Tech Note 557 Enabling Cross-Machine Distributed Transactions Between Factelligence Nodes

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Introduction

This *Tech Note* describes a communications issue that results when installing Factelligence on two separate machines. This implementation consists of two machines:

- A Database machine with the Factelligence Database and SQL Server.
- A **Middleware** machine with the rest of the Factelligence components installed.

The two machines cannot communicate with each other because a set of dlls can be missing on the Middleware machine. The Factelligence installation does not provide the required set of redistributable Microsoft dlls. The dlls are provided only by the SQL Server installation, so in this implementation, at least one machine can be missing the dlls.

Note: Please read the Readme file that ships with Factelligence for other known issues.

Application Versions

- Factelligence 3.4
- Windows 2003 Server SP1
- Wondows 2003 Server R2 SP1
- Microsoft SQL Server 2005

Note: This issue will be resolved in the next Factelligence release.

Restoring the Missing DLLs

Download the **Microsoft Visual C++ 2005 Redistributable Package (x86)** executable from Microsoft to the Middleware node.

- 1. Click here to get the dlls.
- 2. Run the package on the **Middleware** node. Running the package puts the necessary dlls into the **SYSTEM32** directory.
- 3. Reboot the system for the change to take full effect.

Enabling Cross-Machine Distributed Transactions (via MSDTC)

The following steps are required on the Middleware machine in order for the Middleware to work with the Factelligence database on another machine.

Configure the Windows Firewall on the Middleware Machine

1. Open Control Panel, then open Windows Firewall.

🐉 Windows Firewall

General Exceptions Advanced



Your PC is not protected: turn on Windows Firewall

Windows Firewall helps protect your computer by preventing unauthorized users from gaining access to your computer through the Internet or a network.





This setting blocks all outside sources from connecting to this computer, with the exception of those selected on the Exceptions tab.

Don't allow exceptions

Select this when you connect to public networks in less secure locations, such as airports. You will not be notified when Windows Firewall blocks programs. Selections on the Exceptions tab will be ignored.

0 <u>0</u>ff

Avoid using this setting. Turning off Windows Firewall may make this computer more vulnerable to viruses and intruders.

Windows Firewall is using your domain settings.

For information, see the Microsoft Web site.



X

Figure 1: Windows Firewall Configuraton

2. Click the Exceptions tab and click Add Program.



Figure 2: Add Program Exception

3. Click Browse and locate C:\Windows\system32\msdtc.exe.



Figure 3: msdtc.exe Location

- 4. Click **Open**. The program is ready to be added.
- 5. Click **OK** to add it, then **OK** again to finish (Figure 4, below).

Add a Program	X
To allow communications with a program by adding it to the Exceptions list select the program, or click Browse to search for one that is not listed.	
Programs:	
Factelligence Configuration Editor	
Factelligence Database Setup	
📉 HistData	
Market Mistorical data	
internet Explorer	
1 InTouch	
🐖 License Utility	
Macrovision LMTOOLS	
Macrovision Tools Command Prompt	
Messenger	
	-
Path: C:\WINDOWS\system32\msdtc.exe <u>B</u> rowse	
Change scope OK Cancel	

Figure 4: Added Program in Exceptions List

Modify the Component Services on Both Machines

Next, you must modify the **Component Services** settings both the **Database** and **Factelligence** machines.

1. From Control Panel select Administrative Tools, then Component Services.



Figure 5: Component Services Main Window

- 2. Expand the **Component Services** item.
- 3. Expand Computers and select My Computer.
- 4. Right-click My Computer and select Properties.



Figure 6: My Computer Component Services

The **Properties** window appears.

My Computer Properties			<u>? ×</u>
Default Protocols General	MSDTC Options	COM Default P	l Security
Name: MONK			
Description:			
	ОК	Cancel	Apply

Figure 7: My Computer Component Properties Window

- 5. Click the **MSDTC** tab.
- 6. Click Security Configuration.

Security Configuration	? X
Security Settings Image: Network DTC Access Client and Administration Image: Allow Remote Clients Image: Allow Remote Administration	
Transaction Manager Communication Image: Allow Inbound Image: Mutual Authentication Required	
Incoming Caller Authentication Required O No Authentication Required Enable Transaction Internet Protocol (TIP) Transactions	
Enable 🔀 Transactions	
DTC Logon Account Account: NT Authority\NetworkService Browse	
Pa <u>s</u> sword: Co <u>n</u> firm password:	
OK Cancel	

Figure 8: Default Security Configuration

- 7. Click each of the following options (Figure 9 below):
- Network DTC Access
- Allow Remote Clients
- Allow Remote Administration

- Allow Inbound
- Allow Outbound
- No Authentication Required
- Enable XA Transactions

Security Configuration	? ×
Security Settings ✓ Network <u>D</u> TC Access ✓ Client and Administration	
Allow Remote Clients Allow Remote Administration	
Transaction Manager Communication Image: Allow Inbound Image: Allow Outbound	
© Mutual Authentication Required	
C Incoming Caller Authentication Required	
INO Authentication Required Enable Transaction Internet Protocol (TIP) Transactions	
DTC Logon Account Account: NT Authority\NetworkService Browse	
Pa <u>s</u> sword:	
Co <u>n</u> firm password:	
OK Cancel	

Figure 9: Security Configuration

8. Click **OK** to save and close the **Security Configuration** window, then close the **Component Services** window.

No Authentication Required Option Details

The No Authentication Required Option

No Authentication Required option enables operating system compatibility between earlier versions of the Windows operating system. When this option is enabled, network communication between Distributed Transaction Coordinator services can fall back to non-authenticated communication or to non-encrypted communication if a secure communication channel cannot be established.

Note: Wonderware recommends using this setting if the remote Distributed Transaction Coordinator service is running on a computer that is running Microsoft Windows 2000, or on a computer that is running a version of Windows XP earlier than Windows XP SP2.

You can also use No Authentication Required to resolve a situation where the Distributed Transaction Coordinator services are running on computers that are in domains that do not have a trust relationship established. Additionally, you can use No Authentication Required to resolve a situation where the Distributed Transaction Coordinator services are running on computers that are members of a workgroup.

No Authentication Required affects the following registry entries:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSDTC
Value name: AllowOnlySecureRpcCalls
Value type: REG_DWORD
Value data: 0
Value name: FallbackToUnsecureRPCIfNecessary
Value type: REG_DWORD
Value data: 0
Value name: TurnOffRpcSecurity
Value type: REG_DWORD
Value data: 1
```

Note: On a server cluster, these registry entries are located in the Shared Cluster registry.

J. Godfrey

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