

# FOCUS ON REAL DESIGN AUTOMATE THE REST

## **Configuring the Windows Firewall to allow SQL server access**

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CUSTOMTOOLS



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## **SQL Server Instance**

When using CUSTOMTOOLS SQL Server database a named instance called `<server>\CUSTOMTOOLS` is installed. In that case the TCP port is a dynamic port determined at the time the Database Engine starts.

By default, named instances use dynamic ports. That means that every time that the Database Engine starts, it identifies an available port and uses that port number. If the named instance is the only instance of the Database Engine installed, it will probably use TCP port 1433. If other instances of the Database Engine are installed, it will probably use a different TCP port.

Because the port selected might change every time that the Database Engine is started, it is difficult to configure the firewall to enable access to the correct port number. Therefore, if a firewall is used, we recommend reconfiguring the Database Engine to use the same port number every time. This is called a fixed port or a static port. For more information, see [Configuring a Fixed Port](#).

## **How to connect dynamic ports**

The SQL Server Browser service listens for incoming connections to a named instance and provides the client the TCP port number that corresponds to that named instance. Normally the SQL Server Browser service is started whenever named instances of the Database Engine are used. The SQL Server Browser service does not have to be started if the client is configured to connect to the specific port of the named instance. SQL Server Browser uses UDP port 1434 which needs to be opened in firewall.

An alternative to configuring a named instance to listen on a fixed port is to create an exception in the firewall for a SQL Server program such as `sqlservr.exe` (for the Database Engine). This can be convenient, but the port number will not appear in the Local Port column of the Inbound Rules page when you are using the Windows Firewall with Advanced Security



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MMC snap-in. This can make it more difficult to audit which ports are open. Another consideration is that a service pack or cumulative update can change the path to the SQL Server executable which will invalidate the firewall rule.

If you want to explicitly specify a port number to connect you need to specify server name in following format in CUSTOMTOOLS.

`<server>\CUSTOMTOOLS,<port>`

### Configuring a fixed port

1. In SQL Server Configuration Manager, expand **SQL Server Network Configuration**, and then click on the server instance you want to configure.
2. In the right pane, double-click **TCP/IP**.
3. In the **TCP/IP Properties** dialog box, click the **IP Addresses** tab.
4. In the **TCP Port** box of the **IPAll** section, type an available port number. For this tutorial, we will use **49172**.
5. Click **OK** to close the dialog box, and click **OK** to the warning that the service must be restarted.
6. In the left pane, click **SQL Server Services**.
7. In the right pane, right-click the instance of SQL Server, and then click **Restart**. When the Database Engine restarts, it will listen on port **49172**.

#### Note

Port number assignments are managed by the Internet Assigned Numbers Authority and are listed at <http://www.iana.org>. Port numbers should be assigned from numbers 49152 through 65535.

For more information:

[Configuring the Windows Firewall to Allow SQL Server Access](#)

[Configuring a Fixed Port](#)