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](image-url)
4. Equipment and Software Validated

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

<table>
<thead>
<tr>
<th>Equipment/Software</th>
<th>Release/Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avaya Aura® Communication Manager running on Avaya S8300D Server</td>
<td>6.2 SP 02.0.823.0-19829</td>
</tr>
<tr>
<td>Avaya Aura® Session Manager</td>
<td>6.2 SP1</td>
</tr>
<tr>
<td>Avaya Aura® System Manager</td>
<td>6.2 SP1</td>
</tr>
<tr>
<td>GFI FaxMaker™ running on Windows Server 2008 R2</td>
<td>Version 15.0 Build 20120306</td>
</tr>
<tr>
<td>TE-SYSTEMS XCAPI</td>
<td>3.3.260.0</td>
</tr>
</tbody>
</table>
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.

```
<table>
<thead>
<tr>
<th>Optional Features</th>
<th>Page 2 of 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP PORT CAPACITIES</td>
<td></td>
</tr>
<tr>
<td>Maximum Administered H.323 Trunks:</td>
<td>4000</td>
</tr>
<tr>
<td>Maximum Concurrently Registered IP</td>
<td>2400</td>
</tr>
<tr>
<td>Maximum Administered Remote Office</td>
<td>4000</td>
</tr>
<tr>
<td>Maximum Concurrently Registered</td>
<td>2400</td>
</tr>
<tr>
<td>Maximum Concur Registered</td>
<td>100</td>
</tr>
<tr>
<td>Maximum Video Capable Stations:</td>
<td>2400</td>
</tr>
<tr>
<td>Maximum Video Capable IP Softphones:</td>
<td>2400</td>
</tr>
<tr>
<td>Maximum Administered SIP Trunks:</td>
<td>4000</td>
</tr>
<tr>
<td>Maximum Administered Ad-hoc Video</td>
<td>4000</td>
</tr>
<tr>
<td>Maximum Number of DSI Boards with</td>
<td>80</td>
</tr>
<tr>
<td>Maximum TN2501 VAL Boards:</td>
<td>10</td>
</tr>
<tr>
<td>Maximum Media Gateway VAL Sources:</td>
<td>50</td>
</tr>
<tr>
<td>Maximum TN2602 Boards with 80 VoIP</td>
<td>128</td>
</tr>
<tr>
<td>Maximum TN2602 Boards with 320 VoIP</td>
<td>128</td>
</tr>
<tr>
<td>Maximum Number of Expanded Meet-me Conference Ports:</td>
<td>300</td>
</tr>
</tbody>
</table>

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

```

```
<table>
<thead>
<tr>
<th>Optional Features</th>
<th>Page 4 of 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency 'admin' Login? y</td>
<td></td>
</tr>
<tr>
<td>Enhanced Conferencing? y</td>
<td></td>
</tr>
<tr>
<td>Enhanced EC500? y</td>
<td></td>
</tr>
<tr>
<td>Enterprise Survivable Server? n</td>
<td></td>
</tr>
<tr>
<td>Enterprise Wide Licensing? n</td>
<td></td>
</tr>
<tr>
<td>ESS Administration? y</td>
<td></td>
</tr>
<tr>
<td>Extended Cvg/Fwd Admin? y</td>
<td></td>
</tr>
<tr>
<td>External Device Alarm Admin? y</td>
<td></td>
</tr>
<tr>
<td>Five Port Networks Max Per MCC? n</td>
<td></td>
</tr>
<tr>
<td>Flexible Billing? n</td>
<td></td>
</tr>
<tr>
<td>Forced Entry of Account Codes? y</td>
<td></td>
</tr>
<tr>
<td>Global Call Classification? y</td>
<td></td>
</tr>
<tr>
<td>Hospitality (Basic)? y</td>
<td></td>
</tr>
<tr>
<td>Hospitality (G3V3 Enhancements)? y</td>
<td></td>
</tr>
<tr>
<td>IP Trunks? y</td>
<td></td>
</tr>
<tr>
<td>IP Attendant Consoles? y</td>
<td></td>
</tr>
</tbody>
</table>

On Page 4, verify ISDN/PRI field is set to 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 and **Authoritative Domain**, e.g. avaya.com

```
change ip-network-region 1
Region: 1
Location: 1
Authoritative Domain: avaya.com
Name: MEDIA PARAMETERS
Codec Set: 1
Intra-region IP-IP Direct Audio: yes
Inter-region IP-IP Direct Audio: yes
UDP Port Min: 2048
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
H.323 Link Bounce Recovery?: y
Idle Traffic Interval (sec): 20
Keep-Alive Interval (sec): 5
```

IP NETWORK REGION

IP Audio Hairpinning?: n
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

IP Codec Set

Codec Set: 1

Audio
Codec: G.711MU
Silence: n
Frames: 2
Packet: 20

Media Encryption
1:
2:
3:

Codec Set: 1

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

On Page 2:

- Set Fax Mode to t.38-standard

```
change ip-codec-set 1

IP Codec Set

Allow Direct-IP Multimedia? n

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

<table>
<thead>
<tr>
<th>Name</th>
<th>IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>msqsrvr</td>
<td>10.64.10.67</td>
</tr>
<tr>
<td>procr</td>
<td>10.64.10.67</td>
</tr>
<tr>
<td>procr6</td>
<td>::</td>
</tr>
<tr>
<td>sm</td>
<td>10.64.10.61</td>
</tr>
</tbody>
</table>

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

**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
TRUNK GROUP
Group Number: 1
Group Type: sip
Direction: two-way
Dial Access: n
Queue Length: 0
Service Type: tie

Group Name: SM
COR: 1        TN: 1        TAC: *001
Outgoing Display: n

CDR Reports: y
Auth Code: n
Signaling Group: 1
Member Assignment Method: auto
Number of Members: 25
```

**On Page 3:**
- Set **Number Format** to **private**

```
add trunk-group 1
TRUNK FEATURES
ACA Assignment: n
Dial Access: n
Queue Length: 0
Auth Code: n
Member Assignment Method: auto
Number of Members: 25
```

```
Numbering Format: private
UUI Treatment: service-provider
Night Service:
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

<table>
<thead>
<tr>
<th>Grp</th>
<th>FRL</th>
<th>NPA</th>
<th>Pfx</th>
<th>Toll No.</th>
<th>Inserted</th>
<th>Secure SIP?</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:1</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n</td>
</tr>
<tr>
<td>2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n</td>
</tr>
</tbody>
</table>

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.
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.

<table>
<thead>
<tr>
<th>Dialed String</th>
<th>Total Node Num</th>
<th>Min</th>
<th>Max</th>
<th>Route Pattern</th>
<th>Call Type</th>
<th>ANI Reqd</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>aar</td>
<td>n</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>254</td>
<td>aar</td>
<td>n</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>aar</td>
<td>n</td>
</tr>
<tr>
<td>45000</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>30</td>
<td>aar</td>
<td>n</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>aar</td>
<td>n</td>
</tr>
<tr>
<td>60</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>30</td>
<td>aar</td>
<td>n</td>
</tr>
<tr>
<td>602</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>10</td>
<td>aar</td>
<td>n</td>
</tr>
<tr>
<td>605</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>30</td>
<td>aar</td>
<td>n</td>
</tr>
</tbody>
</table>

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.
Log in using appropriate credentials.
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.

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: TR1
Notes: 

Overall Managed Bandwidth

Managed Bandwidth Units: Kbit/sec
Total Bandwidth: 
Multimedia Bandwidth: 
Audio Calls Can Take Multimedia Bandwidth: 

Per-Call Bandwidth Parameters

Maximum Multimedia Bandwidth (Intra-Location): 1000 Kbit/Sec
Maximum Multimedia Bandwidth (Inter-Location): 1000 Kbit/Sec
* Minimum Multimedia Bandwidth: 64 Kbit/Sec
* Default Audio Bandwidth: 80 Kbit/sec

Alarm Threshold

Overall Alarm Threshold: 80 %
Multimedia Alarm Threshold: 80 %
* Latency before Overall Alarm Trigger: 5 Minutes
* Latency before Multimedia Alarm Trigger: 5 Minutes

Location Pattern

<table>
<thead>
<tr>
<th>Add</th>
<th>Remove</th>
<th>Filter: Enable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Item: Refresh

Select: All, None

* Input Required
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: cm-tr1

* FQDN or IP Address: 10.64.10.67

Type: CM

Notes: Communication Manager - Test Row

Adaptation: 

Location: tr1

Time Zone: America/Denver

Override Port & Transport with DNS SRV: 

* SIP Timer B/F (in seconds): 4

Credential name: 

Call Detail Recording: 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.

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.
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.
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.

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: cm-tr1

Disabled: 

* Retries: 0

Notes:

SIP Entity as Destination

Select

<table>
<thead>
<tr>
<th>Name</th>
<th>FQDN or IP Address</th>
<th>Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>cm-tr1</td>
<td>10.64.10.67</td>
<td>CM</td>
<td>Communication Manager - Test Room 1</td>
</tr>
</tbody>
</table>

Time of Day

Add  Remove  View Gaps/Overlaps

1 Item | Refresh  Filter: Enable

<table>
<thead>
<tr>
<th>Ranking 1</th>
<th>Name 2</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
<th>Start Time</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>TimeRange</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>00:00</td>
<td>23:59</td>
</tr>
</tbody>
</table>

Select: All, None

Dial Patterns

Add  Remove

0 Items | Refresh  Filter: Enable

| Pattern | Nin | Max | Emergency Call | SIP Domain | Originating Location | Notes |

Regular Expressions

Add  Remove

0 Items | Refresh  Filter: Enable

| 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:** cm-tr1
- **Disabled:** False
- **Retries:** 0
- **Notes:**

### SIP Entity as Destination

#### Select

<table>
<thead>
<tr>
<th>Name</th>
<th>FQDN or IP Address</th>
<th>Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>cm-tr1</td>
<td>10.64.10.67</td>
<td>CM</td>
<td>Communication Manager - Test Room 1</td>
</tr>
</tbody>
</table>

### Time of Day

#### Add | Remove | View Gaps/Overlaps

| Item | Refresh | Filter: Enable |

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Name 1</th>
<th>Name 2</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
<th>Start Time</th>
<th>End Time</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>TimeRange</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>00:00</td>
<td>23:59</td>
<td></td>
</tr>
</tbody>
</table>

Select: All, None

### Dial Patterns

#### Add | Remove

| Item | Refresh | Filter: Enable |

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Min</th>
<th>Max</th>
<th>Emergency Call</th>
<th>SIP Domain</th>
<th>Originating Location</th>
<th>Notes</th>
</tr>
</thead>
</table>

### Regular Expressions

#### Add | Remove

| Item | Refresh | Filter: Enable |

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Rank Order</th>
<th>Deny</th>
<th>Notes</th>
</tr>
</thead>
</table>

**Input Required**
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.

![Image of Dial Pattern configuration](Image URL)

<table>
<thead>
<tr>
<th><strong>General</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pattern</strong>: 25</td>
<td></td>
</tr>
<tr>
<td><strong>Min</strong>: 5</td>
<td></td>
</tr>
<tr>
<td><strong>Max</strong>: 5</td>
<td></td>
</tr>
</tbody>
</table>

| **Emergency Call**: |  |
| **Emergency Priority**: |  |
| **Emergency Type**: |  |
| **SIP Domain**: | avaya.com |
| **Notes**: |  |

<table>
<thead>
<tr>
<th><strong>Originating Locations and Routing Policies</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Add</strong></td>
<td><strong>Remove</strong></td>
</tr>
<tr>
<td><strong>Originating Location Name</strong>:</td>
<td><strong>Routing Policy Name</strong>:</td>
</tr>
<tr>
<td>-ALL-</td>
<td>Any Locations</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>29</td>
</tr>
<tr>
<td>Min</td>
<td>5</td>
</tr>
<tr>
<td>Max</td>
<td>5</td>
</tr>
<tr>
<td>Emergency Call</td>
<td>No</td>
</tr>
<tr>
<td>Emergency Priority</td>
<td>1</td>
</tr>
<tr>
<td>Emergency Type</td>
<td></td>
</tr>
<tr>
<td>SIP Domain</td>
<td>–ALL–</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
</tr>
</tbody>
</table>

#### Originating Locations and Routing Policies

<table>
<thead>
<tr>
<th>Originating Location</th>
<th>Originating Location Notes</th>
<th>Routing Policy Name</th>
<th>Rank</th>
<th>Routing Policy Disabled</th>
<th>Routing Policy Destination</th>
<th>Routing Policy Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>tr1</td>
<td></td>
<td>GFI-FaxMaker</td>
<td>0</td>
<td></td>
<td>GFI-FaxMaker</td>
<td></td>
</tr>
</tbody>
</table>

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**.

```
Controller Wizard

Add new controller
Welcome to the XCAPI Controller Wizard

Welcome to the XCAPI Controller Wizard

This wizard will guide you through the process of adding a new Voice-over-IP or ISDN Controller to the configuration.

Please select one of the options below and click Next to continue, or Cancel to exit the wizard.

- **Add Voice-over-IP controller (VoIP)**
  Use a Network-Interface-Controller (NIC) to integrate this system into a Voice-over-IP environment.

- **Add ISDN controller**
  Use a CAPI 2.0 compatible ISDN-Controller to connect this system to the ISDN.
```

Click **Next**.

```
Controller Wizard

Add new controller
Select the network interface

Since each terminal and gateway requires a physical connection to the voice-over-ip network, your system needs a network-interface-controller (nic) with a link to this network. Please select a certain nic from the list below.

<table>
<thead>
<tr>
<th>Device</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.64.101.81</td>
<td>Intel(R) PRO/1000 MT Network Connection (00-5...</td>
</tr>
</tbody>
</table>
```

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

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

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

![Device ISDN window](image)

*Enter either the full MSN number, or the base number (i.e. if you enter 3068, all numbers beginning with 3068 will be answered) FaxMaker will answer calls on numbers specified here only.*

Configure MSN list to answer all calls:

- Answer all
- Add
- Remove
- Select All
- Add from...

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.

![SIP Entity Monitoring](image)

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.
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:
25052

Send test fax
Monitor test fax

OK
Cancel
Help
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:


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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