

BTIP & BTalk XMedius Fax Server

version addressed in this guide : XMedius Fax Server
Enterprise 8.0 & 9.0

Version of 30/11/2020

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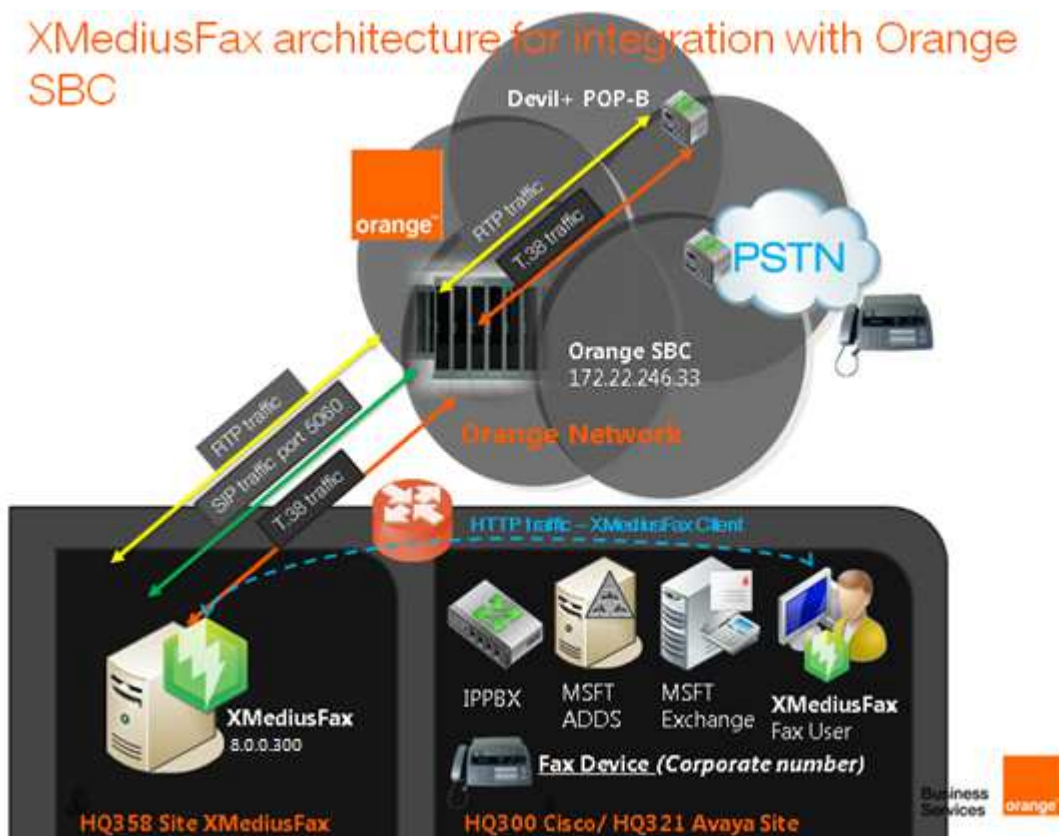
1 Goal of this document

The aim of this document is to provide configuration guideline for XMedius Fax Server directly connected to Orange SBC via SIP trunk. This solution is certified in scope of Business Talk and Business Talk IP (BTIP) services.

2 Solution architecture

2.1 Architecture: XMedius Fax Server directly connected to Orange SBC

Picture 1: XMedius Fax Server integration with Orange infrastructure SBC



3 Configuration prerequisites

3.1 License installation on XMedius Fax Server

In addition to system components settings (users, sites, gateways and channels), some XMedius Fax features can be enabled or disabled depending on the license you purchased.

3.2 IP Address schema configuration

Collect IP Address of XMedius Fax Server which is required to configure properly dedicated XMF site on Orange infrastructure (SBC, iMSS, Application Server). Please, refer to section 4.2 which describe basics of Orange components configuration.

Collect IP Address of Orange SBC interface which is required to configure Peer List and Dial Plan on XMedius Fax Server.

For more details, please refer to section: T.38 Driver Properties Configuration (Managing a Dial Plan and Peer List).

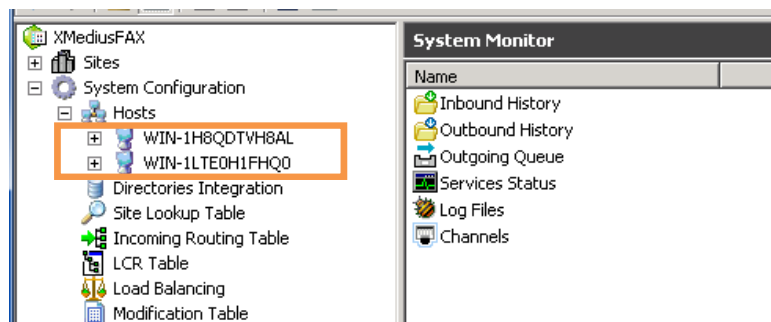
4 Installation in High Availability mode

XMedius FAX provide high availability on two servers working in primary/backup mode. They are installed on separated machines and connected with each other in one FAX system.

Installation of XMedius FAX server in high availability mode consists of steps:

- Installing primary server – it doesn't need additional configuration,
- Connecting backup server – during installation “Connect to existing system” option must be chosen. Wizard will ask then for basic information to connect to primary server:
 - IP address of primary server
 - System administrator user name and password

After installation both nodes should be visible in XMedius Fax system monitor application:



4.1 Update XMedius Fax Server to version 8.0 or 9.0

Note: The following screenshots apply to v8.0 only but are also compatible with v9.0.

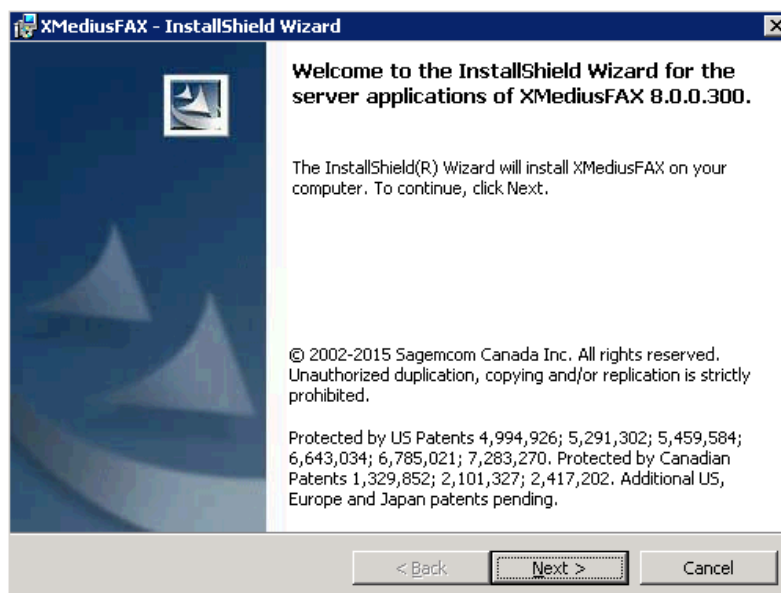
Before upgrade stop the services by run <XMedius Fax>\bin\util\xmsc.exe -oa in console, as shown below.

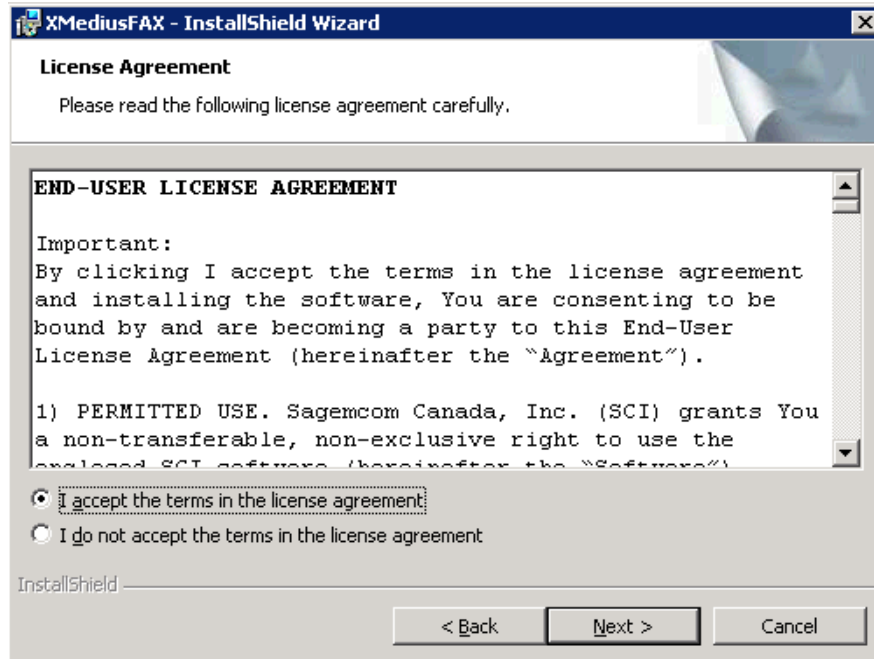
```
C:\Program Files (x86)\XMediusFAX\Bin\Util>xmsc.exe -oa
Stopping xmproxy.....Done
Stopping xmsmtpgateway....Done
Stopping xmxmlgateway.....Done
Stopping xmdocumentrasterizer.....Done
Stopping xmfaxdriver.....Done
Stopping xmcoconfig.....Done
Stopping xmfaxarchive.....Done
Stopping xmfaxmanager.....Done
Stopping xmconfigmanager.....Done
Stopping xmfaulttolerance.....Done
C:\Program Files (x86)\XMediusFAX\Bin\Util>_
```

1. Initiate the installation using the installation Wizard:
 - a) From the root directory of the XMedius Fax distribution media, double-click Setup.exe.

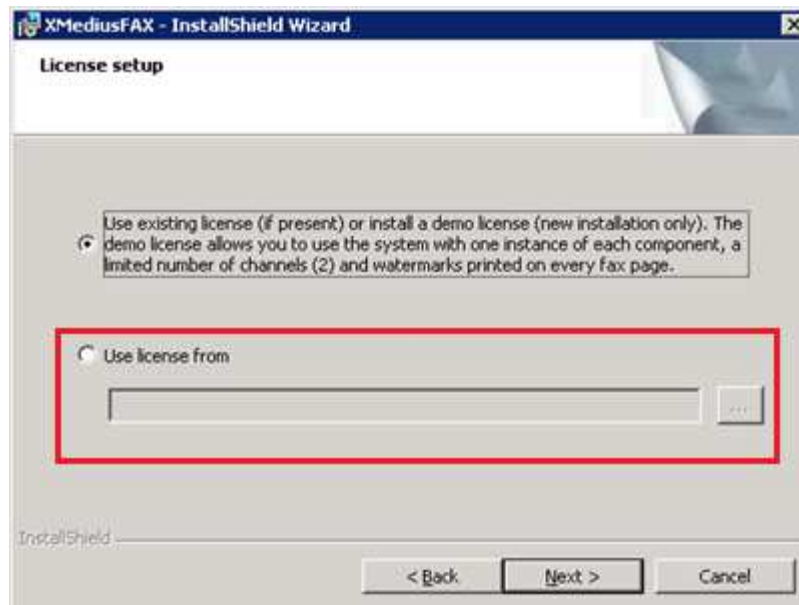


b) Click server button.

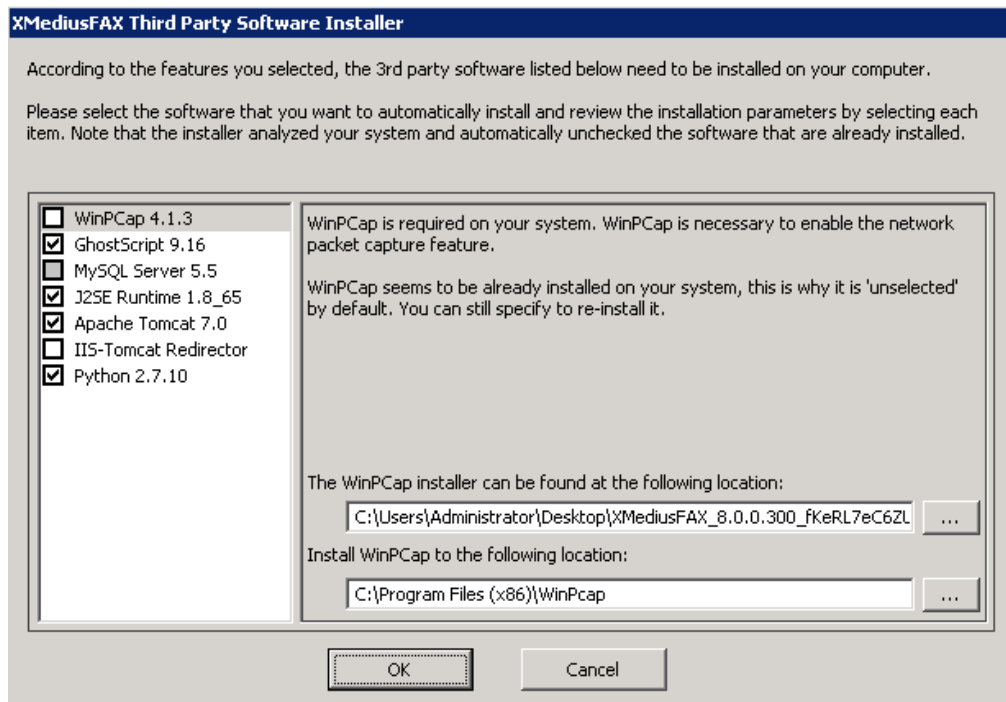




- c) Follow the Wizard installation (click Next button), accept License Agreement and click Next.



- d) Choose location of new license and click Next. On next screen click Install to begin the upgrade.



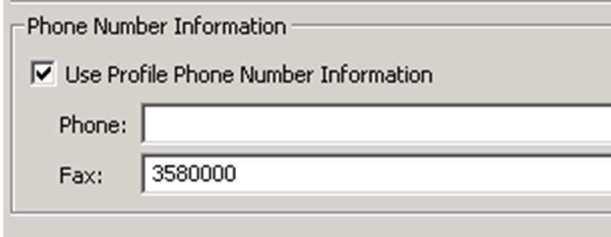
- e) Choose location and click OK. After installation click Finish.

5 XMedius Fax Server directly connected to Orange SBC

Note: The following parameters apply to v8.0 only but are also compatible with v9.0.

5.1 XMedius Fax Server components configuration

Creating a Profile									
Step 1	<p>Immediately after installation, the Basic and No Faxing profiles are available, to which you can associate users. The Basic profile allows the user to fax at a normal fax rate with three retries if a connection cannot be immediately established. The No Faxing Rights profile does not allow the transmission of faxes.</p> <p>You might also create new profiles and assign them to meet the specific fax needs of each user. It is also possible to create profiles for each department, thereby tailoring fax settings to departmental requirements rather than user requirements.</p> <p>In the MMC Snap-in, select the Profiles node of your site, and click on the Profile Properties dialog appears.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;">Parameter Name</th> <th style="width: 20%;">Parameter Value</th> </tr> </thead> <tbody> <tr> <td> <p>❶ Enter the name of the profile in the Profile Name field.</p> </td> <td>❶ XMF Warsaw</td> </tr> <tr> <td> <p>❷ Select the Phone Books tab. If you want to assign phone books to the profile:</p> <ul style="list-style-type: none"> - In the Phone Books section, click Add. The Phone Book Properties dialog appears. - Select a phone book in the Phone Book dropdown list. <p>Note: A phone book must have been previously created. To create and populate a phone book refer to the Administration Guide – Web documentation.</p> </td> <td>❷ for example: 35800</td> </tr> <tr> <td> <p>❸ Select the Billing Codes tab to Associating a Profile and a Billing Group - Once billing groups have been created, administrators can associate a billing group with a profile. The billing group can contain any number of billing codes and sub-billing codes which users can apply when faxing.</p> </td> <td>❸ Default values are</td> </tr> </tbody> </table>	Parameter Name	Parameter Value	<p>❶ Enter the name of the profile in the Profile Name field.</p>	❶ XMF Warsaw	<p>❷ Select the Phone Books tab. If you want to assign phone books to the profile:</p> <ul style="list-style-type: none"> - In the Phone Books section, click Add. The Phone Book Properties dialog appears. - Select a phone book in the Phone Book dropdown list. <p>Note: A phone book must have been previously created. To create and populate a phone book refer to the Administration Guide – Web documentation.</p>	❷ for example: 35800	<p>❸ Select the Billing Codes tab to Associating a Profile and a Billing Group - Once billing groups have been created, administrators can associate a billing group with a profile. The billing group can contain any number of billing codes and sub-billing codes which users can apply when faxing.</p>	❸ Default values are
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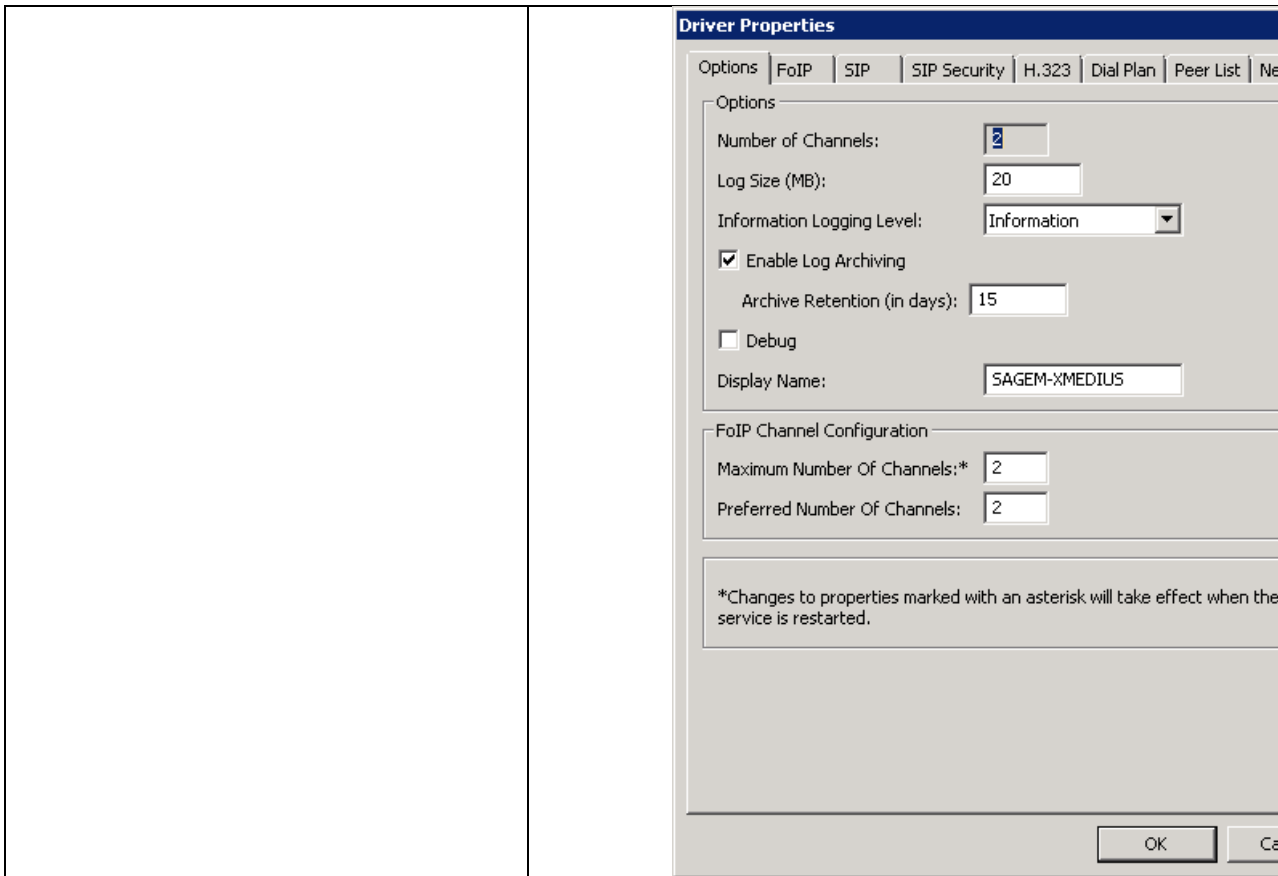
	<p>④ Click the Fax Options tab to set the fax priority and how it affects the order in which the faxes are sent. This is however compounded by the number of retry attempts to send a fax.</p> <p>⑤ Select the Security tab to apply security settings.</p> <p>⑥ Select the Notification tab to set Notifications. By default, incoming fax notifications are sent to the destinations in the Incoming Routing Table, or to the default destination specified in its properties. Outbound fax notifications are sent to the sender's e-mail address.</p>	<p>④ Default values are</p> <p>⑤ Default values are</p> <p>⑥ Default values are</p>								
<p>Step 2</p>	<p>Xmedius Fax number presentation on SIP trunk Configuration of number presentation on SIP trunk from Orange SBC. Number presentation – this number will be used in the SIP INVITE message send by Fax server, for example: SIP INVITE SDP() → <i>SIP From: sip:3580000@XMF_IP:</i></p> <p>Sites > Site name > Configuration > Profiles > Profile properties > Phone Number Information section</p> <table border="1" data-bbox="863 1211 1596 1547"> <thead> <tr> <th>Parameter Name</th> <th>Parameter Value</th> </tr> </thead> <tbody> <tr> <td>① Phone Number Information section > Select Profile Phone Number Information checkbox</td> <td>① checkbox must be checked</td> </tr> <tr> <td>② In Fax field provide phone number “extension” compliant with XMF dialplan</td> <td>② for example: 3580000</td> </tr> <tr> <td>③ Phone field can be empty, not required to provide phone number</td> <td>③ empty value</td> </tr> </tbody> </table>  <p>Picture 2: Phone Number Information configuration window</p>		Parameter Name	Parameter Value	① Phone Number Information section > Select Profile Phone Number Information checkbox	① checkbox must be checked	② In Fax field provide phone number “extension” compliant with XMF dialplan	② for example: 3580000	③ Phone field can be empty, not required to provide phone number	③ empty value
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	<p>Creating an Internal User Account</p>									

<p>Step 3</p>	<p>In the administration interface, select the Internal User node of your Add button. The User Properties dialog appears.</p> <table border="1" data-bbox="861 380 1596 1120"> <thead> <tr> <th data-bbox="861 380 1332 414">Parameter Name</th> <th data-bbox="1332 380 1596 414">Parameter Value</th> </tr> </thead> <tbody> <tr> <td data-bbox="861 414 1332 504"> <p>❶ Enter the SMTP address of the user; this is a mandatory entry.</p> </td> <td data-bbox="1332 414 1596 504"> <p>❶ 3580001@orange</p> </td> </tr> <tr> <td data-bbox="861 504 1332 593"> <p>❷ Use Profile Name to associate the user to a specific profile.</p> </td> <td data-bbox="1332 504 1596 593"> <p>❷ Profile Name: Bas</p> </td> </tr> <tr> <td colspan="2" data-bbox="861 593 1332 750"> <p>Note: A profile is mandatory. If no profile exists, you can choose Basic or No Faxing Rights. If you want to create a new profile, refer to Step 1.</p> </td> </tr> <tr> <td colspan="2" data-bbox="861 750 1332 929"> <p>Tips: If the SMTP user has a corresponding Windows Domain account, use AD account to indicate that account in the format domain\username.</p> </td> </tr> <tr> <td data-bbox="861 929 1332 1120"> <p>❸ Navigate to Personal Information tab in User Properties windows. Provide Phone Number Information details (Phone number and Fax number) for new user. Must be compliant with XMF dial plan.</p> </td> <td data-bbox="1332 929 1596 1120"> <p>❸ Personal Information Phone: 3580001 Fax: 3580001</p> </td> </tr> </tbody> </table>	Parameter Name	Parameter Value	<p>❶ Enter the SMTP address of the user; this is a mandatory entry.</p>	<p>❶ 3580001@orange</p>	<p>❷ Use Profile Name to associate the user to a specific profile.</p>	<p>❷ Profile Name: Bas</p>	<p>Note: A profile is mandatory. If no profile exists, you can choose Basic or No Faxing Rights. If you want to create a new profile, refer to Step 1.</p>		<p>Tips: If the SMTP user has a corresponding Windows Domain account, use AD account to indicate that account in the format domain\username.</p>		<p>❸ Navigate to Personal Information tab in User Properties windows. Provide Phone Number Information details (Phone number and Fax number) for new user. Must be compliant with XMF dial plan.</p>	<p>❸ Personal Information Phone: 3580001 Fax: 3580001</p>
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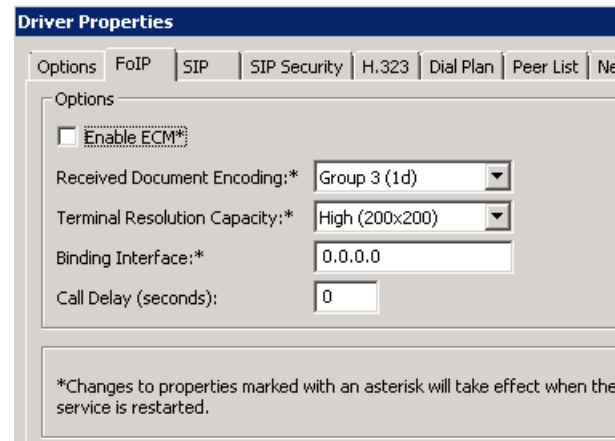
	<p>T.38 Driver Properties Configuration (Options, T.38, T.38)</p> <p>In the administration interface, you just need to access the properties of your host to configure general SIP properties and to configure SIP for listed gateways and associate number patterns to specific gateway.</p> <p>Warning: Parameters locations on Driver Properties tabs can be different from the T.38 driver release installed on the server.</p>						
<p>Step 4</p>	<p>System Configuration > Hosts > XMF_Host_name > Driver container Button click on Driver container and select Properties. In the Driver Properties dialog, select the Options tab.</p> <table border="1" data-bbox="861 1758 1596 1982"> <thead> <tr> <th data-bbox="861 1758 1332 1792">Parameter Name</th> <th data-bbox="1332 1758 1596 1792">Parameter Value</th> </tr> </thead> <tbody> <tr> <td data-bbox="861 1792 1332 1937"> <p>❶ On Options tab enable Enable Log Archiving property. Enables automatic log archiving for future support use.</p> </td> <td data-bbox="1332 1792 1596 1937"> <p>❶ Checkbox Enable Log Archiving must be enabled. Set Archive Retention value: 15.</p> </td> </tr> <tr> <td data-bbox="861 1937 1332 1982"></td> <td data-bbox="1332 1937 1596 1982"> <p>❷ Disabled</p> </td> </tr> </tbody> </table>	Parameter Name	Parameter Value	<p>❶ On Options tab enable Enable Log Archiving property. Enables automatic log archiving for future support use.</p>	<p>❶ Checkbox Enable Log Archiving must be enabled. Set Archive Retention value: 15.</p>		<p>❷ Disabled</p>
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	<p>② On Options tab Debug checkbox should be disabled.</p> <p>③ On Options tab the T.38 Channel Configuration Section configuration.</p> <p>④ On FoIP tab configure ECM (error correction mode).</p> <p>⑤ In the Driver properties dialog, select the SIP tab. Provide port number under which SIP messages are received for UDP, TCP and TLS.</p>	<p>③ When you acquire a need to update here the channels allowed according to new license</p> <p>④ ECM may be enabled (ECM checkbox) or disabled (depends on customer license)</p> <p>If Enabled:</p> <ul style="list-style-type: none"> • Received Data Encoding set to (1d) • Terminal Resolution Capacity set to (200x200) <p>⑤ The general SIP properties are following</p> <ul style="list-style-type: none"> • Local SIP UDP • Local SIP TCP • Local SIP TLS • Print SIP Messages • Wait For DTMF Disabled
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Picture 5: Example of Driver Configuration (Options)



Picture 6: Example of Driver Configuration (FoIP tab) with D

Note: If XMedius Fax is installed in high availability mode driver se configured on all nodes visible in hosts list.

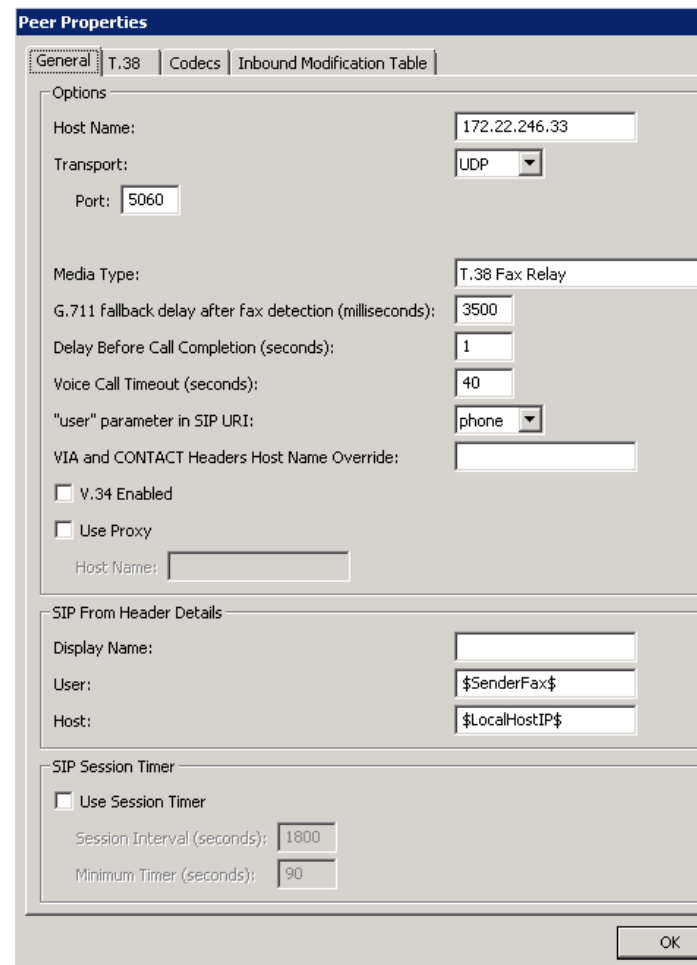
	<p>T.38 Driver Properties Configuration (Managing a Dial Plan Peer List)</p> <p>By default, XMedius Fax assumes that all faxes are to be sent through the gateway. The list SIP gateways (in our case it will be Orange SBC), called the Peer List, displays the single gateway established when XMedius Fax was installed. The corresponding dial plan indicates that all numbers are sent through the gateway available.</p> <p>By using a Peer List, you can manage separately the SIP or H.323 protocols for each known gateway (or proxy) that communicate with the fax server.</p>																
<p>Step 6</p>	<p>System Configuration > Hosts > XMF_Host_name > Driver container button click on Driver container and select Properties.</p> <p>In the Driver properties dialog, select the Peer List tab.</p> <table border="1" data-bbox="861 817 1596 1948"> <thead> <tr> <th data-bbox="861 817 1337 851">Parameter Name</th> <th data-bbox="1337 817 1596 851">Parameter Value</th> </tr> </thead> <tbody> <tr> <td data-bbox="861 851 1337 963">❶ Click Add SIP Peer button. Adds a new SIP Peer and allows to configure its properties</td> <td data-bbox="1337 851 1596 963">❶ Checkbox Enable must be enabled. Set Archive Retention value: 15.</td> </tr> <tr> <td data-bbox="861 963 1337 1142">❷ On General tab of Peer Properties window provide Host Name - The host name of the gateway (or proxy) to be added as a Peer.</td> <td data-bbox="1337 963 1596 1142">❷ IP address of Orange SBC interface, for example 192.168.1.1</td> </tr> <tr> <td data-bbox="861 1142 1337 1321">❸ On General tab of Peer Properties window provide the transport type (UDP, TCP or TLS) to be used by this Peer.</td> <td data-bbox="1337 1142 1596 1321">❸ Transport: UDP</td> </tr> <tr> <td data-bbox="861 1321 1337 1456">❹ On General tab of Peer Properties window provide the port number of this Peer.</td> <td data-bbox="1337 1321 1596 1456">❹ 5060</td> </tr> <tr> <td data-bbox="861 1456 1337 1635">❺ On General tab of Delay Before Call Completion, Voice Call Timeout and SIP From Header Details.</td> <td data-bbox="1337 1456 1596 1635">❺ Delay Before Call second Voice Call Timeout – Display name – emp User - \$SenderFax\$ Host - \$LocalHostIP</td> </tr> <tr> <td data-bbox="861 1635 1337 1792">❻ On T.38 tab of Peer Properties window configure Outbound Initial Media Offer and CNG options.</td> <td data-bbox="1337 1635 1596 1792">❻ Outbound Initial Media Offer Audio CNG - Send CNG us</td> </tr> <tr> <td data-bbox="861 1792 1337 1948">❼ On T.38 tab of Peer Properties window configure Delay before Re-INVITE.</td> <td data-bbox="1337 1792 1596 1948">❼ Delay before Re-INVITE</td> </tr> </tbody> </table>	Parameter Name	Parameter Value	❶ Click Add SIP Peer button. Adds a new SIP Peer and allows to configure its properties	❶ Checkbox Enable must be enabled. Set Archive Retention value: 15 .	❷ On General tab of Peer Properties window provide Host Name - The host name of the gateway (or proxy) to be added as a Peer.	❷ IP address of Orange SBC interface, for example 192.168.1.1	❸ On General tab of Peer Properties window provide the transport type (UDP, TCP or TLS) to be used by this Peer.	❸ Transport: UDP	❹ On General tab of Peer Properties window provide the port number of this Peer.	❹ 5060	❺ On General tab of Delay Before Call Completion, Voice Call Timeout and SIP From Header Details .	❺ Delay Before Call second Voice Call Timeout – Display name – emp User - \$SenderFax\$ Host - \$LocalHostIP	❻ On T.38 tab of Peer Properties window configure Outbound Initial Media Offer and CNG options.	❻ Outbound Initial Media Offer Audio CNG - Send CNG us	❼ On T.38 tab of Peer Properties window configure Delay before Re-INVITE .	❼ Delay before Re-INVITE
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⑧ On **T.38** tab of Peer Properties window configure properties of the **T38 redundancy** section.

⑨ On **Codecs** tab click **Add** button to choose codec from **Available Codecs** list.

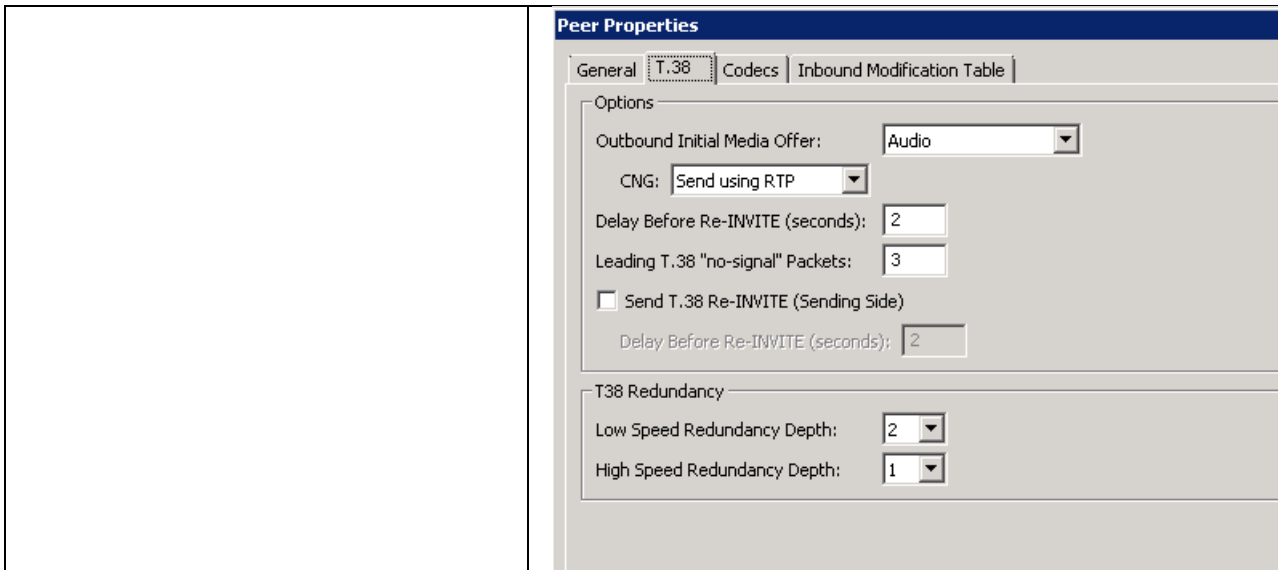
⑧ LS redundancy (p 2) – 2
HS redundancy (p 1)

⑨ It depends on code two supported possibilities Infrastructure:
- **G.711 A-Law**
- or G.729 8kH

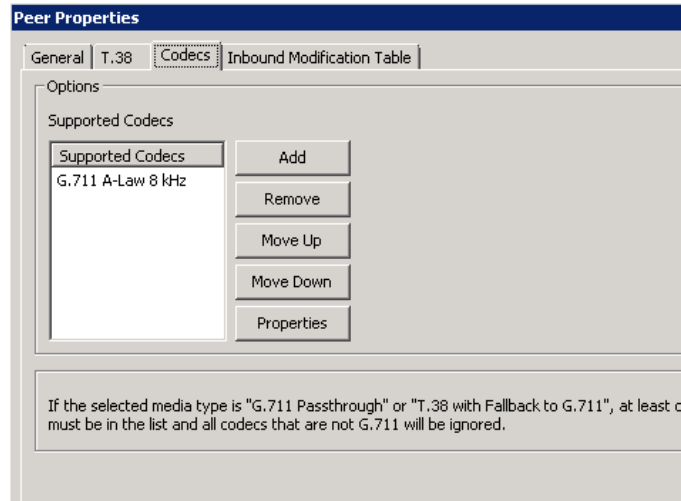


The screenshot shows the 'Peer Properties' dialog box with the 'T.38' tab selected. The 'Options' section includes fields for Host Name (172.22.246.33), Transport (UDP), Port (5060), Media Type (T.38 Fax Relay), G.711 fallback delay (3500), Delay Before Call Completion (1), Voice Call Timeout (40), and 'user' parameter (phone). There are also checkboxes for 'V.34 Enabled' and 'Use Proxy', and a 'Host Name' field. The 'SIP From Header Details' section has fields for Display Name, User (\$SenderFax\$), and Host (\$LocalHostIP\$). The 'SIP Session Timer' section has a 'Use Session Timer' checkbox and fields for Session Interval (1800) and Minimum Timer (90). An 'OK' button is at the bottom right.

Picture 7: Example of Driver Configuration – new Peer (Orange Headers configuration)



Picture 8: Example of Driver Configuration - new Peer (Orange)



Picture 9: Example of Driver Configuration – new Peer (Orange)

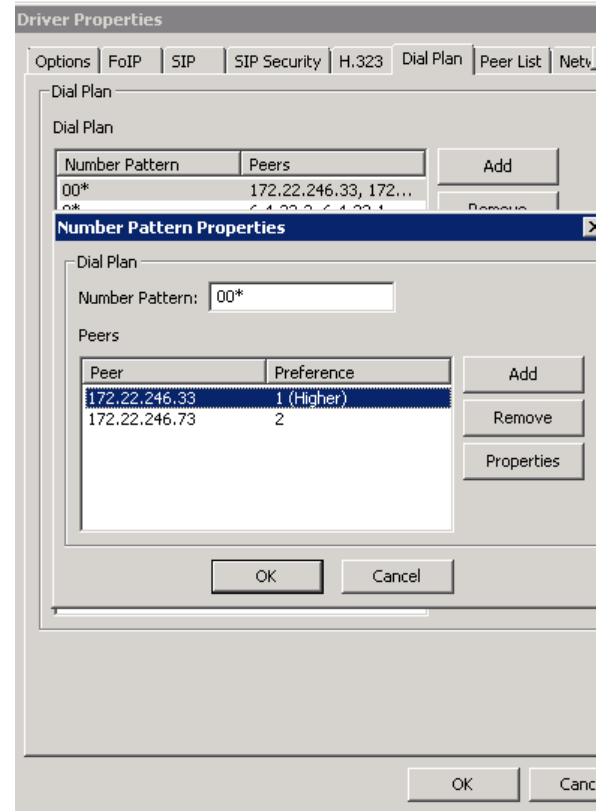
In the **Driver properties** dialog, select the **Dial Plan** tab.

Parameter Name	Parameter Value
<p>❶ Click Add button. Provide number pattern you wish to associate with the list of Peers below.</p> <p>❷ Select a Peer to Add to the List Associated with a Number Pattern.</p>	<p>❶ * (asterisk) Note: You must specify a number anticipated. When entered:</p> <ul style="list-style-type: none"> - The asterisk specifies a number of digits - The question mark specifies a single digit <p>❷ Peer: 172.22.246.3 Preference: 1 (High)</p>

Click Add button to select configured Peer (Orange SBC).

3 On **General** tab of Peer Properties window provide the transport type (UDP, TCP or TLS) to be used by this Peer.

3 Transport: **UDP**



Picture 10: Example of Driver Configuration – Dial Plan configuration

Note: If XMedius Fax is installed in high availability mode driver server should be configured on all nodes visible in hosts list.

	<p>Incoming routing table (System Configuration)</p>				
<p>Step 7</p>	<p>XMedius Fax > System Configuration > Hosts > Incoming Routing Table</p> <p>In the MMC Snap-in, select the Incoming Routing Table node and the Routing Table Entry Properties dialog appears</p> <table border="1" data-bbox="861 1877 1596 1998"> <thead> <tr> <th data-bbox="861 1877 1348 1915">Parameter Name</th> <th data-bbox="1348 1877 1596 1915">Parameter Value</th> </tr> </thead> <tbody> <tr> <td data-bbox="861 1915 1348 1998"> <p>1 Enter a valid DNIS/DID number in the Lower Bound field.</p> </td> <td data-bbox="1348 1915 1596 1998"> <p>1 3580000</p> </td> </tr> </tbody> </table>	Parameter Name	Parameter Value	<p>1 Enter a valid DNIS/DID number in the Lower Bound field.</p>	<p>1 3580000</p>
Parameter Name	Parameter Value				
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	<p>➊ Enter a valid DNIS/DID number in the Upper Bound field.</p> <p>➋ Select the site to which you want to associate these values, from the list in the Site field.</p> <p>➌ Enter the site Call Station ID in the CSID field.</p>	<p>➍ 3580099</p> <p>Note: The Lower Bound values must have the same number of digits and the Upper Bound values must be higher than the Lower Bound values.</p> <p>➎ Site : XMedius</p> <p>➏ CSID : XMedius</p>
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5.2 Orange components configuration

VPN Sites for Customer A-IP TELEPHONY SIP Configuration on Orange Application Server (AS) and Orange SBC Configuration													
Step 1	<p>Site Parameters on AS and Orange SBC Configuration</p> <table border="1"> <thead> <tr> <th data-bbox="863 1160 1348 1189">Parameter Name</th> <th data-bbox="1348 1160 1596 1189">Parameter Value</th> </tr> </thead> <tbody> <tr> <td data-bbox="863 1189 1348 1301">➊ Numbering plan which is compliant with numbers provided on XMedius Fax Server.</td> <td data-bbox="1348 1189 1596 1301">➊ Private prefix: 358 Private range: 0000-9999</td> </tr> <tr> <td data-bbox="863 1301 1348 1458">➋ Public Number in Full Numbering List to realize incoming calls to XMF Users</td> <td data-bbox="1348 1301 1596 1458">➋ Incoming public number user example: <ul style="list-style-type: none"> • Private Number • Public Number • BTG Dom F • Optimised routing VPN: disabled</td> </tr> <tr> <td data-bbox="863 1458 1348 1592">➌ Verify configuration of Site Access on AS to reach SBC interface related to XMF site.</td> <td data-bbox="1348 1458 1596 1592">➌ Please, verify this configuration on Orange Team. Default configuration is used.</td> </tr> <tr> <td data-bbox="863 1592 1348 1727">➍ Verify configuration of iMSS.</td> <td data-bbox="1348 1592 1596 1727">➍ Please, verify this configuration on Orange Team. Default configuration is used.</td> </tr> <tr> <td data-bbox="863 1727 1348 1991">➎ Verify configuration of SBC to XMF site.</td> <td data-bbox="1348 1727 1596 1991">➎ Please, verify this configuration on Orange Team. Default configuration is used.</td> </tr> </tbody> </table>	Parameter Name	Parameter Value	➊ Numbering plan which is compliant with numbers provided on XMedius Fax Server.	➊ Private prefix: 358 Private range: 0000-9999	➋ Public Number in Full Numbering List to realize incoming calls to XMF Users	➋ Incoming public number user example: <ul style="list-style-type: none"> • Private Number • Public Number • BTG Dom F • Optimised routing VPN: disabled	➌ Verify configuration of Site Access on AS to reach SBC interface related to XMF site.	➌ Please, verify this configuration on Orange Team. Default configuration is used.	➍ Verify configuration of iMSS.	➍ Please, verify this configuration on Orange Team. Default configuration is used.	➎ Verify configuration of SBC to XMF site.	➎ Please, verify this configuration on Orange Team. Default configuration is used.
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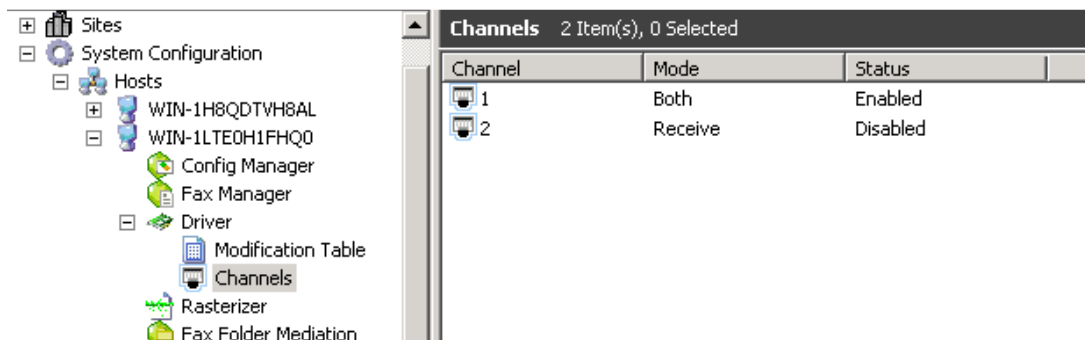


6 Configuring High Availability

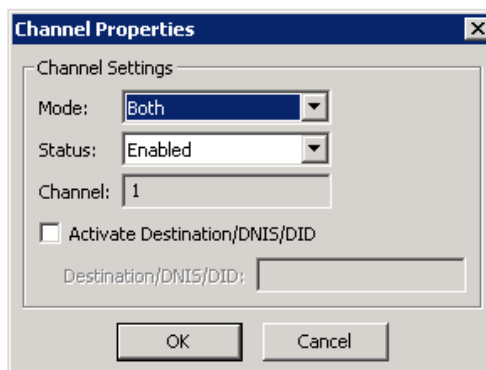
6.1 Channels configuration

Since Business Talk require system to work in Primary/Backup mode servers need appropriate configuration. In normal mode all faxes should be handled by primary server. It means that primary server must have enough channels to send and receive all fax calls. To provide high availability backup server must be also able to receive faxes in situation, when primary server is running but SBC cannot reach it. To receive and not send faxes backup server need special channel configuration.

Incoming faxes are more exposed to failures when channels are busy, because XMedius Fax will reply with 486 Busy if there are no available channels. Outgoing faxes will be stored in memory and send process will be postponed until channels are available. To provide fax service it is recommended to configure up to half channels as receive only. It will keep channels ready only for incoming faxes which cannot wait and must be handled immediately. To do so go to **Driver -> Channels** on primary server where all available channels are listed, right-click on chosen one and select properties.

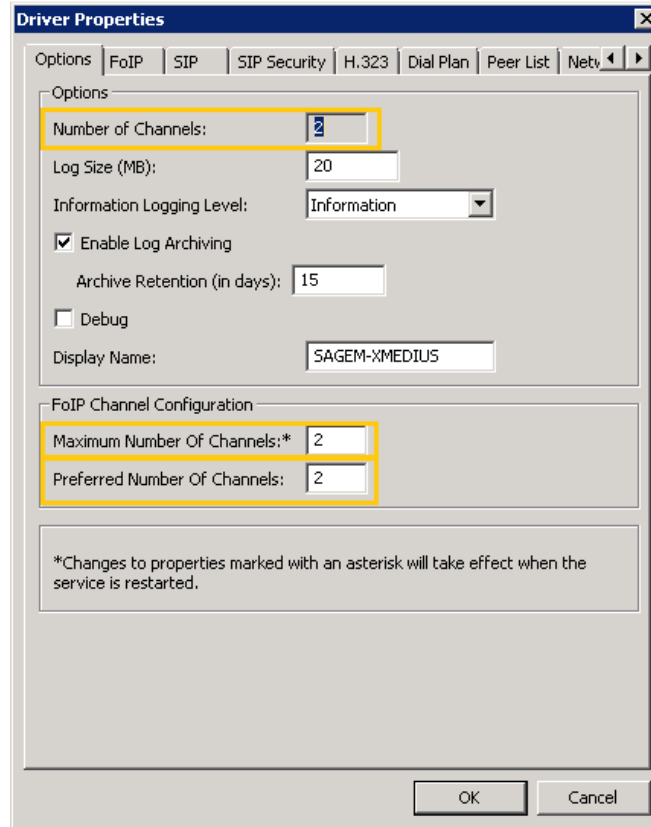


Following window will appear where channel mode can be selected:



Channels are activated in order based on its numerical ID. List contain all channels that are possible to configure but not all can be registered on both servers at the same time. It means that if all channels are registered on primary server, backup will not be able to send or receive any connection. Recommended deployment requires proper amount of channels registered on

both servers. To set maximum and preferred amount of channels registered to each server right click on **Driver** and choose **Properties** on proper server:



Number of Channels – shows available amount of channels that can be registered. This value is specified in license and cannot be changed.

Maximum Number Of Channels – limits number of channels that can register to server.

Preferred Number Of Channels – specify number of channels that should be registered on a selected server during regular maintenance. Values set on servers should add up to number of channels available in license.

6.2 Recommendations

If there are no failures, primary server should handle all incoming and outgoing faxes. It means that primary server must have registered enough channels to provide fax service. Because incoming faxes are not queued it is recommended to set **half** channels to work as **receive only**. With minimal amount of channels which is two, one should work in **both** directions and second should be **receive only**. Number of channels on primary server depends of customer traffic and CAC requirements.

To provide high availability additional channels should be registered on backup server. It means that primary server must have enough channels to handle fax traffic and backup must have additional channels to receive faxes in case of network failure.

Note: For detailed description of recommended licensing refer to "BTIP SIP XMedius Fax Server Release 8.0.0.300 Technical Overview", chapter 4.2.3.

Backup server should have registered only channels for incoming faxes. It means that primary and secondary servers should have assigned the same amount of registered **receive only** channels. When primary server works, backup should not have registered any channels for sending faxes.

Channels are configured on each server independently. In configuration list channels are shown in registration order. It means that administrator can set which channels will be registered only when second server fails.

To clarify recommended solution assume that customer needs 10 channels to provide fax service. It means, that on primary server 5 channels should be registered as **receive only** and other 5 should work in **both** directions. Backup server also should have 5 channels registered as **receive only**. It means that customer needs 10 channels to provide fax service, but license to register 15 channels.

Because channel list allow configuring maximum amount of channels, rest should be set to work in **both** directions. They will become registered when other server fails.

	License contain 15 channels	
	Primary Server	Backup Server
Max. number of channels	15	15
Preferred number of channels	10	5
Channels modes*	<ol style="list-style-type: none"> 1. Both 2. Both 3. Both 4. Both 5. Both 6. Receive 7. Receive 8. Receive 9. Receive 10. Receive 11. Both 12. Both 13. Both 14. Both 15. Both 	<ol style="list-style-type: none"> 1. Receive 2. Receive 3. Receive 4. Receive 5. Receive 6. Both 7. Both 8. Both 9. Both 10. Both 11. Both 12. Both 13. Both 14. Both 15. Both

* Registered channels are bold.

10 channels registered on primary server provide fax service in standard mode. When SBC cannot reach primary server 5 channels on backup server are ready to answer call and receive fax. Failure of any on server causes registering all 15 channels on working node.

7 CAC (Call Admission Control) Configuration for XMedius Fax Server

CAC can be managed on XMedius Fax based on available license channels (by default 2 channels available– it means maximum 2 faxes in the same time).

Updating the License							
	<p>When installing XMedius Fax on a new system, a default license is available for development purposes. This default license enables one instance of each component (T38 and fax boards) in evaluation mode and up to 10 sites. The default license allows for 100 users and applies a watermark on every fax page.</p>						
Step 1	<p>In the administration interface, go to General Settings > Properties. The General Settings Properties dialog appears. Select the License tab.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;">Parameter Name</th> <th style="width: 20%;">Parameter Value</th> </tr> </thead> <tbody> <tr> <td> <p>➊ Click Update button to provide new license. Navigate to the location where the new license file can be found. Click Open. Click OK in the License Updated confirmation dialog.</p> </td> <td style="text-align: center;">➊ N/A</td> </tr> <tr> <td> <p>➋ Click View button to verify license. The content of the license file displays in your default text editor.</p> </td> <td style="text-align: center;">➋ N/A</td> </tr> </tbody> </table>	Parameter Name	Parameter Value	<p>➊ Click Update button to provide new license. Navigate to the location where the new license file can be found. Click Open. Click OK in the License Updated confirmation dialog.</p>	➊ N/A	<p>➋ Click View button to verify license. The content of the license file displays in your default text editor.</p>	➋ N/A
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8 Traffic separation (T.38 & Data) on XMedius Fax Server

Traffic isolation for XMedius Fax Server based on 2 network interfaces (NICs). It is solution recommended by vendor.

- **Primary interface called „T38”** is dedicated for „fax” traffic: RTP/T.38/SIP.
- **Secondary interface called „DATA”** is dedicated for „all” data traffic from/to XMedius Fax Server, example: RDP, SMB, HTTP/S, etc.

All traffic is send via DATA NIC „corporate network”. Static route needs to be defined (**route add 0.0.0.0 mask 0.0.0.0 126.17.45.254**).

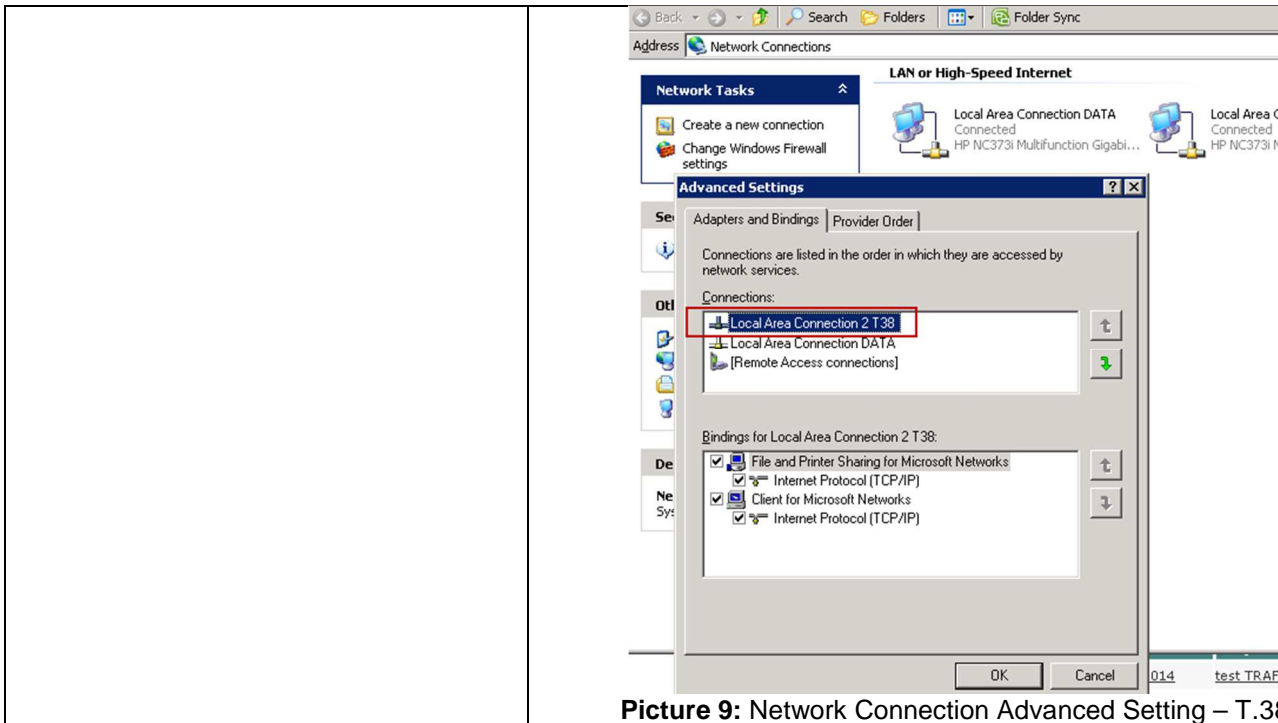
CLI command: **route add 0.0.0.0 mask 0.0.0.0 IP_Corporate_DFGW**

Fax traffic is send via FAX NIC. Dedicated static route to Orange network need to be defined, example route to Orange SBC: (**route add 172.22.246.0 mask 255.255.255.0 6.3.58.254**)

CLI command: **route add IP_OrangeSBC mask Mask_OrangeSBC XMF Network_DFGW**

It is possible to use **batch script** or **GPO** to distribute static routes for **FAX/DATA NIC** on Windows Server 2003/2003/2003 R2/2008/2008 R2. It is also possible to add permanent routes using CLI.

Updating the License					
Step 1	<p>In the administration interface, go to General Settings > Properties. The General Settings Properties dialog appears. Select the License</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Parameter Name</th> <th style="width: 50%;">Parameter Value</th> </tr> </thead> <tbody> <tr> <td> <ol style="list-style-type: none"> 1 Run nca.cpl (Network connections) and from menu select Advance → Advanced Settings. Set T38 NIC on first position in Connection list. 2 Add static routes for T.38 and DATA traffic isolation. <p>route -p add destination mask netmask gatewayaddress</p> <p>The -p (permanent) switch makes it permanent.</p> </td> <td> <ol style="list-style-type: none"> 1 N/A 2 Example of script routes: route /f <i>rem Default route --</i> <i>Coroporate Network</i> route add 0.0.0.0 m 126.17.45.254 <i>rem Routes to Oran</i> <i>example SBC</i> route add 172.22.2 255.255.255.0 6.3.5 </td> </tr> </tbody> </table>	Parameter Name	Parameter Value	<ol style="list-style-type: none"> 1 Run nca.cpl (Network connections) and from menu select Advance → Advanced Settings. Set T38 NIC on first position in Connection list. 2 Add static routes for T.38 and DATA traffic isolation. <p>route -p add destination mask netmask gatewayaddress</p> <p>The -p (permanent) switch makes it permanent.</p>	<ol style="list-style-type: none"> 1 N/A 2 Example of script routes: route /f <i>rem Default route --</i> <i>Coroporate Network</i> route add 0.0.0.0 m 126.17.45.254 <i>rem Routes to Oran</i> <i>example SBC</i> route add 172.22.2 255.255.255.0 6.3.5
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Picture 9: Network Connection Advanced Setting – T.38