



Avaya Solution & Interoperability Test Lab

Application Notes for Biscom FAXCOM Server 6.5 with Avaya IP Office 9.0 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Biscom FAXCOM to interoperate with Avaya IP Office 9.0. Biscom FAXCOM is a fax server application that uses the SIP trunk interface with T.38 fax from Avaya IP Office to send and receive fax.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as the observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the configuration steps required for Biscom FAXCOM to interoperate with Avaya IP Office 9.0. Biscom FAXCOM is a fax server application that uses the SIP trunk interface with T.38 fax from Avaya IP Office to send and receive fax with Error Correction Mode enabled.

For testing, FAXCOM Server test application was used to verify outgoing fax can be sent. Incoming fax is routed by Avaya IP Office to Biscom FAXCOM via an available SIP channel. The received incoming fax is stored in a folder on Biscom FAXCOM server.

2. General Test Approach and Test Results

The feature test cases were performed manually. Fax calls to and from FAXCOM were made. The faxes were sent using the FAXCOM test fax application and an analog fax machine at the PSTN with Error Correction Mode enabled.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet connection to FAXCOM and rebooting the FAXCOM server.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The compliance testing included feature and serviceability areas.

The feature testing focused on verifying the following on FAXCOM:

- Proper handling of faxes via SIP trunk with T.38: send/receive, internal fax, external fax over SIP trunk, simultaneous bi-directional faxes, and miscellaneous failure scenarios.
- Proper handling of faxes with different pages, resolutions, complexity, paper sizes, and data rates.
- DTMF interactions between FAXCOM and IP Office.
- Sample testing of G.711 pass-through mode
- No adverse impact on the internal and external VoIP calls during fax transmission.

The serviceability testing focused on verifying the ability of FAXCOM to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet connection to FAXCOM and rebooting the FAXCOM server.

2.2. Test Results

All test cases were executed and verified as successful. However, the following observation is noted:

- Outbound PSTN calls that require an account code are not supported on FAXCOM 6.5.

2.3. Support

Technical support on FAXCOM can be obtained through the following:

- **Phone:** 1 (800) 477-2472
- **Email:** support@biscom.com
- **Web:** <http://www.biscom.com>

3. Reference Configuration

The configuration used for the compliance testing is shown below. IP Office is connected to FAXCOM and to a simulated PSTN/ISP via two separate SIP trunks. Numbers in range of 32xxx were used to route faxes to FAXCOM. The FAXCOM server sends and receives fax calls to/from a fax machine in the PSTN.

All incoming calls to the fax numbers are routed by IP Office over the SIP trunks to FAXCOM, and all outgoing faxes are routed by FAXCOM over the SIP trunks to IP Office.

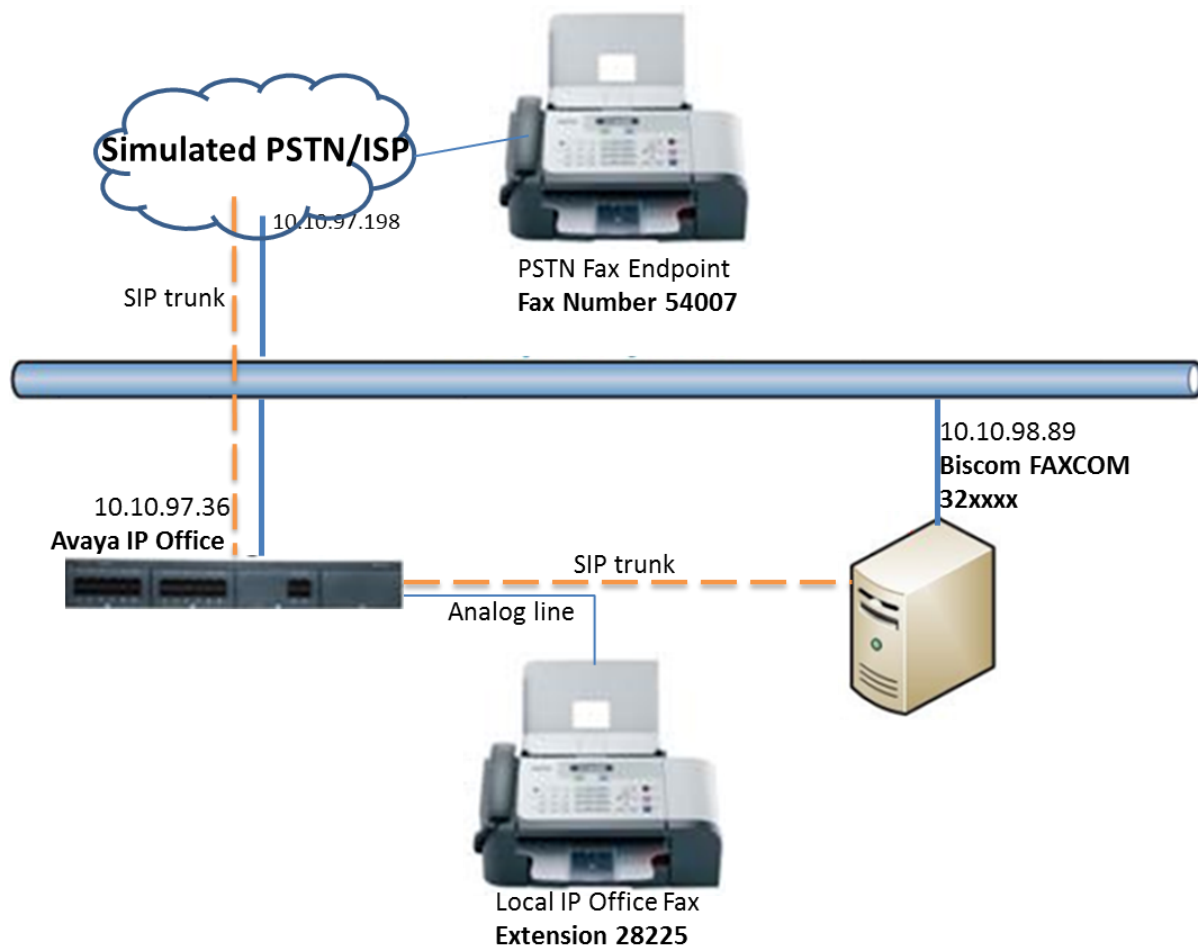


Figure 1: Compliance Testing Configuration

4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment	Software
Avaya IP Office on IP500 V2	9.0.500 Build 972
Biscom FAXCOM on Microsoft Windows Server 2008 R2 Enterprise SP1 64-bit	6.5.5.8 Dialogic Edition

5. Configure Avaya IP Office

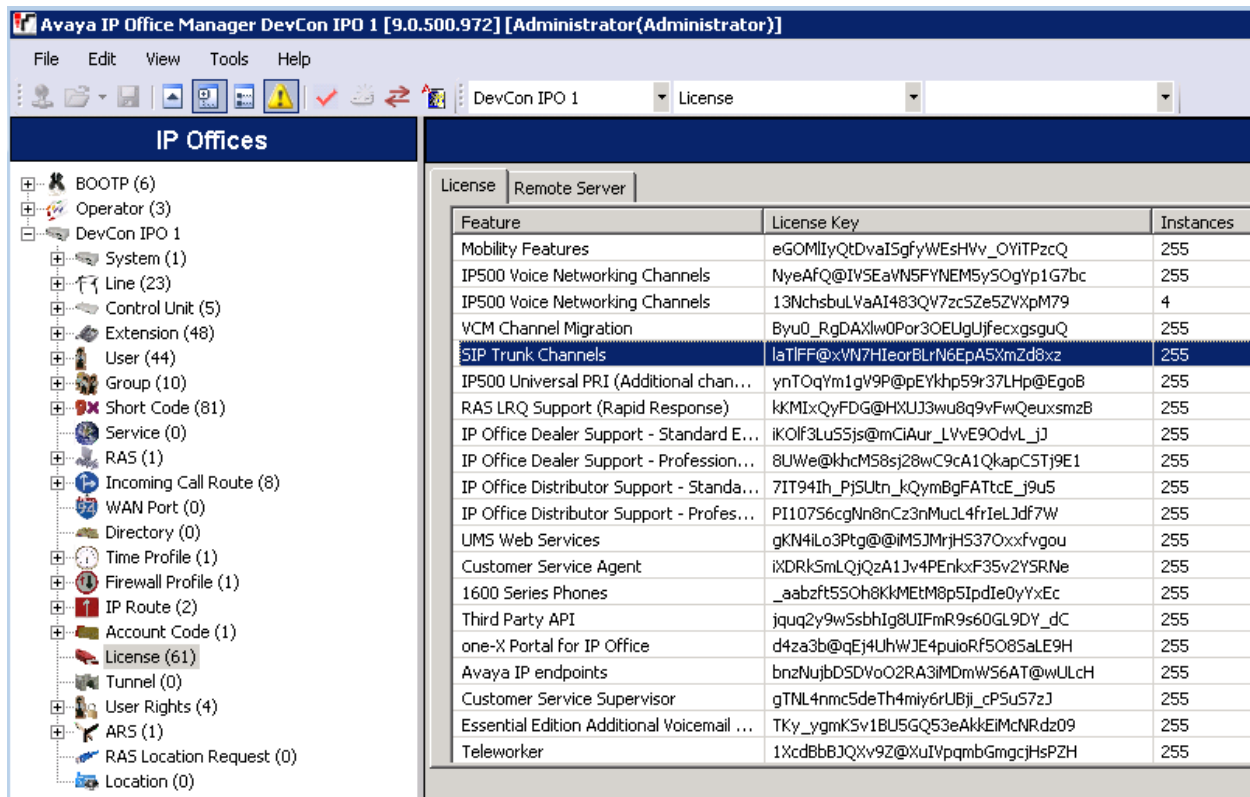
This section provides the procedures for configuring IP Office, assuming it has been installed and licensed. The procedures include the following areas:

- Verify IP Office license
- Obtain LAN IP address
- Enable SIP trunks
- Administer SIP line
- Administer incoming call route
- Administer short code

5.1. Verify IP Office License

From a PC running the IP Office Manager application, select **Start → All Programs → IP Office → Manager** to launch the Manager application. Select the proper IP Office system, and log in using the appropriate credentials.

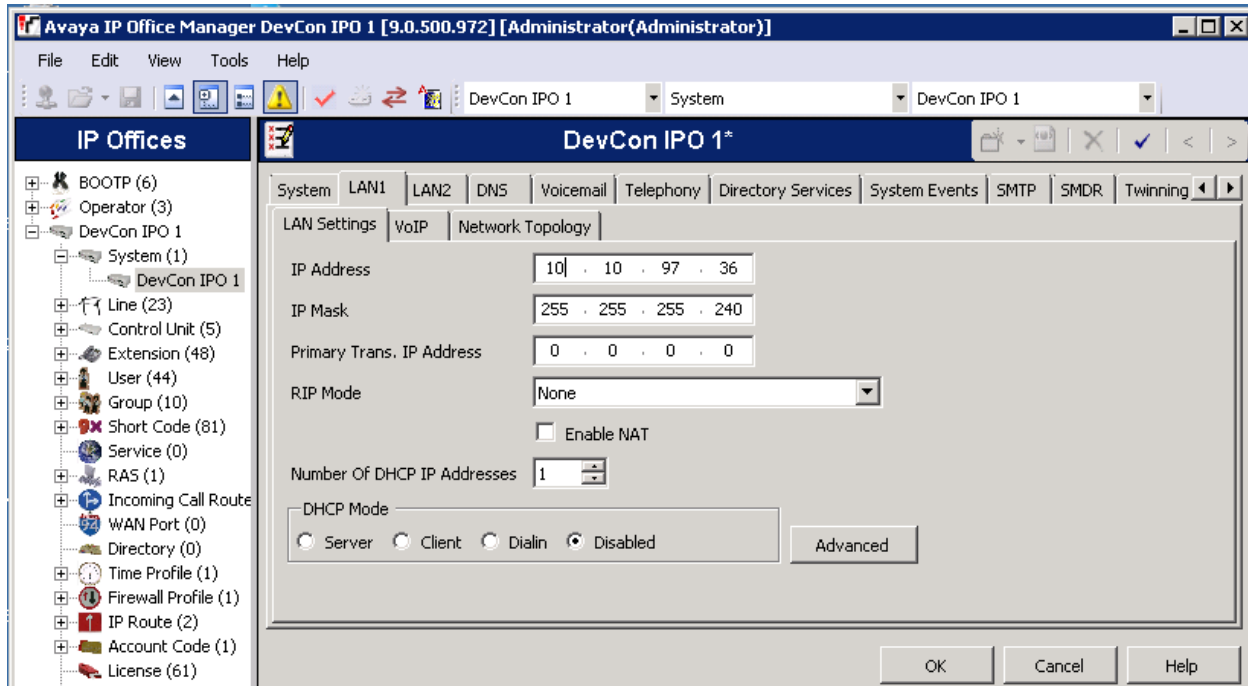
The **Avaya IP Office R9 Manager** screen is displayed. From the configuration tree in the left pane, select **License** to display the **License** screen in the right pane. Verify that the **License Status** for **SIP Trunk Channels** is “Valid”, and that the **Instances** value is sufficient for the desired maximum number of simultaneous faxes. If there is insufficient capacity of SIP Trunks, contact an Avaya representative to make the appropriate changes.



Feature	License Key	Instances
Mobility Features	eGOMIlyQtDvaISgfyWEsHWv_OYITPzcQ	255
IP500 Voice Networking Channels	NyeAfQ@IV5EaVN5FYNEM5y5OgYp1G7bc	255
IP500 Voice Networking Channels	13NchsbuLVaAI483QV7zc5Ze5ZVXpM79	4
VCM Channel Migration	Byu0_RgDAXlw0Por3OEUGUjfecxgsguQ	255
SIP Trunk Channels	laTlFF@xVN7HieorBLrN6EpA5XmZd8xz	255
IP500 Universal PRI (Additional chan...	ynTOqYm1gV9P@pEYkhp59r37LHp@Ego8	255
RAS LRQ Support (Rapid Response)	kKMIxQyFDG@HXUJ3wu8q9vFwQeuxsmzB	255
IP Office Dealer Support - Standard E...	iKOlF3Lu55js@mCiAur_LVvE9OdV_Lj	255
IP Office Dealer Support - Profession...	8UWe@khcM58sj28wC9cA1QkapCSTj9E1	255
IP Office Distributor Support - Standa...	7IT94Ih_Pj5Utn_kQymBgFAItcE_j9u5	255
IP Office Distributor Support - Profes...	PI10756cgNn8nCz3nMucl4frIeLJdf7W	255
UM5 Web Services	gKN4ILo3Ptg@iM5JMrjH537Oxxfvgou	255
Customer Service Agent	iXDRkSmLQjQzA1Jv4PEnkxF35v2Y5RNe	255
1600 Series Phones	_aabzft5SOh8KkMEtM8p5IpdlEoYyXc	255
Third Party API	jquq2y9wSsbhlg8UIFmR9s60GL9DY_dC	255
one-X Portal for IP Office	d4za3b@qEj4UhwJE4puorF5O85aLE9H	255
Avaya IP endpoints	bnzNujbDSDVoO2RA3iMDmW56AT@wULcH	255
Customer Service Supervisor	gTNL4nmc5deTh4miy6rUBji_cP5u57zJ	255
Essential Edition Additional Voicemail ...	TKy_ygmK5v1BU5GQ53eAKkEIMcNRdz09	255
Teleworker	1XcdBbBJQXv9Z@XuIvpqmbGmgcjHsPZH	255

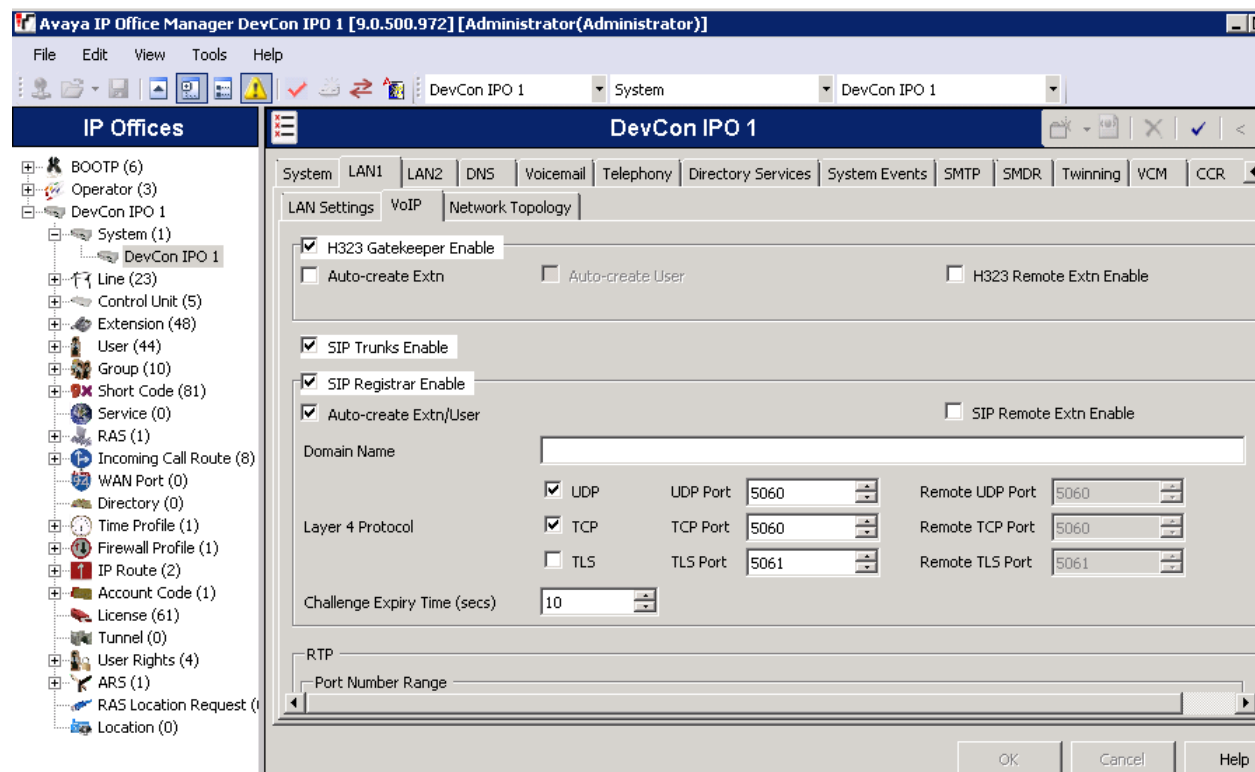
5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **DevCon IPO 1** → **System** tab to display the **DevCon IPO 1** screen in the right pane, where **DevCon IPO 1** is the name of the IP Office system. Select the **LAN1** tab, followed by the **LAN Settings** sub-tab in the right pane. Make a note of the **IP Address**, which will be used later to configure FAXCOM in **Section 6.2**. Note that IP Office can support SIP trunks on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.



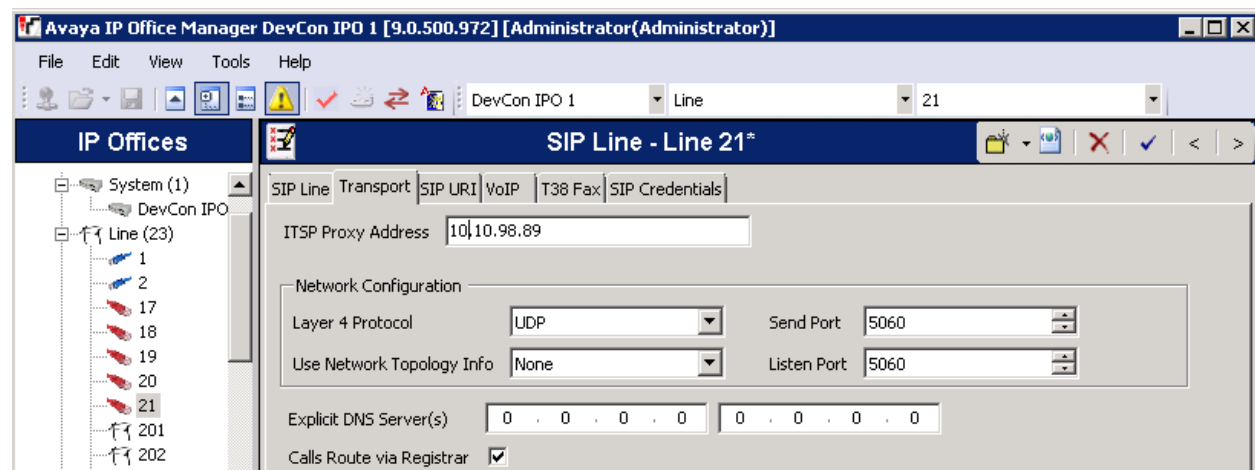
5.3. Enable SIP Trunks

Select the **VoIP** sub-tab. Make certain that **SIP Trunks Enable** is checked, as shown below.

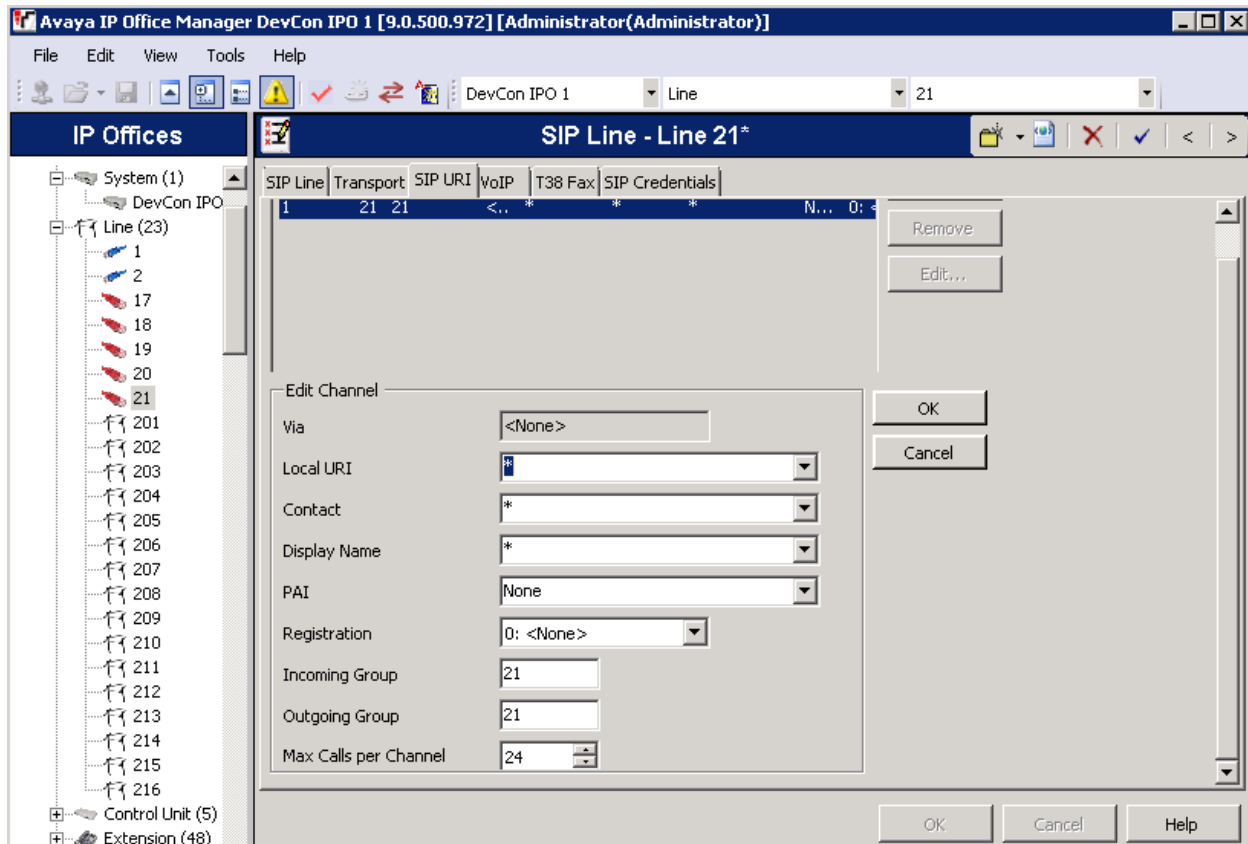


5.4. Administer SIP Line

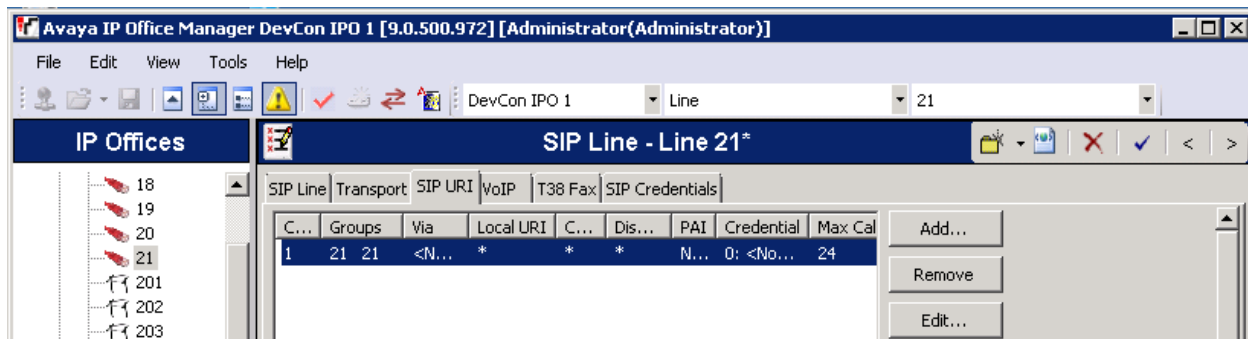
From the configuration tree in the left pane, right-click on **Line** and select **New → SIP Line** from the pop-up list to add a new SIP line. Select the **Transport** tab in the right pane. For **ITSP Proxy Address**, enter the IP address of FAXCOM. Set the **Layer 4 Protocol** field to “UDP”. Retain the default values for the remaining fields.



Select the **SIP URI** tab, and click **Add** to display the **New Channel** section. Enter the wildcard character “*” for **Local URI**, **Contact**, and **Display Name**. Enter an unused group number such as “21” for **Incoming Group** and **Outgoing Group**. Set **Max Calls per Channel** to the maximum number of simultaneous faxes allowed by the FAXCOM license, in this case “21”. Retain the default values in the remaining fields. Click **OK**.



The screen is updated, as shown below.



Select the **VoIP** tab. Check **Re-invite Supported**. For **Fax Transport Support**, select “T38” from the drop-down list. Retain the default values in the remaining fields.

The screenshot shows the 'SIP Line - Line 21*' configuration window with the 'VoIP' tab selected. The window has a title bar with a standard icon and navigation buttons. Below the title bar is a tabbed interface with tabs for 'SIP Line', 'Transport', 'SIP URI', 'VoIP', 'T38 Fax', and 'SIP Credentials'. The 'VoIP' tab is active, displaying the following settings:

- Codec Selection:** A dropdown menu set to 'Custom'. Below it are two lists: 'Unused' (empty) and 'Selected' (containing G.723.1 6K3 MP-MLQ, G.729(a) 8K CS-ACELP, G.722 64K, G.711 ALAW 64K, and G.711 ULAW 64K). Navigation buttons (>>, <<, <-, >=) are between the lists.
- Fax Transport Support:** A dropdown menu set to 'T38'.
- Location:** A dropdown menu set to 'Cloud'.
- Call Initiation Timeout (s):** A numeric field set to '4'.
- DTMF Support:** A dropdown menu set to 'Inband'.
- Checkboxes on the right:**
 - ☐ VoIP Silence Suppression
 - ☐ Allow Direct Media Path
 - ☒ Re-invite Supported
 - ☐ Codec Lockdown
 - ☐ PRACK/100rel Supported
 - ☐ Force direct media with pho
 - ☐ G.711 Fax ECAN

At the bottom right are 'OK', 'Cancel', and 'Help' buttons.

Select the **T38 Fax** tab. Uncheck **Use Default Values** toward the bottom of the screen to access all fields.

For **T38 Fax Version**, select “0”. As FAXCOM supports ECM, verify that **Disable T30 ECM** is unchecked in the right section. Retain the default values in the remaining fields. Click **OK**.

The screenshot shows the 'SIP Line - Line 21*' configuration window with the 'T38 Fax' tab selected. The window has a title bar with standard icons and a tabbed interface with 'SIP Line', 'Transport', 'SIP URI', 'VoIP', 'T38 Fax', and 'SIP Credentials'. The 'T38 Fax' tab contains the following fields and options:

- T38 Fax Version:** A dropdown menu set to '0'.
- Transport:** A dropdown menu set to 'UDPTL'.
- Redundancy:** A section containing two spinners: 'Low Speed' set to '0' and 'High Speed' set to '0'.
- TCF Method:** A dropdown menu set to 'Trans TCF'.
- Max Bit Rate (bps):** A dropdown menu set to '14400'.
- EFlag Start Timer (msecs):** A spinner set to '2600'.
- EFlag Stop Timer (msecs):** A spinner set to '2300'.
- Tx Network Timeout (secs):** A spinner set to '150'.
- Options (right side):**
 - ☒ Scan Line Fix-up
 - ☒ TFOP Enhancement
 - ☐ Disable T30 ECM
 - ☐ Disable EFlags For First DIS
 - ☐ Disable T30 MR Compression
 - ☐ NSF Override
 - Country Code:** A spinner set to '0'.
 - Vendor Code:** A spinner set to '0'.

At the bottom left, there is a checkbox labeled 'Use Default Values' which is currently unchecked. At the bottom right, there are three buttons: 'OK', 'Cancel', and 'Help'.

5.5. Simulated PSTN/ISP SIP Trunk Configuration

A SIP trunk was pre-configured on the IP Office for connectivity to the simulated PSTN/ISP. Since it is an integral part of the test configuration, a screenshot is included in this section for informational purposes.

The screenshot shows the 'SIP Line - Line 17' configuration window. The window has a title bar with a menu icon and standard window controls. Below the title bar is a tabbed interface with tabs for 'SIP Line', 'Transport', 'SIP URI', 'VoIP', 'T38 Fax', and 'SIP Credentials'. The 'SIP Line' tab is selected. The configuration fields are organized into two columns. The left column contains: 'Line Number' (17), 'ITSP Domain Name' (bvwdev.com), 'Prefix' (empty), 'National Prefix' (0), 'Country Code' (empty), 'International Prefix' (00), 'Send Caller ID' (None), 'Association Method' (By Source IP address), and a 'REFER Support' section with 'Incoming' and 'Outgoing' both set to 'Auto'. The right column contains: 'In Service' (checked), 'URI Type' (SIP), 'Check OOS' (checked), 'Call Routing Method' (Request URI), 'Originator number for forwarded and twinning calls' (empty), 'Name Priority' (System Default), 'Caller ID from From header' (unchecked), 'Send From In Clear' (unchecked), 'User-Agent and Server Headers' (empty), 'Service Busy Response' (486 - Busy Here), and 'Action on CAC Location Limit' (Allow Voicemail). At the bottom right are 'OK', 'Cancel', and 'Help' buttons.

Field	Value
Line Number	17
ITSP Domain Name	bvwdev.com
Prefix	
National Prefix	0
Country Code	
International Prefix	00
Send Caller ID	None
Association Method	By Source IP address
REFER Support	Checked
Incoming	Auto
Outgoing	Auto
In Service	Checked
URI Type	SIP
Check OOS	Checked
Call Routing Method	Request URI
Originator number for forwarded and twinning calls	
Name Priority	System Default
Caller ID from From header	Unchecked
Send From In Clear	Unchecked
User-Agent and Server Headers	
Service Busy Response	486 - Busy Here
Action on CAC Location Limit	Allow Voicemail

Detail information of **Transport** tab, for **ITSP Proxy Address** is IP address of the simulated PSTN/ISP.

SIP Line - Line 17*

SIP Line | Transport | SIP URI | VoIP | T38 Fax | SIP Credentials

ITSP Proxy Address: 10.10.97.198

Network Configuration

Layer 4 Protocol: UDP | Send Port: 5060

Use Network Topology Info: None | Listen Port: 5060

Explicit DNS Server(s): 0.0.0.0 | 0.0.0.0

Calls Route via Registrar: ☒

Separate Registrar:

OK Cancel Help

In the **SIP URI** tab, SIP URI record created as show below:

SIP Line - Line 17*

SIP Line | Transport | SIP URI | VoIP | T38 Fax | SIP Credentials

Channel	Groups	Via	L...	C...	Dis...	PAI	Credential	Max Call
1	17 17	<N...	*	*	*	None	0: <No...	10

Add... Remove Edit...

In **VoIP** tab, default value used for SIP trunk as below:

The screenshot shows the 'SIP Line - Line 17*' configuration window with the 'VoIP' tab selected. The window has a title bar with a standard toolbar. Below the title bar are tabs for 'SIP Line', 'Transport', 'SIP URI', 'VoIP', 'T38 Fax', and 'SIP Credentials'. The 'VoIP' tab is active, displaying the following settings:

- Codec Selection:** A dropdown menu set to 'System Default'. Below it are two lists: 'Unused' (empty) and 'Selected' (containing G.711 ULAW 64K, G.711 ALAW 64K, G.722 64K, G.729(a) 8K CS-ACELP, and G.723.1 6K3 MP-MLQ). Navigation buttons (>>, <<, <-, >=) are between the lists.
- Fax Transport Support:** A dropdown menu set to 'T38 Fallback'.
- Location:** A dropdown menu set to 'Cloud'.
- Call Initiation Timeout (s):** A numeric input field set to '4'.
- DTMF Support:** A dropdown menu set to 'RFC2833'.

On the right side of the window, there are several checkboxes:

- ☐ VoIP Silence Suppression
- ☐ Allow Direct Media Path
- ☒ Re-invite Supported
- ☐ Codec Lockdown
- ☐ PRACK/100rel Supported
- ☐ Force direct media with pho
- ☐ G.711 Fax ECAN

At the bottom right, there are three buttons: 'OK', 'Cancel', and 'Help'.

5.6. Administer Incoming Call Route

From the configuration tree in the left pane, right-click on **Incoming Call Route**, and select **New** from the pop-up list to add a new route. For **Line Group Id**, select the incoming group number from **Section 5.4**, in this case “21”. Click **OK**.

The screenshot shows the 'Incoming Call Route' configuration window for Line Group ID 21. The 'Standard' tab is selected, displaying various configuration fields. The left pane shows the configuration tree with 'Incoming Call Route (t)' selected.

Field	Value
Bearer Capability	Any Data
Line Group ID	21
Incoming Number	
Incoming Sub Address	
Incoming CLI	
Locale	
Priority	1 - Low
Tag	
Hold Music Source	System Source
Ring Tone Override	None

Select the **Destinations** tab. For **Destination**, enter “.” to route the call to the dialed number received from FAXCOM without modification. In the case of a call from FAXCOM to the simulated PSTN/ISP, the number has the format 54xxx. See **Section 5.7.2**.

The screenshot shows the 'Destinations' tab in the 'Incoming Call Route' configuration window for Line Group ID 21. The table below represents the data shown in the screenshot.

TimeProfile	Destination	Fallback Extension
Default Value	.	
*		

Repeat the procedure for Line Group 17. From the configuration tree in the left pane, right-click on **Incoming Call Route**, and select **New** from the pop-up list to add a new route. For **Line Group Id**, select the incoming group number from **Section 5.5**, in this case “17”. Click **OK**.

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File Edit View Tools Help

DevCon IPO 1 Incoming Call Route 17

IP Offices

- BOOTP (6)
- Operator (3)
- DevCon IPO 1
 - System (1)
 - Line (23)
 - Control Unit (5)
 - Extension (48)
 - User (44)
 - Group (10)
 - Short Code (81)
 - Service (0)
 - RAS (1)
 - Incoming Call Route (8)
 - 20
 - 17
 - 21
 - 20 16137717497
 - 2 161396xxxxx
 - 20 53043
 - 1 6137717517
 - 2 70000
 - WAN Port (0)
 - Directory (0)
 - Time Profile (1)

17

Standard Voice Recording Destinations

Bearer Capability: Any Voice

Line Group ID: 17

Incoming Number:

Incoming Sub Address:

Incoming CLI:

Locale:

Priority: 1 - Low

Tag:

Hold Music Source: System Source

Ring Tone Override: None

OK Cancel Help

Select the **Destinations** tab. For **Destination**, enter “.” to route the call to the dialed number received from the simulated PSTN/ISP without modification. In the case of a call from the simulated the PSTN to FAXCOM, the number has the format 320xx. See **Section 5.7.1**.

Avaya IP Office Manager DevCon IPO 1 [9.0.500.972] [Administrator/Administrator]

File Edit View Tools Help

DevCon IPO 1 Incoming Call Route 17

IP Offices

- BOOTP (6)
- Operator (3)
- DevCon IPO 1
 - System (1)
 - Line (23)
 - Control Unit (5)
 - Extension (48)
 - User (44)
 - Group (10)
 - Short Code (81)
 - Service (0)
 - RAS (1)
 - Incoming Call Route (8)
 - 20
 - 17
 - 21
 - 20 16137717497
 - 2 161396xxxxx
 - 20 53043
 - 1 6137717517
 - 2 70000
 - WAN Port (0)
 - Directory (0)
 - Time Profile (1)

17

Standard Voice Recording Destinations

	TimeProfile	Destination	Fallback Extension
▶	Default Value	.	
*			

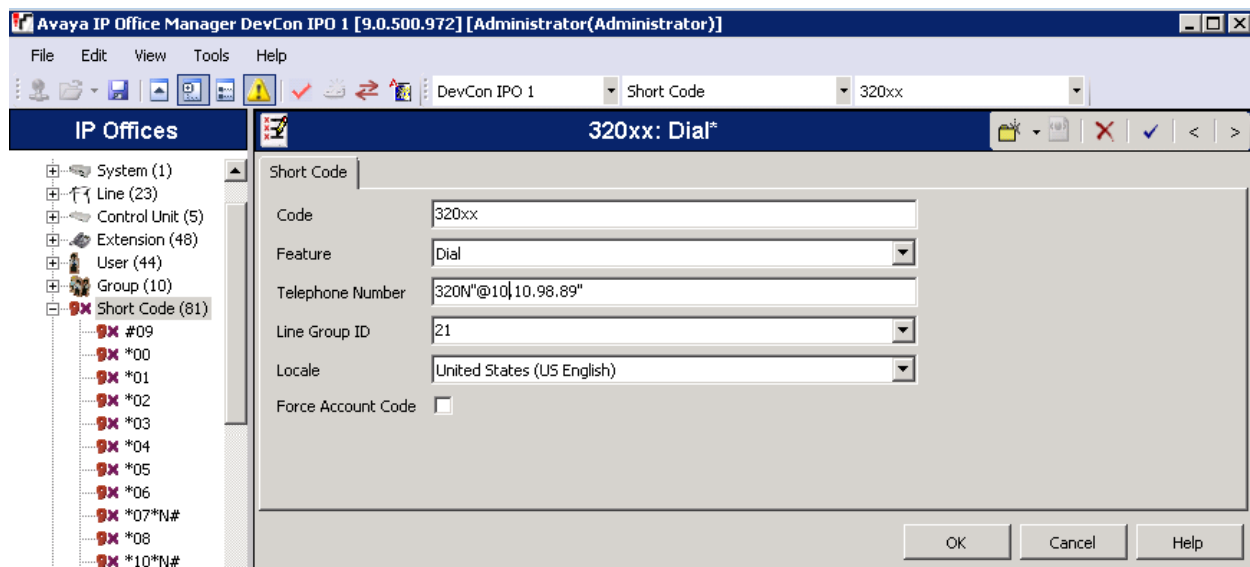
OK Cancel Help

5.7. Administer Short Code

5.7.1. Short Code for Call to FAXCOM Server

From the configuration tree in the left pane, right-click on **Short Code** and select **New** from the pop-up list to add a new short code for fax calls to FAXCOM. In the compliance testing, users on IP Office are designated with fax numbers 320XX, and faxes are routed over the SIP trunks to FAXCOM.

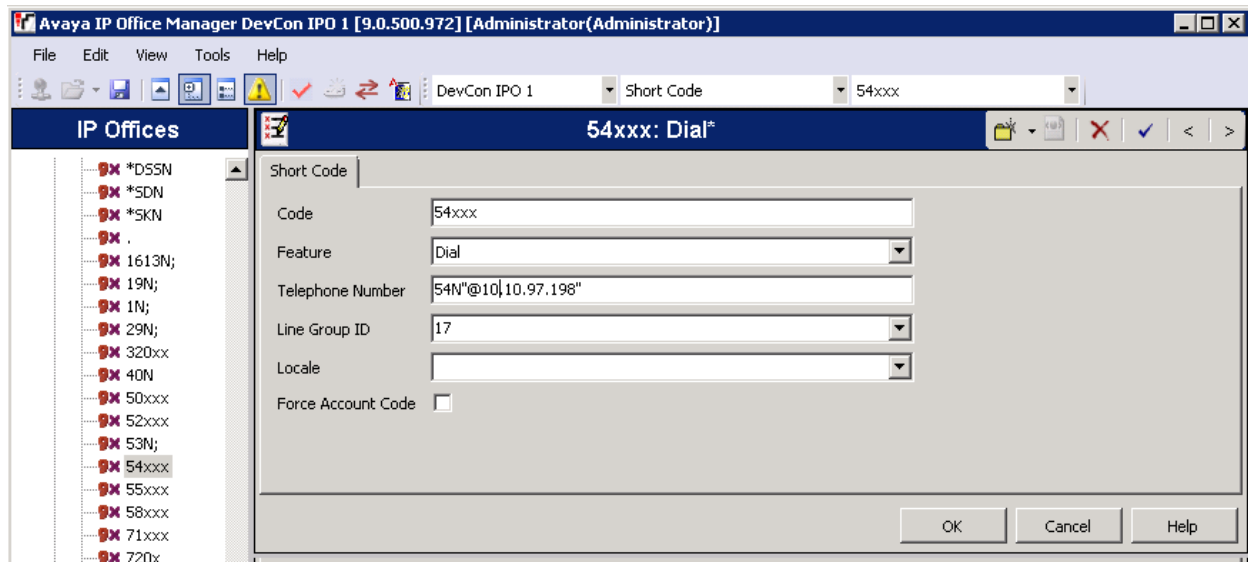
For **Code**, enter “320xx”. For **Feature**, select “Dial” from the drop-down list. For **Telephone Number**, enter “320N”@10.10.98.89” where “320N” corresponds to the short code and “10.10.98.89” is the IP address of FAXCOM. For **Line Group ID**, enter the outgoing group number from **Section 5.4**. Click **OK**.



5.7.2. Short Code for Call to PSTN

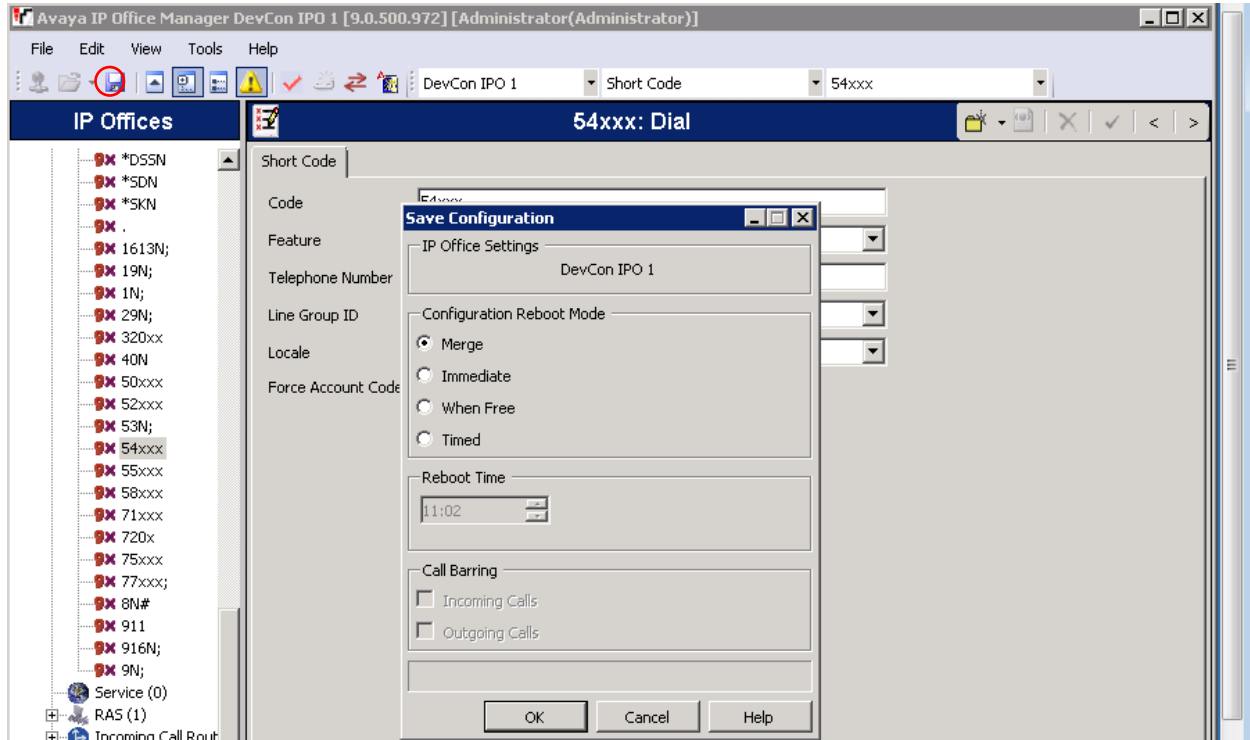
Repeat the procedure for another new short code for fax calls from FAXCOM to PSTN.

Right-click on **Short Code** and select **New** from the pop-up list. For **Code**, enter “54xxx”. For **Feature**, select “Dial” from the drop-down list. For **Telephone Number**, enter “54N@10.10.97.198” where “54N” corresponds to the short code and “10.10.97.198” is the IP address of simulated PSTN/ISP. For **Line Group ID**, enter the outgoing group number assigned to the SIP trunk which is “17”. Click **OK**.



5.8. Save Configuration

Once all the items are configured, click the Save Configuration File icon. The Save Configuration screen is displayed. Click **OK**.



The **Service User Login** screen is displayed (not shown). Enter the appropriate credentials and click **OK**.

6. Configure Biscom FAXCOM

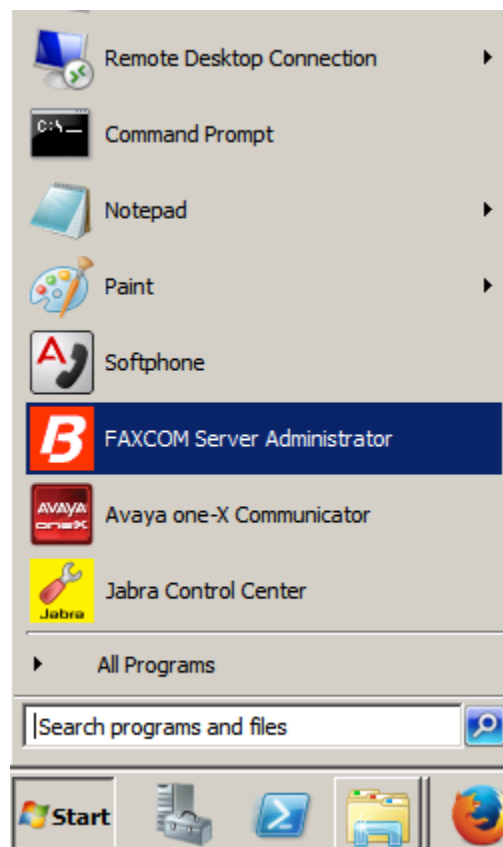
This section provides the procedures for configuring FAXCOM. The procedures include the following areas:

- Launch application
- Administer driver
- Administer fax users
- Administer incoming routing table
- Restart service

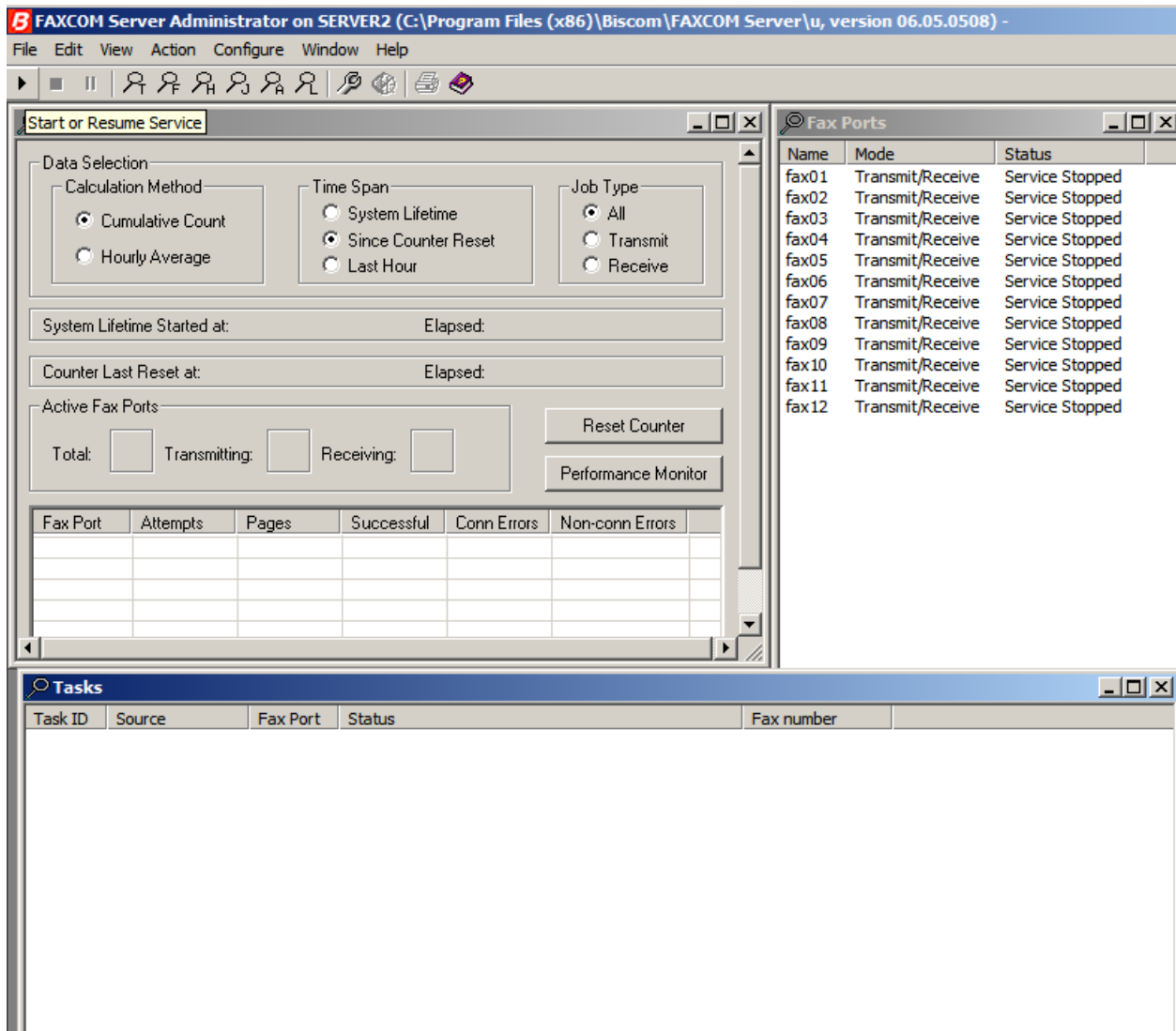
Note that as part of the FAXCOM installation, the IP Office IP address was entered, and a site name and the Basic user profile were created.


6.1. Launch FAXCOM Server Administrator Program

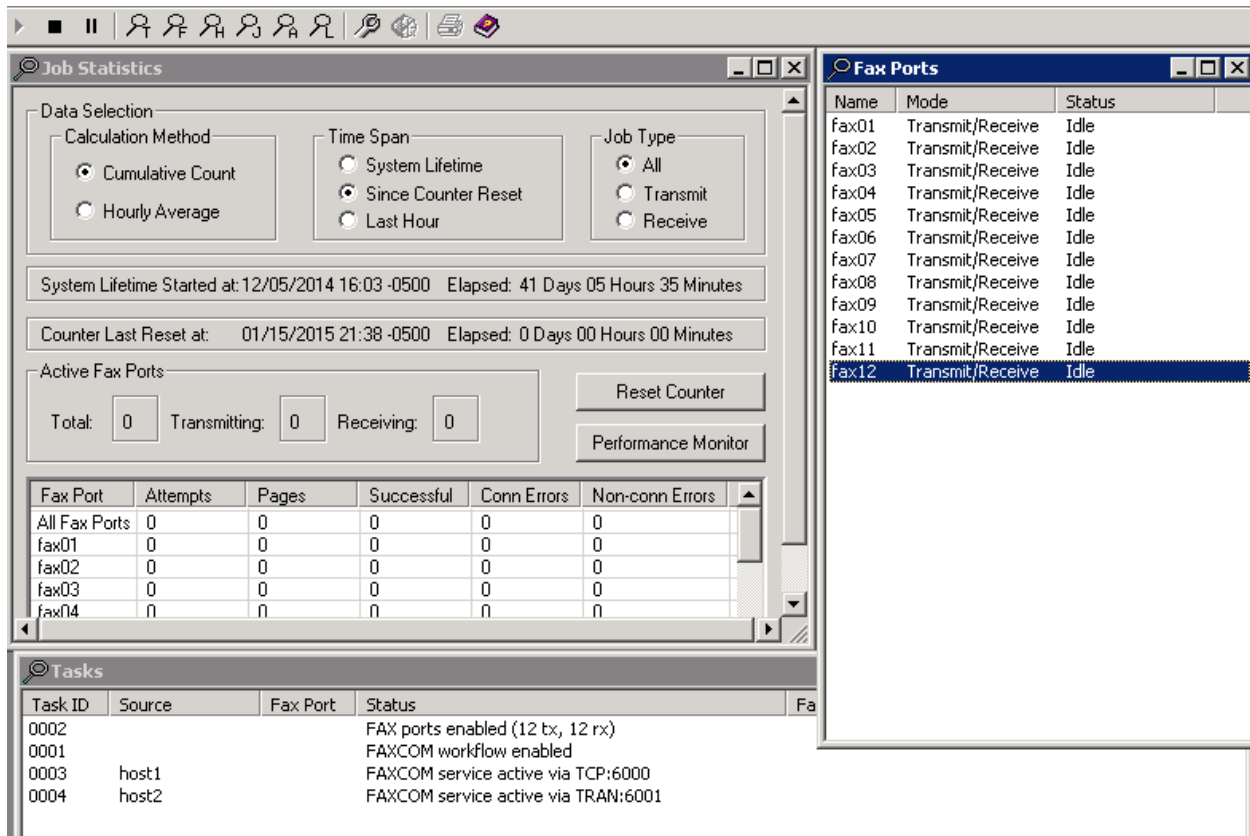
From the FAXCOM server, select **Start → FAXCOM → FAXCOM Server Administrator** to launch the application.



FAXCOM Server opens and a set of three windows is displayed on the FAXCOM desktop – the Job Statistics, Tasks, and Fax Ports windows.



Click on  icon to start fax service. Verify all the ports are “Idle” as shown below:



The screenshot displays the FAXCOM management interface. The 'Job Statistics' window is active, showing data selection options (Cumulative Count, Hourly Average), time span (System Lifetime, Since Counter Reset, Last Hour), and job type (All, Transmit, Receive). It also displays system lifetime and counter reset information. The 'Active Fax Ports' section shows a table with columns: Fax Port, Attempts, Pages, Successful, Conn Errors, and Non-conn Errors. The 'Fax Ports' window is also open, showing a table with columns: Name, Mode, and Status. The 'Tasks' window at the bottom shows a list of tasks with columns: Task ID, Source, Fax Port, and Status.

Job Statistics

Data Selection

Calculation Method

☒ Cumulative Count

☐ Hourly Average

Time Span

☐ System Lifetime

☒ Since Counter Reset

☐ Last Hour

Job Type

☒ All

☐ Transmit

☐ Receive

System Lifetime Started at: 12/05/2014 16:03 -0500 Elapsed: 41 Days 05 Hours 35 Minutes

Counter Last Reset at: 01/15/2015 21:38 -0500 Elapsed: 0 Days 00 Hours 00 Minutes

Active Fax Ports

Total: 0 Transmitting: 0 Receiving: 0

Reset Counter

Performance Monitor

Fax Port	Attempts	Pages	Successful	Conn Errors	Non-conn Errors
All Fax Ports	0	0	0	0	0
fax01	0	0	0	0	0
fax02	0	0	0	0	0
fax03	0	0	0	0	0
fax04	0	0	0	0	0

Fax Ports

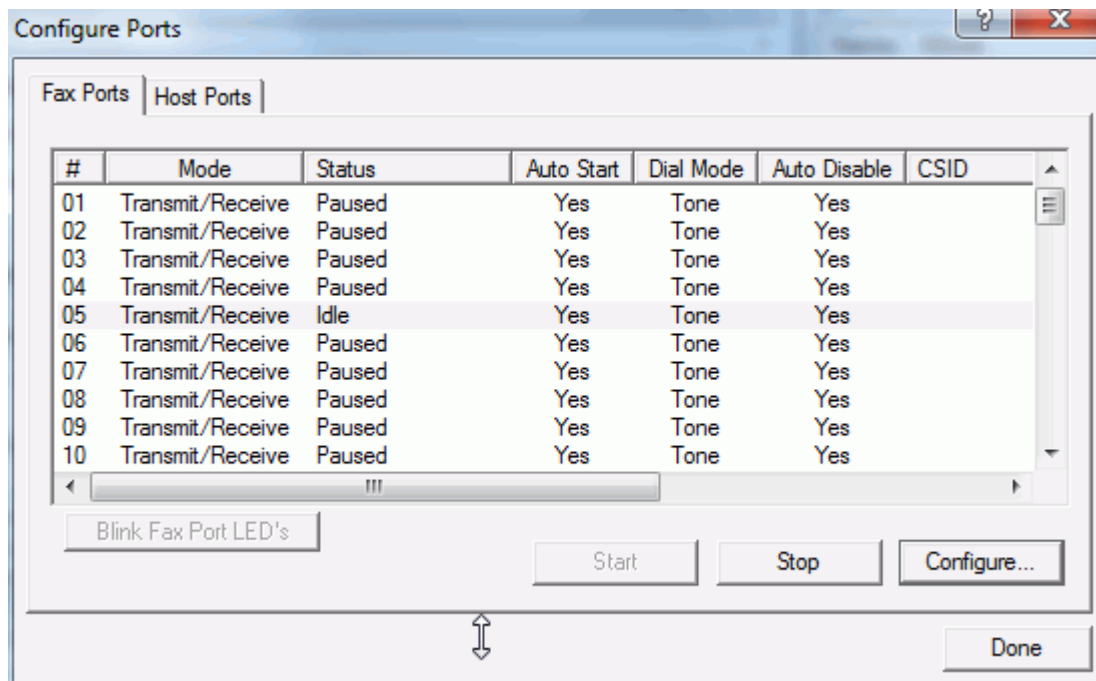
Name	Mode	Status
fax01	Transmit/Receive	Idle
fax02	Transmit/Receive	Idle
fax03	Transmit/Receive	Idle
fax04	Transmit/Receive	Idle
fax05	Transmit/Receive	Idle
fax06	Transmit/Receive	Idle
fax07	Transmit/Receive	Idle
fax08	Transmit/Receive	Idle
fax09	Transmit/Receive	Idle
fax10	Transmit/Receive	Idle
fax11	Transmit/Receive	Idle
fax12	Transmit/Receive	Idle

Tasks

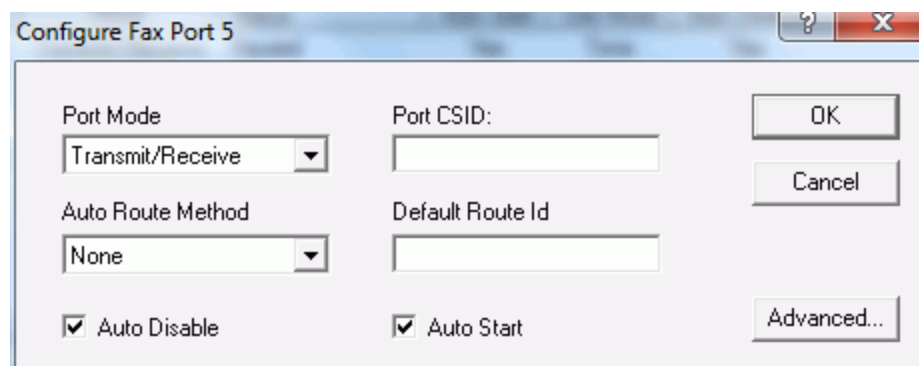
Task ID	Source	Fax Port	Status
0002			FAX ports enabled (12 tx, 12 rx)
0001			FAXCOM workflow enabled
0003	host1		FAXCOM service active via TCP:6000
0004	host2		FAXCOM service active via TRAN:6001

6.2. Administer Fax Ports

Navigate to **Configure → Ports → Fax Ports**. Configure **Fax Ports** tab shown as below:



To configure the port, highlight the port and click the **Configure** button to display the Fax Port dialog. (If the port is not stopped, you are prompted whether to stop the port since you cannot configure a port unless you first stop it. You can, however, view the configuration in read-only mode without stopping the port.). Specify the appropriate information as follows, clicking **OK** when done. During compliance testing, **Port Mode** “Transmit/Receive” is selected.



6.3. Administer Server Setting

From the FAXCOM screen, select **Configure** → **Server Setting**. Select **SR140 Settings**, select “T.38” for **Mode**. In **Call Control** box, select “SIP” and “Avaya” for **Call Control Variant**. **T.38 Version** is “0”. **Local IP address** is FAXCOM IP address, in this case it is “10.10.98.89”. **Gateway IP Address** is IP Office IP address, during compliance test, this IP is “10.10.97.36”. Click **Done** to save changes.

The screenshot shows the 'Server Settings' dialog box with the 'SR140 Settings' tab selected. The 'Licensed channels' is set to 48. The 'Mode' is set to T.38. The 'Call Control' is set to SIP, and the 'Call Control Variant' is set to Avaya. The 'T.38 Version' is set to 0. The 'Local IP Address' is 10.10.98.89. The 'H.323 Gatekeeper IP Address' is 0.0.0.0. The 'Gateway IP Address' list contains 10.10.97.36. The 'Done' button is highlighted.

Field	Value
Licensed channels	48
Mode	T.38
Call Control	SIP
Call Control Variant	Avaya
T.38 Version	0
Local IP Address	10.10.98.89
H.323 Gatekeeper IP Address	0.0.0.0
Gateway IP Address	10.10.97.36

Select **Configure** → **All Settings**, select **Options** tab. Verify maximum number of ports setup. Click **Done** to close window.

The screenshot shows a window titled "Configure All Settings" with a standard Windows-style title bar (minimize, maximize, close buttons). The window contains a tabbed interface with the following tabs: "Dialing", "Local Exchanges", "Internal Numbers", "LCR Routes", "LCR Rules", "Translation Server", "Data Archive", "Alarm Events", "Alarm Notifications", "Fax Ports", "Host Ports", "Server Settings", "SR140 Settings", "Options" (which is the active tab), and "Inbound Routes".

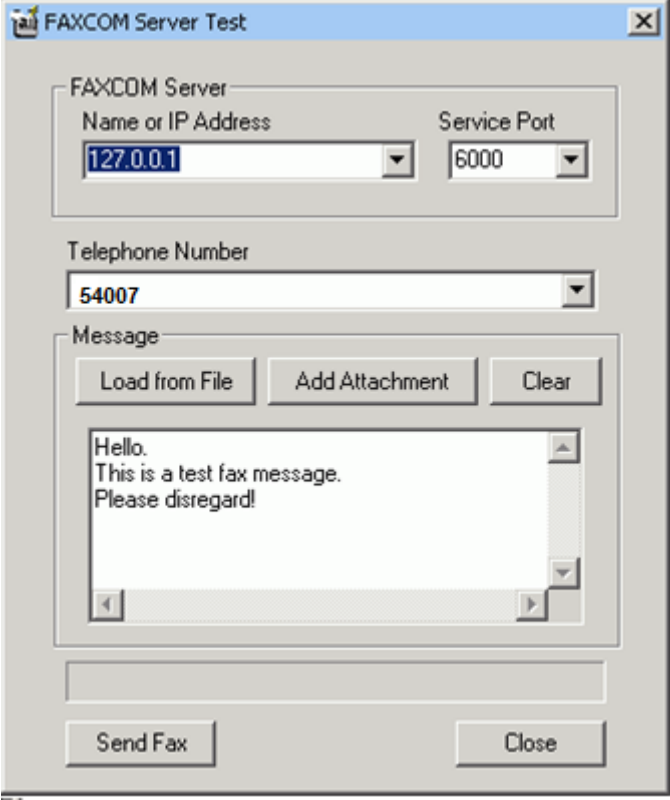
Inside the "Options" tab, the "Fax Server Model" is set to "FAXCOM Server". Below this, the "FAXCOM Server Software Serial Number" is displayed as "6705077". To the right of the serial number, there is a section for "Maximum Fax Ports" with a text box containing the value "12" and a "Change" button next to it.

Below the "Maximum Fax Ports" section, there is a checkbox labeled "OCR Option" which is currently unchecked.

At the bottom right of the window, there are two buttons: "Done" and "Help".

6.4. Send a Test Fax

From the **Action** menu, select **Send a Test Fax**. The FAXCOM Server Test dialog box is displayed, with the name or internal IP Address of the FAXCOM Server itself and the default TCP port number prefilled. In the **Telephone Number** box, specify the fax number of a nearby fax machine. Example: “54007”. Click the **Send Fax** button.

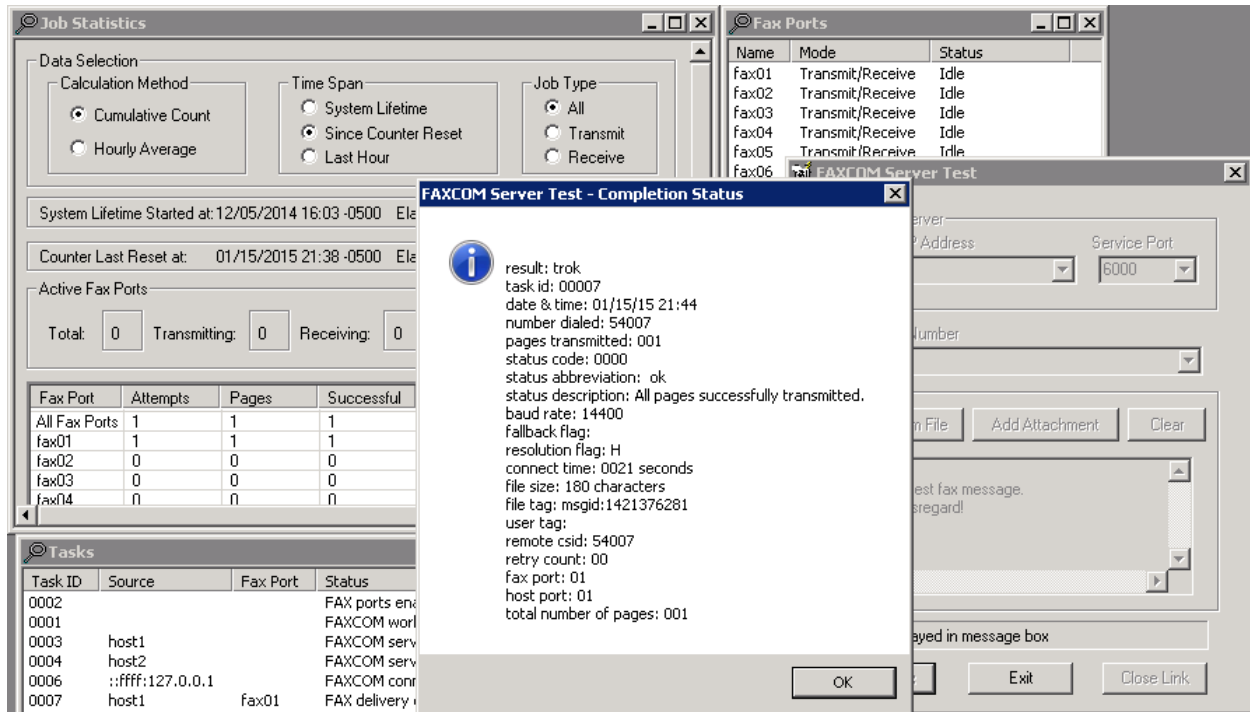


The image shows a Windows-style dialog box titled "FAXCOM Server Test". It contains three main sections: "FAXCOM Server", "Telephone Number", and "Message".

- FAXCOM Server:** This section has two dropdown menus. The first is labeled "Name or IP Address" and contains the text "127.0.0.1". The second is labeled "Service Port" and contains the text "6000".
- Telephone Number:** This section has a single dropdown menu containing the text "54007".
- Message:** This section contains three buttons: "Load from File", "Add Attachment", and "Clear". Below these buttons is a text area with the following text: "Hello.
This is a test fax message.
Please disregard!".

At the bottom of the dialog box, there are two buttons: "Send Fax" and "Close".

Upon completion, the Completion Status window is displayed. Confirm the **result** is “trok” (for transmit ok). Click **OK**. When returned to the FAXCOM Server Test dialog, close the dialog.



7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of IP Office and FAXCOM. Prior to verification, start sending a fax from the PSTN to a fax user on IP Office.

7.1. Verify Avaya IP Office

Send a fax from FAXCOM to the simulated PSTN fax machine. Verify the connection status of a trunk on IP Office by navigating to the **Avaya IP Office R9.0 Manager** screen shown in **Section 5.1**, select **File → Advanced → System Status** to launch the System Status application, and log in using the appropriate credentials (not shown).

The **IP Office System Status** screen is displayed. Expand **Trunks** in the left pane and select the SIP line in this case “21” SIP trunk to FAXCOM.

Verify that the **SIP Trunk Summary** screen shows an active channel with **Current State** of “Connected”. Also verify that the **Other Party on Call** contains the proper information for the trunk “Line: 17 SIP bvwdev.com” to simulated PSTN, as shown below

The screenshot displays the Avaya IP Office System Status application. The left-hand navigation pane shows a tree structure with 'System' expanded, and 'Trunks (7)' selected. Under 'Trunks', 'Line: 21' is highlighted. The main content area is titled 'SIP Trunk Summary' and shows the following details:

- Peer Domain Name: 10.97.36
- Resolved Address: 10.98.89
- Line Number: 21
- Number of Administered Channels: 24
- Number of Channels in Use: 1
- Administered Compression: G7231, G729 A, G722, G711 A, G711 Mu
- Silence Suppression: Off
- Layer 4 Protocol: UDP
- SIP Trunk Channel Licenses: Unlimited
- SIP Trunk Channel Licenses in Use: 0
- SIP Device Features: 0%

Below these details is a table showing the status of individual channels:

Channel Number	URI Gr...	Call Ref	Current State	Time in State	Remote Media Address	Codec	Connection Type	Caller ID or Dialed Digits	Other Party on Call	Direction of Call	Round Trip Delay	Receive Jitter	Receive Packet Los...	Transmit Jitter	Transmit Packet Los...
1	1	3	Connected	00:00:38	10.98.89	T38 Fax	VCM	no_from_in...	Line: 17 SIP bvwdev.com	Incoming	0ms	0ms	0%		
2			Idle	00:09:26											
3			Idle	00:09:26											
4			Idle	00:09:26											
5			Idle	00:09:26											
6			Idle	00:09:26											
7			Idle	00:09:26											

At the bottom of the application window, there are buttons for 'Trace', 'Trace All', 'Pause', 'Ping', 'Call Details', 'Print...', and 'Save As...'. The status bar at the bottom right shows the time as 10:51:13 AM and the system is 'Online'.

7.2. Verify Biscom FAXCOM

In the **FAXCOM** screen, verify all the ports in **Fax Ports** window shows that all ports are idle.

The screenshot displays the FAXCOM software interface. The **Job Statistics** window is active, showing data selection options and system status. The **Fax Ports** window is also visible, listing 12 fax ports, all of which are in the 'Idle' status.

Job Statistics

Data Selection

Calculation Method: ☒ Cumulative Count ☐ Hourly Average

Time Span: ☐ System Lifetime ☒ Since Counter Reset ☐ Last Hour

Job Type: ☒ All ☐ Transmit ☐ Receive

System Lifetime Started at: 12/05/2014 16:03 -0500 Elapsed: 41 Days 05 Hours 35 Minutes

Counter Last Reset at: 01/15/2015 21:38 -0500 Elapsed: 0 Days 00 Hours 00 Minutes

Active Fax Ports

Total: 0 Transmitting: 0 Receiving: 0

Reset Counter

Performance Monitor

Fax Port	Attempts	Pages	Successful	Conn Errors	Non-conn Errors
All Fax Ports	0	0	0	0	0
fax01	0	0	0	0	0
fax02	0	0	0	0	0
fax03	0	0	0	0	0
fax04	0	0	0	0	0

Fax Ports

Name	Mode	Status
fax01	Transmit/Receive	Idle
fax02	Transmit/Receive	Idle
fax03	Transmit/Receive	Idle
fax04	Transmit/Receive	Idle
fax05	Transmit/Receive	Idle
fax06	Transmit/Receive	Idle
fax07	Transmit/Receive	Idle
fax08	Transmit/Receive	Idle
fax09	Transmit/Receive	Idle
fax10	Transmit/Receive	Idle
fax11	Transmit/Receive	Idle
fax12	Transmit/Receive	Idle

Tasks

Task ID	Source	Fax Port	Status
0002			FAX ports enabled (12 tx, 12 rx)
0001			FAXCOM workflow enabled
0003	host1		FAXCOM service active via TCP:6000
0004	host2		FAXCOM service active via TRAN:6001

8. Conclusion

These Application Notes describe the configuration steps required for Biscom FAXCOM to successfully interoperate with Avaya IP Office 9.0. All feature and serviceability test cases were completed with an observation noted in **Section 2.2**.

9. Additional References

This section references the product documentation relevant to these Application Notes.

1. *IP Office Manager 9.0*, Document 15-601011, available at <http://support.avaya.com>.
2. *FAXCOM_Server_Administrator's_Guide*.
3. *FAXCOM-Fax-Server-Data-Sheet*.

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