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Introduction

ActiveFactory maintains communication with the ArchestrA License Server in order to verify its license status. The default communication uses TCP/IP ports 27000 through 27009:

- 27000 is the default port for communicating with the ArchestrA License Server. This port is also used to discover whether a specific port is used.
- When no other specific port is configured, ActiveFactory uses any port between 27000-09.
- When a specific port is discovered, it attempts to use that port.

The default ports are all added to the local Windows Firewall Exceptions list when you install ActiveFactory (Figure 1 below).

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ArchestrA Licen	se Server TCP:2700	5	
ArchestrA Licen	se Server TCP:2700	6	
ArchestrA Licen	se Server TCP:2700	7	
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ArchestrA Licen	se Server TCP:2700	9	-
Add Program	Add Port	Edit	Delete
Display a notifical	tion when Windows I	Firewall blocks a pr	ogram

FIGURE 1: WINDOWS FIREWALL EXCEPTIONS LIST

When no firewall exists between the Server and ActiveFactory nodes, and no specific port is necessary, communication between the nodes occurs on any of these ports and no extra configuration is necessary.

When you have a hardware or software firewall installed between the ArchestrA License Server node (with ArchestrAServer.lic), and an ActiveFactory client node application such as Trend or Query, this communication can be blocked. The client then switches into demo mode because the ActiveFactory application cannot access the License Server through the other firewall (Figure 2 below).



FIGURE 2: ACTIVEFACTORY TREND FALLS INTO DEMO MODE

You can test this easily by disabling the external firewall. If this problem is then resolved, complete the following steps in order to restore and maintain ActiveFactory's communication through the firewall to the ArchestrA License Server.

You can also follow the instructions in *Tech Note* 577 Tips for Resolving Demo Mode with ActiveFactory and WIS to make sure you don't have any other issues with the ActiveFactory licensing.

This *Tech Note* explains port configuration in the scenario where you have firewall(s) between the ArchestrA License Server and ActiveFactory Application nodes.

Application Versions

- ActiveFatory v9.2 or later
- Historian v9.0 Patch 02 or later

• Windows 2003 Operating System

Port Configuration Options

If you have firewalls other than the Windows firewall, you need to make sure these TCP/IP listening ports (from 27000 to 27009) are also opened on *each* of the firewalls between the ArchestrA license server and the ActiveFactory client application. The same is true if you designate a port outside the default range, but you must also add that port to your Windows Firewall Exception list on the license server machine.

Note: Windows or hardware Firewall configuration instructions are outside the scope of this Tech Note.

You can specify a TCP/IP port using the ArchestrAServer.lic file on the server. The following options are possible:

- Specify a port number between 27000 and 27009.
- Specify a port number other than 27000-27009, outside the default port range.

When a port outside the default range is necessary, and no external firewall exists, you must configure the port *only* at the Server, and add it to the local firewall's exception lists on the license server machine.

Configuring a Port

You can designate a specific port for the license server to use for the license request by adding the element **PORT**=####, where #### is the port number you want ActiveFactory to use in order to communicate with the license server.

Note: The following example shows a port number of 7777. In this scenario, you must complete the following steps, *and* add Port 7777 to both your local and external firewall exception lists. In the case where the port number is one of the default port numbers (27000-27009), you only configure the external firewall exception(s) list.

Figure 3 (below) shows Port 7777 added to the ArchestrAServer.lic file: VENDOR Wonderware aaLicServer.exe PORT=7777.

ArchestrAServer.lic - Notepad	
Eile Edit Format View Help	
<pre>#aaserver: SERVER localhost ANY VENDOR Wonderware aaLicServer.exe PORT=7777 #aacomponent:aaInformation Server Portal Information Server Portal P/N 09-0023 #Serial Number 882461 ActiveFactory_RWS_svrDev SVoyager_Portal_svrDev ActiveFactory_svrDev ArchestrA_GracePeriod SVoy ger_svrDev ActiveFa ctory_Web_svrDev ActiveFactory_Pro_Web_svrDev MEAClient_Sessions_svrDev QI_Analyst_SVoy_User_svrDev MI Client_Portal_svrDe v QI_Analyst_SuiteVoyager_svrDev</pre>	ya EA
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FIGURE 3: ADDING PORT NUMBER TO ARCHESTRASERVER.LIC FILE

On the License Server Node

- 1. Open the ArchestrAServer.lic file (using Notepad or other editor) and modify it to include your port number (Figure 3 above).
- 2. Save and close the file.
- 3. Start the ArchestrA License Manager, and then navigate to the Server node under the License Files node.
- 4. Right-click the Server node and click Re-read License File.



FIGURE 4: RE-READ LICENSE FILE

- 5. Right-click Server, and click Stop License Server.
- 6. Then right-click the Server node again and click Start Licence Server so that the change can takes effect.

On the ActiveFactory Client Node

- 1. On the machine running the ActiveFactory client application on the other side of the firewall, start the ArchestrA License Manager and rightclick the **Server** name under the <Machine Name>/License Servers.
- 2. Click **Delete** to remove the remote license server name (Figure 5 below).

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Ready						NUM

FIGURE 5: DELETE THE SERVER NODE

- 3. Next, right-click on your local computer node (BRIANN1 in this example), and click Add License Server (Figure 6 below).
- 4. Type the ArchestrA License Server's computer name in the License Server Computer field and click OK.



FIGURE 6: ADDING LICENSE SERVER

d License Server to Licens Please specify the name of the	e Search Path computer running the ArchestrA License Server	(
License Server <u>C</u> omputer:	briann5 est □ Use Specific Server Port: ☑ Test Server on Close	
	OK Cancel	

FIGURE 7: RE-TYPE LICENSE SERVER COMPUTER NAME

The ActiveFactory client application should now connect to the license server via the designated TCP port (port 7777 in this example). The connection obtains the license and allows the application to run using the specified port. In this example, Trend can now display Wonderware Historian data. Figure 7 (below) shows the **License Status** window and the trend.

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FIGURE 8: ACTIVEFACTORY LICENSE ACQUIRED

Alternate Method

Instead of modifying the License file using Step 1 above, you can use the ArchestrA License Manager on the ActiveFactory client to specify one of the ports from the Firewall Exception list.

- 1. Open the ArchestrA License Manager on the ActiveFactory client node.
- 2. Click the **Use Specific Server Port** option and type a port that is excluded from the Firewall Exception list as shown in Figure 1 above. In this example, port 27000 is used (Figure 9 below):

Add License Server to Licens	se Search Path	
Please specify the name of the	e computer running the ArchestrA License Server	
License Server <u>C</u> omputer:	briann5 <u>T</u> est ✓ Use Specific Server Port: 27000 ✓ Test Server on Close	
	OK Cancel	

FIGURE 9: USE SPECIFIC SERVER PORT OPTION

More Information

A third-party utility called **Advanced Port Scanner** was used during testing in order to verify open ports on the computer running ArchestrA License Server. The utility shows both ports 7777 and 27000 are open (Figure 10 below).

🔊 Advan	ced Port Scanner v1.3	
Eile Optio	ons <u>H</u> elp	
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	RADMIN [®] remote control software fast. secure. affordable.	
Select IP:	10 . 2 . 81 . 140 Use range Scan	
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-	135 Open (loc-srv)	
	- 🕒 139 Open (netbios-ssn)	
-	- 🕒 445 Open (microsoft-ds)	
	- • 1036 Open	
	1025 Open (Microsoft ADL)	
	1080 Open (socks)	
	1433 Open (ms-sql-s)	
1		
	5026 Open	
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-		
	27000 Open	
÷	Closed ports (28978)	
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Scan comp	ete	

FIGURE 10: OPEN PORTS ON ARCHESTRA LICENSE SERVER NODE

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