



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring GFI FaxMaker™ with Avaya Aura® Session Manager and Avaya Aura® Communication Manager – Issue 1.0

Abstract

These Application Notes contains interoperability instructions for configuring GFI FaxMaker™ with Avaya Aura® Session Manager and Avaya Aura® Communication Manager. Compliance testing was conducted to verify the interoperability.

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

GFI FaxMaker™ fax server software solution for small to medium-sized businesses. It allows users to send and receive faxes directly from their email client and it saves each fax digitally for easier filing and finding. GFI FaxMaker™ is configured to communicate with Avaya Aura® Session Manager using SIP. T.38 Protocol was used to send and receive fax calls.

2. General Test Approach and Test Results

This section details the general approach used to verify the interoperability between GFI FaxMaker™ and Avaya Aura® Session Manager and Avaya Aura® Communication Manager, and the test results.

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

General test approach was to test fax calls in an inter-site and intra-site environment. As displayed in the reference configuration, GFI FaxMaker™ was connected to Site 1, main enterprise site, and site 2 serves as a simulated PSTN or a remote enterprise site. Inter-site calls were made over an ISDN-PRI trunk and SIP trunk between Communication Managers. Faxes were sent with various page lengths, resolution and at various fax data speeds.

2.2. Test Results

All executed test cases were passed.

2.3. Support

Visit <http://kb.gfi.com/supportcontact> for support queries related to GFI FaxMaker™.

3. Reference Configuration

Test configuration used during compliance testing consisted of following:

- Avaya G650 Media Gateway with Dell R610 Running Avaya Aura® Communication Manager
- Avaya G430 Media Gateway with Avaya 8300D Media Server running Avaya Aura® Communication Manager
- Avaya Aura® Session Manager
- Avaya Aura® System Manager
- Analog Fax Machines
- GFI FaxMaker™ running on a Windows 2008 R2 server (Virtual Machine)

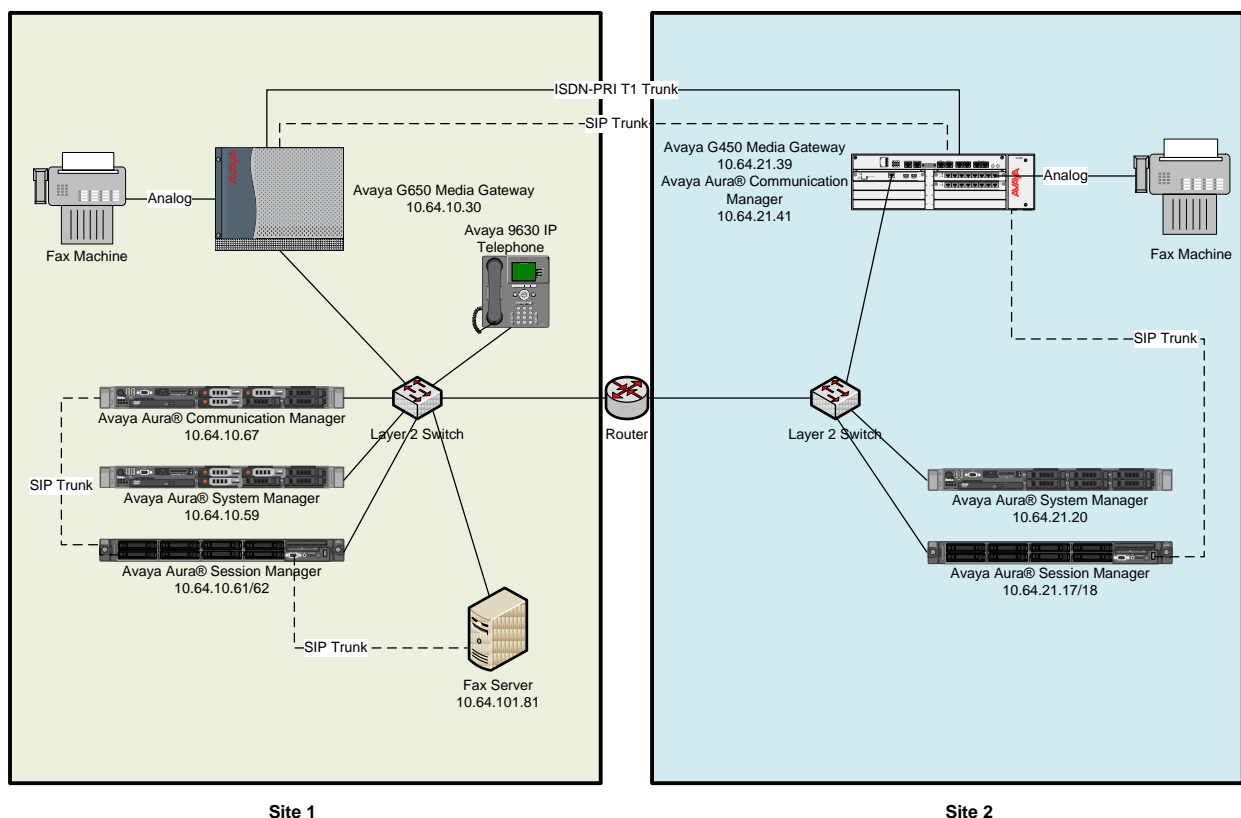


Figure 1: Reference Configuration

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® Communication Manager running on Avaya S8300D Server	6.2 SP 02.0.823.0-19829
Avaya Aura® Session Manager	6.2 SP1
Avaya Aura® System Manager	6.2 SP1
GFI FaxMaker™ running on Windows Server 2008 R2	Version 15.0 Build 20120306
TE-SYSTEMS XCAPI	3.3.260.0

5. Configure Avaya Aura® Communication Manager

This section provides steps for configuring Communication Manager. All configuration for Communication Manager is done through System Access Terminal (SAT).

5.1. Verify Avaya Aura® Communication Manager License

Use the **display system-parameters customer-options** command to verify options.

On **Page 2**, verify that there is sufficient capacity for SIP trunks by comparing **Maximum Administered SIP Trunks** field with corresponding **USED** column field.

display system-parameters customer-options		Page	2 of 11
OPTIONAL FEATURES			
IP PORT CAPACITIES		USED	
Maximum Administered H.323 Trunks:		4000	0
Maximum Concurrently Registered IP Stations:		2400	1
Maximum Administered Remote Office Trunks:		4000	0
Maximum Concurrently Registered Remote Office Stations:		2400	0
Maximum Concurrently Registered IP eCons:		68	0
Max Concur Registered Unauthenticated H.323 Stations:		100	0
Maximum Video Capable Stations:		2400	0
Maximum Video Capable IP Softphones:		2400	0
Maximum Administered SIP Trunks:		4000	45
Maximum Administered Ad-hoc Video Conferencing Ports:		4000	0
Maximum Number of DS1 Boards with Echo Cancellation:		80	0
Maximum TN2501 VAL Boards:		10	0
Maximum Media Gateway VAL Sources:		50	0
Maximum TN2602 Boards with 80 VoIP Channels:		128	0
Maximum TN2602 Boards with 320 VoIP Channels:		128	0
Maximum Number of Expanded Meet-me Conference Ports:		300	0

On **Page 4**, verify **ISDN/PRI** field is set to **y**.

display system-parameters customer-options		Page	4 of 11
OPTIONAL FEATURES			
Emergency Access to Attendant? y	IP Stations? y		
Enable 'dadmin' Login? y			
Enhanced Conferencing? y	ISDN Feature Plus? n		
Enhanced EC500? y	ISDN/SIP Network Call Redirection? y		
Enterprise Survivable Server? n	ISDN-BRI Trunks? y		
Enterprise Wide Licensing? n	ISDN-PRI? y		
ESS Administration? y	Local Survivable Processor? n		
Extended Cvg/Fwd Admin? y	Malicious Call Trace? y		
External Device Alarm Admin? y	Media Encryption Over IP? y		
Five Port Networks Max Per MCC? n	Mode Code for Centralized Voice Mail? n		
Flexible Billing? n			
Forced Entry of Account Codes? y	Multifrequency Signaling? y		
Global Call Classification? y	Multimedia Call Handling (Basic)? y		
Hospitality (Basic)? y	Multimedia Call Handling (Enhanced)? y		
Hospitality (G3V3 Enhancements)? y	Multimedia IP SIP Trunking? y		
IP Trunks? y			
IP Attendant Consoles? y			

5.2. Administer IP Network Region

Use the **change ip-network-region *n*** command to configure a network region, where *n* is an existing network region.

Configure this network region as follows:

- Set **Location** to **1**
- Set **Codec Set** to **1**
- Set **Intra-region IP-IP Direct Audio** to **yes**
- Set **Inter-region IP-IP Direct Audio** to **yes**
- Enter an **Authoritative Domain**, e.g. avaya.com

```
change ip-network-region 1                                     Page 1 of 20
                                                                IP NETWORK REGION
  Region: 1
Location: 1          Authoritative Domain: avaya.com
    Name:
MEDIA PARAMETERS                      Intra-region IP-IP Direct Audio: yes
  Codec Set: 1          Inter-region IP-IP Direct Audio: yes
    UDP Port Min: 2048          IP Audio Hairpinning? n
    UDP Port Max: 3329
DIFFSERV/TOS PARAMETERS
  Call Control PHB Value: 46
    Audio PHB Value: 46
    Video PHB Value: 26
802.1P/Q PARAMETERS
  Call Control 802.1p Priority: 6
    Audio 802.1p Priority: 6
    Video 802.1p Priority: 5
H.323 IP ENDPOINTS          AUDIO RESOURCE RESERVATION PARAMETERS
  H.323 Link Bounce Recovery? y          RSVP Enabled? n
  Idle Traffic Interval (sec): 20
  Keep-Alive Interval (sec): 5
```

5.3. Administer IP Codec Set

Use the **change ip-codec-set *n*** command to configure IP codec set, where *n* is an existing codec set number.

Configure this codec set as follows, on **Page 1**:

- Set **Audio Codec 1** to **G.711MU**

change ip-codec-set 1

Page1 of 2

IP Codec Set

Codec Set: 1

Audio Codec	Silence Suppression	Frames Per Pkt	Packet Size (ms)
1: G.711MU	n	2	20
2:			
3:			
4:			
5:			
6:			
7:			

Media Encryption

1:

2:

3:

On **Page 2**:

- Set **Fax Mode** to **t.38-standard**

change ip-codec-set 1

Page2 of 2

IP Codec Set

Allow Direct-IP Multimedia? n

FAX	Mode	Redundancy
Modem	t.38-standard	0
TDD/TTY	off	0
Clear-channel	US	3
	n	0

5.4. Administer IP Node Names

Use the **change node-names ip** command to add an entry for Session Manager. For compliance testing, **sm** and **10.64.10.61** entry was added.

change node-names ip		Page 1 of 2
		IP NODE NAMES
Name	IP Address	
default	0.0.0.0	
msgsrvr	10.64.10.67	
procr	10.64.10.67	
procr6	::	
sm	10.64.10.61	

5.5. Administer SIP Signaling Group

Use the **add signaling-group *n*** command to add a new signaling group, where ***n*** is an available signaling group number.

Configure this signaling group as follows:

- Set **Group Type** to **sip**
- Set **Near-end Node Name** to **procr**
- Set **Far-end Node Name** to the configured Session Manager in **Section 5.4**, i.e. **sm**
- Set **Far-end Network region** to the configured region in **Section 5.2**, i.e. **1**
- Enter a **Far-end Domain**, e.g. **avaya.com**

add signaling-group 1		Page 1 of 2
		SIGNALING GROUP
Group Number: 1	Group Type: sip	
IMS Enabled? n	Transport Method: tls	
Q-SIP? n		
IP Video? n	Enforce SIPS URI for SRTP? y	
Peer Detection Enabled? y	Peer Server: Others	
Near-end Node Name: procr		Far-end Node Name: sm
Near-end Listen Port: 5061		Far-end Listen Port: 5061
		Far-end Network Region: 1
Far-end Domain: avaya.com		
Incoming Dialog Loopbacks: eliminate	Bypass If IP Threshold Exceeded? n	
DTMF over IP: rtp-payload	RFC 3389 Comfort Noise? n	
Session Establishment Timer(min): 3	Direct IP-IP Audio Connections? y	
Enable Layer 3 Test? y	IP Audio Hairpinning? n	
H.323 Station Outgoing Direct Media? n	Initial IP-IP Direct Media? n	
	Alternate Route Timer(sec): 6	

Note: Signaling Group, Trunk Group and Route Pattern for simulated PSTN calls for inter-site calls over ISDN/PRI and SIP were pre-configured and are not shown in this document.

5.6. Administer SIP Trunk Group

Use the **add trunk-group *n*** command to add a trunk group, where *n* is an available trunk group number.

Configure this trunk group as follows, on **Page 1**:

- Set **Group Type** to **sip**
- Enter a **Group Name**, e.g. SM
- Enter a valid **TAC**, e.g. *001
- Set **Service Type** to **tie**
- Enter **Signaling Group** value to the signaling group configured in **Section 5.5**, i.e. 1
- Enter a desired number in **Number of Member** field

add trunk-group 1		Page 1 of 21	
TRUNK GROUP			
Group Number: 1	Group Type: sip	CDR Reports: y	
Group Name: SM	COR: 1	TN: 1	TAC: *001
Direction: two-way	Outgoing Display? n	Night Service:	
Dial Access? n	Auth Code? n		
Queue Length: 0	Member Assignment Method: auto		
Service Type: tie	Signaling Group: 1		
	Number of Members: 25		

On **Page 3**:

- Set **Number Format** to **private**

add trunk-group 1		Page 3 of 21	
TRUNK FEATURES			
ACA Assignment? n	Measured: none	Maintenance Tests? y	
Numbering Format: private			
UI Treatment: service-provider			
Replace Restricted Numbers? n			
Replace Unavailable Numbers? n			

5.7. Administer Route Pattern

Use the **change route-pattern *n*** command to configure a route pattern, where *n* is an available route pattern.

Configure this route pattern as follows:

- Type a name in **Pattern Name** field
- For line 1, set **Grp No** to the trunk group configured in **Section 5.6**, i.e. 1
- For line 1, set **FRL** to 0

change route-pattern 1										Page	1 of 3		
Pattern Number: 1										Pattern Name: Voice and Fax			
SCCAN? n										Secure SIP? n			
Grp	FRL	NPA	Pfx	Hop	Toll	No.	Inserted			DCS/	IXC		
No			Mrk	Lmt	List	Del	Digits			QSIG			
										Intw			
1: 1	0									n	user		
2:										n	user		

5.8. Administer Private Numbering

Use the **change private-numbering 1** command to define the calling party number to send to Session Manager.

Configure private numbering as follows:

- Add entries for trunk group configured in **Section 5.6**

Note: For compliance testing, 5-digit extensions beginning with 25 routed over trunk groups 1 resulted in a 5-digit calling party number.

change private-numbering 1										Page	1	of	2
NUMBERING - PRIVATE FORMAT													
Ext	Ext	Trk		Private		Total							
Len	Code	Grp(s)		Prefix		Len							
5	25	1				5		Total Administered: 1					
								Maximum Entries: 540					

5.9. Administer AAR Analysis

Use the **change aar analysis *n*** command to configure routing for extensions starting with *n*. Calls to GFI were placed by dialing 5 digits starting with 29. For compliance testing, extensions starting with 29 were used for routing calls to GFI FaxMaker

- Set **Dialed String** to starting digits of extensions that will be used, e.g. 29
- Set **Min** and **Max** to 5 for 5 digit extensions
- Set **Route Pattern** to pattern configured in **Section 5.7**, i.e. 1
- Set **Call Type** to **aar**

Note: An entry to dial plan will need to be added for extension range used in this step.

change aar analysis 29					Page 1 of 2		
AAR DIGIT ANALYSIS TABLE							
Location: all					Percent Full: 1		
	Dialed String	Total Min Max		Route Pattern	Call Type	Node ANI Num Req'd	
29		5	5	1	aar	n	
3		7	7	254	aar	n	
4		5	5	2	aar	n	
45000		5	5	30	aar	n	
5		5	5	10	aar	n	
60		4	4	30	aar	n	
602		4	4	10	aar	n	
605		4	4	30	aar	n	

5.10. Administer Stations

Administration of Avaya Stations/Extensions in Communication Manager and Session Manager is not shown in this document. Please refer to document [1] and/or [2] in reference section of this document.

6. Configure Avaya Aura® Session Manager

Configuration of Avaya Aura® Session Manager is performed via Avaya Aura® System Manager. Access the System Manager Administration web interface by entering <https://<ip-address>/SMGR> URL in a web browser, where <ip-address> is the IP address of System Manager.



Avaya Aura® System Manager 6.2

[Home](#) / [Log On](#)

Log On

Recommended access to System Manager is via FQDN.

[Go to central login for Single Sign-On](#)

If IP address access is your only option, then note that authentication will fail in the following cases:

- First time login with "admin" account
- Expired/Reset passwords

Use the "Change Password" hyperlink on this page to change the password manually, and then login.

User ID:

Password:

[Change Password](#)

Log in using appropriate credentials.



Avaya Aura® System Manager 6.2

Last Logged on at June 4, 2012 12:36 PM
[Help](#) | [About](#) | [Change Password](#) | [Log off](#)
[admin](#)

Users	Elements	Services
Administrators Manage Administrative Users	B5800 Branch Gateway Manage B5800 Branch Gateway 6.2 elements	Backup and Restore Backup and restore System Manager database
Directory Synchronization Synchronize users with the enterprise directory	Communication Manager Manage Communication Manager 5.2 and higher elements	Bulk Import and Export Manage Bulk Import and Export of Users, User Global Settings, Roles, Elements and others
Groups & Roles Manage groups, roles and assign roles to users	Conferencing Manage Conferencing Multimedia Server objects	Configurations Manage system wide configurations
User Management Manage users, shared user resources and provision users	Inventory Manage, discover, and navigate to elements, update element software	Events Manage alarms, view and harvest logs
	Meeting Exchange Manage Meeting Exchange and Avaya Aura Conferencing 6.0 elements	Licenses View and configure licenses
	Messaging Manage Avaya Aura Messaging, Communication Manager Messaging, and Modular Messaging	Replication Track data replication nodes, repair replication nodes
	Presence Presence	Scheduler Schedule, track, cancel, update and delete jobs
	Routing Network Routing Policy	Security Manage Security Certificates
	Session Manager Session Manager Element Manager	Templates Manage Templates for Communication Manager, Messaging System and B5800 Branch Gateway elements
	SIP AS 8.1 SIP AS 8.1	

6.1. Add SIP Domain

Navigate to **Home → Elements → Routing → Domains**, click on **New** button (not shown) and configure as follows:

- In **Name** field type in a domain (authoritative domain used in **Section 5**) i.e. avaya.com
- Set **Type** to **sip**

Click **Commit** to save changes.

AVAYA Avaya Aura® System Manager 6.2

Last Logged on at June 4, 2012 12:36 PM
Help | About | Change Password | Log off admin

Routing * Home

Home / Elements / Routing / Domains

Domain Management

1 Item Refresh Filter: Enable

Name	Type	Default	Notes
* axava.com	sip	<input type="checkbox"/>	

* Input Required

Commit Cancel

6.2. Add Location

Navigate to **Home → Elements → Routing → Location**, click on **New** button (not shown) and configure as follows:

Under **General**:

- Type in a descriptive **Name**

Under **Location Pattern** click on **New** (not shown):

- Type in an **IP Address Pattern**, e.g. 10.64.10.*

Click **Commit** to save changes. Screen shot shown on next page.

General

* Name:

Notes:

Overall Managed Bandwidth

Managed Bandwidth Units: ▼

Total Bandwidth:

Multimedia Bandwidth:

Audio Calls Can Take Multimedia Bandwidth: ☒

Per-Call Bandwidth Parameters

Maximum Multimedia Bandwidth (Intra-Location): Kbit/Sec

Maximum Multimedia Bandwidth (Inter-Location): Kbit/Sec

* Minimum Multimedia Bandwidth: Kbit/Sec

* Default Audio Bandwidth: ▼

Alarm Threshold

Overall Alarm Threshold: ▼ %

Multimedia Alarm Threshold: ▼ %

* Latency before Overall Alarm Trigger: Minutes

* Latency before Multimedia Alarm Trigger: Minutes

Location Pattern

1 Item Refresh		Filter: Enable
<input type="checkbox"/>	IP Address Pattern	Notes
<input type="checkbox"/>	* <input type="text" value="10.64.10.*"/>	<input type="text"/>

Select : [All](#), [None](#)

* Input Required



Activate Windows
Go to PC settings to activate Windows.

6.3. Add SIP Entity – Communication Manager

Add Communication Manager as a SIP Entity. Navigate to **Home → Elements → Routing → SIP Entities**, click on **New** (no shown) and configure as follows:

- Type in a descriptive name in **Name** field
- Type in the IP address or FQDN of Communication Manager in **FQDN or IP Address** field.
- Set **Type** to **CM**
- Set **Location** to the location configured in **Section 6.2**

Click **Commit** to save changes.

Note: It is assumed that SIP Entity for Session Manager has been already configured.

SIP Entity Details

General

* Name:	<input type="text" value="cm-tr1"/>
* FQDN or IP Address:	<input type="text" value="10.64.10.67"/>
Type:	<input type="text" value="CM"/>
Notes:	<input type="text" value="Communication Manager - Test Ro"/>
Adaptation:	<input type="text"/>
Location:	<input type="text" value="tr1"/>
Time Zone:	<input type="text" value="America/Denver"/>
Override Port & Transport with DNS SRV:	<input type="checkbox"/>
* SIP Timer B/F (in seconds):	<input type="text" value="4"/>
Credential name:	<input type="text"/>
Call Detail Recording:	<input type="text" value="none"/>

6.4. Add Entity Link – Communication Manager

Navigate to **Home → Elements → Routing → Entity Links**, click on **New** (not shown) and configure as follows:

- Type in a descriptive name in **Name** field
- Set **SIP Entity 1** to the name of Session Manager SIP Entity
- Set **SIP Entity 2** to Communication Manager SIP Entity configured in **Section 6.3**

Click **Commit** to save changes.

Entity Links Commit Cancel

1 Item Refresh Filter: Enable

Name	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Connection Policy	Notes
* CM	* SM_Public	TLS	* 5061	* Communication Manager	* 5061	Trusted	

6.5. Add SIP Entity – GFI FaxMaker

Add Communication Manager as a SIP Entity. Navigate to **Home → Elements → Routing → SIP Entities**, click on **New** (no shown) and configure as follows:

- Type in a descriptive name in **Name** field
- Type in the IP address or FQDN of GFI FaxMaker™ in **FQDN or IP Address** field.
- Set **Type** to **SIP Trunk**
- Set **Location** to the location configured in **Section 6.2**

Click **Commit** to save changes.

Note: It is assumed that SIP Entity for Session Manager has been already configured.

General

*** Name:**

*** FQDN or IP Address:**

Type:

Notes:

Adaptation:

Location:

Time Zone:

Override Port & Transport with DNS SRV: ☐

*** SIP Timer B/F (in seconds):**

Credential name:

Call Detail Recording:

6.6. Add Entity Link – GFI FaxMaker

Navigate to **Home → Elements → Routing → Entity Links**, click on **New** (not shown) and configure as follows:

- Type in a descriptive name in **Name** field
- Set **SIP Entity 1** to the name of Session Manager SIP Entity
- Set **SIP Entity 2** to GFI FaxMaker™ SIP Entity configured in **Section 6.5**
- Set **Protocol** to **UDP**

Click **Commit** to save changes.

Name	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Connection Policy	Note
* <input type="text" value="asm-tr1_GFI-FaxM"/>	* <input type="text" value="asm-tr1"/>	<input type="text" value="UDP"/>	* <input type="text" value="5060"/>	* <input type="text" value="GFI-FaxMaker"/>	* <input type="text" value="5060"/>	<input type="text" value="Trusted"/>	

*** Input Required**

6.7. Add Time Ranges

Navigate to **Home → Elements → Routing → Time Ranges**, click on **New** (now shown) and configure as follows:

- Type in a descriptive name in **Name** field

Click **Commit** to save changes.

Time Ranges Commit Cancel

1 Item | [Refresh](#) Filter: [Enable](#)

Name	Mo	Tu	We	Th	Fr	Sa	Su	Start Time	End Time	Notes
* TimeRange	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	* 00:00	* 23:59	

6.8. Add Routing Policy – Communication Manager

Navigate to **Home → Elements → Routing → Routing Policies**, click on **New** (not shown) and configure as follows:

- Type in a descriptive name in **Name** field
- Under **SIP Entity as Destination**, click on **Select** (not shown):
 - Select Communication Manager SIP entity added in **Section 6.3**
- Under **Time of Day**, click on **Add** (not shown):
 - Select time range added in previous step

Click **Commit** to save changes.

General

* Name:

Disabled: ☐

* Retries:

Notes:

SIP Entity as Destination

Select

Name	FQDN or IP Address	Type	Notes
cm-tr1	10.64.10.67	CM	Communication Manager - Test Room 1

Time of Day

Add

Remove

View Gaps/Overlaps

1 Item Refresh											Filter: Enable	
<input type="checkbox"/>	Ranking 1 ▲	Name 2 ▲	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes
<input type="checkbox"/>	0	TimeRange	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59	
Select : All, None												

Dial Patterns

Add

Remove

0 Items Refresh							Filter: Enable	
<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Originating Location	Notes	

Regular Expressions

Add

Remove

0 Items Refresh					Filter: Enable		
<input type="checkbox"/>	Pattern	Rank Order			Deny	Notes	

* Input Required

Commit

Cancel

6.9. Add Routing Policy – GFI FaxMaker

Navigate to **Home → Elements → Routing → Routing Policies**, click on **New** (not shown) and configure as follows:

- Type in a descriptive name in **Name** field
- Under **SIP Entity as Destination**, click on **Select** (not shown):
 - Select GFI FaxMaker™ SIP entity added in **Section 6.5**.
- Under **Time of Day**, click on **Add** (not shown):
 - Select time range added in **Section 6.7**.

Click **Commit** to save changes.

General

* Name:

Disabled: ☐

* Retries:

Notes:

SIP Entity as Destination

Select

Name	FQDN or IP Address	Type	Notes
cm-tr1	10.64.10.67	CM	Communication Manager - Test Room 1

Time of Day

Add

Remove

View Gaps/Overlaps

1 Item Refresh											Filter: Enable	
<input type="checkbox"/>	Ranking 1 ▲	Name 2 ▲	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes
<input type="checkbox"/>	0	TimeRange	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59	
Select : All, None												

Dial Patterns

Add

Remove

0 Items Refresh							Filter: Enable	
<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Originating Location	Notes	

Regular Expressions

Add

Remove

0 Items Refresh					Filter: Enable		
<input type="checkbox"/>	Pattern	Rank Order			Deny	Notes	

* Input Required

Commit

Cancel

6.10. Add Dial Patterns – Communication Manager

Navigate to **Home → Elements → Routing → Dial Patterns**, click on **New** (not shown) and configure as follows:

Under **General**:

- Set **Pattern** to prefix of dialed number
- Set **Min** to minimum length of dialed number
- Set **Max** to maximum length of dialed number
- Set **Domain** to domain configured on **Section 6.1**

Under **Originating Locations and Routing Policies**:

- Click **Add** and select originating location and Communication Manager routing policy as configured in **Section 6.8**

Click **Commit** to save changes.

Note: For Compliance testing, dialed number of 25xxx were used to route calls to Communication Manager. Thus, pattern was set to 25 and, min and max values were set to 5.

General

* **Pattern:**

* **Min:**

* **Max:**

Emergency Call: ☐

Emergency Priority:

Emergency Type:

SIP Domain: ▼

Notes:

Originating Locations and Routing Policies

1 Item Refresh		Filter: Enable					
<input type="checkbox"/>	Originating Location Name 1 ▲	Originating Location Notes	Routing Policy Name	Rank 2 ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	-ALL-	Any Locations	cm-tr1	0	<input type="checkbox"/>	cm-tr1	
Select : All , None							

6.11. Add Dial Patterns – GFI FaxMaker

Navigate to **Home → Elements → Routing → Dial Patterns**, click on **New** (not shown) and configure as follows:

Under **General**:

- Set **Pattern** to prefix of dialed number
- Set **Min** to minimum length of dialed number
- Set **Max** to maximum length of dialed number
- Set **Domain** to **–All–**

Under **Originating Locations and Routing Policies**:

- Click **Add** and select originating location and GFI FaxMaker™ routing policy as configured in **Section 6.9**

Click **Commit** to save changes.

Note: For Compliance testing, dialed number of 29xxx were used to route calls to GFI FaxMaker. Thus, pattern was set to 29 and, min and max values were set to 5.

General

* **Pattern:**

* **Min:**

* **Max:**

Emergency Call: ☐

Emergency Priority:

Emergency Type:

SIP Domain:

Notes:

Originating Locations and Routing Policies

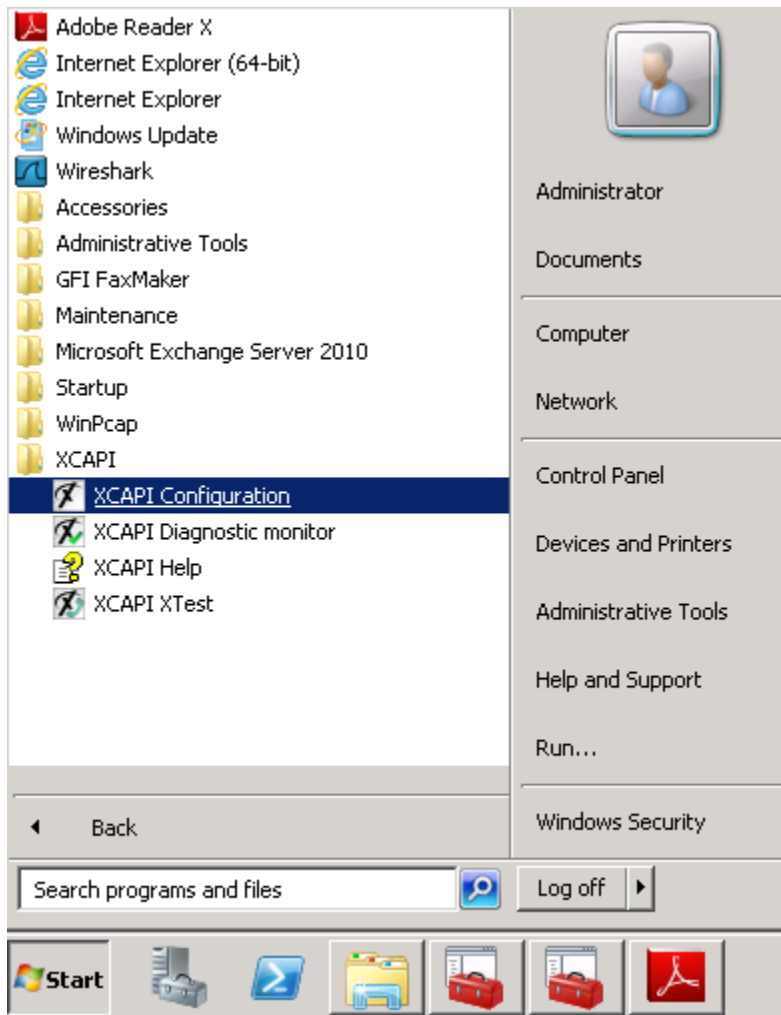
1 Item Refresh		Filter: Enable					
<input type="checkbox"/>	Originating Location Name 1 ▲	Originating Location Notes	Routing Policy Name	Rank 2 ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	tr1		GFI-FaxMaker	0	<input type="checkbox"/>	GFI-FaxMaker	
Select : All , None							

7. Configure GFI FaxMaker

During compliance testing, GFI FaxMaker™ used XCAPi by TE-SYSTEMS for receiving and sending faxes. This section contains configuration steps for XCAPi and GFI FaxMaker.

7.1. Configure XCAPi

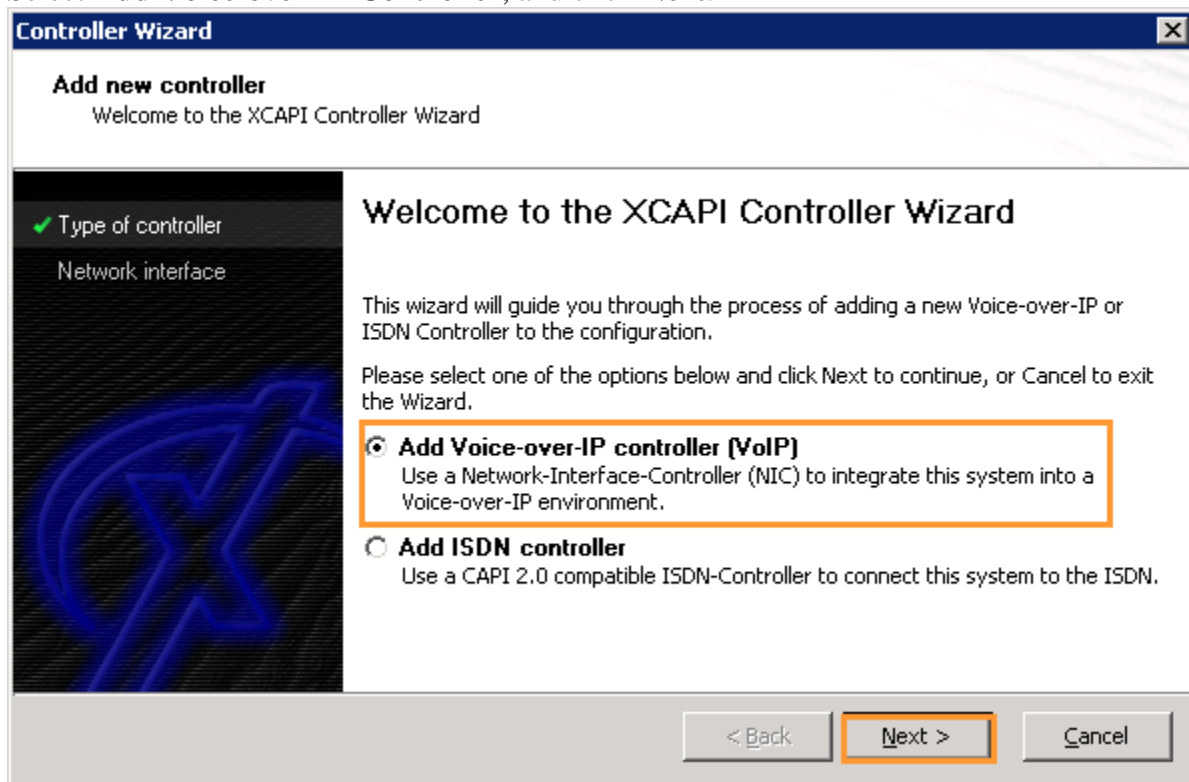
Open XCAPi configuration on the server where GFI FaxMaker™ is installed, **Start → All Programs → XCAPi → XCAPi Configuration**.



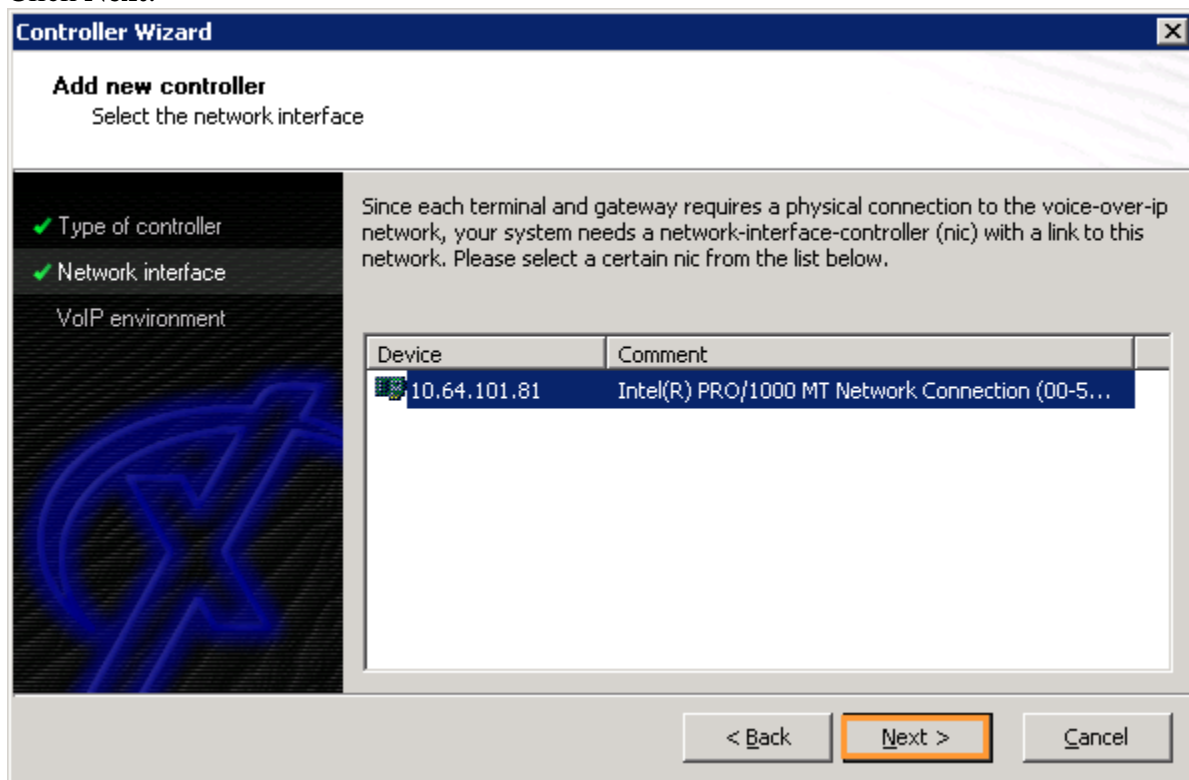
Under **Controller**, click on **Click here to add a controller**.



Select **Add Voice-over-IP Controller**, and click **Next**.



Click **Next**.



From the list, select **Avaya Session Manager** and click **Next**.

Controller Wizard

Add new controller
Select the Voice-over-IP environment

✓ Type of controller
✓ Network interface
✓ VoIP environment

Avaya Aura Session Manager
Registrar/Proxy
Description and channels
Confirmation

Select the environment for the new controller to operate in. If the list below does not contain your PBX you should select a compatible or one of the generic environments.

- Asterisk (SIP-Trunk)
- AudioCodes Mediant
- Avaya Aura Session Manager**
- Avaya Communication Manager
- Avaya Integral Enterprise/Integral 55 (IEE3)
- Avaya Integral Enterprise/Integral 55 (IEE4)
- Avaya IP Office 3.0
- Avaya IP Office 4.0
- Avaya IP Office 8.0
- Avaya SES
- AVM FRITZ!Box Fon WLAN 7270
- bero*fix Series
- hrekeke SIP Server/hrekeke PBX

< Back **Next >** Cancel

Type in the IP Address of Session Manager and click **Next**.

Controller Wizard

Add new controller
Provide the hostname or the ip address of the voice-over-ip remote peer

✓ Type of controller
✓ Network interface
✓ VoIP environment
✓ Avaya Aura Session Manager

Registrar/Proxy
Description and channels
Confirmation

Please provide the hostname or the ip address of the voice-over-ip remote peer (pbx) that should be used.

Avaya Aura Session Manager 10.64.10.61

< Back **Next >** Cancel

Check the **Proxy** box and type in the IP Address of Session Manager, click **Next**.

Controller Wizard

Add new controller
Provide information about the SIP registrar and proxy

If you want to use a SIP registrar and/or a SIP proxy please activate the respective checkbox and enter the hostname or IP address.

☐ Registrar Default

☒ Proxy Default

< Back **Next >** Cancel

Type in a **Description** and number of **Lines**, and click **Next**.

Controller Wizard

Add new controller
Provide a description and select the number of channels

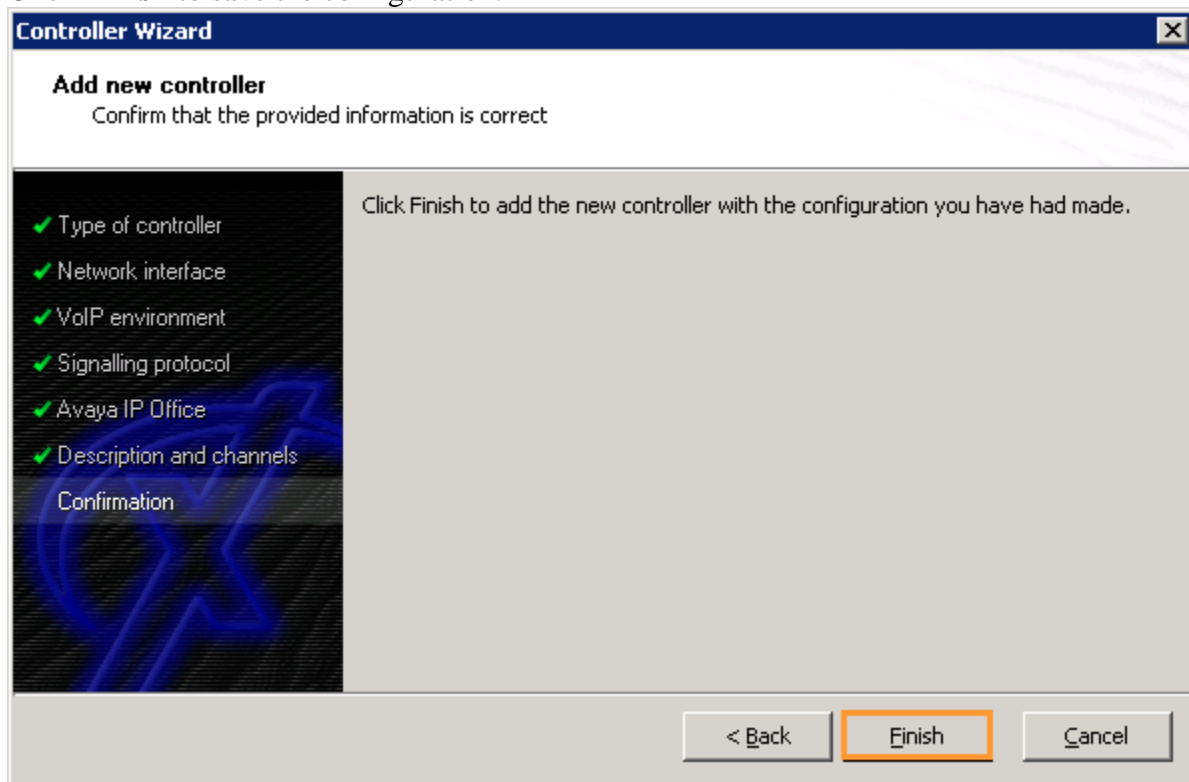
Please enter a meaningful description for the new controller and decide how many channels should be available for applications. Please consider that the effective number of available channels depend on the installed licence.

Description

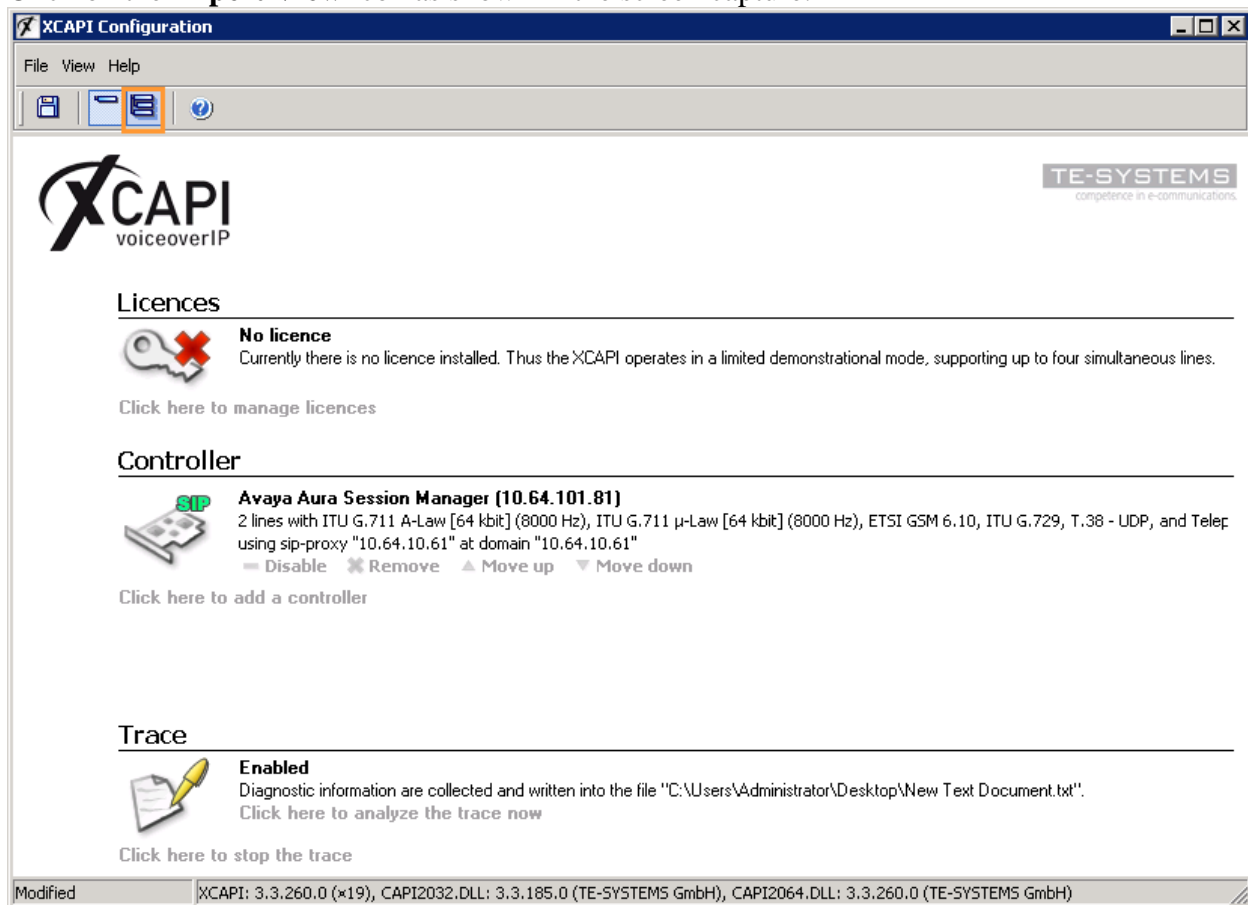
Lines

< Back **Next >** Cancel

Click **Finish** to save the configuration.

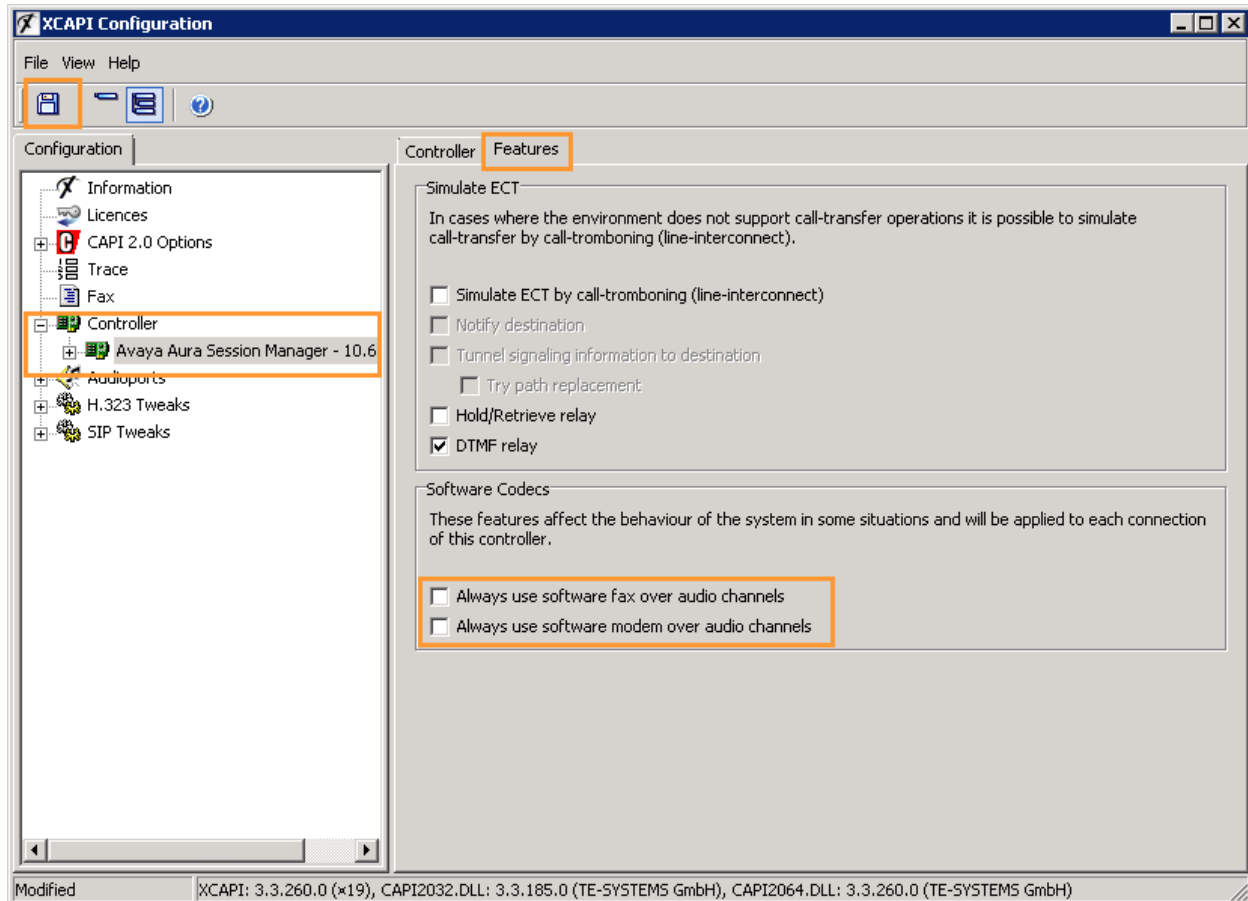


Click on the **Expert View** icon as shown in the screen capture.

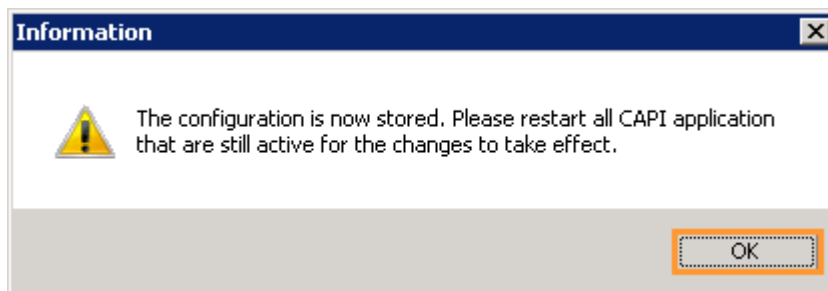


From the left pane, Navigate to **Controller** → **Avaya Session Manager**, and select the **Features** tab. Uncheck the boxes as shown in the screen capture.

Click **Floppy Disk** icon to save the configuration.

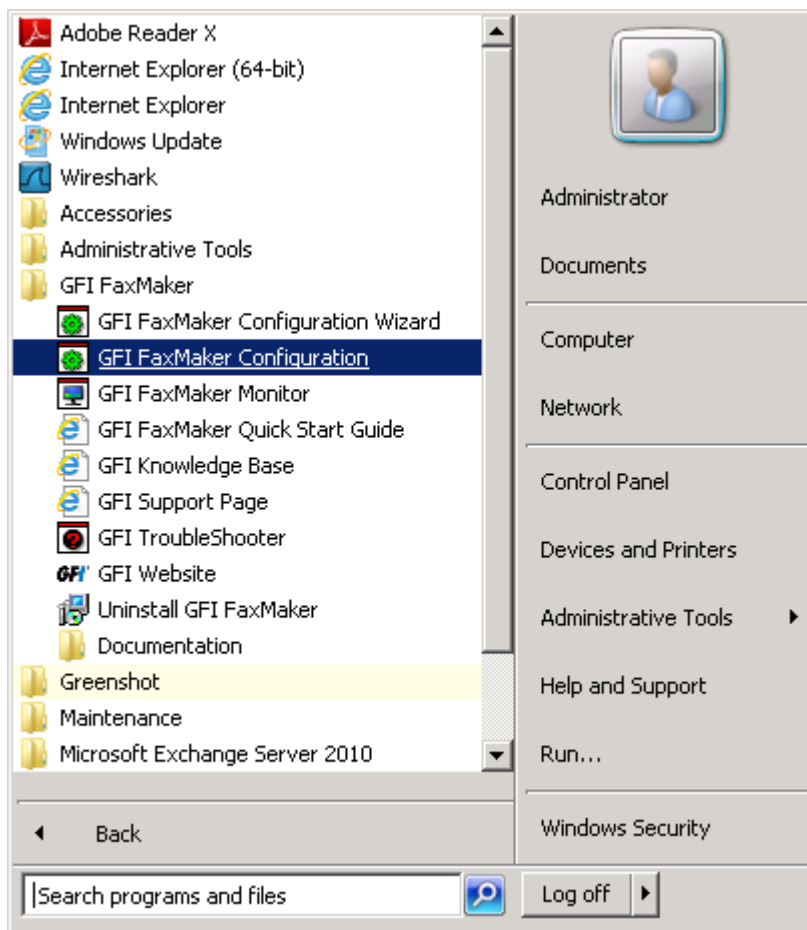


Click **OK** to confirm restart of CAPI application.



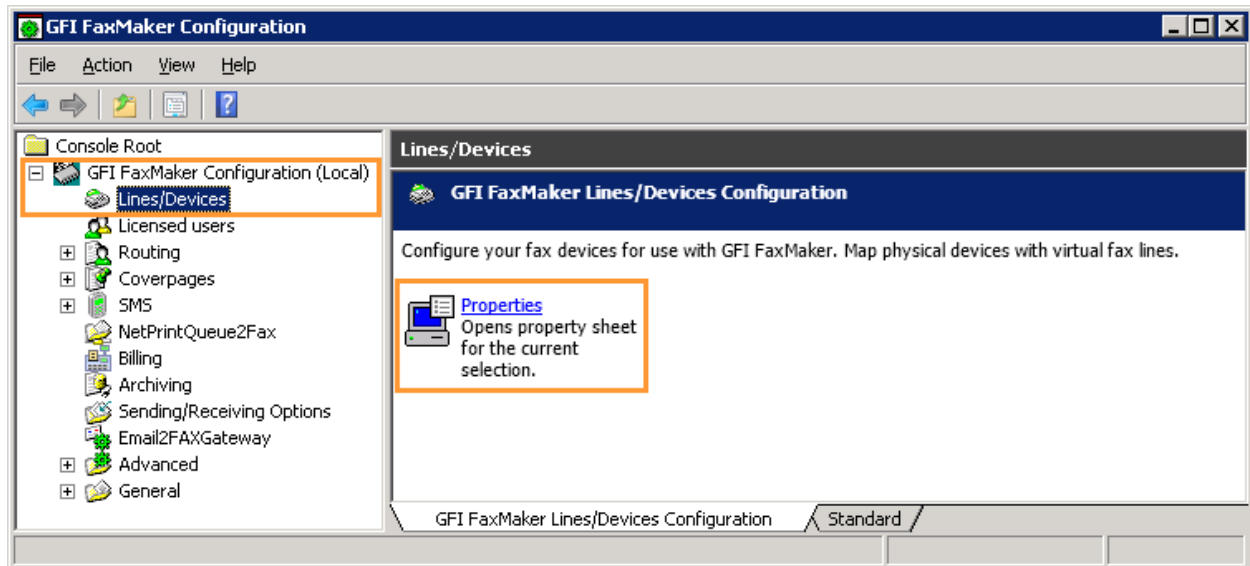
7.2. Configure GFI FaxMaker

Open GFI FaxMaker™ Configuration on the server where it is installed, by navigating **Start → All Programs → GFI FaxMaker™ → GFI FaxMaker™ Configuration**.

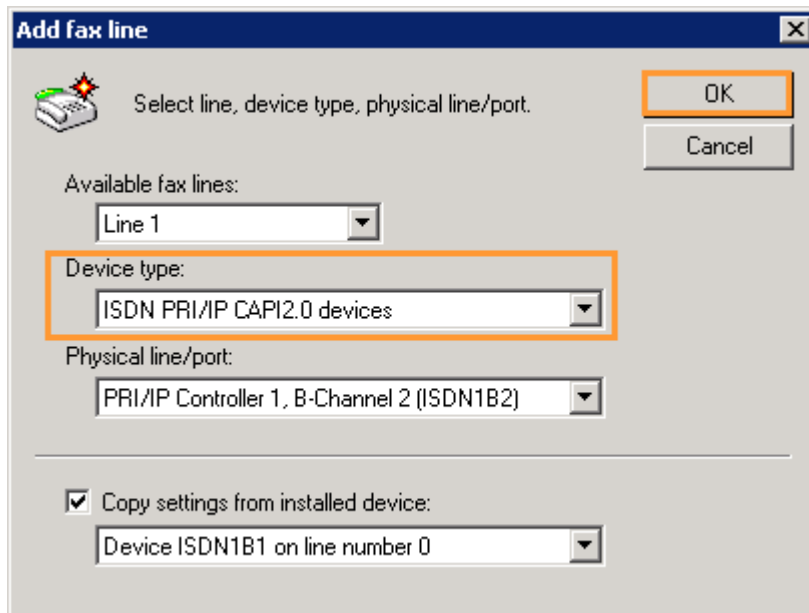


7.2.1. Add a fax line

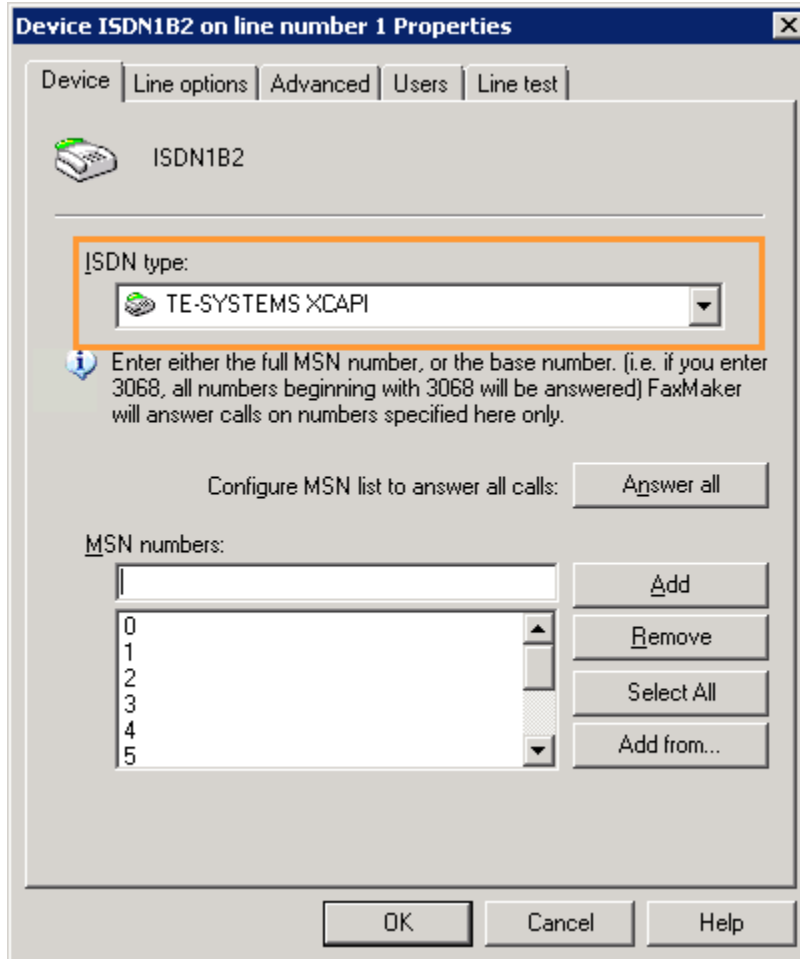
On the left pane, navigate to **Lines/Devices** as shown in the screen capture and click on **Properties**.



On the **Properties** window, click on **Add** (not shown). On the **Add fax line** window, select an available fax line and **ISDN PRI/IP CAPI 2.0 devices** for **Device type**. Click **OK**.



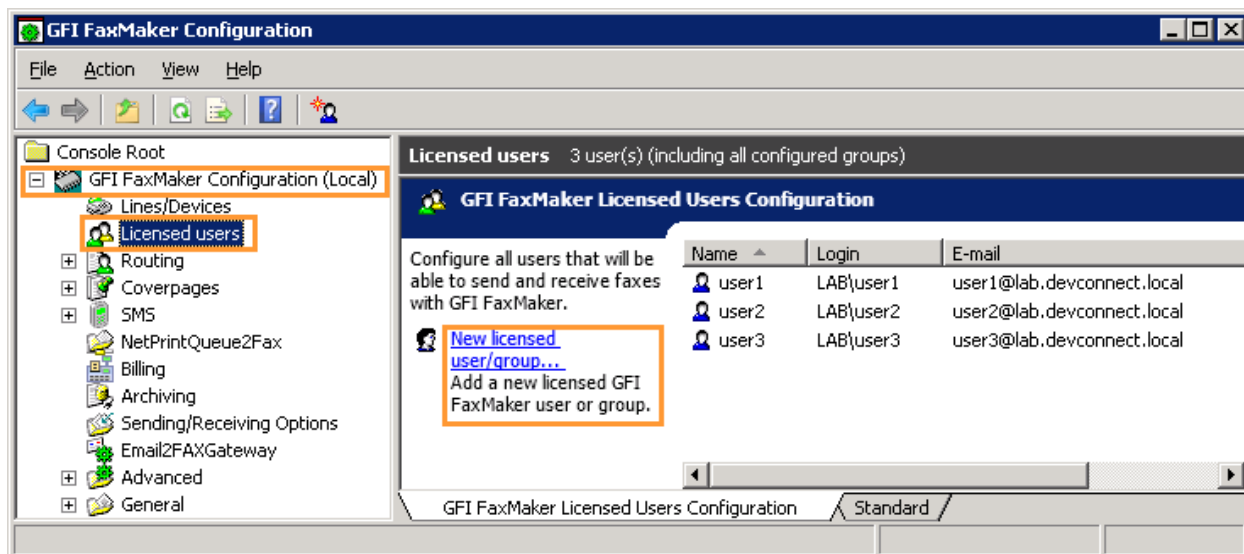
On the **Device ISDN** window, select **TE-SYSTEMS XCAPI** for **ISDN type**, click **OK**.



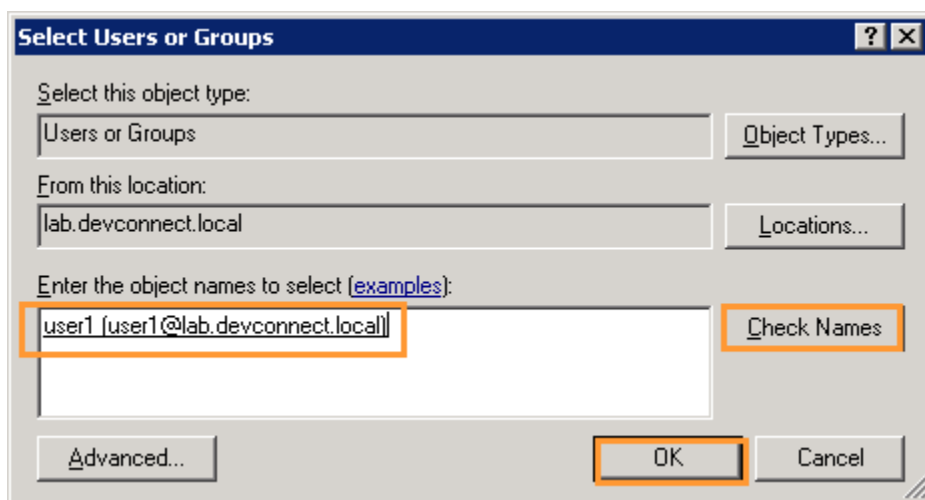
To add more lines, repeat this step again. If no more lines need to be added, click **OK** on the **Add fax line** window. Restart of GFI FaxMaker™ services is required to save these changes.

7.2.2. Add Users

On the GFI FaxMaker™ Configuration window, navigate to **Licensed Users** as shown in the screen capture. Click on **New Licensed user/group...** to add a user.

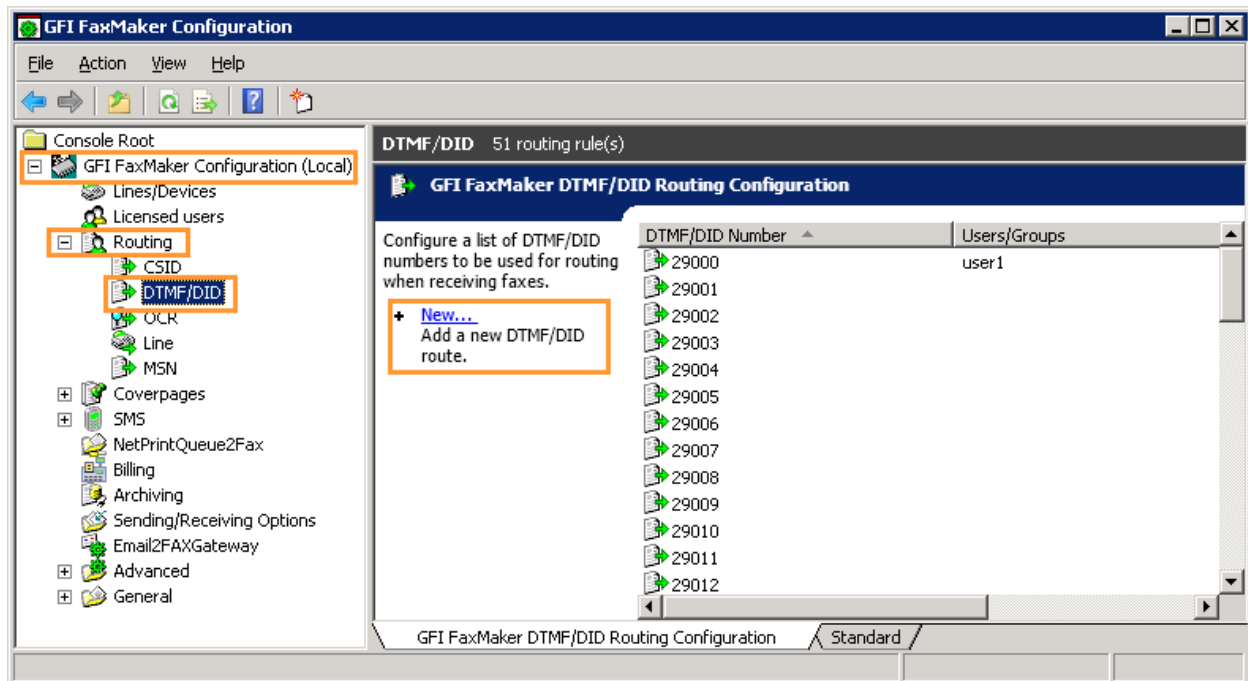


Type in the name of the user in **Enter the object names to select** and click **Check Names**. Please note that this user must exist in Microsoft Active Directory. Click **OK** to add the user.



7.2.3. Configure Routing

On the GFI FaxMaker™ Configuration window, navigate to **DTMF/DID** as shown in the screen capture. Click on **New...** to add a route.

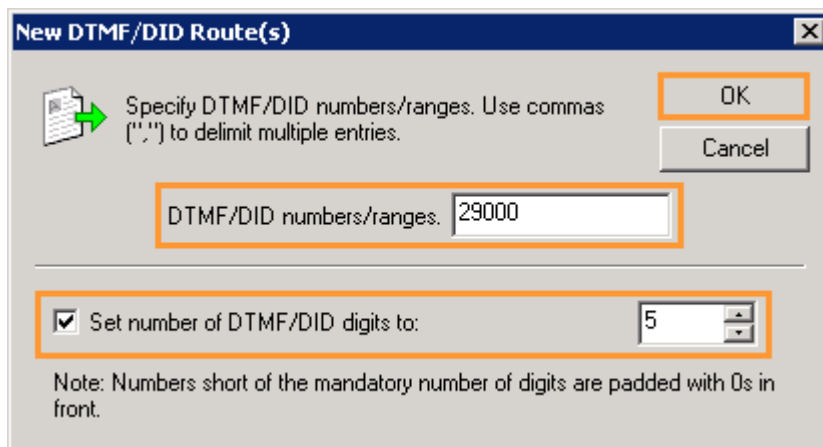


On the **DTMF/DID Route(s)** window:

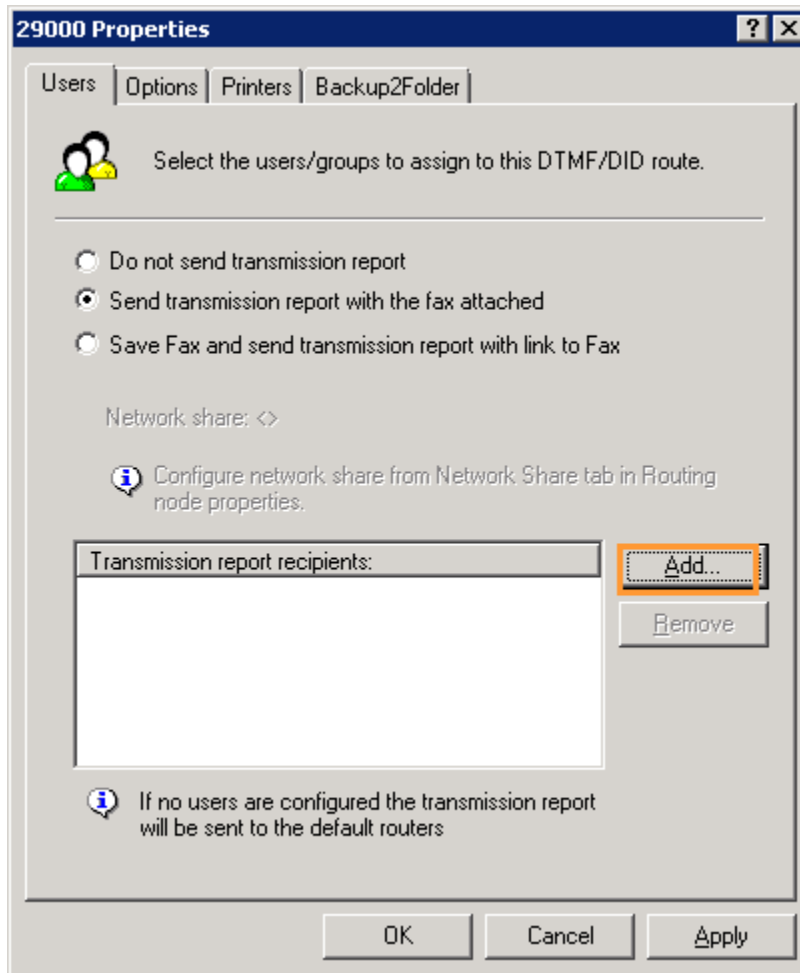
- Type in a single extension to add a route, e.g. 29000
- Type in multiple extensions with “;” as delimiter, e.g. 29000;29005;29100.
- Type in a range, e.g. 29000-29100

Click **OK** to save changes.

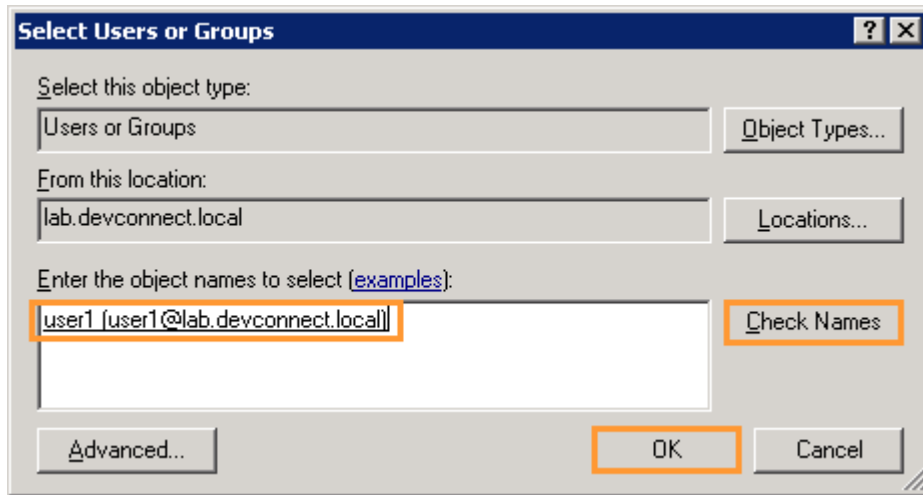
During compliance testing Session Manager was configured to route 29xxx to GFI FaxMaker.



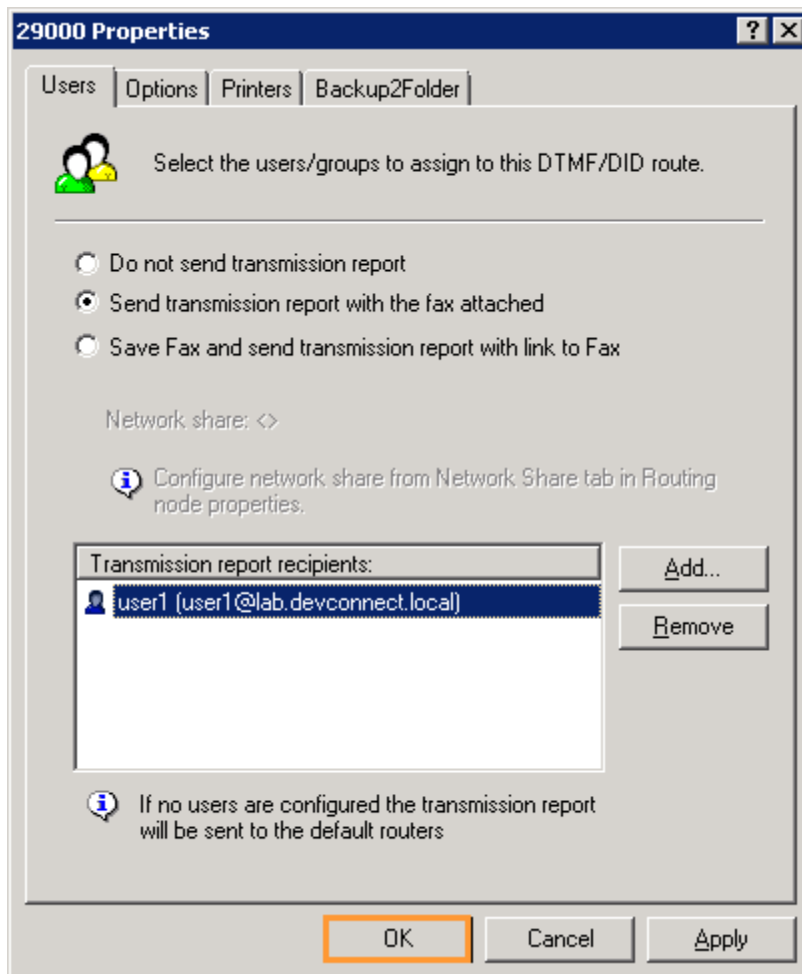
To associate an extension to a user for receiving faxes, double click on a route and click on **Add...** as shown in the screen capture.



Type in name of the user in **Enter the object names to select** and click on **Check Names**, click **OK**.



Click **OK** on the route properties window to save changes.

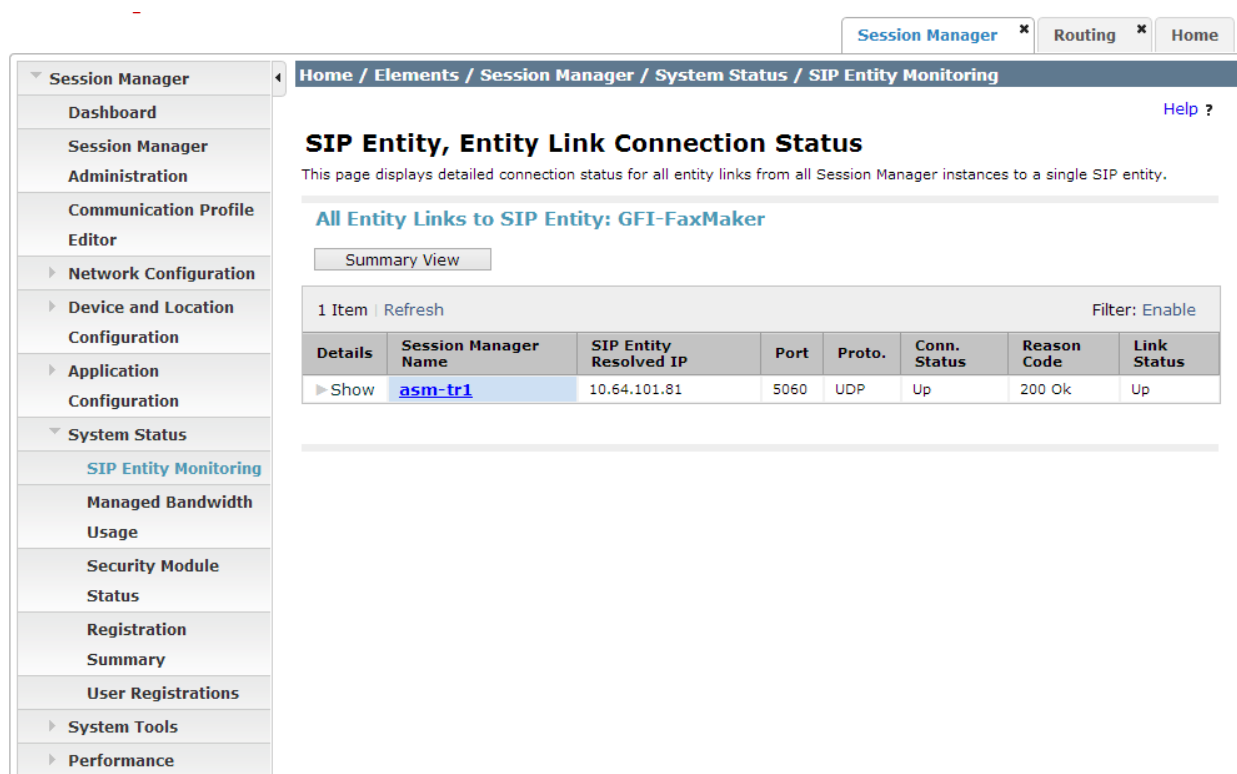


8. Verification Steps

8.1. Avaya Aura® Session Manager

On Avaya Aura® System Manager, navigate to **Home → Session Manager → System Status → SIP Entity Monitoring**.

Value in the **Conn. Status** column, should be **Up**. This verifies that the SIP connectivity between Avaya Aura® Session Manager and GFI FaxMaker™ is established successfully.



The screenshot displays the Avaya Aura Session Manager interface. The left sidebar shows the navigation menu with 'Session Manager' expanded. The main content area is titled 'SIP Entity, Entity Link Connection Status' and shows a table of entity links. The table has columns: Details, Session Manager Name, SIP Entity Resolved IP, Port, Proto., Conn. Status, Reason Code, and Link Status. The table contains one row for 'asm-tr1' with a 'Conn. Status' of 'Up'.

Details	Session Manager Name	SIP Entity Resolved IP	Port	Proto.	Conn. Status	Reason Code	Link Status
► Show	asm-tr1	10.64.101.81	5060	UDP	Up	200 Ok	Up

8.2. GFI FaxMaker™

On the GFI FaxMaker™ configuration window, navigate to **Lines/Devices → Properties** (not shown). Open Properties for Line 1 (added in **Section 6.2.1**). On the **Device ISDN** window, click on **Line test** tab. Type in a number in the **Fax number to dial** field to send a test fax.

Device ISDN1B1 on line number 0 Properties [X]

Device | Line options | Advanced | Users | **Line test**

Send a test fax using the properties configured for this line.
You can monitor the status of the test fax from the GFI FaxMaker Monitor.

NOTE: No transmission reports will be sent when the test completes.

Fax number to dial:

9. Conclusion

GFI FaxMaker™ passed compliance testing. These Application Notes describe the procedures required to configure GFI FaxMaker™ to interoperate with Avaya Aura® Session Manager and Avaya Aura® Communication Manager to support the network shown in **Figure 1**.

10. Additional References

Product documentation for Avaya products may be found at <http://support.avaya.com>.

Documentations used during compliance test are listed as follows:

- [1] Administering Avaya Aura® Communication Manager, Release 6.2, Document 03-3005089, Issue 7.0, December 2012
- [2] Administering Avaya Aura® Session Manager, Release 6.2, Document 03-603324, July 2012

All GFI documentation can be downloaded from www.gfi.com/fax-server-software/manual.

- GFI FaxMaker™ Start Guide
- GFI FaxMaker™ Getting Started Guide
- GFI FaxMaker™ Administration and Configuration Manual
- GFI FaxMaker™ Client Manual
- GFI FaxMaker™ API Manual
- GFI FaxMaker™ Fax Device Installation manual

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