

# **Configuration Note**

# snom 360 Phone with VX for Branch Survivability

Release 1.0



#### Copyright © 2009 Network Equipment Technologies, Inc. All rights reserved.

NETWORK EQUIPMENT TECHNOLOGIES, INC. (hereinafter referred to as "N.E.T."), PROVIDES THIS DOCUMENT AS IS, WITHOUT WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

No part of this publication may be stored in a retrieval system, transmitted or reproduced in any way, including photocopy, photograph, magnetic, or other record, without the prior written permission of N.E.T. Unpublished-rights reserved under the copyright laws of the United States.

#### Trademarks

The N.E.T. logo, PanaVue, PrimeSwitch, Promina, SCREAM, Service Creation Manager, SHOUTIP, CellXpress, FrameXpress, Frame Relay Exchange, IPNX, LAN/WAN Exchange, Network Equipment Technologies, netMS, PortExtender, PrimeVoice, SCREAMvue, and SHOUT are trademarks of Network Equipment Technologies, Inc.

SunOS and Solaris software copyright is held by Sun Microsystems, Inc. Sun Microsystems is a registered trademark and Sun, SunOS, OpenWindows, Solaris, and Ultra are trademarks of Sun Microsystems, Inc. UNIX is a registered trademark of The Open Group.

All other trademarks and registered trademarks are the sole property of their respective owners.

This document constitutes the sole Specifications referred to in N.E.T.'s Product Warranty for the products or services described herein. N.E.T.'s Product Warranty is subject to all the conditions, restrictions, and limitations contained herein and in the applicable contract. N.E.T. has made reasonable efforts to verify that the information in this document is accurate, but N.E.T. reserves the right to correct typographical errors or technical inaccuracies. N.E.T. assumes no responsibility for any use of the information contained in this document or for any infringement of patents or other rights of third parties that may result from the use of this document. Networking products cannot be tested in all possible uses, configurations or implementations, and interoperability with other products cannot be guaranteed. The customer is solely responsible for verifying the suitability of N.E.T.'s products for use in its network. Local market variations may apply. This document is subject to change by N.E.T. without notice as additional information is incorporated by N.E.T. or as changes are made by N.E.T. to hardware or software.

#### U.S. Government Rights, Government Users

The software accompanying this documentation is furnished under a license and may only be used in accordance with the terms of such license. This documentation is "commercial computer software documentation" as that term is used in 48 CFR 12.212. Unless otherwise agreed, use, duplication, or disclosure of this documentation and any related software by U.S. Government civilian agencies is subject to restrictions as set forth in 48 CFR 52.227-14 (ALT III) and 48 CFR 52.227-19, and use, duplication, or disclosure by the U.S. Department of Defense is subject to restrictions as set forth in 48 CFR 227.7202-1(a) and 48 CFR 227.7202-3(a) or, if applicable, 48 CFR 252.227-7013(c)(1)(ii) (OCT 1988).

#### Released

October 2009

Network Equipment Technologies, Inc. 6900 Paseo Padre Parkway Fremont, CA 94555 U.S.A.

http://www.net.com

# Contents

Document Overview	4
Content	4
Intended Audience	4
Configuring snom 360 and VX with TLS	5
Step 1: Install VX Root Certificate onto the snom Phone	5
Step 2: Enter the Configuration Identity	6
Step 3: SIP Settings	7
Step 4: VX Settings	8
Step 5: Trunk Group Settings	9
Step 6: Call Route	10
Step 7: snom SIP Registration	10
Generating a Self-Signed Certificate	11
Step 1: Generate the Certificate	11
Step 2: VX Settings	12
Step 3: Trunk Group Settings	13
Step 4: Export the Self-Signed Certificate	13
Configuring OCS Mediation snom with VX Registrar Fallback	15
Step 1: Setting Up the snom Phone	15
Examples	26
VX Registrar	26
Calls between snom Phone <> eyeBeam	26
Configuring TLS on eyeBeam	27
Step 1: eyeBeam SIP Account Configuration	28
Step 2: eyeBeam Security Settings	29
Step 3: Importing the Root Certificate to the eyeBeam PC	30
Step 4: Verify Certificate Installation	34
Step 5: VX Configuration	41
Step 6: VX General Menu	42
Step 7: eyeBeam TLS to snom Calls	43
Step 8: snom TLS Configuration	43

# **Document Overview**

### Content

This document includes configuration examples for:

- snom 360 with OCS
- snom 360 with VX Registrar Fallback
- snom 360 TLS with VX Registrar
- eyeBeam TLS with VX Registrar

Note: This document does not necessarily describe accurately the design or operation of any NET product or service and it does not create any express or implied warranty. NET's sole warranty is contained in its Product Warranty. The End User Documentation shipped with NET's products constitutes the sole Specifications referred to in the Product Warranty. NET assumes no responsibility for any use of the information contained in this document or for any infringement of patents or other rights of third parties that may result. Networking products cannot be tested in all possible uses, configurations or implementations, and interoperability with other products cannot be guaranteed. The customer is solely responsible for verifying the suitability of NET's products for use in its network. This document and NET's specifications are subject to change without notice.

### **Intended Audience**

This document is intended for Systems Integrators with significant telephony knowledge.

# Configuring snom 360 and VX with TLS

Use the steps in this section to configure the snom 360 (snom) and VX with Transport Layer Security (TLS).

#### Step 1: Install VX Root Certificate onto the snom Phone

If VX is using a Certificate Authority (CA)-signed trusted certificate, the VX root certificate file can also be installed directly onto the snom phone to allow TLS.

1. FTP the VX root certificate file to your PC from VX. You can locate the VX root certificate file by entering **sho cert root** at the command prompt on VX.



- 2. From the snom Trusted Certificates view, browse the Load from file: and locate the root certificate file.
- 3. When you have located the VX root certificate, click **Add Certificate**. The VX root certificate is now added to your snom phone.

🖉 snom 360 - Windows Internel	t Explorer			
O http://10.1.1.10	9/trusted.htm		💌 🔸 🗙 Google	P •
File Edit View Favorites	Tools Help			- 🔁 •
😪 🎄 () snom 360			🙆 • 🗟 - 🕯	🗄 👻 🔂 Page 👻 🎯 Tools 👻 🎇
Truste	d Certificates	SNO V E R	m OCS edition SION 8	HTTP Password not set!
Operation Home Directory	Issued To Issued By	Expiration	Delete	
Setup Preferences Speed Dial Function Keys OCS Account Data	Import Trusted Certificate (.cer):		7	
Identity 1 Identity 2 Identity 3 Identity 4 Identity 5	Load from tile: Filename: Add Certificate	Browse		
Identity 6 Identity 7 Identity 8 Identity 9				<b>•</b>
Done		j j	📔 📔 🕞 🕞 Internet	100% 🔻 🖉

**Note**: The VX root certificate may take a few moments to load and/or display on your snom phone. If the TLS is still working, the certificate should be available.

#### Step 2: Enter the Configuration Identity

1. On VX, locate the certificate name by entering **sho cert** at the command prompt. The VX CA-signed certificate **Common Name** is **vxgw.vx.net**.

UCdemo# sho cert Issued To		Issue	1 By	Type	Generation	Expiration
	vxgw.vx.net		vxca	CA-signed	4/27/2009 20:05:28	4/27/2011 20:15:28
UCdemo#						

2. On the snom Login Tab, the common name also applies to the **Registrar** and **Outbound Proxy**. The Outbound Proxy includes ;transport=tls , which enables TLS on the snom phone.

Note: The Fully Qualified Domain Name (FDQN) must be resolvable by a Domain Name System (DNS).

🖉 snom 360 - Windows Interr	net Explorer		_ 🗆
😋 💽 👻 🚺 http://10.1.1.	109/line_login.htm?l=2	💌 <del>6</del> 7 🗙 Go	ogle 👂
File Edit View Favorites	Tools Help		j 📆 •
🙀 🍄 🌔 snom 360		🖄 -	🔊 - 🖶 - 🔂 Page - 🎯 Tools -
Config	guration Identity 2	snom OCS	A HTTP Password not set!
		VERSION 8	
Operation			
Home	LOUIN SIP NAT KIP		
Directory	Login Information:		-
Setup	Identity active:	€ on C off ♥	
Freierenues Second Dial	Displayname:	trop	
Speed Dial	Account:	1234	
Pullcuoli Keys	Password:	2	
UCS Account Data	Registrar:	vxgw.vx.net ?	
Identity I	Outbound Proxy:	vxgw.vx.net:transport=tls ?	
Identity 2	Fallover Identity:	ivinne 🔍 💿	
Identity 4	Authentication Username:		
Identity 4	Matteriacadori osername.		N
Identity 6	ManDox:		45
Identity 7	Ringtone:	Ringer 1 V	
Identity 8	Custom Melody URL:		
Identity 9	Display text for idle screen:		
•	VMI 141- 0 1101-		Internet 💿 100% 👻

#### Step 3: SIP Settings

On the snom SIP Tab, set Long SIP-Contact (RFC3840) and Support broken Registar to OFF.



# Step 4: VX Settings

On the VX General Settings view, enter the Certificate Name.

General Settings		×
Clock Source	Secure Relay	
Primary Clock Slot 1	STU-III Scrambler/Descrambler 🔽	ОК
Primary Clock Port Internal	DC Filter	Cancel
Secondary Clock Slot None	Clock Rate Compensator 🔽	
Secondary Clock Port Internal	V.14 Auto Detection	
Time Server	Misc	
Enabled Node ID 0:0:0:0	Mid-call DTMF Digits Out-of-band Only	
Interval 21600 sec	T.38 Fax Redundancy 0	
Max Change 7200 sec	T.38 CNG Detect	
SNMP-		
Community Name public	Fax/Modem bypass on PCM 🔽	
MIB-II Support 🕅		
Certificate	Status Update Interval 2000 ms	
Certificate Name vxgw.vx.net	No. of missed status updates before LLEM is 3	
Require TLS for domain logon 🗌	declared down	
Allow untrusted root certificate 🗖	STI Clock Auto-Fallback	
Comfort Noise	Primary 🗖 Secondary 🗖	
Send CN RTP packets Enabled		
Generate TDM CN on Media stream absence	Post-login Message of the Day Pre-login Banner	
Enable 🗖	Edit MOTD Edit Banner	
Comfort Noise Level 58 -dBov	Radius	
Media stream timeout 100 ms	Enable Accounting	

#### Step 5: Trunk Group Settings

On the VX Edit TrunkGroup # 1 view, SIP Tab, select SIP Transport>Enable TLS, Persistent TLS Connection for Registration, and Reuse TLS Connection.

Edit TrunkGroup # 1	× • • • • • • • • • • • • • • • • • • •
General SIP H323 SS7	
· · ·	
SIP Common	SIP Mode
Session Expires	Registrant Mode No
Outbound Proxy	Proxy-Like Mode No
Registrar Address	
Subscriber Table None	
	Registrant
	Reg-Error Retry
	Inter Register Time
	- Provulike
Ringback Audio Filename	Min Proxy Reg Expiry
Reliable Provisional Responses	
Send Symmetric Periodication Time	Backup Registrar Address
Use tel: for Outaoina Invite	Enable SLA J
Retrieve Diversion from To header	SIP Security
SIP Transport	Remote Certificate Name
Enable TCP 🔲 Enable UDP 🗐	Enable Remote Certificate Name Check 🗖
Enable TLS 💌 Enable Mutual TLS 🗌	Allow SIP URI in TLS
Persistent TLS Connection for Registration I	
	RTCP_XR 🔽
Realm	Transmission Interval (secs) 5
	OK Cancel

#### Step 6: Call Route

On the VX Edit Call Route #6 view, select **Destination>SIP Registrar** to evaluate the SIP Registrar for matches.

dit Call Route # 6								
General Parameters Enabled	V Usi	ing Regular Expres	sion 🗖 Desc	UC IDD to Native SI	P	Priority		)K ncel
Input to Match Match Rule	\+{+}					Match Using AD Field	None	•
Match Exact Length	D E	xpression Helper	Numbering Type	Any	•	Numbering Plan	Any	•
	Advanced	SIP Matching 🔲	CarrierSelectInfo	Any	•	Carrier Code		
Translate to Output								
Translation Rule	\1				1	ranslate Using AD Field	None	•
			Numbering Type	Unknown	•	Numbering Plan	Unknown	•
CarrierSelectInfo	Untranslate	ed 🔽	Carrier Code			Circuit Code	Untranslated	•
On Match Paramete	rs ———							
Signaling Diffserv	Best Effort	•	Media Diffserv	Best Effort	•	CallingTransTable	None	•
Media Class	Any	•	Transfer Cap	Untranslated	•	Msg Xlat Table	[None]	•
Jitter Min Delay	50	ms	Jitter Optimization	7	•			
Destination						BSP Link Requi	irements	
C BSP		TrunkGro	up [N/A]		•			
C SIP Proxy		Node	ID [N/A]		~	Min Quality	0 9	
<ul> <li>SIP Registrar T</li> <li>Other</li> </ul>	able	SIP Pro	ху			Ding Limit	· · · · · · · · · · · · · · · · · · ·	
C Call Route Tab	le	Peer IP /	IF [Unchanged]		~	Ping Limic	lo u	15
C [Upshapped]		Call Dauta A	la Diana		_			

#### Step 7: snom SIP Registration

On the VX, enter **sho reg** at the command prompt to confirm the snom SIP registration.

UCdei	mo# s	sho reg		I			
Item	TG#	Address of	Record	Contact Address	NAT Address	Expires	TransportType
====	== ==						
1	1	1234		1234010.1.1.109:2084	0.0.0.0	3618s	TLS

# Generating a Self-Signed Certificate

If you do not have a DNS server or Certificate Authority, you must use a self-signed certificate. You can create the self-signed certificate on VX, as described in the steps below, and the certificate will automatically install itself.

#### Step 1: Generate the Certificate

- 1. From the VX command prompt, enter gen cert sel. A dialog displays asking for general information to generate the certificate.
- 2. Enter the requested information, noting the **Common Name** of the certificate must be the IP address of the system.

C	UCdemo# gen cert sel Please input the fol Common Name should k	lowing information to create a provided at the minimum.	a certificate with.		
C	Enter the Common Nam Enter your email add Enter the Organizati Enter Locality: Frem Enter the State: CA Enter the Country: U Generating a certifi	e (Subject Name): 10.1.1.75 ress. trop8hls.com on Name: NET nont (S cate was successful.			
	UCdemo# sho cert Issued To	Issued By	Туре	Generation	Expiration
		10.1.1.75	10.1.1.75 self-signed	7/17/2009 17:13:44	7/17/2010 17:13:44

# Step 2: VX Settings

On the VX General Settings view, enter the Certificate Name.

General Settings		×
Clock Source	Secure Relay	
Primary Clock Slot 1	STU-III Scrambler/Descrambler 🔽	
Primary Clock Port Internal	DC Filter	Cancel
Secondary Clock Slot None	Clock Rate Compensator 🔽	
Secondary Clock Port Internal	V.14 Auto Detection 🔲	
Time Server Enabled Node ID 0:0:0:0 Interval 21600 sec Max Change 7200 sec SNMP Community Name public	Misc Mid-call DTMF Digits Out-of-band Only T.38 Fax Redundancy 0 T.38 CNG Detect Fax/Modem bypass on PCM Fax/Modem bypass on PCM	
MIB-II Support		
Certificate Certificate Name 10.1.1.75 Require TLS for domain logon	Status Update Interval 2000 ms No. of missed status updates before LLEM is 3 declared down	
Allow untrusted root certificate 🗖	STI Clock Auto-Fallback	
Comfort Noise Send CN RTP packets Enabled Generate TDM CN on Media stream absence Enable Comfort Noise Level 58 -dBov Media stream timeout 100 ms	Primary Secondary Pre-login Banner Edit MOTD Edit Banner Radius	

#### Step 3: Trunk Group Settings

On the VX Edit TrunkGroup # 1 view, SIP Tab, select **Enable TLS**, **Persistent TLS Connection for Registration**, and **Reuse TLS Connection**.

Edit TrunkGroup # 1	×
General SIP H323 S57	
SIP Common	_ SIP Mode
Session Expires	Registrant Mode No
Outbound Proxy	Proxv-Like Mode No
Registrar Address	
Subscriber Table None	
Reject non Subscribers No	Registrant
Rea-Timeout Retry	Reg-Error Retry
Music on Hold Filename	Inter Register Time
Rippback Audio Filename	Proxy-Like
Reliable Provisional	Min Proxy Reg Expiry
Responses Supported	Backup Registrar Address
Send Symmetric Packetization Time	Enable SLA
Use tel: for Outgoing Invite	- STD Security
Retrieve Diversion from To header	Remote Certificate Name
SIP Transport	Enable Remote Certificate Name Check
Enable TLS F Enable Mutual TLS	Allow SIP URI in TLS 🗖
Persistent TLS Connection for Registration 🗹	RICP
Reuse TLS Connection 🔽	Enable RTCP
Challenger	
Realm	Transmission Interval (secs) 5
	OK Cancel

#### Step 4: Export the Self-Signed Certificate

1. Use VXbuilder's Manage File or FTP to move the file to your PC.

UCdemo# export cert 10.1.1.75 10cert.cer	
Exporting a certificate was successful.	
üCdemo#	

- 2. From the snom Trusted Certificates view, browse the Load from file: and locate the self-signed certificate file.
- 3. When you have located the VX self-signed certificate, click **Add Certificate**. The certificate is now added to your snom phone.

🖉 snom 360 - Windows Internet	Explorer			_ 0 ×
G - () http://10.1.1.109	)/trusted.htm		💌 🐓 🗙 Go	ogle 🔎 🔹
File Edit View Favorites T	ools Help			
	1 1			
💢 🐼 🚺 snom 360			] 🖬 🔹	• 🔊 • 🖶 • 😭 Page • 🎯 Tools •
				🔺 HTTP Password not set! 🛓
Truste	d Certificates		snom OCS edition	
Operation				
Directory	Issued To Issued By	Expiration	Delete	
Setup	CN = 10.1.1.75 O = NET	17/07/10	×	
Preferences				
Speed Dial				
Function Keys	Import Trusted Certificate			
OCS Account Data	(.cer):			
Identity 1	Load from file:			
Identity 2	Filename:	Browse		
Identity 3				
Identity 4		1		
Identity 5	Add Certificate			
Identity 6				
Identity 7	ů			
Identity 8				
Identity 9				
Identity 10				
Identity 11				
Identity 12				
Action URL Settinas				
http://10.1.1.109/trusted.htm				Internet 🔍 100% 👻

4. On the snom Login Tab, the certificate Common Name is 10.1.1.75. This applies to the **Registrar** and **Outbound Proxy**, with the Outbound Proxy also including ;transport=tls which enables TLS.

🖉 snom 360 - Windows Interne	t Explorer		_ 🗆 ×
G v Nttp://10.1.1.10	9/line_login.htm?l=2	💌 🐓 🗙 Google	P -
File Edit View Favorites	Tools Help		- 🗊
🙀 🏟 🌔 snom 360		🐴 👻 🔂 👻 🔂 Page 🕶 🍥 1	rools + ×
	1 1	A HTTP Password no	ot set! 🔺
Config	uration Identity 2		
		VERSION 8	
Operation			
Home	Login <u>SIP</u> <u>NAT</u> <u>RTP</u>		
Directory	Login Information:		
Setup	Identity active:	© on C off ?	
Preterences	Displayname:	trop	
Speed Dial	Account:	1235	_
OCS Account Data	Password:	•••••••	
Identity 1	Registrar:	10.1.1.75	
Identity 2	Outbound Proxy:	10.1.1.75;transport=tls	
Identity 3	Failover Identity:	None 🔻 🕐	
Identity 4	Authentication Username:		
Identity 5	Mailbox:	• • • • • • • • • • • • • • • • • • • •	
Identity 6	Bingtone:	Ringer 1	
Identity 7	Custom Melody URL	()	
Identity 8	Display text for idle coreen:		
Identity 9	WMI Talla Company UDLy		
Identity 10	XML Idle Screen OKL:		
Identity 11	Ring After Delay (sec):		
Identity 12	Record Missed Calls:	• on C off •	
Action URL Settinas	Record Dialed Calls:	• on C off U	-
J		100 😌 👘 👘 🔤 Internet	J% •

# Configuring OCS Mediation snom with VX Registrar Fallback

**Note**: Switchover is slow on the loss of OCS Mediation. The snom phone seems to take some time to perform the switchover, although calls will still attempt to use mediation until the actual failover on the phone occurs.

**Note**: Previous versions of snom software have been known to have issues. Always have the latest version of software updates to avoid potential problems.

#### Step 1: Setting Up the snom Phone

1. Start-up your snom phone application. The Welcome to Your Phone! view displays.



 To configure the phone for OCS, from the navigation tree located in the left pane select Setup>OCS Account Data. The OCS Account Data view displays showing the OCS Identity with the SIP Registrar backup identity. Click Save to continue.

🖉 snom 360 - Windows Interi	net Explorer	
😋 🕞 👻 🚺 http://10.1.1.	109/ocs.htm	🔽 🗲 🗙 Google
File Edit View Favorites	Tools Help	
🔆 🏘 🜔 snom 360		🙆 • 🗟 - 🖶 • [
OCS A	Account Data	snom Ocception VERSION 8
<b>Operation</b> Home Directory	Please type in your account data her	re
Setup Preferences Speed Dial Function Keys OCS Account Data Identity 1 Identity 2	SIP-URI Username (DOMAIN\USERNAME) Password Save	jsmith@vx.net ? vx\jsmith ? •••••••

 From the navigation tree select Setup>Identify 1 and in the right pane select the Login tab. The Configuration Identity 1 view displays. Listed under Login Information is the Outbound Proxy: ocs.vx.net;transport=tls, which shows it has been tested and found to be working.

🌽 snom 360 - Windows Interne	t Explorer	
🔆 🔆 🗸 🗸 🕐 http://10.1.1.1	09/line_login.htm?l=1	💽 🗲 🗙 Google
File Edit View Favorites	Tools Help	
🚖 🏟 🌔 snom 360		🐴 • 🔊 - 🖶 •
Config	uration Identity 1	SINCE Contraction VERSION
Operation		
Home	Login <u>SIP</u> <u>NAT</u> <u>RTP</u>	
Directory Setup Preferences Speed Dial Function Keys OCS Account Data Identity 1 Identity 2 Identity 3	Login Information: Identity active: Displayname: Account: Password: Registrar: Outbound Proxy: Failover Identity:	Image: Constraint of the second s
Identity 5 Identity 5 Identity 6 Identity 7 Identity 9 Identity 10 Identity 11 Identity 12 Action URL Settings Advanced Trusted Certificates	Mailbox: Ringtone: Custom Melody URL: Display text for idle screen: XML Idle Screen URL: Ring After Delay (sec): Record Missed Calls: Record Dialed Calls: Record Received Calls:	sip:jsmith@vx.net;opaque=ap;         Ringer 1         ?         James Smith         ?      ?
Software Update Status System Information Log SIP Trace	Save Re-Register Play Ringer Remove Identity Remove All Identities	

4. In the right pane, select the **SIP tab** to display the SIP configuration settings for Identity 1. This configures the phone to login as a communicator to OCS.

• N http://10.1.1.1	U9/line_sip.htm?l=1	Google 🛃 🛃
File Edit View Favorites	Tools Help	
🕇 🕸 🌔 snom 360		🖞 • 🔊
		A
Config	juration Identity 1	snom OCsection
		VERSION 🖁
Operation		
Home		
Setun	SIP Identity Settings:	
Preferences	Music on hold server:	
Speed Dial	Alert Info URL:	
Function Keys	User picture URL:	(?)
OCS Account Data	Dial-Plan String:	(?)
Identity 1	ENUM Support:	⊂on ⊙off ?
Identity 2	Countrycode:	(?
Identity 3	Areacode:	(?
Identity 4	Proxy Require:	
Identity 5	Additional supported beaders:	(?)
Identity 6	O-Value:	
Identity 7	Q-value.	
Identity 8	Proposed Expiry:	
Identity 9	Auto Answer:	
Identity 10	Long SIP-Contact (RFC3840):	Con © off 🕐
Identity 11	Support broken Registrar:	⊙on Coff ℃
Identity 12	Shared Line:	Con © off 🕐
Action URL Settings	Publish Presence on bootup:	⊙on Coff ?
Advanced	DTMF via SIP INFO:	off 🔄 💽 🕐
Trusted Certificates	Send display name on INVITE:	C on 🖲 off 🕐
Software Update	Extension Monitoring Call Pickup List:	Con 🖲 off 🕐
tatus	Extension Monitoring Call Pickup List URI:	?
System Information	Contact List:	⊙on ○off ?
Log	Contact List URI:	jsmith@vx.net
SIP Trace	Server Type Support:	OCS V ?
DNS Cache	Remove all bindings on unregister:	
Subscriptions	Subscription Expire (c):	120
PCAP Trace	Epoble book flock	
Memory	Depart Machine State	
Settings	Report Machine State:	
-		

5. Configure Identity 2 as a backup in case of OCS failure. From the navigation tree, select **Identity 2** and the **Login tab**.

🌈 snom 360 - Windows Interr	net Explorer	
→          →          →	109/line_login.htm?l=2	💽 😽 🗙 Google
File Edit View Favorites	Tools Help	
😭 🏟 📢 snom 360		🏠 • 🗟 - 🖶 •
		A HT
Contig	guration Identity 2	Sn()m OCS
		VERSION 8
Operation		
Home	LOUIN SIP NAL KIP	
Directory	Login Information:	
Setup	Identity active:	• on C off ?
Preferences	Displayname:	trop
Speed Dial	Account:	1235
Function Keys	Password:	••••••
OCS Account Data	Registrar:	10.1.1.75
Identity 1	Outbound Proxy:	10.1.1.75
Identity 2	Failover Identity	None
Identity 3	Authoritication Uncompany	
Identity 4	Authentication Username:	
Identity 5	Mailbox:	
Identity 6	Ringtone:	Ringer 1 💽 🕐
Identity /	Custom Melody URL:	(?
Identity 8	Display text for idle screen:	()
Identity 9	XML Idle Screen URL:	?
Identity 10	Ring After Delay (sec):	•
Identity II	Record Missed Calls:	• op C off ?
Action UDL Sottings	Record Dialed Calls:	
Action OKL Settings	Record Received Calls:	• on C off ?
Trusted Certificator		on on w
Software Undate	Save Re-Register Play Ringer	
Statue		
System Information	Remove Identity	
	Remove All Identities	
SIP Trace		

6. In the right pane, select the **SIP tab** to display the SIP configuration settings for Identity 2. This configures backup for the phone to login as a communicator to OCS.

File Edit View Favorites	Tools Help	
🕻 🏟 🌔 snom 360		🗿 + 🔊
Config	juration Identity 2	Snom Ocs
		VERSION 8
Operation		
Home	LOGIN SIP NAT KIP	
Directory	SIP Identity Settings:	
etup Desferresses	Music on hold server:	(?)
Preterences	Alert Info URL:	•
Speed Dial	User picture URL:	?
Function Keys	Dial-Plan String:	•
The state of the s	ENUM Support:	Con Coff ?
Identity I	Countrycode:	(?)
Identity 2	Areacode:	
Identity 5	Breve Barevier	
Identity 4	Proxy Require:	
Identity 5	Additional supported headers:	
Identity 6	Q-Value:	1.0 • ?
Identity /	Proposed Expiry:	3600
Identity o	Auto Answer:	Con 🖲 off ?
Identity 9	Long SIP-Contact (RFC3840):	🔿 on 💿 off ?
Identity IU	Support broken Registrar:	🖲 on 🔿 off 🕐
Identity II	Shared Line:	⊂on ⊙off ?
Identity 12	Publish Presence on bootup:	💿 on 🔿 off ?
Action URL Settings	DTME via SIP INFO:	off 🔹 🥐
Advanced Transtad Castificates	Send display parce on INVITE:	
Coffeend Certificates	Extension Monitoring Call Pickup Lists	
Software Update	Extension Monitoring Call Pickup List	
System Information	Extension Monitoring Can Mckup List ORI:	
Log	Contact List:	von vott v
SIP Trace	Contact List URI:	
DNS Cache	Server Type Support:	Default 💽 🕐
Subscriptions	Remove all bindings on unregister:	○on ⓒoff ?
PCAP Trace	Subscription Expiry (s):	3600
Memory	Enable hook flash:	⊂on ⊛off ?
Settings	Report Machine State:	💿 on 🔿 off ?
360003		

7. In the navigation tree, select **Advanced** and the Advanced Settings dialog displays.

Snom 360 - Windows Interne	et Explorer	
G V http://10.1.1.1	09/advanced_network.htm	🔽 🐓 🗙 Google
File Edit View Favorites	Tools Help	
🔆 🍄 🌔 snom 360		🐴 • 🗟 - 🖶 •
		л нт
Advan	ced Settings	snom OCS
		VERSION 8
Operation	Notwork Robaujan Audia	SID/0TD OoS/Convrity Undate
Home	Network Denavior Audio	SIP/RTP QUS/Security Opdate
Directory	Network:	2
Setup	DHCP:	Con €off 🕐
Preferences	IP address:	10.1.1.109
Speed Dial	Netmask:	255.255.255.0
Function Keys	Host Name:	
OCS Account Data	ID Cateman	10.1.1.50
Identity 1	IP Gateway:	10.1.1.30
Identity 2	DNE	
Identity 3	Domain:	vx.net
Identity 4	DNS Server 1	10.1.1.4
Identity 5	DNG General G	
Identity 6	DNS Server 2:	
Identity 7	<b>T</b> !	
Identity 8	IIme: NTD Time Servery	10114
Identity 9	NTP TIMe Server:	
Identity 10	NIP Refresh Time (sec):	3600
Identity 11	Timezone:	-8 United States - Pacific Time
Identity 12		(?)
Action URL Settings		
Advanced	HTTP:	
Trusted Certificates	HTTP Proxy:	
Software Update	HTTP port:	80 (?)
Status	HTTPS port:	443
System Information	Webserver connection type:	http or https 🔻 🕐
Log	Auto Logout (min):	,
SIP Trace	Hate Logode (Hilli)	
	INAD.	

8. View System Information to confirm your settings.

🌈 snom 360 - Windows Intern	et Explorer	
🔄 🕞 🗸 🚺 http://10.1.1.1	.09/info.htm	🔽 😽 🗙 Google
File Edit View Favorites	Tools Help	
- 🙀 🏟 🌔 snom 360		
-		
Syste	m Information	snom OCS edition VERSION 8
Operation		
Home	Suctor Information	
Directory	Phone Type:	snom360-SIP
Setup	MAC-Address:	000413294EDB
Preferences	TP-Address:	snom360-SIP
Speed Dial	Firmware-version:	snapshot_branch_8_2_2009_06_08_22_00_03_snom 18991
Function Keys	Firmware-URL:	http://provisioning.snom.com/tmp/snom360-OCS- snapshot branch 8 2 2009 06 08 22 00 03 snom-SIP-f.bin
OCS Account Data		Mac:000413294EDB;Version:Standard;Hardware:snom360 (H:
Identity 1	Production Information:	R2A,PO:2007-10091);Date:17/12/07;Copyright(C) snom technology AG
Identity 2	Uptime:	0 days, 1 hours, 26 minutes
Identity 3	Memfree: Bootloader-Version:	1148 K 1 1 3-c
Identity 4	bootoader-version.	1,1,5-5
Identity 5	SIP Identity Status:	
Identity 6	Identity 1 Status:	jsmith@vx.net: OK
Identity 7	Identity 3 Status:	1235@10.1.1.75: Success
Identity 8	Identity 4 Status:	
Identity 9	Identity 5 Status: Identity 6 Status:	
Identity 10	Identity 7 Status:	
Identity 11	Identity 8 Status: Identity 9 Status:	
Identity 12	Identity 10 Status:	
Action URL Settings	Identity 11 Status: Identity 12 Status:	
Advanced	Identity 12 Status.	
Trusted Certificates	Ethernet Status:	
Software Update	Net Port:	Connection Type: 10 Mbit Half Duplex
Status		Status, connecteu
System Information	PC Port:	Connection Type:
Log		Status: not connected
SIP Trace		

9. Your snom phone is now ready to use.



10. On VXbuilder, you can view the Trunk Groups and Calls from the snom MOC/OCS/Mediation to eyeBeam.

🔀 UCdemo - ¥Xbuilder 4.4.4¥59						_ 🗆 ×
<u>File E</u> dit <u>C</u> onnect <u>H</u> elp						
Restart	🚅 In	nport 🛛 🛃 Export	t 📝 Yerify	🛗 Hardware 🛛 🔼 Run W	izard <mark>造M</mark> anage	e Files
- Access Control List	Trunk	Groups				
DNS	Item	ID	Desc	Route	MediaClass	MediaH
≜-Channel Profile Tables	1	TrunkGroup #1	sip tls from 10.1.1.7	#1 To/From Exchange UM	Any	Passthr
Profile #1 Default CAS E&M	2	TrunkGroup #2 TrunkGroup #3	from Exchange	#1 To/From Exchange UM #1 To/From Exchange UM	#1 G.711 mu-law	Passthr
Profile #2 Default ISDN	4	TrunkGroup #4	h323	#2 Incoming SIP calls	Any	Passthr
- Profile #3 Default CAS R2	5	TrunkGroup #5	native sip udp	#2 Incoming SIP calls	#1 G.711 mu-law	Passthr
Profile #4 Default ISUP	6	TrunkGroup #6	bsp	#2 Incoming SIP calls	Any	Passthr
- Profile #5 Default H.323	7	TrunkGroup #7	from ocs	#3 To/From OCS	Any	Passthr

11. Mediation via TCP Transport .

Edit TrunkGroup # 7	×
General SIP H323 557	
SIP Common	SIP Mode
Session Expires 0	Registrant Mode No
Outbound Proxy	Proxy-Like Mode No
Registrar Address	
Subscriber Table None	
Reject non Subscribers No	Registrant
Reg-Timeout Retry 0	
Music on Hold Filename Int	Inter Register Time
Ringback Audio Filename	Proxy-Like
Reliable Provisional Disabled	Min Proxy Reg Expiry
Responses	Backup Registrar Address
Packetization Time	Enable SLA 🗖
Use tel: for Outgoing Invite	SIP Security
	Remote Certificate Name
Enable TCP I Enable UDP	Enable Remote Certificate Name Check 🗖
Enable TLS 🔲 Enable Mutual TLS 🗌	Allow SIP URI in TLS 🔽
Persistent TLS Connection for Registration	RTCP
Reuse ILS Connection	
Challenger	RTCP_XR 🗹
Realm	Transmission Interval (secs) 5
	OK Cancel

12. Call Route to Mediation from Eyebeam.

it Call Route # 2						
Seneral Parameters Enabled	Using Regu	lar Expressio	on 🗖 🛛 Desc	all SIP calls to mediation	Priority	, ОК Cancel
pout to Match						
Match Rule	#1{+}				 Match Using AD Field	None 💌
Aatch Exact Length	Expression	Helper	Numbering Type	0 DV	▼ Numbering Plan	
laten Exact Eorigen	Adupped STD Mate	hing	CamianCalashTafa			
	Advanced SIP Matt	imiy i	CarrierSelectInro	Any	▲ Carrier Code	;
ranslate to Output						
Translation Rule	\1				Translate Using AD Field	None 💌
			Numbering Type	Unknown	<ul> <li>Numbering Plan</li> </ul>	Unknown
CarrierSelectInfo	Untranslated	•	Carrier Code		Circuit Code	Untranslated
n Match Paramete	rs					
Signaling Diffserv	Best Effort	•	Media Diffserv	Best Effort	<ul> <li>CallingTransTable</li> </ul>	None
Media Class	Any	•	Transfer Cap	Untranslated	▼ Msg Xlat Table	[None]
Jitter Min Delav	50	ms J	itter Optimization	7	— न	
,	, , , , , , , , , , , , , , , , , , , ,			J	-	
estination					BSP Link Req	uirements
C BSP		TrunkGroup	#7 from ocs		-	
G CID During		Node ID	[N/A]		Min Quality	· 0 %
SIP Proxy	able	SIP Proxy	/ mediation.vx.r	net:5060		
C SIP Registrar T		54 11000				
C SIP Registrar T C Other C Call Route Tab	e	Peer IP / IF	[Unchanged]			i jo ilis

**Note**: #1 is prepended to the called number by the VX AD integrated scripts. Calls routes without AD integration do not require a prepend prefix.

### 13. SIP Registrar Trunk Group.

Edit TrunkGroup # 5	×
General SIP H323 SS7	
SIP Common	SIP Mode
Session Expires 0	Registrant Mode No
Outbound Proxy	Proxy-Like Mode No
Registrar Address	Challenger Mode No
Subscriber Table None	- Perictrant
Reject non Subscribers No	Reg-Error Retry 100
Reg-Timeout Retry 100	Taba Decider Time
Music on Hold Filename Int	
Ringback Audio Filename	Proxy-Like
Reliable Provisional Disabled	Min Proxy Reg Expiry
Send Symmetric	Backup Registrar Address
Packetization Time	Enable SLA 🗖
Use tel: for Outgoing Invite T Retrieve Diversion from To header	SIP Security
- SIP Transport	Remote Certificate Name
Enable TCP 🔲 Enable UDP 🔽	Enable Remote Certificate Name Check 🗖
Enable TLS Enable Mutual TLS	Allow SIP URI in TLS
Persistent ILb Connection for Registration	RTCP Enable RTCP
Neuse ILS connection .	
Challenger	RTCP_XR
Realm	Transmission Interval (secs) 5
	OK Cancel

#### 14. Call Route to SIP Registrar.

it Call Route # 5								
General Parameters Enabled	🔽 Using Re	gular Expres	ision 🗌 🛛 Desc	UC IDD to Native SIP	•	Priority		OK Cancel
Input to Match Match Rule	#2\+{+}					Match Using AD Field	None	•
Match Exact Length	Express	ion Helper	Numbering Type	Any	•	Numbering Plan	Any	-
	Advanced SIP M	atching 🔲	CarrierSelectInfo	Any	•	Carrier Code		
ranslate to Output								
Translation Rule	\1					Translate Using AD Field	None	•
			Numbering Type	Unknown	•	Numbering Plan	Unknown	•
CarrierSelectInfo	Untranslated	•	Carrier Code			Circuit Code	Untranslated	•
)n Match Parameter	rs —							
Signaling Diffserv	Best Effort	•	Media Diffserv	Best Effort	•	CallingTransTable	None	•
Media Class	Any	•	Transfer Cap	Untranslated	•	Msg Xlat Table	[None]	•
Jitter Min Delay	50	ms	Jitter Optimization	7	•			
estination						BSP Link Requ	irements	
C BSP		TrunkGro	oup [N/A]		•			
C SIP Proxy		Node	ID [N/A]		7	Min Quality	0	~
<ul> <li>SIP Registrar T</li> <li>Other</li> </ul>	able	SIP Pro	жу			Die e Limite	, [0	
00101	le	Peer IP /	IF [Unchanged]		-	Ping Limit	10	ins
Call Route Tabl								

**Note**: #2 is prepended to the called number by the AD integrated scripts. It may be removed for calls not employing the scripted AD integration.

# Examples

### VX Registrar

	117				
Item TG# Add	lress of Record	Contact Address	NAT Address	Expires	TransportType
===== = = =	=======================================				=========
1 5 123	5	1235010.1.1.109	0.0.0	568	UDP
2 5 140	183489775	14083489775010.1.1.103:51784	0.0.0.0	39s	UDP

# Calls between snom Phone <> eyeBeam

🛃 10.1.1.75 - PuTTY	N.				
UCdemo#					
UCdemo# sho call detail					
CSN In Trunkgroup# Call	ling Number.	Called Number	Out Node ID	Inbound	Outbound
(hex)			or Trunkgroup#	Transport	Transport
x001d Tkgrp: 5 1408	83489775	+1114	Tkgrp: 7	UDP	TCP

🛃 10.1.1.75 - PuT	Y					
UCdemo#						
UCdemo# sho c	all detail					
CSN In Trun (hex)	kgroup# C	alling Number	Called Number	Out Node ID or Trunkgroup#	Inbound Transport	Outbound Transport
 x001f Tkgrp:	7 +	 1114	 14083489775051784	 Tkgrp: 5	 ТСР	 UDP

10.1	.1.75 - PuTTY					
UCdem	o# sho call deta:	il				
CSN	In Trunkgroup#	Calling Number	Called Number	Out Node ID	Inbound	Outbound
(hex)				or Trunkgroup#	Transport	Transport
x0020	Tkgrp: 5	14083489775	1235010.1.1.109	Tkgrp: 5	UDP	UDP

<u>_</u> 10.1	.1.75 - PuTTY					
UCdem CSN (hex)	o# sho call deta: In Trunkgroup#	il Calling Number	Called Number	Out Node ID or Trunkgroup#	Inbound Transport	Outbound Transport
x0030	Tkgrp: 5	1235	14083489775051784	Tkgrp: 5	UDP	UDP

# Configuring TLS on eyeBeam

*eyeBeam with TLS* is similar to other TLS clients. The most important task is to import to the PC the **root certificate** from the Certificate Authority that signed the VX certificate.

About eyeBeam
eyeBeam Version 1.5.19.5 build 52345
License OK

### Step 1: eyeBeam SIP Account Configuration

1. Note the vxgw.vx.net address to the proxy. This entry must be the same as the Common Name of the certificate installed on the VX.

Properties of Account 1	×
Account Voicemail Topology	Presence Storage Security Advanced
User Details	
Display Name	14083489775
User name	14083489775
Password	
Authorization user name	14083489775
Domain	vx.net
Domain Proxy Register with domain and Send outbound via:	receive incoming calls
proxy Address	vxgw.vx.net
Dialing plan	#1\a\a.T;match=1;prestrip=2;
	OK Cancel Apply

2. You can also display the certificate name by entering **sho cert** at the VX command prompt.

_	🐣 10.1.1.75 - PuTTY					
	JCdemo#					
	Issued To	Issued By		Type	Generation	Expiration
L		vxgw.vx.net	vxca	CA-signed	4/27/2009 20:05:28	4/27/2011 20:15:28

# Step 2: eyeBeam Security Settings

Properties of Account 1
Account Voicemail Topology Presence Storage Security Advanced
Signalling Transport TLS
Encrypted or TLS must be selected to enable media encryption.
- Madia Encruption
Make and accept only encrypted calls
Prefer to make and accept encrypted calls
Make unencrypted calls, accept all calls
C Do not allow encrypted calls
OK Cancel Apply

#### Step 3: Importing the Root Certificate to the eyeBeam PC

1. Transfer to the PC the **root certificate** of the Certificate Authority that signed the **vxgw.vx.net** certificate.



- 2. On the Certificate view, General Tab, Double click **Install Certificate** to install the certificate using the following instructions.
  - a. **vxca** is the root certificate from the Certificate Authority used to sign the vxgw.vx.net certificate.

Certificate		? ×
General Deta	ils Certification Path	1
Ce	ertificate Information	
This cert • All • All	ificate is intended for the following purpose(s): ssuance policies application policies	
Issu	ed to: vxca	
Issu	ed by: vxca	
¥ali	<b>i from</b> 1/17/2009 <b>to</b> 1/17/2014	
	Install Certificate Issuer Statem	ent
		ж

3. The **Certificate Import Wizard>Welcome to the Certificate Import Wizard** view displays. Read the text and click **Next** to continue.

Certificate Import Wizard		×
Certificate Import Wizard	Welcome to the Certificate Import Wizard         This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.         A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.         To continue, click Next.	X
	< Back Next > Cancel	

4. Browse the Certificate Store to select certificate storage location. Click Next to continue.

Certificate Import Wizard	×
<b>Certificate Store</b> Certificate stores are system areas where certificates are kept.	
Windows can automatically select a certificate store, or you can specify a location for	
$\odot$ Automatically select the certificate store based on the type of certificate	
Place all certificates in the following store	
Certificate store:	
Browse	
< Back Next > Cancel	

5. Select the **Certificate Store** and click **OK**.



6. Confirm the Certificate Store you have selected, which displays in the **Certificate Store** entry, and click **Next** to continue.

Certificate Import Wizard	×
<b>Certificate Store</b> Certificate stores are system areas where certificates are kept.	
Windows can automatically select a certificate store, or you can specify a location for	
Automatically select the certificate score based on the type of certificate	
Trusted Root Certification Authorities\Local Computer Browse	
< Back Next >	

7. Confirm your completion of the Certificate Import Wizard by clicking Finish.



8. Acknowledge the import was successful by clicking **OK**.



9. You must now **REBOOT your PC** to complete the process. This is a required step to complete the process.

Note: Failure to reboot your PC will invalidate the Certificate Import Wizard steps.

#### Step 4: Verify Certificate Installation

After rebooting your PC, verify that the root certificate is properly installed. Use the Certificates Snap-in to verify the certificate.

1. At the command prompt, enter **mmc** 



2. At the Console 1 view, select Add/Remove Snap-In...

🚡 Console 1		_ 🗆 🗵
File Action View Favorites Window Help		
New Ctrl+N		
Open Ctrl+O		
Save Ctrl+S		
Add/Remove Snap-in Ctrl+M	There are no items to show in this view.	
1 C:\WINDOWS\\compmgmt.msc		
3 C:\WINDOWS\\services.msc		
4 C:\WINDOWS\\Com\comexp.msc		
Exit		
Enables you to add span-ins to or remove them from the span-in	console.	

3. From the Standalone Tab, select the **Console Root** folder from the **Snap-ins added to** field. Click **Add** and then **OK**. The Add Standalone Snap-in view displays.

Add/Remove Snap-in	? ×
Standalone Extensions	
Use this page to add or remove a stand-alone snap-in from the console	.
Snap-ins added to: 🔄 Console Root	
Description	
Add Remove About	
	ncel

4. Select the **Certificates**, and click **Add**. The Certificates snap-in view displays.

Add Standalone Snap-in		? ×
Available standalone snap-ins:		
Snap-in	Vendor	
NET Framework 1.1 Configuration	Microsoft Corporation	
MET Framework Configuration	Microsoft Corporation	
ActiveX Control	Microsoft Corporation	
Certificates	Microsoft Corporation	
Component Services	Microsoft Corporation	
📕 Computer Management	Microsoft Corporation	
Bevice Manager	Microsoft Corporation	
🚯 Disk Defragmenter	Microsoft Corp, Execut	
🗃 Disk Management	Microsoft and VERITAS	
🗐 Event Viewer	Microsoft Corporation	-
The Certificates snap-in allows you to bro	owse the contents of the	
certificate stores for yourself, a service,	or a computer.	
	Add . Close	
L		

5. Select the radio button for **Computer account** and click **Next**.

Certificates snap-in	×
Certificates snap-in This snap-in will always manage certificates for: My user account Service account Computer account	X
< B	ack. Next > Cancel

6. Select the radio button for Local computer and click Finish.

Select Computer	×
Select the computer you want this snap-in to manage.         This snap-in will always manage:         • Local computer: (the computer this console is running on)         • Another computer:         Browse         • Allow the selected computer to be changed when launching from the command line. This only applies if you save the console.	
< Back Finish Cancel	

7. From the Add Standalone Snap-in view, select Certificates and click Add.

Add Standalone Snap-in	? ×
Available standalone snap-ins:	
Snap-in	Vendor 🔺
ation 2.1 Configuration 3.1 Configuration	Microsoft Corporation
and the second s	Microsoft Corporation
a ActiveX Control	Microsoft Corporation
Certificates	Microsoft Corporation 🛛 🔜
Component Services	Microsoft Corporation
🔜 Computer Management	Microsoft Corporation
Boevice Manager	Microsoft Corporation
🚯 Disk Defragmenter	Microsoft Corp, Execut
👹 Disk Management	Microsoft and VERITAS
😥 Event Viewer	Microsoft Corporation
Description The Certificates snap-in allows you to bro certificate stores for yourself, a service,	owse the contents of the or a computer.
	Add Close

8. From the Standalone Tab, the **Certificates (Local Computer)** Snap-ins display as added. Click **OK**.

Add/Remove Snap-in ? 🗙
Standalone Extensions
Use this page to add or remove a stand-alone snap-in from the console.
Snap-ins added to: 🔄 Console Root 💌 💼
Certificates (Local Computer)
Description
beschpton
Add Remove About
OK Cancel

9. You can also verify the vxca certificate has been added by viewing the **Console Root>Trusted Root Certifications Authorities>Certificates** folder contents.

Tonsole1	
File Action View Favorites Window Help	
	]
Console Root\Certificates (Local Computer)\`	Trusted Root Certification Authorities\Certificates
Console Root	Issued To 🔺 Issued By
📄 🗐 Certificates (Local Computer)	🔛 Thawte Personal Premium CA Thawte Personal Premium C
🗄 💼 Personal	🖾 Thawte Premium Server CA Thawte Premium Server CA
Trusted Root Certification Authorities	🖾 thawte Primary Root CA thawte Primary Root CA
Certificates	🖾 Thawte Server CA Thawte Server CA
Enterprise Trust	🖾 Thawte Timestamping CA Thawte Timestamping CA
Intermediate Certification Authorities	UTN - DATACorp SGC UTN - DATACorp SGC
Intrusted Publishers	🖾 UTN-USERFirst-Client Authenticati UTN-USERFirst-Client Authe
Third-Party Root Certification Authorities	UTN-USERFirst-Hardware UTN-USERFirst-Hardware
	UTN-USERFirst-Network Applications UTN-USERFirst-Network App
	UTN-USERFirst-Object UTN-USERFirst-Object
🗄 👘 SPC	🕮 VeriSign Class 3 Public Primary Cer VeriSign Class 3 Public Prima
	🕮 VeriSign Commercial Software Pub VeriSign Commercial Softwa
	🔤 VeriSign Commercial Software Pub VeriSign Commercial Softwa
	🔤 VeriSign Individual Software Publis VeriSign Individual Software
	🕮 VeriSign Individual Software Publis VeriSign Individual Software
	🕮 VeriSign Trust Network VeriSign Trust Network
	🖾 VeriSign Trust Network VeriSign Trust Network
	🖼 VeriSign Trust Network VeriSign Trust Network
	🔤 VeriSign Trust Network VeriSign Trust Network
	🖼 VeriSign Trust Network VeriSign Trust Network
	🖼 VeriSign Trust Network VeriSign Trust Network
	VeriSign Trust Network VeriSign Trust Network
	🕮 VeriSign Trust Network VeriSign Trust Network
	🕮 vxca 💦 vxca
	🔛 Xcert EZ by DST 🛛 🔍 🗸
Trusted Root Certification Authorities store contains 115	certificates.

#### 10. Exit the console.

Save Ctrl+S	\Trusted Root Certification Authorities\Certi	ficates 💶 🗖 🗙
Save As	Issued To 🗠	Issued By
Add/Remove Spap-in Chrl+M	🔛 Thawte Personal Premium CA	Thawte Personal Premium C
Options	🔤 Thawte Premium Server CA	Thawte Premium Server CA
	🔤 thawte Primary Root CA	thawte Primary Root CA
1 C:\WINDOWS\\compmgmt.msc	Thawte Server CA	Thawte Server CA
2 C:\WINDOWS\\certmgr.msc	🔤 Thawte Timestamping CA	Thawte Timestamping CA
3 C:(WINDOWS))services.msc	UTN - DATACorp SGC	UTN - DATACorp SGC
4 C:\WINDOWS\\Com\comexp.msc	UTN-USERFirst-Client Authenticati	UTN-USERFirst-Client Authe
Exit	UTN-USERFirst-Hardware	UTN-USERFirst-Hardware
±	UTN-USERFirst-Network Applications	UTN-USERFirst-Network App
🕘 💼 Other People	UTN-USERFirst-Object	UTN-USERFirst-Object
± EPC	VeriSign Class 3 Public Primary Cer	VeriSign Class 3 Public Prima
	VeriSign Commercial Software Pub	VeriSign Commercial Softwa
	VeriSign Commercial Software Pub	VeriSign Commercial Softwa
	VeriSign Individual Software Publis	VeriSign Individual Software
	😬 VeriSign Individual Software Publis	VeriSign Individual Software
	VeriSign Trust Network	VeriSign Trust Network
	VeriSign Trust Network	VeriSign Trust Network
	E VeriSign Trust Network	VeriSign Trust Network
	VeriSign Trust Network	VeriSign Trust Network
	Veribign Trust Network	VeriSign Trust Network
	VeriSign Trust Network	VeriSign Trust Network
	VeriSign Trust Network	VeriSign Trust Network
	verisign Trust Network	VeriSign Trust Network
	VXCa	VXLd
		ALERCEZ DY DOT
uits the program and prompts to save documents.		11.

# Step 5: VX Configuration

A TLS-configured Trunk Group.

SIP Common	SIP Mode
Session Expires	Registrant Mode No 💌
Outbound Proxy	Proxy-Like Mode No
Registrar Address	Challenger Mode No
Subscriber Table None	
Reject non Subscribers No.	Registrant
Pen-Timenut Petry	Reg-Error Retry
Music on Hold Filename	Inter Register Time
Ringback Audio Filename	Proxy-Like
Reliable Provisional Responses Supported	Min Proxy Reg Expiry
Sond Summotric	Backup Registrar Address
Packetization Time	Enable SLA 🗖
Use tel: for Outgoing Invite 🗌 Retrieve Diversion from To beader 🗍	SIP Security
	Remote Certificate Name
SIP Transport	Enable Demote Cavificate Name Check
Enable TLS 🔽 Enable Mutual TLS 📃	
Persistent TLS Connection for Registration 🔽	RTCP
Reuse TLS Connection 🔽	Enable RTCP 🔽
	RTCP 🗹
Challenger	RTCP_XR 🔽
Realm	Transmission Interval (secs) 5
·	·

# Step 6: VX General Menu

The vxgw.vx.net installed certificate.

General Settings		×
Clock Source	Secure Relay	
Primary Clock Slot 1	STU-III Scrambler/Descrambler 🔽	ОК
Primary Clock Port Internal	DC Filter	Cancel
Secondary Clock Slot None	Clock Rate Compensator 🔽	
Secondary Clock Port Internal	V.14 Auto Detection	
Time Server	- Misc	
Enabled Node ID 0:0:0:0	Mid-call DTMF Digits Out-of-band Only	
Interval 21600 sec	T.38 Fax Redundancy 0	
Max Change 7200 sec		
SNMP		
Community Name public	Fax/Modem bypass on PCM 🔽	
MIB-II Support 🔲		
Certificate	Status Update Interval 2000 ms	
Certificate Name vxgw.vx.net	No. of missed status	
Require TLS for domain logon 「	declared down	
Allow untrusted root certificate 🗖	STI Clock Auto-Fallback	
Comfort Noise	Primary 🗖 Secondary 🗖	
Send CN RTP packets Enabled	Post-login Message of the Day Pre-login Banner	_
Generate TDM CN on Media stream absence	Edit MOTD Edit Banner	
Comfort Noise Level 58 -dBov	Radius	
Media stream timeout 100 ms	Enable Accounting	

TLS

#### Step 7: eyeBeam TLS to snom Calls

🚰 10.1.1.75 - PuTTY					
UCdemo#					
UCdemo# sho call deta	il				
CSN In Trunkgroup# (hex)	Calling Number	Called Number	Out Node ID or Trunkgroup#	Inbound Transport	Outbound Transport
x0001 Tkgrp: 1	14083489775	1235010.1.1.109	Tkgrp: 5	TLS	UDP
🛃 10.1.1.75 - PuTTY					
UCdemo# sho call deta	il				
CSN In Trunkgroup#	Calling Number	Called Number	Out Node ID or Trunkgroun#	Inbound Transport	Outbound Transport

1235@10.1.1.109:2062 Tkgrp: 1

Step 8: snom TLS Configuration

14083489775

x0002 Tkgrp: 1



snom 360 Phone with VX for Branch Survivability