

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
- Windows 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**.

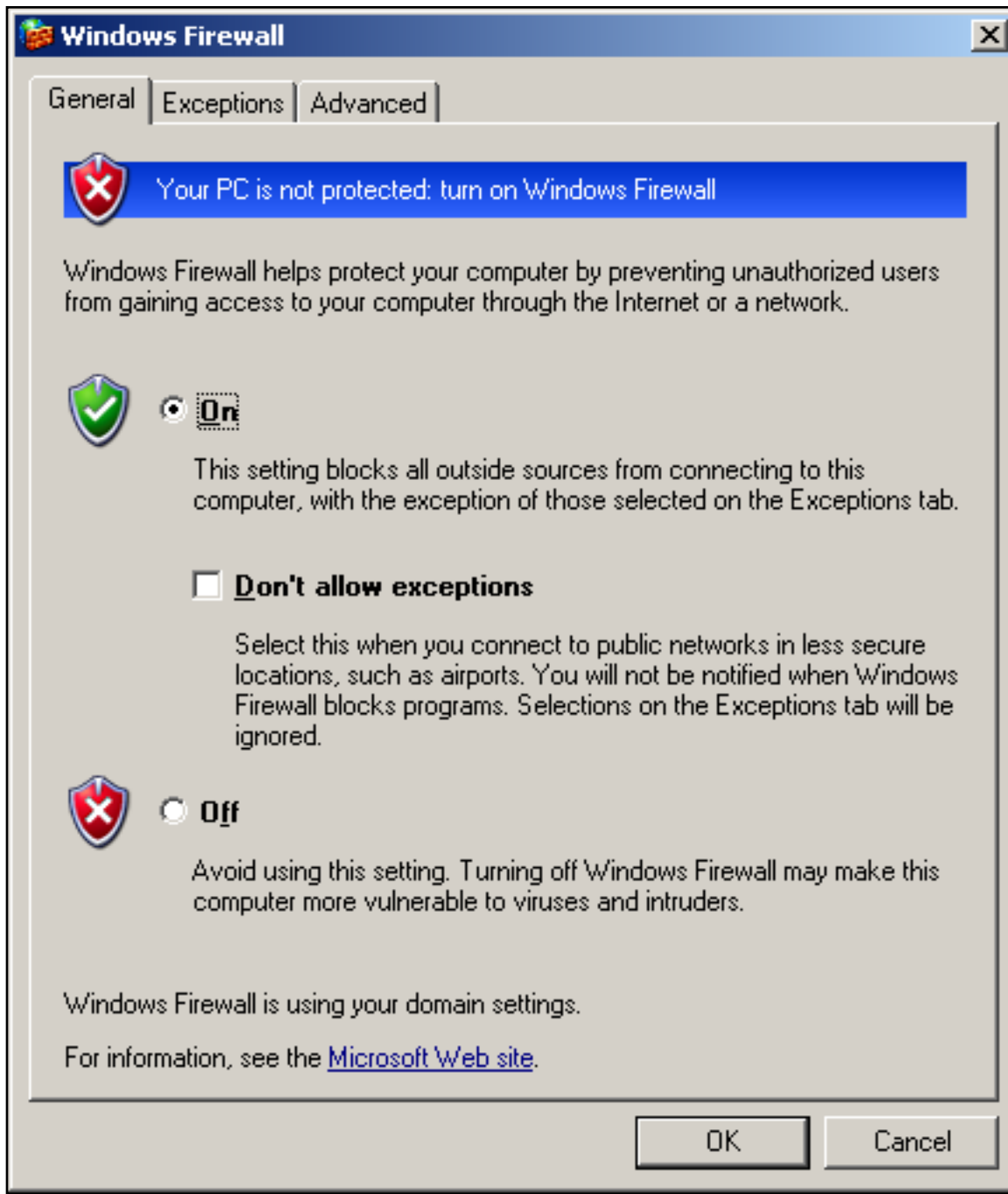


Figure 1: Windows Firewall Configuraton

2. Click the **Exceptions** tab and click **Add Program**.

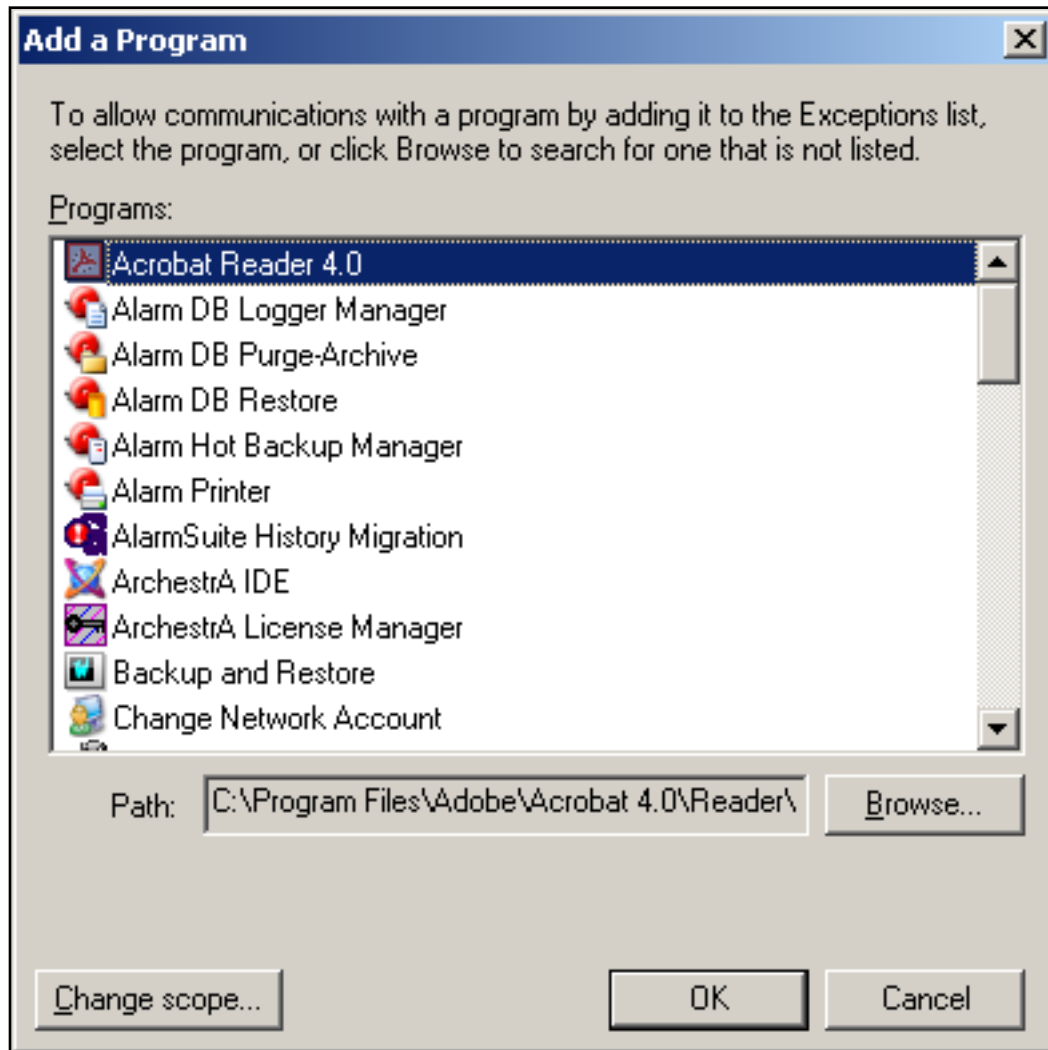


Figure 2: Add Program Exception

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

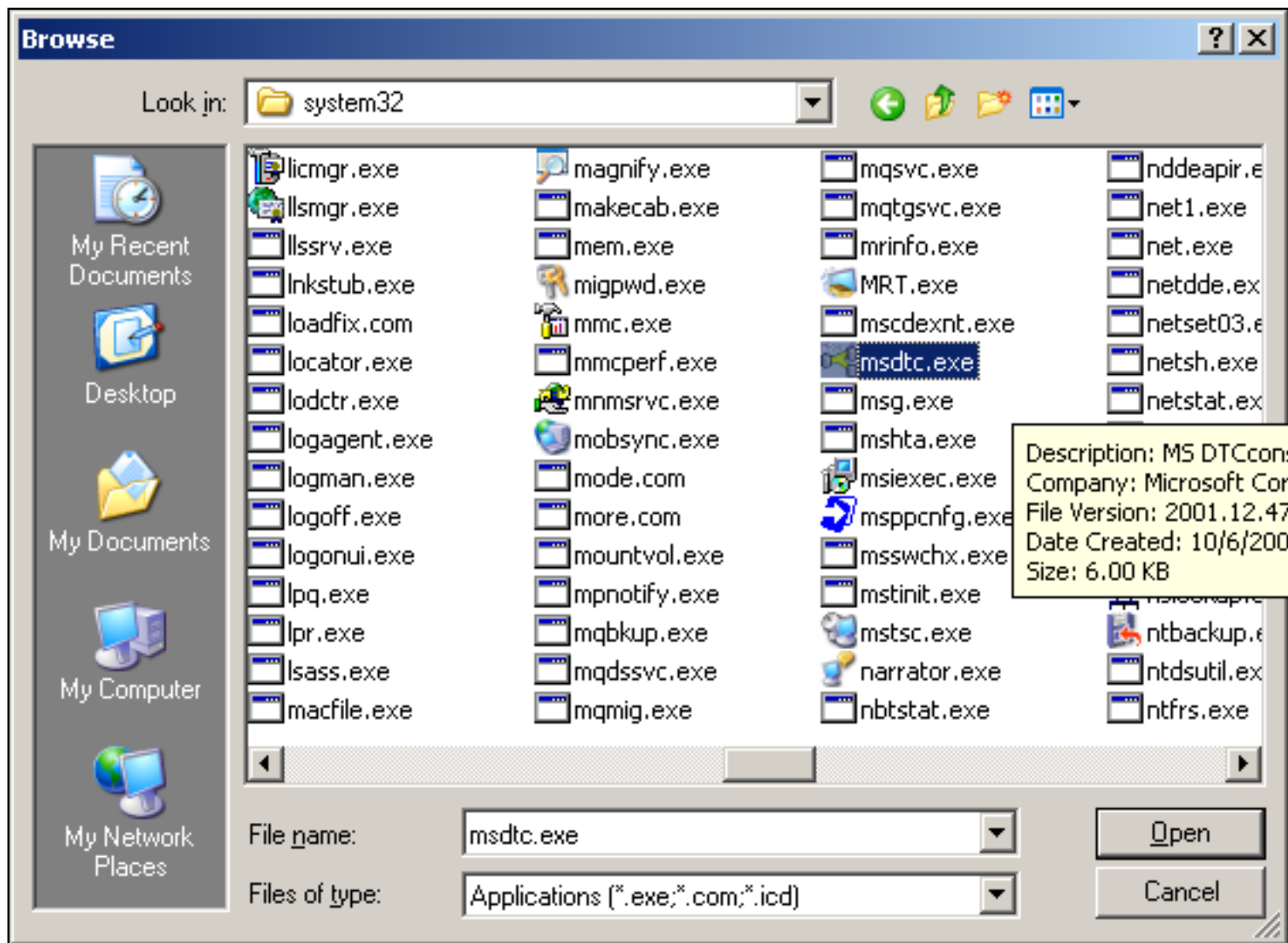


Figure 3: msdtc.exe Location

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

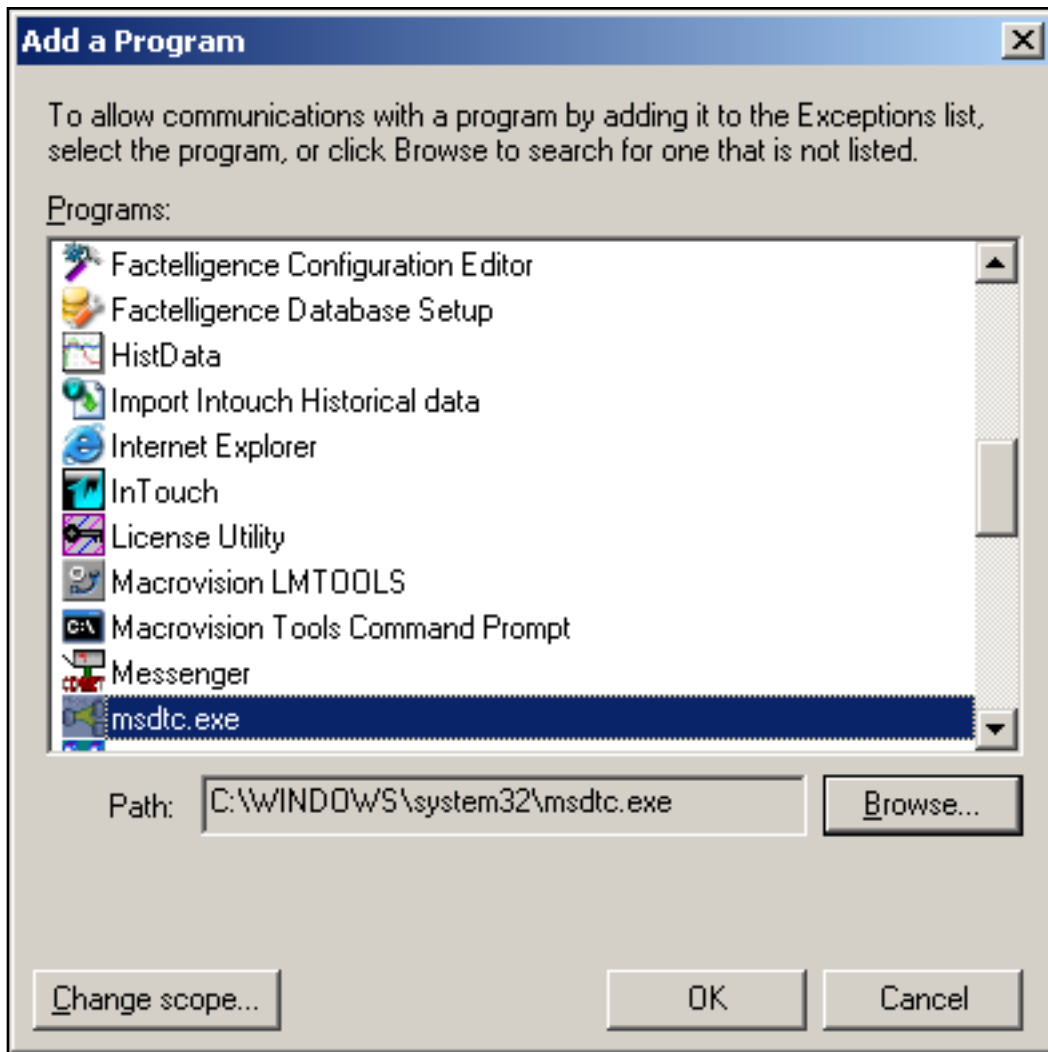


Figure 4: Added Program in Exceptions List

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**.

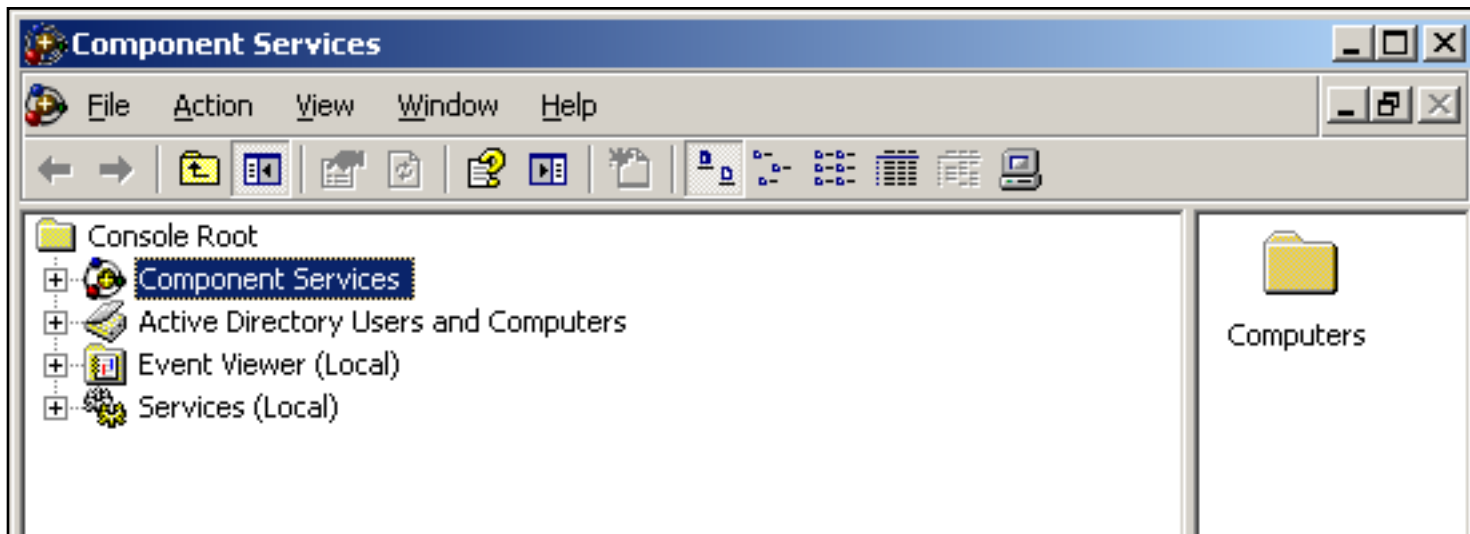


Figure 5: Component Services Main Window

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

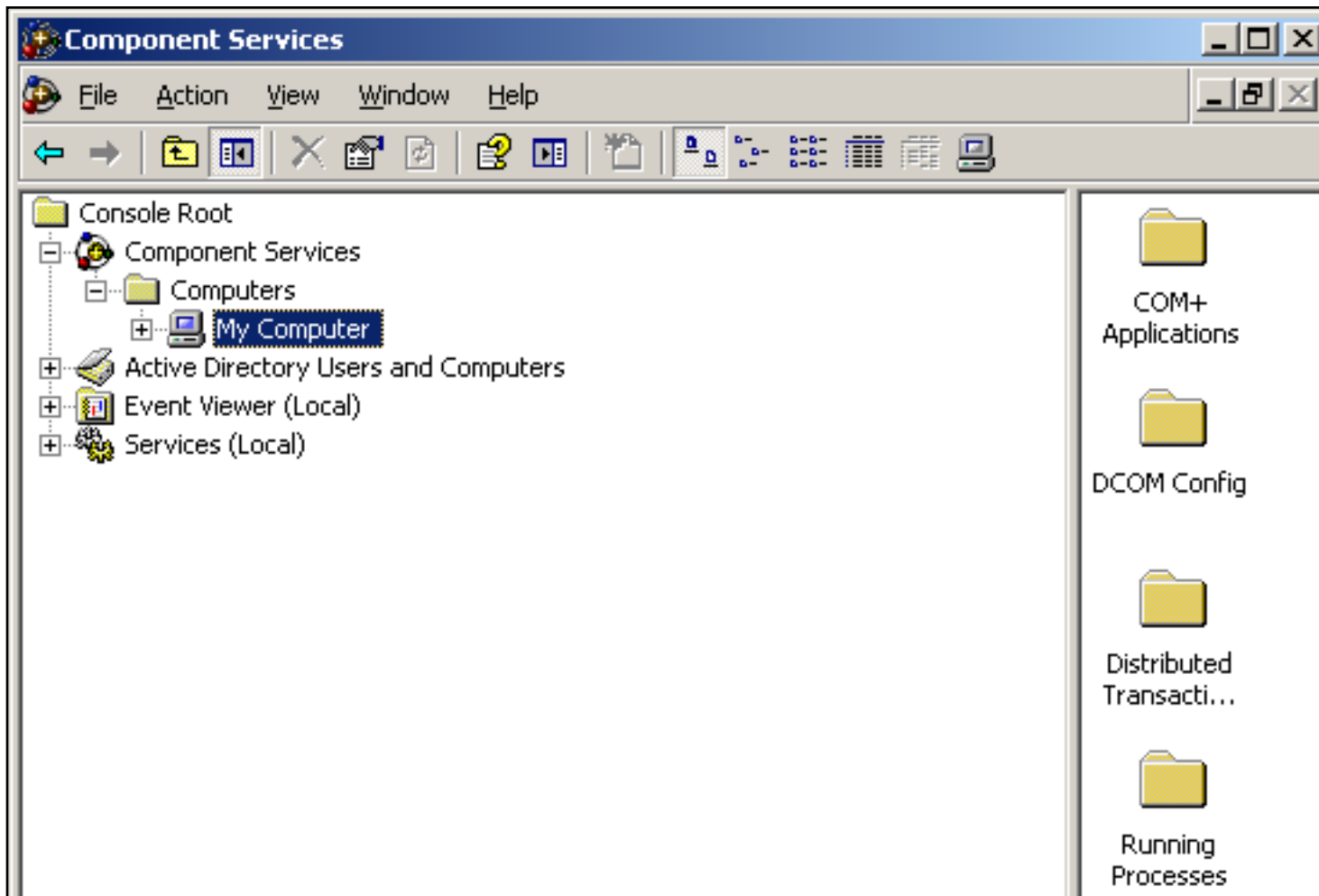


Figure 6: My Computer Component Services

The **Properties** window appears.

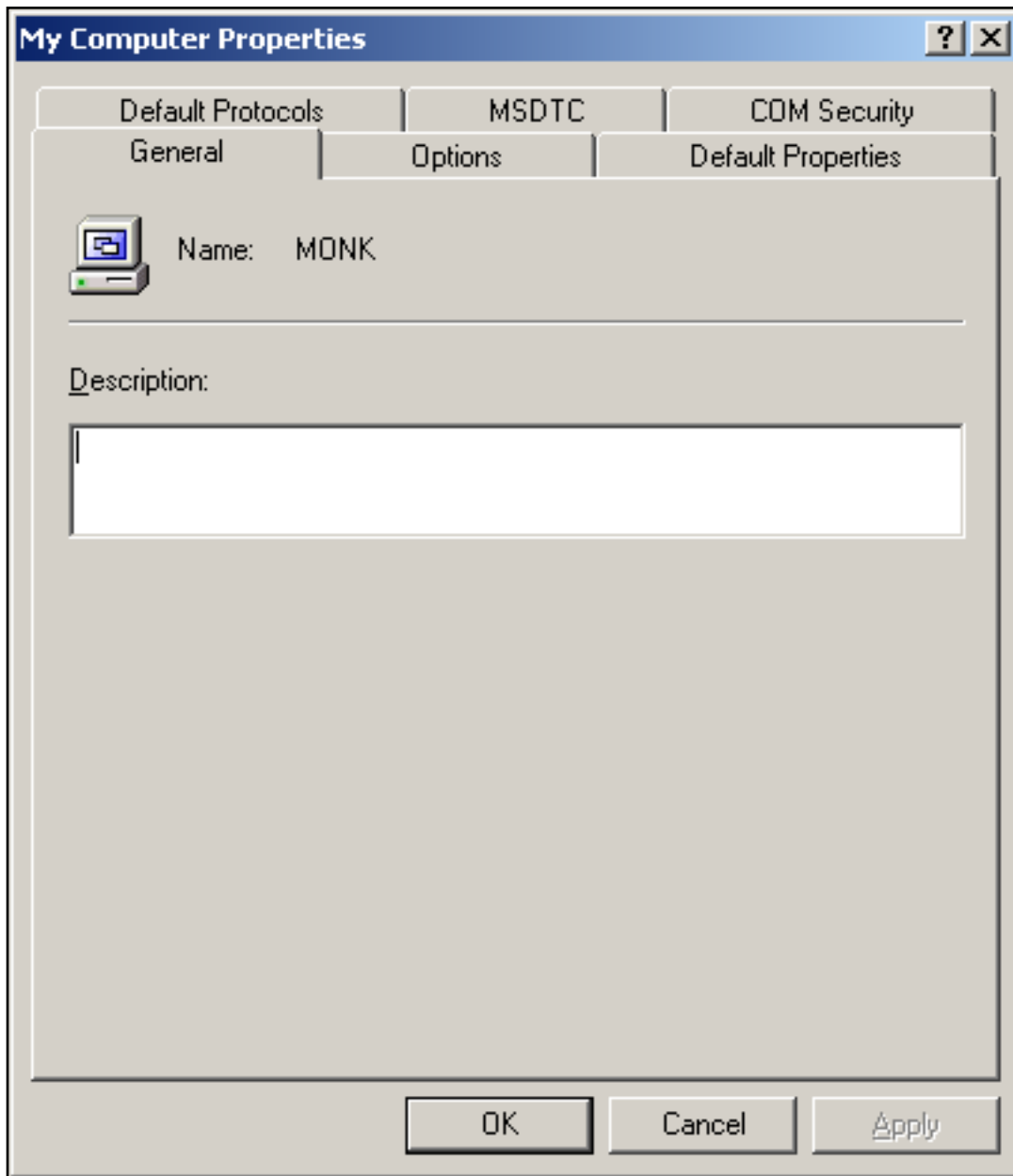


Figure 7: My Computer Component Properties Window

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

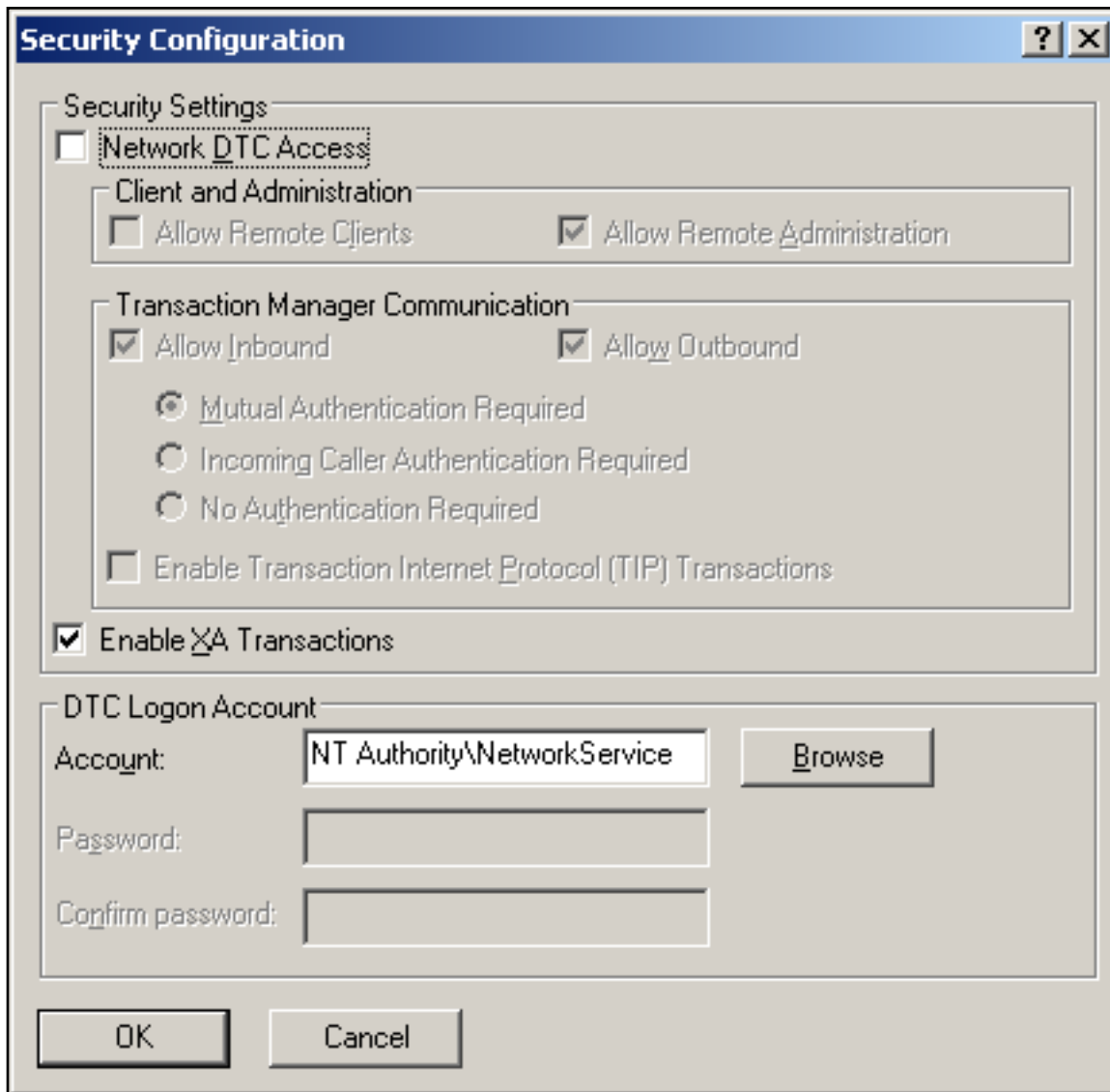


Figure 8: Default Security Configuration

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

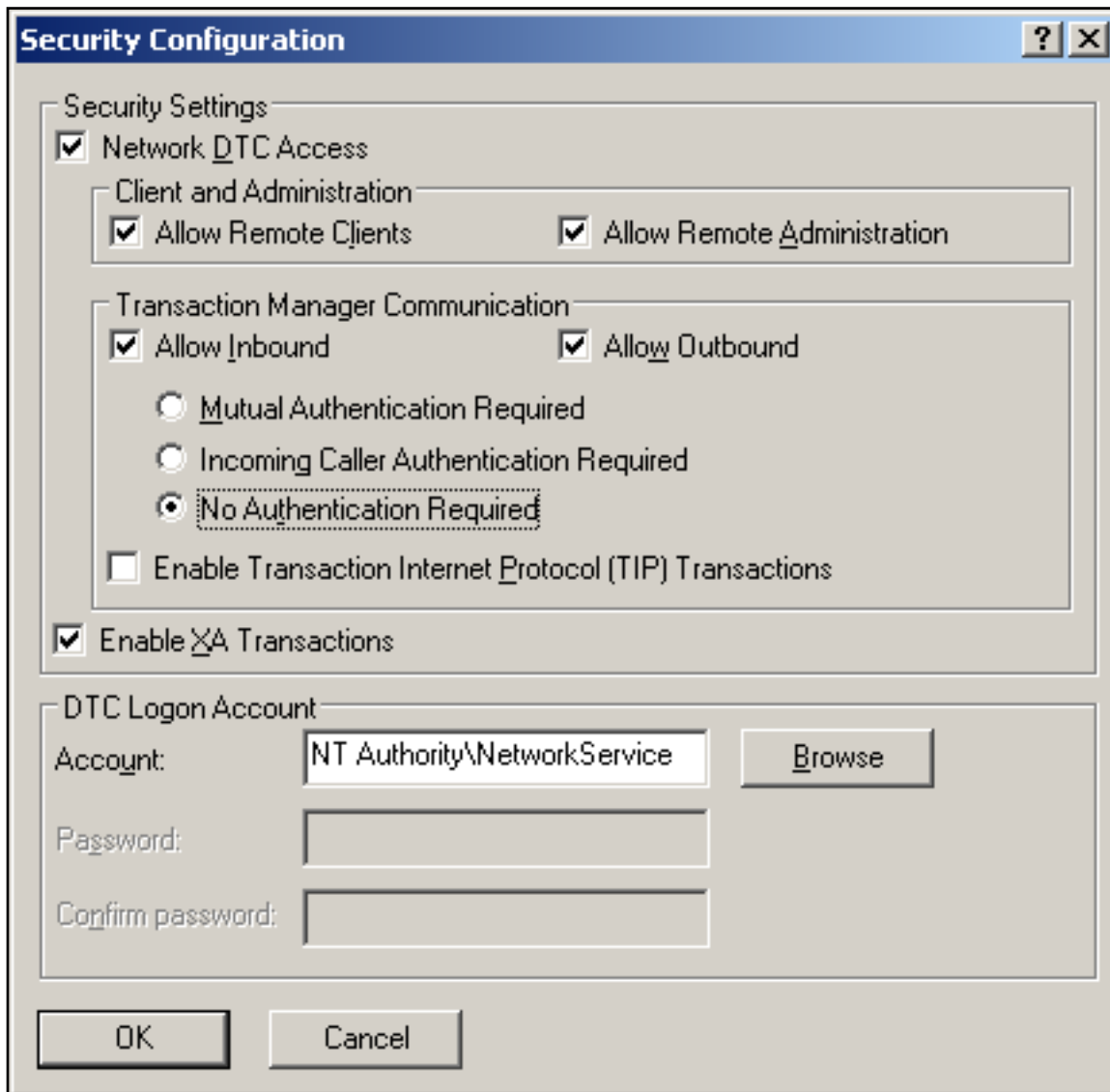


Figure 9: Security Configuration

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.

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