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Overview

This document is a set of notes for installing the iLab Service Broker on a Windows XP computer with SQL Server Express. This is not a complete installation document, but a set of notes to help the user.

Requirements

You should have the following materials on hand before you begin:

- Windows XP machine already installed
- SQL Server Express downloaded
- .NET 2.0 framework downloaded
- Visual Studio.NET 2005 Professional and Library
- ILabs Service Broker Code zip files (the latest version can be downloaded from <https://wikis.mit.edu/confluence/display/ILAB2/iLab+Downloads>)

Software Configuration

Install IIS

The Internet Information Service (IIS) is not automatically installed with the standard installation of XP. You can install Microsoft's web server, Internet Information Server (IIS) for free from the Windows XP Pro installation CD and configure it to run on your system.

- Place the Windows XP Professional CD-Rom into your CD-Rom Drive
- Open the Control Panel
- Select Add/Remove Programs
- In the left hand column, select Add/Remove Windows Components
- Click on the check box for Internet Information Services (IIS)
- Click Details
- In the Internet Information Services (IIS) window, make sure that the boxes are checked next to Common Files, Documentation, FrontPage 2000 Server Extensions, Internet Information Services Snap-In, SMTP Service and the World Wide Web Service. You do not need the File Transfer Protocol (FTP) Service.
- Click OK
- Install IIS

Install .NET 2.0 framework

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The both the SQL server Express and the Interactive iLabs Architecture need the .NET 2.0 framework to be installed. This is not installed when you installed Windows XP.

Download the Microsoft .NET framework from <http://www.microsoft.com/downloads/> there should be a link to the .NET Framework Version 2.0 Redistributable Package (x86).

Once the dotnetfx.exe file is downloaded, double click on the file to install it.

Install SQL Server Express

Download the Microsoft SQL Server 2005 Express from <http://www.microsoft.com/sql/editions/express/default.mspx>. You do not want the Visual Studio 2008 version of SQL Express.

Before you can install the SQL Server Express, make sure the .NET 2.0 Framework is installed. Depending on your installation of Windows XP, you may also need to download and install the Windows Installer 3.1. A warning message will popup, if the .Net 2.0 framework and the Windows Installer 3.1 are not installed when you run the SQL Express installer.

- Once SQL Express file is downloaded, double click on the file to install it.
- Click Run if the Open File Security Warning window pops up
- Click the check box to accept the licensing terms and conditions
- Click Next
- Click Install
- Click Next
- At the Welcome to the Microsoft SQL Server Installation Wizard window, click Next
- At the System Compatibility Check, click Next
- In the Registration Information window, enter the name and company and unclick the Hide advanced configuration options box
- Click Next
- Right-click on both items and select Entire feature to be installed on local hard drive option
- Click Next
- Leave the Named instance as SQLEXPRESS
- Click Next

- In the Service Account window, use the built-in system account Network service
- Click Next
- Select Windows Authentication Mode and click Next
- Leave the Collation Setting as is and click Next
- Leave the Enable User Instances box checked and click Next
- Uncheck both Error and Usage Report Setting boxes and click Next
- In the Install window, click Install
- When the Setup window is finished, click Next
- Click Finish

Install SQL Server Management Studio

You will also need to download and install the SQL Server Management Studio to be able to work with your databases. The best way to find and download the SQL Server Management Studio is to search the Microsoft site.

Once the SQL Server Management Studio is installed, run it and make sure you can connect to the SQL Sever Express database The Enterprise Manager is the best, but the SQL Server Management Studio works fine.

Configure SQL Server for remote access

SQL Server Express 2005 is not automatically configured for remote access during installation. Enabling remote access involves a couple of steps and you should reboot after completion.

- Enable the TCP/IP protocol using the Surface Area Configuration Utility
 - The Surface Area Configuration Utility was installed with SQL Express
 - Click on the Surface Area Configuration for Services and Connections link at the bottom of the utility window.
 - Expand SQLEXPRESS
 - Expand Database Engine
 - Click on Remote Connections
 - Select Using both TCP/IP and named pipes
 - Click Apply

- Click OK
 - Close the Surface Area Configuration Utility
- Make sure the TCP/IP protocol is enabled in the SQL Server Configuration Utility
 - Open the SQL Server Configuration Utility
 - Expand SQL Server 2005 Network Configuration
 - Click on Protocols for SQLEXPRESS
 - In the right pane, select Named Pipes
 - Right-click on Named Pipes and select Properties from the pull-down list
 - Make sure that it is enabled.
 - Next select TCP/IP
 - Right-click on TCP/IP Pipes and select Properties from the pull-down list
 - Make sure that it is enabled.
 - In the Properties window, click on the IP Addresses tab
 - Make sure that the IP address and 127.0.0.1 are both active and enabled.
- Make sure the SQL Server browser is started.
 - Also in the SQL Server Configuration Utility
 - Click on the SQL Server 2005 Services
 - In the right pane, select SQL Server Browser
 - Right-click on SQL Server Browser and select Properties from the pull-down list
 - In the Service tab, set the Start Mode to Automatic
 - In the Log On Tab, Start the service by clicking on the Start button.
 - Click on Apply
 - Click on OK
- Make sure SQL Server and SQL Server Browser are exempted by the firewall on the server machine. This is done by putting sqlservr.exe and sqlbrowser.exe as an exception in the windows firewall.
- You should reboot the machine after making the changes.

Add Security Login

You will need to add a login in the security section of the SQL Server Management Studio

- Right-click on Logins and select New Login
- Click Search in the Login creation window
- In the Select User or Group window, enter ASPNET and select the Check Names button you should get a user back with your machineName\ASPNET
- Click OK to return to the login window with the username already entered
- Click OK to create the user

Service Broker Configuration

Loading Database Tables

You will need to follow 'METHOD 1: Using the SQL Query Analyzer' from the Interactive iLab Bootstrapping and Time Of Day Test Lab Configuration Guide. The loader scripts described in METHOD 2, do not seem to work.

- Open the SQL Server Management Studio
- Create the database
- Right-click on the database name and select New Query
- From the menu, select File -> Open
- Browse to the database scripts folder and select the scripts in the order listed in the Interactive iLab Bootstrapping and Time Of Day Test Lab Configuration Guide. This is an annoying process since you have to open each script separately, but it is manageable.
- One gottcha with this process is that if a window pops up asking to reconnect to the database, it will reset the database to Master and you will need to use the pull-down list to select the correct database or else the scripts will install into the wrong database.

Setting Database Ownership

For some reason that I have not yet figured out, you need to give access to the database to both the **AUTHORITY\NETWORK SERVICE** and the **MachineName\ASPNET** users.

- Open the SQL Server Management Studio
- Click on **Logins**
- Right-click on **NT AUTHORITY\NETWORK SERVICE** and select **properties**
- Select User Mappings
- Check the box next to **the database name**
- In the box below, click the box next to **db_owner**
- Click **OK**
- Repeat process for **MachineName\ASPNET**

Updating Web.Config files

Update the database connection variable in the web.config file to use the name you chose when you created the database. For use with SQL Server Express, you will also need to update the source since the (local) connection will probably not work. It should be updated to MACHINENAME\SQLEXPRESS. This does not seem to be true for the standard or developer versions of SQL Server.

Original:

```
<add key="sqlConnection"
value="data source=(local);initial catalog=ilab_ISB;Integrated Security = SSPI" />
```

Updated:

```
<add key="sqlConnection"
value="data source=MACHINENAME\SQLEXPRESS;initial
catalog=ilab_ISB;Integrated Security = SSPI" />
```

Problems under XP

- In the virtual directory properties make sure Default.aspx is in the documents section
- Run the .Net framework-iis installation "aspnet_regiis -I" from the command prompt (C:\WINDOWS\Microsoft.NET\Framework)

