



Optimum Business Trunking and the Nortel BCM50 IP-PBX (Release 5.0)- V9.0.1.74.660 Configuration Guide







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1 Overview

The purpose of this configuration guide is to describe the steps needed to configure the Nortel PBX for proper operation Optimum Business Sip Trunking.

2 SIP Trunk Adaptor Set-up Instructions

These instructions describe the steps needed to configure the LAN side of the Optimum Business SIP Trunk Adaptor.

Step 1:

Log on to the Optimum Business SIP Trunk Adaptor

1. Connect a PC to port 4 of the Optimum Business SIP Trunk Adaptor, the silver device labeled Edgewater Networks, 4550 series.



- 2. Open a Web browser and go to IP Address http://10.10.200.1. A login box will appear.
- Enter login and password and click 'OK'. Login: pbxinstall Password: s1ptrunk



Step 2:

Click on the LAN Settings Link

1. Assign an IP Address to the LAN interface of the SIP Trunk Adaptor. The IP address must be on the same subnet as the IP PBX. This changes the address on port 1 of the Optimum Business SIP Trunk Adaptor.

Note: This will become your local SIP proxy IP address. No other IP addresses will be provided by Cablevision.

2. Optional: Specify a VLAN for your voice traffic. Click the 'Enable Voice VLAN Tagging' check box. The default VLAN ID is 100.

Note: VLAN 200 should not be used. It is dedicated to port 4 for management.







- 3. Optional: Enable the DHCP server. This will allow the SIP Trunk Adaptor to act as a DHCP server, which will provide IP addresses to the voice network, and create a dedicated voice LAN, as per diagram 2.
- 4. Click 'Submit'.



Diagram 1 SIP Trunk Adaptor for IP-PBXs

Using a connection from the customer's LAN, the SIP Trunk Adaptor's address can be a statically assigned private IP address. It may not be assigned a Public IP address.

Diagram 2 SIP Trunk Adaptor for IP-PBXs Example: Separate Voice and Data Networks Configuration





Step 3:

Click on the SIP Trunk Configuration Link

- 1. Select your IP PBX make and model from the drop-down menu.
- 2. Specify how the IP PBX will register to the Optimum Business SIP Trunk Adaptor.
- 3. The Cablevision network only supports Inband DTMF. Click on the check box next to "Convert Inband DTMF" if you cannot configure your IP PBX to

optimum.	SIP Trunk Configur	ation	Help
Configuration	Select your PBX:	Asterisk	
Customer <u>LAN Settings</u> <u>SID Trunk</u> <u>Configuration</u>	 Passive connection u This address must be on th interface PBX Address: 	sing the local, private IP address of the PB he same subnet as the IP Address that is specified for	X the LAN
 Diagnostics System 	 Active connection using the set of the set	ng registration	
	Password:	secret	
	Convert Inband DTMF:		
	Submit Reset		
	Status:		
	Trunk Status:	Not Registered	
	DID's		
	5164939899 (Pilot number) 5164939768 5164939769 5164939795 5164939841	20 7	

send out Inband DTMF. The DTMF tone duration generated by the phones and/or PBX may need to be increased from their default setting. Some phones and/or PBX have a default setting between 180ms to 200ms. This setting is too low. The recommended setting is 600ms.

4. Click 'Submit'.

Step 4:

Diagnostics Link

You can make a test call directly from your phone or use the test call application under the Diagnostics link.

ontimum	Network Test Tools
optimon.	A network administrator may use the test tools on this page to verify connectivity of the System and trace the path of data throughout the network.
Configuration Menu Customer LAN Sattings SIP Trunk Configuration Diagnostics System	Outbound Call Test: This test ull place a call be the provided telephone number and play a series of tenes for 30 excende. Pilot Number: Telephone Number:
	Concentration Inhound Call Test: When this test is easkled calls received for the pilot number are diverted to the internal Test UA for 15 minutes, share this alapsed time the test is automatically disabled. Cobabled Sobabled Sobabled
	Ping Test: IP Address to Ping: Bog Base
	Traceroute Test: IP Address to Trace:



Step 4 continued

Field	Description
Outbound Call Test TelephoneNumber	Specifies an outside phone number to which an outbound call will be initiated. The pilot telephone number of the SIP Trunk will be prepopulated.
Pilot Number	Displays the provisioned pilot number, which is used for outbound and inbound call tests.
Call	Initiates a call outbound to a telephone number entered or inbound to the pilot number displayed.
Inbound Call Test (radio button)	Indicates whether inbound test call will be enabled or disabled. If inbound test calls are enabled, calls made to the pilot number will be redirected to the test UA for fifteen minutes. When the pilot number is dialed, you will hear a test message play.
Submit	Enables or disables the inbound call test.
IP Address to Ping	Verifies basic connectivity to a networking device. Successful ping test results indicate that both physical and virtual path connections exist between the system and the test IP address.
Ping Button	Sends a ping to the IP address specified in the field "IP Address to Ping".
IP Address to Trace	Tracks the progress of a packet through the network. The packet can be tracked through the WAN or LAN interfaces of the adaptor.
Interface (radio button)	Indicates whether a packet will be tracked through the LAN or the WAN.
Traceroute Button	Initiates a traceroute to the specified IP address on either the LAN or the WAN.
Reset	Clears all fields and selections and allows you to enter new information. Reset applies to outbound call test, ping and traceroute.



3 Additional Set-up Information

Systems

optimum.	System Help
Configuration Menu	Software Version: Version 11.6.14.1 Fri Jan 4 17:49:28 PST 2013
Customer LAN Settings SIP Trunk	Hostname: 5164939899
Configuration Diagnostics System	Model: EdgeMarc 4552
	Vendor: Cablevision
	LAN Interface MAC Address: A8:70:A5:00:D8:18
	Registration Status: The ALG feature is registered. View <u>license kev</u> .
	System Date: 02/29/2016 15:03:40 UTC
	Change Password: • pbxinstall

Field	Description
Pbxinstall Link	Select to change the default password for the pbxinstall login ID. Only the password can be changed. The login ID cannot be changed.

Password

optimum.	Set Password Change the GUI password by filling in the fields below. The password must be between 6 and 8 characters in length		<u>Help</u>
Configuration Menu • Customer • LAN Sattings <u>SIP Truck</u> <u>Configuration</u> • Diagnostics • System	Username: Current Password: New Password: New Password: Confirm Password: Submit Reset	poxinatal	



Field	Description
Username	Specifies the username for which the password can be changed.
Current Password	Specifies the current password.
New Password	Specifies the new password.
Confirm Password	Confirms the new password.
Submit	Applies the settings configured on this page.
Reset	Clears all fields and selections and allows you to enter new information.

4 International Calling

Optimum Voice Business Trunking offers an optional International Calling Service for direct-dialed calls made from the Customer's business or from any phone via the Optimum Voice International Calling remote access number to destinations outside of the United States, Puerto Rico, Canada and the U.S. Virgin Islands at per minute rates. The Customer must login to the Optimum Business Account Center and activate the service on the Optimum Business Trunk Pilot telephone number to activate the service and manage the monthly International spending limit for the account.

Activating International calling on the Pilot TN will enable International calling for all Direct Inward Dial (DIDs) telephone numbers as well. Blocking International calling for one or more DIDs is managed by the customer directly from the PBX phone system configuration. To minimum the exposure to fraudulent calling, It is recommended to limit International calling capability to those DID's that require it and set up an account spending limit that reflects what is necessary to run the business.

It is the Customer (and/or the Customer Agent's) responsibility to properly secure the customer's PBX to prevent the PBX from being compromised and fraudulent calls from being made by unauthorized (internal or external) users. If fraudulent calls are detected, Cablevision reserves the right to disable International Calling until the PBX is properly secured by the customer.

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5 PBX Configuration

The steps on the following pages describe the minimum configuration required to enable the PBX to use Optimum Business SIP Trunking for inbound and outbound calling. Please refer to the Nortel BCM50 System product documentation for information on other advanced PBX features.

The PBX used in the lab comprises of the following:

- Nortel BCM50 PBX
- 1 Nortel IP Phone 2004
- I Nortel IP Phone 1120E

The configuration described here assumes that the PBX is already configured and operational with station side phones using assigned extensions or DIDs. This configuration is based on BCM50 (Release 5.0) v9.0.1.74.660.

- The Nortel BCM30 PBX comes with 4 Ethernet ports. Starting from the left side of the front panel, the first Ethernet port is for Administration only. This port has a default IP address of "10.10.11.1/255.255.255.252.". To access this OAM port for administration or configuration, the Windows PC must have an IP address of "10.10.11.2/29", either by manually assigned or by sending DHCP request to the PBX. The second Ethernet port from the left side of the front panel is PBX's LAN port. The PBX's LAN port has a default IP address of "192.168.1.2/24" and a default gateway of "192.168.1.1/24". The PBX's LAN port, the local IP phones and the Optimum Business SIP Trunk Adaptor's LAN port 1 should be on the same LAN segment. The Optimum Business SIP Trunk Adaptor's LAN port 1 and the PBX's LAN port have been assigned with IP addresses of "192.168.1.1/24" and "192.168.1.2/24" respectively. The third and the fourth ports are for connecting to expansion modules (i.e.: PRI) and are not needed for SIP trunk service.
- 2. To configure the PBX, first install the **Nortel Business Element Manager** from the CDROM to a Windows PC and then run "https://10.10.11.1/" from your browser.
 - a. Click the "Continue to this website (not recommended)" link.

There is a problem with	this website's security certificate.	
The security certificate present The security certificate present	ed by this website was not issued by a trusted certificate authority. ed by this website was issued for a different website's address.	
Security certificate problems m server.	ay indicate an attempt to fool you or intercept any data you send to the	
We recommend that you clo	se this webpage and do not continue to this website.	
Sclick here to close this web	page.	
Scontinue to this website (n	ot recommended).	
More information		

b. Click the "Yes" button.

NQT	RTEL
Home Co	ontact
	Security Warning X Do you want to view only the webpage content that was delivered securely? The webpage contains content that will not be delivered using a secure HTTPS connection, which could compromise the security of the entire webpage. More info Yes

c. Click the **"Yes"** button.

NQR	TEL	2
Home] Co	ntact	
Welcon	ne	
	to	
	BCM	
	Warning - Security X The web site's certificate cannot be verified. Do you want to continue?	
	Name: 10.10.11.1 Publisher: (NOT VERIFIED) 192.168.1.2	
	Always trust content from this publisher. Yes No	
	The certificate cannot be verified by a trusted source. More Information	1

d. Click the "**Run**" button.



e. From the "Please Enter Credentials" pop-up box, enter the default user ID of "nnadmin" in the "**User ID**" field, enter the password (default password is "PlsChgMe!") in the "**Password**" field and then click the "**Ok**" button.

Home Contact				
Welcome		Please Enter Cree	Innadmin	X
	to	Password:	*****	
B	всм	Save Credentials		
fain Advanced	Applications		Ok	Cancel
Application Group	Nar	ne	Status	
в				
Generation 3rd Party	Download Locations			Run

f. Run Nortel Business Element Manager by selecting "Business Element Manager" in the Applications section and then clicking "Local BCM" in the Download Locations section.

Home Contact		
Welcome		
	to	
	CAA	
Main Advanced	Applications	
Application Group	Name	Status
	Business Applications	No update required
	Business Element Manager	No update required - currently at 61.0.1
	BCM Monitor	No update required - currently at 5.0
	Data Migration Manager	No update required - currently at 1.1.0
В		
В	Other Administrator Applications	No update required
В	Other Administrator Applications Online Documentation	No update required
B	Other Administrator Applications Online Documentation Download Locations	No update required
B	Other Administrator Applications Online Documentation Download Locations	No update required No update required Run
B B	Other Administrator Applications Online Documentation Download Locations Local BCM	No update required
B 3rd Party	Other Administrator Applications Online Documentation Download Locations Local BCM	No update required

g. A new window will pop up to run the Business Element Manager. Enter the default user ID of "nnadmin" in the "**User ID**" field, enter the password in the "**Password**" field and then click the "**Connect**" button.

🙆 Nortel Business Element	t Manager - Network Elements / 10.10.11.1	
File Edit View Network	Session Tools Help	
📲 Exit 🐰 Cut 🔩 Co	iopy 🖷 Paste 🛛 🗮 Web Page 🖌 Validate Device 🚔 Connect 🗙 Delete 🐘 New Folder	
Idencet Taxigation Panel	Connection Information IP Address: 10.10.11.1 User ID: Imadmin Password: ********* Inventory Information System Name: borns00 3 System Decoption: 50:050 System Software Version: 9.0.1.74.660	

h. Click the "**OK**" button.



- Navigate to "Configuration">"System">"IP Subsystem" to check and/or change IP address of the PBX and its default gateway.
 - a. Select the **"General Settings**" tab to make sure the Optimum Business SIP Trunk Adaptor's IP address is set in the **"Default gateway**" field.

BCM Element Manager -	10.10.11.1		-I미 ×
File Edit View Network	Session Tools Help		
📲 Exit 💥 Cut 🦏 Co	opy 🖷 Paste 🛛 💳 Web Page 🚽	Validate Device 🧏 Disconnect 🔗 Refresh 🖉 Auto-refresh	
Element Navigation Panel	Task Navigation Panel	The second	
	Configuration Administration	IP Settings Conversion System Information System Information System Information System Information Definition If you change the default gateway you may lose your connection to the Retwork Element Definition Definition Note of the face: Definition Publiched IP Address: Die Settings Die Sonam name: Construction Die Sonam name: Secondary DNS address:	

b. Select the **"LAN Interfaces"** tab to make sure the PBX's LAN IP address is correct.



- 4. Before configuring the PBX, first make sure the PBX has license for SIP trunk. To enable the licensed features, certain keycodes will need to be installed in the PBX. Users should require these keycodes be installed before the PBX is delivered.
 - a. Navigate to "**Configuration**">"**System**">"**Keycodes**" to check the licensed features. PBX should have license for SIP trunks.

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Element Navigation Panel	Task Navigation Panel		
Network Elements	Configuration Administration	Keycodes	
10.10.11.1	Welcome	System ID: E8056DFECEFD Sequence #: 1	
	System Jdentification	Key Type: 3 Date Stamp: 2010-11-10	
	Date and Time	Region: Global SW Version: BCM50 Release 5.0	
	Keycodes	Manufacturing SW version: 50.05	
	Telephony Regions	Feature licenses	
	Administrator Access	Status A Name Data Expiry Date	
	E Resources	ACTIVE Exp Port 1	
	🗈 🌆 Data Services	ACTIVE IP Client seat 2	
	Applications	ACTIVE SIP GW Trunk 4	
		Load Keycode File	
		Download Credit Proof File	
		Keycode Retrieval	
		Connect to Nortel Keycode Retrieval System	

b. Navigate to "Configuration">"Telephony">"Lines" and then select "Active VoIP Lines" to find out which line pool ("BlocA" in this example) has been assigned for the VoIP/SIP trunks.

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File Edit View Network	Session Tools Help											
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Network Elements	Configuration Administration	ACUVE	VOIP LIN	•								
10.10.11.1	Welcome	Line	A.	Trunk Type	Name		Control Set	Line Type		Prime Set		Pub. Received #
	😑 🍌 System	001	VoIP		Line001	221		Pool:BlocA	22	1	N/A	
	- O Identification	002	VoIP		Line002	221		Pool:BlocA	22	1	N/A	
	Date and Time	003	VoIP		Line003	221		Pool:BlocA	22	1	N/A	
	Keycodes	004	VoIP		Line004	221		Pool:BlocA	22	1	N/A	
	Talsahasu Basians											
	Administrator Acress											
	Accounts and Privileges											
	 Security Policies 											
	Email Settings											
	SNMP											
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	 Application Resources 											
	Media Gateways											
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	 Telephony Resources 											
	 Dial Up Interfaces 	I'		Darke	1 Dame							
	E Jo Telephony		сору	Pastern	Kenun	Dei						
	🕀 🎍 Global Settings											
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	Active Physical Lines											
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1	Scheduled Services											
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	Call Detail Recording											
	Cal Recording											
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- To configure the Optimum Business SIP Trunk Adaptor as the PBX's SIP trunk service provider, navigate to "Configuration">"Resources">"Telephony Resources" and select "IP Trunks" entry under the "Configured Device" column.
 - a. SIP trunk service may be set up from either the "Routing Table" tab or the "Sip Proxy" tab. If using the "Sip Proxy" tab, make sure nothing is set up for the Optimum Business SIP Trunk Adaptor under the "**Routing Table**" tab.



b. Select the "Sip Proxy" tab to set up the Optimum Business SIP Trunk Adaptor as the PBX's SIP trunk service provider. Enter Optimum Business SIP Trunk Adaptors IP address ("192.168.1.1" in this example) in both the "Domain" field and the "IP address" field, enter "5060" in the "Port" field and leave other fields as default.

BCM Element Manager	- 10.10.11.1										
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📲 Exit 💥 Cut 🖳 C	Copy 🖷 Paste 💳 Web Page 🗸	Validate Device	Disconnect 🔗 Refresh 🧂	Auto-refre	sh						
Element Navigation Panel	Task Navigation Panel	Telester Dec									
Network Elements	Configuration Administration	Telephony Res	ources								
10.10.11.1	Welcome	Modules (Note: N	1BMs in Expansion 1 and 2 must have	all DIPs ON)		1.	[[
	July System	Internal	Configured Device	BUS N/A	Enabled	Low	High 012	Active	Busy		
	Oate and Time	Internal	IP Sets	1	Enabled	301	332	2	0		
	- Skeycodes	Internal	Applications	1	Enabled	333	396	17	N/A		
	Telephony Regions	Main	GATI4 DSU2	3	Enabling	061	232	0	0		
	E- Administrator Access	Main	GASI4	4	Enabling	233	236		o		
	Accounts and Privileges	Expansion 1	DTM-PRI	5.1	Enabled	065	087	23	0		
	Email Settions	Expansion 2	None	7.1	N/A	N/A	N/A	N/A	N/A		
	- SNMP										
	E-										
	Application Resources										
	Port Ranges										
	 Telephony Resources 										
	Dial Up Interfaces										
	Bobal Settings	Disable	Enable								
	🕀 🍒 Sets										
	🗄 🎍 Lines	Details for Modu	le: Internal IP Trunks								÷
	Active VoIP Lines										
	Target Lines	Routing Table	IP Trunk Settings H323 Settings	H323 Media	Parameters	SIP Settin	gs Sip Pro	xy SIP Media	Parameters	SIP URI Map SIP Auth	entication
	Inactive Lines	SIP Prox	/			Optional IP	Address fo	r legacy routing			
	O Al Lines		* Domain: 192.168.1.1		_	IP Address	: 192.168.	1.1			
	Scheduled Services	Route all	calls using proxy:			Port	-		5060		
	🖽 🔐 Dialing Plan		MCDN Protocol: None		-						
	Ring Groups										
	el la cal security	Outbound P	roxy Table								
	- Hunt Groups	Name /	IP Address Port		Load-balancir	ng Weight		Keep aliv	e		
	Call Detail Recording										
	Call Recording										
	DHCP Server										
	QoS										
	Applications							-			×
1	-										-

c. Select the "IP Trunk Settings" tab, make sure the "Ignore in-band DTMF in RTP" checkbox is unchecked and leave other fields as default. This is a mandatory setting for the service to work properly. If you set up an Auto-Attendant, it will recognize either in-band DTMF or RFC-2833 DTMF.



d. Select the **"SIP Settings"** tab, enter "101" in the **"Dynamic Payload"** field for RFC-2833 DTMF and leave other fields as default.



e. Select the "**SIP Media Parameters**" tab, move the G.711-uLaw and the G.711aLaw codec to the "**Selected list**" by selecting the G.711 codec from the "**Available list**" and then click the "**Add**" arrow. Select "20" in the "**G.711 payload size (ms)**" field and leave other fields as default.



f. Select the **"SIP URI Map**" tab, blank out both the **"e.164 / National**" field and the **"Unknown / Unknown**" field and leave other fields as default.



- g. Note that this step is for PBX registration mode only; skip this step if the PBX is communicating with the Optimum Business SIP Trunk Adaptor using static IP mode. Select the "SIP Authentication" tab and then click the "Add" button. From the "Add Auth Account" pop-up box:
 - 1) Enter a descriptive name in the **"Description**" field (EM-4552 was used in this example).
 - 2) Enter the Optimum Business SIP Trunk Adaptor's IP address in the "Domain" field.
 - 3) Enter the pilot DID in the "CLID" field.
 - 4) Enter the SIP username in the "SIP Username" field, enter the Auth. Username in the "Auth. Username" field (if needed), and enter the Auth. Password in the "Auth. Password" field. Note: The user credential info must match what has been configured on the Optimum Business SIP Trunk Adaptor.
 - 5) Check the "Registration" checkbox.
 - 6) Leave other fields as default and click the "OK" button.



- 6. Navigate to "Configuration">"Data Services">"DHCP Server" to configure DHCP server for the IP phones. Note that the PBX's DHCP server is enabled by default. Make sure the Optimum Business SIP Trunk Adaptor's DHCP server is disabled. This is part of step 2 of the Optimum Business SIP Trunk Set-Up Guide.
 - a. Select the **"General Settings"** tab, select "Enabled IP Phones Only" from the drop-down list of the **"DHCP server is"** field.



b. Select the "Address Ranges" tab and then click the "Add" button. From the "Add Included Address Range" pop-up box, enter the starting IP address in the "From IP address" field, enter the ending IP address in the "To IP address" field and enter the PBX's LAN IP address in the "Default Gateway" field.



Create DNs/extensions for the IP phones and map the inbound called number to the DNs/extensions. Note that a 3-digit DN/extension is used in this example.

a. Navigate to "Configuration">"Telephony">"Dialing Plan" and then select the "Private Network" tab. Select "3" from the drop-down list of the "Private Received number length" field, select "3" from the drop-down list of the "Private DN length" field and leave other fields as default.

File (Ed. Vew Vetwork Bealino, Tools Help	
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Element Navigation Panel	
Configuration Adversarial Image: Configuration Configuration Image: Configuration Image: Configuration	

b. Navigate to "Configuration">"Telephony">"Sets" and then select the "All DNs" tab. For each selected DN, select the model of the IP phone in the "Model" field and enter the assigned DID in the "Pub. OLI" field. Note that for PBX registration mode, the "Pub. OLI" field must always be set to be the same as the pilot DID. Also note that while static IP mode allows all the different DIDs to be used as the caller ID, PBX registration mode allows only the pilot DID as the caller ID.

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10.10.11.1	Welcome	Line Access	e 117 (e c)		-								
	E- System	Life Access	Capabilities and Preferences	Kestricto	nsi	-	-		-				
	- G Identification	DN A	Model	Name	Port	Pub. OLI	_	Priv. OLI	Fwd No An	swer	Fwd Delay		
	Date and Time	293	T7208/M7208	293	0809		293			N	ΙΔ.		
	- Keycodes	294	T7208/M7208	294	0810		29			N	A		
	IP Subsystem	295	T7208/M7208	295	0811		29	5		N	A		
	Telephony Regions	296	T7208/M7208	296	0812		29	5		N	A		
	Administrator Access	297	T7208/M7208	297	0813		293	7		N	A		
	 Accounts and Privileges 	298	T7208/M7208	298	0814		29	3		N,	A		
	Security Policies	299	T7208/M7208	299	0815		29	9		N,	A		
	Email Settings	300	T7208/M7208	300	0816		300)		N,	A		
	SVMP	301	1140E/2004/2007/2050/221x	301	0101	6316769514	30	1		N,	A		
	Amplication Description	302	1120E/2002	302	0109	6316769515	30.	2		N	A		
	Modia Gateways	903	1140E/2004/2007/2050/ =	303	0103	6316769516	30	3		N	A		
	Port Pances	304	1140E/2004/2007/2050/221x	304	0104		30-			N,	A		
	Telephony Resources	205	1120E/2002	205	0105		303			IN,			
	Dial Lip Interfaces	207	1110/2001/2033	207	0100		200	2		IN,			
	E Telephony	307	1230	308	0 108		30	2		N	A (A		
	Global Settings		1210		0100			•					
	E Sets	Copy	Paste	Renumb	r								
	• Templates	- T	A										
	Active Sets	Details for DNI 202											
	 Active Application DNs 	Details for DN: 303											
	 Inactive DNs 	Line Assignment Line Deal Assess Lineway Dirk Meetille Conferencies											
	AI DNS	the rooty	The Pool Access Ansy	wer uns [meeone Ca	anterenong							
	E Lines	Assigned L	ines Tran	-			~		1 1000	1	outra I		
	Coops	une 🗡	Appearance Type		Appe	arances	Ca	ier iD set	vmsg set	Phy.	Received #		
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	E Cal Security												
	- B Hospitality												
	Hunt Groups												
	- Call Detail Recording												
	Call Recording	Add	. Delete										
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	Applications												
	 Voice Messaging/Contact Ci 												
	MeetMe Conferencing												
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	MUSIC			_	_		_						
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- c. Navigate to "Configuration">"Resources">"Telephony Resources" and then select "IP Sets" under the Configured Device column to enable registration from the phones. From the "IP Terminal Global Settings" tab:
 - 1) Check the "Enable registration" checkbox.
 - 2) Check the **"Enable global registration password**" checkbox.
 - 3) Enter a global password in the **"Global password"** field. When you add a new IP phone, the IP phone will be prompted for the password.
 - 4) Select "20" from the drop-down list of the "G.711 payload size (ms)" field.
 - 5) Leave other fields as default.



d. Navigate to "Configuration">"Resources">"Telephony Resources" and then select "IP Sets" under the Configured Device column after rebooting the IP phones. The IP phones should boot up and successfully obtain an assigned IP address from the PBX. Select the "IP Terminal Details" tab to see the IP addresses assigned to the IP phones.

Configuration Administration	Telephony Res	Telephony Resources										
···· • Welcome	Modules (Note:	MBMs in Exp	pansion 1 and 2 must have	all DIPs ON)						1000		
E- 🕌 System	Location		Configured Device	Bus	State	Low	High	Active	Busy			
🗄 🍶 Administrator Access	Internal	IP Trun	u a	N/A	Enabled	001	012		4 0			
😑 🎍 Resources	Internal	IP Sets		1	Enabled	301	332		2 0			
Application Resources	Internal	Applicat	ions	1	Enabled	333	396	1	2 N/A			
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Port Ranges	Main	DSI12		4	Enabling	221	232		0 0			
 Telephony Resources 	Main	GASI4		4	Enabling	233	236		0 0			
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e. Navigate to "**Configuration**">"**Telephony**">"**Sets**" and then select "**Active Sets**" to see if the IP phones are up and running. **Note:** when the IP phone boots up and before it is operational, it will prompt for the DN/extension. You must enter the DN assigned for the IP phone from the IP phone itself. Nortel IP 200x, 11xx and 12xx phones use the Nortel proprietary UNIStim signaling protocol to communicate to the BCM50 PBX.



To map the inbound calls to the DNs/extensions, navigate to "**Configuration**"> "**Telephony**">"**Sets**" and then select "**Active Sets**" to assign the DIDs to each DN/extension.

a. Select the "**Line Access**" tab and select the first DN from the list. In this example, the pilot DID/"631-676-9514" has been assigned to DN "301", using a target line of "126".

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- Active Sets
Active Application D Line Assignment Line Pool Access Answer DNs MeetMe Conferencing
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Al DNs Line / Appearance Type Appearances Caller ID Set Vinog Set Priv. Received # Pub. Received #
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b. Select DN "302" and then click the "Add" button to select an unused target line for assigning another DID ("6316769515" in this example) for DN "302". The unused target lines can be selected from "Configuration"> "Telephony"> "Lines"> "Target Lines". In this example, the target line we want to use is "127". Enter "127" in the "Line" field of the pop-up box and then click the "OK" button.

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c. From the Assigned Lines section, check the "Caller ID Set" checkbox, check the "Vmsg Set" checkbox, enter "302" in the "Priv. Received #" field, enter "6316769515" in the "Pub. Received #" field and leave other fields as default.

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To set up an Auto-Attendant, navigate to "**Configuration**">"**Applications**" and then select the "**Voice Messaging/Contact Center**" to launch the CallPilot Manager. a. Click the "**Launch CallPilot Manager**" button.

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b. Click the **"OK**" button.

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	B- 🕌 Lines		
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Juone.			C:0m:0m:10W:5 V Include ACKed alarms

c. Click the "Continue to this website (not recommended)" link.



d. A new window will come up when the CallPilot Manager starts running. Click the **"Auto-Attendant**" tab.

🙋 CallPilot Manager: Main Menu		👌 👻 🔂 👻 🖃 📾 👻 Page 🗸 Safety 👻 Tools 👻 🔞 👻
Main Logout	Нејр	
	Main Menu	
Mailbox Administration •	Add Mailbox Change/Delete Mailbox	
Auto-Attendant •	Group List Administration System Properties	
Custom Call Routing •	Operator Settings	
Networking •	Logout	
Contact Center •		
Reports •		
Configuration •		
Operations •		
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e. Click the "**Company Greetings**" link.

🙋 CallPilot Manager: Lines Administra	tion					👌 • 🔊	- 🖃 🖷	- Page -	Safety -	Tools -	• •	**
Main Logout	Help	nes Adm	ninistrat	tion	K							4
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Auto-Attendant •	2	No		0	Change							
General Properties •	3	No		0	Change							
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CLID Routing Table •	5	No		0	Change							
Greeting Tables •	6	No		0	Change							
Holidays •	7	No		0	Change							
Customized Digits •	8	No		0	Change							
	9	No		0	Change							
Custom Call Routing *	10	No		0	Change							
	11	No		0	Change							
Networking *	12	No		0	Change							
	13	No		0	Change							
Contact Center *	14	No		0	Change							
	15	No		0	Change							
Reports *	16	No		0	Change							
	17	No		0	Change							
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0	19	No		0	Change							
Operations •	20	No		0	Change							
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f. Click the **"Voice**" link from **Company Greeting 2**, an unused Company Greeting entry/table in this example.

CallPilot Manager: Company Greetin	ngs							🟠 • E	h • 🗟 - 🗉	👌 • 🗟 - 🖻 👼	📩 - 🔂 - 🗆 🌧 - Page	📩 + 🔂 - 🖃 🖶 + Page + Safe	📩 + 🔂 - 🖃 🖶 + Page + Safety +	han - 🔂 - 🖸 👘 - Page - Safety - Tools -
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Greeting Tables •	5	Not Recorded		Voice										
Holidays •	6	Not Recorded		Voice										
Customized Digits •	7	Not Recorded		Voice										
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	12	Not Recorded		Voice										
Contact Center *	13	Not Recorded		Voice										
	14	Not Recorded		Voice										
Reports *	15	Not Recorded		Voice										
	16	Not Recorded		Voice										
Configuration •	17	Not Recorded		Voice										
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- g. A new window will pop up for Company Greeting 2. You will need a working phone and its DN to record the message for the Auto-Attendant.
 - a. Enter "301" (or other DN of a working phone) in the "**Connect To**" field and then click the "**Dial**" button. The called phone should ring and it should show "Stopped" on the display when answered.
 - b. Click the "**Record**" button to prompt the user to enter an extension and the called phone should show "Recording" on its display.
 - c. Record your message from the called phone.
 - d. Click the **"Stop**" button as soon as you finish recording the message.
 - e. Click the "Save" button to save the recording.
 - f. Click the "Hang Up" button to hang up the call.
 - g. Click the "Close" button to close the window.

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Comp	any Greeting 2		<u> A</u>
	Phone Set:		
Connect To:	301 Dial Hang Up		
	Changes to the recording are applied ONLY when the SAVE button is pressed BEFORE hanging up.		
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h. Click "<u>Greeting Tables</u>" and then click "<u>Change</u>" from Greeting Table 2.

😰 CallPilot Manager: Greeting Tables						· 🗟 · 🗆	-	Page •	Safety •	Tools •	
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i. From the Greeting Table 2 Setup screen:

- 1) Select "2" in the "**Greeting**" fields under the Morning, Afternoon, Evening and Non Business column.
- 2) Enter "301" in the "**Attendant Extension**" field.
- 3) Leave other fields as default and click the **"Submit"** at the bottom of the screen.

2 CallPilot Manager: Greeting Table Setup						📅 • 🔊	- 🚍 🖶 -	Page +	Safety -	Tools +	• •
Greetir	ng Ta	ble 2	Setup								*
	Morning	Afternoon	Evening	Non Business							
Greeting:	2 💌	2 💌	2 💌	2 •							
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Disable DN Dialing:											
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Tuesday:	12:00 AM	12:00 PM	6:00 PM	6:00 PM	(eg 12:00 AM)						
Wednesday:	12:00 AM	12:00 PM	6:00 PM	6:00 PM	(eg 12:00 AM)						
Thursday:	12:00 AM	12:00 PM	6:00 PM	6:00 PM	(eg 12:00 AM)						
Friday:	12:00 AM	12:00 PM	6:00 PM	6:00 PM	(eg 12:00 AM)						
Saturday:	12:00 AM	12:00 PM	6:00 PM	6:00 PM	(eg 12:00 AM)						
Sunday:	12:00 AM	12:00 PM	6:00 PM	6:00 PM	(eg 12:00 AM)						
Attendant Exte	ension:	301	-								
Language Pre	ference:	Primary -	1								
Menu Repeat	Key:	None -									
Custom Auto-A	Attendant M	enu Prompts	•								
Enable:											
Primary Prom	pt:	Not Record	ed	Voice							
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j. Click the "Lines Administration" link.

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General Properties •	3	Change					
Change Many Lines *	4	Change					
CLID Routing Table •	5	Change					
Greeting Tables	6	Change					
Company Greetings •	7	Change					
Customized Digits •	8	Change					
	9	Change					
Custom Call Routing •	10	Change					
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k. Navigate to "Configuration">"Telephony">"Lines" and then select an available target line for assigning it to the Auto-Attendant. We will use "125" in this example.

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Element Navigation Panel	Task Navigation Panel											
E - 🔊 Network Elements	Configuration Administration	Targ	et Lines									
10.10.11.1	- • Wekome	1	e 🛆 Trunk Type	Name	Co	ntrol Set	Line Type	Prime Set	Pub. Received #	Priv. Received #		Distinc
	🕀 🏭 System	125	Target Ine	Test125	221	Publi	22				None	
	Identification	126	Target line	Line 126	221	Publi	22	L	6316769514	301	None	
	Oate and Time	127	Target line	Line 127	221	Publi	22	L	6316769515	302	None	
	- Keycodes	128	Target line	Line 128	221	Publi	22:	L			None	
	IP Subsystem	129	Target line	Line 129	221	Publi	22:	L			None	
	Telephony kegions	130	Target line	Line 130	221	Publi	22	L			None	
	Administration Access	131	Target line	Line 131	221	Publi	22	L			None	
	Security Policies	132	Target Ine	Line 132	221	Publi	22	L			None	
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	Resources	100	Target Ine	Line 135	221	Public	22				None	
	Application Resources	117	Target Ine	Line137	221	P-bb	22				None	
	Media Gateways	110	Target Ing	Line 139	221	p. bk	- 22				None	
	 Port Ranges 	111	Target line	Line 139	221	Publi	- 22				None	
	Telephony Resources	140	Target line	Line 140	221	Publi	77				None	
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I. Select Line 125 and then click the "Change" link.



m. Select "Auto-Attendant" from the drop-down list of the "Answer Mode" field, enter "2" in the "Table/Skillset Number" field. Leave other fields as default and click the "Submit" button.

2 CallPilot Manager: Line Properties		👌 • 🔊 - 📑 🖶 • Page • Sa	afety + Tools + 🔞 + "
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Numbe	r of Rings: 0 -		
			×

- n. Navigate to "**Configuration**">"**Telephony**">"**Sets**" and then select the "**Active Sets**" tab to assign a DID ("631-676-9517" in this example) for the Auto-Attendant.
 - 1) Select the "Line Access" tab and then select DN 301.
 - 2) From the Assigned Lines section, click the "**Add**" button and follow the previous example to add target line "125" which has been set up for an Auto-Attendant.



3) Follow the previous example to assign the DID to target line "125".

Setting up PBX to dial 9 first to place outbound calls via SIP trunks.

a. Navigate to "Configuration">"Telephony">"Dialing Plan" and then select "Line Pools" to ensure the DN numbers have access to the same line pool assigned as the SIP trunks (line pool BlocA in this example). To add the DN for the line pool access, select "BlocA" from "Pool" column, click the "Add" button, enter the DN in the "DN" field and then click the "OK" button.



b. Navigate to "Configuration">"Telephony">"Dialing Plan" and then select "Routing" to create a route for accessing the SIP trunks via line pool BlocA. Click the "Add" button, enter the next available route ("001" in this example) in the "Route" field of the "Add Route" pop-up box and then click the "OK" button.



c. Select **Route "001"** and then select "BlocA" from the drop-down list of its **"Use Pool**" field.



d. Select **Route "001"** and then select "Public (Unknown)" from the drop-down list of its "**DN Type**" field.



e. Navigate to "Configuration">"Telephony">"Dialing Plan">"Routing" and then select the "Destination Codes" tab to create a destination code of "9A" ("9" followed by any digits). First, we need to delete the default destination code of "9" ("9" followed by nothing). Select the "9" destination code and then click the "Delete" button.



f. Now click the **"Add"** button. From the **"Add Destination Code"** pop-up box, enter **"9A"** in the **"Destination Code"** field and then click the **"OK"** button.

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g. Select **destination code "9A**" and then enter "001" in the **"Normal Route**" field.

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h. Select **destination code "9A**" and then enter "1" in its **"Absorbed Length**" field (the PBX will strip "9" from the called number before sending the outbound call to the SIP trunk) and leave the other checkboxes checked.



i. Navigate to "Configuration">"Telephony">"Dialing Plan" and then select the "Public Network" tab. From the Public Network Setting, elect "10" from the drop-down list of the "Public Received number length" field. From the Public Network DN Length section, select the Default DN Prefix and change the "DN Length" field from "7" (default) to "10".

