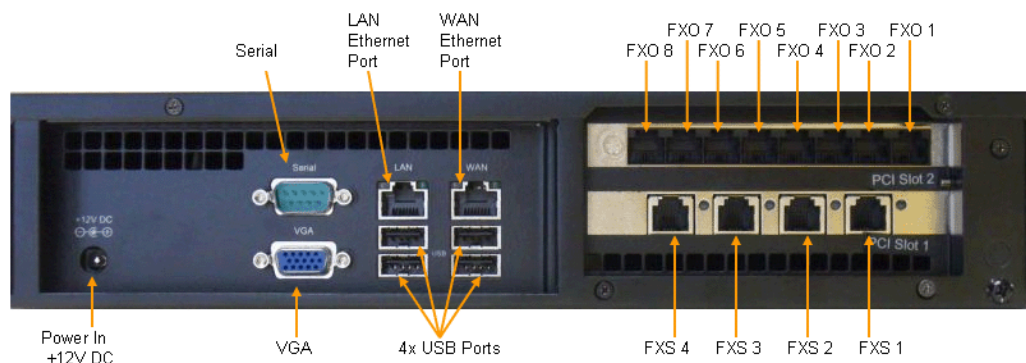
- OpenScape Branch 50i DP14E: 1 E1 PRI + 4 FXS Ports
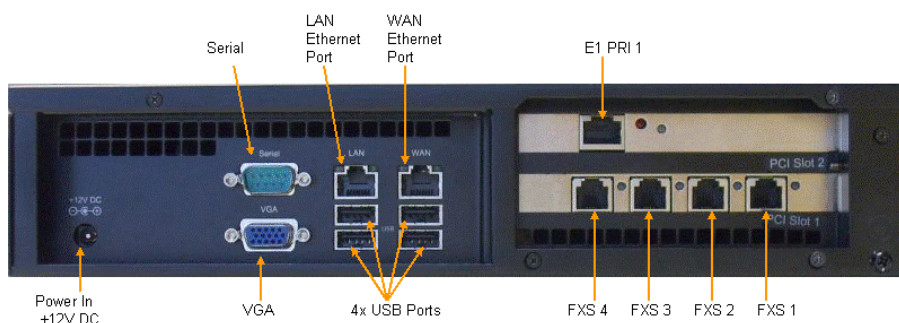
- OpenScape Branch 50i DP14T: 1 T1 PRI + 4 FXS Ports:
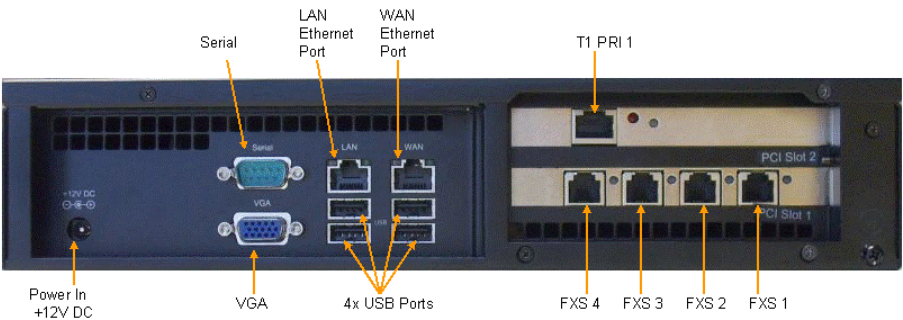
ISDN BRI port - RJ45 Telco Port Connector - pin assignment

Pin	Description
1	Not Used
2	Not Used
3	Tx+
4	Rx+
5	Rx-
6	Tx-
7	Not Used
8	Not Used

FXO/FXS port - RJ11 Telco Port Connector - pin assignment

Pin	Description
1	Not Used
2	Not Used
3	Tip
4	Ring
5	Not Used
6	Not Used

E1/T1 PRI port - RJ45 Telco Port Connector - pin assignment

Pin	Description
1	Rx
2	Rx
3	Not Used
4	Tx
5	Tx
6	Not Used
7	Not Used
8	Not Used
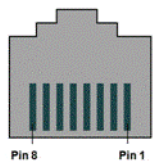
OpenScape Branch 50i Advantech SYS-2USM01-6M01E

OpenScape Branch 50i is based on the Advantech SYS-2USM01-6M01E server offers two new models – "OSB 50i A024" and "OSB 50i A048".

The Digium 24-port analog board (defined as the TDM2460), contains 24 FXS ports. It is intended to be used in customer environments where analog phones dominate. It is possible to install one or two boards which gives the opportunity to offer either a 24-port version (A024), or a 48-port version (A048).

When only one 24-port board is installed, the other slot will remain empty. Other types of interfaces e.g. FXO, PRI, BRI boards should not be installed.

Power for Ringing

In the 24-port FXS configuration, it is necessary to connect a second power supply to the Advantech server to support ringing. The amount of power required is dependent on how many ringing devices are connected to each line. The list below shows the power requirements for different Ringer Equivalence Numbers (REN) for a single board. The OSB 50i A024/A048 server with the second power supply will support up to 3 RENs per line.

- 12V AEX/TDM246xE into 1 REN 22.0 Watts
- 12V AEX/TDM246xE into 2 RENs 24.0 Watts
- 12V AEX/TDM246xE into 3 RENs 30.0 Watts

> **NOTICE:**
>
> A typical electronic warbler type of ringer consumes 0.3 REN.

Operational Aspects

This configuration of the OpenScape Branch will function as an Analog Terminal Adapter. Therefore, capabilities, such as Automatic Call Distribution (ACD), Auto Attendant and Port Forwarding, are not supported.

Distance

The maximum distance to analog devices is dependant upon the gauge of the wire that is used. Larger gauge (thicker) wire can support longer distances. The adapters do not support long loop (2km).

Please refer to the table at the end of this section for specific length values based on the gauge of the wire.

> **NOTICE:**
>
> SIP subscribers are not supported in this configuration.

Specification:

- Advantech SYS-2USM01-6M01E
- Physical Dimension (W x H x D): 300 x 65 x 400 mm (11.8" x 2.6" x 15.8")
- Weight: Up to 6.44 Kg (14.2 lb)
- Rated Power: 100~240 V AC, 50-60 Hz, 140W
- Heat Emission: 504 kJ/h (477.7 BTU)
- Operating Temperature: 0-40C (32-104F)

Part Numbers:

- ADA565 / L30220-D600-565 (A024 FXS)
- ADA566 / L30220-D600-566 (A048 FXS)
- BZF101 / L30280-Z600-F101 (Power Cord, USA Variant)
- BZF102 / L30280-Z600-F102 (Power Cord, UK Variant)
- BZF105 / L30280-Z600-F105 (Power Cord with Straight Appliance Connector, EURO Variant)
- BZF107 / L30280-Z600-F107 (Power Cord, BRA Variant)
- BZF108 / L30280-Z600-F108 (Power Cord, ARG Variant)

The following configurations can be ordered for the OSB 50i:

- OpenScape Branch 50i A024: 24 FXS Ports

  The OpenScape Branch A024 is equipped with a single 24 port analog adapter card.
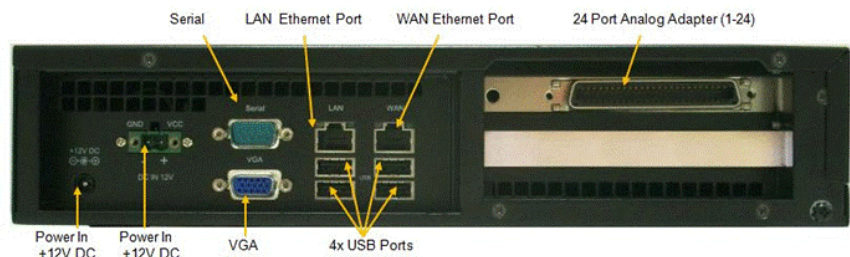
• OpenScape Branch 50i A048: 48 FXS Ports
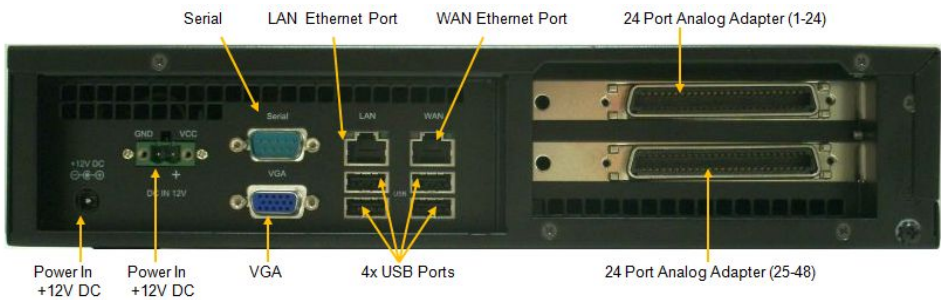
FXO/FXS port - RJ21 Telco Port Connector - pin assignment
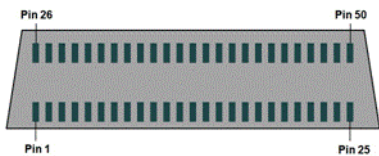
Pin	Description	Pin	Description	Pin	Description
1 & 26	Port 1 Slot 1	9 & 34	Port 9 Slot 3	17 & 42	Port 17 Slot 5
2 & 27	Port 2 Slot 1	10 & 35	Port 10 Slot 3	18 & 43	Port 18 Slot 5
3 & 28	Port 3 Slot 1	11 & 36	Port 11 Slot 3	19 & 44	Port 19 Slot 5
4 & 29	Port 4 Slot 1	12 & 37	Port 12 Slot 3	20 & 45	Port 20 Slot 5
5 & 30	Port 5 Slot 2	13 & 38	Port 13 Slot 4	21 & 46	Port 21 Slot 6
6 & 31	Port 6 Slot 2	14 & 39	Port 14 Slot 4	22 & 47	Port 22 Slot 6
7 & 32	Port 7 Slot 2	15 & 40	Port 15 Slot 4	23 & 48	Port 23 Slot 6
8 & 33	Port 8 Slot 2	16 & 41	Port 16 Slot 4	24 & 49	Port 24 Slot 6
25 & 50	Not Used				

Analog Adapter Port Characteristics for the OSB 50i (A84, D44, DP14E, DP14T, DP24, A024 and A048)

Ring Frequency	Default Value: 20 Hz. Configurable options:20, 25, 50
Ring Voltage	Default Value: 75 V. Configurable Options: 50, 75, 89
Nominal Impedance	The Impedance varies according to the country setting of the OSB. For USA, it is 600 ohms.
Ring Drive Capacity	Maximum value per line: 3 REN. But not all lines can simultaneously support this value. The overall simultaneous REN for the OSB 50i A024 is 30 REN and for the OSB 50i A048 is 60 REN.
Loop Current	Default Value: 20 mA. Configurable values = 20, 23, 26, 29, 32, 35, 38, 41. However the overall current that can be drawn from the OSB 50i A024 is 500 mA and for the OSB 50i A048 is 1000 mA.
Ring Trip Detection	12.5 ms
On-Hook Voltage	48 V

Loop Length (see details below)	Varies with loop current and wire gauge. For Loop current of 20 mA, the following reach is supported. See table below. Please note that no ESD protection is included and therefore should be for internal or shielded use only.

Wire AWG	22	24	26
Reach (m):	800	500	305
Reach (ft):	2,625	1,640	1,001

3.1.1 How to Install the Advantech SYS-2USM12-6M01E Server Hardware

Proceed as follows to connect the cables of the Advantech SYS-2USM12-6M01E server hardware for the OpenScape Branch 50i model according to the port configuration ordered. The BIOS on the OpenScape Branch 50i model is pre-loaded and therefore does not require configuration.

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Attach the keyboard, mouse, and monitor cables to the server.
2) Attach the Ethernet cables.
   a) Attach an Ethernet cable to the LAN switch for the local LAN and to the Ethernet interface port on the server that corresponds to the LAN interface you configured in the node.cfg.
   b) For an OpenScape Branchthat will be configured to operate in SBC mode: Attach an Ethernet cable to the LAN switch or router for the external WAN and to the Ethernet interface port on the server that corresponds to the WAN interface you configured in the node.cfg. This cabling is not necessary for an OpenScape Branchsystem configured for Proxy mode.
3) Attach the FXO and FXS cables, or BRI and FXS, or PRI and FXS cables according to the configuration of the OpenScape Branch system.

4) For OSB50i-A84, D44, DP14E and DP14Tmodels, ferrites have to be installed at the FXS/FXO lines.

    a) Loop up to 4 cables from FXO or FXS cards, so that each cable is passing twice through ferrite. The ferrite must be installed about 10cm (4 inches) from the OSB50i-A84, D44, DP14E and DP14T connectors.

    b) Close the ferrite by pressing the two halves together without jamming a cable. The ferrite must be totally closed.

    c) Repeat process for up to 3 ferrites (12 Cables)

The picture below shows an example installation of 3 ferrites with 11 cables.

> **NOTICE:**
>
> Please see the *"Clip-on Ferrites for OpenScape Branch 50i-A84, Installation Guide"*, part number: *A31003-H8000-J100-X-7431* in the appendix for more information.

5) Attach the power cord to the server and to the power receptacle.

6) Turn on the server.

The BIOS on the OpenScape Branch 50i model is pre-loaded and therefore does not require configuration.

3.1.2 How to Install the Advantech SYS-2USM01-6M01E Server Hardware

Proceed as follows to connect the cables of the Advantech SYS-2USM**01**-6M01E server hardware for the OpenScape Branch 50i A024 and A048 models according to the port configuration ordered. The BIOS on the OpenScape Branch 50i model is pre-loaded and therefore does not require configuration.

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Attach the keyboard, mouse, and monitor cables to the server.

2) Attach the Ethernet cables.

    a) Attach an Ethernet cable to the LAN switch for the local LAN and to the Ethernet interface port on the server that corresponds to the LAN interface you configured in the node.cfg.

    b) OpenScape Branch 50i A024 and A048 models must be configured for "ProxyATA" mode.

       When only one 24-port board is installed (in the lower PCI slot), the other slot will remain empty. Other types of interfaces e.g. FXO, PRI, BRI boards should not be installed.

3) Attach the additional power supply to support ringing to the OpenScape Branch system.

4) Attach the FXS cables according to the configuration of the OpenScape Branch system.

The maximum distance to analog devices is 300 feet based on standard wire width cabling. Larger gauge (thicker) wire can support longer distances. The adapters do not support long loop (2km).

5) For OSB50i-A024 and A048 models, ferrites are not required since direct cable to panel connections are used.

The pictures below show the patch panel and cable accessories.

Accessories - Patch Panel

Front view

19" 24 port RJ-11 Patch Panel

Back view - connector
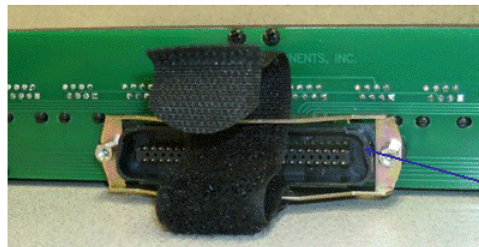
Amphenol 50 pin connector - Male

Accessories - 25 Pair cable - 5 Ft cable length

Amphenol 50 pin female 90 degrees connector
(to connect to the patch panel)
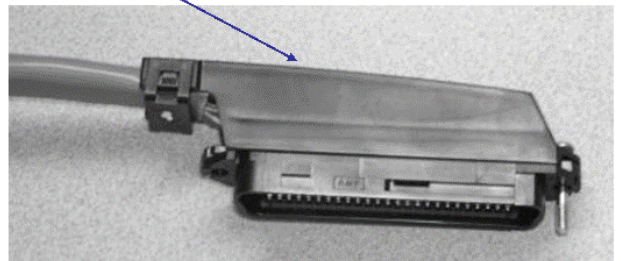
Amphenol 50 pin male 180 degrees connector
(to connect to the OSB 50i A024 / A048)

6) Attach the power cord to the server and to the power receptacle.

7) Turn on the server.

The BIOS on the OpenScape Branch 50i model is pre-loaded and therefore does not require configuration.

3.2 The OpenScape Branch 500i Servers

OpenScape Branch 500i is based on the Advantech SYS-2USM03-6M01E server. OpenScape Branch 500i contains integrated PRI gateway so no external gateway is needed.

OpenScape Branch 500i Advantech SYS-2USM03-6M01E

Specification:

*   Advantech SYS-2USM03-6M01E
*   Physical Dimension (W x H x D): 425x 65 x 320 mm (16.8" x 2.6" x 12.9")
*   Weight: up to 4.99 Kg (11.0 lb)
*   Rated Power: 100~240 V AC, 50-60 Hz, 180W
*   Average Power Consumption: 41W
*   Rated Heat Emission: 504 kJ/h (477.7 BTU)
*   Operating Temperature: 0-40C (32-104F)

Part Numbers:

*   ADA571 / L30220-D600-A571 (E1/T1PRI) (DP4)
*   ADA572 / L30220-D600-A572 (E1/T1PRI) (DP8)
*   BZF101 / L30280-Z600-F101 (Power Cord, USA Variant)
*   BZF102 / L30280-Z600-F102 (Power Cord, UK Variant)
*   BZF105 / L30280-Z600-F105 (Power Cord with Straight Appliance Connector, EURO Variant)
*   BZF107 / L30280-Z600-F107 (Power Cord, BRA Variant)
*   BZF108 / L30280-Z600-F108 (Power Cord, ARG Variant)

The following configurations can be ordered for the OSB 500i:

- OpenScape Branch 500i DP4: 4 PRI (E1/T1)
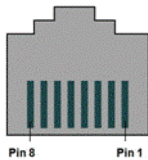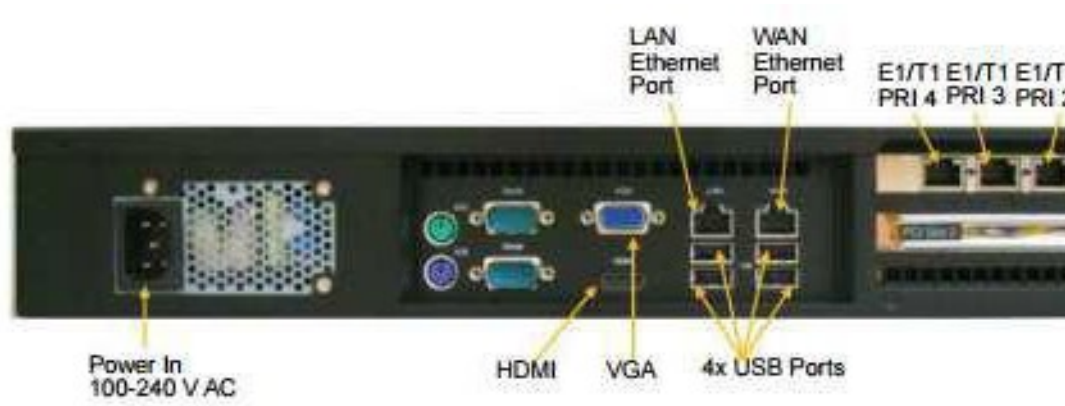

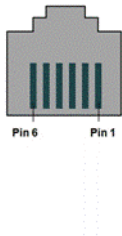- OpenScape Branch 500i DP8: 8 PRI (E1/T1)
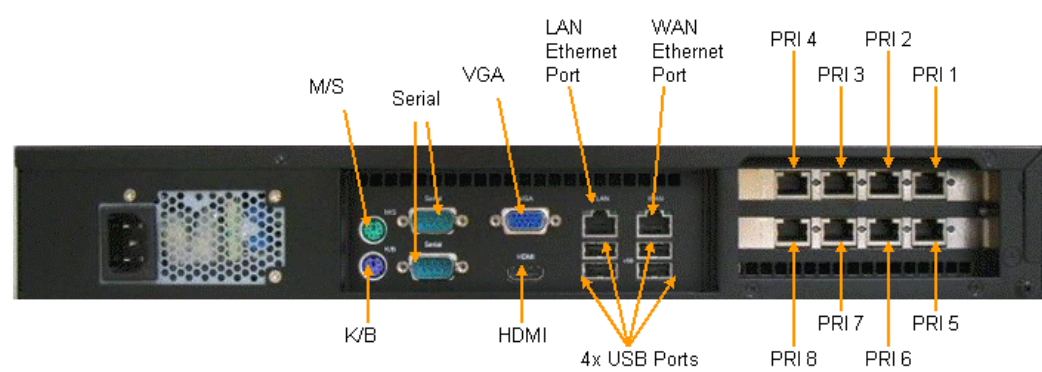
ISDN BRI port - RJ45 Telco Port Connector - pin assignment

| Pin	Description
1	Not Used
2	Not Used
3	Tx+
4	Rx+
5	Rx-
6	Tx-
7	Not Used
8	Not Used
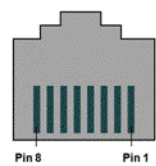
OpenScape Branch 50i Advantech SYS-2USM03-6M01E

OpenScape Branch 500i is based on the Advantech SYS-2USM03-6M01E server offers two new models – "OSB 500i DP4" and "OSB 500i DP8".

The Digium 4-port T1/E1Quad PRI PCIe card with echo cancellation (defined as the TE420B) is intended to be used in customer environments where a large number of gateways is required. It is possible to purchase either a 4-port version (DP4), or a 8-port version (DP8).

When only one 4-port board is installed (slot 1 (top)), the other slot will remain empty. Other types of interfaces e.g. FXO, BRI boards are not supported.

NOTICE:

OpenScape 500i DP4 cannot be upgraded to a DP8 in the field.

3.2.1 How to Install the Advantech SYS-2USM03-6M01E Server Hardware

Proceed as follows to connect the cables of the Advantech SYS-2USM**03**-6M01E server hardware for the OpenScape Branch 500i DP4 and DP8 models according to the port configuration ordered. The BIOS on the OpenScape Branch 500i model is pre-loaded and therefore does not require configuration.

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Attach the keyboard, mouse, and monitor cables to the server.
2) Attach the Ethernet cables.

   a) Attach an Ethernet cable to the LAN switch for the local LAN and to the Ethernet interface port on the server that corresponds to the LAN interface you configured in the node.cfg.

   b) OpenScape Branch 500i DP4 and DP8 models must be configured for "Proxy" (it could be changed after the installation).

   When only one 4-port board is installed (slot 1 (top)), the other slot will remain empty. Other types of interfaces e.g. FXO, BRI boards are not supported.

NOTICE:

OpenScape 500i DP4 can not be upgraded to a DP8 (second board) in the field.

---

3) Attach the PRI cables according to the configuration of the OpenScape Branch system.
4) Attach the power cord to the server and to the power receptacle.
5) Turn on the server.

   The BIOS on the OpenScape Branch 500i model is pre-loaded and therefore does not require configuration.

3.3 The OpenScape Branch 50/250 Servers

OpenScape Branch 50/250 is based on the Advantech SYS-2USM12-6M01E server introduced for OpenScape Branch V1R4.

OpenScape Branch 50/250

OpenScape Branch 250 Using Advantech SYS-2USM12-6M01E Server

NOTICE:

Please note that this platform (L30220-D600-567 for OpenScape Branch V2 and L30220-D600-395 for OpenScape Branch V1.4) is the successor for the OSB 50 based on Acrosser AR-ES5495SM server and OSB 250 based on Advantech FWA-710SIME server.
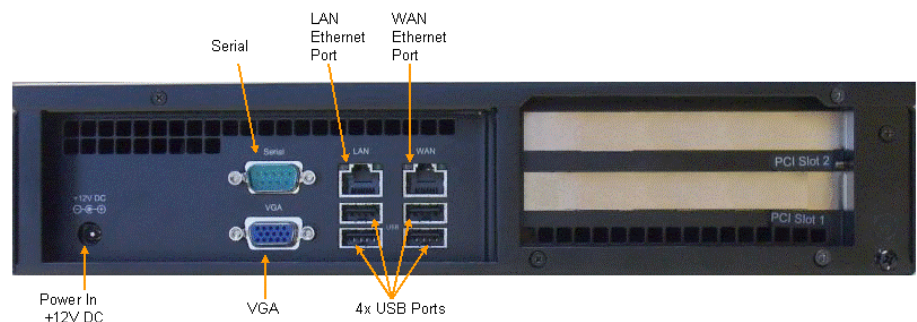
Specification:

- Advantech SYS-2USM12-6M01E (Available for OpenScape Branch V1R4 and later)
- Physical Dimension (W x H x D): 300 x 65 x 300 mm (11.8" x 2.6" x 11.8")
- Weight: up to 4.5 Kg (9.9 lb)
- Rated Power: 100~240 V AC, 50-60 Hz, 60W
- Average Power Consumption: 18W
- Heat Emission: 216.2 kJ/h (204.8 BTU)
- Operating Temperature: 0-40C (32-104F)

Part Numbers:

- ADA567 / L30220-D600-567 (Server only)
- BZF101 / L30280-Z600-F101 (Power Cord, USA Variant)
- BZF102 / L30280-Z600-F102 (Power Cord, UK Variant)

- BZF105 / L30280-Z600-F105 (Power Cord with Straight Appliance Connector, EURO Variant)
- BZF107 / L30280-Z600-F107 (Power Cord, BRA Variant)
- BZF108 / L30280-Z600-F108 (Power Cord, ARG Variant)

OpenScape Branch 50 (Legacy - does not support OpenScape Branch V7 and later)

Acrosser AR-ES5495SM Server
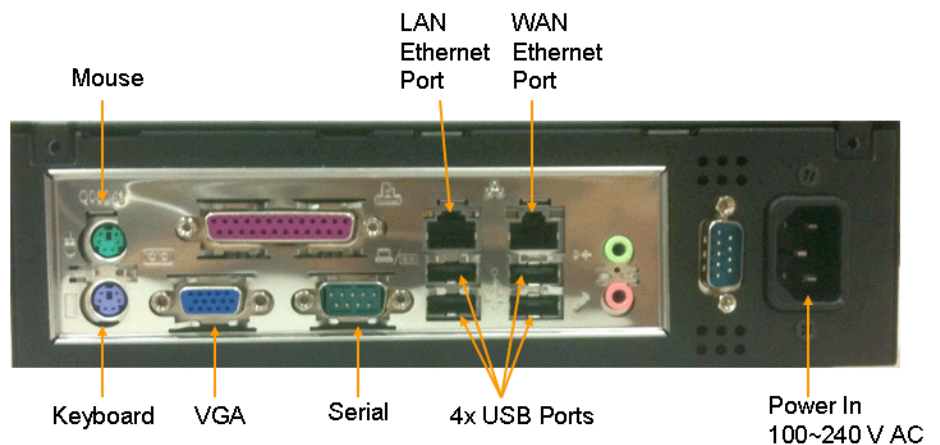
- Acrosser AR-ES5495SM (No longer available for purchase)
- Physical Dimension (W x H x D): 230 x 65 x 215 mm (19.05" x 2.55" x 8.46")
- Power: 50 W, 100~240 V AC input
- Unify Part number: ADA390 / L30220-D600-A390 (No longer available for purchase)

OpenScape Branch 250 (Legacy - does not support OpenScape Branch V7 and later)

OpenScape Branch 250 Using Advantech FWA-710SIME Server
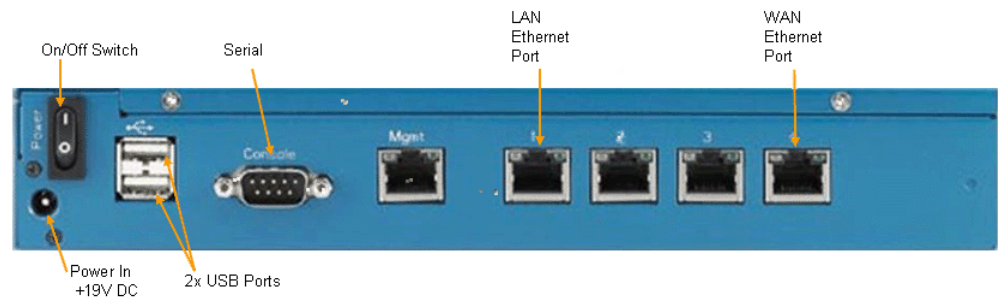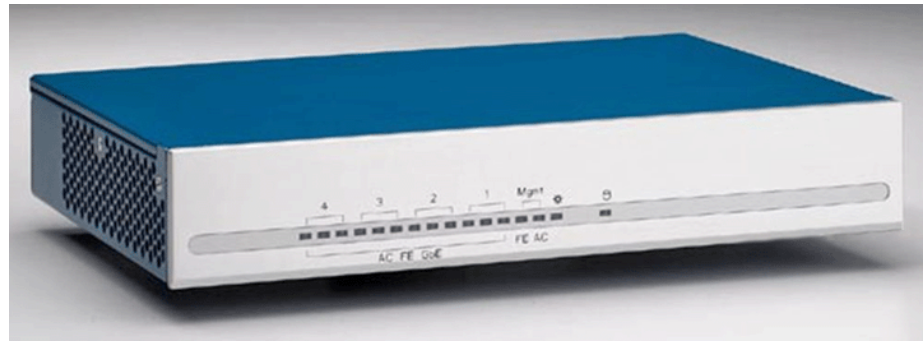
- Advantech FWA-710SIME
- Physical Dimension (W x H x D): 252 x 44 x 167 mm (9.9" x 1.7" x 6.6")
- Power: 65W, 100 ~ 240 V AC input
- Unify Part number: ADA47 / L30220-D600-A47 (Available until depletion of inventory)

3.3.1 How to Install the Advantech SYS-2USM12-6M01E Server Hardware

Proceed as follows to connect the cables and configure the BIOS of the Advantech SYS-2USM12-6M01E server hardware for the OpenScape Branch 50/250 model.

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Attach the keyboard, mouse, and monitor cables to the server.
2) Attach the Ethernet cables.
   a) Attach an Ethernet cable to the LAN switch for the local LAN and to the Ethernet interface port on the server that corresponds to the LAN interface you configured in the node.cfg.
   b) For an OpenScape Branchthat will be configured to operate in SBC mode: Attach an Ethernet cable to the LAN switch or router for the external WAN and to the Ethernet interface port on the server that corresponds to the WAN interface you configured in the node.cfg. This

cabling is not necessary for an OpenScape Branchsystem configured for Proxy mode (v1 and V2). V7 and later support all branch modes of operation.

3) Attach the power cord to the server and to the power receptacle.

4) Turn on the server

5) Press the **F2** function key to run the BIOS Setup Utility.

6) On the Main screen of the Setup Utility, set the date and time.

> **NOTICE:**
>
> The banner at the bottom of the Main screen describes how to select and change the values in the time and date fields on the Main screen. It also describes how to select screens.

7) Select the **Advanced** screen.

8) Select **APM Configuration** -> **Restore On AC Power Loss**

9) Check if the setting is **Power On**. In case it is not, change the setting to **Power On**.

10) Press **Esc** to exit the screen.

11) Select the Exit screen, select **Save Changes & Exit**, and press **Enter**.

> **NOTICE:**
>
> If there are problems with detecting the USB stick on the Advantech 50/250 hardware then a BIOS update is required. Contact service if this is needed. As work around unplug/plug the USB stick while the server is turned on.

3.3.2 How to Install the Acrosser AR-ES5495SM Server Hardware

Proceed as follows to connect the cables of the Acrosser AR-ES5495SM server hardware for the OpenScape Branch 50 model.

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Attach the keyboard, mouse, and monitor cables to the server.

2) Attach the Ethernet cables.

   a) Attach an Ethernet cable to the LAN switch for the local LAN and to the Ethernet interface port on the server that corresponds to the LAN interface you configured in the node.cfg.

   b) For an OpenScape Branchthat will be configured to operate in SBC mode: Attach an Ethernet cable to the LAN switch or router for the external WAN and to the Ethernet interface port on the server that corresponds to the WAN interface you configured in the node.cfg. This cabling is not necessary for an OpenScape Branchsystem configured for Proxy mode.

3) Attach the power cord to the server and to the power receptacle.

3.3.3 How to Install the Advantech FWA-710SIME Server Hardware

Proceed as follows to connect the cables and configure the BIOS of the Advantech FWA-710SIME server hardware for the OpenScape Branch 250 model:

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Attach the keyboard and mouse cables to the server.
2) Attach the Ethernet cables.
   a) Attach an Ethernet cable to the LAN switch for the local LAN and to the Ethernet interface port on the Advantech server that corresponds to the LAN interface (Interface 1) you configured in the node.cfg.
   b) For an OpenScape Branchthat will be configured to operate in SBC mode: Attach an Ethernet cable to the LAN switch or router for the external WAN and to the Ethernet interface port on the Advantech server that corresponds to the WAN interface (Interface 4) you configured in the node.cfg. This cabling is not necessary for an OpenScape Branchsystem configured for Proxy mode.
3) Attach the power cord to the server and to the power receptacle.
4) Turn on the server

3.4 The OpenScape Branch 550 / 550HA Servers

OpenScape Branch 550 / 550HA is based on the Kontron KISS 2US V3 CFL model server and supports up to 500 SIP registered lines.

OpenScape Branch 550/550HA

Rear view of the OSB 550:

Rear view of the OSB 550HA:

Specification:

- Kontron KISS 2US V3 CFL model server
- Physical Dimension (W x H x D): 482 x 88 x 355 mm (18.9" x 3.4" x 13.9")
- Weight: up to 7 kg (15.3 lb)
- Rated Power: 100-240 V AC, 50/60 Hz, 60W
- Average Power Consumption: 41W
- Rated Heat Emission: 648 kJ/h (614.2 BTU)
- Operating Temperature: 0-50°C (32-122°F)

OSB 550/550HA Installation

For more information on how to install the OSB 550/550HA, please refer to the *OpenScape Branch 550 / 550HA, Installation Guide*.

> **IMPORTANT:**
>
> Splitter box for E1/T1 Redundancy is not supported.

3.5 The OpenScape Branch 1000 Server

OpenScape Branch 1000 V1R4 and later is based on the IBM x3250 M3/M5/M6 server and supports up to 1000 SIP registered lines.

OpenScape Branch 1000 - IBM x3250 M3/M5

Rear view of the IBM x3250 M3/M5 server:

Power In
100~127/ 200~240 V AC

Serial   VGA   LAN Ethernet Port   4x USB Ports   WAN Ethernet Port
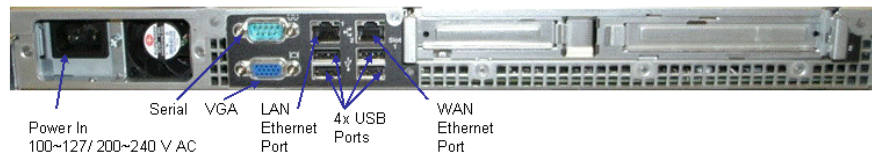
Specification:

- IBM x3250 M3/M5/M6 server
- Physical Dimension (W x H x D): 440 x 43 x 559 mm (17.3" x 1.69" x 22.0")
- Weight: up to 12.7 Kg (28.0 lb)
- Rated Power: 100~127 / 200~240 V AC, 50-60 Hz, 351W
- Average Power Consumption: 75W
- Rated Heat Emission: 1263.7 kJ/h (1197.7 BTU)
- Operating Temperature: 0-35C (32-95F)

Part Numbers:

- ADA568 / L30220-D600-A568
- BZF101 / L30280-Z600-F101 (Power Cord, USA Variant)
- BZF102 / L30280-Z600-F102 (Power Cord, UK Variant)
- BZF105 / L30280-Z600-F105 (Power Cord with Straight Appliance Connector, EURO Variant)
- BZF107 / L30280-Z600-F107 (Power Cord, BRA Variant)
- BZF108 / L30280-Z600-F108 (Power Cord, ARG Variant)

NOTICE:

The IBM x3250 M2 is no longer available for new orders and will support OpenScape Branch V1R4 and V2.

OpenScape Branch 1000 - IBM x3250 M6

Rear view of the IBM x3250 M6 server:

2x Hot-swap power supplies (IEC 320-C14) (1x Fixed power supply also available)

1x 1 GbE network port (RJ-45)

2x PCIe 3.0 slots

1x VGA port (DB-15)

2x USB 3.0 ports

1x 1 GbE shared network/management or dedicated management port (RJ-45) (set by a jumper on the system board)

Specification:

- IBM x3250 M6 server
- Physical Dimension (W x H x D): 435 x 43 x 576 mm (17.1" x 1.7" x 22.7")
- Rated Power: 100~127 / 200~240 V AC Input, 50-60 Hz, 300W
- Part Number: x3250 M6 / 3633AC1

OpenScape Branch 1000 - IBM x3520 M2 (Legacy)

NOTICE:

The IBM x3250 M2 is no longer available for new orders and will support OpenScape Branch V1R4 and V2.

Rear view of the IBM x3250 M2 server:
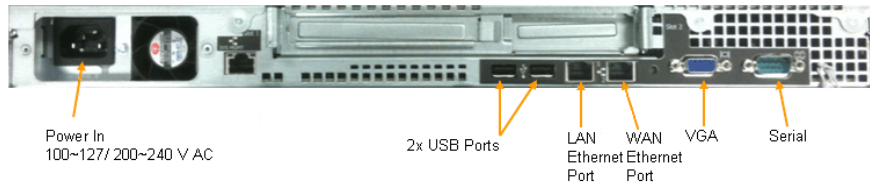
- IBM x3250 M2 server
- Physical Dimension (W x H x D): 440 x 44.5 x 559 mm (17.3" x 1.75" x 22.0")
- Weight: up to 12.7 Kg (28.0 lb)
- Rated Power: 100~127 / 200~240 V AC, 50-60 Hz, 351W
- Average Power Consumption: 75W
- Rated Heat Emission: 1263.7 kJ/h (1197.7 BTU)
- Operating Temperature: 0-35C (32-95F)

OpenScape Branch 1000 IBM - Lenovo ThinkSystem SR250 / SR250 V2
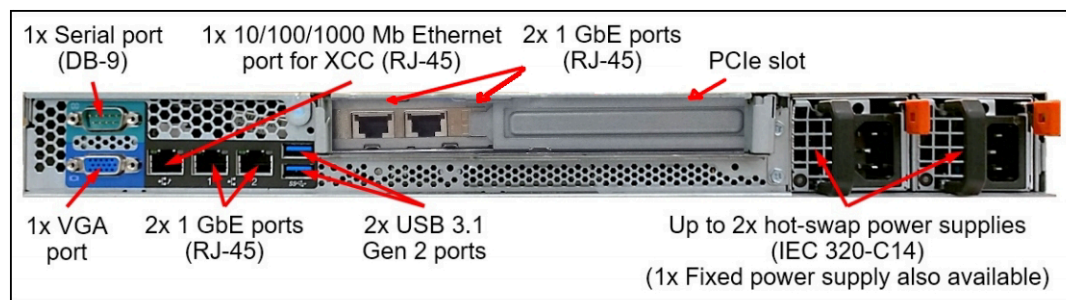
Specification SR250:

- Lenovo ThinkSystem SR250 server
- Physical Dimension (W x H x D): 434 x 43 x 498 mm (17.1" x 1.7" x 19.6")
- Weight: up to 12.3 Kg (27.1 lb)
- Rated Power: 100~127 / 200~240 V AC, 50-60 Hz, 334W (single power supply)
- System Heat Output: 1139 BTU/hour
- Operating Temperature: 5-40C (41-104F)

Part Numbers:

- Unify Part number: S30122-X8000-X129

   Specification SR250 V2:

   - Lenovo ThinkSystem SR250 V2 server
   - Physical Dimension (W x H x D): 435 x 43 x 545 mm (17.1" x 1.7" x 21.5")
   - Weight: up to 12.3 Kg (27.1 lb)
   - Rated Power: 100~127 / 200~240 V AC, 50-60 Hz
   - System Heat Output: 802.5 BTU/hour
   - Operating Temperature: 5-40C (41-104F)

   Part Numbers:

   - Unify Part number: S30122-X8000-X134

3.5.1 How to Install the IBM x3250 M3/M5/M6 Server Hardware

Proceed as follows to connect the cables of the IBM x3250 M3/M5/M6 server hardware for the OpenScape Branch 1000 model:

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Refer to the IBM x3250 M3/M5/M6 rack installation instructions to install the server into the rack.
2) Attach the keyboard, mouse, and monitor cables to the server.

3) Attach the Ethernet cables.

a) Attach an Ethernet cable to the LAN switch for the local LAN and to the Ethernet interface port on the IBM x3250 server that corresponds to the LAN interface (Ethernet 1) you configured in the node.cfg

b) For an OpenScape Branchthat will be configured to operate in SBC mode: Attach an Ethernet cable to the LAN switch or router for the external WAN and to the Ethernet interface port on the IBM x3250 server that corresponds to the WAN interface (Ethernet 2) you configured in the node.cfg. This cabling is not necessary for an OpenScape Branchsystem configured for Proxy mode.

4) Attach the power cord to the server and to the power receptacle.

5) Turn on the server.

> **NOTICE:**
>
> The IBM x3250 server requires the server boot sequence in the BIOS to be updated. The following steps are required to update the server boot sequence and date and time settings.

6) At boot up, wait and press **F1** to enter the BIOS setup when the option "<F1> Setup" is available.

The System Configuration and Boot Management window is displayed.

7) Use the **arrow key** to navigate to the **Boot Manager** and press **Enter**.

The Boot Management window is displayed.

8) Select **Add Boot Option** and press **Enter**.

9) Select **USB Storage** and press **Enter**.

10) Press **Esc** to exit and go back to the Boot Manager window.

The System Configuration and Boot Management window is displayed.

11) Select **Change Boot Order** and press **Enter**.

12) Press **Enter** again to change the order.

13) Using the "+" and "-" keys ensure the order is as follows: USB Storage, CD/ DVD Rom, Hard Disk 0 and then press **Enter**.

The settings are temporarily saved.

14) Select **Commit Changes** to save changes.

15) Press **Esc** to progress to the **Main Screen**.

> **NOTICE:**
>
> The banner at the bottom of the Main screen describes how to select and change the values in the time and date fields on the Main screen. It also describes how to select screens.

The Main screen of the BIOS Setup Utility is displayed.

16) From the main menu of the **Configuration/Setup Utility**, select Date and Time and press **Enter**.

17) In the **Date and Time** screen, ensure that the date and time is correct, and then press the **Esc** key to return to the main menu of the Configuration/ Setup Utility.

18) From the main menu of the Configuration/Setup Utility, select **Exit Setup** and press **Enter**.

The **Exit Setup** screen is displayed.

19) In the **Exit Setup** screen, select **Yes, save and exit the Setup Utility,** and press **Enter** to confirm that you want to exit.

The system will reset.

Example

IMPORTANT:

In the case of **x3250 M6** Server, BIOS should be configured as `Legacy,` otherwise the Server will not boot from the Hard Drive.

3.5.2 How to Install the Lenovo SR250 / SR250 V2 Server Hardware

Proceed as follows to connect the cables of the Lenovo SR250 / SR 250 V2 server hardware for the OpenScape Branch 6000 model:

Prerequisites

This section describes the equipment needed on the Lenovo SR250 / SR 250 V2. All necessary hardware comes pre-installed. You can find the steps necessary to assemble the hardware, connect the cables and load the necessary firmware.

Step by Step

1) Refer to the Lenovo SR250 / SR 250 V2 rack installation instructions to install the server into the rack.

2) Install the disk drive.The image below shows the location of the two drives.
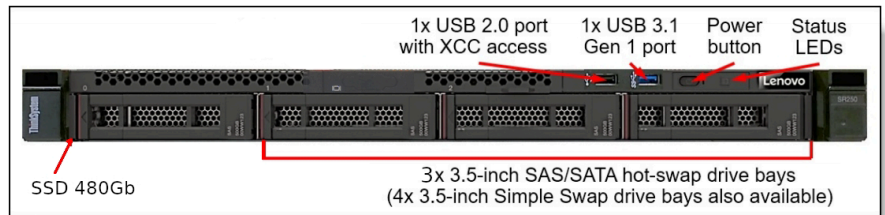
Figure 1: Lenovo SR250/SR250 V2, Front view

The image below is a close-up of the drives, with the two leftmost bays populated with hard disks.

To remove a drive, slide the blue release latch to the right with one finger while using another finger to grasp the black drive handle and pull the hard disk drive out of the drive bay.

3) Connection Panel in the rear of the Lenovo SR250 / SR 250 V2 server. The image below gives a general overview of the connection panel in the rear of the Lenovo SR530 server.
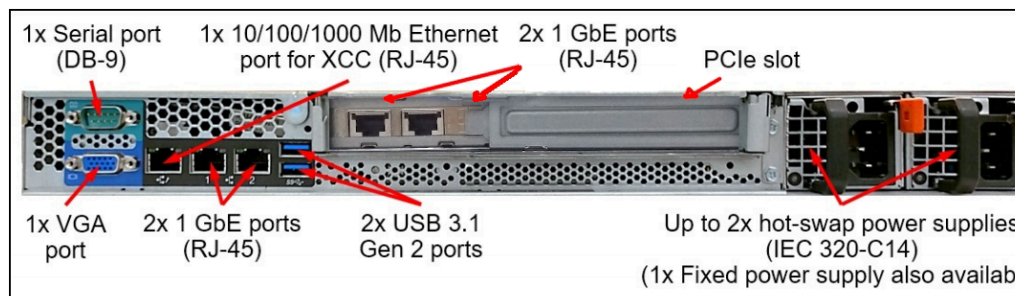
Figure 2: Lenovo SR250/SR250 V2, Rear view

4) Network port assignment.

The following figure shows the Ethernet port assignments for the Lenovo SR250 / SR250 V2.

5) Power on the server.

6) At boot up, press **F1** to enter the UEFI setup option.

    a) Navigate to **UEFI Setup** > **System Settings**.

    b) Select **Legacy BIOS**.

    c) Navigate to **Boot Manager**>**Boot Modes** and select **Legacy Modes**.

    d) Click **Save** to save the configuration.

    e) Navigate back to **Boot Manager** and select **Reboot System**.

7) From V10R2, it is possible to setup UEFI option.

    a) Select **F1** to enter in **System Setup**.

    b) Select the **UEFI Setup option**.

    c) The **Boot Manager / Boot Mode** must be changed to **UEFI mode**.

    d) Disable the **Legacy BIOS** in **System Settings**.

    e) Click **Save** to save the configuration.

    f) Navigate back to **Boot Manager** and select **Reboot System**.

8) Follow the server manufacturer recommendations and instructions to update the firmware and drivers.

3.6 The OpenScape Branch 6000 Hardware

OpenScape Branch 6000 V1R4 and later is based on the IBM x3550 (M3/M4/M5) or Fujitsu Primergy RX 200 S6/S7 or Lenovo ThinkSystem SR530 or Lenovo ThinkSystem SR630 V2 hardware.

OpenScape Branch 6000 Fujitsu Primergy RX200 S7

The FTS RX200 S7 is a new server in the FTS family of RX200 servers. Since the FTS RX200 servers are almost alike with only a few differences when it comes to installation, most of the references in this document will indicate FTS RX200 S6/S7 meaning the section or description applies to the FTS RX200 S6 and the FTS RX200 S7 servers. If differences apply, then they will be indicated as to which server they apply to.

Housed within a rack-mountable enclosure, the FTS RX200 S7 server is equipped for OpenScape Branch as follows:

- Processor: Two 2.00 GHz 6-Core Intel Xeon E5-2620 CPUs
- Memory: 32 GB of Double Data Rate 3 (DDR3) memory
- Hard disk drive: Two 300 GB hot-swappable HDDs in RAID1
- CD/DVD drive
- Disk controller: Internal on-board RAID controller
- Ethernet interfaces
- Universal Serial Bus (USB) ports: Five (two at the front, three at the back)
- Remote Supervision: One integrated Remote Management Controller (iRMC)

• Power supply: Two hot-swappable 110/220 AC power supplies

OpenScape Branch 6000 Fujitsu Primergy RX200 S6
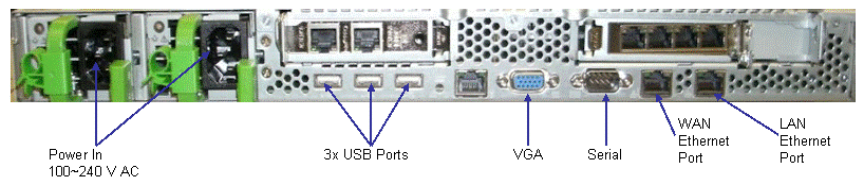
Specification:

• Fujitsu Primergy RX200 S6
• Physical Dimension (W x H x D): 431 x 43 x 762mm (18" x 1.69" x 30.0")
• Weight: up to 17 Kg (37.5 lb)
• Rated Power: 100~240 V AC, 50-60 Hz, 549W
• Average Power Consumption: 193W
• Rated Heat Emission: 1976.4 kJ/h (1873.3 BTU)
• Operating Temperature: 10-35C (50-95F)

Part Numbers:

• ADA570 / L30220-D600-A570
• BZF101 / L30280-Z600-F101 (Power Cord, USA Variant)
• BZF102 / L30280-Z600-F102 (Power Cord, UK Variant)
• BZF105 / L30280-Z600-F105 (Power Cord with Straight Appliance Connector, EURO Variant)
• BZF107 / L30280-Z600-F107 (Power Cord, BRA Variant)
• BZF108 / L30280-Z600-F108 (Power Cord, ARG Variant)

> **NOTICE:**
>
> The IBM x3550 M2 and Fujistu RX330 S1 are no longer available for new orders and will support OpenScape Branch V1R4 and V2.

OpenScape Branch 6000 IBM - x3550 M4/M5

OpenScape Branch 6000 IBM - x3550 M3
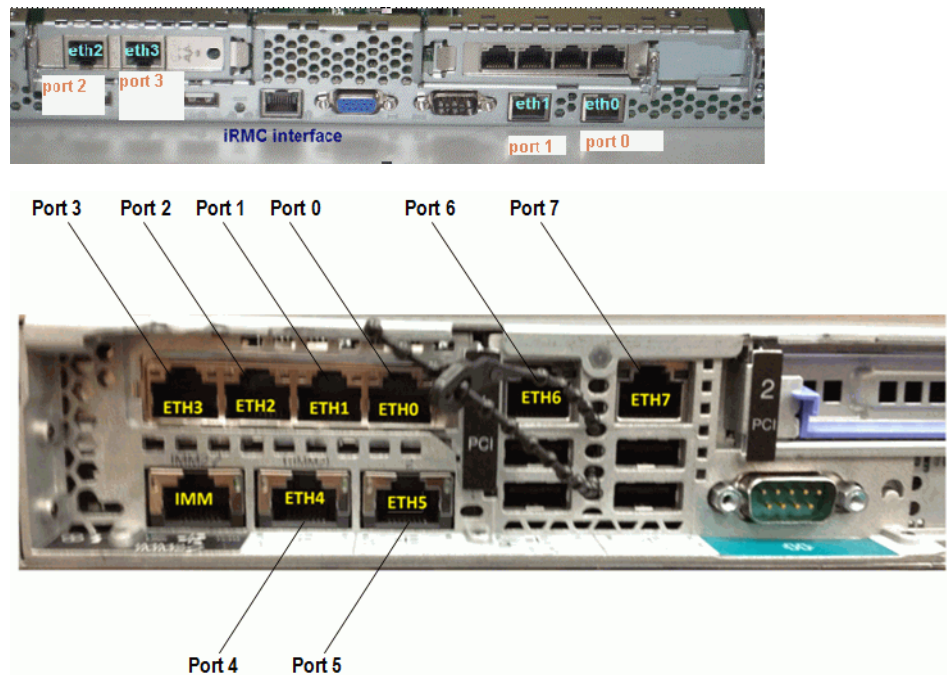
The IBM x3550 M4/M5 is a new server in the IBM family of x3550 servers. Since the IBM x3550 servers are almost alike with only a few differences when it comes to installation, most of the references in this document will indicate IBM x3550 M2/M3/M4/M5 meaning the section or description applies to the IBM x3550M2, IBM x3550 M3/M4 and IBM(Lenovo) x3550 M5 servers. If differences apply, then they will be indicated as to which server they apply to.

Housed within a rack-mountable enclosure, the IBM x3550 M4 server is equipped for OpenScape Branch as follows:

- Processor: Two 2.00 GHz 6-Core Intel Xeon E5-2620 CPUs
- Memory: 32 GB of Double Data Rate 3 (DDR3) memory
- Hard disk drive: Two 300 GB hot-swappable HDDs in RAID1
- CD/DVD drive
- Disk controller: Internal on-board RAID controller
- Ethernet interfaces
- Universal Serial Bus (USB) ports: Six (two at the front, four at the back)
- Remote Supervision: One Intel Management Module with optional Virtual Key Media (VMK)
- Power supply: Two hot-swappable AC power supplies, DC power is optional
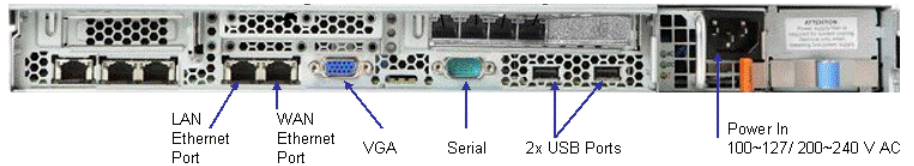
Specification:

- IBM x3550 M3
- Physical Dimension (W x H x D): 440 x 44 x 711 mm (17.3" x 1.7" x 28.0")
- Weight: up to 15.4 Kg (34.0 lb)
- Rated Power: 100~127 / 200~240 V AC, 50-60 Hz, 351W
- Average Power Consumption: 180W
- Rated Heat Emission: 1263.6 kJ/h (1197.7 BTU)
- Operating Temperature: 10-35C (50-95F)

Part Numbers:

- ADA569 / L30220-D600-A569
- BZF101 / L30280-Z600-F101 (Power Cord, USA Variant)
- BZF102 / L30280-Z600-F102 (Power Cord, UK Variant)
- BZF105 / L30280-Z600-F105 (Power Cord with Straight Appliance Connector, EURO Variant)
- BZF107 / L30280-Z600-F107 (Power Cord, BRA Variant)
- BZF108 / L30280-Z600-F108 (Power Cord, ARG Variant)

> **NOTICE:**
>
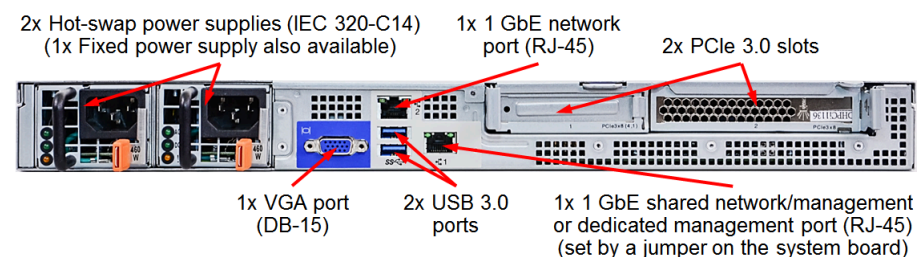> The IBM x3550 M2 is no longer available for new orders and will support OpenScape Branch V1R4 and V2.

OpenScape Branch 6000 Fujitsu - RX330 S1 (Legacy)

> **NOTICE:**
>
> The IBM x3550 M2 and Fujistu RX330 S1 are no longer available for new orders and will support OpenScape Branch V1R4 and V2.
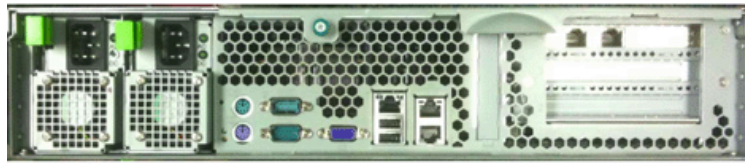
- Fujitsu RX330 S1
- Physical Dimension (W x H x D): 430 x 86 x 770mm (17" x 3.4" x 30.3")
- Power: 100~240 V AC, 50-60 Hz, 513W
- Heat Emission: 1976.4 kJ/h (1873.3 BTU)
- Operating Temperature: 0-35C (32-95F)

OpenScape Branch 6000 IBM - x3550 M2 (Legacy)

> **NOTICE:**
>
> The IBM x3550 M2 is no longer available for new orders and will support OpenScape Branch V1R4 and V2.
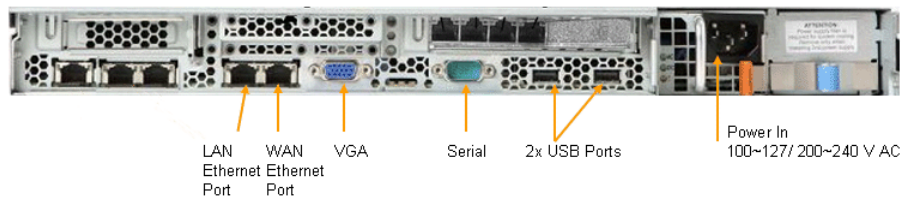

- IBM x3550 M2
- Physical Dimension (W x H x D): 440 x 44 x 711 mm (17.3" x 1.7" x 28.0")
- Power: max 675W, 100~127 / 200~240 V AC input
- Heat Emission: 1263.6 kJ/h (1197.7 BTU)
- Operating Temperature: 0-35C (32-95F)

OpenScape Branch 6000 IBM - Lenovo SR530

Up to 3x PCIe slots

1x 10/100/1000 Mb Ethernet port for XCC (RJ-45)

LOM card (optional):
• 2x 10 GbE SFP+
• 2x 10 GbE RJ-45
• 2x GbE RJ-45

2x GbE ports (RJ-45)   1x VGA port   2x USB 3.0 ports   2x Hot-swap power supplies (IEC 320-C14)
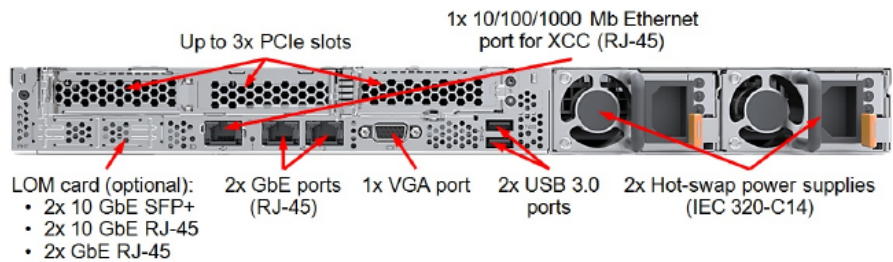
Housed within a rack-mountable enclosure, the Lenovo SR530 server is equipped for OpenScape Branch as follows:

• Memory: 768 GB of 2666 MHz Tru Double Data Rate 4(DDR4) memory.
• Power supply: Up to two redundant hot-swap 550 W or 750 W (100 - 240 V) High Efficiency Platinum or 750 W (200-240 V) High Efficiency Titanium AC power supplies. HVDC support (PRC only).

• Weight: up to 16 kg (35.3 lb)
• Physical Dimension (W x H x D): 434 x 43 x 715 mm (17.1" x 1.7" x 28.1")
• Power: 100~127/200~240 V AC, 50-60 Hz, 550W or 750W (redundant power supplies)
• Heat Emission: 3413 kJ/h (3235 BTU/h)
• Operating Temperature: 10-35°C (50-95°F)

Lenovo ThinkSystem SR630 V2

3x Low Profile PCIe slots (no rear drives)
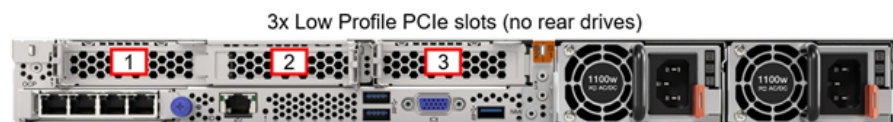
• Weight: up to 20.8 kg (45.9 lb)
• Physical Dimension (W x H x D): 440 x 43 x 773 mm (17.3" x 1.7" x 30.4")
• Rated Power: 100-127 / 200-240 V AC, 50-60 Hz
• Part Number: S30122-X8000-X133

RAID (Redundant array of independent disks) information for IBM3550, RX200 and SR530

Please refer to chapter 3 to the following document for instructions: OpenScape Voice V10, Service Manual: Installation and Upgrades, Installation Guide.

NOTICE: Only RAID1 is supported.

3.6.1 How to Install the IBM x3550 M3 Server Hardware

Proceed as follows to connect the cables of the IBM x3550 M3 server hardware for the OpenScape Branch 6000 model:

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Refer to the IBM x3550 M3 rack installation instructions to install the server into the rack.

2) Attach the keyboard, mouse and monitor cables to the server.

3) Attach the Ethernet cables.

   a) Attach an Ethernet cable to the LAN switch for the local LAN and to the Ethernet interface port on the IBM x3550 server that corresponds to the LAN interface you configured in the node.cfg.

   b) For an OpenScape Branchthat will be configured to operate in SBC mode: Attach an Ethernet cable to the LAN switch or router for the external WAN and to the Ethernet interface port on the IBM x3550 server that corresponds to the WAN interface you configured in the node.cfg. This cabling is not necessary for an OpenScape Branchsystem configured for Proxy mode.

4) Attach the power cord to the server and to the power receptacle.

5) Turn on the server.

   NOTICE:

   The IBM x3550 server requires the server boot sequence in the BIOS to be updated. The following steps are required to update the server boot sequence and date and time settings.

   ---

6) At boot up, wait and press **F1** to enter the BIOS setup when the option "<F1> Setup" is available.

   The System Configuration and Boot Management window is displayed.

7) Use the **arrow key** to navigate to the **Boot Manager** and press **Enter**.

   The Boot Management window is displayed.

8) Select **Add Boot Option** and press **Enter**.

9) Select **USB Storage** and press **Enter**.

10) Press **Esc** to exit and go back to the Boot Manager window.

    The System Configuration and Boot Management window is displayed.

11) Select **Change Boot Order** and press **Enter**.

12) Press **Enter** again to change the order.

13) Using the "+" and "-" keys ensure the order is as follows: USB Storage, CD/DVD Rom, Hard Disk 0 and then press **Enter**.

The settings are temporarily saved.

14) Select **Commit Changes** to save changes.

15) Press **Esc** to progress to the **Main Screen**.

> **NOTICE:**
>
> The banner at the bottom of the Main screen describes how to select and change the values in the time and date fields on the Main screen. It also describes how to select screens.

The Main screen of the BIOS Setup Utility is displayed.

16) From the main menu of the **Configuration/Setup Utility**, select Date and Time and press **Enter**.

17) In the **Date and Time** screen, ensure that the date and time is correct, and then press the **Esc** key to return to the main menu of the Configuration/Setup Utility.

18) From the main menu of the Configuration/Setup Utility, select **Exit Setup** and press **Enter**.

The **Exit Setup** screen is displayed.

19) In the **Exit Setup** screen, select **Yes, save and exit the Setup Utility,** and press **Enter** to confirm that you want to exit.

The system will reset.

3.6.2 How to Install the IBM x3550 M4/M5 Server Hardware

Proceed as follows to connect the cables of the IBM x3550 M4/M5 server hardware for the OpenScape Branch 6000 model:

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Refer to the IBM x3550 M4/M5 rack installation instructions to install the server into the rack.

2) Attach the keyboard, mouse and monitor cables to the server.

3) Attach the Ethernet cables.

a) Attach an Ethernet cable to the LAN switch for the local LAN and to the Ethernet interface port on the IBM x3550 server that corresponds to the LAN interface you configured in the node.cfg.

b) For an OpenScape Branch that will be configured to operate in SBC mode: Attach an Ethernet cable to the LAN switch or router for the external WAN and to the Ethernet interface port on the IBM x3550 server that corresponds to the WAN interface you configured in the node.cfg. This cabling is not necessary for an OpenScape Branchsystem configured for Proxy mode.

4) Attach the power cord to the server and to the power receptacle.

5) Turn on the server.

> **NOTICE:**
>
> The IBM x3550 server requires the server boot sequence in the BIOS to be updated. The following steps are required to update the server boot sequence and date and time settings.

6) At boot up, wait and press **F1** to enter the BIOS setup when the option "<F1> Setup" is available.

The System Configuration and Boot Management window is displayed.

7) Use the **arrow key** to navigate to the **Boot Manager** and press **Enter**.

The Boot Management window is displayed.

8) Select **Add Boot Option** and press **Enter**.

9) Select **USB Storage** and press **Enter**.

10) Press **Esc** to exit and go back to the Boot Manager window.

The System Configuration and Boot Management window is displayed.

11) Select **Change Boot Order** and press **Enter**.

12) Press **Enter** again to change the order.

13) Using the "+" and "-" keys ensure the order is as follows: USB Storage, CD/ DVD Rom, Hard Disk 0 and then press **Enter**.

The settings are temporarily saved.

14) Select **Commit Changes** to save changes.

15) Press **Esc** to progress to the **Main Screen**.

> **NOTICE:**
>
> The banner at the bottom of the Main screen describes how to select and change the values in the time and date fields on the Main screen. It also describes how to select screens.

The Main screen of the BIOS Setup Utility is displayed.

16) From the main menu of the **Configuration/Setup Utility**, select Date and Time and press **Enter**.

17) In the **Date and Time** screen, ensure that the date and time is correct, and then press the **Esc** key to return to the main menu of the Configuration/ Setup Utility.

18) From the main menu of the Configuration/Setup Utility, select **Exit Setup** and press **Enter**.

The **Exit Setup** screen is displayed.

19) In the **Exit Setup** screen, select **Yes, save and exit the Setup Utility,** and press **Enter** to confirm that you want to exit.

The system will reset.

3.6.3 How to Install the Lenovo X3550 M5 Server Hardware

Prerequisites

The safety instructions have been read and well-understood

When creating the USB stick for installation on LENOVO x3550 M5 platform, the checkbox **Partitioned USB Stick** must be set.

Step by Step

1) Power on or reboot the server

2) At boot up, wait and press **F1** to enter the BIOS setup when the option "<F1> Setup" is available.

   The System Configuration and Boot Management window is displayed

3) Use the **arrow key** to navigate to the **Boot Manager** and press **Enter**

   The Boot Management window is displayed.

4) Select **Add Boot Option** and press **Enter**

5) Select **USB Storage** and press **Enter**.

6) Press **Esc** to exit and go back to the Boot Manager window.

   The System Configuration and Boot Management window is displayed

7) Select **Change Boot Order** and press **Enter**.

8) Press **Enter** again to change the order.

9) Using the "+" and "-" keys ensure the order is as follows: USB Storage, CD/DVD Rom, Hard Disk 0 and then press **Enter**

   The settings are temporarily saved

10) Select **Commit Changes** to save changes

11) Press **Esc** to progress to the **Main Screen**.

12) Continue pressing **Esc** until Setup is exited

IMPORTANT:

In the case of x3550 M5 Server, BIOS should be configured as Legacy, otherwise the Server will not boot from the Hard Drive.

3.6.4 How to Install the Lenovo SR530 Server Hardware

Proceed as follows to connect the cables of the Lenovo SR530 server hardware for the OpenScape Branch 6000 model:

Prerequisites

This section describes the equipment needed on the Lenovo SR530. All necessary hardware comes pre-installed. You can find the steps necessary to assemble the hardware, connect the cables and load the necessary firmware.

Step by Step

1) Refer to the Lenovo SR530 rack installation instructions to install the server into the rack.

2) Install the disk drive.The image below shows the location of the two drives.
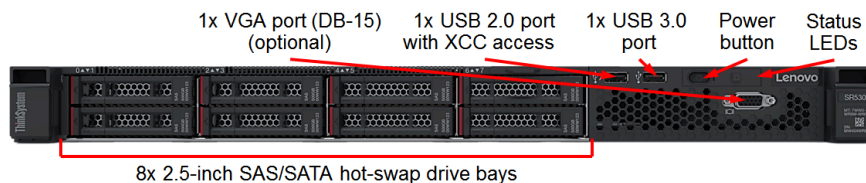
Figure 3: Lenovo SR530, Front view

The image below is a close-up of the drives, with the two leftmost bays populated with hard disks.
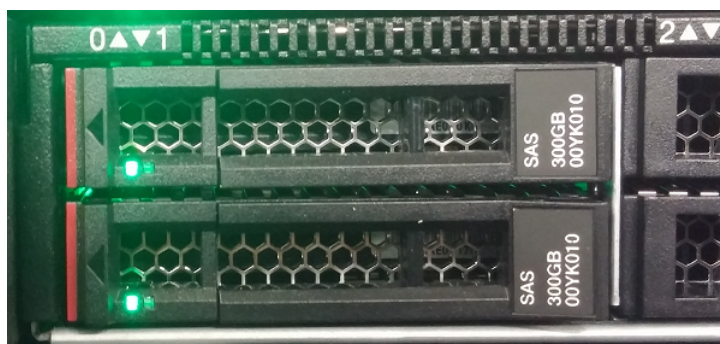
To remove a drive, slide the blue release latch to the right with one finger while using another finger to grasp the black drive handle and pull the hard disk drive out of the drive bay.

3) Connection Panel in the rear of the Lenovo SR530 server. The image below gives a general overview of the connection panel in the rear of the Lenovo SR530 server.
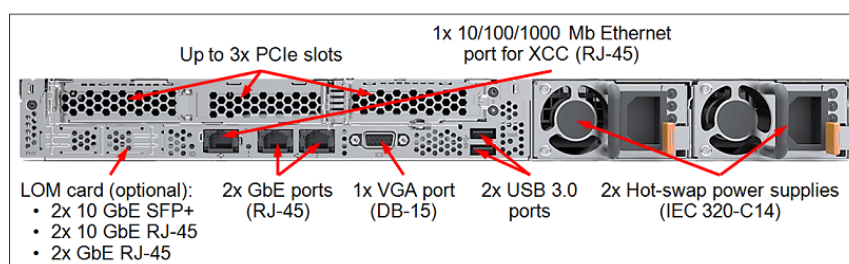
Figure 4: Lenovo SR530, Rear view

4) Network port assignment.

The following figure shows the Ethernet port assignments for the Lenovo SR530

5) Power on the server.

6) At boot up, press **F1** to enter the UEFI setup option.

    a) Navigate to **UEFI Setup** > **System Settings**.

    b) Select **Legacy BIOS**.

    c) Navigate to **Boot Manager**>**Boot Modes** and select **Legacy Modes**.

    d) Click **Save** to save the configuration.

    e) Navigate back to **Boot Manager** and select **Reboot System**.

7) From V10R2, it is possible to setup UEFI option.

    a) Select **F1** to enter in **System Setup**.

    b) Select the **UEFI Setup option**.

    c) The **Boot Manager / Boot Mode** must be changed to **UEFI mode**.

    d) Disable the **Legacy BIOS** in **System Settings**.

    e) Click **Save** to save the configuration.

    f) Navigate back to **Boot Manager** and select **Reboot System**.

8) Follow the server manufacturer recommendations and instructions to update the firmware and drivers.

3.6.5 How to Install the Fujitsu RX200 S6 Server Hardware

Proceed as follows to connect the cables and set up the Fujitsu RX200 S6 server hardware for the OpenScape Branch 6000 model:

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Refer to the FSC RX200 rack installation instructions to install the server into the rack.

2) Attach the keyboard, mouse, and monitor cables to the server.

> **NOTICE:**
>
> If the equipment for OpenScape Voiceincludes a KVM, connect cables from the keyboard, mouse, and monitor connectors on the server to the KVM and connect the keyboard, mouse and monitor cables to the appropriate connectors on the KVM. If necessary, refer to the KVM documentation for assistance.

3) Attach the Ethernet cables.

> **NOTICE:**
>
> Ensure that the Ethernet switch or switches are configured for VLAN operation. Refer to the Ethernet switch manufacturer's documentation for instructions.

4) Attach the power cord to the server and to the power receptacle.

5) Turn on the server

> **NOTICE:**
>
> The Fujitsu server requires LSI RAID creation. The following steps will setup the internal LSI controller and disks into a mirrored pair. The LSI RAID Creation functionality is in the Setup Application.

Shortly after power is applied the following prompt should appear on the **System Console** screen: **Press <Ctrl><H> for WebBIOS or press <Ctrl><Y> for Preboot CLI**.

6) Press **<Ctrl><H>** to get to the WebBIOS screen.

The **Adapter Selection** screen is displayed.

7) Click the **Start** button to advance to the WebBIOS Main screen.

The **WebBIOS** main screen is displayed with the physical view as the default.

8) Select the **Configuration Wizard**.

The **MegaRAID BIOS Config Utility Configuration Wizard** screen is displayed.

9) Select **New Configuration** and click the **Next** button.

The **MegaRAID BIOS Config Utility Confirm Page** is displayed.

10) Click the **Yes button since this is a new system. This will clear the current configuration**.

The **MegaRAID BIOS Config Utility Configuration Wizard** screen is displayed.

11) Select **Automatic Configuration** and select **Redundancy when possible** in the pull down; then click the **Next** button.

The **MegaRAID BIOS Config Utility Wizard - Preview** screen is displayed. This screen provides a preview of the new virtual RAID to be created.

12) Click the **Accept button**.

The **MegaRAID BIOS Config Utility Confirm Page** is displayed and a confirmation prompt to create the new virtual RAID appears.

13) Click the **Yes button to save the configuration.**

The **MegaRAID BIOS Config Utility Confirm Page** is displayed and a prompt to initialize the Virtual Drives appears.

14) Click the **Yes button to start the initialize virtual drives sequence.**

The **MegaRAID BIOS Config Utility Virtual Drives** screen is displayed.

15) Select **Fast Initialize** and click the **Go** button.

The **MegaRAID BIOS Config Utility Confirm Page** is displayed and a confirmation prompt to initialize the virtual drives appears.

16) Click the **Yes** the button to proceed to initialize the virtual drives and click the **Home** button to return to the main page.

The **MegaRAID BIOS Config Utility Virtual Configuration** screen is displayed and should now indicate the presence of a Virtual RAID.

17) Select the **Boot tab**

The **System Console Boot** screen is displayed.

18) Using the up and down keys select the USB Key (storage) and other storage devices, one at a time.

19) Using the "+" and "-" keys ensure the order is as follows: USB Storage, CD/DVD Rom, Hard Disk 0.

Verify there is no CD/DVD in the drive prior to configuring the boot sequence to guarantee booting from the USB.

20) Save the configuration

21) Select **Exit**

The **Exit Confirmation** screen is displayed.

22) Click the **Yes button to exit.**

The LSI RAID is updated.

3.6.6 How to Install the Fujitsu RX200 S7 Server Hardware

Proceed as follows to connect the cables and set up the Fujitsu RX200 S7 server hardware for the OpenScape Branch 6000 model:

Prerequisites

The safety instructions have been read and well-understood.

Step by Step

1) Refer to the FSC RX200 rack installation instructions to install the server into the rack.

2) Attach the keyboard, mouse, and monitor cables to the server.

> **NOTICE:**
>
> If the equipment for OpenScape Voiceincludes a KVM, connect cables from the keyboard, mouse, and monitor connectors on the server to the KVM and connect the keyboard, mouse and monitor cables to the appropriate connectors on the KVM. If necessary, refer to the KVM documentation for assistance.

3) Attach the Ethernet cables.

> **NOTICE:**
>
> Ensure that the Ethernet switch or switches are configured for VLAN operation. Refer to the Ethernet switch manufacturer's documentation for instructions.

4) Attach the power cord to the server and to the power receptacle.

5) Turn on the server

> **NOTICE:**
>
> The Fujitsu server requires LSI RAID creation. The following steps will setup the internal LSI controller and disks into a mirrored pair. The LSI RAID Creation functionality is in the Setup Application.

Shortly after power is applied the following prompt should appear on the **System Console** screen: **Press <Ctrl><H> for WebBIOS or press <Ctrl><Y> for Preboot CLI**.

6) Press **<Ctrl><H>** to get to the WebBIOS screen.

The **Adapter Selection** screen is displayed.

7) Click the **Start** button to advance to the WebBIOS Main screen.

The **WebBIOS** main screen is displayed with the physical view as the default.

8) Select the **Configuration Wizard**.

The **MegaRAID BIOS Config Utility Configuration Wizard** screen is displayed.

9) Select **New Configuration** and click the **Next** button.

The **MegaRAID BIOS Config Utility Confirm Page** is displayed.

10) Click the **Yes button since this is a new system. This will clear the current configuration**.

The **MegaRAID BIOS Config Utility Configuration Wizard** screen is displayed.

11) Select **Automatic Configuration** and select **Redundancy when possible** in the pull down; then click the **Next** button.

The **MegaRAID BIOS Config Utility Wizard - Preview** screen is displayed. This screen provides a preview of the new virtual RAID to be created.

12) Click the **Accept button**.

The **MegaRAID BIOS Config Utility Confirm Page** is displayed and a confirmation prompt to create the new virtual RAID appears.

13) Click the **Yes button to save the configuration.**

The **MegaRAID BIOS Config Utility Confirm Page** is displayed and a prompt to initialize the Virtual Drives appears.

14) Click the **Yes button to start the initialize virtual drives sequence.**

The **MegaRAID BIOS Config Utility Virtual Drives** screen is displayed.

15) Select **Fast Initialize** and click the **Go** button.

The **MegaRAID BIOS Config Utility Confirm Page** is displayed and a confirmation prompt to initialize the virtual drives appears.

16) Click the **Yes** the button to proceed to initialize the virtual drives and click the **Home** button to return to the main page.

The **MegaRAID BIOS Config Utility Virtual Configuration** screen is displayed and should now indicate the presence of a Virtual RAID.

17) Select the **Boot tab**

The **System Console Boot** screen is displayed.

18) Using the up and down keys select the USB Key (storage) and other storage devices, one at a time.

19) Using the "+" and "-" keys ensure the order is as follows: USB Storage, CD/ DVD Rom, Hard Disk 0.

Verify there is no CD/DVD in the drive prior to configuring the boot sequence to guarantee booting from the USB.

20) Save the configuration

21) Select **Exit**

The **Exit Confirmation** screen is displayed.

22) Click the **Yes button to exit.**

The LSI RAID is updated.

3.6.7 How to Install the Lenovo SR630 V2 Server Hardware

This section describes the equipment needed on the Lenovo SR630 V2. All necessary hardware comes pre-installed. You can find the steps necessary to assemble the hardware, connect the cables and load the necessary firmware.

Proceed as follows to connect the cables of the Lenovo SR630 V2 server hardware for the OpenScape Branch 6000 model:

Step by Step

1) Refer to the Lenovo SR630 V2 rack installation instructions to install the server into the rack.

**2)** Install the disk drive.The image below shows the location of the two drives. The system comes with a total of up to 10 2.5-inch drive bays.
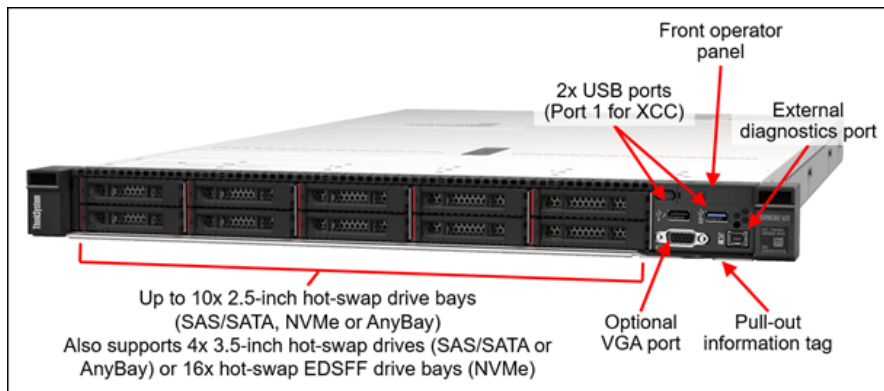
To remove a drive, slide the blue release latch to the right with one finger while using another finger to grasp the black drive handle and pull the hard disk drive out of the drive bay.
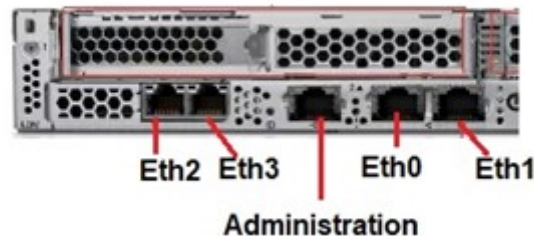
3) The image below gives a general overview of the connection panel in the rear of the Lenovo SR630 V2 server.
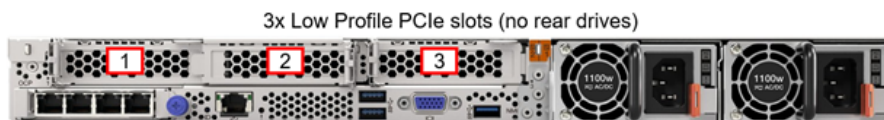
4) Installing the PCI.PCI installation is not required. The system comes pre-installed with six ports:

- ThinkSystem Broadcom 5719 1GbE RJ45 4-Port PCIe Ethernet Adapter (eth0 to eth3)
- ThinkSystem Broadcom 5720 1GbE RJ45 2-Port PCIe Ethernet Adapter (eth4 and eth5)

These are identified in the image below:

5) After adding and wiring all hardware to the machine, continue with the UEFI configuration and firmware updates. If you are using KVM devices connect it to the server prior to initial boot.

4 Installation and Upgrades - Overview

This chapter describes the preparation of the USB stick and the installation, update or upgrade procedure of the OpenScape Branch software.

Administration and management of the OpenScape Branch is performed using an integrated and intuitive user GUI via a single point-of-entry using the same Common Management Platform (CMP) that is used to manage other components of the OpenScape Suite.

> **IMPORTANT:**
>
> From V10, the open-vm-tools is installed in full install and the flag Enable Open VM Tools should be checked in System / Settings. If checked, this field enables the Open Virtual Machine Tools (open-vm-tools).

> **NOTICE:**
>
> OSB V10 requires that OSB HW is installed with at least 2GB memory!

4.1 Installation and Upgrades

This chapter describes the preparation of the USB stick and the installation, update or upgrade procedure of the OpenScape Branch software.

Full Installation, Upgrades

Only one process for software delivery is supported: An entire image or a delta image that is used to rebuild a new image on the OpenScape Branch appliance.

The following methods are available:

- **Full Installation**

  A new full installation erases both backup and active partition and overwrites them with software from the USB stick. This option is only available if the USB stick is plugged in and the system is booting from the USB stick.

  > **NOTICE:**
  >
  > The database must be backed up to the USB stick, to preserve the data, prior to installation.

  > **NOTICE:**
  >
  > There is no data validation performed when installing using a .xml file on the USB stick.

- **Upgrade OpenScape Branch software**:

  The system is upgraded using the concept of delta images. A full version will be installed on the backup partition and the active partition will be preserved

in case of failure. Upgrade is possible using USB stick or local files stored in PC/network. If the USB stick upgrade is performed only the files stored on the USB stick will be used, while in other methods the user has to choose which version will be used. The software image *.tar file is required for all upgrades types. A tar file contains 3 files: `image*.ob, image*.key, and image*.sig`

Upgrade of redundant OpenScape branches is accomplished by upgrading the master node. The master node takes care of synchronizing the data on the partner node.

> **NOTICE:**
>
> Update and full installation is only possible using the local OSB Management tool.

- **Mass upgrades via CMP**

  The following methods and tasks are supported:

  – Display a list of available software on the CMP (Common Management Platform) for downloading to the OpenScape Branch devices.
  – Software transfer or activation for a list of OpenScape Branch devices.
  – Software transfer of new software from the software repository or USB stick or remote locations to the CMP server.
  – Display a status overview of the software transfer or software activation process.
  – Scheduling multiple batches.

  > **NOTICE:**
  >
  > It is recommended to upgrade to the latest version of the current OpenScape Branch software release before upgrading to a new OpenScape Branch software release (i.e. from V9 to V10).
  >
  > Direct upgrade to V10R2 is allowed ONLY when OpenScape Branch system is running with V9R4.12.X or higher.
  >
  > In case of update/upgrade failures, fallback to the backup partition and apply the recommended/tested upgrade path.

  > **NOTICE:**
  >
  > When upgrading OSBs or OS-SBC units to V10, the centralized OSB/OS-SBC license file needs to reflect the entire OSB/OS-SBC network and not just and individual OSB/OS-SBC that is being upgraded.

Software Images Provided for Customers

The following software is provided for customers on SWS (software repository).

- **osb-10.02.*.*-*.zip**, that contains:
  - **image_osb-10.02.*.*-*.tar**-Software image file for upgrade or install.
  - **image_osb-10.02.*.*-*.spa**-File contains the compatibility information from the old release to new release for use by the CMP.
  - **usbsticksetup_osb-10.02.*.*-*.zip**-Contains the USB Stick Wizard.
  - **USB Stick Wizard**
  - **Installation file folders**
- **misc_osb-10.02.*.*-*.tar.gz**-has the default XML configuration files and the MIBS.
- **vApps_osb-10.02.*.*-*.zip**-Contains the OVF templates to create and deploy a virtual machine for the various models of Virtual OSB.
- **sw-metadata-osb-10.02.*.*-*.json**-this file is used with OS Composer application.

> **NOTICE:**
>
> Refer to USB Stick Setup Tool section (below) for example of folders and files included in the zip file.

USB Stick Setup Tool

The USB Stick Wizard (usbsticksetup.exe) is a Windows application used to generate a USB Stick (pen drive) for OpenScape Branch Installation. This application is distributed with the following folders:

USB Stick Setup Folder (unzipped)

Name	Type	Size
ob	File folder	
syslinux	File folder	
systemd-boot	File folder	
Readme	Text Document	1 KB
usbsticksetup	Application	2,220 KB
usbsticksetup.exe.manifest	MANIFEST File	2 KB

4.1.1 How to Set Up the USB Stick

Proceed as follows to set up the USB stick for Installation:

Prerequisites

One USB memory stick (minimum 2 GB memory capacity recommended).

The USB stick setup tool and the software image files are available on a local PC.

Step by Step

1) Extract the USB Stick Setup tool application from the zip file.

2) Copy the software image *.tar files into the ob folder. The folder will contain SW images and boot files for OpenScape Branch SW installation.

Name ^	Type	Size
image_osb-10.02.00.00-2.tar	TAR File	730,990 KB
initrd.gz	GZ File	12,091 KB
vmlinuz	File	8,838 KB

In this example, the base software file is *image_osb-10.02.00.00-2.tar* to be used for installing or upgrading.

3) Connect the USB stick to a USB port on the PC.

4) Proceed to the USB stick creation by running the usbsticksetup.exe application.

> **NOTICE:**
>
> If doing a full installation using an existing DataBase (.xml), please make sure that the DB is exported from OpenScape Branch prior to start building the USB Stick. Via OpenScape Branch Local GUI, select the **Import/Export** configuration menu and export the xml file. The exported config file will be selected in the following step under installation method as "Already existent database file".

> **NOTICE:**
>
> There is no data validation performed when installing using a .xml file on the USB stick.

The **USB Stick Setup** screen is displayed.

5) In the **USB Stick Setup** screen:

a) In the Removable Media Select field, ensure that the USB stick is selected.

b) Select **Generate node.cfg file** to create a new configuration file. Network interfaces configuration is required with this option.

> **NOTICE:**
>
> If you select either the **Already existing database file or Already existing node.cfg file** option as the Installation Method the USB stick is created with data from the *.xml or *.cfg file you specify. With either option: the Host Name, IP Address, Subnet mask, and Default gateway fields are inactive (greyed out) and cannot be changed here. If you are using an *.xml or *.cfg as a template to install a new OpenScape Branch, site-specific parameters will have to be specified or modified as necessary during the

configuration process. The database file option can not be used for different hardware types.

Perform **Sub-steps c - h** only if the OpenScape Branch is to be installed using a **Simplified Installation** method for installation.

c) Checkmark the **Automated** and **Net boot** checkboxes if **Simplified Installation** is to be used for installing the OpenScape Branch server.

d) Click the **VPN** install button if **Simplified Installation Option 5** is to be used to create a Hosted OpenScape Branch server. A boot VPN is required for simplified installation using Option 5.

The **Boot VPN Settings** dialog will appear.

e) Select the **Enable** radio button, in the **IPsec** work area.

f) Select the **Browse...** button to upload certificate files.

The Browse Files dialog appears

g) Add or remove certificates (CA certificates, X.509 Certificates, Key files) as needed. Click the **OK** button when finished to return to the **Boot VPN Settings** dialog.

h) Enter the Network Settings (**Partner IP**, **Partner Network** and **Partner Network Mask Bits**) in the **Network Settings** work area. Click the **OK** button when finished to return to the **USB Stick Setup** screen.

i) In the **Host Name** field, enter a name for the system.

j) In the Network fields, specify the **IP Address, Subnet mask**, and **Default gateway** for the LAN/WAN Interfaces.

k) The **Partitioned USB Stick** field should be checked for the IBM, Fujitsu and Lenovo servers.

l) From V10R2, the UEFI Bootloader option is available. By enabling this flag, the System Boot will be set as UEFI Mode. It is important that the server supports the UEFI Mode and then it is also configured to run in this mode.

m) Click **Yes** to continue.

A warning message is displayed: "All partitions of the removable media will be deleted and a single FAT32 partition will be created."

6) Click Yes to continue.

> **NOTICE:**
>
> After selecting **Yes** a warning will appear only if "image*.tar" is included in OB folder (no "update*.tar"). This is normal in cases where a full install is required and only the "image*.tar" is provided with the load. Click **Yes** to continue.

A progress bar is displayed.

7) When the USB Stick Setup tool indicates that "USB Stick setup complete", click **OK**.

After the process is concluded the USB Stick can be removed and it will be ready for installation.

4.1.2 How to Update the Server Boot Sequence

The sever boot sequence may require update in order to perform a full installation of the OpenScape Branch software, if the server does not have the USB storage as the first option for booting. Proceed as follows to update the server boot sequence. **After software installation, for security issues, it is recommended to start the boot from Hard Disk option.**

Prerequisites

The server hardware has been installed e.g., IBM 3250 and IBM 3550.

The USB stick has been prepared.

Step by Step

1) Power on the server.
2) At boot up, wait and press **F1** to enter the BIOS setup when the option "<F1> Setup" is available.

    The System Configuration and Boot Management window is displayed.
3) Use the **arrow key** to navigate to the "Boot Manager" and press **Enter**.

    The Boot Management window is displayed.
4) Select **Add Boot Option** and press **Enter**.
5) Select **USB Storage** and press **Enter**.
6) Press **Esc** to exit and go back to the Boot Manager window.

    The System Configuration and Boot Management window is displayed.
7) Select **Change Boot Order** and press **Enter**.
8) Press **Enter** again to change the order.
9) Using the "+" and "-" keys ensure the order is as follows: USB Storage, CD/DVD Rom, Hard Disk 0 and then press **Enter**.

    The settings are temporarily saved.
10) Select **Commit Changes** to save changes.
11) Press **Esc** to exit from all of the windows.

    The prompt **Do you want to exit the Setup Utility?** is displayed.
12) When prompted with the message, select **Y**.
13) Once the Boot Sequence is updated, insert the USB stick and proceed with OpenScape Branch full installation.

The server boot sequence is updated and full installation of OpenScape Branch is now available. Proceed with USB full installation of OpenScape Branch software.

4.1.3 Boot device for one time use: for IBM 3250M3/M5/M6and 3550M3/M4/M5, Lenovo SR250/SR250 V2, SR530 and SR630 V2

4.1.3.1 IBM x3250M3/M5/M6, x3550M3/M4/M5 platforms

Step by Step

1) Plug in the USB stick to be used for the boot.
2) Power on or reboot the server.
3) When prompted, select **F12** to select the **Boot Device** option.
4) In **Boot Devices Manager**, select the **USB Storage** option.
5) Click **ESC** to exit.

4.1.3.2 Lenovo SR530, SR630 V2 and Lenovo SR250/SR250 V2 platforms

Step by Step

1) Plug in the USB stick to be used for the boot.
2) Power on or reboot the server.

3) When prompted, select **F12 One Time Boot Device** option:

SR250
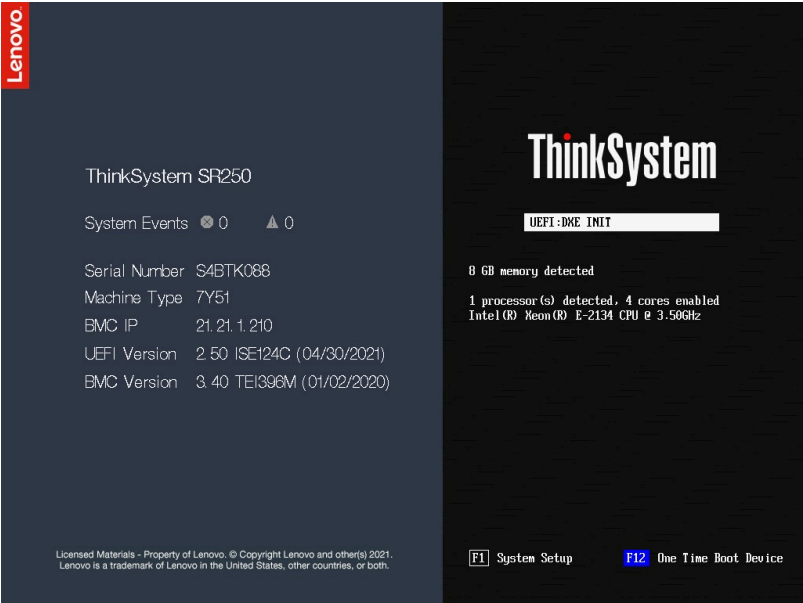
SR250 V2

SR530
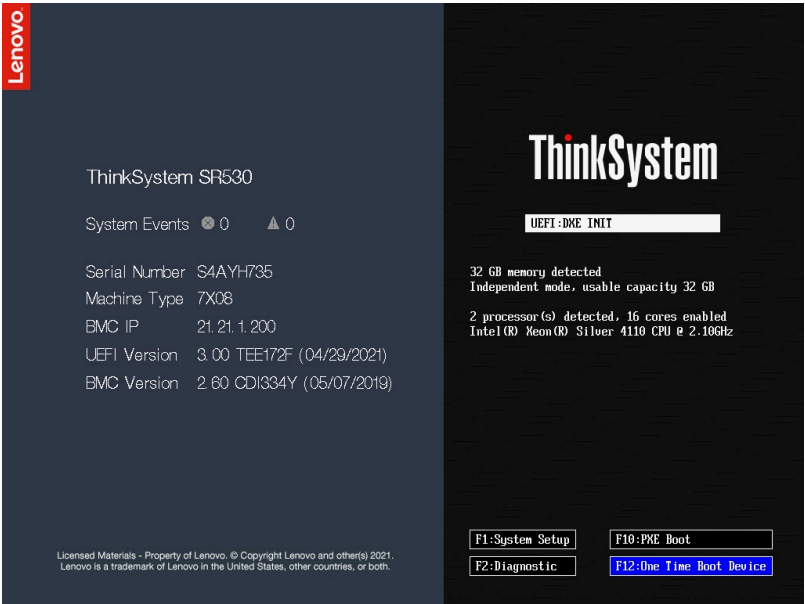
SR630 V2

SR530

4) In **Boot Devices Manager**, select the **USB Storage** option when the system is in Legacy Mode or the **UEFI: USB** option when the system is in UEFI Mode.

> **NOTICE:** When the system is in UEFI Mode, the name shown in the **UEFI: USB** option changes depending on the brand/model of the USB:

```
                            Boot Devices Manager

    Legacy Mode                       [X]

    CD/DVD Rom
    Hard Disk
    Network
    USB Storage




    ↑↓=Move Highlight          <Enter>=Select Entry        <ESC>=Exit Setup Utility
```

```
                            Boot Devices Manager

    UEFI:   OnBoard (5A/0/3) PXE IP4  Intel(R) Ethernet Connection  ▲
    X722 for 1GbE
    UEFI:   SLOT2 (2F/0/0) PXE IP6  Intel(R) Ethernet Server
    Adapter I350-T4
    UEFI:   SLOT2 (2F/0/0) PXE IP4  Intel(R) Ethernet Server
    Adapter I350-T4
    UEFI:   SLOT2 (2F/0/1) PXE IP6  Intel(R) Ethernet Server
    Adapter I350-T4
    UEFI:   SLOT2 (2F/0/1) PXE IP4  Intel(R) Ethernet Server
    Adapter I350-T4
    UEFI:   SLOT2 (2F/0/2) PXE IP6  Intel(R) Ethernet Server
    Adapter I350-T4
    UEFI:   SLOT2 (2F/0/2) PXE IP4  Intel(R) Ethernet Server
    Adapter I350-T4
    UEFI:   SLOT2 (2F/0/3) PXE IP6  Intel(R) Ethernet Server
    Adapter I350-T4
    UEFI:   SLOT2 (2F/0/3) PXE IP4  Intel(R) Ethernet Server
    Adapter I350-T4
    UEFI:   USB 0/14/0                                              ▼

    ↑↓=Move Highlight          <Enter>=Select Entry        <ESC>=Exit Setup Utility
```

5) Press **Enter** to start the installation:

NOTICE: Automate installation or installation using GUI.

---

6) After finishing the installation remove the USB stick before rebooting the system.

4.1.3.3 Fujitsu RX200 platforms

Step by Step

1) Plug in the USB stick to be used for the boot.

2) Power on or reboot the server.

3) At boot up wait and Press **F2** to enter setup.

4) Use the right arrow to select the boot tab.

5) Select the USB as the boot option #1.

6) Exit setup.

7) Continue with the system boot.

> **NOTICE:** You can not select USB as a boot option since there are multiple USBs on the system, and picking a specific port would be problematic. The best solution is to plug a USB in (as shown below: a Kingston Data Traveler USBstick) and you can then select.

4.1.4 System Boot Mode - Legacy Mode or UEFI Mode

Before V10R2, only the Legacy Mode was available for system boot.Now, it is possible to choose the UEFI Mode to system boot.

> **NOTICE:** The System Boot Mode must be configured correctly, otherwise the Server will not boot from the Hard Drive.

4.1.4.1 Lenovo x3250M6 and x3550 M5 platforms

LEGACY MODE: Select **F1** to enter in System Setup. Choose the **Boot Manager** option.

> **NOTICE:** The Boot Mode must be changed to UEFI mode.

UEFI MODE: Select **F1** to enter in System Setup. Choose the **Boot Manager** option. The **Boot Mode** must be changed to **UEFI mode**.

> **NOTICE:** In System Settings, the Legacy Support must be disabled.

4.1.4.2 Lenovo SR530, SR630 V2 and Lenovo SR250/SR250 V2 platforms

Step by Step

1) Select **F1** to enter in System Setup.

SR250
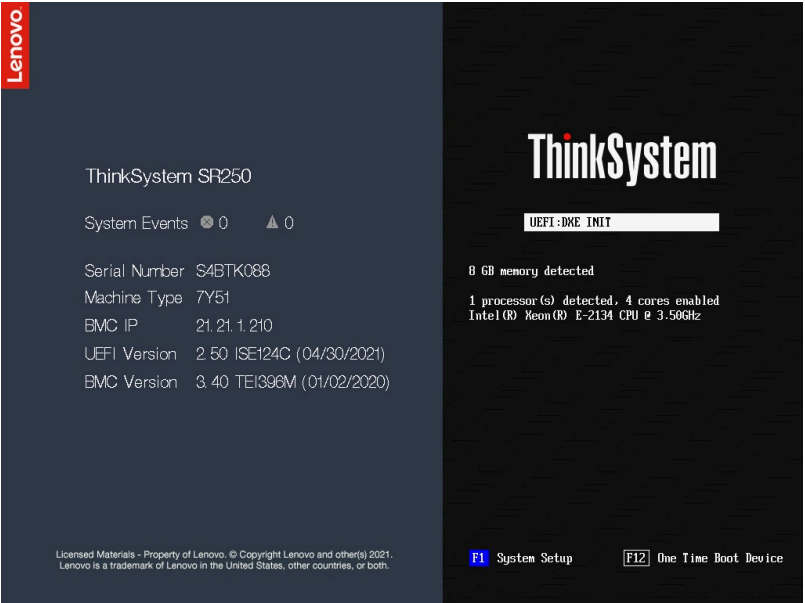
SR250 V2
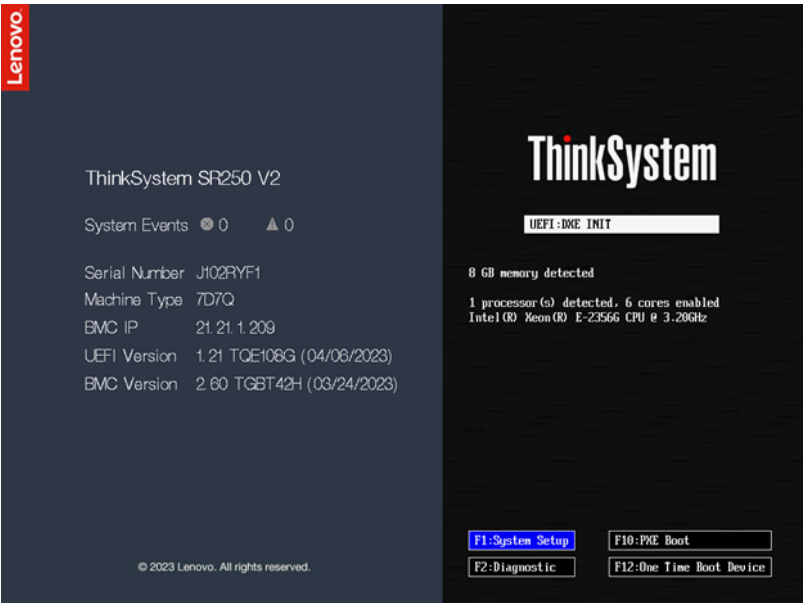
SR530
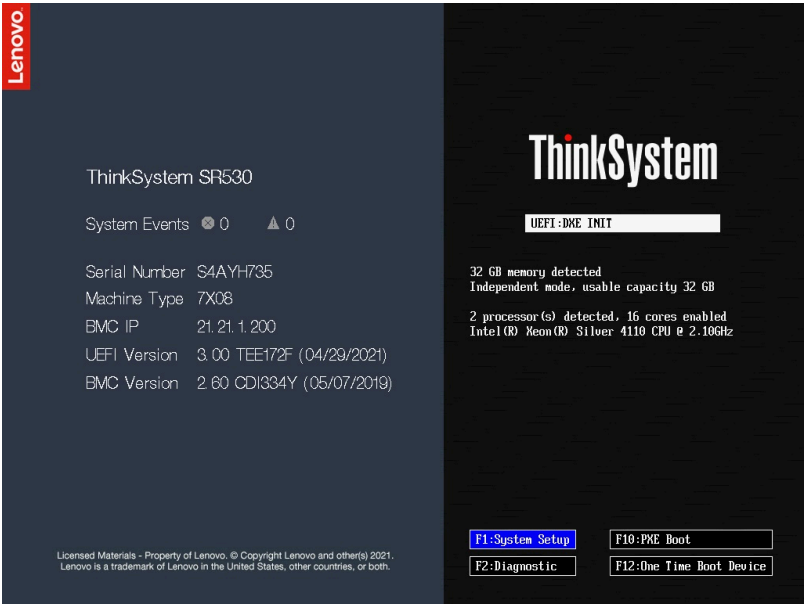
SR630

2) Select one of the available system boot modes:

LEGACY MODE

a) Select **UEFI Setup** option.

b) In **System Settings** tab, the **Legacy BIOS** field must be set to **Enable**.

SR250
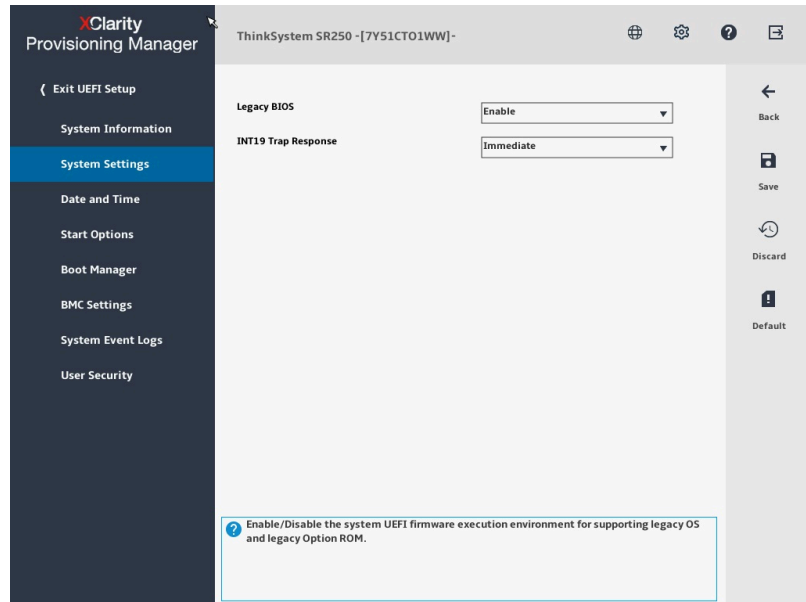
SR250 V2
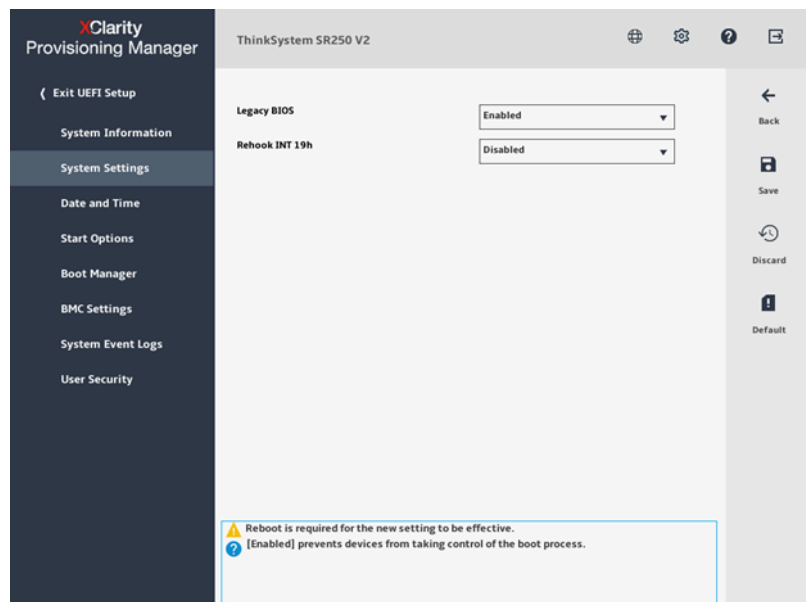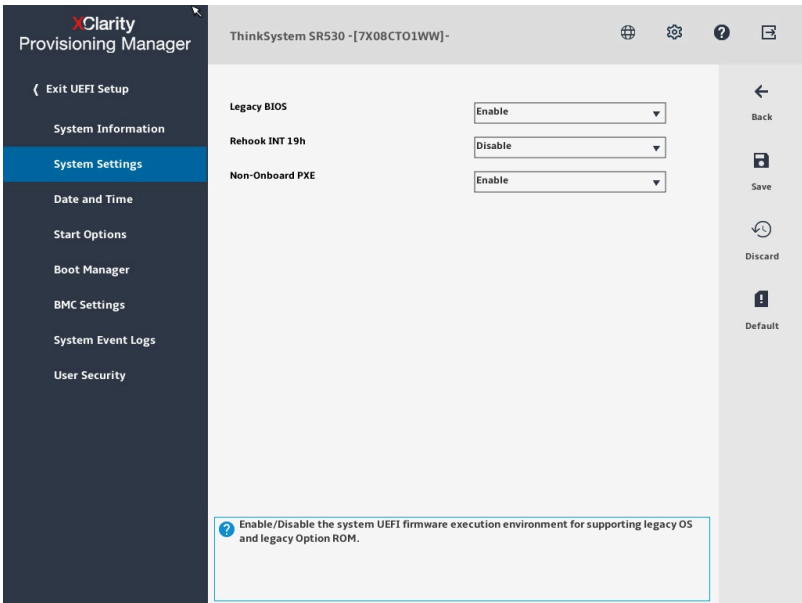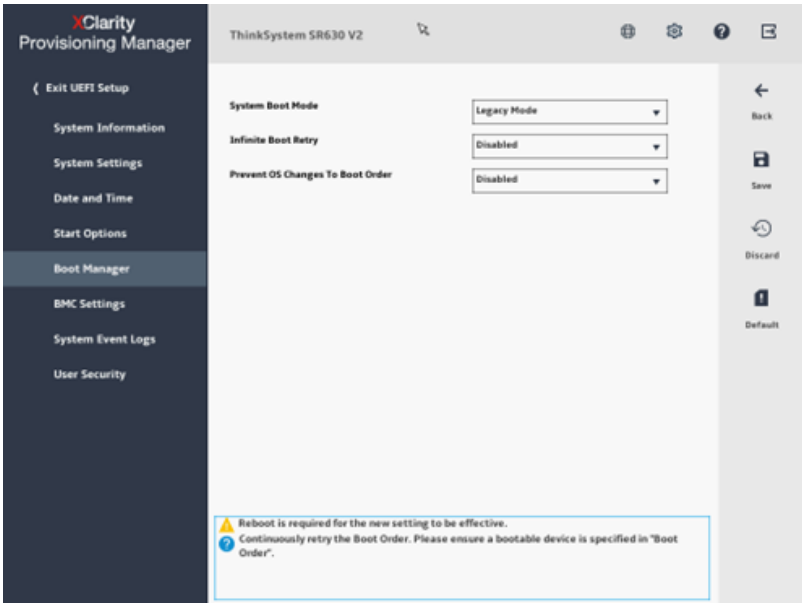
SR530

SR630 V2

c) In **Boot Manager** tab, the **System Boot Mode** field must be set to **Legacy Mode**.

SR250

Installation and Upgrades - Overview
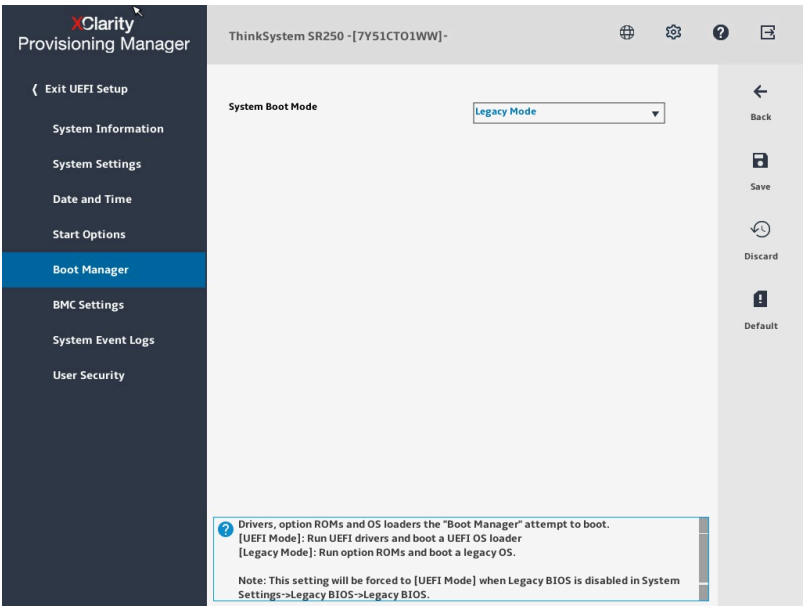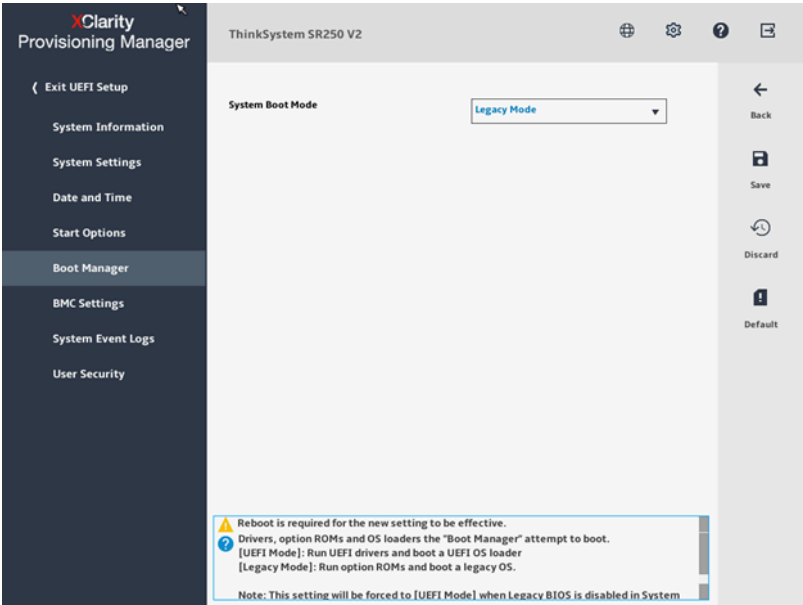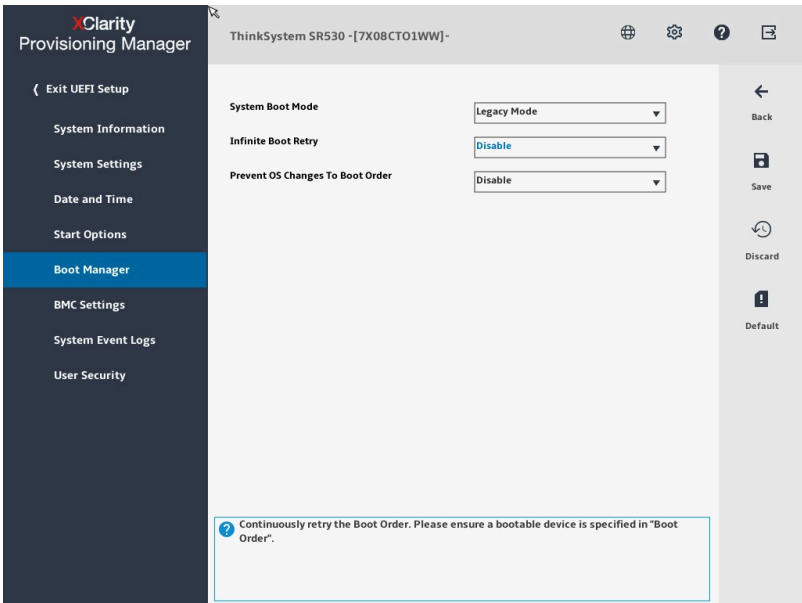
SR250 V2

SR530

SR630 V2
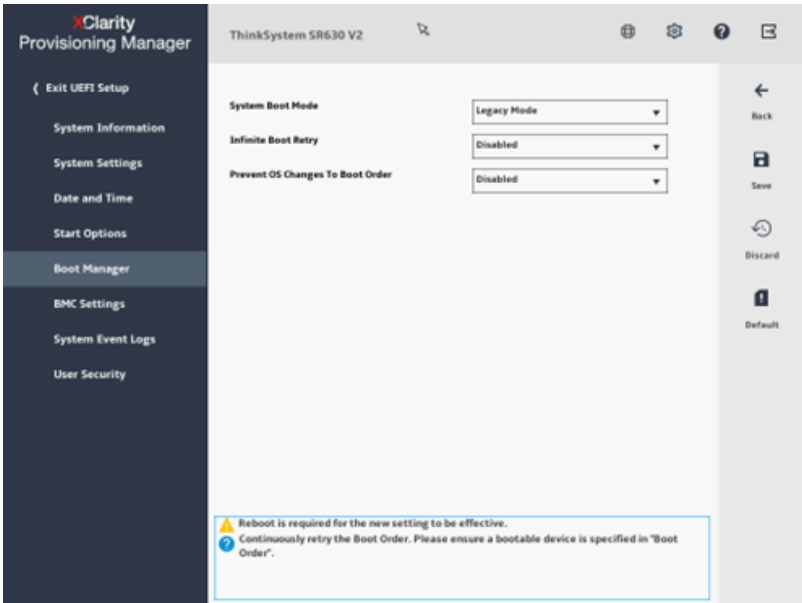
UEFI MODE

a) Select **UEFI Setup** option.

b) In **System Settings** tab, the **Legacy BIOS** field must be set to **Disable**.

   SR250
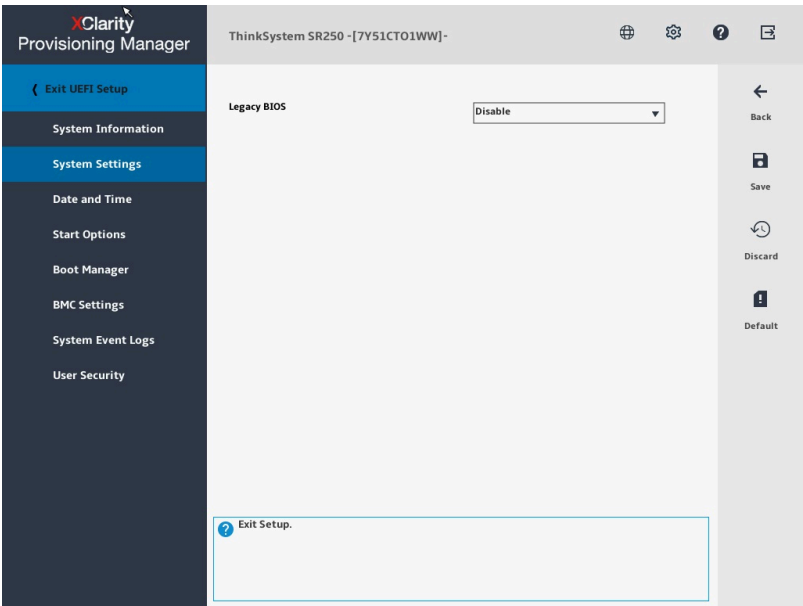
SR250 V2
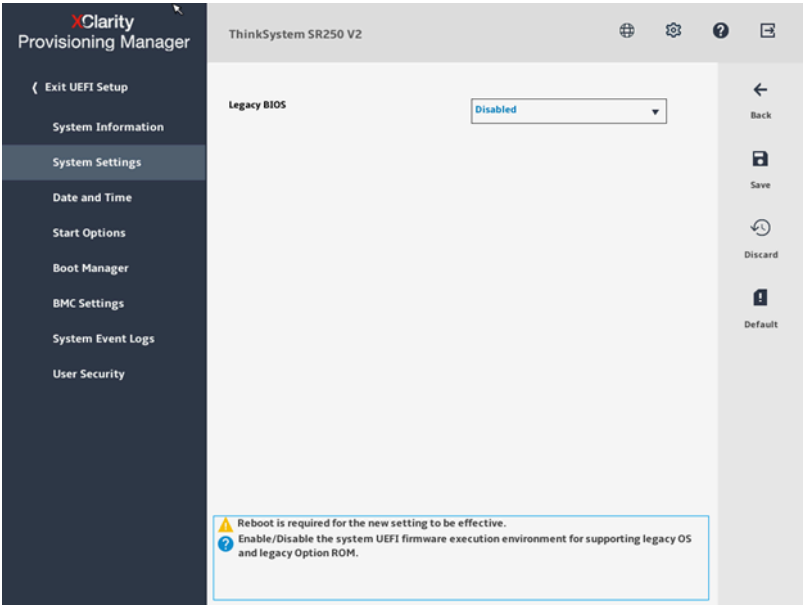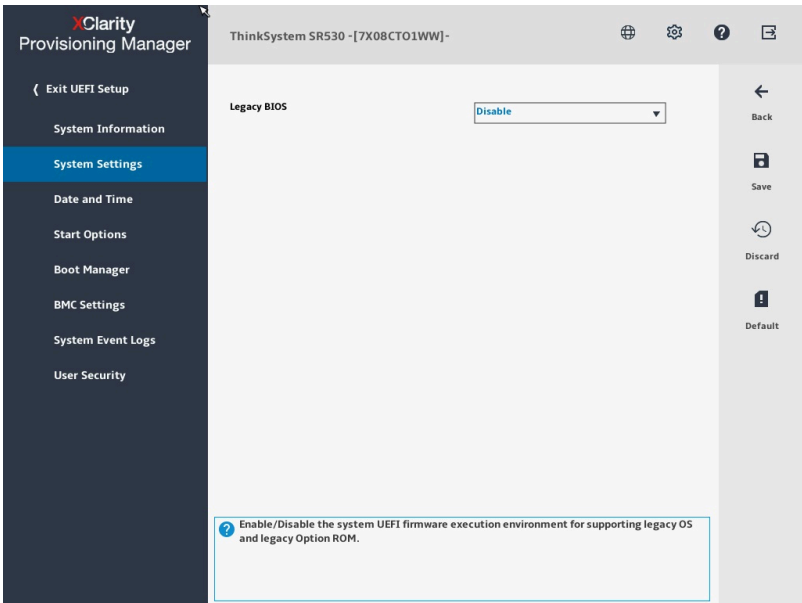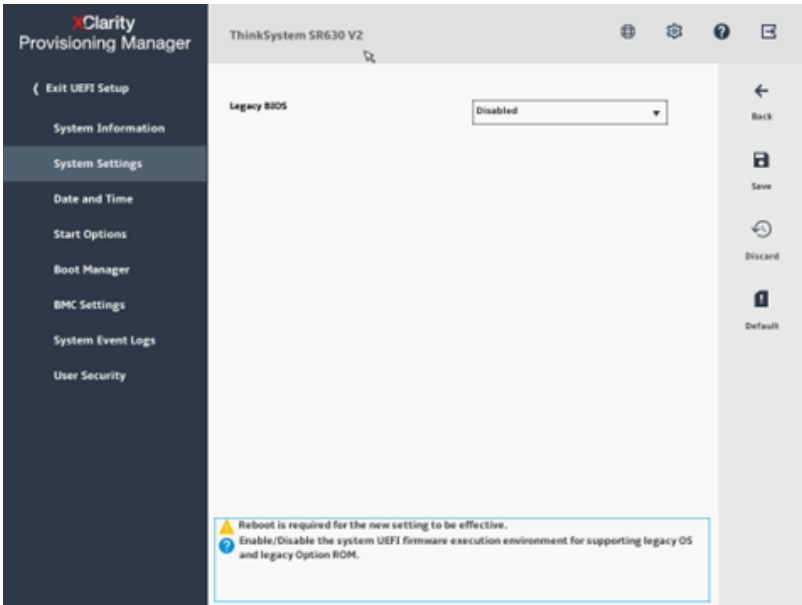
SR530

SR630

c) In **Boot Manager** tab, the **System Boot Mode** field must be set to **UEFI Mode**.

SR250

Installation and Upgrades - Overview
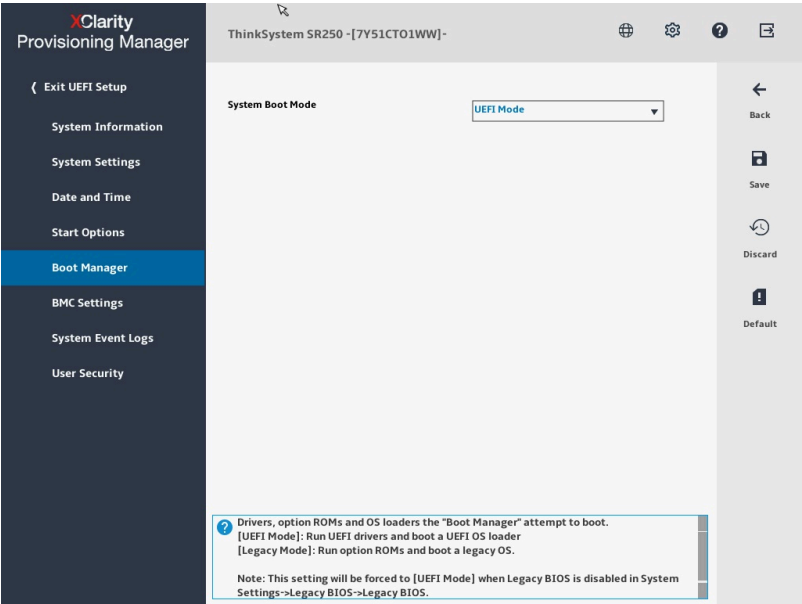
SR250 V2
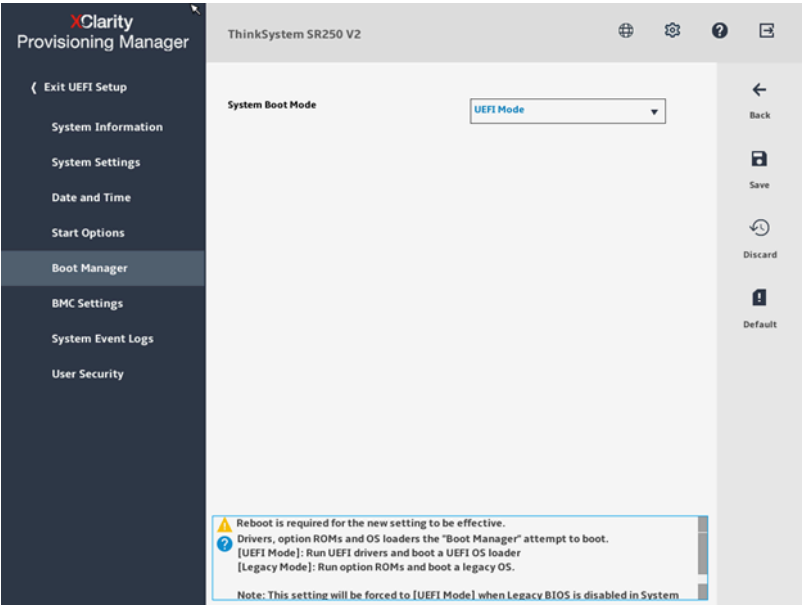
SR530
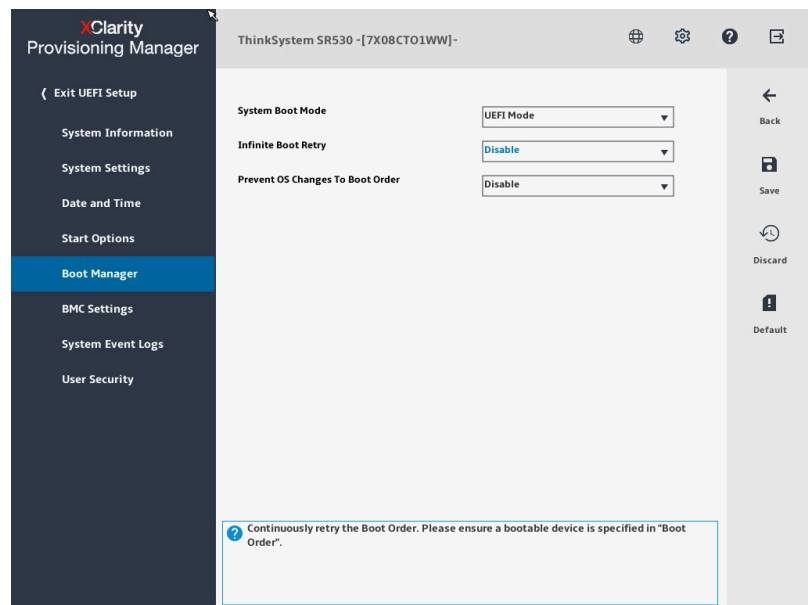
SR630
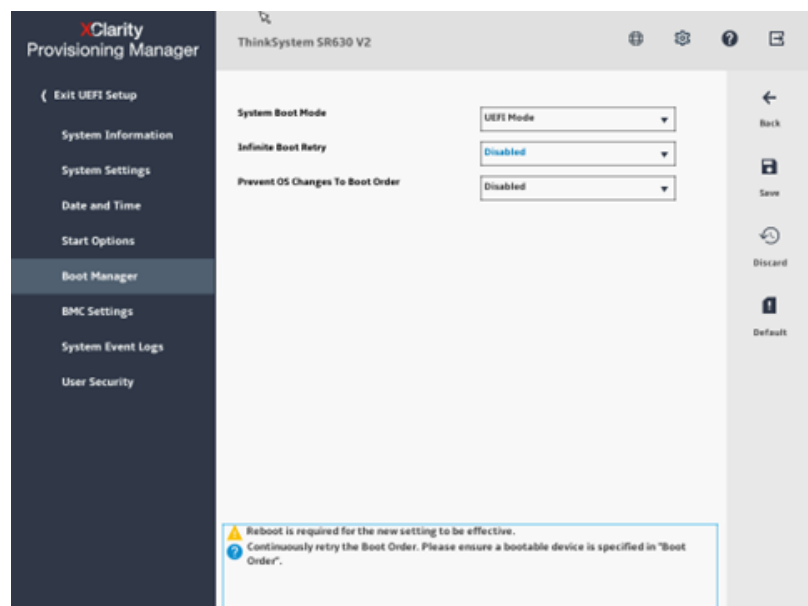
3) Save the changes before Exit.

NOTICE:

The following servers do not support UEFI Boot Mode:

- Fujitsu Rx 200 S6
- Fujitsu Rx 200 S7
- 50i
- 500i

For virtual machines, it is recommended to use Legacy Mode.

4.1.5 How to Perform a Full Installation of the OpenScape Branch Software

Proceed as follows to install the OpenScape Branch software on the server. This procedure is performed using the OpenScape BranchManagement Portal (local GUI); it is not supported from the OpenScape Voice Common Management Platform (CMP) because the OpenScape Branch appliance needs to have an IP address assigned and be discovered at first.

Prerequisites

The server hardware has been installed.

The USB stick has been prepared.

Step by Step

1) Connect the USB stick you created to a USB port on the server and restart the server. To SR250/SR250 V2/SR530/SR630 V2 servers press F12 to select the USB stick drive.

> **NOTICE:**
>
> The Installation erases both backup and active partitions and overwrites them with existent SW in USB.

2) Open an internet browser and enter the OpenScape Branch IP address (defined previously with the USB Stick Setup tool) via https:// in the Address field).

> **NOTICE:**
>
> From V10R2, the Local GUI is optimized for current versions of Chrome, Edge and Firefox. Please note that using IE or other browsers may lead to rendering errors and/or limited.
>
> The Edge browser appears to render some colors differently than Chrome and Firefox, for example some check box controls in Edge may appear grayer than the blue check mark controls rendered in Firefox and Chrome.

The OpenScape Branch Management Portal login screen is displayed.

3) Log in to the OpenScape Branch Management Portal with User name: administrator and Password: Asd123!. (note the period [dot] at the end).

4) After you are logged in, you will be alerted that "You are booting from USB stick". Click **OK**.

The **OpenScape Branch** tab is displayed.

5) Select the **Maintenance** > **Install/Upgrade** > **Installation** menu item and click **Install** (the installation option is only shown when booting from the USB stick).

> **NOTICE:**
>
> From V10R1, there is a new option to select the number of code partitions to be created. The default is 2 (one for the active version and other for the backup version).
>
> From now, it is possible to have until 5 partitions of code. Despite the number of partitions selected, the number created can be below due to the disk size limitations.
>
> For instance: you can select 5, but just 3 will be created.

> **NOTICE:**
>
> From V10R2, the UEFI bootloader flag is available in the installation option. "UEFI Bios detected" or "UEFI Bios NOT detected" message is shown.
>
> The UEFI bootloader flag could be activated in the USBsticksetup.
>
> Please, attention to choose this option. The System Boot Mode must be configured correctly, otherwise the Server will not boot from the Hard Drive.

> **NOTICE:**
>
> All previous data in the system will be lost. If USB stick was created with a Config/DB file then that will be applied during installation.

6) When prompted to confirm that you want to perform a full installation, click **OK**.

> **NOTICE:**
>
> If a full installation is done with a new Config File and two interfaces configured (only one is used), then OSB will come up in Proxy Mode.

The installation will begin and takes about 15 minutes for a small OpenScape Branchsystem (less on IBM/Fujitsu). A progress bar shows the percent complete for the installation process.

7) When prompted with the message, "System installed. Press OK to reboot the system now", click **OK**.

8) When prompted to "Please remove the USB stick before continue", remove the USB stick and click **OK**.

The system will boot in about three minutes.

9) Open an internet browser and enter the OpenScape BranchIP address (defined previously with the USB Stick Setup tool) via https:// in the Address field.

> **NOTICE:**
>
> No configuration changes are allowed for about 5-10 minutes while the process manager checks if the system is stable.

The installation is checked and a information message is displayed: "The process manager is working to ensure that the system is stable. Please wait a few minutes and try again." This message is presented during the initial installation and if the user attempts to make changes during the installaton processing time.

10) Click **OK** to clear the process manager message.

If the check of the installation fails, the system will reboot to the backup partition; in the case of a full installation and both partitions are failing then a re-installation is required.

4.1.6 How to Upgrade OpenScape Session Branch Software via the CMP Software Repository

Proceed as follows to upgrade an OpenScape Session Border Controller using the CMP Software Repository.

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

The connection to the CMP Software Repository is up.

Step by Step

1) Select the **Maintenance**, tab followed by the **Inventory** button, and then select **Repository in the Navigation Tree**.

The system presents the **Software Repository** work area displays a list of software and version number.

> **NOTICE:** Note that effective with OpenScape Branch V8 the software versions use the'Fit4more' format. For example,
>
> 10.01.05.01-1 (V10 R1.5.1)
>
> 10.02.00.00-2 (V10 R2.0.0)

2) To add a software image to the CMP Software Repository select the **Add** button.

The **Add to software repository** window opens.

3) Click the **Browse** button to select and upload file.

The **Choose File to Upload** dialog opens.

4) Click the **Open** button to complete the file selection. Select the **image_osb-*.*.*.*-*.spa** and then the **image_osb-*.*.*.*-*.tar** files.

The **Add to software repository** window is displayed with the selected file.

5) Click the **Save** button to upload the selected files.

Software is now added and ready to be used for Upgrades/Updates.

6) In the Common Management Platform (CMP), select the **Maintenance**, tab followed by the **Inventory** button, and then select **Applications in the Navigation Tree**.

The system presents the **Applications** form with a current list of all applications.

7) In the row of the respective OpenScape Session Border Controller application, select the **Software activation** command.

The **Software activation** dialog appears.

8) Select **Common Repository** in the **Location** selection list.

9) Select the file version to be activated from the **Version** selection list.

NOTICE: Only applicable images are displayed in the list.

---

10) Click the **Activate...** button to activate the software as displayed in the list. The activation may take some time.

The **Software activation - Current status** window appears.

NOTICE: The **Software activation - Current status** window may not be closed until the status "completed" is displayed in the window.

---

11) Click the **Close** button.

The software is activated at the OpenScape Branch and the Software activation window is closed.

4.1.7 How to Upgrade OpenScape Branch Software via USB Stick

Proceed as follows to upgrade an OpenScape Branch using a software image stored on an USB stick.

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

The connection to the Common Management Platform (CMP) is up.

Step by Step

1) Connect the USB stick you created to an USB port.

2) In the Common Management Platform (CMP), select the **Maintenance**, tab followed by the **Inventory** button, and then select **Applications in the Navigation Tree**.

The system presents the **Applications** form with a current list of all applications.

3) In the row of the respective OpenScape Session Border Controller application, select the **Software activation** command by clicking the arrow on the right hand side of the work area followed by clicking the **Software Activation** button.

The **Software activation** dialog appears.

4) Select **USB stick** in the **Location** selection list. The following options are available:

5) Select the file version to be activated from the **Version** selection list.

NOTICE: Only applicable images are displayed in the list.

---

6) Click the **Activate...** button to activate the software as displayed in the list. The activation may take some time.

The **Software activation - Current status** window appears.

NOTICE: The **Software activation - Current status** window may not be closed until the status "completed" is displayed in the window.

---

7) Click the **Close** button.

The action is completed.

4.1.8 How to Upgrade OpenScape Branch Software via Local GUI

Proceed as follows to upgrade an OpenScape Branch using a Local GUI.

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Branch system is up.

NOTICE: Before performing a local file/SFTP/HTTPS upgrade, place the IP address of the server where the new software image is into the Message Rate Control White List.

Step by Step

1) Navigate to OSB LOCAL GUI> Security> Message Rate Control White List.

2) Type the IP address and click **Add** and **Apply Changes**.

NOTICE: From V10R2, the Local GUI is optimized for current versions of Chrome, Edge and Firefox. Please note that using IE or other browsers may lead to rendering errors and/or limited. The Edge browser appears to render some

---

colors differently than Chrome and Firefox, for example some check box controls in Edge may appear grayer than the blue check mark controls rendered in Firefox and Chrome.

4.1.8.1 Software source as USB stick

Step by Step

1) Access the OpenScape Branch using Local GUI or CMP. The USB stick has been prepared and connected in the system.

2) Select **Maintenance>Install/Upgrade>Upgrade** option.

3) In **Software Source** choose the option to upgrade: **USB stick**.

4) After receiving the message to Upgrade from USB stick, select **OK** .

5) After the process is completed, a **System upgraded** message is displayed. Click **OK**.

6) The messages **A new version is ready to be activated** and **Please remove the USB stick before continuing** are displayed. Click OK.
   The software version is shown in **New Code Activation**.

7) Click **Activate now** to activate the software.

   The messages **Do you want to reboot the system and activate the software now?** and **WARNING!!! It could NOT wait for active calls be disconnected** are displayed. Click **OK** to restart the system.

4.1.8.2 Software source as Local file

Step by Step

1) Access the OpenScape Branch using Local GUI or CMP. The USB stick has been prepared and connected in the system.

2) Select **Maintenance>Install/Upgrade>Upgrade** option.

3) In **Software Source** choose the option to upgrade: **Local file**.

4) Choose the file stored in Computer or stored in the local network.

5) Click **Upgrade**.

   The file is uploaded and the message **File(s) uploaded** is displayed. Click **OK**.

6) The message **Are you sure you want to upgrade from local file(s)?** is displayed. Click **OK**.

7) After the completion of the process, the message **System upgrated** is displayed. Click **OK**.

8) The message **A new version is ready to be activated** is displayed. Click **OK**.

   The software version is shown in **New Code Activation**.

9) Click **Activate now** to activate the software.

   The messages **Do you want to reboot the system and activate the software now?** and **WARNING!!! It could NOT wait for active calls be disconnected** are displayed. Click **OK** to restart the system.

4.1.8.3 Software source as SFTP

Step by Step

1) Access the OpenScape Branch using Local GUI or CMP.

2) Select **Maintenance** > **Install/Upgrade**> **Upgrade** option.

3) In **Software Source** choose the option to upgrade: **SFTP**.

4) Save the **osb_image-*.*.*.*-*.tar** file in respective directory in **SFTP server**. Create the file **list** without extension in the same directory. Add the version name in this list, for instance: image_osb-10.02.00.00-2.tar.

5) Enter the following information: **Hostname** (ip address or fqdn), **Port** (22), **Remote directory**, **User name** and **Password**. The information related to SFTP server.

6) Click **List Versions**.

7) Choose the desired version in **Software version** option. The files that are in the **list** file are listed.

8) Click **Upgrade**.

   The file is downloaded and the message **File(s) downloaded** is displayed. Click **OK.**

9) The message **Are you sure you want to upgrade from SFTP?** is displayed. Click **OK**.

10) After the process is completed, the message **System upgraded** is displayed. Click **OK**.

11) The message **A new version is ready to be activated** is received. Click **OK**.

   The software version is shown in **New Code Activation**.

12) Click **Activate now** to activate the software.

   The messages **Do you want to reboot the system and activate the software now?** and **WARNING!!! It could NOT wait for active calls be disconnected** are displayed. Click **OK** to restart the system.

4.1.8.4 Software source as HTTPS

Step by Step

1) Access the OpenScape Branch using Local GUI or CMP.

2) Select **Maintenance** > **Install/Upgrade**> **Upgrade** option.

3) In **Software Source** choose the option to upgrade: **HTTPS**.

4) Save the **osb_image-*.*.*.*-*.tar** and **osb_image-*.*.*.*-*spa** files inrespective directory in **HTTPS server**. Create the file **list** without extension in the same directory. Add the version name in this list, for instance: image_osb-10.02.00.00-2.tar.

5) Enter the following information: **Hostname** (ip address or fqdn) and **Remote directory**. The information related to HTTPS server.

6) Click **List Versions**.

7) Choose the desired version in **Software version** option. The files that are in the **list** file are listed.

8) Click **Upgrade**.

The file is downloaded and the message **File(s) downloaded** is displayed. Click **OK**.

9) The message **Are you sure you want to upgrade from HTTPS?** is displayed. Click **OK**.

10) After the process is completed, the message **System Upgrated** is displayed. Click **OK**.

11) The message **A new version is ready to be activated** is displayed. Click **OK**.

The software version is shown in **New Code Activation**.

12) Click **Activate now** to activate the software.

The messages **Do you want to reboot the system and activate the software now?** and **WARNING!!! It could NOT wait for active calls be disconnected** are displayed. Click **OK** to restart the system.

4.2 Virtualization - Overview

This chapter describes the preparation for installation of the OpenScape Branch in a virtual environment.

Testing of Virtual Solution

Tests were executed for an OpenScape Branch virtual solution. For configuration details, see Section **Virtual Machine Configuration Parameters**.

Test Environment 1 employed the following:

- **ESXi 6.0/6.5/6.7/7.0 Virtual Machine running on x3550 M3/M4/M5** (same as native hardware)

> **NOTICE:**
>
> The x3550 M3/M4/M5 contains 12 GB Ram and a 300 GB HD to cover VMware overhead.

  – 8 CPUs – (2 quad core processors minimum 2.5 GHZ)
  – 8 GB RAM
  – 140GB HD
  – 2 NW adapters

- **Resource Reservation settings:**

  – CPU – Shares = High
  – CPU – Reservation = 20000 MHz
  – CPU – Limit = 20000 MHz
  – Memory – Shares = Normal
  – Memory – Reservation = 8 GB
  – Memory – Limit = 8 GB
  – Amount of virtual processors = 8
  – HD = 140GB
  – Hyper threading = off
  – CPU Affinity = off

Characteristics of the Virtual OpenScape Branch

The virtual OpenScape Branch has the following characteristics.

• Is HW independent
• Hardware sensing and monitoring is disabled when configuring OpenScape Branch as virtual. Percentage of CPU, Memory and Disk usage will still be reported and alarmed (e.g., CPU usages too high) and reflect the usage of the virtual machine. Statistics can be viewed in the Maintenance tab> Inventory > Nodes > Dashboard for the system.
• Currently supports and requires a fixed number of 2 (virtual) Ethernet ports
• Supports 2 node clustering with each OpenScape Voice node.

  OpenScape Branch cluster can be co-located on 1 ESXi host for Software redundancy and 2 ESXi hosts for hardware redundancy. It can use internal or SAN storage.
• OpenScape Branch is compatible with ESXi V6/V6.5/V6.7/V7 and all hardware used must be on the VMware compatibility list for ESXi V6/V6.5/V6.7/V7.
• Supports failover to a second OpenScape Branch node

Disk Space Limitations:

If you choose to install from an ISO image file instead of a DVD, please allocate at least 5 GB of disk space in a node's datastore for the placement of the Virtualization Image DVD ISO and Node Configuration files

Other Limitations:

The virtual OpenScape Branch system is hardware (HW) independent. It is assumed that the HW platform is installed, supervised and maintained by the customer. This includes the installation and configuration of the virtual machine that will host the OpenScape Branch.

The virtual OpenScape Branch assumes it has one disk and 2 virtual Ethernet ports.

VM Management

VMware ESXi V6/V6.5/V6.7/V7 vSphere Client provides the interface to vCenter and to the ESXi server where the Virtualized OpenScape Branch is running.
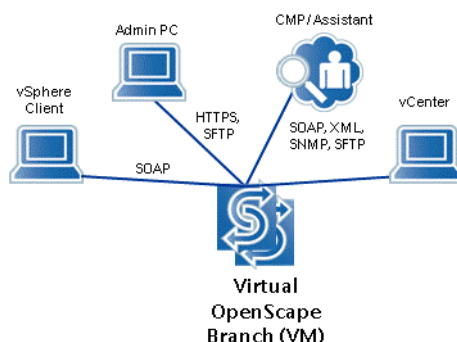
Backup/Restore database versus VM snapshots

It is recommended to use OpenScape SBC Backup and Restore databases procedures instead of VM snapshots. It is not recommended to use VM

Snapshots in a production environment except during initial installation process. All Snapshots should be removed once the OpenScape SBC VM is placed into production.

4.2.1 Virtual Machine Configuration Parameters

This provides the configuration parameters needed to configure each OpenScape Branch in a virtual environment.

For more details, see OpenScape Solution Set V10, OpenScape Virtual Machine Resourcing and Configuration Guide.

VM resources for OpenScape Branch

The following table values shall be used to set the VM resources based on the number of Registered SIP users to be supported by the VM.

Deployment	OSB 250	OSB 1000	OSB 6000
Deployment Scenario	Single or redundant node	Single or redundant node	Single or redundant node
Nodes	1-2 active-standby	1-2 active-standby	1-2 active-standby
Users (See VMware Metrics)	<=250	<=1000	<=6000
Server	Each OSB node	Each OSB node	Each OSB node
Guest OS	OpenSUSE Leap 15.3 (configure as "Other 2.6x Linux (64-bit)")	OpenSUSE Leap 15.3 (configure as "Other 2.6x Linux (64-bit)")	OpenSUSE Leap 15.3 (configure as "Other 2.6x Linux (64-bit)")
Realtime Application Note:Resources need to be reserved for Real time apps otherwise availability cannot be guaranteed	Y	Y	Y
IOPS – Input/output operations per second (Storage I/O) Note from VMware Resource Management Guide: Before using Storage I/O Control on data stores that are backed by arrays with automated storage tiering capabilities, check the VMware Storage/SAN Compatibility Guide to verify whether your automated tiered storage array has been certified to be compatible with Storage I/O Control.	20 I/O per sec.	20 I/O per sec.	30 I/O per sec.
Disk Throughput in KBps	400 KB/sec	600 KB/sec	600 KB/sec
Network Bandwidth in KBps	10000 KB/sec	20000 KB/sec	60000 KB/sec
Number of Virtual Disks	1	1	1
Virtual Disk Size	40 GB	40 GB	60 GB

Deployment	OSB 250	OSB 1000	OSB 6000
Virtual disk mode The Virtual disk mode setting "independent" disallows the creation of Snapshots of a virtual machine. For a customer environment; it is recommended the Mode settings are NOT selected. This is the default configuration. Mode Independent Persistent will leave changes permanently written to disk Mode Independent Non-persistent writes data to disk but the data will be eliminated on restart (good for a training or demo environment)	Use defaults (Snapshot)	Use defaults (Snapshot)	Use defaults (Snapshot)
Virtual disk format type Note: using thick eager-zeroed virtual disk reduces delays the first time that a block is written to the disk and ensures that all space is allocated and initialized at creation time.Note: FT requires thin disk to be converted to thick eager-zeroed	Thick lazy-zeroed	Thick lazy-zeroed	Thick lazy-zeroed
Additional HD space needed (on the server/SAN) to hold things like images, patchsets, mass provisioning files, restore cd, etc	5 GB	5 GB	5 GB
vCPU	2 Total 1 virtual socket	4 Total 2 virtual sockets	8 Total 2 virtual sockets
vCPU Shares H=High N=Normal	H	H	Custom Configure "Custom" to reach 20,000MHz. "H" allows maximum 16,000MHz.
vCPU Reservation	5000 MHz	10000 MHz	20000 MHz
vCPU Limit	5000 MHz	10000 MHz	20000 MHz
VM Memory [GB]***	4 GB	4 GB	6 GB
VVM Memory Shares H = High N = Normal***	N	N	N
VM Memory Reservation***	4 GB	4 GB	6 GB
VM Memory Limit***	4 GB	4 GB	6 GB
# vNICs(Note ****)	2	2	2
VMware manual MAC used [Y/N]	N - Only for Local license file	N - Only for Local license file	N - Only for Local license file
VMware VMotion supported [Y/N] (Note *)	Y (V7 and later)	Y(V7 and later)	Y (V7 and later)
VMware High Availability supported [Y/N]	Y(V7 and later)	Y (V7 and later)	Y (V7 and later)
VMware Fault Tolerance supported [Y/N]	N	N	N
VMware Distributed Resource Scheduler supported [Y/N]	Y(V7 and later)	Y (V7 and later)	Y (V7 and later)
VMware Data Recovery (VDR) supported [Y/N]	N	N	N

Deployment	OSB 250	OSB 1000	OSB 6000
VMXNET3 virtual network adapter supported [Y/N] Note: If supported please reference product specific installation/configuration documentation section for VMXNET3	Y	Y	Y

NOTICE:

* It is recommended to perform a Live Migration only in periods of low traffic, otherwise noticeable service interruption might occur.

NOTICE:

** Yes with the following exceptions: No gcc toolchain and kernel headers, not possible to build custom modules, see installation guide for more details.

NOTICE:

*** The values are valid from V10R1. For previous versions the valid values are:

Deployment	OSB 250 (Used for OSB 50)	OSB 1000	OSB 6000
VM Memory [GB]	2 GB	2 GB	4 GB
VVM Memory Shares H = High N = Normal	N	N	N
VM Memory Reservation	2 GB	2 GB	4 GB
VM Memory Limit	2 GB	2 GB	4 GB

- OpenScape Branch NW and Disk usage may vary based on call and registration rate.
- OpenScape Branch figures in the table are based on no continuous tracing, default log level and configuration setting.
- VMotion/DRS during restart/patching/upgrade is currently not supported.
- OSB figures in the table indicate requirements for each node
- OSB figures in the table are based on a typical Enterprise Feature set
- OSB NW and Disk usage may vary based on Feature mix
- OSB nodes are recommended to reside on separate physical servers for HW redundancy

---

NOTICE:

****The default value is 2, but it is possible to configure up to 4 vNICs.

In some cases, it is necessary to add more NICs (network interfaces cards) after VM installation. In this case, it is possible that the order of the interfaces migh be incorrect. It is related to a known bug in SuSE knowledge base affecting SuSE VMs with 3 or more NICs. As a workaround, the following is suggested:

1) Use the console to verify the MAC address associated to eth interfaces using the command "ip addr".
2) In VMWare interface, select the VM and edit settings. Verify the MAC address used for NIC.
3) Associate the correct network adapter configured in VMWare host in NIC in accordance with MAC address verified in step 1.

VMware Metrics

The following table and notes show the metrics for support of up to 6,000 OpenScape Branch SIP registered users.

Metric	250/(50)	1000	6000
Maximum number of SIP registered lines (Note 1)	250	1000	6000
Maximum number of concurrent Sessions	50	200	2400
Maximum number of calls per second (continuous)	3	5	35
Maximum Registrations per second (background)	10	20	40
Maximum Registrations per second (peak)	250	1000	6000
Maximum number of Announcement ports	7	16	50
Maximum number of Conference ports	28	32	60
Maximum number of Supported Languages	2	5	5
Maximum number of Backup ACD Agents	50	250	250
Maximum number of SIP Trunks	1	10	10
Maximum number of SIP Service Provider Profiles	1	10	10
Maximum number of SIP Trunking Sessions	30	120	400
Maximum number of Management Sessions	5	5	5

The following notes provide details for the VMware Metrics:

Note	Description	Value
1	Registered lines includes primary lines, secondary call appearances and phantom lines.	

Overhead Requirements for Hosting OpenScape Branch

The following table lists the overhead requirements per physical server hosting OpenScape Branch.

Hardware	Description	Type
HD	VMware system disk overhead	17 GB
HD	Overhead for swap space for all unreserved VM memory	This value cannot be strictly defined because it is based on other VMs the customer may host on the physical server that are not configured to reserve all their (VM) memory
RAM.	VMware system overhead	2.5 GB
CPU	VMware system overhead	See the vSphere Resource Management Guide

4.2.2 Checklist for Virtualization

This procedure assumes the following steps 1-7 have already been completed. Please review steps 1 through 7 before proceeding to install the "Virtual Machine". For installation of a "Virtual Appliance" (vApp) the procedure assumes the virtual environment is already operational.

Prerequisites:

• License activation codes have been secured
• Configuration file is available
• Ethernet switches are installed
• Servers are installed e.g., IBM x3550 M3
• Create the VM using ESXi.
• Set the VM to boot off the ISO Image (virtual CD drive)
• The OpenScape Branch can be configured using CMP or Local GUI.

Virtual Machine Environment Setup:

1) Determine if Physical Server hardware is supported by VMware.
2) Determine if the local hard disk of this server will be the datastore or if a SAN will be connected.
3) If a SAN will be connected then determine if it is supported by VMware.
4) Have an operational USB Stick Setup Tool at hand in order to build the ISO Image.
5) Determine the Network Port to VMNIC mapping.
6) Determine what kind of installation configuration you will be conducting (Single or Redundant).
7) Determine network cabling based on the decisions made in steps 5 through 6.

8) Create the OpenScape Branch Software reference ISO image and burn to CDROM or upload the ISO file to the VM datastore. Instead of a USB, the OpenScape Branch ISO Image is used for the guest VMs.

NOTICE:

The ISO image must contain a valid image of the OpenScape Branch and IPs configured, created with the USB wizard tool.

---

9) Create the guest VMs according to the specifications in the VM release notes.

10) Install the OpenScape Branch ISO Image on the guest VMs created.

Virtual Appliance Setup - Overview

The main steps to create and install a virtual appliance is as follows:

1) Use the USB stick setup tool to create the ISO image with the software and node.cfg file for the virtual appliance.

2) Download the vApps template for the appliance.

3) Deploy the vApps.

4) Connect the USB stick ISO image to the Virtual Machine.

5) Boot using the USB stick ISO image.

6) The vApps gets configured with IP and other attributes from the USB stick ISO image.

7) Login to the Local GUI and install the system; then disconnect ISO and reboot.

8) Provision the OpenScape Branch using the CMP or Local GUI.

Upgrade of a VM

To upgrade an existing VM install new software on the backup partition.

Migration from Native Hardware (HW) to VM

To migration from native HW to Virtualized OpenScape Branch deployment install the OpenScape Branch software on the virtual machine using the config files from the native HW deployment (modified by the USB Stick Tool to indicate the new deployment HW is "Virtual"). The XML database may need to be adjusted prior to using the USB Stick.

4.2.2.1 How to Create an ISO Image

Proceed as follows to create an ISO image for virtual OpenScape Branch installation:

Prerequisites

The USB stick setup tool and the software image files are available on a local PC.

The VMware vSphere Host client is available.

Step by Step

1) Extract the USB Stick Setup tool application from the zip file.

2) Copy the software image *.tar files into the ob folder. The folder will contain SW images for OpenScape Branch SW installation.

Name	Type	Size
image_osb-10.02.00.00-2.tar	TAR File	730,990 KB
initrd.gz	GZ File	12,091 KB
vmlinuz	File	8,838 KB

In this example, the base software file is *image_osb-10.02.00.00-2.tar* to be used for installing or upgrading.

3) Connect the USB stick to a USB port on the PC.

4) Proceed to the USB stick creation by running the usbsticksetup.exe application.

NOTICE:

If doing a full installation using an existing DataBase (.xml), please make sure that the DB is exported from OpenScape Branch prior to start building the ISO Image. Via OpenScape Branch Assistant, select the **Import/Export** configuration menu and export the xml file. See Backup/Restore Procedure in the OpenScape Branch Installation and Upgrade Guide for more details. The exported config file will be selected in the following step under installation method as "Already existent database file".

The **USB Stick Setup** screen is displayed.

5) In the **USB Stick Setup** screen:

   a) In the **Media Select** field, ensure that the **Virtual Machine ISO image** is selected.

   b) Select **Generate node.cfg file** to create a new configuration file. Network interfaces configuration is required with this option.

   NOTICE:

   If you select either the **Already existing database file or Already existing node.cfg file** option as the Installation Method the ISO image is created with data from the *.xml or *.cfg file you specify. With either option: the Host Name, IP Address, Subnet mask, Hardware type, and Default gateway (LAN only) fields are inactive (greyed out) and cannot be changed here. If you are using an *.xml or *.cfg as a template to install a new OpenScape Branch specific parameters will have to be specified or modified as necessary during the configuration process. The database file option can not be used for different hardware types.

   ---

   c) Select the virtual hardware type from the **Hardware Type** list field, in the **OpenScape Branch Network Configuration** work area.

    d) In the **Host Name** field, enter a name for the system.

    e) Set the interface type in the **Interface** list field to **LAN Interface**.

    f) In the Network fields, specify the **IP Address, Subnet mask**, and **Default gateway** for the LAN/WAN Interfaces.

    g) Click **OK**.

    A warning message is displayed: "All partitions of the removable media will be deleted and a single FAT32 partition will be created."

6) When the **Save As** message appears select the **OK** button.

    The USB Stick Setup tool then indicates **USB Stick setup complete**.

7) Save the file as "Any File Name" and select "Save As Type" **ISO Files (*.iso)** from the list field.

8) Click the **Save** button to complete the creation of the ISO image.

After the process is concluded the ISO Image is used to create the virtual Branch.

4.2.2.2 How to Perform a Full Installation of the OpenScape Branch Virtual Machine

Proceed as follows to install the OpenScape Branch virtual machine on the server. This procedure is performed using the VMware vSphere Host client.

Prerequisites

The server hardware has been installed.

The ISO image has been prepared.

VMware and vSphere Host client is operational.

Common Management Platform (CMP) is installed or use Local GUI.

> **NOTICE:**
>
> The process to create a virtual machine may vary based on the third party vendor client application.

Step by Step

1) Copy the **ISO** file to the datastore using the VMware vSphere Host client.

2) Using the VMware vSphere Host client create a new virtual machine configuration for OpenScape Branch as described below:

    a) Select **Create/Register VM**, the screen **New virtual machine** is open. In **Select creation type** choose the option **Create a new virtual machine** and click the **Next** button.

    The **Select a name and guest OS** screen is displayed.

    b) Enter the name of the OpenScape Branch virtual machine in the **Name** field. The name must be unique for each virtual machine and can contain up to 80 characters. Choose the option to **Compatibility(EsXi 6.5 virtual**

machine or higher), Guest OS family(Linux) and Guest OS version (Other 2.6x Linux(64 bit)).

Click the **Next** button.

The **Select storage** screen is displayed.

c) Select the **datastore** (Name) from the datastore list display in which to store the OpenScape Branch virtual machine file and click the **Next** button.

The **Customize settings** screen is displayed.

d) Select the CPU, Memory and Hard Disk capacities in accordance with the desired Hardware Type:

Deployment	Virtual OSB 250	Virtual OSB 1000	Virtual OSB 6000
CPU	2	4	8
Memory (GB)	4	4	6
HD size (GB)	40	40	60

The number of processors in use depends on the number of licensed CPUs on the host and the number of processors supported by the guest OS.

By default, the parameter CPU Reservation is configured as None and CPU limit is configured as Unlimited if the virtual machine has been installed manually.

If the virtual machine has been installed using vApps, the specified values are reserved in accordance with the values shown in the table.

The same procedure applies to the amount of **Memory**.When deploying vApps these values are set automatically (based on the 2.5 GHz core processor).

In OVF file in vApps, the CPU reservation is configured for Virtual OSS 250 (5000 MHz), Virtual OSS 6000 (10000 MHz) and Virtual OSS 20000 (20000 MHz).

Regardless if VM has been created manually or with vApps, these values need to be adjusted to fit the host processor capabilities. Other critical applications running at same host need to be taken into consideration as well.

The recommended settings for the reservation is the number of cores used by OSB/SBC multiplied by the core frequency of host processor.

Select the **Hard Disk** size for the virtual machine. The value should be set to e.g., **Hard Disk = 60 GB**.

Choose Thin or Thick provisioned option.

- **Thin:** This method helps you eliminate storage underutilization problems by allocating storage space in a flexible on-demand manner.
- **Thick:** Traditional method of storage provisioning. With thick provisioning, large amount of storage space is provided in anticipation of future storage needs. The space might remain unused causing underutilization of storage capacity.

e) Set the number of network interfaces based on the Hardware Type. Use the option **Add network adapter** to increase the number of NICs in

virtual machine. In Network adapter uses **VMXNET3** option in **Adapter Type** field.

Connect at Power On checkboxes is activated for the NICs.

f) For **SCSI Controller** select the **LSI Logic Parallel** option.

g) Normally the virtual machine is created only with one **CD/DVD Drive 1**. Verify if the **controller location type** is using **SATA Controller 0 - SATA (0:0)**. The ISO file related to system software is added in this device.

NOTICE:

If the system is not detecting the CD/DVD, please change the **controller location type** from **SATA** to **IDE (IDE controller 0)** type.

If ISO file related to database is used, add another CD/DVD device. Add using **Add other device**, **CD/DVD drive** option. **CD/DVD Drive 2** is using **SATA Controller 0 - SATA (0:1).** Configure the ISO file repeating the procedure used to CD/DVD Drive 1.

Connect at Power On checkboxes is activated for CD/DVD Drives.

Click the **Next** button.

The **Ready to complete** screen is displayed.

---

3) Prior to starting the task that will create the OpenScape Branch virtual machine, check the **virtual machine properties**. If it is necessary to correct some parameter, use the Back option to return to previous settings and change it.

4) Press Finish to complete the virtual machine creation.
    The OpenScape Branch virtual machine is created.

5) Select the virtual machine and **Edit Settings**. In **CD/DVD Drive 1** change from **Host device to Datastore ISO file** option and select the ISO file in **CD/DVD Media**. Browse and Select the desired ISO file stored in datastore.

6) Power on the virtual OpenScape Branch. The virtual machine will boot from ISO image.

7) Follow the OpenScape Branch installation steps to complete the installation.The virtual OpenScape Branch virtual machine is created and installed.

NOTICE: Once installation is complete, disconnect the CD/DVD Drive unchecking the **Connect at Power** checkbox on the **Virtual Machine Edit settings** window. Change also in **CD/DVD Media** from **Datastore ISO file** to **Host device**.

4.2.2.3 How to Display System Information for a Virtual OpenScape Branch

Perform the following steps to display system information for a Virtual OpenScape branch. Display of system information for a virtual or physical Branch uses the same procedure.

Prerequisites

Adequate administrative permissions.

At least one branch office of the OpenScape Branch type is configured and in operation.

The OpenScape Branch must be created in the OpenScape Voice.

Step by Step

4.3 Deployment of OpenScape Branch VirtualAppliance in the Form of a vApp

This chapter describes how to deploy the OpenScape Branch virtual appliance in the form of a vApp. This procedure is performed using the ESXi 6.5 or higher. It can be managed by any web browser using the VMware Host Client, which is based on HTML5 technology. The process to create avirtual appliance may vary based on the third party vendor client application.

4.3.1 How to install the virtual machines using OpenScape Branch vApps

This chapter describes how to select the creation and storage type of the new virtual machine.

Prerequisites

The server hardware has been installed.

The vApp ISO image has been prepared. Refer to How to Create an ISO Image on page 162 section in this document.

VMWare and vSphere Host client are operational.

Step by Step

1) Select the profile associated with the virtual appliance you want to create. The profiles are located where the vApp zip files were un-compressed. Otherwise select **Create / Register VM** > **Deploy a virtual machine from an OVF or OVA file** and click **Next**.

2) Enter the name of the OpenScape Branch virtual appliance in the Name field. The name must be unique for each vCenter Server VM folder and must contain up to 80 characters.

3) Select one of the following profiles:

   a) **OSB-250**
   b) **OSB-1000**
   c) **0SB-6000**

4) Select the **.ovf** and **.vmdk** files and click **Next**.

5) Select the destination storage from the datastore list display to store the OpenScape Branch virtual appliance files on the **Storage** screen and click **Next**.

6) Configure Network mappings. Set the appropriate LAN and WAN interfaces with the ESXI Server.

7) Select one of the available Disk Provisioning options:

   a) **Thick**: Traditional method of storage provisioning. With thick provisioning, large amount of storage space is provided in anticipation of future storage needs. The space might remain unused causing underutilization of storage capacity.

   b) **Thin**: This method helps you eliminate storage underutilization problems by allocating storage space in a flexible on-demand manner.

   > **NOTICE:** Using thick eager-zeroed virtual disk reduces delays the first time that a block is written to the disk and ensures that all space is allocated and initialized at creation time.

8) Enabling the **Power on automatically** option, the virtual machine is started automatically after finishing the installation process. Click **Next**.

9) Verify the deployment settings displayed in the work area on the **Ready to Complete** screen and click **Finish**.
The deployment will start and run to completion. When the process is completed, the virtual OpenScape Branch appliance will be ready to power on.

If the resources are not available in used VMWare Host server or due to the processor type, the following messages can be received in virtual machine power on:

"Failed - The amount of CPU resource available in the parent resource pool is insufficient for the operation."

Errors

- Module 'MonitorLoop' power on failed.
- Group vm.8998268: Cannot admit virtual machine: CPU admission check failed. Invalid reservation 20000 mhz.
- Group host/user: Invalid CPU allocation requested for virtual machine vmm0:OSBConfigDemo. (min: 20000 mhz, max: 20000, minLimit: -1, shares: -3).
- Could not power on virtual machine: Admission check failed for cpu resource. See the VMware ESX Resource Management Guide for information on resource management settings.
- Failed to power on VM.
- Failed to start the virtual machine.

"Failed - Module 'MonitorLoop' power on failed."

Errors

- Module 'MonitorLoop' power on failed.
- Group host/user: Invalid CPU allocation requested for virtual machine vmm0:OSBConfigDemo. (min: 20000 mhz, max: 20000, minLimit: -1, shares: -3).
- Could not power on virtual machine: CPU min outside valid range.
- Failed to power on VM.
- Failed to start the virtual machine.

In this case, it is necessary to set the parameter **Reservation** to a value that fits the host processor capabilities (considering also other applications) and parameter Limit=Unlimited.

To avoid this risk, close monitoring of the SBC CPU usage is recommended. An alarm is raised in case there is a high CPU usage.

4.3.2 How to select the OpenScape Branch software to installation in virtual machine

This chapter describes how to select the software to complete the installation of OpenScape Branch virtual machine.

Step by Step

1) Click the **Edit settings** for Virtual Machine.

2) Verify the **CD/DVD Drive 1** and **CD/DVD Drive 2**. Please select the **CD/DVD Drive** that is associated with **IDE Controller 0(IDE 0)**.

> **NOTICE:**
>
> The other CD/DVD Drive is associated to IDE Controller 1(IDE 1), that is used to connect the ISO related to xml database. If it is not used, this CD/DVD Drive associated to IDE Controller 1 can be removed.

3) Click on the **Connect at power on** checkbox in the **Device Status** work area.

4) Select **Datastore ISO File** in the **Device type** work area. For more information see How to Create an ISO Image on page 162.

5) Browse and select the Datastore ISO File associated with the OpenScape Branch, in the **Device type** work area.

6) Save the **Virtual Machine** configuration.

7) Click on the **Virtual Machine Properties** screen to complete the task.The virtual OpenScape Branch virtual appliance is created.

> **NOTICE:** Repeat the same procedure to connect Branch Configuration ISO file in CD/DVD Drive 1, if the file is available.

> **NOTICE:** If specific MAC address is required, then configure the MAC address before powering on the virtual appliance.
>
> Refer to How to set the MAC address of vApp (optional) on page 170 on page 155.

4.3.3 How to set the MAC address of vApp (optional)

This chapter describes how to set the MAC Address of the OpenScape Branch virtual appliance. If the MAC address of the virtual appliance is not set manually, the ESXI server will create a random MAC address.

Step by Step

1) Click the **Edit Settings** for Virtual Machine.

2) Select **Network Adapter 1** in the **Hardware** work area.

3) Check the **Connect at power on** checkbox in the **Device Status** work area.

4) Enter the **MAC address** in the **MAC Address field**.

5) Select **Manual** in the **MAC Address** work area and click **OK**.

The virtual OpenScape Branch appliance is ready to power on.

4.3.4 How to complete the installation related to virtual OpenScape Branch

This chapter describes how to install the OpenScape Branch virtual appliance.

Step by Step

1) Open a browser and enter the OpenScape Branch Function LAN IP address (defined previously with the OpenScape Branch USB Stick setup tool) via https:// in the address field.
   The OpenScape Branch Management Portal login screen is displayed.

2) Log in to the OpenScape Branch Management Portal using the following credentials:

   • username: **administrator**
   • password: **Asd123!.**

3) Click **OK** on the message **You are booting from USB stick/CDROM**.

   The **OpenScape Branch** tab is displayed.

4) Select **Maintenance** > **Install/Upgrade** to open the dialog window and click **Install**.

   NOTICE: All previous data in the system will be lost. If an USB stick or ISO image has been created with a Config/DB file then that will be applied during installation.
   ---

5) When prompted to confirm that you want to perform a full installation, click **OK**.
   The installation process begins. Average installation time of an OpenScape Branch system is around 10 minutes. A progress bar will show the total installation progress.

6) When prompted with the message **System installed press OK to reboot the system now**, click **OK**.

7) Another prompt with the message **Please detach the ISO from your virtual machine CD/DVD drive before continue** is displayed. Refer to How to detach the ISO Files from the CD/DVD drives in the vApp to configure detachment of ISO Files from the CD/DVD drive.

8) Click **OK** in response to the prompt **Please detach the ISO from your virtual machine CD/DVD drive** before continuing to reboot the OpenScape Branch.

   IMPORTANT: From V10, the open-vm-tools is installed in full install and the flag Enable Open VM Tools should be checked in System / Settings. If checked, this field enables the Open Virtual Machine Tools (open-vm-tools).

4.3.5 How to detach the ISO Files from the CD/DVD drives in the vApp

This chapter describes how to detach the ISO files from the CD/DVD drives in the Virtual Machine Settings, using the VMware Host Client via the web browser.

Step by Step

1) Select **CD/DVD Drive 2** and uncheck the **Connected at power on** option.
2) Change the **Datastore ISO File** to **Host device** option.
3) Select **CD/DVD Drive 1** and uncheck the **Connected at power on** option.
4) Change the **Datastore ISO File** to **Host device** option.
5) Click **OK** to save the Virtual Machine settings.

5 Serviceability Features

Several services are available to perform maintenance and service tasks via the OpenScape Branch Assistant, the OpenScape Branch Local Management tool or the OpenScape Voice Assistant CMP. The features listed below are documented in the Openscape Branch Online Help.

OpenScape Branch Local Management Tool Versus Assistant

For a new installation and complete setup of an OpenScape Branch system the local management tool provides all relevant configuration and service functionalities. When the WAN and LAN connection to the OpenScape Voice system is up, the OpenScape Branch Assistant may be used to maintain and configure the system as well.

Software Management and Monitoring

The following tasks can be performed:

- Restarting the system to the current configuration
- Storing the system to the backup configuration
- Import/export configuration files
- Software activation
- Debugging the system
- Continuous tracing
- On demand tracing

Statistics

Statistics comprise current quantities of specific values of the SIP server of an OpenScape Branch system.

The following Information is displayed:

- SIP server: Active dialogs:

  The number of SIP dialogs currently active.
- SIP server: Requests In:

  The number of SIP requests received since the SIP server is in operation.
- SIP server: Requests Out:

  The number of SIP requests sent since the SIP server is in operation.
- SIP server: Responses In:

  The number of SIP responses received since the SIP server is in operation.
- SIP server: Responses Out:

  The number of SIP responses sent since the SIP server is in operation.

System Info

A list of registered subscribers, the Backup link status and the Integrated Gateway´s link status (only for OpenScape Branch 50i) can be displayed in separate windows.

Dashboard

The Dashboard view of an OpenScape Branch system can be displayed via the Common Management Platform. It provides a variety of performance

and system information such as Alarm summary, system information and status of applications and actions. Several subwindows provide advanced information.The dashboard view suits for the administrator as well as for the service technician to get a quick and global overview of the selected branch office.

Alarms

The OpenScape Branch Assistant provides a table displaying all types of alarms and the respective parameters. For each type it is possible to edit the alarm parameters individually.

> **NOTICE:**
>
> Please see the *OpenScape Branch V1R4, Administration, Administrator Documentation*, part number *A31003-H8113-M100-X-76A9* for more information or use the OpenScape Branch Assistant online help.

5.1 How to Display the OpenScape Branch Dashboard via CMP

Aggregated information and data for a branch office can be displayed in the "Dashboard View" via the Common Management Platform.

Prerequisites

Adequate administrative permissions.

At least one branch office of the OpenScape Branch type is configured and in operation.

The connection to the OpenScape Voice system is up.

Step by Step

1) In the Common Management Platform (CMP), under **Maintenance**, select the **Inventory** button, and select **Nodes in the Navigation Tree**.

   The system presents the list of nodes with a list of all known systems of all kinds.
2) Select a node of the OpenScape Branch type:
   a) Use the **Search for** and **in** fields to filter the list for OpenScape Branch systems.
   b) Click the name of an Open Scape branch node in the list.

The system presents the **Dashboard** view of the selected node.

5.2 Backup and Restore Procedures

This chapter describes several maintenance tasks.

Overview

The Import/Export menu option is used for the following:

• Backup a configuration file.
• Restore a configuration file.
• Change the system configuration by loading a different configuration file.

5.2.1 How to Load and Apply Configuration Files

Proceed as follows to change the configuration of the system using a new configuration file where all configuration settings are stored.

Prerequisites

Adequate administrative permissions.

At least one branch office of the OpenScape Branch type is configured and in operation.

The connection to the OpenScape Voice system is up.

NOTICE:

Configuration done from CLI (ex. /etc/hosts, Manual DNS config, etc) will have to be backed up manually as it is not part of the XML.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) To view a list of SBCs and Branch Offices configured at a specific communication system, select a communication system in the **Communication System** field in the navigation tree.

The default selection for the **Communication System** field is the selection of the global settings in the system menu.

4) To find and select a particular branch office use one of the following options:

• In the Work Area select the checkbox to the left of the particular SBC or branch office in the list. Action Menu buttons are set active in the Work Area with the following options: **Manage**, **Local Password...**, **Refresh Selected**, **Edit...**, **Delete**. Selecting the **Manage** button updates the **Branch Office** field, in the Navigation Tree, with the selected SBC or branch office and displays information and data in the Work Area for that SBC or branch office.

• Choose a SBC or branch office from the **Branch Office** pull-down located in the Navigation Tree. Information and data are displayed in the Work Area.

- Enter filter search criteria to filter the list of SBC and branch offices.

  Filtering is possible on the following criteria from the **in** field: **Branch Office** (name), **Business Group, IP Address, Version, Status, Mode.**

  NOTICE:

  Wild cards are supported (* for 0 or more characters, "?" for single characters).

  ---

5) Navigate to **Configuration > System**.

   The **System** window appears with the **General** tab selected by default.

6) Select the **Import/Export** tab.

   The **File in use** field displays the name of the configuration file currently in use.

   NOTICE:

   The config_default.xml file contains the original basic xml including IP configuration.

   ---

7) To select a new configuration file use one of the following options:

   - Select the configuration file in the **Use a new configuration file** field.
   - Click the **Import** button and select a configuration file to be transferred to the system.

8) Click the **Load** button.

   The system reads and stores the xml config file settings temporarily.

9) Click the **Close** button to close the **Import/Export** window.

10) Click the **Apply Changes** button in the main window to confirm the changes and start the action.

The configuration settings of the selected configuration XML (Extensible Markup Language) file is applied to the system. After Changes are done, the loaded config file will be incremented by 1.

Example

IBM3250IP70_config_47.xml will be replaced by IBM3250IP70_config_48.xml

5.2.2 How to Import or Restore a Configuration File

Proceed as follows to import a new configuration file where all configuration settings are stored.

Prerequisites

Adequate administrative permissions.

At least one branch office of the OpenScape Branch type is configured and in operation.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

   The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) To view a list of SBCs and Branch Offices configured at a specific communication system, select a communication system in the **Communication System** field in the navigation tree.

   The default selection for the **Communication System** field is the selection of the global settings in the system menu.

4) To find and select a particular branch office use one of the following options:

   • In the Work Area select the checkbox to the left of the particular SBC or branch office in the list. Action Menu buttons are set active in the Work Area with the following options: **Manage**, **Local Password...**, **Refresh Selected**, **Edit...**, **Delete**. Selecting the **Manage** button updates the **Branch Office** field, in the Navigation Tree, with the selected SBC or branch office and displays information and data in the Work Area for that SBC or branch office.

   • Choose a SBC or branch office from the **Branch Office** pull-down located in the Navigation Tree. Information and data are displayed in the Work Area.

   • Enter filter search criteria to filter the list of SBC and branch offices.

     Filtering is possible on the following criteria from the **in** field: **Branch Office** (name), **Business Group, IP Address, Version, Status, Mode.**

     NOTICE:

     Wild cards are supported (* for 0 or more characters, "?" for single characters).

     ---

5) Navigate to **Configuration > System**.

   The **System** window appears with the **General** tab selected by default.

6) Select the **Import/Export** tab.

   The **File in use** field displays the name of the configuration file currently in use.

7) Click the **Import** button.

   The **Import** window appears.

8) Click the **Browse...** button to select the file name and path of the configuration file to be transferred to the system.

9) Click the **OK** button.

   The **Import** window closes and selected configuration XML (Extensible Markup Language) is temporarily applied to the system. The **Apply Changes** button in the main menu becomes enabled and navigation in any of the configuration menu screens will indicate the temporarily imported configuration.

10) Click the **Apply Changes** button to set this configuration to the OpenScape Branch appliance.

After **Apply Changes** has been clicked, the loaded config file will be incremented by 1.

Example

IBM3250IP70_config_47.xml will be replaced by IBM3250IP70_config_48.xml

5.2.3 How to Export a Configuration File for Backup

Proceed as follows to export a configuration file where all configuration settings are stored.

Prerequisites

Adequate administrative permissions.

At least one branch office of the OpenScape Branch type is configured and in operation.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

   The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) To view a list of SBCs and Branch Offices configured at a specific communication system, select a communication system in the **Communication System** field in the navigation tree.

   The default selection for the **Communication System** field is the selection of the global settings in the system menu.

4) To find and select a particular branch office use one of the following options:

   • In the Work Area select the checkbox to the left of the particular SBC or branch office in the list. Action Menu buttons are set active in the Work Area with the following options: **Manage**, **Local Password...**, **Refresh Selected**, **Edit...**, **Delete**. Selecting the **Manage** button updates the **Branch Office** field, in the Navigation Tree, with the selected SBC or branch office and displays information and data in the Work Area for that SBC or branch office.

   • Choose a SBC or branch office from the **Branch Office** pull-down located in the Navigation Tree. Information and data are displayed in the Work Area.

- Enter filter search criteria to filter the list of SBC and branch offices.

  Filtering is possible on the following criteria from the **in** field: **Branch Office** (name), **Business Group, IP Address, Version, Status, Mode.**

  NOTICE:

  Wild cards are supported (* for 0 or more characters, "?" for single characters).

  ---

5) Navigate to **Configuration > System**.

   The **System** window appears with the **General** tab selected by default.

6) Select the **Import/Export** tab.

   The **File in use** field displays the name of the configuration file currently in use.

7) Select a configuration file in the **Select a configuration file to export** field.

   Using the Export All feature; it is possible to generate a tar file which includes the 10 latest xml configuration files for export.

8) Click the **Export** button.

   The **file Download** dialog opens.

9) Use one of the following options:

   - Click the **Open** button to open and display the configuration file in the system´s XML (Extensible Markup Language) file viewer application.
   - Click the **Save** button and specify the location of the configuration file to be exported. Then click the **Save** button in the **Save As** dialog.
   - Click the **Cancel** button to abort the action and return to the **Export/Import** window.

10) Click the **Close** button to close the **Import/Export** window.

The action is completed.

5.3 Mass Provisioning and Export/Import of OpenScape Branch Assistant Data Procedures

This chapter describes several installation and maintenance tasks.

Overview

The Import/Export menu option is used for the following:

- Backup of configuration, appliance and licensing information from the OpenScape Branch Assistant and OpenScape Branch and SBC appliances, to a local repository for safe keeping.
- Restoring of configuration, appliance and licensing information from a local repository, to the OpenScape Branch Assistant and OpenScape Branches and SBCs.
- Mass provisioning of configuration information for OpenScape Branches and OpenScape SBCs.

5.3.1 How to Export Configuration, Appliance and License Files From OpenScape Branch Assistant

Proceed as follows to export configuration, appliance and license files from the OpenScape Branch Assistant and OpenScape Branch to a local backup storage location. The exported files can be used for restoring of OpenScape Branch servers.

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Maintenance tab** > **Recovery** within the Navigation Bar in Common Management Platform.

   The system presents the Recovery Navigation Tree.

2) Select **Export** from the Navigation tree under **Import & Export**.

   The **Export - Step 1** window appears with a list of software.

3) Check the **Configuration files** checkbox, in the OpenScape Branch work area. This indicates configuration information from the OpenScape Branch is to be exported.

   The **Select appliances: Edit...** button becomes active.

4) Select the **Edit...** button.

   The **Select appliances** dialog appears, with OpenScape Branch offices displayed.

5) Select one or more OpenScape Branches by placing a checkmark in the checkbox associated with the branch(s).

   The **Show Selected( )** button activates with the number of branches selected indicated.

6) Click the **Show Selected** button in the navigation bar to update the display with only the selected branches.

   The **Select appliance** dialog is updated with the selected branches and the **Show All** button becomes active.

7) Click the **Show All** button (optional) to re-display all branches both selected and unselected.

8) Select the **OK** button to complete selection of the branch appliances.

   The **Export - Step 1** dialog appears, with OpenScape Branch appliances selected displayed e.g., Branch01;Branch03.

9) Check the **Appliances** checkbox, in the OpenScape Branch work area to export list of appliances for all OpenScape Branches from the OpenScape Branch Assistant to the local database.

   A list of all OpenScape Branches will be exported in a CSV xml file.

10) Check the **Licenses** checkbox, in the OpenScape Branch work area to export licensing information for all OpenScape Branches from the OpenScape Branch Assistant to the local database.

A list of licenses for all OpenScape Branches will be exported in a CSV xml file.

11) Select the **OK** button to complete selection of the branch appliances.

The **Export - Step 1** dialog appears, with OpenScape Branch appliances selected displayed e.g., SBCBoca01;SBCMiami04.

12) Click the **Next** button to proceed to the next step.

The **Confirm export configuration** dialog appears with the updated software file information.

- OpenScape Branch: Number of selected appliances and Selected OpenScape Branch configuration data (xml file) to export.
- OpenScape Branch (applies to OpenScape Branch): OpenScape Branch CSV indicator and OpenScape Branch License CSV indicator. This information will also be exported in CSV file format.

13) Click the **Export** button to proceed to export.

The **File Download** dialog appears with the updated software file information.

14) Click the **Save** button and specify the directory in **Save in:** to export the file to and **File name:** for the zip file. Click the Save button to complete the export.

The **Download complete** dialog appears.

15) The requested information configuration, appliance and licensing is now exported from the OpenScape Assistant, and OpenScape Branch to the local repository specified.

The requested information is exported in a zip file, containing CSV and xml files, to the local database repository and can now be used to restore multiple OpenScape severs.

5.3.2 How to Import Configuration, Appliance and License via a ZIP File

Proceed as follows uses the zip file to import recovery files to the OpenScape Branch Assistant and OpenScape Branches and SBCs from the local repository. The imported files can be used to restore OpenScape Branch servers. Files include appliance, configuration and licensing files.

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Maintenance tab** > **Recovery** within the Navigation Bar in Common Management Platform.

The system presents the Recovery Navigation Tree.

2) Select **Import** from the Navigation tree under **Import & Export**.

The **Import - Step 1** dialog appears with a list of software.

3) Select the **Browse...** button to search and select the zip file, to be recovered and then click the **Open** button.

The **browser** window appears, for search and selection of a file, followed by the **Import - Step 1** dialog once the file is chosen.

4) Click the **Next** button.

The **Import - Step 2** dialog appears with the **CMP tab** selected by default.

5) Select the **OpenScape Branch tab**.

The **Import - Step 2** OpenScape Branch tab is updated with files associated with the OpenScape Branch Assistant and OpenScape Branch appliance.

- **Name**: Name of the file. CSV files include appliance and license files.
- **Target**: Target where a configuration type file will be imported to i.e., OpenScape Branch. Licensing and appliance CSV files will be imported to the OpenScape Branch Assistant and do not require a target.

6) Checkmark the files to be imported.

7) Select the **arrow** to the right of the configuration file. This is required to select the target appliance where the configuration information will be imported to.

The **Select appliances** button appears.

8) Click the **Select Appliance** button.

The **Select appliances** dialog appears with a list of Branch Offices displayed.

9) Click the radio button associated with the OpenScape Branch target.

10) Click the **Save** button to complete selection of the Target.

The **Select appliances** dialog closes and the **Import - Step 2** dialog appears with the updated Target information.

11) Click the **Import** button to start the import process.

The **Summary** pop-up appears with information and errors that occur during the import process.

12) Click the **Import** button to start the import process.

The **Summary** pop-up appears with information and errors that occur during the import process.

13) Navigate to **Maintenance tab** > **Recovery** within the Navigation Bar and **Latest Job** in the Navigation Tree under the **General** section to view Import status progress. Status indications: RUNNING, ERROR, OK (complete).

The associated configuration, appliance and licensing information is imported to the OpenScape Branch Assistant repository and the selected OpenScape Branch sever.

5.3.3 How to Import Individual Configuration, Appliance and License XML Files

Proceed as follows to import individual files to the OpenScape Branch Assistant and OpenScape Branches and SBCs from the local repository. The imported files can be used to restore OpenScape Branch servers. Files include appliance, configuration and licensing files.

Prerequisites

Adequate administrative permissions.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Maintenance tab** > **Recovery** within the Navigation Bar in Common Management Platform.

   The system presents the Recovery Navigation Tree.

2) Select **Import** from the Navigation tree under **Import & Export**.

   The **Import - Step 1** dialog appears with a list of software.

3) Select the **Browse...** button to search and select a file and then click the **Open** button. One file can be imported at one time.

   The **browser** window appears, for search and selection of a file, followed by the **Import - Step 1** dialog once the file is chosen.

4) Click the **Next** button.

   The **Import - Step 2** dialog appears.

5) Select the type of file to be imported from the **Type of file to be imported:** pull-down list.

   • **Common Management Platform**
   • **OpenScape Voice**
   • **OpenScape Branch**

   a) Select the type of data to be imported from the **Include type of data:** pull-down list when **Type of file to be imported:** is **OpenScape Branch**

      Appliances

      Licenses

      Configuration files

   The **Import - Step 2** dialog is updated with the selected information.

6) For import of **Configuration files** select the **...** button to search and select the target node to send the imported file to. One node can be selected as the target at one time. Import of licensing and appliance files are sent to the OpenScape Branch Assistant as the target and need not be specified.

   The **Select appliances** dialog appears, for search and selection of the node (Branch Office).

7) Click the radio button associated with the OpenScape Branch to be selected.

8) Click the **Save** button to complete selection of the Branch.

The **Select appliances** dialog closes and the **Import - Step 2** dialog appears with the updated Branch or SBC information.

9) Click the **Import** button to start the import process.

The **Summary** pop-up appears with information and errors that occur during the import process.

10) Navigate to **Maintenance tab** > **Recovery** within the Navigation Bar and **Latest Job** in the Navigation Tree under the **General** section to view Import status progress. Status indications: RUNNING, ERROR, OK (complete).

The associated configuration, appliance and licensing information is imported to the OpenScape Branch Assistant repository and the selected OpenScape Branch SBC sever.

5.4 Storage of Phone Software Loads - Overview

This feature provides the functionality to store several phone software loads locally on an OpenScape Branch allowing the software to then be redistributed locally to the phones in the branch. This avoids the need to download each individual phone from a ftp/HTTPS Server and therefore reduces uplink transport bandwidth issues that may arise due to the size of the phone software and contention with voice traffic for the bandwidth, especially in busy traffic hours.

Overview

The Storage of Phone Software Loads feature is used for the following:

- This functionality is initially intended to support Unify phones that support retrieving phone software from HTTPS Servers (i.e. OpenStage phones).

    – OpenStage 15, 29 and 40 phones (one software image)
    – OpenStage 60 and 80 phones (one software image)

- The scope of this feature does not include the following:

    – phones to retrieve phone software from OpenScape Branch via ftp i.e. Optipoint phones are not supported.
    – OptiClient
    – 3rd party SIP phones

- This feature is supported for the OpenScape Branch devices that run on the Advantech SYS-2USM12-6M01E Server i.e. OpenScape Branch 50i, new OpenScape Branch 250.

NOTICE:

The existing OSB 50 and OSB 250 will now only be offered on the same HW that is used today for the OSB 50i (Advantech SYS-2USM12-6M01E Server) and that the OSB 50 will no longer be sold but the customer can still purchase the OSB 250 and licenses for only 50 users. OSB 250 (including customers with only 50 users) is supported

for this feature as long as the OSB250 is running on the
Advantech SYS-2USM12-6M01E Server.

- OpenScape Branch 1000 and OpenScape Branch 6000 branches are
  supported but it may become necessary to provide a separate HTTPS
  Server due to the large number of phones that would be trying to retrieve
  phone software from the local OpenScape Branch device.
- The Central HTTPS phone software server and all OpenScape Branch
  device with an OpenScape Branch phone software repository must have a
  common root path where all phone software resides.
- Alarming and logging is provided for blocking conditions when files are
  downloaded to the OpenScape Branch or uploaded to the phones.
- The transfer of phone software to the OpenScape Branch is only supported
  during off-hours.

Basic Operation

The solution provides a means for the phones to download phone software
from the local OpenScape Branch. This creates a more efficient utilization of the
branch's uplink transport bandwidth, and with that, the maintenance of better
voice quality service as the uplink doesn't get overloaded especially in busy
traffic hours.

Step 1: Phone sw is loaded onto a "Central" HTTPS phone software Server.

Step 2: OpenScape Branch syncs (Mirrors) in the middle of the night with the
Central HTTPS phone software Server (port 444) to ensure the OpenScape
Branch has the latest phone software.

Step 3: DLS software instructs the phones to go to the local OpenScape
Branch to obtain updated phone software.

Step 4: Phones use existing functionality and interfaces obtain phone software
from the local OpenScape Branch device.

5.4.1 How to Configure Phone Software Storage in the OpenScape Branch

Proceed as follows to configure Phone Software Management for OpenScape
Branch devices:

Prerequisites

Adequate administrative permissions.

The Central HTTPS phone software server is configured to interwork with the
OpenScape Branch(s) and operational (via CMP GUI - port 444)

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the
   Navigation Bar in Common Management Platform.
2) Select the **Branch Office list** in the Navigation Tree under Administration.

   The system presents the **Branch Office Overview** in the Work Area with a
   current list of all SBCs and branch offices.

3) To view a list of SBCs and Branch Offices configured at a specific communication system, select a communication system in the **Communication System** field in the navigation tree.

The default selection for the **Communication System** field is the selection of the global settings in the system menu.

4) To find and select a particular branch office use one of the following options:

- In the Work Area select the checkbox to the left of the particular SBC or branch office in the list and select **Manage**. Selecting the **Manage** button updates the **Branch Office** field, in the Navigation Tree, with the selected SBC or branch office and displays information and data in the Work Area for that SBC or branch office.

- Choose a SBC or branch office from the **Branch Office** pull-down located in the Navigation Tree. Information and data are displayed in the Work Area.

5) Select the **Phone Software** in the Navigation Tree under **Administration > Configuration**.

The system presents the **Phone Software Management** dialog with the **General tab** displayed by default.

6) Proceed as follows to assign the general configuration of phone software management for mirroring the central HTTPS server phone software in the OpenScape Branch:

a) Check the **Enable** checkbox in the General tab work area to allow phone software management.

The associated management functions become active including the **Available phone software tab**.

b) Check the **Enable** checkbox under **Periodic OSB pulling software from central server** area in the General tab work area to allow the latest phone software to be downloaded to the OpenScape Branch.

The associated management functions become active.

c) Enter the **Start time**, in 24 hour format, for download of phone software from the Central HTTPS server phone software server to the OpenScape Branch. The default time is 2 am.

d) Enter the **Stop time**, in 24 hour format, to stop the download of phone software from the Central HTTPS server phone software server to the OpenScape Branch if the download has not completed. The default time is 6 am.

e) Enter the location of the Central HTTPS phone software server in the **Central phone software server URL:** field. The URL shall point to the Phone Software Repository (port 444).

f) Click to **Start now** key (optional step) to manually initiate a download of phone software from the Central HTTPS phone software server to the OpenScape Branch.

The central phone software is downloaded into the OpenScape branch. The available phone software can then be viewed in the **Available phone software** tab work dialog once the download is complete.

g) Click the **OK** key to save the General Phone Management configuration.

When the General Phone Management configuration is added to the OpenScape Branch, from that point the phone software will be mirrored from the Central HTTPS phone software server to the OpenScape Branch.

7) Proceed as follows to enable phones to upload the latest phone software from the OpenScape Branch phone software repository:

a) Select the **Available phone software** tabsheet.

b) Check the **Enable** checkbox in the work area to allow phones to upload (pull) software from the OpenScape Branch.

The associated management functions become active.

c) Select the number of phones from the **Maximum parallel access** pull-down that can simultaneously upload phone software from the OpenScape Branch. The default is 3 phones.

d) Click the **OK** key to save the configuration.

When the configuration is added to the OpenScape Branch, from that point phones can upload software from the OpenScape Branch.

8) Proceed as follows to view and delete available phone software images in the OpenScape Branch phone software repository:

a) Select the **Available phone software** tabsheet.

Software phone images are displayed with the associated name in the **Name** column.

b) To delete a phone software image, place a checkmark in the checkbox associated with the image to be deleted.

The **Delete** key become active.

c) Click to **Delete** key to remove the selected phone images

d) Click the **OK** key to save the configuration changes.

When the Phone Software Management dialog closes.

The Phone Software Management settings are complete and operational.

5.5 Users and Passwords

Passwords can be changed or reset to default depending on the user identity, the rights and the administration tool.

Types of Users on the OpenScape Branch Assistant

The following users are available for login and can be configured in the **System** window:

User	Password
administrator	Asd123!.
root	T@R63dis
service	BF0bpt@x
guest	1clENtk=
cdr	MNY9$dta
assistant	2GwN!gb4
ACD	3jMp!ee9
redundancy	Asd!.123

> **IMPORTANT:**
>
> It is strongly recommended that the default passwords be changed to different (secret) passwords during system installation.

User rights for password change

The capability to change or reset passwords is base on the Management Interface the User is logged onto.

Management Interface	User	Rights to Change Password for
CMP (Assistant)	assistant	guest, assistant, ACD, cdr, administrator, service
Local GUI	administrator and service	guest, assistant, ACD, cdr, administrator, service, redundancy
	root	guest, assistant, ACD, cdr, administrator, service, root, redundancy
	guest, cdr and ACD	Own password
CLI (ssh)	root (via sudo command)	guest, assistant, ACD, cdr, administrator, service, root
	service (via sudo)	guest, assistant, ACD, cdr, administrator, service, root

Default users rights/groups for OSB

Default user rights and groups are preset for each type of user.

User	Assistant	Local GUI	ssh/sftp	Groups
ACD	No access	Read only (Read and Write for ACD parameters)	sftp only	user, sshlogin
administrator	No access	Read and Write	ssh (Read only)	user, sshlogin
assistant	Read and Write	No access	sftp only	assistant, sshlogin
guest	No access	Read only	No access	user
root	No access	Read and Write	No access (Root privileges via ssh can be obtained by using sudo)	root
service	No access	Read and Write	ssh/sftp (Read and Write)	administrator, assistant, sshlogin, user, www,

User	Assistant	Local GUI	ssh/sftp	Groups
redundancy	No access	No access	ssh/sftp (Read and Write)	sshlogin

5.5.1 How to Change or Reset the Password

Proceed as follows to change or reset the login password for the access to the OpenScape Branch system.

Prerequisites

Adequate administrative permissions.

At least one branch office of the OpenScape Branch type is configured and in operation.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select the **Branch Office list** in the Navigation Tree under Administration.

   The system presents the **Branch Office Overview** in the Work Area with a current list of all SBCs and branch offices.

3) To view a list of SBCs and Branch Offices configured at a specific communication system, select a communication system in the **Communication System** field in the navigation tree.

   The default selection for the **Communication System** field is the selection of the global settings in the system menu.

4) To find and select a particular branch office use one of the following options:

   • In the Work Area select the checkbox to the left of the particular SBC or branch office in the list. Action Menu buttons are set active in the Work Area with the following options: **Manage**, **Local Password...**, **Refresh Selected**, **Edit...**, **Delete**. Selecting the **Manage** button updates the **Branch Office** field, in the Navigation Tree, with the selected SBC or branch office and displays information and data in the Work Area for that SBC or branch office.

   • Choose a SBC or branch office from the **Branch Office** pull-down located in the Navigation Tree. Information and data are displayed in the Work Area.

   • Enter filter search criteria to filter the list of SBC and branch offices.

     Filtering is possible on the following criteria from the **in** field: **Branch Office** (name), **Business Group, IP Address, Version, Status, Mode.**

     NOTICE:

     Wild cards are supported (* for 0 or more characters, "?" for single characters).

     ---

5) Navigate to **Administration > Security > General** > Passwords and choose **Reset**.

6) Select the **Password** tab.

7) To reset a password, proceed as follows:

    a) Select the user for whom the password shall be reset in the **Select user** selection list. Possible users: administrator, service, guest, ACD, assistant, cdr.

    b) Click the **Reset** button.

    The password will be set to default for the selected user.

8) To change a password, proceed as follows:

    a) Select the user for whom the password shall be changed in the **Select user** selection list. Possible users: administrator, service, guest, ACD, assistant, cdr.

    b) Enter the old password in the **Old Password** field.

    c) Enter the new password of the OpenScape Branch appliance in the **New Password** field. The password must be 8...36 characters.

    d) Enter the new password of the OpenScape Branch appliance again in the **Confirm Password** field.

    e) Click the **Change** button.

    The password will be changed and a confirmation message is displayed.

9) Click the **OK** button to store the changes temporarily in the administrator´s login session.

    The **System** dialog disappears.

10) Click the **Apply changes** button in the main window.

The password is changed or set to default in the OpenScape Branch system.

5.6 Remote Administration for Standalone Servers

Administration for a standalone OpenScape Branch without a Common Management Platform (CMP) is performed by the OpenScape Branch Management Portal (Local GUI). Since the OpenScape Branch is normally protected by a firewall, a tunnel must be created to allow administrative access. This tunneling capability is supported for V7 and later releases of the OpenScape Branch.

General Concept

To allow access to the Local GUI, the OpenScape Branch device must support the Smart Services Delivery Platform (SSDP). A SSDP plug-in resides in the server software and can be enabled, disabled and be monitored via the Local GUI. SSDP provides a tunnel to the Local GUI from the OpenScape Branch device to the service technician's workplace. The service technician work in a Secure Infrastructure for Remote Access (SIRA) environment.

The SSDP plug-in in conjunction with the SSDP Enterprise server enables the remote service technician to use functions of the OpenScape Branch Local GUI including:

• OpenScape Branch software installation
• File transfer

• Retrieval of last restart date and time for the device.
• Display of software version, Product name (OSBranch), and HW type.

5.6.1 How to Enable Smart Service Delivery Platform (SSDP) for Stand Alone Remote Administration

Proceed as follows to enable the Smart Service Delivery Platform plug-in for remote administration access to a standalone OpenScape Branch device. This feature is supported in OpenScape Branch for V7 and later releases.

Prerequisites

Adequate administrative permissions.

At least one branch office of the OpenScape Branch type is configured and in operation.

Step by Step

1) Open the local OpenScape Branch Management Portal (Local GUI) for the OpenScape Branch.
2) Select **Maintenance & Diagnostics** within the Navigation Bar in Local GUI.
3) Checkmark the **SSDP Enable** checkbox in the Administration Work Area.
4) Click the **Apply Changes** button in the main window to confirm the changes and start the action.

The SSDP plug-in system is enabled and remote access to the Local Administration GUI is available.

> **NOTICE:**
>
> The SSDP plug-in only needs to be enabled once in the Local Administration GUI. When enabled the SSDP plug-in will automatically run even after the OpenScape Branch restarts.

> **NOTICE:**
>
> It may be necessary to configure the SSDP plug-in with an HTTP proxy server via the Axeda Deployment Utility so the SSDP plug-in can contact the SSDP Enterprise Server.

5.6.2 How to Display Smart Service Delivery Platform (SSDP) Status

Proceed as follows to display the Smart Service Delivery Platform status used plug-in for remote administration access to a standalone OpenScape Branch device. This feature is supported in OpenScape Branch for V7 and later releases.

Prerequisites

Adequate administrative permissions.

At least one branch office of the OpenScape Branch type is configured and in operation.

Step by Step

1) Open the local OpenScape Branch Management Portal for the OpenScape Branch.

2) Select **Maintenance & Diagnostics** within the Navigation Bar in Local GUI.

3) Click the **Show services status** button in the System Status Work Area.

The Services status window appears with the current status of available services. The SSDP status is displayed.

6 OpenScape Branch and OpenScape SBC Licensing Files

For OpenScape Branch, OpenScape Session Border Controller and associated applications different license types and license files are available.

License File Generation

A License file can be generated in one of two ways: Generated for Centralized Licensing Management via Common Management Platform (CMP) or generated for Stand Alone Mode License Management via the local Branch/SBC administration.

- **Centralized License Management**

  The license file is generated using the MAC ID of the Common Management Platform.

  This license file can be offline activated/applied via the CMP. Optionally, a License Authorization Code (LAC) can be used to online activate/apply a license file via the CMP.

- **Stand Alone Mode License Management**

  Stand Alone Mode management is used when the OpenScape Branch or OpenScape SBC is deployed at a customer who does not have a Common Management Platform (CMP) with OpenScape Branch Assistant or the CMP is not upgraded to a version that supports OpenScape Branch licensing.

  The stand alone license file must have been previously generated and supplied to the customer, using the MAC ID of the OpenScape Branch or SBC. These customers use the OpenScape Branch or OpenScape SBC local GUI to manage the OpenScape Branch or OpenScape SBC

Licensing Files

The following types of license files are supported:

- **Regular License Files** (RLF) contain licenses purchased by the customer. Regular Licenses have no expiration date.

  OpenScape Branch License file:

  The following types of files are contained in the OpenScape Branch License file:

  – OpenScape Branch Base Licenses (maximum allowed 3,000)
  – OpenScape Branch Registered Line Licenses (maximum allowed 100,000)
  – Auto Attendant Licenses (maximum allowed 3,000)
  – Backup ACD Licenses (maximum allowed 3,000)

  OpenScape SBC License File:

  The following types of files are contained in the OpenScape SBC License file:

  – Centralized SBC Base Licenses (maximum allowed 100)
  – OpenScape SBC Session Licenses (Maximum allowed 160K for Branches and 40K for OpenScape SBC)

- **Software Subscription License file** is a Regular License file that expires on Jan 31st and will contain the maximum values possible for each OpenScape Branch and OpenScape SBC license type.

  OpenScape Branch File:

  – 3,000 OpenScape Branch Base Licenses
  – 100,000 OpenScape Branch Registered Line Licenses
  – 3,000 Auto Attendant Licenses
  – 3,000 Backup ACD Feature Licenses

  OpenScape SBC file:

  – 100 Centralized SBC Base Licenses
  – 200,000 OpenScape SBC Session Licenses (160K for Branches and 40K for OpenScape SBC)
- **Evaluation License File** is a Regular License File with an expiration time of 180 days. The Evaluation License File shall contain the following licenses:

  OpenScape Branch File:

  – 1 OpenScape Branch Base License (if evaluating OSB)
  – 1 Auto Attendant Feature License (if evaluating OSB)
  – 1 Backup ACD Feature License (if evaluating OSB)
  – 50 OpenScape Branch Registered Line Licenses (if evaluating OSB)

  OpenScape SBC File:

  – 1 OpenScape SBC Evaluation License (if evaluating SBC)
  – 100 OpenScape SBC Session Licenses (if evaluating OSB or SBC)

Redundancy

For redundant OpenScape systems the active node populates its' licensing to the backup node. No additional licenses are required.

6.1 OpenScape Regular License File (OSB and SBC)

OpenScape Branch Assistant supports Regular License files. The Regular license is a customer purchased license that does not expire.

License Functionality

- The OpenScape Branch Regular license file provides the license types and quantities necessary for a customer to use OpenScape Branch functionality, including Branch base functions, Branch Users, Auto Attendant feature, Backup ACD feature without expiration
- The OpenScape Session Border Controller (SBC) Regular license file providesthe license types and quantities necessary for a customer to use OpenScape SBC functionality, SBC base functions and SBC sessions without expiration.

License Monitoring

- OpenScape Branch Assistant is informed by the License Management service that a new RLF license file has been applied including the total number of OpenScape Branch licenses for each license type and the expiration date of the license file. OpenScape Branch Assistant will then check to ensure the number of licenses in the RLF is enough to accommodate the number of configured licenses for all devices. If not,

OpenScape Branch Assistant provides a popup to inform the craft the RLF license file does not have enough licenses. In this situation OpenScape Branch Assistant will also return license values of zero to all devices requesting a license update until a license file with enough licenses is applied to the system.

- If the RLF license file has enough licenses to accommodate all the devices, OpenScape Branch Assistant will check-out the licenses for each device.
- The OpenScape Branch will display a popup at least once a day whenever any license file is within 60 days of expiration and whenever configuration is not possible due to the inability to check-out a license. The popup will be shown when navigating to the OpenScape Branch Assistant tab.
- If OpenScape Branch Assistant is informed by the License Management service that an RLF license file has expired, the OpenScape Branch Assistant will return values of zero for all licenses whenever a device requests a license update. This will occur until a new license file is applied.

6.2 OpenScape Software Subscription License File (OSB and SBC)

OpenScape Branch Assistant supports Software Subscription License (SSL) files. Software Subscription Licensing consists of two parts – the Product Instance and the Subscription License.

Licensing Structure

- **Product Instance**: The Product Instance is purchased once for each product and consists of all of the licenses necessary to equip a product for its maximum capacity, including all major features. The Product Instance is time limited each year until January 31st so the customer must renew their Product Instance annually between the first of December and the end of January. This does not require any additional ordering – just an update of the product license keys.
- **Subscription License**: The Subscription License is the monthly charge for a single user to use a single product. If a single OpenScape Branch user has voice, voice mail and Unified Communications (UC), then they would pay for 4 Subscription Licenses – one for OpenScape Voice, one for Xpressions, one for OpenScape UC and one for OpenScape Branch. The Subscription Licenses are based upon the product usage that is reported monthly and the billing is calculated on actual service consumption.

SSL License Customers

There are two SSL License Customer types; Service Providers and Enterprise customers. Service Providers resell OpenScape product, while Enterprise customers are end users. The following SSL licensing is provided based on the Licensing Structure and type of Customer:

- **Product Instance** - The following licenses are provided via SSL Licensing:

  - OpenScape Session Border Controller V2 Product Instance for Service Provider Licensing
  - OpenScape Session Border Controller V2 Product Instance for Enterprise Licensing

- **Subscription License**- The following licenses are provided via SSL Licensing:
  – Monthly Subscription License Service Provider OpenScape Session Border Controller Session License (per session)
  – Monthly Subscription License Enterprise Provider OpenScape Session Border Controller Session License (per session)

License Functionality

- The OpenScape Branch Software Subscription licenses provide the capability for a customer to use OpenScape Branch functionality, including Branch base features, Branch Users, Auto Attendant feature, Backup ACD feature for the length of the software subscription.
- The OpenScape Session Border Controller (SBC) Software Subscription licenses provide the capability for a customer to use OpenScape SBC functionality, SBC base features and SBC sessions for the length of the software subscription.

License Monitoring

- The OpenScape Branch Assistant displays a popup at least once a day whenever any license file is within 60 days of expiration and whenever configuration is not possible due to the inability to check-out a license. The popup is displayed when navigating to the OpenScape Branch Assistant.
- If OpenScape Branch Assistant is informed by the License Management service that a Regular License File (RLF) license file has expired, the OpenScape Branch Assistant will return values of zero for all licenses whenever a device requests a license update. This will occur until a new license file is applied.

License Billing

- OpenScape Branch Assistant provides high water mark counters for the last 12 months and supports the retrieval of the current values of the high watermarks by the Common Management Platform (CMP) for each new license type.
- The billing period ID as well as the values of all high watermarks are included in the results.
- A high watermark of the values of the OpenScape Branch License usage counters are calculated on every counter change and written to OpenScape Branch Assistant database and the disk along with the billing period ID.
- On a monthly basis, the high watermarks are reset to the instant value of used Dynamic Licenses.
- The Software Subscription licensing related parameters/counters are displayed in the OpenScape Branch Assistant.

Software Subscription License Monitoring and Reporting

- A monitoring and reporting mechanism resides in the OpenScape Branch Assistant and CMP License Management Server for support of Software Subscription Licensing (SSL).
- OpenScape Branch Assistant provides calculation and reporting of OpenScape Branch User and OpenScape SBC Session license usage.

6.2.1 OpenScape Software Subscription License (SSL) Monitoring and Reporting - Details (OSB and SBC)

OpenScape Branch Assistant supports Software Subscription License (SSL) files with monitoring and reporting capabilities in Version 7 and beyond.

Application Scenario

All of the products in the Software Subscription Licensing Model record subscriber license usage over the course of the month and allow this usage information to be retrieved by the CMP. "Usage" is defined as license consumption, based on the product's current licensing model, not minute-by-minute usage of any particular product. The Smart Service Delivery Platform (SSDP) service tool provides remote access to the CMP for retrieval of the usage information by Unify Service. This usage information can be retrieved by SAP. The SSDP tool has the ability to schedule the automatic retrieval of the usage information, reducing the Unify Service overhead.

Automated SSL Usage Flow

SSDP = Smart Service Delivery Platform
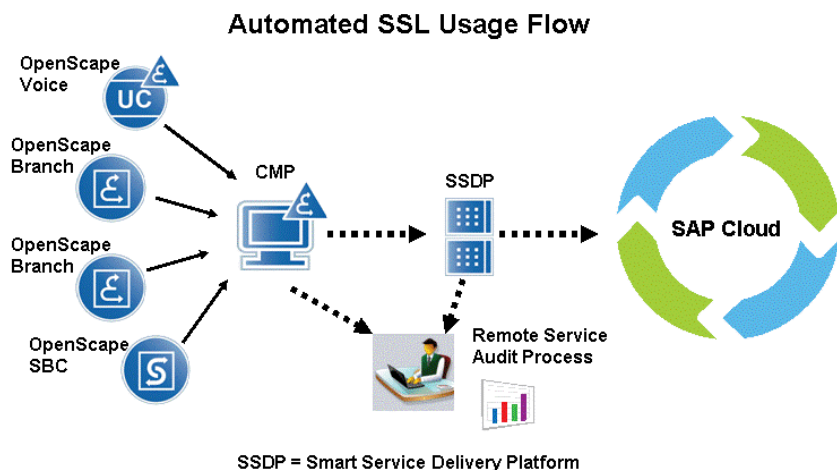
Terms and Definitions

- **High Water Mark**: As high watermark is defined the maximum value which is set. Any increment which produces a current value numerically greater than the current "high watermark", should cause the "high watermark" to increase to the current value.
- **Billing Period**: As billing periods, in the context of Software Subscription Licensing, are defined monthly time intervals. The billing period ID is the number of the month where the billing period starts. The day of the month where a billing period starts is 1 e.g. Billing Period #1 is from January 1st 0:00:00 to January 31st 23:59:99.
- **Collection**: The SSDP periodically connects to the CMP and collects the usage data for the products (pull from CMP). Remote Service Engineer can display Monthly Usage for specific customer.
- **Billing**: The information gathered by SSDP and the customer ID are retrieved by SAP to invoice the customer for the monthly usage (pull from SSDP).

Description

- **Polling**: Once per day, each product is polled by the CMP for its usage (pull from product).
- **Display**: The CMP has a "Usage" screen that shows the monthly usage from all of the products.
- **Collection**: The SSDP periodically connects to the CMP and collects the usage data for the products (pull from CMP). Remote Service Engineer can display Monthly Usage for specific customer.
- **Billing**: The information gathered by SSDP and the customer ID are retrieved by SAP to invoice the customer for the monthly usage (pull from SSDP).
- **Usage**: Each product will calculate the usage based on their existing licensing model of either statically configured license usage or concurrent usage. For example, licensing in OpenScape Voice is a concurrent model where licenses are pulled from a pool for consumption based on the number of phones and soft clients currently registered. In contrast, OpenScape UC would use a statically configured model as licenses are consumed when a user is configured in the system, whether they login to OpenScape UC or not.

- **OpenScape Branch User Usage:**

  – For the OpenScape Branch User the usage is calculated based on the statically configured license usage.
  – OpenScape Branch User usage is defined as the high watermark for the number of consumed OpenScape Branch Registered Line Licenses in the month.

- **OpenScape SBC Session Usage**:

  – For the OpenScape SBC Session usage a "mixed" model is followed. The usage on the OpenScape Branch is calculated based on the statically configured license usage, while the usage on the OpenScape SBC is calculated based on the concurrent usage
  – As OpenScape SBC Session usage is defined as the high watermark of the number of consumed OpenScape SBC Session licenses in the month.

CMP License Management Service

The CMP License Management service is aware of the OpenScape Branch/ SBC related configured licenses. Thus the usage of the licenses where the statically configured model will be followed is retrieved by the CMP License Management Service.

Additionally the Product Instance ID (retrieved by the license file) is provided. The CMP License Management Service interface is called by OpenScape Branch Assistant whenever SSL usage data is reported to the SSL service.

CMP License Management service updates the a usage counter for the following:

- Whenever a modification is done in the number of the total configured OpenScape Branch Registered Line Licenses. If the modified number of total configured licenses is greater than the usage counter then the usage counter is updated, otherwise the usage counter remains unchanged.
- Whenever the Billing Period (the month) is changed. The first day of a month CMP License Management service resets the usage counter to the current value of the corresponding license counter.

> **NOTICE:**
>
> The counter is stored encrypted to avoid unwanted modifications. Additionally, this counter is referred to the current Billing Period. The calculation of the Billing period is based on the configured system time of the application server (where CMP License Management Service is installed).

OpenScape Branch Assistant - Calculation of OpenScape SBC Session Usage

OpenScape Branch Assistant maintains one counter for the OpenScape SBC Session Usage for all the configured OpenScape Branch/SBC appliances. Usage is calculated separately on the OpenScape Branch appliances and the OpenScape SBC appliances and is combined into one count.

- Usage for OpenScape Branch (based on the statically configured model): Is the maximum of the total of the configured OpenScape SBC Sessions on all the configured OpenScape Branch appliances.
- Usage for OpenScape SBC (based on the concurrent model): Is the high watermark of the sum of the OpenScape SBC sessions simultaneously actually used for all the configured OpenScape SBC appliances.
- The final usage counter that is reported for the OpenScape SBC Session License shall is the sum of the usage on the OpenScape Branch plus the usage on the OpenScape SBC.

> **NOTICE:**
>
> The counters are stored encrypted to avoid unwanted modifications. Additionally, those counters are referred to the current Billing Period. The calculation of the Billing period is based on the configured system time of the application server (where CMP License Management Service is installed).

The OpenScape Branch Assistant updates the a usage counter for the following:

- Whenever an update is done in the total configured OpenScape SBC sessions (case of OpenScape Branch) or in the number of the simultaneously actually used OpenScape SBC sessions (case of OpenScape SBC). If the updated number is greater than the usage counter then the usage counter is updated, otherwise the usage counter remains unchanged.
- Whenever the Billing Period (the month) is changed. The first day of a month OpenScape Branch Assistant resets the usage counter to the current value of the corresponding counter.

> **NOTICE:**
>
> In case of redundant systems, OpenScape Branch Assistant takes into consideration only the licenses of the Master Node.

OpenScape Branch Assistant License Management Interface with the SSL Service

OpenScape Branch Assistant uses the interface of the SSL service in order to report the SSL usage data. Whenever the SSL service requests SSL usage data (e.g. once per day), OpenScape Branch Assistant performs the following:

- retrieves the usage counter of the OpenScape Branch User from the License Management service.
- reports the SSL usage counters for OpenScape Branch User and OpenScape SBC session to SSL service.
- request license information (OpenScape SBC Session usage included) from the OpenScape SBC appliances.
- reports the SSL usage counters for OpenScape Branch User and OpenScape SBC session to SSL service

The OpenScape Branch Assistant reports the following parameters to the SSL service:

Parameter	Description	Length	Allowed Characters
Year	The year the license info is reported. 4-digits representing the year (e.g. 2010)	4 characters	numeric only
Month	The month the license info is reported. Integer value ranging from 1 (January) to 12 (December).	2 characters	numeric only
Product-instance-ID	The unique ID of the product instance. This ID identifies the product in the SAP	17 characters	Alpha-numeric
Product Name	The name of the product (for informational purposes only)	20 characters	Alpha-numeric
Feature –ID (= License ID)	The ID of the feature (SSL Feature ID). Possible values depend on product type	20 characters	Alpha-numeric

Parameter	Description	Length	Allowed Characters
Used-licenses	Number of used licenses in the reported month (High Watermark). If the CMP did not receive data from the product during the month, then -1 is reported.	6 characters	numeric only
Timestamp	Time when the last license update from the product was obtained. The Timestamp is used by SAP to determine up to date data was received for the month. This shall be reported as a string with format: yyyy-mm-dd hh:ss	16 characters	numeric plus "-" and "." characters
Violation	The violation flag indicates whether the license of the affected product is violated.	1 character	true / false

In addition, OpenScape Branch Assistant reports the following parameters necessary to process SSL usage data within the CMP SSL service:

•   Node name, string -The IP address or node name
•   Node type, string - OpenScape Branch Assistant
•   SSL Node Group - N/A (an empty string)

The additional parameters are not needed for SAP.

6.3 OpenScape Evaluation License File (OSB and SBC)

OpenScape Branch Assistant supports Evaluation License files. The Evaluation license file is a Regular License file (RLF) that expires after 180 (calendar) days.

License Functionality

•   The OpenScape Branch Evaluation license file provides the license types and quantities necessary for a customer to evaluate OpenScape Branch functionality, including Branch base functions, Branch Users, Auto Attendant feature, Backup ACD feature for up to 180 days.
•   The OpenScape Session Border Controller (SBC) Evaluation license file provides the license types and quantities necessary for a customer to

evaluate OpenScape SBC functionality, SBC base functions and SBC sessions for up to 180 days.

License Monitoring

- The OpenScape Branch Assistant displays a popup at least once a day whenever any license file is within 60 days of expiration and whenever configuration is not possible due to the inability to check-out a license. The popup is displayed when navigating to the OpenScape Branch Assistant.
- If OpenScape Branch Assistant is informed by the License Management service that an Evaluation license file has expired, the OpenScape Branch Assistant will return values of zero for all licenses whenever a device requests a license update. This will occur until a new license file is applied.

6.4 OpenScape Branch Base License Type (OSB only)

The OpenScape Branch Base license type provides full usage of the basic switch software.

The OpenScape Branch Base license type is not tied to a software release or hardware type. OpenScape Branch Base licenses are used to track the number of OpenScape Branch(s) in the field.

OpenScape Branch Base licenses are configured via the OpenScape Branch Assistant. The OpenScape Branch Assistant will then request the license from the existing License Management Service. If the OpenScape Branch Base licenses are not available, the OpenScape Branch Assistant will not allow the configuration of the Base License. The OpenScape Branch Assistant keeps track of the usage counters and displays the OpenScape Branch Base licenses assigned to OpenScape Branch devices.

An OpenScape Branch Base License is required for the following Branch types:

- OpenScape Branch - Proxy
- OpenScape Branch - SBC Proxy
- OpenScape Branch - Proxy ACD
- OpenScape Branch - Proxy ATA
- OpenScape Branch - Branch SBC

The maximum number of OpenScape Branch base licenses in a license file on the CMP is 3,000.

One OpenScape Branch Base License must be allocated and assigned to each OpenScape Branch managed by the CMP

6.5 OpenScape Branch Registered Line License Type (OSB only)

OpenScape Branch Registered Line Licenses control the number of lines that can register with an OpenScape Branch.

The OpenScape Branch Registered line License type is not tied to a software release or hardware type. OpenScape Branch Registered Line Licenses are used to track the number of system-wide OpenScape Branch Users.

OpenScape Branch Registered Line Licenses are configured via the OpenScape Branch Assistant. The OpenScape Branch Assistant will then request the license from the existing License Management Service. If the OpenScape Branch Registered Line Licenses are not available, the OpenScape Branch Assistant will not allow the configuration of the Registered Line License. The OpenScape Branch Assistant keeps track of the usage counters and displays the OpenScape Branch Registered Line Licenses assigned to OpenScape Branch devices.

One OpenScape Branch Registered Line License is required for the registration of each line or device including phantom and secondary lines.

The number of Registered Line Licenses in the license pool determines the following:

- The number of primary, phantom and secondary lines that can be registered concurrently.

  Example: OpenScape Branch Keyset with 1 prime line, 1 phantom line and 1 secondary line would use 1 OpenScape Voice dynamic license and 3 OpenScape Branch Registered Line Licenses.
- The number of non-keyset DNs that can have one or more telephones/soft clients simultaneously registered on the system. One OpenScape Branch Registered Line License per registration request and one OpenScape Voice dynamic license per unique DN.

  > **NOTICE:**
  >
  > Licenses that are purchased or included with a particular package only become available on the OpenScape Branch server when the license file is applied to the OpenScape Branch Assistant server and configured for the OpenScape Branch server. Until then, only the default number of licenses will be available on the OpenScape Branch server.

  > **NOTICE:** Prior to V8 these licenses were called OpenScape Branch User Licenses. The name was changed to more accurately describe the purpose and enforcement criteria of these licenses.

Upon SIP registration, the user is granted a single license from the pool of available licenses allocated to the OpenScape Branch server based on the rules stated above.

OpenScape Branch warning threshold occurs, as follows:

- If the Registered Line Licenses allocated exceeds the configurable warning threshold (e.g. 80% of the assigned licenses), a warning is generated to the customer's system administrator. At this point, purchasing additional licenses may be necessary to provide a margin of safety.

Attempt to exceed user licensing:

- The number of allowed registrations is the number of registered line licenses + 10% for 1000 registered line licenses or less. The number of allowed registrations is the number of registered line licenses + 5% for over 1000 registered line licenses. Attempts to exceed these amounts will result

in blocked registrations and a critical alarm is generated daily with text indicating registration(s) blocked due to insufficient registered line licenses. The alarm must be manually cleared.

• Registration is on a first come first served basis

Users may reside in the following Branch types:

• OpenScape Branch - Proxy
• OpenScape Branch - SBC Proxy
• OpenScape Branch - Proxy ACD
• OpenScape Branch - Proxy ATA
• OpenScape Branch - Branch SBC
• Remote 3rd party Branch device

After enforcement is initiated and the license pool is completely depleted by the number of incoming SIP registered users, the next endpoint is denied registration and is unable to originate or terminate calls, including emergency calls.

6.6 OpenScape Branch Auto Attendant License (OSB only)

An OpenScape Branch Auto Attendant license allows access to Auto Attendant features.

Auto Attendant feature licenses are configured via the OpenScape Branch Assistant. An Auto Attendant feature license is optional and need not be purchased if Attendant functionality is not required.

The maximum number of Auto Attendant licenses is 1 per OpenScape Branch.

6.7 OpenScape Branch Backup ACD (Automatic Call Distribution) License (OSB only)

OpenScape Branch Backup ACD licenses control access to the ACD backup communication links feature provided during survivability processing.

Backup ACD feature licenses are configured via the OpenScape Branch Assistant. A Backup ACD feature license is optional and need not be purchased if ACD Backup functionality is not required.

The maximum number of Backup ACD licenses is 1 per OpenScape Branch - Proxy ACD.

6.8 OpenScape Session Border Controller (SBC) Base License (SBC only)

The OpenScape Session Border Controller (SBC) Base license provides full usage of the basic SBC software for a given version e.g. OpenScape SBC V2 base software.

The OpenScape SBC Base license is not tied to a software release or hardware type. OpenScape SBC Base licenses are used to track the number of OpenScape SBC(s) in the field.

OpenScape SBC Base licenses are configured via the OpenScape Branch Assistant. The OpenScape Branch Assistant will then request the license from the Existing License Management Service. If the OpenScape SBC Base licenses are not available, the OpenScape Branch Assistant will not allow the configuration of the Base License. The OpenScape Branch Assistant keeps track of the usage counters and displays the OpenScape SBC Base licenses assigned to OpenScape SBC devices.

The maximum number of OpenScape SBC base licenses in a license file is 100.

One OpenScape SBC Base License must be allocated and assigned to each OpenScape SBC managed by the CMP

6.9 OpenScape SBC Session License (OSB and SBC)

OpenScape SBC Session licenses are shared between OpenScape Branch and OpenScape SBC, and control the maximum number of connections to OpenScape SBC and OpenScape Branch SBC.

OpenScape SBC Session licenses are configured via the OpenScape Branch Assistant. The OpenScape Branch Assistant will then request the licenses from the existing License Management Service. If the OpenScape SBC Session licenses are not available, the OpenScape Branch Assistant will not allow the configuration of the Session License. The OpenScape Branch Assistant keeps track of the usage counters and displays the OpenScape SBC Session licenses assigned to OpenScape Branch SBC and OpenScape SBC devices.

An OpenScape SBC Session License is required for the following:

- OpenScape SBC - Internet connections
- OpenScape SBC - SIP Trunking and Remote Subscribers
- OpenScape Branch - SBC Proxy - SIP Trunking
- OpenScape Branch - Branch SBC - SIP Trunking

The maximum number of OpenScape SBC Session licences is 200,000 (160K for OpenScape Branches and 40K for OpenScape SBCs).

6.10 Upgrade License - Overview

The OpenScape Upgrade Licenses are required when upgrading from an OpenScape Branch with pre-Version 2 software to an OpenScape Branch with Version 2 or later software; and is also required when upgrading from an OpenScape SBC with pre-Version 2 software to an OpenScape SBC Version 2 or later.

The enforcement of OpenScape License files begins with OpenScape Branch Version 2 and OpenScape SBC Version 2.

For SSL upgrade licenses are not required. Monthly Subscription licenses are version–independent. To upgrade from one major version to the next, a new Product Instance for the new product version is ordered (a small handling fee is charged) and the license file will deliver once again the full complement of feature and registered line licenses. The end user is invoiced for the monthly usage as usual and the change is transparent to the user.

Licensing Software Upgrades for the OpenScape Branch and OpenScape SBC

The following applies to handling of software upgrades for OpenScape Branch and OpenScape SBC:

*   OpenScape Branch Assistant upgrade from a version that does not support licensing to a version that does support licensing:

    –   Prior to upgrading an OpenScape Branch or OpenScape SBC device in a customer network to a software release that supports OpenScape licensing, the OpenScape Branch Assistant must be upgraded to a revision that provides provisioning of OpenScape Branch and OpenScape SBC Licenses. If the OpenScape Branch Assistant in not upgraded, then licensing of Branch or SBC via Common Management Platform (CMP) is not possible. Stand Alone licensing must be used directly on the Branch or SBC.

    –   The OpenScape Branch Assistant must be provisioned with the OpenScape Branch and OpenScape SBC licensing information; otherwise, the OpenScape devices will not allow licensed features to work when the OpenScape Branch or OpenScape SBC devices are upgraded and start requesting licensing information. A license file, generated with the MAC ID of the Assistant, must be applied to the Assistant.

*   OpenScape Branch Assistant upgrade from a version that does support licensing:

    –   OpenScape Branch and OpenScape SBC license data must be maintained whenever the OpenScape Branch Assistant is upgraded.

*   After performing an OpenScape Branch or OpenScape SBC software upgrade from a release that did not support OpenScape Branch or OpenScape SBC licensing to a release that does support licensing, the OpenScape Branch or OpenScape SBC device will begin requesting licenses automatically.

*   When performing an OpenScape Branch or OpenScape SBC software upgrade from a release that does support OpenScape Branch or OpenScape SBC licensing to a newer release, the upgrade is performed as usual and the device will begin to request its licenses automatically when it reconnects to the network.

OpenScape Branch Upgrade Licenses

The following Upgrade Licenses apply to OpenScape Branch:

*   OpenScape Branch V2 Upgrade Base from Branch V1
*   OpenScape Branch V2 Upgrade User from Branch V1
*   OpenScape Branch V2 Upgrade Auto Attendant License from Branch V1
*   OpenScape Branch V2 Backup ACD License from V1
*   OpenScape SBC V2 Upgrade Session License from SBC V1

OpenScape SBC Upgrade Licenses

The following Upgrade Licenses apply to OpenScape SBC:

*   OpenScape SBC V2 Upgrade Base License from SBC V1
*   OpenScape SBC V2 Upgrade Session License from SBC V1

6.11 Managing Licenses

This chapter provides information about the following topics:

- License Management Concept
- License Information
- Activating Licenses

6.11.1 License Management Concept

The legal use of the OpenScape system features requires the corresponding product licenses. You can use the license management to activate these licenses and to view license information. The license management works domain-spanning.

Central License Server (CLS) The Central License Server (CLS) generates and manages the license files. A license file is generated when the License Authorization Code is sent to the CLS by Common Management Platform. The transfer of the license file to Common Management Platform occurs automatically via the internet.

IMPORTANT:

When you connect the Common Management Platform computer system to the internet, make sure that the computer system can only connect to the CLS and other selected, secure target systems.

NOTICE:

In certain circumstances the Common Management Platform may not be able or desired to access the internet. In this case it is possible to manually generate the license file at the CLS and to download it. The associated licenses can then be activated in the Common Management Platform with the license file alone and without internet connection.

Every customer or sales partner has a separate license account on the CLS. The accounts can be maintained at the CLS via a separate web-based user interface. All available and already purchased licenses can be displayed.

Centralized Licensing via Common Management Platform

Centralized Licensing implies that the license file is applied at the Common Management Platform (CMP). The license file must have been generated previously with the MAC ID of the CMP. This license file can be offline activated/applied via the CMP. Optionally, a License Authorization Code (LAC) can be used to online activate/apply a license file via the CMP.

The licenses are applied/activated with Common Management Platform either offline or online. The Common Management Platform online activation transfers the License Authorization Code (LAC) to the CLS and receives the associated license file. The CMP offline activation assumes the license file was previously generated (with the CMP MAC ID).

The licenses and their related information are displayed in Common Management Platform. The total number of licenses, which licenses are assigned to which OpenScape Branches or OpenScape SBCs, and when these licenses expire can be viewed in the CMP. In addition, number of licenses that are still free can also be viewed.

OpenScape Branch Assistant stores licensing information encrypted on the disk.

Licensing in Stand Alone Mode

Stand Alone Mode is defined as when an OpenScape Branch or OpenScape SBC is deployed at a customer who does not have a Common Management Platform (CMP) with OpenScape Branch Assistant or the CMP is not upgraded to a version that supports OpenScape Branch licensing. The standalone license file must have been previously generated and supplied to the customer, using the MAC ID of the OpenScape Branch or SBC. These customers use the OpenScape Branch or OpenScape SBC local GUI to manage the OpenScape Branch or OpenScape SBC.

Grace Period

After purchasing or installing the product/feature, the license for it must be activated within a specified time period - called the grace period. Depending on the product involved, this period may be e. g. 30 days.

During this grace period, the product may be restricted or fully functional. If you do not install a license after the grace period, the product becomes severely restricted or stops working entirely.

MAC address (Locking-ID)

During production, hardware is assigned a board-specific number called a MAC address which is unique world-wide. To guarantee unique licensing, the license file is linked to the hardware's MAC address (for example, network card of the system server). Every project/feature license is therefore linked to this locking ID.

6.11.2 License Information

This Common Management Platform (CMP) and the OpenScape Branch Assistant can be used to retrieve licensing information:

License Information via Common Management Platform (CMP)

The following information can be displayed using the CMP:

*   **General license information**

    The general license information contains

    – the license name
    – the name of the product for which the license is used
    – the number of licenses already used
    – the licenses validity

*   **License locking IDs**

    A locking ID is a unique feature of a computer system - e. g. the MAC address of a network board. The purchased licenses are linked to the locking

ID. You may have to select a locking ID to which you want to bind licenses the first time you license the system. All further licensing activities are performed with this locking ID.

- **Software Subscription License Monitoring and Reporting**

  OpenScape Branch CMP supports display of Software Subscription License (SSL) information in Version 7 and beyond.

License Information via OpenScape Branch Assistant

The following information can be displayed using the OpenScape Branch Assistant:

- **General license information per Branch or SBC**

  The general license information contains

  – the node name
  – the license type
  – the number of licenses configured
  – the number of licenses locally configured
  – the peak number of licenses used during the past month
  – when the license was first updated to the Branch or SBC
  – when the license was last updated to the Branch or SBC

- **License thresholds**

  License thresholds can be set and displayed for the following license types:

  – OpenScape Branch Base
  – OpenScape SBC Base
  – OpenScape Branch Users
  – Auto Attendant feature
  – Backup ACD feature
  – SBC Sessions

  The percentage threshold for each license type is used to warn the customer that more licenses may need to be purchased. When the percentage of licenses have been allocated from the license pool, a pop-up warning will be issued indicating that threshold was exceeded.

6.11.2.1 How to Display License Information via CMP

To display license information via the Common Management Platform (CMP), proceed as follows:

Prerequisites

Adequate administrative permissions.

Step by Step

1) On the **Maintenance** navigation tab click on the **License** navigation menu item.

2) Select **Information** in the navigation tree.

3) A list of all features available in the OpenScape system is displayed in the work area. This list contains for each entry the following information:

Product Name

Shows the name of the product for which the license information is being displayed e.g., OpenScape Branch / SBC V2.

Feature Name

States the feature name/license type associated with the product e.g., OpenScape SBC Base.

Number of used licenses

Specifies how many licenses are altogether available for the feature and how many of these are already used e.g., 1 of 30.

Validity

Shows the validity for the feature's licenses by expiration date. License entries that are invalid or have expired or are about to expire are marked red e.g., Grace Period 30 days, or unlimited.

4) The list can be filtered according to specific terms (patterns).

   a) Enter the desired filter term in the field Pattern. You can either enter the complete term or the initial letters followed by * (e. g. *HiPath*).

   b) From the list displayed, select whether the filtering is to be applied to the Product Name or Feature Name column.

   c) Click on **Go** to activate the filter. Only the list elements which correspond to the pattern entered are displayed.

   d) Click on **Clear** to deactivate the filter. Filter conditions are deleted. All the list elements are displayed again.

5) Information in the list can be exported to a CSV file.

   a) Click the **CSV icon** in the work area to the right of the Items/Page controls.

   b) From the File Download dialog select **Save**.

   c) Enter the **Save in:** location and **File Name** and click on **Save**.

   d) The CSV file is saved and the **License Information** work area appears.

6.11.2.2 How to Display Software Subscription License Information via CMP

To display Software Subscription License (SSL) data via the Common Management Platform (CMP), proceed as follows:

Prerequisites

Adequate administrative permissions.

Step by Step

1) On the **Maintenance** navigation tab click on the **License** navigation menu item.

2) Select **Software Subscription** in the navigation tree.

The Subscription License Usage dialog appears.

3) A list of nodes by name and type with the assocaited subscription licenses is displayed in the work area. This list contains for each entry the following information:

Node Name

Shows the name of the node for which the license information is being displayed e.g., bocaosb1.

Node Type

Indicates the type of node assocaited with subscription license reported e.g., OpenScape Branch, OpenScape Branch/SBC.

License Type

Indicates the type of subscription license reported e.g., OpenScape Branch User, OpenScape Branch Session.

Quantity

Shows the number of used licenses in the reported month (High Watermark). If the CMP did not receive data from the product during the month, then -1 is reported..

Product ID

The unique ID of the product instance. This ID identifies the product in the SAP.

Remaining Days

Shows the number of days left in the subscription licenses for the node. e.g., 155 days.

Collection error

The Collection error flag indicates there was an issue with collection of license data.

Last collection date

When the last license update from the product was obtained. The Timestamp is used by SAP to determine up to date data was recieved for the month.

4) The list can be filtered according to specific terms (patterns).

　　a) Enter the desired filter term in the field Pattern. You can either enter the complete term or the initial letters followed by * (e. g. *HiPath*).

　　b) From the list displayed, select whether the filtering is to be applied to the Node Type or Product ID.

　　c) From the year and month field list, select the year and month for which the data will be displayed.

> **NOTICE:**
>
> Data is only valid for a rolling year.

　　d) Click on **Search** to activate the filter. Only the list elements which correspond to the pattern entered are displayed.

　　e) Click on **Show all** to deactivate the filter. Filter conditions are deleted. All the list elements are displayed again.

5) Information in the list can be sorted by Node Name, Node Type and Violation by clicking the associated column name.

6.11.2.3 How to Display License Locking IDs via CMP

To display license locking IDs via the Common Management Platform (CMP), proceed as follows:

Prerequisites

Adequate administrative permissions

Step by Step

1) On the **Maintenance** navigation tab click on the **License** navigation menu item.
2) Select **Locking IDs** in the navigation tree.
3) A list of all computer systems available in the entire system is displayed in the work area. This list contains for each entry the following information:

> **NOTICE:**
>
> If a Locking ID was already used for licensing, it is the only Locking ID displayed.

Locking ID

Shows the Locking ID (MAC address) of the system to which the licenses are registered.

Adapter Name

Shows the name of the adapter that provides the Locking ID.

Logical Name

Specifies the logical name of the adapter that provides the Locking ID.

IP Address

Specifies the IP address of the adapter that provides the Locking ID. Here there could be several IP addresses displayed - such as in server scenarios. or no IP address (adapter out of service).

4) If access to the central license server is required, click **Link to the Central License Server**.

6.11.2.4 How to Display License Information via OpenScape Branch Assistant

To display license information via the OpenScape Branch Assistant, proceed as follows:

Prerequisites

Adequate administrative permissions.

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.
2) Select **Licensing** in the navigation tree, under Administration.
3) Select **Licensing list** in the navigation tree, under Licensing.

4) A list of all licenses available for OpenScape Branches, OpenScape Branch application features and OpenScape SBCs are displayed in the work area. This list contains for each entry the following information:

Name

Shows the name of the OpenScape Branch or OpenScape SBC for which the license information is being displayed.

License Type

Type of Licenses are as follows:

- OpenScape Branch Base
- OpenScape Branch Users
- Auto Attendant feature
- Backup ACD feature
- SBC sessions
- OpenScape SBC Base

Configured licenses

Specifies how many licenses are configured in the OpenScape Branch Assistant for this logical device.

- OpenScape Branch Base (values - 0-1)
- OpenScape Branch Users (values - 0-6000)
- Auto Attendant feature (values - 0-1)
- Backup ACD feature (values - 0-1)
- SBC sessions (values - 0-4000)
- OpenScape SBC Base (values - 0-1)

Locally Configured licenses

Specifies how many licenses are configured for this physical device, OpenScape Branch or SBC. Maximum values are the same as Configured license values.

Usage (Peak)

Shows the peak number of licenses used for the current month.

First updated

Date and time when the license information was first updated between the CMP and OpenScape Branch or OpenScape SBC.

Last updated

Date and time when the license information was last updated between the CMP and OpenScape Branch or OpenScape SBC.

5) The Licences list can be filtered by Name.

  a) Enter the desired filter term in the field Pattern. You can either enter the complete term or the initial letters followed by * (e. g. *C-SBC*).

  b) Click on **Go** to activate the filter. Only the list elements which correspond to the pattern entered are displayed.

  c) Click on **Clear** to deactivate the filter. Filter conditions are deleted. All the list elements are displayed again.

6.11.2.5 How to Display and Manage Licensing Thresholds via OpenScape Branch Assistant

This feature allows the administrator to manage the allocation of licenses by specifying the threshold values for licenses associated with OpenScape Branch and OpenScape SBC. The threshold value is used to determine when to generate a warning (pop-up) so the administrator can obtain additional licenses prior to running out of licenses. To display or manage threshold license information via the OpenScape Branch Assistant, proceed as follows:

Prerequisites

Adequate administrative permissions

Step by Step

1) Navigate to **Configuration tab** and select **OpenScape Branch** within the Navigation Bar in Common Management Platform.
2) Select **Licensing** in the navigation tree, under Administration.
3) Select **License thresholds** in the navigation tree, under Licensing.

   The **OSB licenses thresholds** dialog opens.
4) The following Licenses and associated thresholds will be displayed
   OpenScape Branch Base (%):
   The default value is 80%, and the valid range is [0 % ...100 %].
   OpenScape SBC Base (%):
   The default value is 80%, and the valid range is [0 % ...100 %].
   OpenScape Branch Users (%):
   The default value is 80%, and the valid range is [0 % ...100 %].
   Auto Attendant feature (%):
   The default value is 90%, and the valid range is [0 % ...100 %].
   Backup ACD feature (%):
   The default value is 90%, and the valid range is [0 % ...100 %].
   SBC Sessions (%):
   The default value is 90%, and the valid range is [0 % ...100 %].
5) Enter the threshold percentage of licenses used for the associated license type(s). When the license usage reaches the threshold value a warning shall be sent to the administrator.
6) Click **Save** to make the changes of the threshold values valid.

   The threshold warning level for the associated license type usage is modified and set.

6.11.2.6 How to Display Licensing for an OpenScape Branch Office or SBC Via OpenScape Branch Assistant

The OpenScape Branch Assistant can administer OpenScape Branch Offices and OpenScape SBCs. Thus it keeps a list of branch offices and SBCs in its database. The "OpenScape Branch Overview" displays all known branch offices

and provides a search function to find a particular one. The administrator can select a single OpenScape Branch or OpenScape SBC to view and configure.

Prerequisites

Adequate administrative permissions.

At least one OpenScape branch office or OpenScape SBC is configured and in operation.

The connection to the OpenScape Voice system is up.

Step by Step

1) To display all SBCs and branch offices: navigate to **Configuration tab** > **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select **All systems** in the **Communication System** pull-down under **Administration** in the Navigation Tree (if not currently selected).

   If **All systems** is not currently selected, selecting All systems will display the **OpenScape Branch Overview** in the Work Area, with a current list of all known SBCs and branch offices of all systems. If no SBCs or branch offices are defined, the list is empty. If **All systems** was previously selected, then proceed to step 3.

3) Select **Branch Office list** in the Navigation Tree.

   The system presents the **OpenScape Branch Overview** in the Work Area, with a current list of all known SBCs and branch offices of all systems. If no SBCs or branch offices are defined, the list is empty.

4) To view a list of SBCs and Branch Offices configured at a specific communication system, select a communication system in the **Communication System** field in the navigation tree.

   The default selection for the **Communication System** field is the selection of the global settings in the system menu.

5) To find and select a particular branch office use one of the following options:

   • In the Work Area select the checkbox to the left of the particular SBC or branch office in the list. Action Menu buttons are set active in the Work Area with the following options: **Manage**, **Local Password...**, **Refresh Selected**, **Edit...**, **Delete**. Selecting the **Manage** button updates the **Branch Office** field, in the Navigation Tree, with the selected SBC or branch office and displays information and data in the Work Area for that SBC or branch office.

   • Choose a SBC or branch office from the **Branch Office** pull-down located in the Navigation Tree. Information and data are displayed in the Work Area.

   • Enter filter search criteria to filter the list of SBC and branch offices.

     Filtering is possible on the following criteria from the **in** field: **Branch Office** (name), **Business Group, IP Address, Version, Status, Mode.**

     NOTICE:

     Wild cards are supported (* for 0 or more characters, "?" for single characters).

     ---

6) Once the filters are set, click the **Go** button.

   The system refreshes the list of displayed branch offices and displays the ones matching the search criteria.

7) Click The **Clear** button. The system clears the filter criteria field and displays all records of the default communication system selected in the **Communication System** field. If no specific communication system is selected, all SBCs and branch offices of all systems are listed in the Work Area.

8) View the work area under **Licensing Information**. The following is displayed:

   First updated:

   Date and time when the license was first updated.

   Last updated:

   Date and time when the license was last updated.

   Logical ID:

   Unique ID for the OpenScape Branch or OpenScape SBC in the form of System Name:Business Group Name:OpenScape Branch or SBC Name.

   Hw ID:

   Unique Hardware ID associated with the hardware of the OpenScape Branch or OpenScape SBC.

   License type

   Type of Licenses are as follows: OpenScape Branch Base, OpenScape Branch Users, Auto Attendant feature, Backup ACD feature, SBC sessions and OpenScape SBC Base.

   Configured

   Specifies how many licenses are configured in the OpenScape Branch Assistant for this logical device.

   Locally Configured

   Specifies how many licenses are configured for this physical device, OpenScape Branch or SBC.

   Usage (Peak)

   Shows the highest number of licenses used at any point in time during the current month.

   Refresh button

   Used to refresh the current licensing information displayed for that particular OpenScape Branch or OpenScape SBC from the OpenScape Branch Assistant database.

   Device license update button

   Used to request an update of license data from the OpenScape Branch Assistant, to the OpenScape Branch or OpenScape SBC device.

   Configure button

   Used to access configuration of licenses for the OpenScape Branch or OpenScape SBC. In addition, provides access to clear license counters at the OpenScape Branch and SBC devices.

9) Configuration and update of licenses can be accomplished for a single OpenScape Branch Office or OpenScape SBC.

The data displayed is provided by the OpenScape Branch assistant database and the OpenScape Branch or SBC hardware itself. This means that the data might be out of date if it was changed on the SBC or branch office without the assistant being notified. Refresh button must be used to synchronize data when changes are made.

6.11.2.7 How to Configure and Clear Licensing for an OpenScape Branch Office or SBC Via OpenScape Branch Assistant

The OpenScape Branch Assistant can administer licensing for a particular OpenScape Branch Office or OpenScape SBC.

Prerequisites

Adequate administrative permissions.

At least one OpenScape branch office or OpenScape SBC is configured and in operation.

The connection to the OpenScape Voice system is up.

Completed either online or offline license activation to apply the license file to the Common Management Platform (CMP).

Step by Step

1) To display all SBCs and branch offices: navigate to **Configuration tab > OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select **All systems** in the **Communication System** pull-down under **Administration** in the Navigation Tree (if not currently selected).

   If **All systems** is not currently selected, selecting All systems will display the **OpenScape Branch Overview** in the Work Area, with a current list of all known SBCs and branch offices of all systems. If no SBCs or branch offices are defined, the list is empty. If **All systems** was previously selected, then proceed to step 3.

3) Select **Branch Office list** in the Navigation Tree.

   The system presents the **OpenScape Branch Overview** in the Work Area, with a current list of all known SBCs and branch offices of all systems. If no SBCs or branch offices are defined, the list is empty.

4) To view a list of SBCs and Branch Offices configured at a specific communication system, select a communication system in the **Communication System** field in the navigation tree.

   The default selection for the **Communication System** field is the selection of the global settings in the system menu.

5) To find and select a particular branch office use one of the following options:

   • In the Work Area select the checkbox to the left of the particular SBC or branch office in the list. Action Menu buttons are set active in the Work Area with the following options: **Manage**, **Local Password...**, **Refresh Selected**, **Edit...**, **Delete**. Selecting the **Manage** button updates the **Branch Office** field, in the Navigation Tree, with the selected SBC or

branch office and displays information and data in the Work Area for that SBC or branch office.

- Choose a SBC or branch office from the **Branch Office** pull-down located in the Navigation Tree. Information and data are displayed in the Work Area.

- Enter filter search criteria to filter the list of SBC and branch offices.

  Filtering is possible on the following criteria from the **in** field: **Branch Office** (name), **Business Group, IP Address, Version, Status, Mode.**

NOTICE:

Wild cards are supported (* for 0 or more characters, "?" for single characters).

---

6) Once the filters are set, click the **Go** button.

   The system refreshes the list of displayed branch offices and displays the ones matching the search criteria.

7) Click The **Clear** button. The system clears the filter criteria field and displays all records of the default communication system selected in the **Communication System** field. If no specific communication system is selected, all SBCs and branch offices of all systems are listed in the Work Area.

8) This Step should be executed when changing out OpenScape Branch or OpenScape SBC hardware.

   a) Click the **Configure** button in the work area under Licensing Information.

      The **Configure licenses** licenses dialog appears and the following information is displayed:

      - Clear license counters
      - OpenScape licenses assigned for each license type
      - Number of available licenses associated with each license type

   b) Checkmark the **Clear license counters** and click the **Save** button to clear out "all" licenses at the OpenScape Branch or OpenScape SBC device. This will clear the link between the allocated licenses and the hardware ID.

NOTICE:

This should be done prior to changing out OpenScape Branch or OpenScape SBC hardware.

The licenses on the OpenScape Branch or OpenScape SBC are cleared and the General OpenScape work area appears. The allocated licenses are not returned to the license pool.

   c) Uncheck the **Clear license counters** checkbox and click the **Save** button once the new hardware is installed; the **Clear license counters** checkbox should be cleared so the new hardware can receive the licenses configured in the OpenScape Branch Assistant. This will link the licenses allocated to the device with the devices' hardware ID.

      The General OpenScape work area appears.

9) Enter the number of licenses to be assigned to the OpenScape Branch Office or OpenScape SBC for each license type. The number of assigned licenses can not exceed the number of available licenses shown e.g., **Available:** 5017, for the associated license type. License types include the following:

- **OpenScape Branch Base** (for Branch)
- **OpenScape Branch Users** (for Branch)
- **Auto Attendant feature** (for Branch)
- **Backup ACD feature** (for Branch)
- **SBC Sessions** (for Branch or SBC)
- **OpenScape SBC Base** (for SBC)

10) Click the **Save** button to complete the assignment of licenses in the OpenScape Branch Assistant for the OpenScape Branch or OpenScape SBC device.

> **NOTICE:**
>
> This action also updates OpenScape Branch or OpenScape SBC licenses in the OpenScape hardware.

> **IMPORTANT:**
>
> Applying or changing licenses assigned to an OSB will cause the OSB to restart the sip server process which will have an affect on transient (non-stable) calls.

Licenses are now allocated in the OpenScape Branch Assistant for the OpenScape Branch or OpenScape SBC and the General OpenScape work area appears.

11) Click the **Device license update** button, in the Licensing Information work area to update license information in the OpenScape Branch or OpenScape SBC device.

> **NOTICE:**
>
> This action transfers licensing information from the OpenScape Branch Assistant to the OpenScape Branch or OpenScape SBC hardware.

Licenses are now configured in the OpenScape Branch or OpenScape SBC hardware.

12) Click the **Refresh** button, in the Licensing Information work area to refresh the OpenScape Branch or OpenScape SBC licensing information from the OpenScape Branch Assistant only.

The data displayed is provided by the OpenScape Branch assistant database rather than the hardware itself. This means that the data might be out of date if it was changed on the SBC or branch office without the assistant being notified.

6.11.2.8 How to Display Licensing Warnings for an OpenScape Branch Office or SBC

The OpenScape Branch Assistant automatically displays licensing warnings to notify the administrator of possible licensing issues. Warnings can occur during display and configuration of OpenScape Branches and OpenScape SBCs.

Prerequisites

Adequate administrative permissions.

At least one OpenScape branch office or OpenScape SBC is configured and in operation.

The connection to the OpenScape Voice system is up.

Step by Step

1) Navigate to **Configuration tab** > **OpenScape Branch** within the Navigation Bar in Common Management Platform.

2) Select **All systems** in the **Communication System** pull-down under **Administration** in the Navigation Tree (if not currently selected).

   If **All systems** is not currently selected, selecting All systems will display the **OpenScape Branch Overview** in the Work Area, with a current list of all known SBCs and branch offices of all systems. If no SBCs or branch offices are defined, the list is empty. If **All systems** was previously selected, then proceed to step 3.

3) Select **Branch Office list** in the Navigation Tree.

   The system presents the **OpenScape Branch Overview** in the Work Area, with a current list of all known SBCs and branch offices of all systems. If no SBCs or branch offices are defined, the list is empty.

4) To view a list of SBCs and Branch Offices configured at a specific communication system, select a communication system in the **Communication System** field in the navigation tree.

   The default selection for the **Communication System** field is the selection of the global settings in the system menu.

5) To find and select a particular branch office use one of the following options:

   • In the Work Area select the checkbox to the left of the particular SBC or branch office in the list. Action Menu buttons are set active in the Work Area with the following options: **Manage**, **Local Password...**, **Refresh Selected**, **Edit...**, **Delete**. Selecting the **Manage** button updates the **Branch Office** field, in the Navigation Tree, with the selected SBC or branch office and displays information and data in the Work Area for that SBC or branch office.

   • Choose a SBC or branch office from the **Branch Office** pull-down located in the Navigation Tree. Information and data are displayed in the Work Area.

- Enter filter search criteria to filter the list of SBC and branch offices.

  Filtering is possible on the following criteria from the **in** field: **Branch Office** (name), **Business Group, IP Address, Version, Status, Mode.**

  NOTICE:

  Wild cards are supported (* for 0 or more characters, "?" for single characters).

  ---

6) Once the filters are set, click the **Go** button.

   The system refreshes the list of displayed branch offices and displays the ones matching the search criteria.

7) Click The **Clear** button. The system clears the filter criteria field and displays all records of the default communication system selected in the **Communication System** field. If no specific communication system is selected, all SBCs and branch offices of all systems are listed in the Work Area.

8) Choose a particular OpenScape Branch or OpenScape SBC.

   OpenScape Branch and OpenScape SBC associated information is displayed. In addition, licensing pop-up warnings will appear if applicable. Warning may include but are not limited to the following:

   - A license file is within 60 days of expiring. If a new license file is not added within xx days branch calls will not be possible.
   - A configured threshold has been exceeded.
   - license file has expired, branch calls will not be possible.
   - A license file has been applied that does not have enough licenses. Add a new license file with sufficient licenses for the licenses configured in the Assistant.
   - A configuration was attempted but no license was available
   - Number of licenses according to the device is out of sync with the number of configured licenses (i.e. after the device responds with a status of "success" after updating its license info but the number of licenses the device reports to have is different than the number of licenses configured. Note: this can happen if the administrator assigns more User or SBC Session licenses than the OpenScape Branch or OpenScape SBC hardware can handle.

9) Warnings can occur during display and configuration of OpenScape Branches and OpenScape SBCs.

The administrator is warned about licensing issues and can then correct the pending issue.

6.11.3 Activating Licenses

After you have purchased an OpenScape product, you will have to activate the licenses supplied with it in order to enable the product and its features.

Licenses can be activated by one of the following two methods:

In order to activate licensing via the Common Management Platform (CMP); the license file must have been generated using the MAC ID of the CMP.

> **NOTICE:**
>
> If the CMP does not support licensing or no CMP is available, OpenScape Branch or OpenScape SBC licensing can be activate via the Stand Alone Licensing mechanism using the local administration GUI.

- **Activating a License Online with License Authorization Code**

  License activation via the LAC is the standard method. Using the LAC, a license file is generated at the Central License Server (CLS) and forwarded to the Common Management Platform. The license file is used to activate the associated licenses and thus release the products and their features.

- **Activating a License Offline with a License File**

  License activation with the license file is necessary if you cannot or do not want to perform online activation and if the license file is directly available. The license file was generated at the Central License Server (CLS) earlier and downloaded. The license file is used to activate the associated licenses and thus release the products and their features.

Supplementary licenses can be purchased to use additional products. When additional licenses are purchased, a separate License Authorization Code (LAC) is provided which can then be used to activate the new licenses you purchased. After activation, all features for which a license is required will be available.

6.11.3.1 How to Activate License - Online

Online license activation via the LAC (License Authorization Code) is the standard method. Using the LAC, a license file is generated at the Central License Server (CLS) and forwarded to the Common Management Platform. The license file is used to activate the associated licenses and thus release the products and their features.

Prerequisites

Adequate administrative permissions.

Common Management Platform and OpenScape Branch Assistant version supports OpenScape Branch/SBC Licensing.

The license file must have been generated with the MAC ID of the Common Management Platform (CMP)

Step by Step

1) On the **Maintenance** navigation tab click on the **License** navigation menu item.

2) Select **Information** in the navigation tree.

> **IMPORTANT:**
>
> OpenScape Voice license activation is not offered via CMP.

3) Click the **Online Activation...** button in the work area.

   The **Activate licenses online** dialog appears.

4) Specify under License authorization code (LAC) the license authorization code you have received with the OpenScape product.

5) Select a locking ID under Locking ID. There is no selection option available if only one locking ID is present.

6) Enter the user name and password for accessing the license server under User name and Password.

> **NOTICE:**
>
> Certain products can also be anonymously licensed without a user name and password. Deactivate the **I would like to logon at the License Server with the following account** option for this purpose. If you have a valid user ID for the license server you should use it for anonymous licensing also.

7) Click **Activate**.

The connection to the license server is established, and the license is released. As a rule, this operation does not take more than 90 seconds.

> **NOTICE:**
>
> The license pool is created and licenses can then be allocated/configured to individual OpenScape Branches or OpenScape SBCs.

6.11.3.2 How to Activate License - Offline

License management can be used to import a new or updated license file offline. A license file is required which can be downloaded from the Central License Server (CLS). The license file is used to activate the associated licenses and thus release the products and their features.

Prerequisites

Adequate administrative permissions

The license file must have been generated with the MAC ID of the Common Management Platform (CMP)

Step by Step

1) On the **Maintenance** navigation tab click on the **License** navigation menu item.

2) Select **Information** in the navigation tree.

> **IMPORTANT:**
>
> OpenScape Voice license activation is not offered via CMP.

3) Click the **Offline Activation...** button in the work area.

The **License Activation** dialog appears.

4) Select on **Browse** next to the **License file** field and navigate to the storage location of the license file you have received with the product.

5) Click **Activate**.

The license management verifies the signature of the license file against the system server's MAC address (Locking ID). If the verification is successful, the data are transferred from the file and the licenses are displayed in the Common Management Platform with the associated information.

> **NOTICE:**
>
> The license pool is created and licenses can then be allocated/ configured to individual OpenScape Branches or OpenScape SBCs.

6.12 License Enforcement and Update

This Common Management Platform (CMP) and the OpenScape Branch Assistant can be used to retrieve licensing information:

Enforcing Licensing

Alarms, pop-ups and logging will occur when enforcing licensing limits.

The following table shows how Licensing enforcement will be handled during Installation/Upgrade and when OpenScape devices are operational:

	Install / Upgrade License Enforcement	Operation License Enforcement
Base license	No base: No enforcement	No base: No enforcement
Registered Line License (OSB only)	• If no Licenses of any type are available, operate as today but alarm daily. After 30 days of no licenses block all registrations. • If licenses of any type are provided during the 30 day period OpenScape Branch begins to operate based on the licenses available.	Attempts to exceed license: • The number of allowed registrations is the number of registered line licenses + 10% for 1000 registered line licenses or less. The number of allowed registrations is the number of registered line licenses + 5% for over 1000 registered line licenses. Attempts to exceed these amounts will result blocked registrations and a critical alarm is generated daily with text indicating registration(s) blocked due to insufficient registered line licenses. The alarm must be manually cleared. • Registration is on a first come first served basis

	Install / Upgrade License Enforcement	Operation License Enforcement
SBC Session license (OSB and SBC)	• If no Licenses of any type are available, operates normal but alarm daily. After 30 days of no licenses the final response to Invites will be 606 (a warning header may be included for diagnostic purposes). The same is true for gateways. • If licenses of any type are provided during the 30 day period OpenScape Branch or OpenScape SBC begins to operate based on the licenses available.	Attempts to exceed license: • Established SIP Service Provider/OpenScape SBC calls will be counted based on 2xx (ack) responses. New Invites exceeding the license limit will be rejected with response code 606 (a warning header may be included for diagnostic purposes) and a critical alarm is generated daily with text indicating SIP Service Provider calls blocked due to insufficient SBC Session licenses. The alarm must be manually cleared.
Attendant license (OSB Only)	• If no Licenses of any type are available, operate normal but alarm daily. After 30 days of no licenses calls to the Attendant are not possible (all calls are blocked). • If licenses of any type are provided during the 30 day period OpenScape Branch begins to operate based on the licenses available.	Attempts to exceed license: • Reject calls to the Attendant with response code 606 (a warning header may be included for diagnostic purposes) and a critical alarm is generated daily with text indicating Attendant calls blocked due to no Attendant License. The alarm must be manually cleared.
Backup ACD license (OSB only)	• If no Licenses of any type are available, operate normal but alarm daily. After 30 days of no licenses calls going into the queue are not possible (all calls are blocked). • If licenses of any type are provided during the 30 day period OpenScape Branch begins to operate based on the licenses available.	Attempts to exceed license: • Reject calls to Backup ACD with response code 606 (a warning header may be included for diagnostic purposes) and a critical alarm is generated daily with text indicating Backup ACD calls blocked due to no Backup ACD. The alarm must be manually cleared.

• **Additional Enforcement Scenarios and Responses**

  Scenarios:

  – OpenScape Branch and OpenScape SBC prevents licensed features from working if the License Server does not respond to a request for a refresh of licenses for 30 consecutive days (OpenScape Branch or OpenScape SBC has successfully received license information from

OpenScape Branch Assistant at least once). This can happen when there is a communication error or when the licenses are already allocated to another hardware device.

– If the licenses have been released for a device the OpenScape Branch Assistant will return zero as the value for all licenses for a device as a response to a license refresh request from a device. In this case licensed features shall be blocked by the device.

– If the Evaluation license file has expired, the OpenScape Branch Assistant will return zero as the value for all licenses for a device whenever a license refresh request is sent. In this case licensed features shall be blocked by the device.

Responses:

– A pop-up is provided to alert the craft whenever a OpenScape Branch or OpenScape SBC is created but installation data and/or licensing data has not been configured for the device.

– If no Licenses of any type are available OpenScape Branch or OpenScape SBC will operate normal for 30 days and generate a daily alarm with text indicating how many days before the OpenScape Branch or OpenScape SBC will not provide any calls since no licenses are installed.

License Update

The OpenScape Branch and OpenScape SBC requests licensing update for the following:

• after every reboot

• after changing from survivable mode to normal mode (OpenScape Branch)

• every 24 hours (based on the last reboot time)

License Validation

The OpenScape Branch and OpenScape SBC validate licenses periodically with the central License Server (CMP). If validation fails, additional attempts are made to validate licenses:

• OpenScape Branch/OpenScape SBC to License Server (CMP) Validation:

The OpenScape Branch/OpenScape SBC checks the License server (CMP) once a day to validate licenses.

If the first request fails a second attempt is made 30 minutes later, a third attempt 15 minutes after that and a forth attempt 5 minutes later. In other words, 4 tries during the one hour period. After the four validation attempts; validation attempts will take place once every 24 hours.

– If the connection from the OpenScape Branch/OpenScape SBC to the License server (CMP) is restored within the grace period; the grace period operation returns to normal (30 days).

– If the grace period expires, licensed features will stop working (e.g. OSB users cannot place calls, ACD will not work, Attendant will not work, SBC Sessions will not be allowed).

Subscribers that are registered will continue to work unless the user's phone is powered off. When the phone is powered on the user will not

register and won't be able to make calls. Attempts to register new users after the 30 day grace period expires will be unsuccessful.

Periodic checking from the OpenScape Branch/OpenScape SBC to the License server (CMP) continues. If the connection to the License server is restored after the grace period expires, operation returns to normal (30 days).

- The Network must be fixed to allow communication between the OpenScape Branch and the License server (CMP) for centralized license operation. Stand-alone licensing can be used at the OpenScape Branch/OpenScape SBC to bring operation back to normal (Notice: The OpenScape Branch/ OpenScape SBC must be configured for Stand Alone license operation).

- Number of Users in the OpenScape Branch Exceeds the Number of Allowed Registered Users: If the number of users in the OpenScape Branch exceeds the number of allowed registered users, additional registrations are allowed. The number of additional registrations allowed depends on the OpenScape Branch type.

6.13 License Security

This Common Management Platform (CMP), OpenScape Branch and OpenScape SBC secures licensing information in the following ways:

Securing Licensing in the OpenScape Branch and OpenScape SBC

- Licensing information stored in the OpenScape Branch and OpenScape SBC is secured by encryption.
- The OpenScape Branch and OpenScape SBC automatically sets the Branch or SBC licensing to secure mode if it is in unsecured mode and the Licensing Information request contains a correct authentication statement. This function is performed regardless of whether the licenses are configured
- Authentication Statements are encrypted and saved in the backup and are usable after restore.

Securing Licensing in the OpenScape Branch Assistant

- Licensing information stored in the OpenScape Branch Assistant is secured by encryption. Secured information includes the Logical-IDs, MAC addresses, Authentication Statements and License counts
- The OpenScape Branch Assistant only allows Authentication Statement requests in unsecured mode. License Information requests are not possible in unsecured mode
- Authentication Statements are included in the backup and are available after restore. The Authentication Statements encrypted and persist over restarts and upgrades.

6.14 How to Install the Lenovo SR250 / SR250 V2 Server Hardware

Proceed as follows to connect the cables of the Lenovo SR250/SR250 V2 server hardware for the OpenScape Branch.

Prerequisites

This section describes the equipment needed on the Lenovo SR250/SR250 V2. All necessary hardware comes pre-installed. You can find the steps necessary to assemble the hardware, connect the cables and load the necessary firmware.

Step by Step

1) Refer to the Lenovo SR250/SR250 V2 rack installation instructions to install the server into the rack.

2) Install the disk drive. The image below shows the location of the drive. The system comes with a total of 4 3.5-inch drive bays.
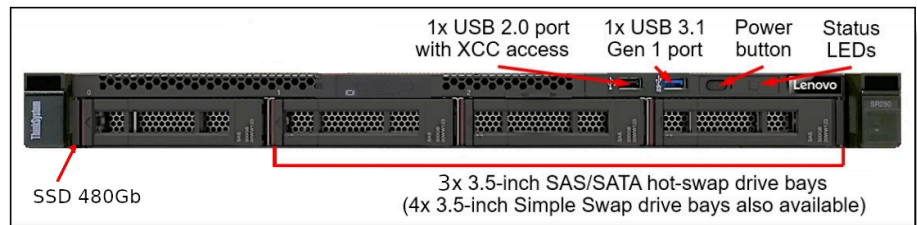
To remove a drive, slide the release latch to the right with one finger while using another finger to grasp the black drive handle and pull the hard disk drive out of the drive bay.

3) Connection Panel in the rear of the Lenovo SR250/SR250 V2 server. The system comes pre- installed with five onboard ports (two Integrated 1 GbE and one 10/100/1000 MbE for XCC on Motherboard), and a Broadcom Limited 2 port NX BCM5720 GbE. The image below gives a general overview of the connection panel in the rear of the Lenovo SR250/SR250 V2 server.
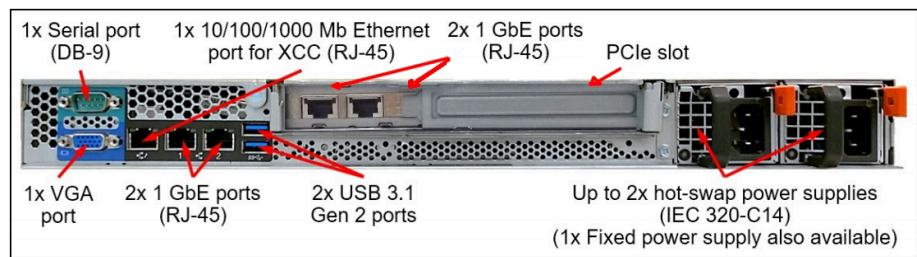
4) Network port assignment. The following diagrams show the Ethernet port assignments for the Lenovo SR250/SR250 V2.
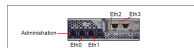
5) Power on the server

6) At boot up, press F1 to enter the UEFI setup when the option **<F1> System Setup** is available.

Press many times until the option symbol turns blue.

7) After the **System Summary** screen appears, go to **UEFI Setup** > **System Settings** > **Legacy BIOS** and enable the option **Legacy BIOS**

8)   Go to **Boot Manager** > **Boot Modes** and select **Legacy Modes**

9)   Save the configuration by clicking **Save** in the right corner

10) Back to **Boot Manager**, select **Reboot System**

7 Appendix

The appendix provides reference information on the Installation and Upgrade of the OpenScape Branch Appliance.

7.1 Clip-on Ferrites for OSB 50i A84, D44, DP14E,DP14T and DP24 Installation Guide

This guide describes the installation of ferrites (order # Wuerth 7427154) on OpenScape Branch 50i A84, DP14E, DP14T and DP24.

Table 1: Attach Cables
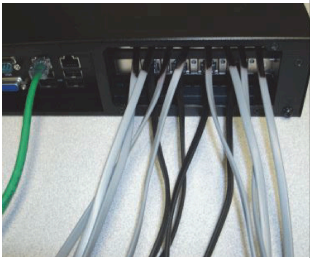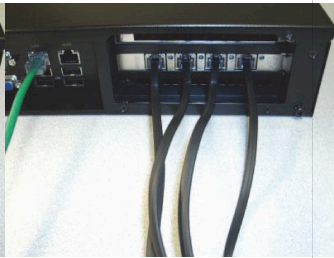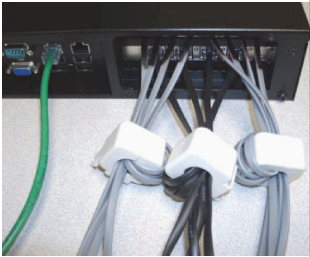
OpenScape Branch 50i A84 - ferrite to be installed on FXO & FXS cables.	OpenScape Branch DP14E, DP14T and DP24 - ferrite to be installed on FXS -cables.	

Table 2: Install Ferrites at FXO/FXS lines

Loop up to 4 cables per Ferrite so that each cable is passing twice through ferrite. Close the ferrite by pressing the two halves together without jamming a cable. The ferrite must be totally closed. It should not be visible to see through the opening. The ferrite must be installed about 10cm (4 inches) from the OSB 501 connectors.

OpenScape Branch 50i A84.	OpenScape Branch DP14E, DP14T and DP24.	

7.2 OpenScape Branch 500i E1/T1 PRI Redundancy Splitter Box, Installation Guide

This guide describes the installation of the OpenScape Branch 500i E1/T1 PRI Splitter Box.

When physically connecting the IP interfaces of the OSB 500i, it is **important** that each server is connected to a different Layer 2 switch (or router). This will help to ensure greater reliability of the overall solution by eliminating the possibility of failure in a single Layer 2 switch (or router) resulting in both OSB 500i servers failing.

The splitter box is totally passive, requiring no power.

Once the physical connects have been completed redundancy must be configured in the CMP OpenScape Branch Assistant. For each OpenScape Branch 500i, under Network Services, activate redundancy for the OpenScape Branch and also activate redundancy for PRI interfaces.

Splitting PRI Links Between Two OpenScape Branch 500i Nodes

The splitter box will be situated between the two OSB 500i servers in the rack.

OpenScape Branch Redundancy requires both OpenScape Branch 500i nodes be the same model e.g. DP4 or DP8.

The splitter box accommodates up to 4 such splitter boards. Each splitter board has six connections, arranged in 2 sets of 3 cables. The connector arrangement for each splitter board will be:

- 6 RJ-45 sockets, arranged as 2 columns of 3 sockets.
- PRI in from the PSTN in the center socket
- PRI out to the top OpenScape Branch 500i in the upper socket
- PRI out to the lower OpenScape Branch 500i in the bottom socket

A USB-to-USB cable (cross connect) no longer than 16 feet must be connected between the Master node and Backup node when PRI redundancy is required.

The splitter box is engineered to accommodate either four or eight split PRI links,
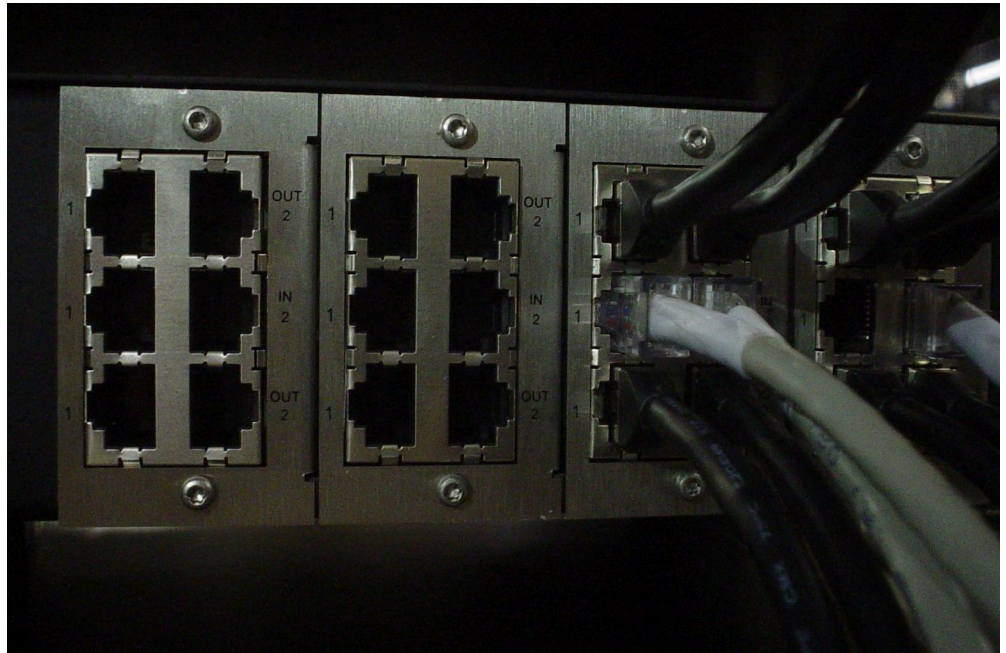
Splitter Box Connection Example

The splitter box, located between two OpenScape Branch 500is, in the figure below has 4 splitter boards installed. Center of the 3 cables is the PRI link from the PSTN (the grey cables in the picture), and the other 2 cables are split one to each OpenScape Branch 500i node. The figure shows a splitter box capable of handling 8 PRI links, which is the capacity of the OpenScape Branch 500i.

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