Avaya one-X Quick Edition and Quintum Tenor SSG

Configuration Guide for use with AT&T's IP Flexible Reach Service

> Version 1 / Issue 7 April 1, 2008

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1. OVERVIEW

This document describes the configuration procedures required for an Avaya one-X Quick Edition and Quintum Tenor Survivable SIP Gateway (SSG) to make full use of the capabilities of AT&T Flex Reach Trunk solution.

The Quick Edition telephone uses the Session Initiation Protocol (SIP) to communicate with Tenor Gateway for call control. It also translates voice to audio packets for transmission across a packet network.

This guide describes the specific configuration items that are important for use with AT&T Flex Reach solution. It does not describe the purpose and use of all configuration items on the Quick Edition and Tenor Gateway. For those details, see the *Avaya one-X Quick Edition Release 3.0.0 System Administrator Guide* 1 supplied by Avaya and the *Tenor AF Hardware Guide* 2 supplied by Quintum Technologies Inc.

2. NETWORK CONFIGURATION

Figure 1 Typical network layout

Figure 1 shows a typical network configuration on the customer premise. The Quick Edition telephones and the Tenor gateway can be connected to the customer LAN using an Ethernet switch and can reside behind the AT&T managed router. Power is ideally supplied to Quick Edition telephones by plugging the telephones into 802.3af PoE-enabled Ethernet wall jacks using the supplied CAT5 modular line cords.

The Tenor gateway acts as a registrar and proxy to the Quick Edition phones and provides connectivity to AT&T Flex Reach trunk. AT&T Flex Reach service provides NAT traversal capability and connectivity to PSTN, other Avaya QE/Quintum IP-PBXs, and TDM PBXs.

A DHCP server is required on the customer LAN to assign the IP addresses to the Quick Edition phones. The DHCP server can either be an existing device on the customer site, or be enabled on the AT&T managed router.

If the DHCP server is not available when the system boots up, the Quick Edition phones will automatically configure their network interfaces with the IP addresses in the range of 169.254.x.x. This feature allows QE phones to communicate with each other on the local network. When the DHCP server is available, recycling the power on the QE phones will enable them to acquire the standard private IP addresses from the DHCP server.

3. ONE-X QUICK EDITION 4610/4621 CONFIGURATION

The Quick Edition is a distributed system, with the intelligence and the site configuration held and stored on each Quick Edition IP telephone that comprises that site. When a configuration change is made on a telephone in this site, the change is automatically sent to all the other Quick Edition IP telephones in this site using multicast communications.

The Quick Edition is configured through its embedded Web Server. Because of its distributed nature, the configuration can be done to any Quick Edition device IP address.

The capabilities of the Quick Edition have been verified for use with Quintum Tenor Gateway and AT&T Flex Reach service based on the settings described in the following table. For more information on the meaning, purpose, and applicability of the individual configuration items, see the *Avaya one-X Quick Edition Release 3.0.0 System Administrator Guide* [1] supplied by Avaya.

3.1. Verifying QE telephone version

Perform the following steps to verify that the QE 4610 and 4621 IP phones are loaded with compatible software.

- 1. Click the options button () on the telephone to bring up the options menu.
- 2. Select the following menu items: Set Details->Release Ver
- 3. Verify the following items:

 Release Ver	3.0.6
Firmware Version	7.0.52
Boot	2.2.14

3.2. Accessing System Level Configuration

Step	Command	Purpose
Step 1	Find out IP address of a QE set Click on Options button. Select Set Details → Ext IP and MAC address would be listed.	The IP address of a QE telephone is needed to access the system level configuration.
Step 2	Access the web portal of the QE set Enter http:// <ip address="" of<br="">the QE set> Select System Options Enter your Admin Password Click Login.</ip>	This is where we will be able to configure the system level configuration.

3.3. Codec Preference Configuration

Setting codec sequence preference is a system level configuration. Perform the following steps to set G729 to be the first codec after you have logged into the system option web portal of a QE telephone.

Step	Command	Purpose
Step 1	Select Networking on System Options Menu	Gets you to the menu item to configure codec preference
Step 2	Select audio Bandwidth Click Change Details Set Audio Bandwidth to Low	Sets G729A codec preference over G711u/A codec

Figure 2 Setting Codec Preference

3.4. Service Provider Configuration

This section describes the service provider configuration that is required to connect to AT&T IP Flex Reach Service through the Quintum Tenor gateway. The Tenor gateway is acting as a SIP registrar and proxy server for QE phones. This example is based on the network topology shown in Figure 1. The IP Address used in this example may be different depending on your site configuration. Please see figure 3 below for reference.

In order to forward incoming SIP message through the WAN port to the Tenor gateway, it needs to configure managed router to create a mapping between WAN port 5060 to Tenor gateway's internal IP address and port.

Step	Command	Notes
Step 1	Add a Service Provider Domain. Set System Options/Service Provider/Add Configuration/Domain Name = "172.16.4.3"	Set the Quick Edition service provider domain name. The domain name must match Tenor gateway's IP address.
Step 2	Set Proxy Host. Set System Options/Service Provider/Add Configuration/Proxy Host = "172.16.4.3"	The proxy host must match Tenor gateway's proxy IP address.
Step 3	Set Proxy Port. Set System Options/Service Provider/Add Configuration/Proxy Port = "5060"	The proxy port must match Tenor gateway's proxy port.
Step 4	<pre>Set Registrar Host. Set System Options/Service Provider/Add Configuration/Registrar Host =</pre>	The registrar host must match Tenor gateway's registrar IP address.
Step 5	Set Registrar Port. Set System Options/Service Provider/Add Configuration/Registrar Port = "5060"	Set the registrar port to match the Tenor gateway's registrar port.
Step 6	Leave Outbound Proxy Host and Port empty	
Step 7	<pre>Set Realm. Set System Options/Service Provider/Add Configuration/Realm = "172.16.4.3"</pre>	Set the realm to match the domain configured in Step 2.
Step 8	Set Register Expiry Time. Set System Options/Service Provider/Add Configuration/Register Expiry Time = 60	60 seconds registration expiry time is adequate in most cases where phones and the gateway reside in the same network.

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Figure 3 Service Provider Configuration

3.5. Service Provider Identity

AT&T provides two types of telephone numbers (TNs) --- virtual telephone numbers (VTNs) and non virtual telephone numbers. VTNs are usually comprised of 10 digits while non-VTNs are usually comprised of 7 or less digits. For example, if a QE telephone is associated with a VTN, the number received from AT&T would be 10 digits (i.e. 732-216-2700). If a QE telephone is associated with a non virtual TN, the number received from AT&T would be 7 digits or less (i.e. 216-2701 for a 908-216-2701 TN). However, in both cases, the 10 digit number must be sent as calling party number when originating calls to AT&T. The implication of having both VTN and non-VTN identities is that the QE telephone should be able to receive calls from both numbers but will only use the VTN number to make outgoing calls..

3.5.1. Configuring VTN

This section describes how to provision VTN from the QE System Options Web Portal. Please see figure 4 below for reference.

Step	Command	Notes
Step 1	Add Service Provider Identity.	This identity should match a
	Set System Options/Service Provider/Domain 172.16.4.3/Identities/Add Identity/Identity	AT&T trunk.

	= "7322162700"	
Step 2	<pre>Set Authentication Password. Set System Options/Service Provider/Domain 172.16.4.3/Identities/Add Identity/Password = ~7322162700"</pre>	Any password will do since registration and incoming request are not challenged.
Step 3	Verify Authentication Password Set System Options/Service Provider/Domain 172.16.4.3/Identities/Add Identity/Verify Password = "7322162700"	This password must match the password entered in the "Password" field in Step 2.
Step 4	Select Incoming Extension. Set System Options/Service Provider/Domain 172.16.4.3/Identities/Add Identity/Incoming Extension = "201"	Select the internal extension that will receive incoming calls targeted for this VTN. Select the "Global" option from drop down list to enable the auto attendant for this VTN.
Step 5	Select Outgoing Extension. Set System Options/Service Provider/Domain 172.16.4.3/Identities/Add Identity/Outgoing Extension = "201"	Select the internal extension that is allowed to make calls using this VTN.
Step 6	Leave AA Enabled and AA Script as it is	They are only used for Auto Attendant functionality.

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Figure 4 VTN configuration from QE Web portal

3.5.2. Configuring non-VTN

The first step in configuring a non-VTN number in a QE telephone is to create a "non-existing" extension which will ultimately be used for outgoing extension for the non-VTN identity. The main purpose of creating such a non existing extension is to disallow any QE telephone from making outgoing calls using the non-VTN number. This "non-existing" extension can be used for all non-VTN identities in one QE network. In section 3.5.1 we have configured the VTN number (9082162700) for QE extension 201. Follow the steps below to provision non-VTN number (2162700) for the same QE extension 201. Please see figure 5, 6 and 7 for reference.

Step	Command	Notes
Step 1	Add a "non existing" extension manually Set System Options/Set Management/Add Extension/Extension = "303"	Make sure the extension doesn't exist and is in the valid "Extension Range" configured in System Options/DialPlan/Extension Range.
Step 2	Set the name of the "non existing" extension	
	Set System Options/Set Management/Add Extension/Name = "303"	

Step 3	<pre>Set the MAC address of the "non existing" extension Set System Options/Set Management/Add Extension/MAC Address = "00:00:00:00:00:00"</pre>	Setting MAC address to an invalid value like 00:00:00:00:00:00 ensures that there won't be any conflict with existing MAC devices.	
Step 4	Create the "non existing" extension Click the "Validate" button followed by the "Add Extension" button to create the extension.	This non existing extension can be used for the outgoing extensions of all the non-VTNs in the PBX.	
Step 5	Add Service Provider Identity. Set System Options/Service Provider/Domain 216.13.42.88/Identities/Add Identity/Identity = "2162700"	This identity should match a non-VTN provisioned for this AT&T trunk.	
Step 6	Set Authentication Password. Set System Options/Service Provider/Domain 216.13.42.88/Identities/Add Identity/Password = "2162700"	Any password will do since registration and incoming request are not challenged.	
Step 7	Verify Authentication Password Set System Options/Service Provider/Domain 216.13.42.88/Identities/Add Identity/Verify Password = "2162700"	This password must match the password entered in the "Password" field in Step 6.	
Step 8	Select Incoming Extension. Set System Options/Service Provider/Domain 216.13.42.88/Identities/Add Identity/Incoming Extension = "201"	Select the internal extension that will receive incoming calls targeted for this non-VTN. Select the "Global" option from drop down list to enable the auto attendant for this non-VTN.	
Step 9	Select Outgoing Extension. Set System Options/Service Provider/Domain 216.13.42.88/Identities/Add Identity/Outgoing Extension = "303"	Select the "non-existing" extension that is allowed to make calls using this non-VTN i.e. no extension is allowed to make calls using the non- VTN as its identity.	
Step 10	Leave AA Enabled and AA Script as it is	They are only used for Auto Attendant functionality.	

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Figure 5 Provisioning a non-existing extension

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Figure 6 Non-existing extension is shown along with the existing extensions

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Figure 7 Provisioning non-VTN using the "non-existing" extension in Outgoing Extension

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Figure 8 VTN and non-VTN identities provisioned for extension 201

4. MAKING CALLS USING QE

After all of the extensions have been properly configured from a QE web portal, you are ready to make calls. To make calls using the AT&T trunk, complete the following steps:

Step	Command	Notes
Step 1	Find the SIP Code from the Dial Plan Settings Go to System Options/Dial Plan/View Dial Plan Settings from the QE web portal and look up the SIP code	By default the SIP code is 8 unless changed by the administrator.
Step 2	<pre>Dial a number Using the telephone keypad, first enter the SIP Code (e.g. 8), and then the country code and then the VTN/non-VTN for calls within North America. For international call, enter SIP code, then 011 and then the country code followed by VTN/non-VTN. e.g. In order to dial a NJ number (732-216- 1203), you have to enter 817322161203 In order to dial a UK number (+44- 2476824003), you have to enter 8011442476824003</pre>	The prefix 1 (for North American calls) and 011 (for international calls) are being used by Quintum Tenor gateway to decide whether to route the call to the AT&T trunk or route it internally. Those prefixes have to be configured in the Quintum gateway also.

4.1. Making N11 Calls (211, 311, 411, 511, 611, 711, 811,911)

The Avaya one-X Quick Edition IP Phones will complete N11 calls via the AT&T IP Flexible Reach Network. See the network diagram in figure 1.

1. To place an N11 call, perform one of the following actions:

- handset operation: pick up the handset.
- hands-free operation: press the Speaker () button or a Line/Feature () button.
- headset operation: press the Headset () button.

2. Dial 8-N11

5. QUINTUM TENOR SURVIVABLE SIP GATEWAY (SSG)

This section describes the steps for configuring the Quintum Tenor AF Survivable SIP Gateway (SSG), to work with the Avaya one-X Quick Edition and AT&T's IP Flexible Reach Service. The Quintum Tenor AF Software release S105.17.01 was tested with the Avaya one-X Quick Edition version 3.0/3.1 and the AT&T IP Flexible Reach Service.

The Tenor AF Survivable SIP Gateway (SSG) is a signaling intermediary between the local IP endpoints (Avaya one-X phones) and the central SIP Server (AT&T IP Flexible Reach). SSG technology (internal to the Tenor) provides site survivability for branch offices in a single, integrated access solution. The SSG acts as an outbound proxy--all IP endpoints register to the SIP Server via SSG and all SIP signaling passes through it. It is an intelligent local agent that gathers and maintains routing information for all endpoints passing registrations and call signaling through it to the central SIP proxy.

In the event of a loss of connection with the central SIP Server, SSG takes control as the SIP session manager and uses its internal database of stored routing information to provide local routing support for all local IP endpoints (this routing information is automatically built from the registration and signaling information passed through the SSG acting as an outbound proxy).

5.1. Routing Scenarios Supported

• Failover from Primary to Secondary AT&T IP Border Element

5.2. Quintum Tenor AF Overview



Figure 9: Tenor AF Back Panel

- Power Adapter jack Connection port to external power supply.
- **DIAG** Enables you to perform software diagnostic procedures.
- **CONSOLE port** This RS-232 connector is used for connection to a PCs serial port via a DB-9 serial cable at 38400 bps 8 N 1, no flow control.
- LAN port 10/100 Base-T Ethernet port. This port provides an RJ-45 jack for an individual connection to a 10/100 Ethernet LAN switch or hub via RJ-45 cable; the interface is individually configured with a unique IP and MAC address.
- Port Label (Phone/FXS or Line/FXO ports) For Phone/FXS, provides an RJ-11 jack for connection to a PBX, Keyphone or analog phone. For Line/FXO, enables connection to another piece of equipment that houses your telephone lines running to the PSTN, such as the patch panel.

AF GENERAL SPECIFICATIONS

Dimensions: 1U high chassis

W 8 ¼" x H 2" x D 7" (W 21cm x H 5.1cm x D 18.73cm)

- Maximum weight: 1.3 lbs. (0.6kg)
- AC Power: 100-240 Volts AC, 50/60 Hz, 22 watts
- Operating temperature: 40° 104° F (5° 40° C)
- Operating humidity: 20% 80% non-condensing
- Telco: FCC Part 68, AS/ACIF S003, CS03, JATE, AS/ACIFS002:2001
- EMC: FCC Part 15 Class B, EN55022, EN55024
- EN61000-2-3, EN61000-3-3, AS/NZS3260
- Safety: UL60950, EN60950, AS/NZS60950

The Tenor AF SSG will support 50 simultaneous VoIP Calls. The Tenor AF SSG will also provide two analog FXS ports for connecting FAX machines.

For more details on the Tenor AF SSG, consult documents "Tenor AF Product Guide" and "Tenor S Application Guide".

6. QUINTUM TENOR CONFIGURATION GUIDE

6.1. Tenor Software Version

The version of the Tenor Software can be obtained via the Tenor Configuration Manager GUI or the Command Line Interface (CLI).



From the Configuration Manager View menu, click **Tenor Version**. A text file will open in a new window displaying the Software version as shown below

🚾 Tenor Configuratio	on Manager (Connected to Tenor AS -	- IP=192.168.2.184 5N=A012-20000A 5W=5106-06-01)		
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Advanced Explore	File Edit Format Help			
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E → I Phone (FXS),	Serial Number:	A012-20000A		
	FXS Cards: FXO Cards:	2 [1 0] 2 [2 0]		
	Cli Errors File Version: Cli Help File Version: Cli Object File Version:	1.31 1.161 1.18		
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As shown below, the CLI Command to display the Tenor Software version information is "show -v".

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Password:		
Quintum# show -v		
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System Software:	Dec 20 2007, 19:03:40 \$106-06-0	1
H323 Module:	3.1.1	
SIP Module:	2.1.0	
Boot Software:	P106-02-00	
Serial Number:	A012-20000A	
FXS Cards:	2 [1 0]	
7XO Cards:	2 [2 0]	
li Errors File Version:	1.31	
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For technical support on the Quintum Tenor AF Survivable SIP Gateway, contact Quintum at 877-435-7553, and also refer to <u>www.quintum.com</u>.

6.2. Standard Configuration

The following steps describe the configuration for the Tenor AF Survivable SIP Gateway to work with the AVAYA one-X Quick Edition and AT&T IP Flexible Reach service. For detailed information on installing and running the Tenor Configuration Manager, consult the *Tenor Configuration Manager Product Guide* available at the Quintum Technologies web site http://www.guintum.com/support/mgmt/index.*shtml*.

Create an ASCII text file with the file name "var_config.cfg". Copy the following line into the file.

SecureSSG0 0

Create an ASCII text file with the file name "ssg.cfg".

Copy the following four lines into the file replacing the "xxx.xxx.xxx" with the IP Address of the Primary AT&T IP Border Element and "yyy.yyy.yyy" with the IP Address of the Secondary AT&T IP Border Element.

* ^sip:\+?([0-1][0-9]*)@+ sip:\$1@XXX.XXX.XXX.XXX	
* ^sip:\+?9?([1-9]11)@+ sip:\$1@XXX.XXX.XXX.XXX	
* ^sip:\+?([0-1][0-9]*)@+ sip:\$1@YYY.YYY.YYY	
* ^sip:\+?9?([1-9]11)@+ sip:\$1@YYY.YYY.YYY.YYY	

FTP the "var_config.cfg" file and the "ssg.cfg" file into the Tenor /cfg directory. MS Windows Explorer can be used to perform the FTP with the Tenor.

😋 ftp://12.176.187.253/		
File Edit View Favorites Tools Help		
G Back - Search	Folders	
Address 👰 ftp://12.176.187.253/		💌 🔁 Go 🛛 📶 🔭 💦 👻
Folders	×	
	As Either the server does not allow anonymous laccepted. FTP server: 12.176.187.253 User name: admin Password: ••••• After you log on, you can add this server to FTP does not encrypt or encode passwords of server. To protect the security of your pass (WebDAV) instead. Learn more about using Web Folders. Log on anonymously Save pa	logins or the e-mail address was not Default ID: admin Default Password: admin your Favorites and return to it easily. ar data before sending them to the words and data, use Web Folders assword Log On Cancel
± 🖳 12.176.187.253	~	
		😜 Internet

🕒 ftp://192.168.2.184/cfg/						
File Edit View Favorites Tools Help						
🗢 Back 🔹 🤿 🖈 🔁 🔞 Search 隆 Folders 🎯 🖓 🌾	X 10 III+					
Address 👰 cfg					▼ @Go	
Folders ×	Name 🔺	Size	Туре	Modified		
Image: Solution of the second sec	gys sys By ssg.cfg By var_config.cfg	96 bytes 11 bytes	File Folder File Folder CFG File CFG File	1/1/2008 12:01 AM 1/1/2008 8:17 PM 1/6/2008 8:17 PM 1/5/2008 1:11 AM]	
				User: admin	🕑 Internet 🏼 ///	

1. Run the Tenor Configuration Manager. From the File Menu click **Connect**.

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🙍 Tenor Configuration Manager (Connected to	o Tenor AS 12.176.187.253)	_ 🗆 🗙
File View Tools Help		
Connect Ctrl+N 🚮 🔾		
Reload Ctrl+R	IP Address Configuration	
Submit Changes Discard Changes Password Address Book Ctrl+B Exit Ctrl+E -Line Port Configuration -VoIP Routing Configuration SIP Configuration	Specify how your Tenor will obtain an IP Address Obtain an IP address automatically • Specify a static IP address • Obtain an IP address using PPPoE Static IP Address IP Address: 10 • 176 IP Address: 10 • 176 Static IP Address IP Address: 10 • 176 Static IP Address: 10 • 176 Static IP Address: 10 • 176 Subnet Mask: 255 255 • 255 Obfain Mask: 255 0 • 0 DNS Server IP Address: 0 Obtain DNS Server addresses automatically • Use manually configured DNS Servers Primary DNS Server IP Address: 0 • 0 Secondary DNS Server IP Address: 0 • 0 • 0	
	Confirm/OK Cancel Refresh Help	

2. Click Add.

Tenor Configurati	on Manager (Connected to Tenor AS 12.176.187.253)	
File View Tools	ldress Book	
Basic		
-IP Address Com	The current Tenor AS IP Address is 12.176.187.253. Please specify/select a new Tenor DX/BX/AX/AS/AF/CMS.	
-Time Server Col		
- Dial Plan Confi <u>c</u> - Phone Port Con	Discover Cancel	
– Multi Path Confi	Tenor IP Address Server Port Description Serial Number Software Version Login	
- Line Port Config - VolP Routing Cr		
- SIP Configuratio		
	Council Class Front Import	
	Fournest Grove Export Iniport	
	Confirm/OK Cancel Refresh Help	

3. Enter the Tenor IP Address, a Description, and the Login ID and Password. Click OK.

Tenor Configuration Manager		
File View Taols Address Book		
File View Tools Address Book	Add Address Tenor IP ADDRESS: 192 . 188 . 1 . 184 Tenor IP Address Tenor Server Port: 8080 Description: Tenor AF Enter Description Serial Number: Login: admin Password: Default ID: "admin" Default Password: Confirm Password: K Cancel	©

4. Connect to the Tenor AF from the Tenor Configuration Manager. Highlight the Tenor AF and click **Connect**.

Tenor Configuration Ma	inager						
File View Tools Address	s Book						
							1
- We	elcome to Tenor Cont	iguration Man	ager! Please specify/selec	t a Tenor DX/BX/AX/A	S/AF/CMS.		
	Discover Cancel				Add Delete	e Edit	
	Tenor IP Address	Server Port	Description	Serial Number	Software Version	Login	
	192.168.1.184	8080	Tenor AF			admin	
							-
							∕ "
		Col	nnect Close E	cport Import .	-		•
-		-		NULU	UILS,	1.11.5.1	

 5. Confirm that the Radio Button for "Specify a static IP address" is selected. Populate the IP Address fields with the correct numbers.
 IP Address: This is the Private Network IP Address assigned to the Tenor.

Subnet Mask: This is the Subnet Mask used on the customer private network.

Default Gateway: Default Gateway at Customer location.

External NAT IP Address: Set to "0.0.0.0" to disable the Tenor NAT capability.

Click Confirm/OK then Click the DNS tab

6. Enter values for the Primary and Secondary DNS Server IP Address. If not using DNS enter: 0.0.0.0

Click **Confirm/OK** then the sunburst icon on the menu bar to implements the change.



7. Click on the Advanced Explorer icon on the menu bar.

Tenor Configuration Manager (Conne	:ted to Tenor AS- Survivable IP=192.168.1.184 SH=A012-1039C6 SW=)	
File View Tools Help		
	IP address Configuration	
IP Address Configuration - Time Server Configuration - Dial Plan Configuration - Dhone Port Configuration - Multi Path Configuration - Line Port Configuration - Survivability Configuration - SIP Configuration - Prot Configuration	General DNS DNS Server IP Address • • Obtain DNS Server addresses addomatically • Use manually configured DNS Servers • Use static DNS Host Primary DNS Server IP Address: • • Secondary DNS Server IP Address: • • •	
	Confirm/OK Cancel Refresh Help	
	Submit OK	

8. In the Advanced Explorer panel on the left, highlight the Dial Plan field. Select the desired Dial Plan Country in the drop down menu. The sample configuration uses *None*.

Select the desired **Progress Tone Country** setting from the drop down menu. The sample configuration uses **USA**.

Enter values for the Minimum and Maximum dial digit string length.

To implement the change, click **Confirm/OK** then the 🛄 sunburst icon.

🚾 Tenor Configuration Manager (Connected t	to Tenor AS- Survivable IP=192.168.1.184 SN=A012-1039C6 SW=)	_ 🗆 🛛
File View Tools Help		
Advanced Explorer	Dial Plan	
System-Wide Configuration - SNMP Server	General Advanced	
– Dial Plan	Dial Plan Country: None Progress Tone Country: USA	
- Time Server - DNS Server	Country Code: Maximum Dial Digit Length:	30
- DNS Hosts	Area/City Code: Minimum Dial Digit Length:	7
- Remote Tenor Manager		
🕀 🖗 SysLog Servers		
DR Servers		
🖶 閛 Ethernet Configuration	Carrier Prefix Pattern: Add Delete	Edit
VoIP Configuration	Long Distance Defin	
- Survivability Parameters		
De SIP Signaling Groups		
L SIP Signaling Group-1		
– DN Channel Map		
- Gateway		
– Fax Profile		
End Point Address Directory		
De Province Codecs		
🕂 🕂 🖓 Codec Profiles		
	Confirm/OK Cancel Refresh Help	
	OK	

 In the Advanced Explorer panel on the left, click the + sign next to VoIP Configuration to expand the field. Highlight Survivability Parameters. Set the Listening Port to "5060" and the Default Route Port to "5080".

Click **Confirm/OK** then the **Sunburst** icon to implement the change.

Tenor Configuration Manager (Connected 1	to Tenor AS IP=12.176.187.253 -	SN=A012-1039C	5 SW=)	_ 🗆 🔀
File View Tools Help				
Advanced Explorer		Survivabil	ity Parameters	
🖶 📄 System-Wide Configuration				
Ethernet Configuration	Listening Port: 50	060	🗖 Use Local Gateway	
VolP Configuration	Default Route Port: 50	080	Default Route IP Address:	
Survivability Parameters SIP Signaling Groups	Endpoint Expires Time (in sec.): 90			
– DN Channel Map				
- Gateway				
- Fax Profile				
- End Point Address Directory				
🖬 🖶 🕂 Voice Codecs				
🖬 🖶 🗤 Odec Profiles				
🕀 🔟 IP Dial Plans				
IP Routing Groups				
🕀 😱 Circuit Configuration				
Phone (FXS)/Line (FXO) Configurati				
⊕ W DSP Configuration				
	Co	nfirm/OK Cancel	Refresh Help	
	ок			

6.2.1. Additional Steps for VoIP FAX Configuration

10. On the Advanced Explorer panel on the left, click the + sign next to VoIP Configuration
 → SIP Signal Groups to expand the field. Highlight SIP Signaling Group-1. Under the
 General tab, enter the IP Address and Port of the Tenor SSG. Set the Register Expiry
 Time to 3600.

Click Confirm	/OK then the 🔼 sunburst ic	con to implement the change.
Tenor Configuration Manager (Connecte	d to Tenor AS IP=12.176.187.253 SN=A012-20000A	SW=P105-13-00)
File View Tools Help		
Advanced Explorer	SIP Sign	aling Group-1
🖶 🔄 System-Wide Configuration 🗕	General MWI & Session Timer Advanced User Agent	
🖶 👎 Ethernet Configuration		
🖶 🏪 VoIP Configuration	Register Expiry Time (in sec.): 3600	
- Gatekeeper/Border Element	Drimon, CID Conter 102 169 1 194	Conservation: CID Conver
– H323 Signaling Group	Filmary Sir Server. 132,106,1,164	Secondary Sir Server.
SIP Signaling Groups	Primary SIP Server Port. 5060	Secondary SIP Server Port: 5060
SIP Signaling Group-1	, <u> </u>	
- DN Channel Map		
- Gateway		
- Fax Profile	Primary Outbound Server:	Secondary Outbound Server:
F End Point Address Directory	Drivery Orthograph Deck	Survey of the sector Dest
Voice Codecs	Primary Outbound Server Port. 5000	Secondary Outbound Server Port. 5000
	✓ User Name in Contact	User Name As URI
H # VolP Routing		E Allow Only Brown Collo
E Circuit Configuration	I✓ Include Quintum Header	Anow Only Proxy Cans
Phone (FXS)/Line (FXO) Configur	Use From Contact: 💿 Use DN 🛛 🔿 Use Alias Name	
DSP Configuration		
=		
	Confirm/OK Cancel	Refresh Help
	ок	

- 11. Click on the Advanced tab. Un-check the boxes for:
 - "SDP in 180 Ringing"
 - "SDP in 183 Progress"
 - "Proxy Address in From Header"

Tenor Configuration Manager (Connecte	d to Tenor AS IP=12.176.187.253 SN=A012-1039C6 SW=)	
File View Tools Help		
S 🗈 📕 🖼 🔍		
Advanced Explorer	SIP Signaling Group-1	
B 🔄 System-Wide Configuration	General MWI & Session Timer Advanced User Agent	
🖶 🦈 Ethernet Configuration		
P VoIP Configuration	Request Retransmit Count: 3	Maximum Forwards: 70
- Survivability Parameters	User Agent Header: Quintum/1.0.0	SIP No Connect Timeout (in sec.): 180
Groups	Proxy Fail-Over Behavior: O No Fail-Over (Always try the 1st Proxy)	 Fail-Over on Error Response
SIP Signaling Group-1		
– DN Channel Map		
- Gateway	SDP in 180 Ringing	Send 180 Ringing
- Fax Profile	SDP in 183 Progress	Send 183 Progress
 End Point Address Directory 		
Voice Codecs) SIP Server in From Header	V SIP Telephone Events
Codec Profiles	SIP-PSTN Interworking	
🖶 🛄 IP Dial Plans	PRACK Method: Supported	SIP Info Format: Nortel
由證 IP Routing Groups		
🖶 🗊 Circuit Configuration	Send Remote Party ID	
Phone (FXS)/Line (FXO) Configur		
DSP Configuration		
T		_
	Confirm/OK Cancel Refresh He	lp
	ок	

12. Click on the User Agent tab. Highlight the User Agent 101 entry. Click the Edit button to display the Edit User Agent pop-up window. We will create One User Agent for each FAX Machine that will be attached to the

Tenor.	In this	configuratio	n example	e we will	create one	User Agent.
		<u> </u>				<u> </u>

Tenor Configuration Manager (Connected)	1 to Tenor AS- Survivable IP=12.176.187.253 SN=A012-1039C6 SW=)	_ 🗆 🔀
File View Tools Help		
Advanced Explorer	SIP Signaling Group-1	
 System-Wide Configuration Ethernet Configuration VoIP Configuration Survivability Parameters SIP Signaling Groups SIP Signaling Group-1 DN Channel Map Gateway Fax Profile End Point Address Directory Voice Codecs Voice Codecs Voice Codecs IP Point Plans IP Routing Groups Circuit Configuration Sirvity DSP Configuration SP Configuration 	General MVII & Session Timer Advanced User Agent Add C UA Listen Polt Primary User Primary Password 2ndary User 2ndary Password MM/I User Name 101 5061 Contacts[1]: Contacts[2]:	Pelete Edit MMM Passound
	Confirm/OK Cancel Refresh Help	

13. In the Edit User Agent pop-up window, enter the following information:
 PrimaryUser - The username for Registration and Authentication purposes. If Registration were enabled, the "username" will appear in the URI populated in the To and From headers of the REGISTER message.

SIP Listen Port: 5080 Set the SIP Listen Port to 5080. *Any value other than 5060 will be acceptable.*

Primary User: *FAX1* < --- Any alpha-numeric string may be entered because SIP Registration and Authentication are not applicable to the AT&T IP Flexible Reach service.

Click **OK** to continue.

Tenor Configuration Manager (Connecte File View Tools Help	d to Tenor AS- Survivable IP=12.176.187.253 SN=A012-1039C6 SW=)	
Advanced Explorer	Edit User Agent	
🖶 🕎 System-Wide Configuration		
➡ ➡ Ethernet Configuration ➡ ➡ VoIP Configuration	UA: 101	-
- Survivability Parameters	SIP Listen Port: 5080	
SIP Signaling Groups	Primary User:	
- DN Channel Map	Primary Password:	
- Gateway - Fax Profile	Secondary User:	
- End Point Address Directory	Secondary Password:	
Voice Codecs Voice Profiles	MWI User Name:	
🖶 🔟 IP Dial Plans	MWI Password:	
IP Routing Groups In Routing Groups In Configuration	Contacts[1]:	
🖶 📲 Phone (FXS)/Line (FXO) Configurati	Contacts[2]:	
DSP Configuration		
٩	OK Cancel Help.	

14. At the **SIP Signal Group-1** panel click **Confirm/OK** to complete and the sunburst icon to implement the change in the Tenor SSG.

Tenor Configuration Manager (Connecte	d to Tenor AS- Survivable IP=12.176.187.253 SN=A012-1039C6 SW=)
Advanced Explorer	Ceneral MVI & Session Timer Advanced User Agent Add Delette Edd Uk Litten Pae Primary Damoord 2ndary User 2ndary Passooid MMI User Name MMI Passooid 101 5060 FAX1 Contacts[1]: Contacts[2]
	Confirm/OK Cancel Refresh Help

15. From the **Advanced Explorer** panel on the left, highlight the **DN Channel Map** field. Click **Add** on the **DN Channel Map** panel on the right.

Tenor Configuration Manager (Connecte File View Toole Help	d to Tenor AS- Survivable IP=12.176.187.253 SN=A012-1039C6 SW=) 💷 🔲 🔀
Advanced Explorer Advanced Explorer System-Wide Configuration Unit Configuration Survivability Parameters Survivabili	Cit Chinese Logi Add Derer Edit Slot Span Channel DN Calling Name PubDN RegDN UA
	Confirm/OK Cancel Refresh Help OK

16. Each of the FAX machines physically connected to a Channel/Port on the Tenor must be associated with a 10-digit TN (Telephone Number) or a 10-digit VTN (Virtual Telephone Number) provided by AT&T. When the FAX machine / Tenor initiates a call to the AT&T IP Flex Reach service the 10-digit TN / VTN is signaled to AT&T in the outgoing SIP INVITE message. When AT&T routes a call to the Tenor, the signaled DN will be a 10-digit VTN or a subset of the 10-digit TN (4 to 7 digits). The AT&T network **can not** presently signal the full 10-digit TN to the Tenor. But the AT&T network can signal the full 10-digit VTN to the Tenor.

The consequence of this asymmetric digit string length for sending vs. receiving calls from the AT&T IP Flex Reach service requires that the Tenor be provisioned with multiple DN's for a given FAX machine (Channel/Port). To support outbound calling (from Tenor) the full 10-digit TN/VTN must be configured for the given channel/port. To support inbound calling to the Tenor, the channel/port must also be configured with the appropriate subset of the full TN (4 to 7 digits) or VTN (4 to 10 digits).

For the sample configuration documented here, Channel 1 is assigned a 10-digit TN (732-368-0416). When the FAX machine connected to Tenor Channel 1 places a call to the AT&T IP Flex reach service it will include the 10-digit TN (732-368-0416) in the SIP signaling message. When the AT&T IP Flex Reach service routes a call to the FAX machine connected to the Tenor Channel/Port 1 the SIP signaling message from AT&T will include a 4-digit subset of the TN (0416).

At the Add DN Channel Map pop-up window, enter the following information.Channel:1DN:7323680416< --- Phone Number (number provided by AT&T)</th>

User Agent: Public DN Register DN Add DN Channel Map Slot: Slot: DN: 7323680416 Calling Name: Quintum FAX User Agent: 101 V Register DN K Cancel Help	Calling Name: Qu	intum FAX <-	Display Name	
Public DN Register DN checked < default Add DN Channel Map Image: Channel Map Slot: 2 Span: 1 DN: 7323680416 Channel: 1 DN: 7323680416 User Agent: 101 Public DN Register DN OK Cancel	User Agent:	<i>101</i> <	User Agent defined in Step 1	3.
Register DN checked < default	Public DN	checked	< default	
Add DN Channel Map Image: Comparison of the comparison o	Register DN	checked	< default	
Slot: 2 Span: 1 Channel: 1 DN: 7323680416 Calling Name: Quintum FAX User Agent: 101 ✓ Public DN ✓ Register DN OK Cancel Help		Add DN Channel Map		
Slot: 2 Span: 1 Channel: 1 DN: 7323680416 Calling Name: Quintum FAX User Agent: 101 ✓ Public DN ✓ Register DN OK Cancel Help			10.00	
Span: 1 10 digit TN provided by AT&T Channel: 1 DN: 7323680416 Calling Name: Quintum FAX User Agent: 101 Public DN Register DN		Slot	2	
Channel: 1 DN: 7323680416 Calling Name: Quintum FAX User Agent: 101 ✓ Public DN ✓ Register DN OK Cancel Help		Shop:	10 digit TN provided by AT&T	
Channel: 1 DN: 7323680416 Calling Name: Quintum FAX User Agent: 101 ▼ Public DN ▼ Public DN ▼ Register DN OK Cancel Help		opan.		
DN: 7323680416 Calling Name: Quintum FAX User Agent: 101 ▼ ✓ Public DN ✓ Register DN OK Cancel Help		Channel:	1	
Calling Name: Quintum FAX User Agent: 101 ✓ Public DN ✓ Register DN OK Cancel Help		DN:	7323680416	
User Agent: 101		Calling Name:	Quintum FAX	
✓ Public DN ✓ Register DN OK Cancel Help		User Agent:	101	
✓ Register DN OK Cancel Help		Public DN		
OK Cancel Help		Register DN		
OK Cancel Help				
OK Cancel Help				
		OK	Cancel Help	

Click **OK** to continue. At the DN Channel Map panel click **Confirm/OK** and the sunburst icon implements the change.

Note:

Slot and Span are not relevant to the Analog Tenor.

Channel: Denotes the physical port that the analog device will be connected. **DN:** TN number provided by AT&T. Populated in outgoing INVITE message (to AT&T) as the user part of the URI in the From and Contact headers. On inbound calls to Tenor, used to determine routing of calls to physical line. Should appear as user part of Request URI of incoming INVITE.

Calling Name: Will appear as the Display Name in the From header in outgoing INVITE messages.

Public DN: Indicates whether or not this is a Public DN **Register DN:** Only relevant to H.323 17. It is necessary to define another DN Channel Map entry to provide the 4-digit routing (0416) of calls to the FAX machine connected to Tenor Channel/Port 1.

Click the **Add** button.

🚾 Tenor Configuration Manager (Connecte	ed to Tenor AS- Survivable IP=12.176.187.253 SN=A012-1039C6 SW=)	. 🗆 🗙
File View Tools Help		
🔶 🗁 🔛		
Advanced Explorer System-Wide Configuration Ethernet Configuration Survivability Parameters SIP Signaling Groups L SIP Signaling Group-1 DN Channel Map Gateway Fax Profile End Point Address Directory Volce Codecs Codec Profiles Code Crofiles Circuit Configuration Phone (FXS)/Line (FXO) Configurati Map DSP Configuration SP Configuration	Confirm/OK Cancel Refresh Help	

18. At the **Add DN Channel Map** pop-up window, enter the following information.

	mer map p	op up whicew, enter the renowing information.
Channel:	1 <	Physical port used on Tenor
DN:	0416 <	Phone Number (number provided by AT&T)
Calling Name:	Tim Thornton	n < Display Name
User Agent:	<i>101</i> < -	User Agent defined in Step Error! Reference
source not fo	ound.	
Public DN	checked	< default
Register DN	checked	< default
	Edit DN Channel Map	
	Slot:	2
	Span:	4 digit TN provided by AT&T
	Channel:	
	DN	0416
	DIN.	
	Calling Name:	Quintum FAX
	User Agent:	101
	Public DN	
	🔽 Register DN	
	-	a (
	OK	Cancel Help

Click **OK** to continue. At the DN Channel Map panel click **Confirm/OK** and the sunburst icon to implement the change.

Tenor Configuration Manager (Connected to Tenor AS- Survivable IP=12.176.187.253 SN=A012-1039C6 SW=) File View Tools Help	
File View Tools Help Advanced Explorer Advanced Explorer Advanced Explorer System-Wide Configuration System-Wide Configuration Survivability Parameters Survivability Parameters SiP Signaling Group-1 ON Channel Mac Dir Channel Mac Gateway Fax Profile End Point Address Directory File Youting Groups File Plai Plans File Produing Groups File Dispression	
ConfirmiOK Cancel Refresh Help	

Note that 0416 and 7323680416 are the two DN's associated with channel 1 and User Agent 101 (UA 101).

19. From the **Advanced Explorer** panel on the left, highlight the **Gateway**. Enter a **Description** and *check* the **SIP** only radio button for the **Outgoing IP Routing** field under the Gateway screen panel on the right.

Click **Confirm/OK** then the sunburst icon on the menu bar to implements the change.

🙍 Tenor Configuration Manager (Connected to Tenor AS 12.176.187.253)
File View Tools Help
Advanced Explorer Remote Tenor Manager SysLog Servers SysLog Servers Configuration Gatekeeper/Border Element H323 Signaling Groups L SIP Signaling Groups L
ОК

20. From the **Advanced Explorer** panel on the left, click on the + sign to expand the **Voice Codecs** field. Highlight the **Voice Codec-1** field. For FAX select the *G.711* codec.

Tenor Configuration Manager (Connected t	o Tenor AS- Survivable I	₽=12.176.187.253 SN=A012-1039C6 SW=)	
Advanced Explorer Advanced Explorer Advanced Explorer Configuration Configura	Description: Voice Codec: Codec Payload Size:	Voice Codecit	
		Confirm/OK Cancel Refresh Help	
	1000	Vit]

Click **Confirm/OK** then the sunburst icon on the menu bar to implements the change.

21. From the Advanced Explorer panel on the left, highlight the IP Routing Groupdefault field under IP Routing Groups. Under the General tab in the IP Routing Group-default panel on the right, select *Out-of-Band RFC 2833* for SIP Digit Relay from the drop down menu.

Tenor Configuration Manager (Connected to Tenor AS 12.176.187.253)	
File View Tools Help	
Advanced Explorer	IP Routing Group-default
General Advanced ANVFax	
- H323 Signaling Group Description:	✓ Silence Suppression
SIP Signaling Groups	
- DN Channel Map	J RFC 2833 Packet Saver Enabled
- Gateway SIP DR Payload Type: 101	
- Fax Profile H323 Digit Relay: Out-of-Ban	J H245 Alphanumeric 📃
- End Point Address Directory	
Dep	
Codec Profiles Maximum Incoming Calls Allowed:	-1 Inbound Access Level: 0
🖶 🖶 🌆 IP Dial Plans 🛛 🔹 Maximum Outgoing Calls Allowed:	-1 Outbound Access Level: 0
다. [화] IP Routing Groups Maximum Talk Time (in minutes):	D Trunk (D)
P Routing Group-default	
B VolP Routing	
🕀 🗊 Circuit Configuration IP Dial Plan: IP Dial Plan-def	ault 🔹 IP Dial Plan-default
Phone (FXS)/Line (FXO) Configur	efault Codec Profile-default
B I DSP Configuration	
	onfirm/OK Cancel Refresh Help
0	к

22. Click on the ANI/FAX tab under the IP Routing Group-default panel on the right. Select *Relay ANI* for Relay ANI from the drop down menu. Select *Pass-through* for Default ANI Screen Indicator from the drop down menu.

Select *Relay ANI* for **Default ANI Presentation Indicator** from the drop down menu.

Select *Relay CNAM in INVITE* for **Relay Calling Name** from the drop down menu.

Select G.711 Mu-law for Fax Relay from the drop down menu.

Select *Disabled* for Fax Modem Coding from the drop down menu.

Click **Confirm/OK** then the sunburst icon on the menu bar to implements the change.

Tenor Configuration Manager (Connected)	d to Tenor AS IP=12.176.187.254 SN=A012-20000A SW=P105-05-00)	- 🗆 💌
File View Tools Help		
Advanced Explorer	IP Routing Group-default	. 1
System-Wide Configuration System-Wide Configuration System-Wide Configuration	General Advanced ANJFax	
De VolP Configuration	Relay ANI 💌	
 Gatekeeper/Border Element H323 Signaling Group 	Default ANI:	
🕀 SIP Signaling Groups	Default ANI Screen Indicator: Pass-through	
– DN Channel Map – Gateway	Default ANI Presentation Indicator, Relay ANI	
- Fax Profile	Relay Calling Name:	
- End Point Address Directory		
Dice Codecs		
🖶 🕬 Codec Profiles	[/	
🖶 🛅 IP Dial Plans	Furthering O 711 Mulau	
中 🇃 IP Routing Groups	Fax Relay. 0.711 MuriaW	
IP Routing Group-default	T38 LS Data Redundancy: 3 T38 HS Data Redundancy: 0	
⊕ ∰→ VoIP Routing	TCE Handling Method: Sent Over the Network	
E Sincuit Configuration		
Phone (FXS)/Line (FXO) Configur	Allow MR Page Compression	
DSP Configuration		
	Confirm/OK Cancel Refresh Help	
	OK	

23. From the Advanced Explorer panel on the left, expand Circuit Configuration → Line Routing Configuration → Line Circuit Routing Groups, and highlight the Line Circuit Routing Group-phone field.

Click on the **General** tab under the **Line Circuit Routing Group-phone** panel on the right. From the **SIP User Agent** drop down menu, select *SIPUserAgent-101* and *check* the boxes for **Overlap Dial** and **Provide Progress Tone**.

Click **Confirm/OK** then the **sunburst** icon on the menu bar to implements the change.

Click the **Call Services** tab.

Ovstern-Wide Configuration General Trunk ID/Caller ID V/R Numbering Call GerVices Dypass/Humt Advanced Interface Enternet Configuration Description Direction Both Circuit Configuration Channel Hunting Algorithm: Acconding Round Robin Direction Both Signaling Configuration Channel Hunting Algorithm: Acconding Round Robin Provide Progress Tone Caller ID Translation Directories Finable External Routing Provide Progress Tone Oth Smitch Configuration Pass Through: Disabled Pass Through ID: 0 Outbound Access Level:	
VolP - Computation Description Direction Bdh Circuit Configuration Channel Hunting Algorithm: Accending Round Robin Imound Robin Imound Robin Signaling Configuration Channel Hunting Algorithm: Accending Round Robin Imound Robin Imound Robin Auto Switch Configuration Enable External Routing Imound Robin Imound Robin Imound Robin Cater ID Translation Directories Imound Routing Imound Access Level: Imbound Access Level: Imbound Access Level: In Broating Configuration Pass Through ID: 0 Outbound Access Level: Imbound Access Level:	
Inhound DNIS Translulion Directories DT Trunk Routing Configuration Pass Through: Disabled Inbound Access Level: 0 Une Routing Configuration Pass Through ID: 0 Outbound Access Level: 0 Outbound Ac	
Hunt LDN Directories Partial Trunk Group Tine Circuit Rouding Groups	
Line Gircult Rousing Group-shop Phone (FXS)/Line (FXO) Configuration DSP Configuration	

24. From the **Call Services** tab under the **Line Circuit Routing Group-phone** panel on the right. Disable all Call Service because this is a FAX line.

Click **Confirm/OK** then the sunburst icon on the menu bar to implements the change.



25. Under the Advanced Explorer panel on the left, highlight the Phone (FXS)/Line (FXO) Configuration. Check the box to enable Phone-Line 1.

Click **Confirm/OK** then the sunburst icon on the menu bar to implements the change.

Tenor Configuration Manager (Connected	to Tenor AS- Survivable IP=12.176.187.253 SN=A012-1039C6 SW=)	_ 🗆 🔀
File View Tools Help		
- F) II Q		
Advanced Explorer Fax Profile End Point Address Directory Codec Profiles Codec Profiles	Slot Number 2 Description: Analog Tenor FXS and FXO Cards Analog Online Setting for Phone-Line/FXS-FXO Pair Phone-Line 1 Phone-Line 2	
	Confirm/OK Cancel Refresh Help	
	ок	

26. Under the Advanced Explorer panel on the left, expand Phone (FXS)/Line (FXO) Configuration, and highlight the Analog interface-phone field. Highlight Channel Group-phone then click Add.

Tenor Configuration Manager (Connecte	d to Tenor AS 12.176.187.253)	
File View Tools Help		
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Avanced Explorer System-Wide Configuration System-Wide Configuration Circuit Configuration Phone (FXS)/Line (FXO) Configuratio Analog Interface-line DSP Configuration	General IP Extension Image: Contract of the second seco	
<u>د</u>	ConfirmUOK Cancel Refresh Help	
	OK	

27. Enter a description "phone" for the Channel Group and click OK to continue.



28. In the **Add Channel Group-Channel Group phone** pop-up window, select the following information.

Associated Signaling Group: Associated Routing Group: FXS Channel Assignment CAS Signaling Group-phone Line Circuit Routing Group-phone Check radio button for 1

Click **OK** to complete.

Add (Channel Group-Channel Group phone	×
	Selected Analog Interface: Analog Interface-phone	
	Associated Signaling Group CAS Signaling Group-phone	
	Associated Routing Group: Line Circuit Routing Group-phone	
	FXS Channel Assignment	
	Select All De-select All Reset	
	Select All Available De-select All Available	
	OK Cancel Help	

7. REMOTE CONFIGURATION

The CPE Router that provides connectivity to the AT&T trunk must be configured properly to allow remote monitoring of the Tenor gateway as well as the one-X Quick Edition telephones. The gateway and one of the one-X QE telephones need to be configured with a static IP address so that static port mapping can be configured on the router.

The following steps will configure the static IP address on the one-X QE telephones. The steps need to be executed on the phone itself.

Step	Command	Notes
Step 1	Go to Network Options Click the Options button on the telephone. From the screen menu, go to Options/System Options/Network Options	Enter the administration password to log into System Options.
Step 2	Change IP Set IP Settings/Chg/Edit IP Address = ~172.16.4.20"	Make sure the IP assigned is from the static IP address block and not from the DHCP IP address block.
Step 3	Change Netmask Set IP Settings/Chg/Edit Netmask= "255.255.255.0"	Make sure the netmask is the one configured in your router.
Step 4	Change Gateway Set IP Settings/Chg/Edit Gateway = "172.16.4.1"	Make sure the gateway is the IP address of the router.
Step 5	Save the settings Press IP Settings/Save	

In Section 6.2 Step 1, find the instructions to configure the static IP address of the Quintum Tenor gateway. Now create a mapping between the router's external 5060 port and the internal Tenor gateway so that incoming SIP signals can be routed from the AT&T trunk to the Tenor Gateway.

To access the web portal of one-X QE telephone, it is necessary to configure two more port mappings on the router. One port is mapped to the http port (80) of the QE telephone while the port is mapped to the https port (443). The following procedure will configure the port mapping on the router whether it is a customer managed router or an AT&T managed router.

Step	Command	Notes
Step 1	Login to the router's administrator portal	Depending on the router it could be a CLI interface or web based interface. For remote management of the router, you may have to configure the IP addresses from which the router can be managed.
Step 2	Set the port mapping for http port on the router Map port 80 on the public side to port 80 on the QE phone with the static IP.	Make sure port 80 is not assigned to an http server other than the QE telephones.
Step 3	Set the port mapping for https port on the router Map port 443 on the public side to port 443 on the QE phone with static IP address.	Make sure port 443 is not used by other internal servers except QE.
Step 4	Access the QE web portal from a remote site From a web-browser enter http:// <wan ip<br="">address of the router>/ and that should redirect the request to the QE web portal</wan>	Only System Options on QE phone are configurable from a remote site.
Step 5	Login to System Options Select System Options and enter the system password	

The remote configuration is only allowed for system options on the QE telephone --- individual phones cannot be configured through this telephone. All of the configurations related to AT&T Flex Reach solution and Quintum Tenor gateway are available through System Options in QE web portal.

The Tenor Survivable SIP Gateway (SSG) can also be configured and monitored remotely, in two ways.

One way to achieve this functionality without modifying the router is by using the Quintum Remote Management Session Server (RMSS). The Remote Management Session Server resides either on the public IP network or within the Service Provider DMZ. The RMSS sets up a secure management channel between the Remote Management Session Server platform and the customer Tenor that may be located behind a NAT firewall. After the Tenor SSG is configured with the RMSS's IP address, the Tenor will open a UDP session through the CPE router's firewall (port 2300) to the RMSS. Then the remote user can connect to the Tenor SSG through the RMSS server to perform system configuration, performance monitoring, diagnostics, troubleshooting and remote upgrade functionality.

Another method for providing remote configuration and monitoring of the Tenor SSG is to configure port mapping on the CPE router. After an external port (e.g. 8080) on the router is mapped to the Tenor gateway's management port (usually 8080), a remote user can access the Tenor gateway through that router's external mapped address (e.g. 207.15.13.45:8080).

8. TROUBLESHOOTING

For technical support on the Quintum Tenor AF Survivable SIP Gateway, contact Quintum at 877-435-7553, and also refer to <u>www.quintum.com</u>.

9. ADDITIONAL REFERENCES

- Avaya. 2006. Avaya one-X Quick Edition Release 3.0.0 System Administrator Guide, P/N16-601412, Release 3.0.0, November 2006, Issue 1. Available from Avaya at support.avaya.com/quickedition.
- 2. Tenor AF VoIP Multipath/Gateway Switch Product Guide, P/N 480-0084-00-11 <u>http://www.quintum.com/support/products/2G/tenor_2G/sysdoc/TenorAFUserGuide.pdf</u>
- 3. Tenor S Application Guide <u>http://www.quintum.com/support/products/2G/tenor_s/sysdoc/SSGAppNote.pdf</u>
- 4. Tenor Configuration Manager/Tenor Monitor Product Guide. P/N 480-0028-00-05 http://www.quintum.com/support/mgmt/TenorConfigManagerUsersGuide.pdf

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