

How to configure Synway Gateway for a connection with 3CX Phone System

Technical Department

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1. Abstract

3CX Phone System for Windows is a software-based IP PBX that replaces a proprietary hardware PBX / PABX. 3CX's IP PBX has been developed specifically for Microsoft Windows and is based on the SIP standard, making it easier to manage and allowing you to use any SIP phone (software or hardware).

Synway SMG gateway family helps customers access to IP networks from legacy telephony applications more reliably and efficiently.

This document will help you to configure Synway Digital or Analog Gateway for a connection with 3CX Phone System.

2. Test Environment

Windows 2008 server R2, 64bit

.NET Framework 3.5.1

3CX Phone System 12.5, download from <http://erp.3cx.com/downloads/download.aspx>

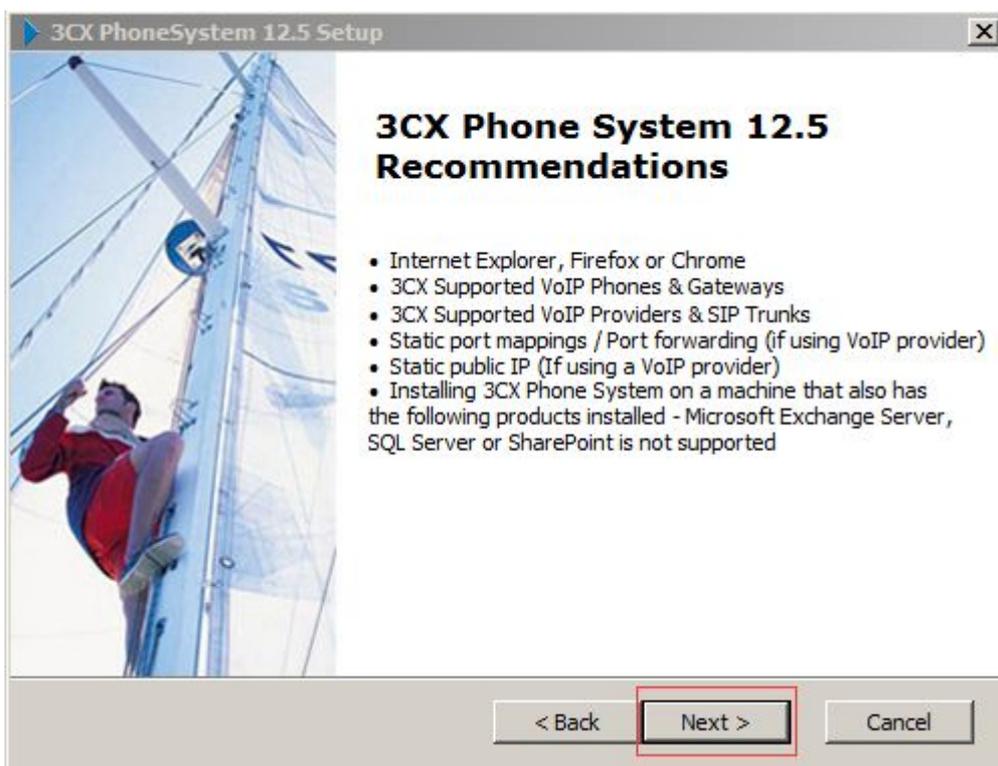
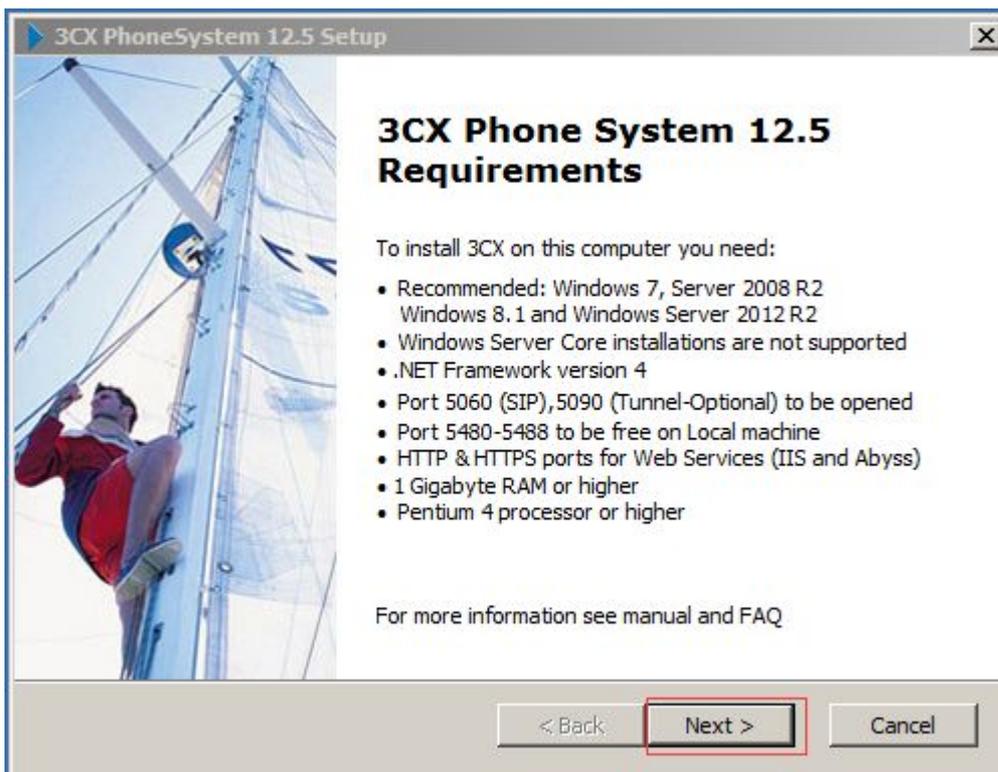
Synway Digital Gateway: SMG2120, 1.6.1_2015062617

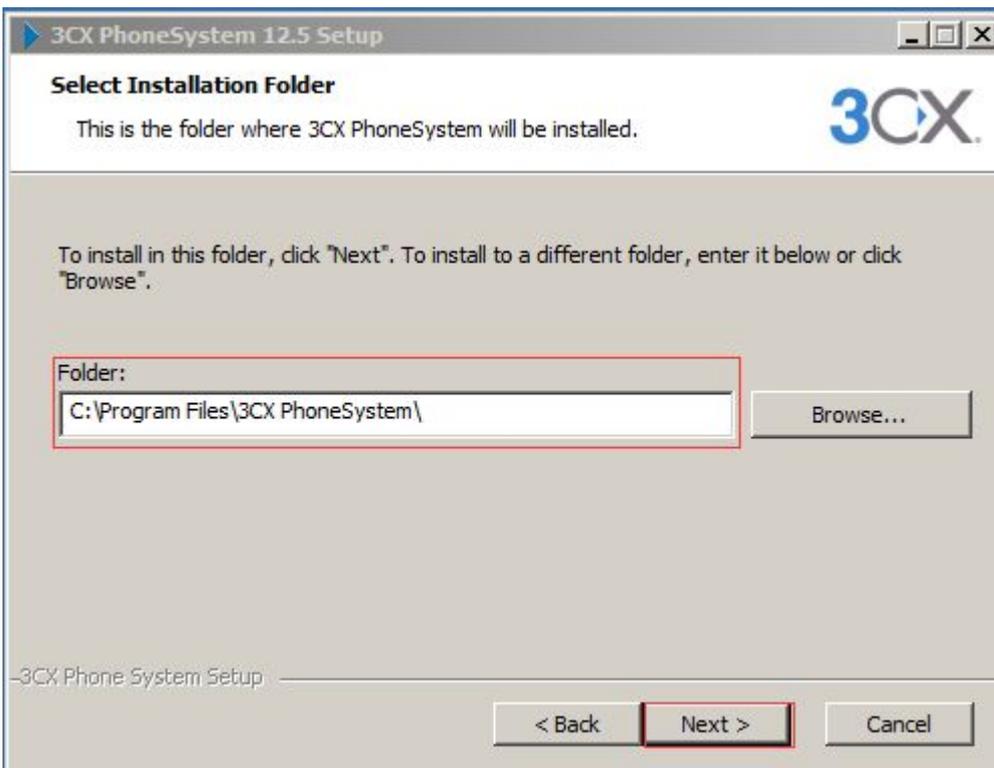
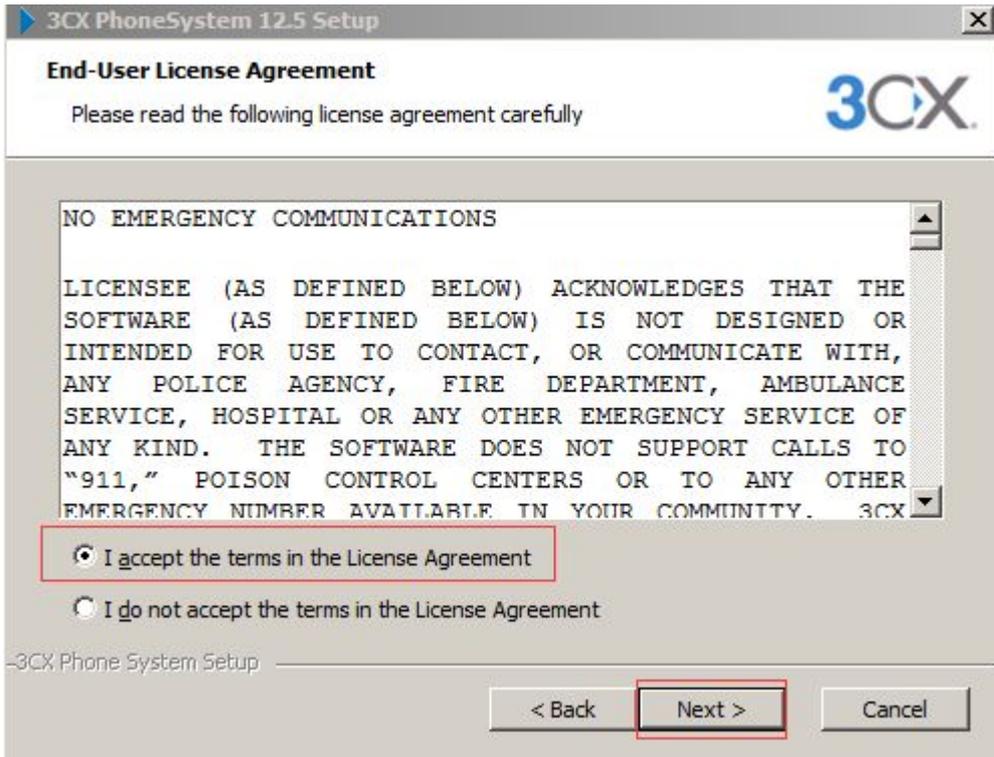
Synway Analog Gateway:SMG1032, 1.5.2_Release+2015052812

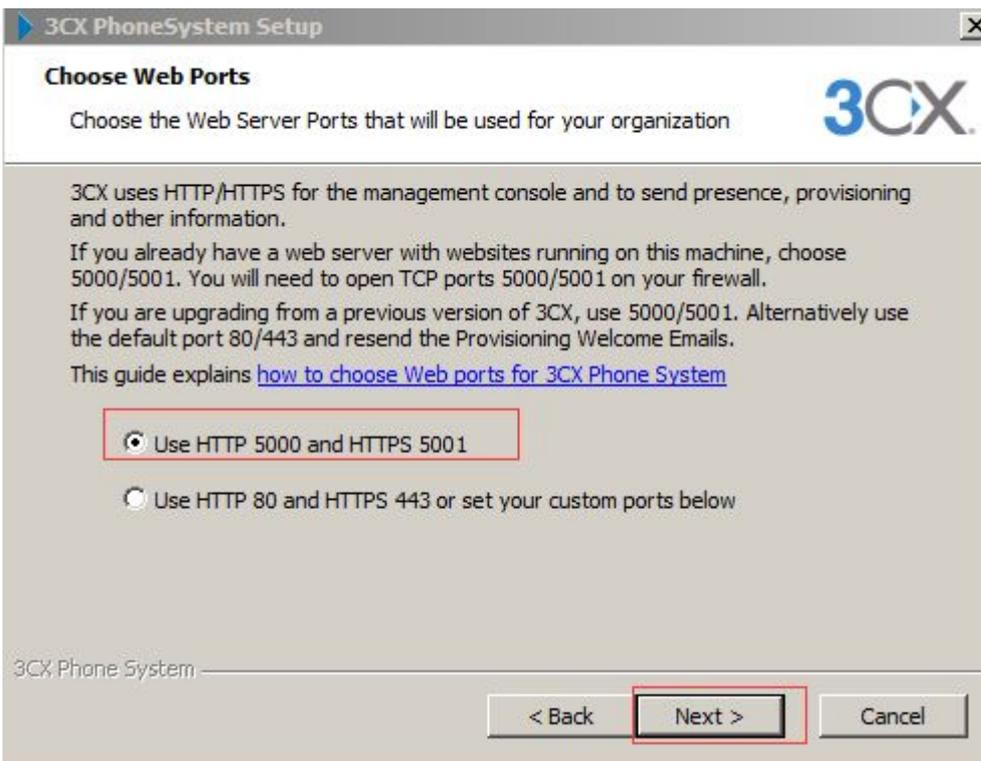
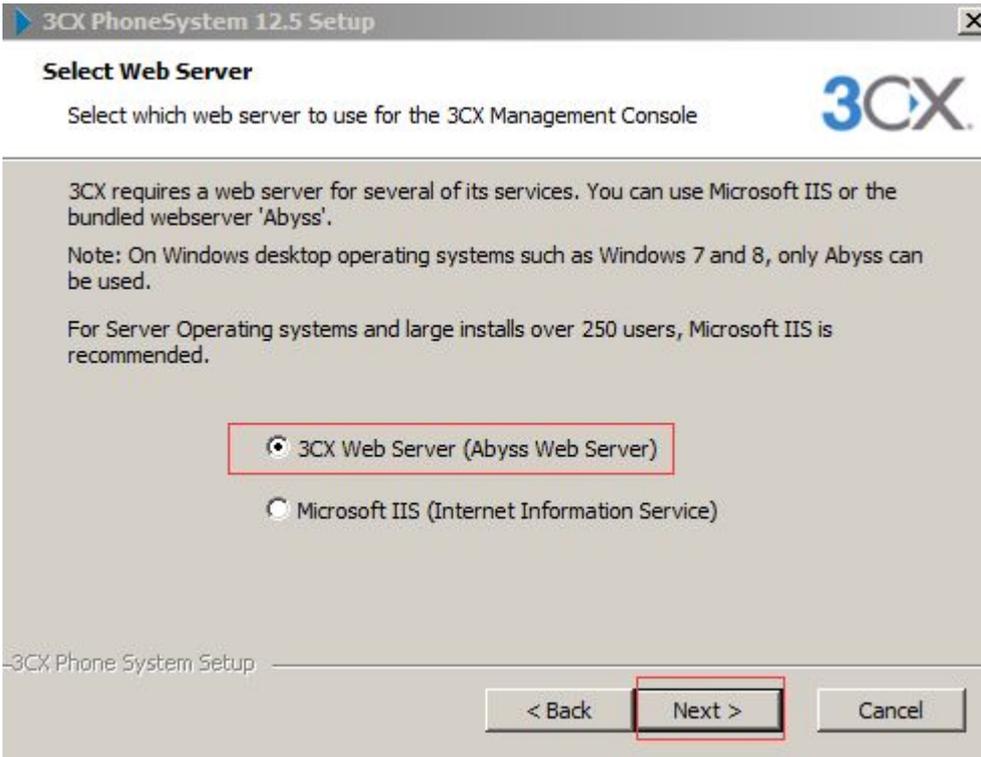
3. Installing 3CX Phone System & Running the Configuration Wizard

Please refer to <http://www.3cx.com/docs/manual/>, you can find 3CX Phone System 12.5 Manual & Documentation Index

- 1) Download the latest version of 3CX Phone System.
- 2) Start the installation of 3CX Phone system by double clicking on the setup file.
- 3) Click "Next" to begin installation step by step.
- 4) Click "Install". Once 3CXPhone has been installed, click "Finish" to enter into configuration wizard.
- 5) The wizard will ask you to set language, static public IP address, and create a new PBX account step by step.
- 6) After the wizard has completed, you can connect to the 3CX Phone System Management Console by clicking on the management console short cut in the desktop.







3CX PhoneSystem Setup [X]

Configure HTTPS

Enter the following information to create your SSL Certificate 

Company Name
Enter your company name

Internal / local FQDN
Enter your 3CX Phone System internal fully qualified domain name (FQDN). FQDN must resolve correctly from the LAN! [How to setup an internal FQDN](#)
(If you do not have a DNS Server enter the Internal/Local IP)

External FQDN
Enter your 3CX Phone System external fully qualified domain name (FQDN). FQDN must resolve correctly from the Internet! [How to setup an external FQDN](#)
(If you do not have a DNS Server enter the External/Public IP)

Certificate Password
Create a certificate password.

3CX Phone System Setup

< Back **Next >** Cancel

3CX PhoneSystem 12.5 Setup [X]

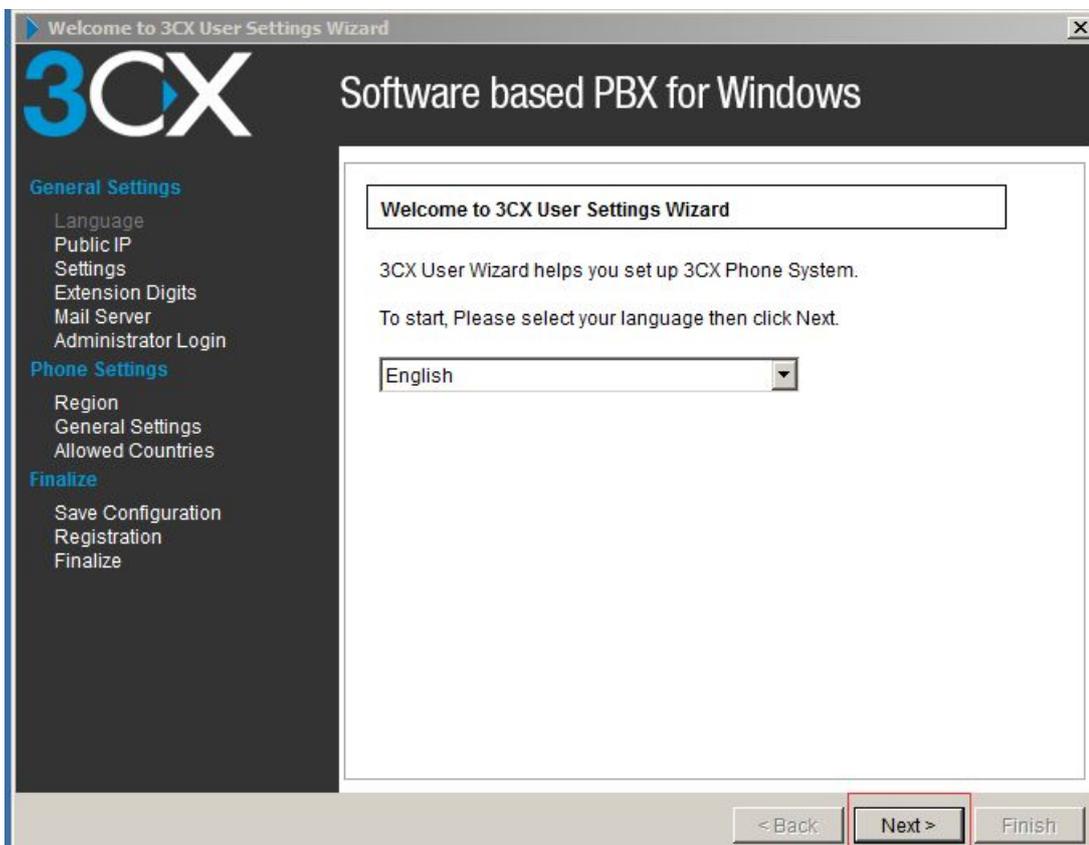
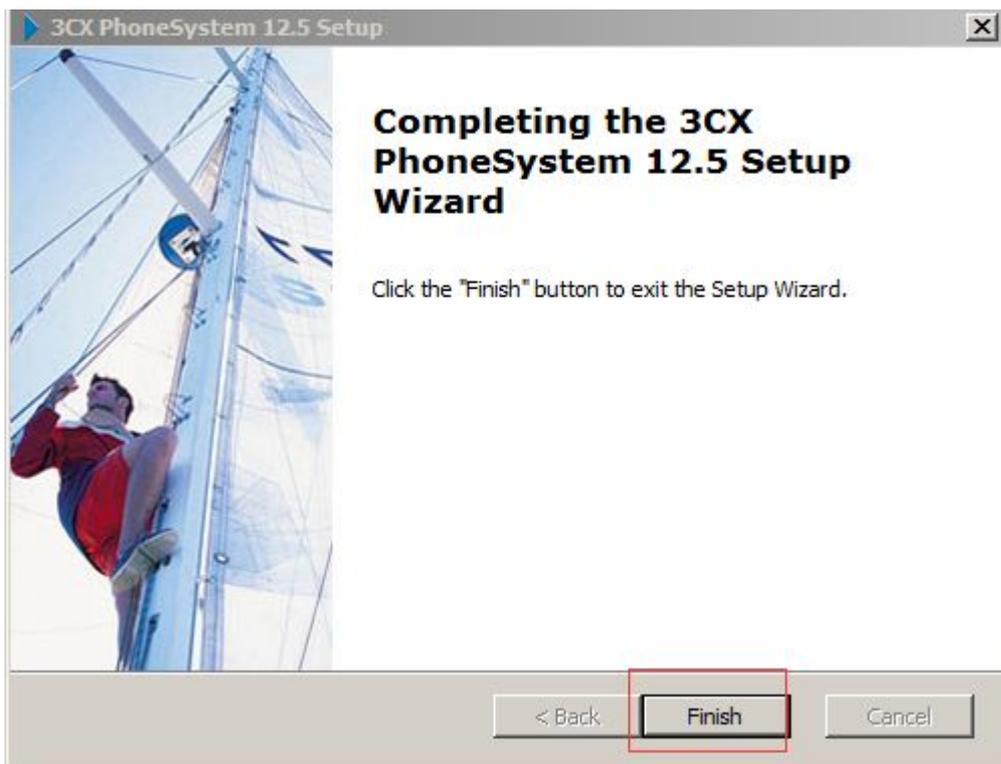
Ready to Install

The Setup Wizard is ready to begin the 3CX PhoneSystem installation 

Click "Install" to begin the installation. If you want to review or change any of your installation settings, click "Back". Click "Cancel" to exit the wizard.

3CX Phone System Setup

< Back **Install** Cancel



Welcome to 3CX User Settings Wizard

3CX Software based PBX for Windows

- General Settings
 - Language
 - Public IP
 - Settings
 - Extension Digits
 - Mail Server
 - Administrator Login
- Phone Settings
 - Region
 - General Settings
 - Allowed Countries
- Finalize
 - Save Configuration
 - Registration
 - Finalize

Network and Public IP Configuration

Configure Default IP Address

Enter your Public (External) IP Address here. This will be used for remote extensions, VoIP Providers, and remote phone provisioning. Note that dynamic public IP Addresses or services like DynDns are not supported.

Static Public IP

External FQDN

Select the network interface on this computer that is connected to the internet (Default Gateway)

Network card Interface

No, I do not have a Static Public IP Address.
WARNING! VoIP Providers, Remote extensions, Bridges and WebRTC will NOT work reliably with this configuration.

< Back **Next >** Finish

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- Phone Settings
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 - Allowed Countries
- Finalize
 - Save Configuration
 - Registration
 - Finalize

Create New PBX or Restore

Do you want to create a New 3CX Phone System or do you want to restore a backup?

Create New PBX

Restore existing PBX backup

< Back **Next >** Finish

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Specify number of digits in extension number

Select how many digits you want your internal extension numbers to have. System defaults are set to 3 digits. Note that the system uses at least 30 numbers for system extensions. This setting can not be changed after installation.

- 2 Digits (Available extensions between 10-99)
- 3 Digits (Available extensions between 100-999)
- 4 Digits (Available extensions between 1000-9999)
- 5 Digits (Available extensions between 10000-99999)

< Back **Next >** Finish

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Mail Server Settings

Please enter the name or IP address of your SMTP server and the sender's email address. 3CX Phone System will use this SMTP server to send voice mail notifications.

SMTP Server:

E-mail address:

User:

Password:

Enable SSL/TLS:

< Back **Next >** Finish

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 - Finalize

Administrator Login and Password

Please enter your preferred user name and password. You will require these to logon to 3CX Management Console.

Username:	<input type="text" value="admin"/>
Password:	<input type="password" value="....."/>
Confirm Password:	<input type="password" value="....."/>

< Back **Next >** Finish

Welcome to 3CX User Settings Wizard

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Select Region and International Dialing Code

Specify the region where 3CX Phone System will be operating from

Select Country	<input type="text" value="China (+86)"/>
----------------	--

International Dialing Code (Exit Code)
When making an international call, the International Dialing Code is the number you are required to dial first to "exit" your country. After selecting the country verify the International Dialing Code below.

International Dialing Code	<input type="text" value="00"/>
----------------------------	---------------------------------

Time Zone Settings
Set the time zone

< Back **Next >** Finish

Welcome to 3CX User Settings Wizard

3CX Software based PBX for Windows

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Operator and Voicemail Extension

Select the Operator Extension which will be the default destination for inbound calls.

Create the Operator Extension

Extension Number:

First Name:

Last Name:

E-mail address:

Voice mail extension:

< Back **Next >** Finish

Welcome to 3CX User Settings Wizard

3CX Software based PBX for Windows

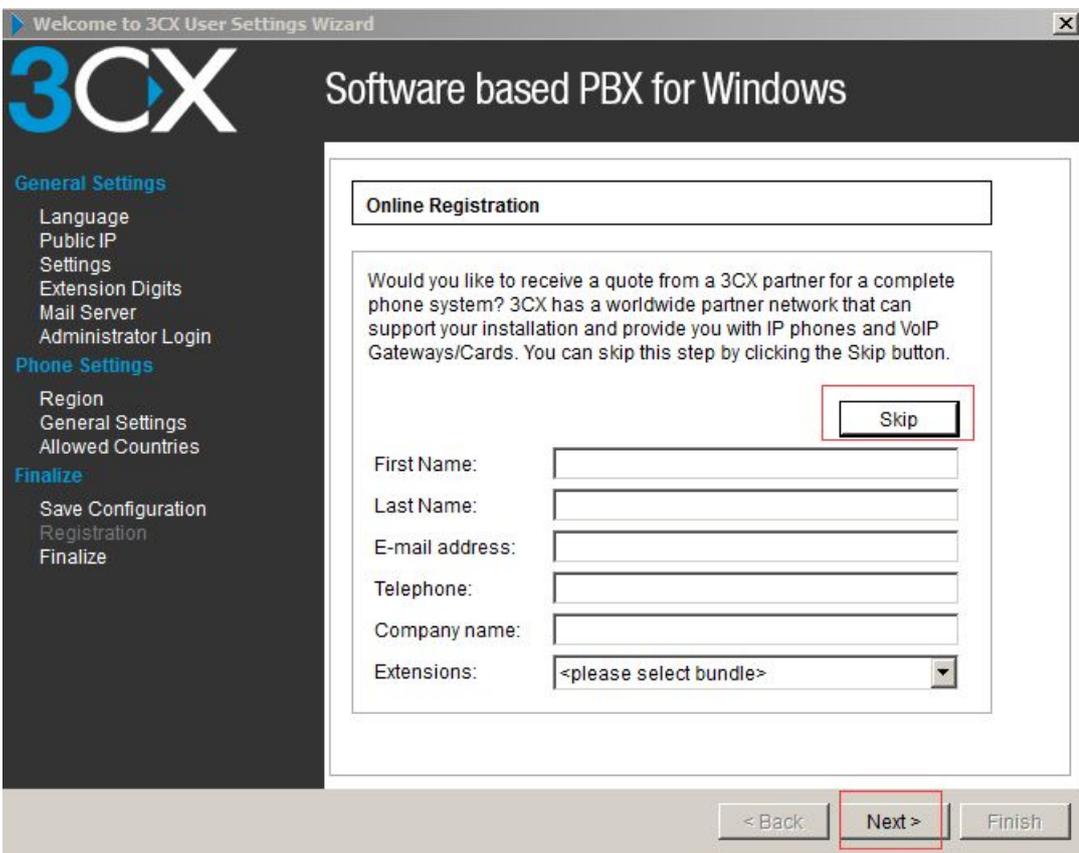
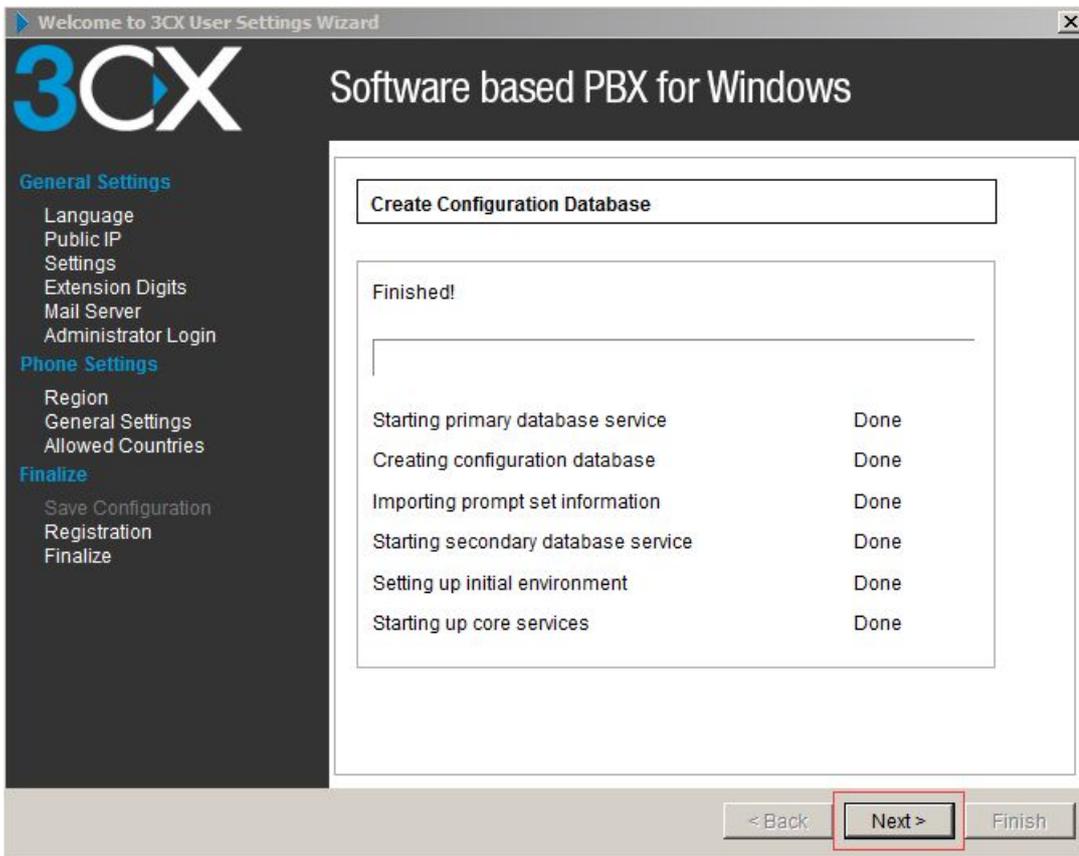
- General Settings
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 - Region
 - General Settings
 - Allowed Countries
- Finalize
 - Save Configuration
 - Registration
 - Finalize

Allowed International Regions

3CX Phone System will allow calls made to the following countries

- North America
- South America
- Europe
- Asia and the Middle East
- Africa
- Australia

< Back **Next >** Finish





4. Configuring Synway Digital Gateway for a Connection with 3CX

3CX IP Address: **192.168.10.63**

Synway Digital Gateway IP Address: **192.168.10.248**

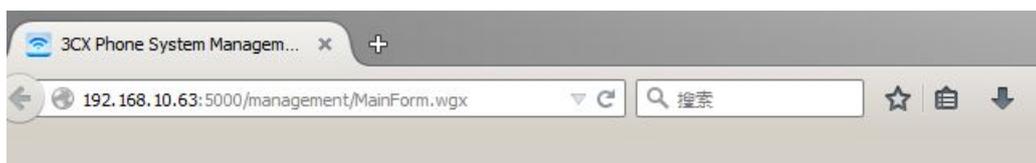
Synway Digital Gateway E1 port PCM0 connects to E1 endpoint , here we use Synway SHD digital trunk board as the E1 endpoint, both are configured in PRI protocol

Below is the configuration among 3CX Phone System, Eyebeam, and Synway Digital Gateway, try to make calls from these scenarios:

a) Eyebeam-->3CX-->Digital Gateway-->E1 Endpoint

b) E1 Endpoint-->Digital Gateway-->3CX-->Eyebeam

- 1) To connect to the management console, start a web browser and enter the name of the machine on which 3CX Phone System is installed, followed by 'Management'. Here is an example, <http://192.168.10.63:5000/Management>.



- To add an extension, click on 'Add Extension' from the toolbar, specify an authentication ID and password for this extension.

3CX Server Manager ▶ Extensions

Filter:

Extension Number	First Name	Last Name	Email Address
100	hui	fang	fqh@synway.cn

- Ports/Trunks Status
- Extension Status
- System Extensions Status
- 3CXPhone Clients
- Remote Connections
- Phones
- Server Activity Log
- Server Event Log
- Services status
- Extensions**
- WebRTC Gateway
- VoIP/PSTN Gateways

Edit Extension settings and click OK or Apply to save changes.

User Information

Configure user information below

Extension Number	<input type="text" value="101"/>	<input type="button" value="i"/>
First Name	<input type="text"/>	<input type="button" value="i"/>
Last Name	<input type="text"/>	<input type="button" value="i"/>
Email address	<input type="text"/>	<input type="button" value="i"/>
Mobile Number	<input type="text"/>	<input type="button" value="i"/>

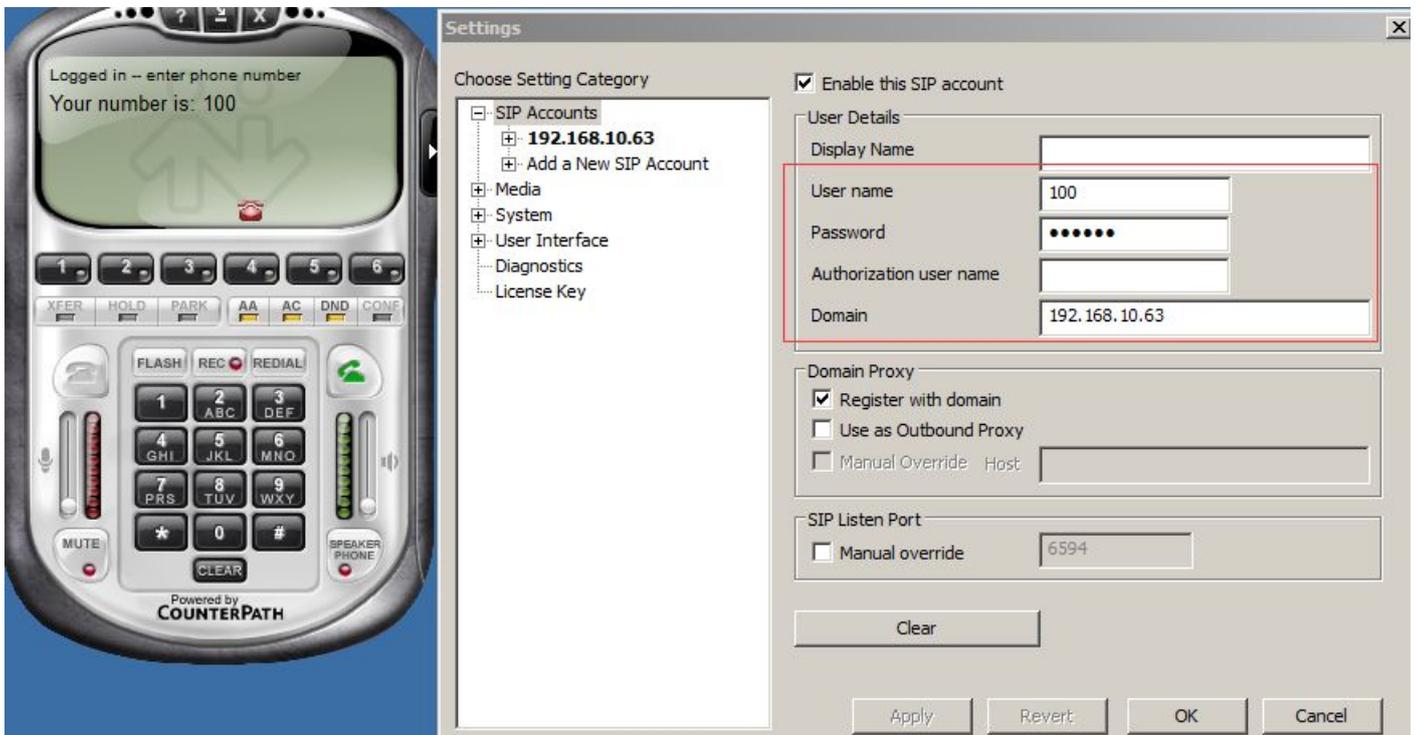
Authentication

The authentication ID and Password are used by the phone to authenticate with 3CX Phone System. If the pho

ID	<input type="text" value="101"/>	<input type="button" value="i"/>
Password	<input type="text" value="synway"/>	<input type="button" value="i"/> <input type="button" value="***"/>

- Ports/Trunks Status
- Extension Status
- System Extensions St
- 3CXPhone Clients
- Remote Connections
- Phones
- Server Activity Log
- Server Event Log
- Services status
- Extensions**
- WebRTC Gateway
- VoIP/PSTN Gateways
- VoIP Providers
- Inbound Rules
- Bridges
- OutBound Rules

- 3) To set an Eyebeam registering to the 3CX Phone System, the User name and Password fields here must match the extension in the 3CX Phone System.



Once the Eyebeam registered to the 3CX Phone System, the Extension Status shows Registered(idle).

Status	Extension	User Status	DND	Queues	Name
Registered (idle)	100	Available	OFF	OUT	hui fang
Not Registered	101	Available	OFF	OUT	

- 4) To add a Synway Digital Gateway as a Sip Trunk, click on 'VoIP Providers' from the toolbar, follow below steps to add a 'synway smg' sip trunk. As Synway has not been in the VoIP Provider list, here we should select 'Generic SIP Trunk'

Add VOIP Provider Wizard

Add VOIP Provider Wizard

Name of Provider:

Country:

Provider:

URL: <http://www.3cx.com/partners/sip-trunks/>

3CX Supported VoIP Providers can be found here: <http://www.3cx.com/partners/sip-trunks/>

More 3rd party tested providers can be found here: <http://www.3cx.com/partners/voip-providers.html>

Enter the IP address and port of the digital gateway, here IP address is 192.168.10.248, and port is 5060.

Add VOIP Provider Wizard

VOIP Provider Details:

Enter the hostname and port for your VOIP Provider's SIP Server

SIP server hostname or IP:

SIP Server port:

Outbound proxy hostname or IP:

Outbound proxy port (default is 5060):

Set the external number of this sip trunk as 2000.

Add VOIP Provider Wizard

Account Details
Enter the Authentication ID or SIP User, Password and number of your account

External Number: 2000

Authentication ID (aka SIP User ID): 2000

Authentication Password: [Empty]

3 Way Authentication ID: [Empty]

Simultaneous Calls
Maximum simultaneous calls: 30

Route the incoming call to extension 100.

Add VOIP Provider Wizard

Office Hours
Configure where calls should be routed during office hours.

End Call

Connect to Extension: 100 hui fang

Connect to Queue / Ring Group

Connect to Digital Receptionist

Voicemail box for Extension: 100 hui fang

Forward to Outside Number

Send fax to email of extension: email of extension 888

Same as Out of Office hours

Create an outbound call rule to Synway Digital SMG, with prefix 9, stripping the 1st digit, prepending "123". For example, when making an outbound call 9100 from the extension 100, the other side will receive a call with caller ID 12300.

The screenshot shows the configuration page for an Outbound Call Rule. The left sidebar contains a navigation menu with 'VoIP Providers' selected. The main content area is titled 'Create an Outbound Call Rule to configure on which PSTN port, VOIP provider or bridge an outbound calls should be placed on'.

General
 Rule Name:

Apply this rule to these calls
 Define to which outbound calls the rule must apply

- Calls to numbers starting with prefix:
- Calls from extension(s):
- Calls to Numbers with a length of:
- Calls from extension group:

Make outbound calls on
 Configure up to 3 routes for calls. The second and third route will be used as backup. For each route, digits can be stripped or added.

Route		Strip Digits	Prepend
1	<input type="text" value="synway smg"/>	<input type="text" value="1"/>	<input type="text" value="123"/>
2	<input type="text"/>	<input type="text" value="1"/>	<input type="text"/>
3	<input type="text"/>	<input type="text" value="1"/>	<input type="text"/>

Create an inbound call rule with DID number 0*, which means call from the Synway Digital Gateway Sip Trunk with callee ID starting with 0 will be accepted by the 3CX Phone System.

- Ports/Trunks Status
- Extension Status
- System Extensions Status
- 3CXPhone Clients
- Remote Connections
- Phones
- Server Activity Log
- Server Event Log
- Services status
- Extensions
- WebRTC Gateway
- VoIP/PSTN Gateways
- VoIP Providers
- Inbound Rules
- Bridges
- OutBound Rules
- Digital Receptionist
- Ring Groups
- Call Queues
- Fax Machines
- Settings
- Updates
- Links
- Help

↓ Configure inbound routing of calls based on DID/DDI or Caller ID

Inbound rule name

Enter a DID or string to look for in the SIP "to" field. Use wildcards (*) to match any digit for that entry. For example, if you enter the dialled number of +35722444032 in the "to" field

Inbound rule name

Number/Mask

Select from the drop-down below the type of inbound rule you want to create and enter a mask for this rule

Inbound Rule type

DID/DDI number/mask

Apply this rule to these ports

Select the Gateway you want this DID/DDI rule to be applied to. You can select on the whole gateway with a checkmark

Available ports > synway smg

Office Hours

Configure where calls to this DID/DDI should be routed during office hours.

End Call

Connect to Extension

Connect to Queue / Ring Group

Connect to Digital Receptionist

Voicemail box for Extension

Forward to Outside Number

Send fax to

Set up Specific Office Hours

Set the source identification by the DID which is created in the Inbound Rules.

- Ports/Trunks Status
- Extension Status
- System Extensions Status
- 3CXPhone Clients
- Remote Connections
- Phones
- Server Activity Log
- Server Event Log
- Services status
- > Extensions
- WebRTC Gateway
- VoIP/PSTN Gateways
- > **VoIP Providers**
- > Inbound Rules
- Bridges
- > OutBound Rules
- > Digital Receptionist
- Ring Groups
- Call Queues
- > Fax Machines
- > Settings
- > Updates
- > Links
- > ...

Edit VOIP Provider settings and click OK or Apply to save changes

General Advanced Outbound Parameters Inbound Parameters **Source ID** DID

Call Source Identification
The source of incoming calls must be identified. Configure how 3CX Phone System should identify calls from this provider.

Matching Strategy Match Any Fields

SIP Field	Variable
<input type="text"/>	<input type="text"/>
<input type="button" value="Add/Update"/>	<input type="button" value="Delete"/>
<input type="button" value="Clear Selection"/>	

SIP Field	Variable	Custom Val

Source identification by DID

If Call Source identification is based on dialled number and DIDs are in use, you need to specify these DIDs here. Specify a Mask, or sele

SIP Field containing DID numbers Request Line URI : User Part

Source Identification by DID

0*	<input type="button" value="Add Mask"/>
	<input type="button" value="Add DID"/>
	<input type="button" value="Delete"/>

- 5) To configure Synway Digital Gateway connecting with 3CX Phone System, start a web browser and enter the IP address of the Synway Digital Gateway.

The screenshot shows a web browser window with the URL `192.168.10.248/en/navigation.php`. The page title is "System Info" and the timestamp is "2015/7/31 下午1:50:03". The left sidebar contains a menu with "Operation Info" expanded, showing "System Info" selected. Other menu items include PSTN Status, SS7 Server, Call Count, VoIP, PCM, SS7, Fax, Route, Number Filter, Num Manipulate, and System Tools. The main content area displays the following system information:

System Info			
LAN 1			
MAC Address	00:00:E0:10:10:9B		
IP Address	192.168.10.248	255.255.255.0	192.168.10.254
DNS Server	0.0.0.0		
Receive Packets	All:6117684	Error:0	Drop:0
Transmit Packets	All:145682822	Error:0	Drop:0
Current Speed	Receive:240 B/s	Transmit:0 B/s	
Work Mode	100Mb/s Full Duplex		
LAN 2			
MAC Address	00:00:E0:10:10:9C		
IP Address	192.168.0.101	255.255.255.0	192.168.0.254
DNS Server	0.0.0.0		
Receive Packets	All:15	Error:0	Drop:0
Transmit Packets	All:3	Error:0	Drop:0
Current Speed	Receive:0 B/s	Transmit:0 B/s	
Work Mode	10Mb/s Half Duplex		
Runtime	1d 2h 41m 26s		
Operating Mode	Client		
Current Version			
Serial Number	000000106(4)		
WEB	1.6.1_2015062617		
Gateway	1.6.1_2015062617		
Uboot	2.0.6_201407		
Kernel	#208 Thu Mar 26 15:10:01 CST 2015		
Firmware	18		

- 6) Click on 'SIP Trunk' from the toolbar, add the 3CX Phone System as a sip trunk, here the 3CX IP address is 192.168.10.63, and port is 5060.

The screenshot shows the "SIP Trunk" configuration page. The left sidebar has "Operation Info" expanded, and "VoIP" is selected. Under "VoIP", "SIP Trunk" is highlighted. The main content area displays a table with the following data:

Check	Index	Remote Address	Remote Port	WAN Option	Outgoing Voice Resource	Incoming Voice Resource
<input type="checkbox"/>	0	192.168.10.63	5060	NET 1	128	128

Below the table are buttons for "Check All", "Uncheck All", "Inverse", "Delete", and "Clear All". At the bottom, it shows "1 Items Total 20 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total".

7) Click on 'SIP Trunk Group' on the toolbar, add the SIP Trunk 0 into SIP Trunk Group 0

The screenshot shows the 'SIP Trunk Group' configuration page. The left sidebar has 'SIP Trunk Group' selected. The main table contains one entry:

Check	Index	SIP Trunks	SIP Trunk Select Mode	Description	Modify
<input type="checkbox"/>	0	0	Increase	3CX	

Below the table are buttons for 'Check All', 'Uncheck All', 'Inverse', 'Delete', 'Clear All', and 'Add New'. The status bar shows '1 Items Total 20 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total'.

8) Click on 'PCM Trunk Group' on the toolbar, According to the requirement, add related PCM Trunk(s) into PCM Trunk Group. Here adding all the PCM Trunks 0,1,2,3 into PCM Trunk Group 0.

The screenshot shows the 'PCM Trunk Group' configuration page. The left sidebar has 'PCM Trunk Group' selected. The main table contains one entry:

Check	Index	PCM Trunks	PCM Trunk Select Mode	Description	Modify
<input type="checkbox"/>	0	0,1,2,3	Increase	PRI	

Below the table are buttons for 'Check All', 'Uncheck All', 'Inverse', 'Delete', 'Clear All', and 'Add New'. The status bar shows '1 Items Total 20 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total'.

9) Click on 'Route\ IP->PSTN' on the toolbar, call from the 3CX Phone System will be routed to PCM Trunk Group 0.

The screenshot shows the 'Routing Rules' configuration page. The left sidebar has 'Route\ IP->PSTN' selected. The main table contains one entry:

Check	Index	Call Initiator	CallerID Prefix	CalleeID Prefix	Number Filter	Call Destination	Description	Modify
<input type="checkbox"/>	255	SIP Trunk Group [0]	*	123	none	PCM Trunk Group [0]	3CX-SMG	

Below the table are buttons for 'Check All', 'Uncheck All', 'Inverse', 'Delete', 'Clear All', and 'Add New'. The status bar shows '1 Items Total 20 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total'.

10) Click on 'Route\ PSTN->IP' from the toolbar, call from E1 Endpoint will be routed to SIP Trunk Group 0.

Check	Index	Call Initiator	CallerID Prefix	CalleeID Prefix	Number Filter	Call Destination	Description	Modify
<input type="checkbox"/>	255	PCM Trunk Group [0]	*	0	none	SIP Trunk Group [0]	SMG-3CX	

1 Items Total 20 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total

11) Extension 100 in the 3CX Phone System made a call 9100 to Synway Digital Gateway, it finally reached to E1 Endpoint with caller ID 2000, and callee Id 123100.

C...	Type	State	RCnt	TrnC...	DtmfRcvBuffer	CallerId	CalleeID	Suspen...	V
0	ISDNNetio	Ringing				2000	123100		
1	ISDNNetio	Idle							
2	ISDNNetio	Idle							
3	ISDNNetio	Idle							
4	ISDNNetio	Idle							
5	ISDNNetio	Idle							
6	ISDNNetio	Idle							
7	ISDNNetio	Idle							
8	ISDNNetio	Idle							
9	ISDNNetio	Idle							
10	ISDNNetio	Idle							
11	ISDNNetio	Idle							
12	ISDNNetio	Idle							
13	ISDNNetio	Idle							
14	ISDNNetio	Idle							
15	ISDNNetio	Idle							
16	ISDNNetio	Idle							
17	ISDNNetio	Idle							
18	ISDNNetio	Idle							
19	ISDNNetio	Idle							
20	ISDNNetio	Idle							

CurCh: 2 All Channel

BasicFun | PlaybackFun | RecordFun | EventDriven | IPFun | OtherFun | IPRRFun | IPRAFun

12) E1 endpoint made a call 010086 to the Synway Digital Gateway, it finally reached to Extension 100 in the 3CX Phone System.

The screenshot shows a software interface for testing a 3CX phone system. On the left, a table lists call events:

C...	Type	State	RCnt	TnC...	DtmfRcvBuffer	CallerId	CalleeD.	Suspen...	V...	Fpeak	OvrEnrg	BI	PTime	PTim...	P%	ChkPlay	GetF
0	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
1	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
2	ISDNNetio	Ringback										0	0	0	100	NmlEnd	PLA
3	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
4	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
5	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
6	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
7	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
8	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
9	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
10	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
11	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
12	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
13	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
14	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
15	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
16	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
17	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
18	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
19	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA
20	ISDNNetio	Idle										0	0	0	100	NmlEnd	PLA

Overlaid on the interface is a mobile phone displaying an incoming call from 3CX (88861158) with options to IGNORE or BAN the call. Below the phone, configuration fields are visible, including DTMF: 010086 and FlashTime: 500.

5. Configuring Synway Analog Gateway for a Connection with 3CX

3CX IP Address: **192.168.10.63**

Synway Analog Gateway IP Address: **192.168.10.189**

Below is the configuration among 3CX Phone System, and Synway Analog Gateway, FXS 9 and FXS 10 in the Synway Analog Gateway registered to 3CX, try to make calls from these scenarios:

- FXS-->3CX-->FXS
- FXS-->3CX-->Eyebeam
- Eyebeam-->3CX-->FXS
- Eyebeam-->3CX-->Analog Gateway-->PSTN
- PSTN-->Analog Gateway-->3CX-->Eyebeam

- 1) Add two more extensions 101 and 102 in the 3CX Phone System, for details how to add an extension, please refer to Chapter4, Section2 in this document.

Extension Number	First Name	Last Name	Email Address
100	hui	fang	fqh@synway.cn
101	Analog	SMG	
102	Analog	SMG	

- 2) Add the Synway Analog Gateway as a VoIP SIP Trunk, for details, please refer to Chapter4, Section4 in this document.

Provider Name	Host / IP Address	Type
synway analog smg	192.168.10.189	VoIP Provider
synway smg	192.168.10.248	VoIP Provider

Create an inbound call rule with DID number 1*, which means call from the Synway Analog Gateway sip trunk with callee ID starting with 1 will be accepted by the 3CX Phone System.

The screenshot shows the configuration interface for an inbound call rule in a 3CX system. On the left is a navigation menu with 'Inbound Rules' highlighted. The main area is titled 'Configure inbound routing of calls based on DID/DDI or Caller ID'. It contains three sections: 'Inbound rule name' with a text input 'Analog SMG to 3CX'; 'Number/Mask' with a dropdown 'DID/DDI number/mask' and a text input '1*'; and 'Apply this rule to these ports' with a list of available ports: 'synway smg' (unchecked) and 'synway analog smg' (checked). Below this is the 'Office Hours' section, which includes radio buttons for routing options like 'End Call', 'Connect to Extension', etc., and dropdown menus for selecting specific extensions or services.

Set the source identification by the DID which is created in the Inbound Rules.

3) To configure Synway Analog Gateway connecting with 3CX Phone System, start a web browser and enter the IP address of the Synway Analog Gateway.

System Info			
LAN 1			
MAC Address	00:00:E0:10:0E:CD		
IP Address	192.168.10.189	255.255.255.0	192.168.10.254
DNS Server	0.0.0.0		
Receive Packets	All:375107	Error:0	Drop:0
Transmit Packets	All:677576	Error:0	Drop:0
Current Speed	Receive:1.8 KB/s	Transmit:1.0 KB/s	
Work Mode	100Mb/s Full Duplex		
LAN 2			
LAN 2	Disable		
Runtime	1d 1h 34m 16s		
Current Version			
WEB	1.5.2_Release+2015052812		
Gateway	1.5.2_Release+2015052812		
Serial Num	000000014		
Authorization Code	0x7		
U-boot	Nov 24 2014 - 09:24:52		
Kernel	#186 PREEMPT Mon Mar 2 09:06:53 CST		
Firmware	2015		
Device Type	1a4		

- 4) Click on 'VoIP\SIP' from the toolbar, as two FXS extensions in the Analog Gateway should register to 3CX Phone System, here set the Register IP Address is 192.168.10.63.

The screenshot shows the 'SIP Settings' configuration window. The left sidebar has 'SIP' selected under the 'VoIP' category. The main configuration area includes the following fields:

SIP Address	LAN 1: 192.168.10.189
SIP Port	5060
Register Status	Unregistered
Register Gateway	No
Registrar IP Address	192.168.10.63
Registrar Port	5060
Spare Registrar Server	<input type="checkbox"/> Enable
Registry Validity Period (s)	600
Multi-Registrar Server Mode	<input type="checkbox"/> Enable
SIP Transport Protocol	UDP
IMS Network	<input type="checkbox"/> Enable

- 5) Port 9 and Port 10 are FXS type, set these two ports registering to 3CX with extension number 101 and 102.

The screenshot shows the 'FXS-Modify' configuration window. The left sidebar has 'FXS' selected under the 'Port' category. The main configuration area includes the following fields:

Port	9
Type	FXS
Register Port	Yes
SIP Account	101
Password	••••••
Auto Dial Number	
Wait Time before Auto Dial (s)	0
Echo Canceller	<input type="checkbox"/> Enable
Forbid Outgoing Call	<input type="checkbox"/> Enable
CID	<input checked="" type="checkbox"/> Enable
Call Waiting	<input type="checkbox"/> Enable
DND (Do Not Disturb)	<input type="checkbox"/> Enable
Call Forward	<input type="checkbox"/> Enable
Advanced Configuration	<input type="checkbox"/> Enable

Operation Info

Quick Config

VoIP

Advanced

Port

FXS

FXO

Port Group

Route

Num Manipulate

System Tools

FXS-Modify

Port: 10

Type: FXS

Register Port: Yes

SIP Account: 102

Password: ●●●●●●

Auto Dial Number:

Wait Time before Auto Dial (s): 0

Echo Celler: Enable

Forbid Outgoing Call: Enable

CID: Enable

Call Waiting: Enable

DND (Do Not Disturb): Enable

Call Forward: Enable

Advanced Configuration: Enable

Operation Info

Quick Config

VoIP

Advanced

Port

FXS

FXS Settings

Port	Type	SIP Account	Authentication Username	Auto Dial Num	Forbid Outgoing Call	DND	Forward	FWD Type	FWD Number	CID	Call Waiting	Reg Status
9	FXS	101	---	---	Disable	Disable	Disable	---	---	Enable	Disable	Registered
10	FXS	102	---	---	Disable	Disable	Disable	---	---	Enable	Disable	Registered
11	FXS	200	---	---	Disable	Disable	Disable	---	---	Enable	Disable	Unregistered
12	FXS	201	---	---	Disable	Disable	Disable	---	---	Enable	Disable	Unregistered

6) FXS 9(101) made a call to FXS 10 (102).

Channel State								
Channel	Type	Number	Voltage(v)	State	Direction	CallerID	CalleeID	Reg Status
1	FXO	8001	29		---	---	---	Unregistered
2	FXO	8002	0		---	---	---	Unregistered
3	FXO	8003	0		---	---	---	Unregistered
4	FXO	8004	0		---	---	---	Unregistered
5	FXO	8005	0		---	---	---	Unregistered
6	FXO	8006	0		---	---	---	Unregistered
7	FXO	8007	0		---	---	---	Unregistered
8	FXO	8008	0		---	---	---	Unregistered
9	FXS	101	0		TEL->IP	101	102	Registered
10	FXS	102	0		IP->TEL	101	102	Registered

7) FXS 9(101) made a call to Eyebeam(100)

wed Jul 29 2015 22:32:41 GMT+07:00 (Pacific Standard Time)

Channel State								
Channel	Type	Number	Voltage(v)	State	Direction	CallerID	CalleeID	Reg Status
1	FXO	8001	29		---	---	---	Unregistered
2	FXO	8002	0		---	---	---	Unregistered
3	FXO	8003	0		---	---	---	Unregistered
4	FXO	8004	0		---	---	---	Unregistered
5	FXO	8005	0		---	---	---	Unregistered
6	FXO	8006	0		---	---	---	Unregistered
7	FXO	8007	0		---	---	---	Unregistered
8	FXO	8008	0		---	---	---	Unregistered
9	FXS	101	0		TEL->IP	101	100	Registered
10	FXS	102	0		---	---	---	Registered
11	FXS	200	0		---	---	---	Unregistered

8) Eyebeam(100) made a call to FXS 10(102).

The screenshot shows the 'Channel State' table in the software interface. The table lists various channels, with channel 10 highlighted in red. Channel 10 is of type 'FXS', number '102', and is in a 'Registered' state. The 'Direction' is 'IP->TEL', 'CallerID' is '100', and 'CalleeID' is '102'. To the right of the table is a mobile phone displaying 'Ringing...' and the number '102@192.168.10.63' on its screen.

Channel	Type	Number	Voltage(v)	State	Direction	CallerID	CalleeID	Reg Status
1	FXO	8001	30	📞	---	---	---	Unregistered
2	FXO	8002	0	📞	---	---	---	Unregistered
3	FXO	8003	0	📞	---	---	---	Unregistered
4	FXO	8004	0	📞	---	---	---	Unregistered
5	FXO	8005	0	📞	---	---	---	Unregistered
6	FXO	8006	0	📞	---	---	---	Unregistered
7	FXO	8007	0	📞	---	---	---	Unregistered
8	FXO	8008	0	📞	---	---	---	Unregistered
9	FXS	101	0	📞	---	---	---	Registered
10	FXS	102	0	📞	IP->TEL	100	102	Registered
11	FXS	200	0	📞	---	---	---	Unregistered

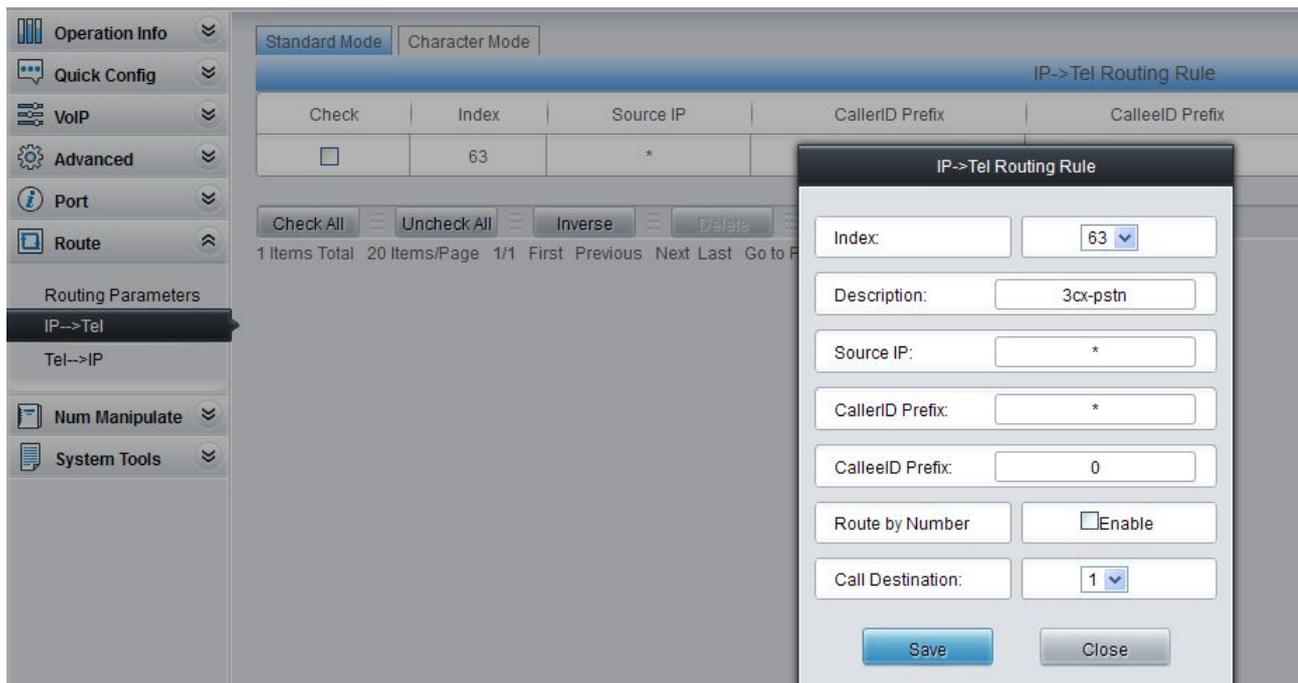
9) Eyebeam(100) made a call to PSTN 088861158.

Click on Port\Port Group from the toolbar, add FXO port into Port Group 1.

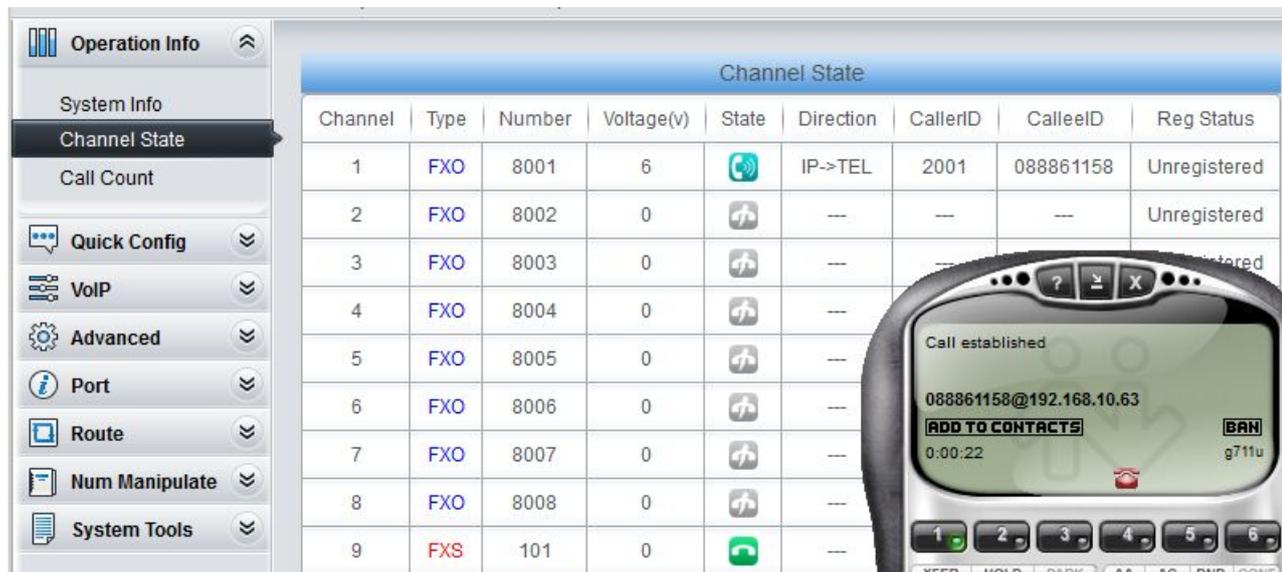
The screenshot shows the 'Port Group Settings' table. The table has columns for 'Check', 'Index', 'Description', 'SIP Account', 'Authentication Username', 'Ports', 'Port Select Mode', 'Rule for Ringing by Turns', and 'Timeout for Ringing by Turns'. The first row shows 'Index' 1, 'Description' 'FXO', and 'Ports' 1. The 'Ports' column is highlighted with a red box. Below the table are buttons for 'Check All', 'Uncheck All', 'Inverse', 'Delete', and 'Clear All'. At the bottom, it shows '1 Items Total', '20 Items/Page', and '1/1' page information.

Check	Index	Description	SIP Account	Authentication Username	Ports	Port Select Mode	Rule for Ringing by Turns	Timeout for Ringing by Turns
<input type="checkbox"/>	1	FXO	---	---	1	Increase	---	---

Create the IP-TEL routing rule, when a call comes in to the gateway on a SIP channel, with callee ID prefix 0, this call will be routed to FXO port, then this FXO port will make an outbound call to PSTN.



Eyebeam(100) made a call to PSTN 088861158.



10) PSTN 088861158 made a call to Eyebeam(100).

Create the TEL-IP routing rule, when a call comes in to the gateway on a FXO port, this call will be routed to SIP channel, then the SIP channel will make an outbound call to the 3CX Phone System.

Check	Index	Call Initiator	CallerID Prefix	CalleeID Prefix	Destination IP
<input type="checkbox"/>	63	Port Group 1	*	*	192.168.10.63

PSTN 088861158 made a call to Eyebeam(100).

Sun Aug 02 2015 22:39:56 GMT-0700 (Pacific Standard Time)

Channel	Type	Number	Voltage(v)	State	Direction	CallerID	CalleeID	Reg Status
1	FXO	8001	6		TEL->IP	8357	100	Unregistered
2	FXO	8002	0		---			
3	FXO	8003	0		---			
4	FXO	8004	0		---			
5	FXO	8005	0		---			
6	FXO	8006	0		---			
7	FXO	8007	0		---			
8	FXO	8008	0		---			
9	FXS	101	0		---			
10	FXS	102	0		---			
11	FXS	200	0		---			
12	FXS	201	0		---			
13	FXS	300	0		---			
14	FXS	1014	0		---			
15	FXS	9007	0		---			