OpenScape Business

How to: configure SIP Trunk for Verizon IP Trunk Services

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Date	Version	Changes
10/05/2013	1.0	Converted to Unify Template
09/10/2024	1.1	Editorial changes

Note: The basis for this document is the current OpenScape Business at the time of certification. Since OpenScape Business is constantly developed, input masks and interfaces as well as requirements may change in the future. The settings and entries described here then apply accordingly.

Introduction

This application note highlights the use and setup for OpenScape Business with Verizon IP Trunks and Verizon IP Contact Center Trunk Services (IPCC). OpenScape Business became generally available on July 13, 2012. Verizon has certified the OpenScape Business for compatibility in accordance with their US Retail VoIP, EMEA Retail VoIP and IPCC Interoperability test plans.

A Note on Standards Compliance

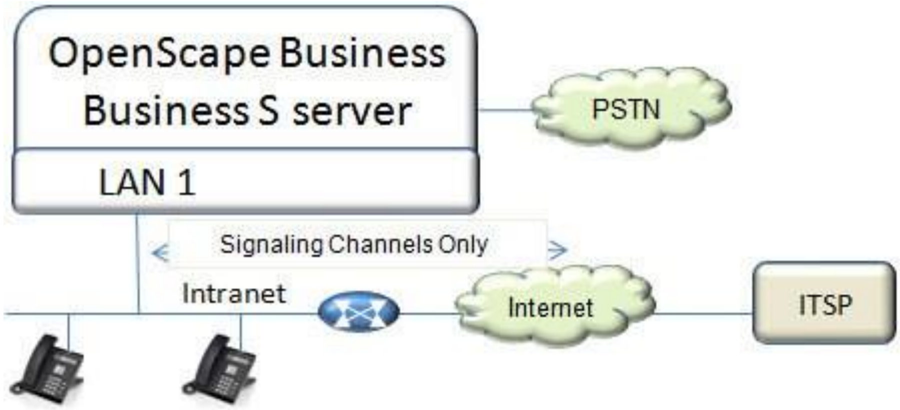
Due to interpretation, conformance with standards does not automatically imply that products will properly interoperate. It is absolutely necessary to perform interoperability testing to insure expected results. Verizon has performed interoperability testing and certifies that the OpenScape Business system meets Verizon support expectations when implemented following the provisioning outlined in this brief with exceptions where noted.

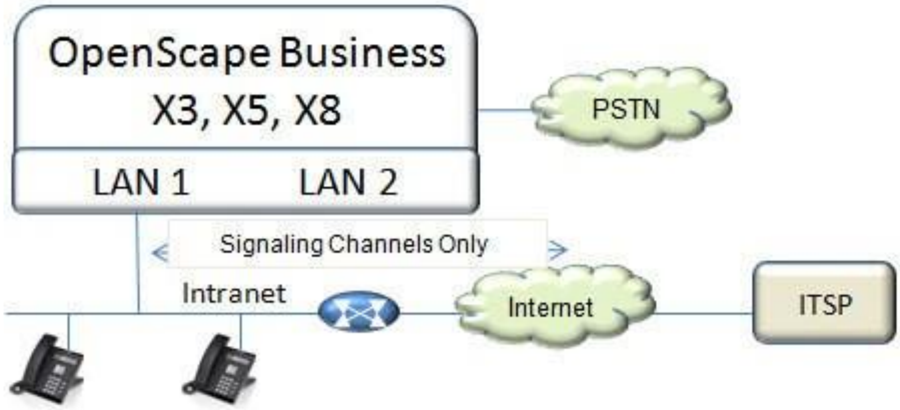
Implementations of OpenScape Business using alternative provisioning or other software version or alternate Session Border Control (SBC) elements must be locally tested to insure interoperability. Project level support for these non-certified elements can be requested for via the customer's Verizon Account team.

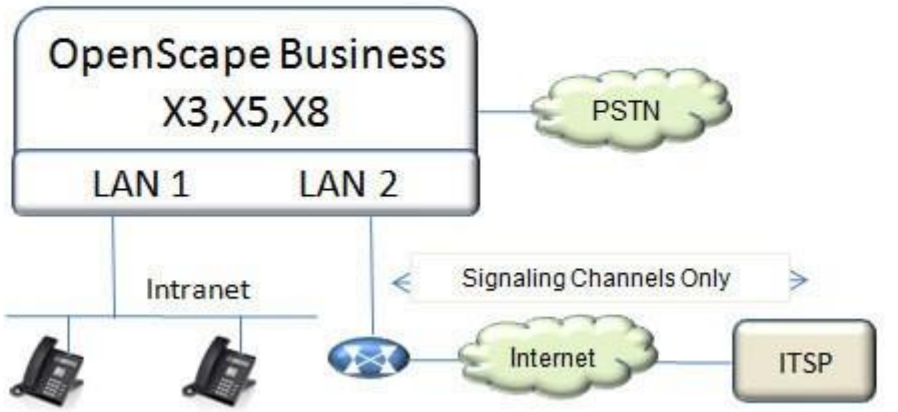
OpenScape Business Reference Architecture

OpenScape Business may be designed in modular fashion from simple single server applications through active/active dual processing designs using geographically distributed processing nodes for high availability. With OpenScape Business, OpenScape software may run on industry standard server hardware or within IT environments employing virtual machines.

NOTE: Verizon certification lab setup with Virtual Farm 1 and Transformed Site with disaster recovery.







Verizon IP Trunk Service Highlight

Verizon IP Trunk Services simplify network management and drive operational efficiencies by enabling the convergence of voice and data traffic on the same access connection. Verizon provides native SIP trunks directly to OpenScape Business solution over Private IP or Internet Dedicated Access facilities. Due to the extensibility of the Verizon VoIP network, now OpenScape Business customers can consolidate suppliers and obtain local exchange services using Verizon IP Trunks.

Verizon IP trunks can be provisioned to provide outbound calls and direct inward dial (DID) calls.

Verizon Burstable Enterprise Shared Trunks (BEST) - Verizon's BEST is an IP trunk service billing feature that allows pooling of IP trunk sessions for multiple site customers. BEST services are applicable where Verizon IP trunks are delivered at each customer site vs. a central or regional trunk deployment model. BEST is an industry first and allows the customer to take advantage of IP trunk traffic engineering at the enterprise level. Traditional trunk services and competitive IP trunk service sessions are normally, engineered for peak calling times for each customer site. With Verizon BEST enabled, the customer's IP trunk sessions can be combined into an enterprise view which can result in significant reduction of IP call sessions (and costs) due to the typical over-subscription. No special OpenScape Business provisioning is required to take advantage of Verizon BEST features.

Verizon VoIP Enterprise Routing (VIPER) - Verizon's VIPER feature for IP trunks eliminates domestic and international per minute calling charges for business-to-business calls made between Verizon VoIP VIPER customers in the U.S. and Europe. Because the new service is enabled on the Verizon network, customers don't have to deploy any additional software or hardware. Customers only need to have VIPER feature enabled on their IP trunks to take advantage of free calling to other VIPER enabled accounts (no special OpenScape Business provisioning is required).

OpenScape Business Configuration – Verizon IP Trunks

This section will outline the steps for the Configuration of the Verizon SIP Trunks with the OpenScape Business system. The configuration requires the creation or modification of the database within the OpenScape Business system.

The documented steps assume that the system administrator is a certified technician on the OpenScape Business platform.

The configuration assumes that the Routing information has been completed to allow the OpenScape Business system to access the internet as well as the Verizon Registration destination.

Configure the OpenScape Business System Information

This section will provide the configuration steps for programming the OpenScape Business system.

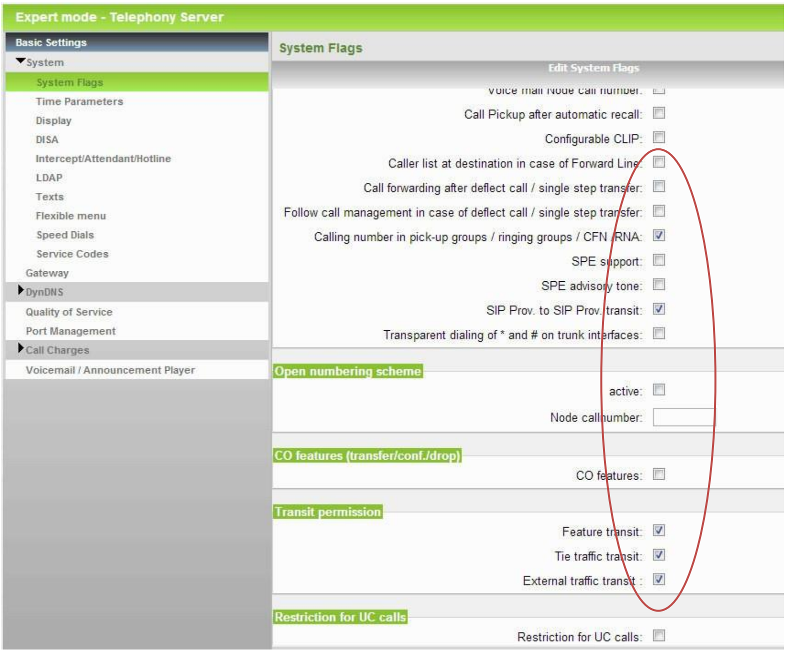
Open the OpenScape Business System Administration tool

Launch the OpenScape Business Administration tool from your web browser.

Once the portal is opened enter the user name and password to open the main menu screen.

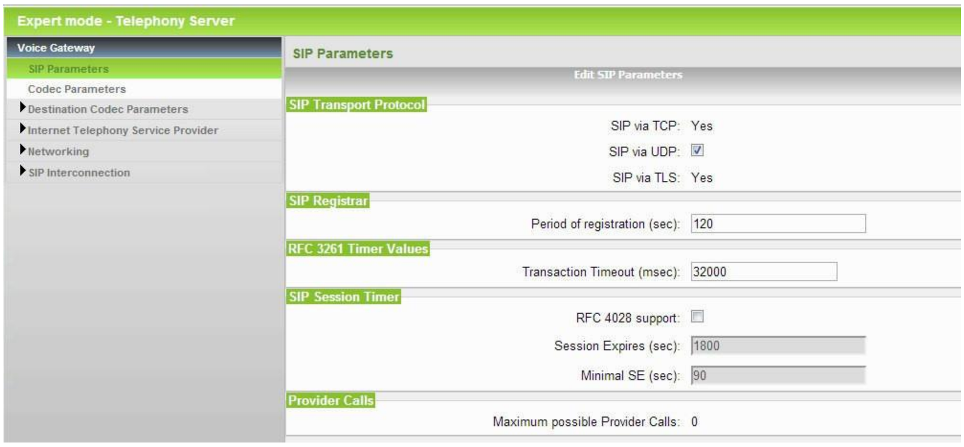
Configure the system Parameters

Under the Expert > Basic Settings> System Flags menu insure that the following flags are enabled



Setting Up the General SIP Trunk Parameters

From the main menu select Expert > Telephony server >Voice Gateway> SIP Parameters



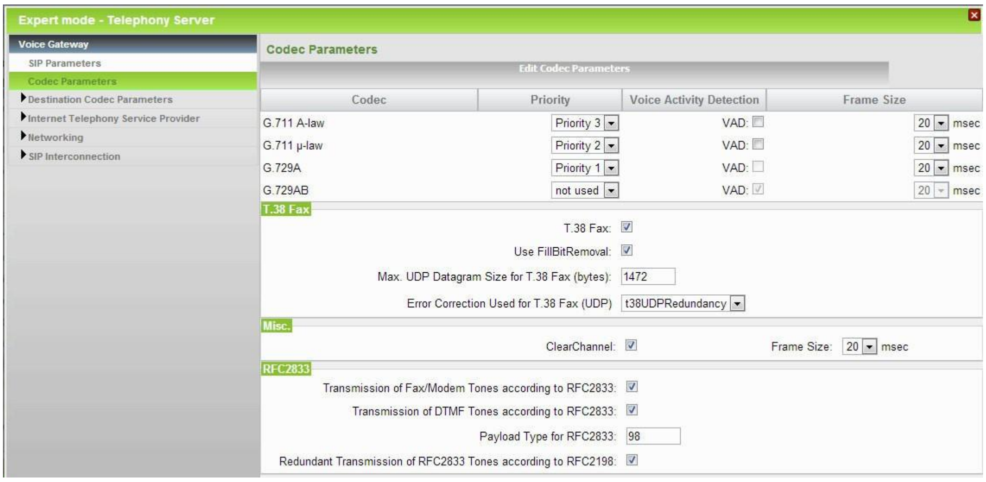
Insure that the SIP transport protocol flags are set as displayed above

Insure that the SIP Session Timer flags are set as displayed below

Press the Apply key to save your changes

Select Expert > Telephony server >Voice Gateway> Codec Parameters and select "Edit Codec Parameters"

Insure that the Codec Flags, the T.38 flags, Misc. flags and RFC 2833 flags are set as displayed.



After making the changes press the Apply button to save your changes

Set STUN Configuration Parameter

Select Expert > Telephony server >Voice Gateway> Internet Telephony Service Provider > Edit STUN Configuration

Select —Use static IP‖ as the STUN Mode

Enter your Public IP address information

Leave the Public SIP Port of 5060 in place

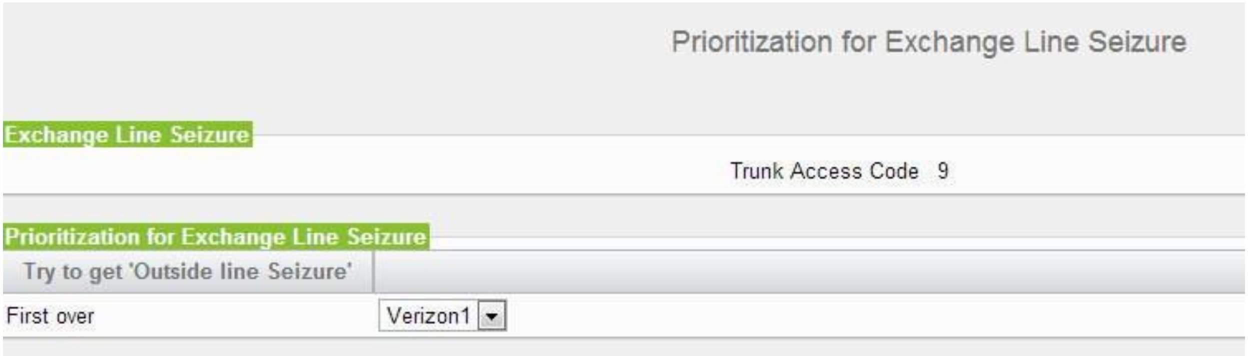
After making the changes press the Apply button to save your changes

Please note that this setting is required even though STUN is not required by Verizon

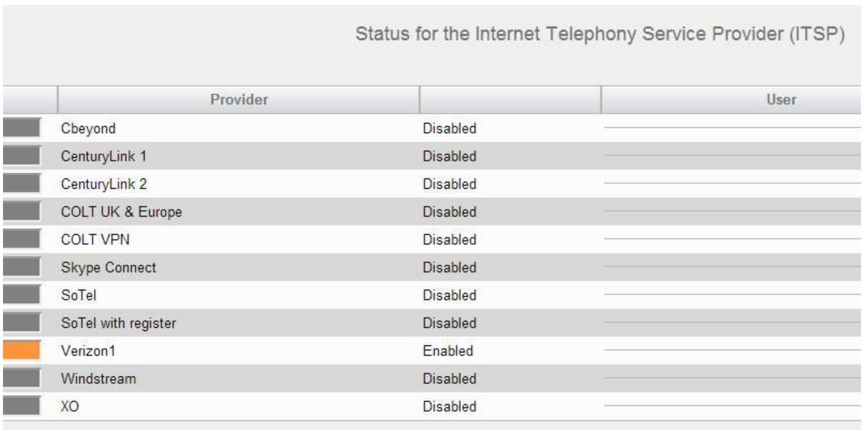
Define Special Phone Numbers and Primary Line Seizure Route Group

This **Special Phone Numbers** form allows you define special telephone numbers such as 911. Please note that 9C911 is a default entry. Press Ok & Next to move to the next step.

The **Prioritization for Exchange Line Seizure form** is used to define the Primary route group that will be selected when a user dials 9 to place an outbound call. Please insure that the Verizon group is the first entry. Press Ok & Next to move to the next step**.**



The **Status for the ITSP** screen below will display the registration status of the Verizon ITSP. The orange indication indicates that a connection has not been established to the ITSP After revising the ITSP profile and adding the Internet Telephony numbers you will be able to redisplay the status to confirm the connection status of the group. Continue to press the Ok &Next button until the Finish button appears. Press the Finish button to complete this portion of the programming.



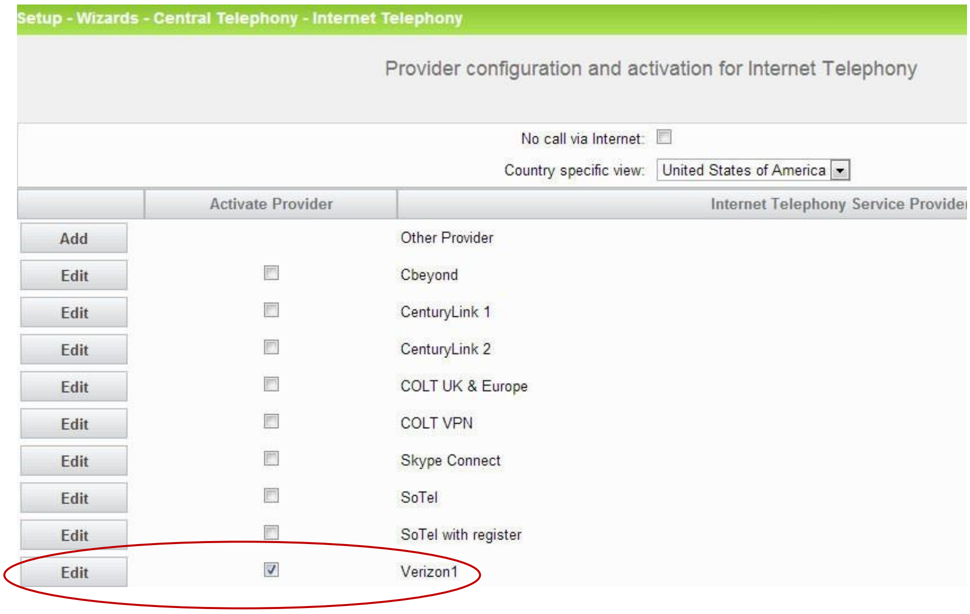
Status for the Internet Telephony Service Provider (ITSP)

Provider		User
Cbeyond	Disabled	
CenturyLink 1	Disabled	
CenturyLink 2	Disabled	
COLT UK & Europe	Disabled	
COLT VPN	Disabled	
Skype Connect	Disabled	
SoTel	Disabled	
SoTel with register	Disabled	
Verizon1	Enabled	
Windstream	Disabled	
XO	Disabled	

Revise the Verizon ITSP profile Domain and Proxy information

The profile for the Verizon SIP trunks has already been loaded into the OpenScape Business and contains the low level parameter settings. The domain information, proxy information and STN settings will need to be entered.

Select Setup > Wizards > Central Telephony > Internet Telephony to display the list of approved ITSPs.
Select the Edit Button associated with the Verizon1 provider

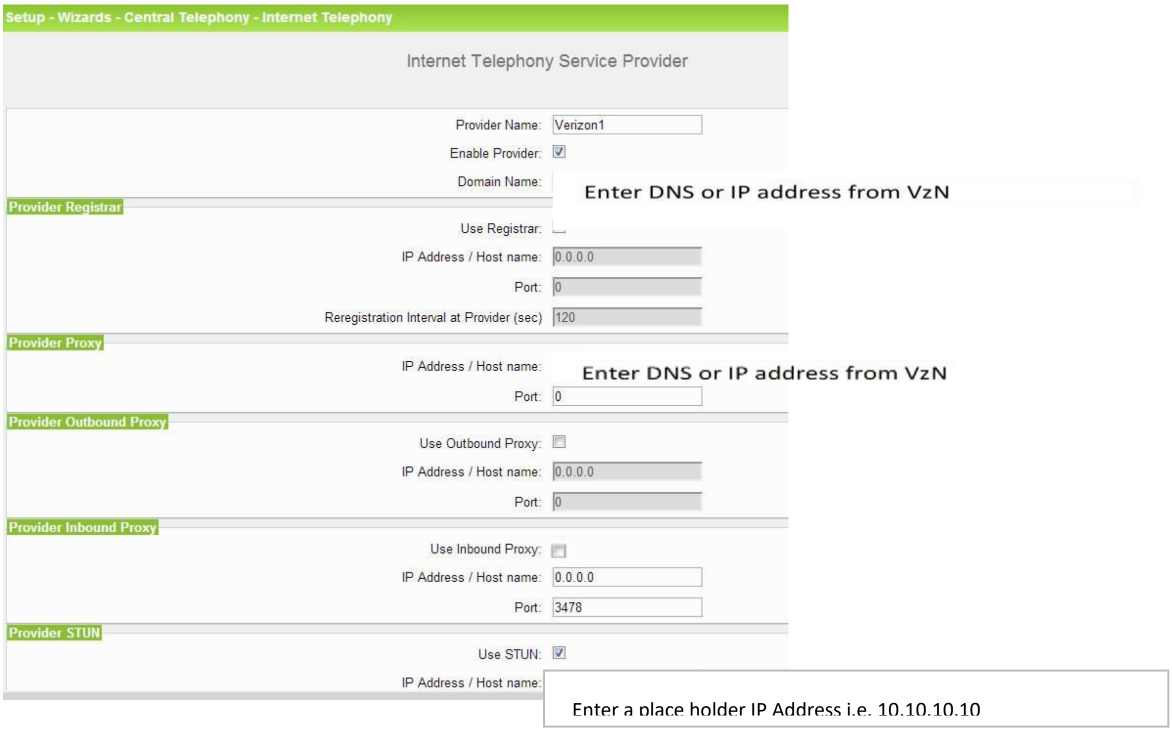


In the Domain Name field you will need to enter the Domain Name or IP address information that is received from Verizon. This is because there are no fixed-public servers for Verizon and a private VPN will be used for connection to the Verizon services.

In the Provider Proxy group you will need to enter the Domain Name or IP address information and the port ID that is received from Verizon. The typical port ID is 5060.

In the Provider STUN group click on the Use STUN check box and enter a —dummy IP address such as 10.10.10.10

Click on the Apply button to write the information to the data base.



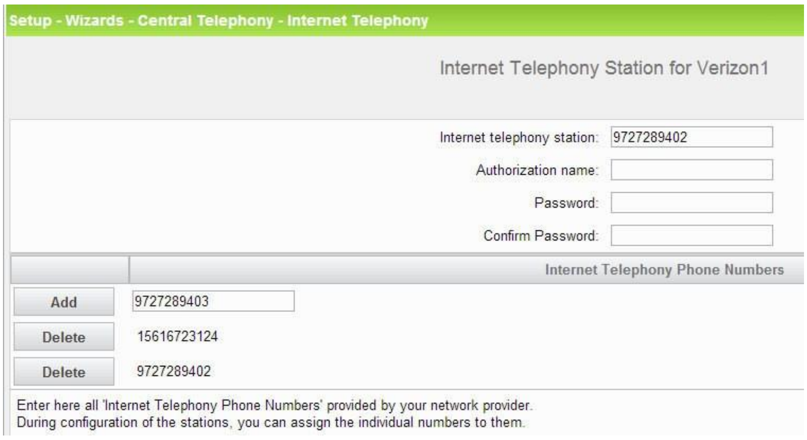
After inputting the Domain Name, the Proxy Provider information, press the Ok button to accept the changes and then press Ok& Next to move to the next form.

Add the Main Internet Telephony Station Number

Insert the Main Telephone number in the Internet telephony station field. Please confirm with Verizon that an authorization name and password are not required. Press Ok to accept your input

Add the Internet Telephony Phone Numbers

This step is used to add the set of call numbers received from Verizon that will be used for direct inward dialing to tour stations and groups.



In the Internet Telephony Phone Numbers section, enter the number input as the Main Internet Telephony Station number and press the Add button. In the example above the first number that should be entered is 9727289402.

Continue the above process to enter the balance of the Internet Telephony Station Numbers.

Press the OK & Next button

Associate the Internet Telephony Phone Numbers with the system users and groups

This section provides the information for assigning the Internet Telephony Phone Numbers to the system users and groups.

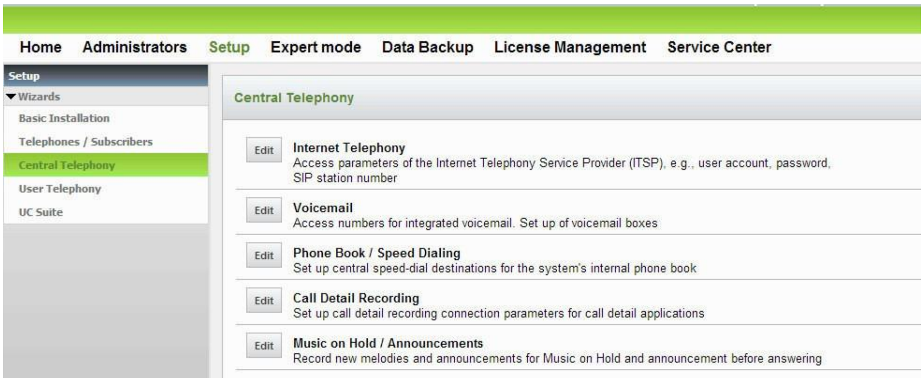
Using the list box associated with each of the Internet Telephony Phone Numbers, select a station or Group as the target destination for the selected telephone number.

You may select one of the numbers as the default entry. The selected telephone number will be displayed for all outbound calls placed by stations that are not assigned an Internet Telephony Phone Number.

After assigning all of your numbers press the Ok &Next button to advance through the balance of the forms until the finish button appears. Press the Finish button to complete the ITSP programming.

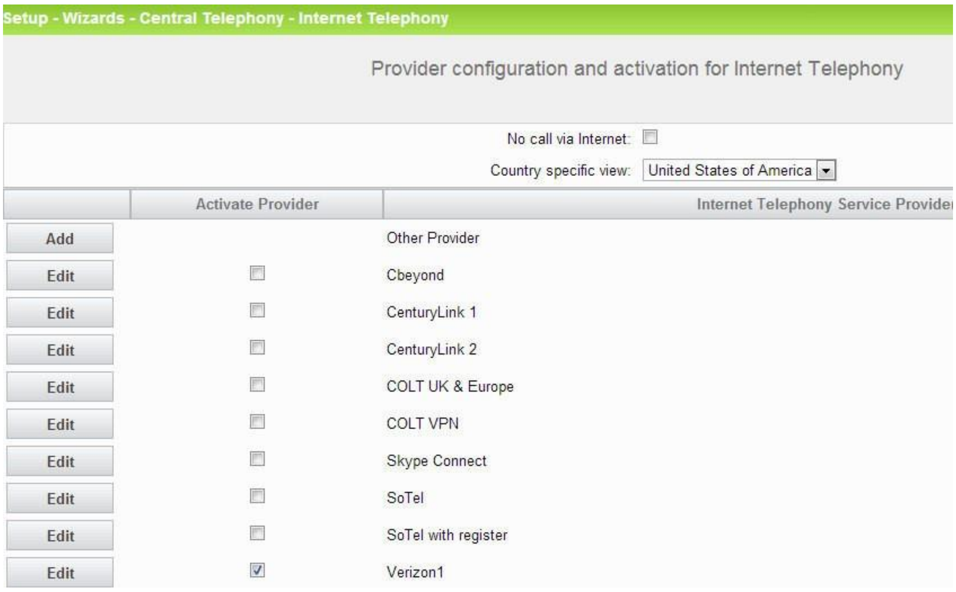
Select the Verizon ITSP profile

Select Setup > Wizards > Central Telephony > Internet Telephony to display the list of approved ITSPs.



Uncheck the ―No call via Internet‖ box to display the ITSPs for the United States

Enable the Verizon ITSP entry and press Ok & Next to move to the next step

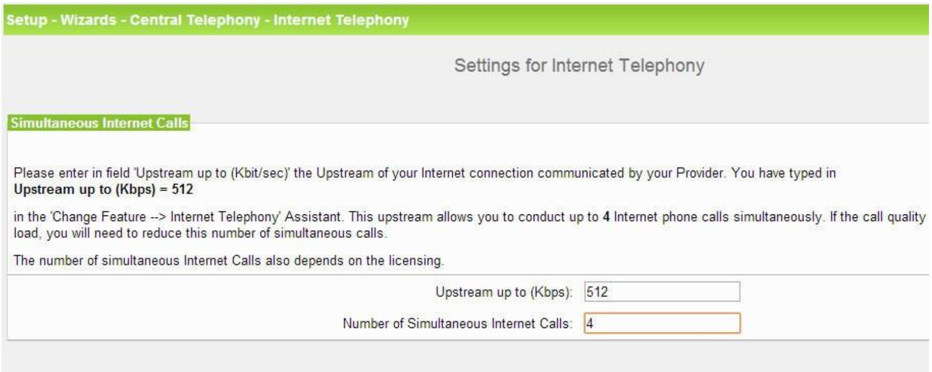


Uncheck the ―No call via Internet‖ box to display the ITSPs for the United States

Enable the Verizon ITSP entry and press Ok & Next to move to the next step

Define the number of concurrent voice sessions

The **Settings for Internet Telephony** form is used to define the number of concurrent voice sessions that will be supported. The maximum number of sessions supported by the X3, X5 and X8 is 60. The maximum number of sessions supported by the Business S system is 120. This assumes that the internet medium is capable of handling the anticipated traffic



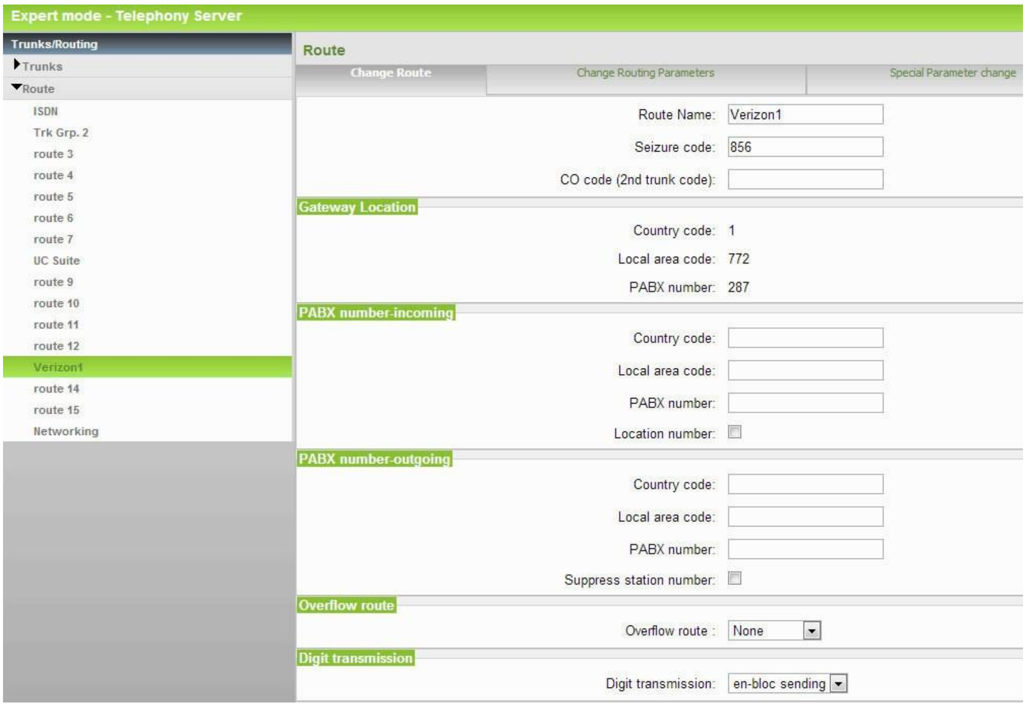
Assuming 128kbps per call enter the upstream kbps size to calculate the number of concurrent sessions. In the example above entering a value of 512 kbps resulted in 4 concurrent voice sessions

Press Ok & Next to move to the next step

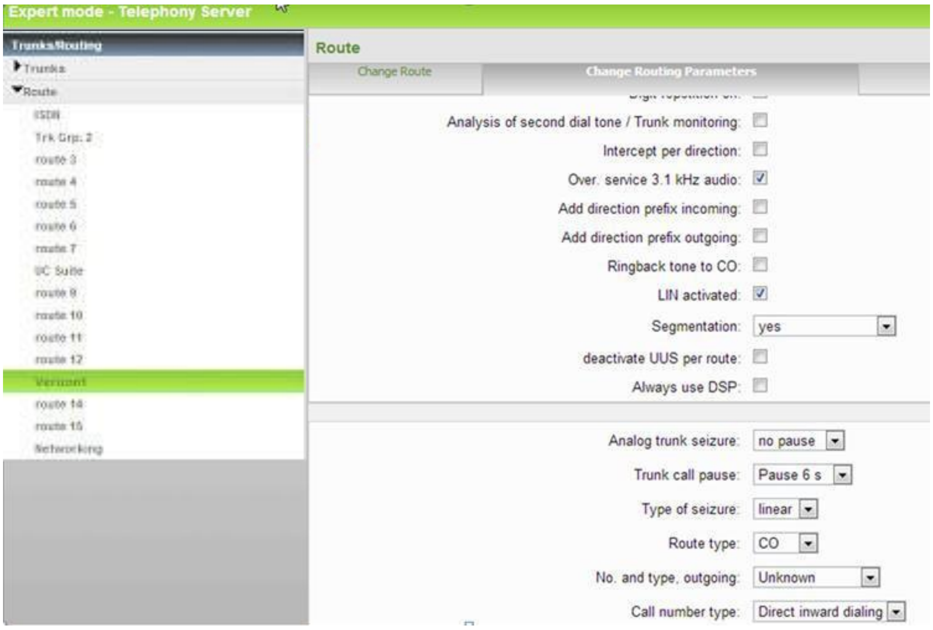
Please note that each ISP session will require an OSBiz S2M/SIP Trunk license. The licenses will have to be enabled under the License Management > CO Trunks

Confirm the Trunk Route Settings

Under the Expert Mode > Telephony Server > Trunks & Routing > Route select the Verizon1 trunk group and then select Change Route to confirm that the Gateway Location information entered during the original system setup is correct and the defined Seizure entered as part of the Wizard is accurate



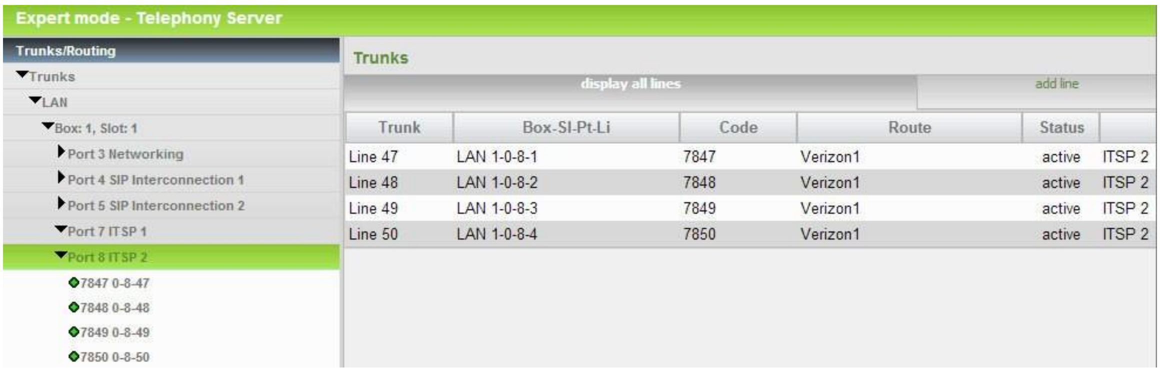
Select the Change Route Parameters button to display the form. Confirm or revise your entries to match the form displayed below.



Press the Apply button after making the changes

Confirm number of SIP sessions have been added the selected ITSP group

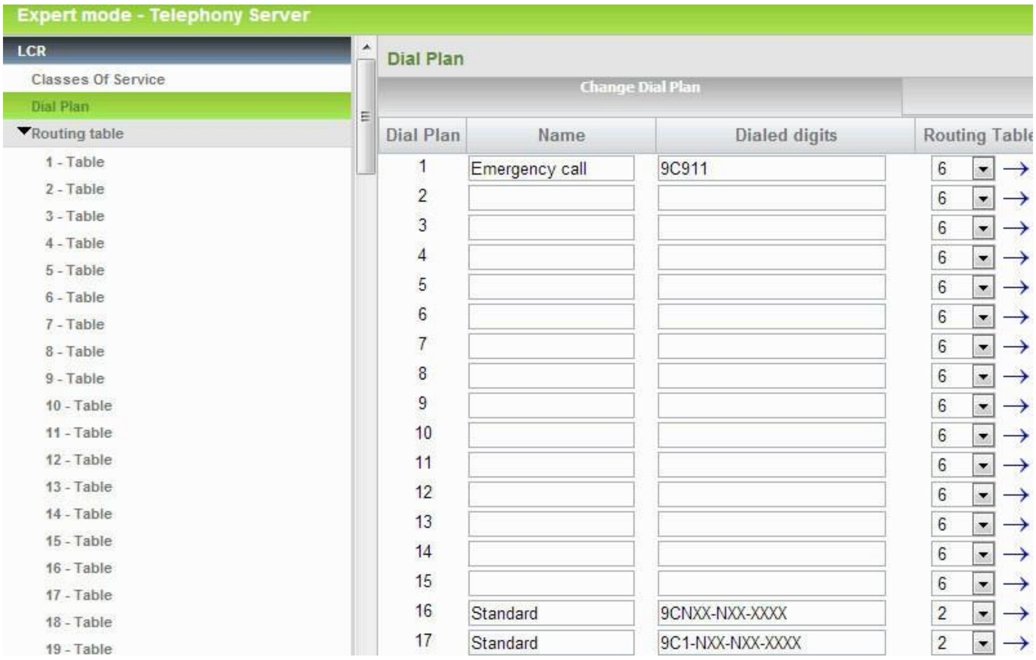
Under the Expert Mode > Telephony Server > Trunks & Routing >Trunks > LAN section you can select the "Port – ITSP" that is associated with the configured provider to confirm the number of channels added in the wizard have been added to the Verizon group. After confirming the quantity is correct exit the form to return to the main menu.



Least Cost Routing Dial Plan

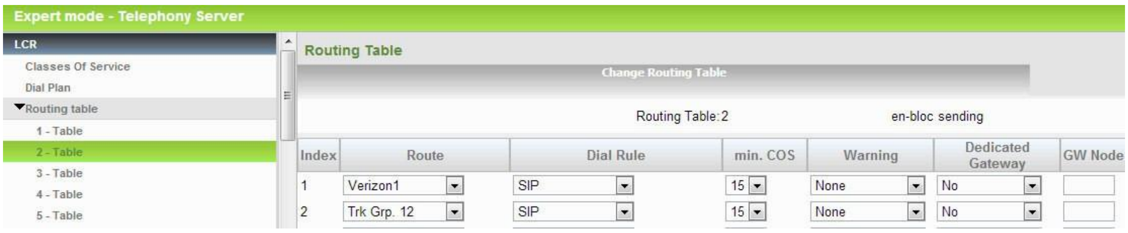
This step is required to allow the station user to dial a PSTN telephone number and have the outbound call route over the selected Verizon SIP trunk group.

Under the Expert Mode > Telephony Server >LCR >Dial Plan selection the entries for dial 9 access to be assigned to a Routing Table. In the example below the route table selected is 2. Press the blue arrow to the right of the route table entry to display the route table content.



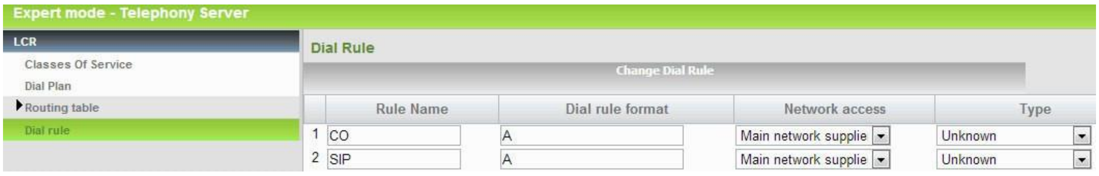
The information under Expert Mode > Telephony Server >LCR >Routing Table will be displayed. In the example below the Verizon1 group is primary selection. The dial rule is SIP and the minimum COS is 15.

In applications where the My Fax application will be used the Min Cos must be set to 1.



The Dial Rule may be confirmed under Expert Mode > Telephony Server >LCR >Dial Rule.

In the example below the out dial rule A will echo all digits to the PSTN after the access code “9”.



The LCR Out dial rule is used to define the digit string that will be sent to the PSTN.

The system administrator uses a set of command codes to configure how much and which portions of the number that was dialed.

A dial string is created using field separators between dial pattern groups. The separator is either the letter “C” that will return dial tone or the character “-“.

For example in the Dial plan string 9C1-NXX-XXX-XXXX

The “9” is the LCR access code and is field 1

The “C” is a separator and will return simulated dial tone to the user

The “1” is the entry in field one

The “-“is a separator

The “NXX” is the entry for field two

The “-“ is a separator

The “XXX” is the entry for field three

The “-“ is a separator

The “XXXX” is the entry for field four

The command codes are

“A” = dial the entire string after field one or after a specified ECHO field.

“EX” = Echo the digits from a specific field. i.e. E2 = Dial the digits in field 2

“D” = Insert a string of digits within the output. i.e. D408A

The Out dial rule for the SIP trunk call will be

Rule Name = Dial SIP

Rule Format = A (echo all digits after the LCR access code)

Procedure = Main Network Provider

TON = Unknown

High Level Troubleshooting OpenScape Business and IP Trunks

Refer to the OpenScape Business Service Manual, Service Documentation, for OpenScape Business trouble shooting steps. The latest service documentation maybe found via “New Company” Business Area on-line web portal (SEBA).

Additional Documentation References

OpenScape Business General Information

http://wiki.unify.com/wiki/OpenScape_Business

OpenScape Business and SIP Provider Information

http://wiki.unify.com/wiki/OpenScape_Business#Supported_VoIP_Provider

Network Configuration for VoIP Providers

http://wiki.Unify.com/wiki/Network_Configuration_for_VoIP_Providers List of Acronyms

Acronym	Description	Acronym	Description
B2BUA	Back-to-Back User Agent	**NCS**	Network Based Call Signaling Protocol
CCBS	Call Completion to Busy Subscriber	**NE**	Network Element
CCNR	Call Completion on No Reply	**NNI**	Network-Network Interface
CLIP	Calling Line Identification Presentation	**OCSP**	Online Certificate Status Protocol
CLIR	Calling Line Identification Presentation Restriction	**PBX**	Private Branch Exchange
COLP	Connected Line Identification Presentation	**PPPoE**	Point to Point Protocol over Ethernet
COLR	Connected Line Identification Presentation Restriction	**PSAP**	Public Safety Answering Point
CRL	Certificate Revocation List	**PSTN**	Public Switched Telephone Network
DID	Direct Inward Dialing	**QoS**	Quality of Service
DN	Directory Number	**RFC**	Request For Comments
DNS	Domain Name System	**RTP**	Real-time Transport Protocol
DNS	Domain Name Server	**SBC**	Session Border Controller
DSCP	Differentiated Services Code Point	**SDP**	Session Description Protocol
DSL	Digital Subscriber Line	**SIP**	Session Initiation Protocol
DSLAM	Digital Subscriber Line Access Multiplexer	**SLA**	Service Level Agreement
DTMF	Dual-Tone Multifrequency	**SP**	Service Provider

ENUM	Telephone Number Mapping	**SSNE**	SIP Signaling Network Element
ETSI	European Telecommunication Standardization Institute	**TCAP**	Transaction Capabilities Application Part (SS7)
FQDN	Fully Qualified Domain Name	**TCP**	Transmission Control Protocol
GWY	Gateway	**TISPAN**	Telecommunications & Internet Converged Services Networking
IP	Internet Protocol	**UA**	User Agent
ISUP	ISDN User Part (SS7)	**UAC**	User Agent Client
LIN	Location Identification Number	**UAS**	User Agent Server
MG	Media Gateway	**URI**	Uniform Resource Identifier
MGC	Media Gateway Controller	**VCU**	Video Conference Unit
MGCP	Media Gateway Control protocol	**VM MS**	Voice Mail/Media Server
MTP	Message Transfer Part (SS7)	**V-MG**	Video Media Gateway
NAPTR	Naming Authority Pointer Records	**XML**	Extensible Markup Language