Microsoft Health Connection Engine 2.1.1

Deployment Guide

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Microsoft

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# Introduction

This guide describes the platform and installation steps required to deploy the components with the HCE 2.1.1 platform.

The document provides guidance on the recommended hardware required to support the platform, a step of pre-installation steps which prepares this hardware for installation of the components and detailed instructions on how to install and configure each component.

This document should be read in-conjunction with the HCE 2.1.1 – Test Plan and Execution document (available from the location provided in section 1.1 as this test document provides test cases to confirm the installation and configuration of each component.

## References

This document should be read in conjunction with following documents which provide additional detail about the HCE solution and the functionality covered by the HCE 2.1.1 project.

HCE 2.1.1 – Architecture and Design Guide

HCE 2.1.1 – Adapter Development Guide

## Recommended Platform

The HCE solution can be deployed in a variety of configurations and the architecture and design supports the installation of each component on separate servers if required.

With HCE 2.1.1, deployment has been tested with all components deployed on a single server and this deployment guide assumes that the components will be deployed in this way.

The following tables provide guidelines about the resources required in a single server deployment and the Microsoft products which should be installed within the environment before deployment.

Note:

* HCE 2.1.1 can be deployed on a virtual machine image running under Virtual Server 2005 R2
* No formal load or performance testing has been completed on the solution, but it is understood that the recommended platform will provide acceptable performance for the use of HCE for demonstration purposes.

|  |  |
| --- | --- |
| Attribute | Value |
| CPU | 3.2 GHz |
| Disk Space | 8 Gb |
| Memory | 1 Gb |
| Network | Available as part of a domain and LAN environment |

|  |
| --- |
| Significant products/components installed within the platform: |
| Microsoft Windows Server 2003 R2 SP1 Enterprise Edition[[1]](#footnote-2) |
| Microsoft Internet Information Services 6.0[[2]](#footnote-3) |
| Microsoft .Net Framework 2.0[[3]](#footnote-4) |
| Microsoft Visual Studio 2005 Professional Edition (used for debugging purposes only)[[4]](#footnote-5) |
| Microsoft SQL Server 2005 SP1 Enterprise Edition[[5]](#footnote-6) with:  SQL Server Notification Services |
| Microsoft BizTalk Server 2006 RTM[[6]](#footnote-7) and prerequisites. |
| Microsoft Update: All High Priority updates applied as at 24/08/2006 for all installed products[[7]](#footnote-8) |

## Assumptions

1. The person completing the deployment is familiar with BizTalk Server 2006 administration tasks such as starting and stopping applications etc.
2. All pre-configuration steps and package installations should be completed while logged into the server as a user with Local Administrator rights, unless otherwise stated
3. All packages will be installed on the same server, installation steps may differ slightly if components are to be installed across a number of servers
4. The deployment outlined in this guide assumes that SSL/TLS and Client/Server Certificates are not being used to secure the transport layer communication between HCE components.
5. This deployment guide does not provide detailed steps to uninstall the HCE components.
6. The variable denoted by <machinename> throughout this document should be substituted for the host name of the machine where the package is being installed or configured.
7. The installation packages for the following components will configure the associated service providers with the following ServiceProviderID’s both within the Service Provider Register database and also within the web.config for each associated Adapter. It is assumed that no other Service Providers are already using these ServiceProviderID’s and that they are available for use within the Service Provider Register.

|  |  |
| --- | --- |
| Component | Service Provider ID |
| Service Provider Register | 101 |
| Service Provider Register Administration | 102 |
| Patient Register | 117 – Patient Register |
| Change Notification Service | (uses the same adapter as the Service Provider Register) |

# Pre-Install Configuration

This section provides details on how the configuration steps which need to be completed before any of the HCE components are installed. The steps in this section assume that the server has been setup with the products specified in section 1.2

## Configure BizTalk Server 2006

In this step we configure the BizTalk installation using the basic configuration. If you have done this already then move to step 2.2.

1. Create a new local user for the BizTalk services.

Username: btsadmin

Password: pass@word1

Groups: BizTalk Application Users

BizTalk Isolated Host Users

EDI Subsystem Users

IIS\_WPG

SQLServer2005NotificationServicesUser$<machine name>

SSO Administrators

Users

1. Open BizTalk Service Configuration application from the Start | Programs | BizTalk Server 2006 menu
2. Click on the Basic Configuration button.
3. Follow the wizard and use the BTSAdmin login for the BizTalk Service credentials where needed.

## Setup the SQL Server Authentication

In this step we ensure that SQL Server supports both the Windows Authentication Mode and SQL Server Authentication Mode. We also set the password for the SA SQL Login for use during further steps.

1. Open SQL Server Management Studio
2. Right-click on the server icon and select Properties
3. Click on Security
4. Select SQL Server and Windows Authentication Mode
5. Click OK.
6. In the Object Explorer tree view, expand the Security and Logins folders.
7. Right click on the SA login and select Properties
8. Enter the password below in both the Password and Confirm Password boxes

Password: pass@word1

1. Click OK
2. Exit SQL Server Management Studio
3. Restart the SQL Server Service

## Verify IIS is configured to use ASP.NET 2.0

In this step we setup the default IIS web site to use ASP.NET 2.0 rather than 1.1 or 1.0.

1. Open IIS Management Console (%SystemRoot%\system32\inetsrv\iis.msc)
2. Expand the tree until Default Web Site is found
3. Right click on the Default Web Site icon and select Properties
4. Select the ASP.NET tab
5. Set that the value to ASP.NET version 2.0.50727
6. Click OK.
7. Restart IIS

## Create a new application pool on IIS called ConnectionEngineAppPool

In this step we create a new Application Pool within IIS. This application pool will be used to provide identity for all HCE components installed on the server.

1. Open IIS Management Console (%SystemRoot%\system32\inetsrv\iis.msc)
2. Right click on Application Pools and select New / Application Pool
3. Enter ConnectionEngineAppPool as the name of the new Application Pool
4. Click Ok.
5. Right click on the newly created ConnectionEngineAppPool and select Properties
6. Select the Identity tab
7. Select the Configurable radio-button and change the username to <machinename>\BTSAdmin and the password to pass@word1
8. Click Ok.
9. Right click on the ConnectionEngineAppPool Application Pool and select Recycle.

## Set the IIS certificate

In this step we ensure that IIS can use a certificate from a certificate server that may not be available:

1. Open a command prompt
2. Navigate to c:\inetpub\adminscripts
3. Execute the following command

cscript adsutil.vbs set w3svc/1/CertCheckMode 1

1. Restart IIS

## Set permissions for the RSA machine key store

In this step we set the modify permission for all users on the RSA machine key store which is needed by the Windows Cryptography API.

1. Navigate to the folder “C:\Documents and Settings\All Users\Application Data\Microsoft\Crypto”
2. Right click on the “RSA” folder and select Sharing and Security from the context menu
3. Click on the Security tab in the RSA Properties dialog displayed
4. Click on “Everyone” in the Groups or user names area of the dialog
5. Click on the check the “Allow” checkbox associated with the Modify permission in the lower half of the dialog
6. Click on the Advanced button
7. Check the “Replace permission entries on all child objects with entries shown here which apply to child objects” checkbox
8. Click OK. Click Yes
9. Click Ok
10. Restart IIS

## Windows SharePoint Services

If you have Windows SharePoint Services installed on your machine, extra configuration steps will be needed in order to successfully install and operate HCE. See Appendix I – Windows SharePoint Service Configuration to execute those extra steps.

# Component Installation

This section provides details on how to install each of the HCE components. The steps in this section assume that the server has been setup with the products specified in section 1.2 and that the pre-installation configuration outlined in section 2 have been completed.

## HCE Routing Services

|  |  |
| --- | --- |
| Description | Installation Package |
| Routing Services Installation package | Microsoft.ConnectionEngine.RoutingServices.msi |
| BTSAdmin Client Certificate Installation package | Microsoft.ConnectionEngine.BTSAdminClientCertificate.msi |

### Pre-requisites

Installation of other HCE components is not required before the HCE Routing Services are deployed.

Although no other components need to be installed the name of the Service Provider Register IIS virtual directory is required so that the Routing Services can be configured to use the Validation web service exposed by the Service Provider Register.

### Package Installation

In this step we import the Routing Services package into BizTalk Server 2006 and also install the package locally on the server

1. Open BizTalk Server Administration application from the Start/Programs/BizTalk Server 2006 menu
2. Navigate to Applications
3. Right-click and select Import/MSI file
4. Browse to the location of the Routing Services installation package
5. Click the Next button 3 times to accept the default settings
6. Click Import. The package is imported into BizTalk Server 2006
7. Check the “Run the application installation wizard to install the application on the local computer” checkbox
8. Click Finish. The standard installation package wizard starts.
9. Click the Next button 3 times to accept the default settings.
10. The package is installed.
11. A message is displayed explaining that the package needs to be registered within BizTalk Server 2006. We have already completed this and so the message can be ignored. Click Next.
12. Click Close
13. Within BizTalk Server Administration, locate the “Microsoft Connection Engine 2.1.1 Routing Services” application and start the application.

In these steps we install the BTSAdmin Client Certificate package which places the certificate files on the server ready for post installation configuration

1. Open the BTSAdmin Client Certificate installation package
2. Click the Next button 3 times to accept the default settings
3. Click Close

### Post Installation Configuration

These steps should be completed after the Routing Service and BTSAdmin Client Certificate installation packages have been successfully installed on the server.

#### Installing the Client Certificate for the BTSAdmin user

In this step we install the example Trusted Root Certificate Authority and Client certificate provided with HCE which are required by BizTalk Server 2006 to run the Routing Services.

Note: Alternate Trusted Root Certificate Authorities and Client certificates can be used during this step if available within your environment.

1. Log on to the server as BTSAdmin using the password available in section 2.1.1
2. Open Internet Explorer
3. Click on Tools | Internet Options
4. Click on the Content tab and then click on the Certificates button
5. Ensure the Personal tab is displayed within the Certificates dialog
6. Click Import… to start the Import Certificate Wizard
7. Click Next
8. Browse to the location C:\Program Files\Microsoft Connection Engine\BTSAdmin Client Certificate and select the file named “Example – BTSAdmin Client Certificate.pfx”. Click Next
9. Provide the password for the BTSAdmin user. Also, if the certificate is a pfx, click the box make keys exportable, if you plan to move the certificate from this server at any time. Click on Next after finished setting up the information on this screen.
10. Confirm that the file will be installed on the Personal Information Store and click on Next
11. Click Finish.
12. Click on the “Trusted Root Certificate Authorities” tab in the Certificates dialog
13. Click Import… to start the Import Certificate Wizard
14. Click Next
15. Browse to the location C:\Program Files\Microsoft Connection Engine\BTSAdmin Client Certificate and select the file named “Example - Trusted Root Authority Certificate.cer”. Click Next
16. Confirm that the file will be installed on the Trusted Root Certificate Authority Store and click on Next
17. Click Finish.
18. Click Yes on the dialog which asks for confirmation that the certificate is to be installed.
19. After the import process is completed, the new certificate can be found listed in the Personal tab of the Certificates dialog. Also, as part of the import process, the Trusted Root Authority Certificate for pftapcfg has been imported into the Trusted Root Certification Authorities.
20. Open the certificate named “Plug-and-Play Infrastructure Client” by double clicking on it
21. Click on the Details tab
22. Navigate to “Thumbprint” Copy the value of the Thumbprint to a file by selecting the thumbprint value and saving it to a file named “BTSAdmin Client Certificate Thumbprint.txt” in a folder on the server.
23. Log off the server

#### Turn off Automatic configuration in IE proxy settings for the BTSAdmin user

In this step we ensure that the Internet Explorer proxy is turned off for the BTSAdmin user. This will ensure that the BizTalk services, which run using the BTSAdmin user identity, can communicate successfully with other HCE components.

1. Log on to the server as BTSAdmin using the password available in section
2. Open Internet Explorer
3. Click on Tools | Internet Options
4. Click on the Connections tab and then click on the LAN Settings button
5. Ensure that the “Automatically Detect Settings”, “User automatic connection settings” and “Use proxy settings for your LAN” checkboxes are un-checked
6. Close Internet Explorer
7. Log off the server

#### Configuring BizTalk Server 2006

In this step we add the HCE-specific configuration entries within the BizTalk Server 2006 configuration file.

On the server, while logged in as a local administrator:

1. Locate the BizTalk Server 2006 configuration file name BTSNTSVC.exe.config. This file is located in the folder “C:\Program Files\Microsoft BizTalk Server 2006\” within a default BizTalk Server 2006 installation.
2. Open the BTSNTSVC.exe.config file using an editor such as Visual Studio 2005
3. Add the entries in the following table to the <appSettings> section of the file. Note: If the <appSettings> section does not exist, then add this section at the top of the file directly under the <configuration> element
4. Restart the “Microsoft Connection Engine 2.1.1 Routing Services” application within BizTalk Server Administration

|  |  |
| --- | --- |
| Key name | Description and default value |
| SystemAdapter.AuthenticationMethod | Identifies the type of authentication used by the destination adapters.  This should be set to the value “NTLM”. |
| ConnectionEngine.GeneralException.Code | Define message status code for unhandled errors that occurred within the Routing Service boundaries.  This should be set to the value “99” |
| ConnectionEngine.GeneralException.Description | Define message status description for unhandled errors that occurred within the Routing Service boundaries.  This should be set to the value “An unhandled exception occurred" |
| ConnectionEngine.SystemAdapterException.Code | Define message status code for connection errors with the destination adapter  This should be set to the value “18” |
| ConnectionEngine.SystemAdapterException.Description | Define message status description for connection errors with the destination adapter  This should be set to the value "Error connecting to destination adapter" |
| ConnectionEngine.ClientCertificateThumbPrint | Defines the thumbprint of the client certificate that uniquely identifies the Routing Service for connection with destination adapters through a secure channel.  This should be set to the value of the BTSAdmin Client Certificate Thumbprint obtained in the previous section (Installing the Client Certificate for the BTSAdmin user) |
| ServiceProviderRegister.Validation.WebServiceURL | Defines the URL for the Service Provider Register’s Validation Web Service, used by the Routing Service.  This should be set to the value "http://<machinename>[[8]](#footnote-9)/  <name of the Service Provider Register WS[[9]](#footnote-10)>/  ConnectionEngineValidation.asmx" |

The following extract provides an example of the <appSettings> block in BTSNTSVC.exe.config after the configuration entries have been added:

<appSettings>

        <add key="SystemAdapter.AuthenticationMethod" value="NTLM" />

        <add key="ConnectionEngine.GeneralException.Code" value="99"/>

        <add key="ConnectionEngine.GeneralException.Description" value="An Unhandled exception occurred"/>

        <add key="ConnectionEngine.SystemAdapterException.Code" value="18"/>

        <add key="ConnectionEngine.SystemAdapterException.Description" value="Error connecting to destination adapter"/>

        <add key="ConnectionEngine.ClientCertificateThumbPrint" value="5d ec 70 16 fd 8e 87 16 c8 2a 6f d3 e8 38 e7 23 7a 36 57 0f"/>

        <add key="ServiceProviderRegister.Validation.WebServiceURL" value="http://hce21tst.simpl.co.nz/ServiceProviderRegisterWS/ConnectionEngineValidation.asmx"/>

    </appSettings>

#### Configuring Routing Service web service identity

In this step we ensure that the Routing Service web service is using the ConnectionEngineAppPool application pool within IIS. This ensures that the Routing Service web service has the correct permissions to access the BizTalk related SQL Server databases.

On the server, while logged in as a local administrator:

1. Open IIS Management Console (%SystemRoot%\system32\inetsrv\iis.msc)
2. Navigate to the RoutingServices web site listed under the Default Web Site
3. Right click on RoutingServices web site and selection Properties from the connect menu
4. Select ConnectionEngineAppPool within the Application Pool drop down list
5. Click Ok
6. Restart IIS

## Service Provider Register

|  |  |
| --- | --- |
| Description | Installation Package |
| Service Provider Register Installation package | Microsoft.ConnectionEngine.ServiceProviderRegister.msi |

### Pre-requisites

Installation of other HCE components is not required before the Service Provider Register is deployed.

### Package Installation

In this step we install the package locally on the server.

1. Open the Service Provider Register installation package
2. Click the Next button 2 times to accept the default settings
3. On the Routing Services and Connection Engine Settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Routing Services Host | Identifies the server where the HCE Routing Services component has been installed. The installation of this component is described in section 3.1.  By default the value for this parameter should be <machinename>. |
| Connection Engine Username | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |
| Connection Engine Password | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |

1. On the Service Provider Register database settings dialog, provide values for the following parameters. These parameters are provided so that the Service Provider Register database can be created and populated with data required to support the Service Provider Register itself. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| SQL Server Host | Identifies the server where the Service Provider Register database is to be installed  By default the value for this parameter should be “.” (dot) so that the database is installed on the local machine. |
| Database Name | Represents the name of the Service Provider Register database within SQL Server.  By default the value of this parameter should be left as “ServiceProviderRegister” |
| SQL Server Admin Username | Provides a SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should set to “SA” |
| SQL Server Admin Password | Provides the password for the SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should be set to the password set for the “SA” login in section 2.2 |

1. On the Service Provider Register application settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Web Service Application Name | Represents the name of the IIS virtual directory created for the Service Provider Register Adapter web service  By default the value of this parameter should be left as “ServiceProviderRegisterWS” |
| Application Pool Name | Represents the name of the IIS application pool to be used for the Service Provider Register Adapter web service. Note: This application pool will be created if not already present  By default the value of this parameter should be left as “ConnectionEngineAppPool” |

1. Click Next to start the installation
2. Click Close once the installation package has successfully completed

Note: If any of the configuration parameters associated with the Service Provider Register adapter need to be changed after the installation then the parameters can be found in the <appSettings> section of the web.config file. For an installation using the default installation location, this file can be found at “C:\Program Files\Microsoft Connection Engine\Service Provider Register\WebService” on the server. Details about these parameters can be found in the HCE 2.1.1 – Adapter Development Guide.

### Post Installation Configuration

No post installation configuration steps need to be completed for the Service Provider Register.

## Service Provider Register Administration

|  |  |
| --- | --- |
| Description | Installation Package |
| Service Provider Register Administration Installation package | Microsoft.ConnectionEngine.ServiceProviderRegisterAdmin.msi |

### Pre-requisites

Installation of the Service Provider Register is required before the Service Provider Register Administration component is deployed. The Service Provider Register Administration component assumes that the Service Provider Register database is available during installation as it attempts to create the relevant service provider, message type and associated records within the Service Provider Register during installation.

### Package Installation

In this step we install the package locally on the server.

1. Open the Service Provider Register Administration installation package
2. Click the Next button 2 times to accept the default settings
3. On the Routing Services and Connection Engine Settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Routing Services Host | Identifies the server where the HCE Routing Services component has been installed. The installation of this component is described in section 3.1.  By default the value for this parameter should be <machinename>. |
| Connection Engine Username | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |
| Connection Engine Password | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |

1. On the Service Provider Register database settings dialog, provide values for the following parameters. These parameters are provided so that the Service Provider Register database can be populated with data required to support the Service Provider Register Administration component. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| SQL Server Host | Identifies the server where the Service Provider Register database is to be installed  By default the value for this parameter should be “.” (dot) so that the database is installed on the local machine. |
| Database Name | Represents the name of the Service Provider Register database within SQL Server.  By default the value of this parameter should be left as “ServiceProviderRegister” |
| SQL Server Admin Username | Provides a SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should set to “SPRUser” |
| SQL Server Admin Password | Provides the password for the SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should be set to “pass@word1” |

1. On the Service Provider Administration and Register application settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Administration Web Site Application Name | Represents the name of the IIS virtual directory created for the Service Provider Register Administration web site  By default the value of this parameter should be left as “ServiceProviderRegisterWebAdmin” |
| Administration Web Service Application Name | Represents the name of the IIS virtual directory created for the Service Provider Register Administration web services  By default the value of this parameter should be left as “ServiceProviderRegisterAdminWS” |
| Service Provider Register Web Service Host | Identifies the server where the Service Provider Register component has been installed. The installation of this component is described in section 3.2.  By default the value for this parameter should be <machinename>. |
| Service Provider Register Web Service Application Name | Represents the name of the IIS virtual directory created for the Service Provider Register Adapter web service  By default the value of this parameter should be left as “ServiceProviderRegisterWS” |

1. On the IIS Application Pool settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Application Pool Name | Represents the name of the IIS application pool to be used for the Service Provider Register Administration web site and web service. Note: This application pool will be created if not already present  By default the value of this parameter should be left as “ConnectionEngineAppPool” |

1. Click Next to start the installation
2. Click Close once the installation package has successfully completed

Note:

* If any of the configuration parameters associated with the Service Provider Register Administration adapter need to be changed after the installation then the parameters can be found in the <appSettings> section of the web.config file. For an installation using the default installation location, this file can be found at “C:\Program Files\Microsoft Connection Engine\Service Provider Register Admin\WebService” on the server. Details about these parameters can be found in the HCE 2.1.1 – Adapter Development Guide.
* If any of the configuration parameters associated with the Service Provider Register Administration web site need to be changed after the installation then the parameters can be found in the <appSettings> section of the web.config file. For an installation using the default installation location, this file can be found at “C:\Program Files\Microsoft Connection Engine\Service Provider Register Admin\WebSite” on the server.

### Post Installation Configuration

No post installation configuration steps need to be completed for the Service Provider Register Administration.

## Patient Register

|  |  |
| --- | --- |
| Description | Installation Package |
| Patient Register Installation package | Microsoft.ConnectionEngine.PatientRegister.msi |

### Pre-requisites

Installation of the Service Provider Register is required before the Patient Register is deployed. The Patient Register assumes that the Service Provider Register database is available during installation as it attempts to create the relevant service provider, message type and associated records within the Service Provider Register during installation.

### Package Installation

In this step we install the package locally on the server.

1. Open the Patient Register installation package
2. Click the Next button 2 times to accept the default settings
3. On the Routing Services and Connection Engine Settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Routing Services Host | Identifies the server where the HCE Routing Services component has been installed. The installation of this component is described in section 3.1.  By default the value for this parameter should be <machinename>. |
| Connection Engine Username | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |
| Connection Engine Password | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |

1. On the Patient Register database settings dialog, provide values for the following parameters. These parameters are provided so that the Patient Register database can be created and populated with data required to support the Patient Register component. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| SQL Server Host | Identifies the server where the Patient Register database is to be installed  By default the value for this parameter should be “.” (dot) so that the database is installed on the local machine. |
| Database Name | Represents the name of the Patient Register database within SQL Server.  By default the value of this parameter should be left as “PatientRegister” |
| SQL Server Admin Username | Provides a SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should set to “sa” |
| SQL Server Admin Password | Provides the password for the SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should be set to “pass@word1” |

1. On the Patient Register application settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Patient Register Web Service Application Name | Represents the name of the IIS virtual directory created for the Patient Register adapter web service  By default the value of this parameter should be left as “PatientRegisterWS” |
| Application Pool Name | Represents the name of the IIS application pool to be used for the Patient Register Adapter web service. Note: This application pool will be created if not already present  By default the value of this parameter should be left as “ConnectionEngineAppPool” |

1. On the Service Provider Register database settings dialog, provide values for the following parameters. These parameters are provided so that the Service Provider Register database can be populated with data required to support the Patient Register component. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| SQL Server Host | Identifies the server where the Service Provider Register database is to be installed  By default the value for this parameter is set to the name of the current machine. |
| Database Name | Represents the name of the Service Provider Register database within SQL Server.  By default the value of this parameter should be left as “ServiceProviderRegister” |
| SQL Server Admin Username | Provides a SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should set to “SPRUser” |
| SQL Server Admin Password | Provides the password for the SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should be set to “pass@word1” |

1. On the Service Provider Register connection settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Service Provider Register Web Service Host | Identifies the server where the Service Provider Register component has been installed. The installation of this component is described in section 3.2.  By default the value for this parameter should be <machinename>. |
| Service Provider Register Web Service Application Name | Represents the name of the IIS virtual directory created for the Service Provider Register Adapter web service  By default the value of this parameter should be left as “ServiceProviderRegisterWS” |

1. Click Next to start the installation
2. Click Close once the installation package has successfully completed

Note: If any of the configuration parameters associated with the Patient Register adapter need to be changed after the installation then the parameters can be found in the <appSettings> section of the web.config file. For an installation using the default installation location, this file can be found at “C:\Program Files\Microsoft Connection Engine\Patient Register\WebService” on the server. Details about these parameters can be found in the HCE 2.1.1 – Adapter Development Guide.

### Post Installation Configuration

No post installation configuration steps need to be completed for the Patient Register.

## Connection Engine Adapter Development Kit

|  |  |
| --- | --- |
| Description | Installation Package |
| Adapter Development Kit | Microsoft.ConnectionEngine.AdapterDevelopmentKit.msi |

### Pre-requisites

Installation of other HCE components is not required before the Connection Engine Adapter Kit is deployed.

Although no other components need to be installed before the kit itself is installed, the following components need to be installed prior to the Service Provider Sample (which is provided as part of the Adapter Development Kit) being deployed:

* Service Provider Register
* Service Provider Register Administration
* HCE Routing Services

Installation of the Service Provider Register is required before the Service Provider Sample because the sample deployment package assumes that the Service Provider Register database is available during installation as it attempts to retrieve the Service Provider Register Public Key from the database during installation of the Service Provider Sample.

The Service Provider Register Administration component is required so that the relevant entries can be added into the Service Provider Register database to complete the configuration of the Service Provider Sample.

The HCE Routing Services are required so that the entries can be added to the Service Provider Register database and so that the Service Provider Sample can be used to send Connection Engine Messages within the solution.

### Package Installation

In this step we install the package locally on the server.

1. Open the Adapter Development Kit installation package
2. Click the Next button 2 times to accept the default settings
3. Click Next to start the installation
4. Click Close once the installation package has successfully completed

### Post Installation Configuration

No post installation configuration steps need to be completed for the Adapter Development Kit, although post configuration is required to install and configure the Service Provider Sample should this be required as part of the deployment.

#### Service Provider Sample package installation

The Service Provider Sample can be installed multiple times on the same machine to provide example Service Providers within an HCE solution. These examples can also be used as test harnesses to assist with regression testing of a HCE solution.

Once installation has been completed, the Service Provider Sample must be configured using the steps in the next section.

To install the Service Provider Sample on a machine where the Adapter Development Kit has already been installed:

1. Open the Service Provider Sample Deployment Manager from Start/Program Files/Microsoft HCE – Adapter Development Kit/Deploy – Service Provider Sample
2. Click Next. Confirm the installation location for the Service Provider Sample. By default the sample is installed in a new folder called ServiceProviderSample within the Deployment folder where the Adapter Development Kit was installed. This location can be changed if required.  
     
   Note: If the Service Provider Sample is being installed for the second time on the same machine, an integer will be automatically added to the end of the default installation folder (e.g. the second Service Provider Sample default installation folder will be changed to “ServiceProviderSample1”).
3. On the Routing Services and Connection Engine Settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Routing Services Host | Identifies the server where the HCE Routing Services component has been installed. The installation of this component is described in section 3.1.  By default the value for this parameter should be <machinename>. |
| Connection Engine Username | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |
| Connection Engine Password | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |

1. On the Application settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Web Service Application Name | Represents the name of the IIS virtual directory created for the Adapter web service associated with the new Service Provider Sample  By default the value of this parameter should be left as “SystemAdapterSampleWS”, but can be changed if required.  Note: If the Service Provider Sample is being installed for the second time on the same machine, an integer will be automatically added to the end of the default installation folder (e.g. the second System Adapter Sample default installation folder will be changed to “SystemAdapterSampleWS1”). |
| Application Pool Name | Represents the name of the IIS application pool to be used for the Adapter web service associated with the new Service Provider Sample.  By default the value of this parameter should be left as “ConnectionEngineAppPool” |
| Service Provider ID | This is the unique identifier which will be used to identify the new Service Provider Sample within the HCE solution. The installation package will add this identifier to the configuration files associated with the new Service Provider Sample and Adapter. **The package does not create the required records within the ServiceProviderRegister database to allow the new Service Provider Sample to send and receive Connection Engine Messages.**  The value provided for this field must be recorded as it is required during later configuration steps when the records associated with the Service Provider Register are created within the ServiceProviderRegister database.  By convention, integer values are used for these identifiers, but the HCE solution will accept any text value up to a length of 10.  Notes:  This identifier must be unique amongst all Service Providers within the HCE solution. It is used as a unique identifier throughout the solution.  The set of identifiers already in use within a HCE solution can be found by examining the values of the serviceProviderID column within the ServiceProvider table of the ServiceProviderRegister database. |

1. On the Service Provider Register database settings dialog, provide values for the following parameters. These parameters are provided so that the Service Provider Register database can retrieve the Service Provider Register’s public key from the Service Provider Register database. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| SQL Server Host | Identifies the server where the Service Provider Register database is to be installed  By default the value for this parameter is set to the name of the current machine. |
| Database Name | Represents the name of the Service Provider Register database within SQL Server.  By default the value of this parameter should be left as “ServiceProviderRegister” |
| SQL Server Admin Username | Provides a SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should set to “SPRUser” |
| SQL Server Admin Password | Provides the password for the SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should be set to “pass@word1” |

1. Click Next to start the installation
2. Click Close once the installation package has successfully completed

Note: If any of the configuration parameters associated with the new Service Provider Sample need to be changed after the installation then the parameters can be found in the <appSettings> section of the app.config file. For an installation using the default installation location, this file can be found at “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServiceProviderSample\ServiceProvider” on the server. Details about these parameters can be found in the HCE 2.1.1 – Adapter Development Guide.

Note: If any of the configuration parameters associated with the new Service Provider Sample Adapter need to be changed after the installation then the parameters can be found in the <appSettings> section of the web.config file. For an installation using the default installation location, this file can be found at “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServiceProviderSample\SystemAdapter” on the server. Details about these parameters can be found in the HCE 2.1.1 – Adapter Development Guide.

#### Service Provider Sample configuration

Once installation has been completed, the Service Provider Sample must be configured using the following steps:

1. Open SQL Server Management Studio on the server where the ServiceProviderRegister database has been installed
2. Locate the ServiceProviderRegister database
3. Open the ServiceProviderType table to display the current records in that table and add a new record to the table using the following values for each field, leaving the values for all other fields set to *NULL*. Note: It is possible to configure the new Service Provider Sample to use an existing Service Provider Type and this may be desired depending on the set of Service Providers being set up within the HCE solution.

|  |  |
| --- | --- |
| Field | Description and default value |
| serviceProviderTypeID | Uniquely identifies the Service Provider Type within the HCE solution.  The value for this field should be set to a unique value and can be any integer value. |
| displayName | Provides a description for the new Service Provider Type.  The value for this field should be set to any textual description for the new Service Provider Type |
| serviceProviderTypeCode | Provides a short description for the new Service Provider Type.  The value for this field should be set to any short textual description for the new Service Provider Type |

1. Open the ServiceProvider table to display the current records in that table and add a new record to the table using the following values for each field, leaving the values for all other fields set to *NULL*:

|  |  |
| --- | --- |
| Field | Description and default value |
| serviceProviderID | Uniquely identifies the new Service Provider Sample within the HCE solution.  The value for this field should be set to the value for the Service Provider ID entered during the installation of the Service Provider Sample package in the previous section. |
| displayName | Provides a description for the new Service Provider Sample.  The value for this field should be set to any textual description for the new Service Provider Sample |
| serviceProviderTypeID | Links the service provider record to the ServiceProviderType table and identifies the type of the new Service Provider Sample.  The value for this field should be set to the value of the serviceProviderTypeID field for the corresponding ServiceProviderType record. |
| systemName | Provides a description for the connected system associated with the new Service Provider Sample.  The value for this field should be set to the same value as the displayName field |
| publicKey | Contains the Public key used to encrypt the payload of Connection Engine Messages which are sent to the new Service Provider Sample  The value for this field should be set to match the contents of the Public Key XML file “SAPublicKey.xml” which can be found in the SystemAdapter\Bin folder where the new Service Provider Sample was installed (e.g. “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServiceProviderSample  \SystemAdapter\Bin”) |
| webServiceURL | Contains the URL which should be used to reach the Adapter web service associated with the new Service Provider Sample.  The value of this field should be set to the URL needed to browse to the ConnectionEngineAdapter.asmx file within the Adapter web service installed as part of the new Service Provider Sample (e.g. http://HCE21TST/SystemAdapterSampleWS/  ConnectionEngineAdapter.asmx) |
| encryptionType | Denotes the algorithm used by the new Service Provider Sample to encrypt and decrypt the payloads within Connection Engine Messages  The value of this field should be set to “TripleDES” |
| adminContact\* | Fields starting with “adminContact” contain contact details associated with the Administrator of the new Service Provider Sample.  The values for these fields should be set to any non-NULL value (e.g. all fields must not have the value of *NULL*) |

1. Open the ServiceProviderPool table to display the current records in that table and add a new record to the table using the following values for each field, leaving the values for all other fields set to *NULL.*  
     
   Service Providers can only communicate with other Service Providers in the same pool; therefore a record must be added to this table for every pool which contains service providers you would like the new Service Provider Sample to communicate with.

|  |  |
| --- | --- |
| Field | Description and default value |
| serviceProviderID | Uniquely identifies the new Service Provider Sample within the HCE solution.  The value for this field should be set to the value for the Service Provider ID entered during the installation of the Service Provider Sample package in the previous section. |
| poolID | Uniquely identifies the Pool to which the new Service Provider Sample will belong.  The value of this field should be set to any value currently in the poolID field of the Pool table |

1. Open the ServiceProviderTypeMessageType table to display the current records in that table and add a new record to the table using the following values for each field, leaving the values for all other fields set to *NULL.*A record needs to be present in this table for every message type which can be sent or received by the Service Provider Type selected for the new Service Provider Sample.  
     
   At a minimum, the Service Provider Type selected for the new Service Provider Sample must be able to send MessageTypeID 1000 (Service Provider Search Request) and MessageTypeID 1002 (Health Service Directory Reference Data Request) to the Service Provider Register (ServiceProviderTypeID 101) and receive MessageTypeID 1001 (Service Provider Search Result) and MessageTypeID 1003 (Health Service Directory Reference Data Result) from the Service Provider Register as these messages are sent/received during the initialization of the Adapter associated with the new Service Provider Sample:

|  |  |
| --- | --- |
| Field | Description and default value |
| serviceProviderTypeMessageTypeID | Uniquely identifies the record within the table.  The value for this field should be set to a unique value and can be any integer value. |
| MessageTypeID | Uniquely identifies the message type which is being allowed to be sent from the sourceServiceProviderTypeID to the destinationServiceProviderTypeID.  The value of this field should be set to any value currently in the messageTypeID field of the MessageType table |
| sourceServiceProviderTypeID | Uniquely identifies the Service Provider Type being allowed to send the messageTypeID to the destinationServiceProviderTypeID.  The value of this field should be set to any value currently in the serviceProviderTypeID field of the ServiceProviderType table. |
| destinationServiceProviderTypeID | Uniquely identifies the Service Provider Type being allowed to receive the messageTypeID from the sourceServiceProviderTypeID.  The value of this field should be set to any value currently in the serviceProviderTypeID field of the ServiceProviderType table. |

1. The new Service Provider Sample has now been configured.
2. The interface associated with the new Service Provider Sample can be started by opening the file named “Microsoft.ConnectionEngine.Samples.ServiceProviderSample.exe” within the ServiceProvider folder where the new Service Provider Sample was installed (e.g. “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServiceProviderSample\ServiceProvider”

## Invocation Register Test Harness

|  |  |
| --- | --- |
| Description | Installation Package |
| Invocation Register Test Harness | Microsoft.ConnectionEngine.InvocationRegisterTestHarness.msi |

### Pre-requisites

Installation of the Connection Engine Adapter Development Kit is required before the Invocation Register Test Harness is deployed as the Service Provider Sample deployment package is used to install the Adapter which will be used by the Invocation Register Test Harness web application.

### Package Installation

In this step we install the package locally on the server.

1. Open the Invocation Register Test Harness installation package
2. Click the Next button 2 times to accept the default settings
3. On the Invocation Register Test application settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Web Server Host | Identifies the server where the Invocation Register Test Harness web site will be installed.  By default the value for this parameter should be <machinename>. |
| Web Service Application Name | Represents the name of the IIS virtual directory created for the Invocation Register Test Harness web site  By default the value of this parameter should be left as “InvocationRegisterTestHarness” |
| Application Pool Name | Represents the name of the IIS application pool to be used for the Invocation Register Test Harness web site. Note: This application pool will be created if not already present  By default the value of this parameter should be left as “ConnectionEngineAppPool” |

1. Click Next to start the installation
2. Click Close once the installation package has successfully completed

Note: If any of the configuration parameters associated with the Invocation Register Test Harness web site need to be changed after the installation then the parameters can be found in the <appSettings> section of the web.config file. For an installation using the default installation location, this file can be found at “C:\Program Files\Microsoft Connection Engine\Invocation Register Test Harness\WebSite” on the server.

### Post Installation Configuration

These steps should be completed after the Invocation Register Test Harness installation package has been successfully installed on the server.

#### Install an Adapter to use with the Invocation Register Test Harness web application

To create and configure an Adapter for the Invocation Register Test Harness web application to use:

1. Open the Service Provider Sample Deployment Manager from Start/Program Files/Microsoft HCE – Adapter Development Kit/Deploy – Service Provider Sample
2. Click Next. Confirm the installation location for the Service Provider Sample. Change the default folder name from ServiceProviderSample to InnvocationRegisterTestHarness
3. On the Routing Services and Connection Engine Settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Routing Services Host | Identifies the server where the HCE Routing Services component has been installed. The installation of this component is described in section 3.1.  By default the value for this parameter should be <machinename>. |
| Connection Engine Username | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |
| Connection Engine Password | Represents an optional password to use as credentials connecting to the Routing Services.  By default the value for this parameter should be left blank |

1. On the Application settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Web Service Application Name | Represents the name of the IIS virtual directory created for the Adapter web service associated with the new Service Provider Sample  By default the value of this parameter is “SystemAdapterSampleWS”, but this should be changed to “InvocationRegisterTestHarnessWS”. |
| Application Pool Name | Represents the name of the IIS application pool to be used for the Adapter web service associated with the new Service Provider Sample.  By default the value of this parameter should be left as “ConnectionEngineAppPool” |
| Service Provider ID | This is the unique identifier which will be used to identify the new Adapter  The value of this filed should be set to “300” |

1. On the Service Provider Register database settings dialog, provide values for the following parameters. These parameters are provided so that the Service Provider Register database can retrieve the Service Provider Register’s public key from the Service Provider Register database. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| SQL Server Host | Identifies the server where the Service Provider Register database is to be installed  By default the value for this parameter is set to the name of the current machine. |
| Database Name | Represents the name of the Service Provider Register database within SQL Server.  By default the value of this parameter should be left as “ServiceProviderRegister” |
| SQL Server Admin Username | Provides a SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should set to “SPRUser” |
| SQL Server Admin Password | Provides the password for the SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should be set to “pass@word1” |

1. Click Next to start the installation
2. Click Close once the installation package has successfully completed  
     
   Note: If any of the configuration parameters associated with the new Service Provider Sample Adapter need to be changed after the installation then the parameters can be found in the <appSettings> section of the web.config file. For an installation using the default installation location, this file can be found at “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServiceProviderSample\SystemAdapter” on the server. Details about these parameters can be found in the HCE 2.1.1 – Adapter Development Guide.

#### Configure the Adapter to use with the Invocation Register Test Harness web application

Once the Adapter installation has been completed, the Invocation Register Test Harness Adapter must be configured using the following steps:

1. Open SQL Server Management Studio on the server where the ServiceProviderRegister database has been installed
2. Locate the ServiceProviderRegister database
3. Open the ServiceProviderType table to display the current records in that table and add a new record to the table using the following values for each field, leaving the values for all other fields set to *NULL*.

|  |  |
| --- | --- |
| Field | Value |
| serviceProviderTypeID | 300 |
| displayName | “Invocation Register Test Harness” |
| serviceProviderTypeCode | “IRTH” |

1. While in the ServiceProviderType table add another Service Provider Type to represent the type of the Service Provider being called interactively. The values for this record should be:

|  |  |
| --- | --- |
| Field | Value |
| serviceProviderTypeID | 100 |
| displayName | “Invocation Register Destination” |
| serviceProviderTypeCode | “IRD” |

1. Open the ServiceProvider table to display the current records in that table and add a new record to the table using the following values for each field, leaving the values for all other fields set to *NULL*:

|  |  |
| --- | --- |
| Field | Value |
| serviceProviderID | 300 |
| displayName | “Invocation Register Test Harness” |
| serviceProviderTypeID | 300 |
| systemName | The value for this field should be set to the same value as the displayName field |
| publicKey | The value for this field should be set to match the contents of the Public Key XML file “SAPublicKey.xml” which can be found in the SystemAdapter\Bin folder where the Adapter was installed (e.g. “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\InvocationRegisterTestHarness  \SystemAdapter\Bin”) |
| webServiceURL | The value of this field should be set to the URL needed to browse to the ConnectionEngineAdapter.asmx file within the Adapter web service installed (e.g. http://HCE21TST/InvocationRegisterTestHarnessWS/  ConnectionEngineAdapter.asmx) |
| encryptionType | “TripleDES” |
| adminContact\* | Fields starting with “adminContact” contain contact details associated with the Administrator of the new Service Provider Sample.  The values for these fields should be set to any non-NULL value (e.g. all fields must not have the value of *NULL*) |

1. While in the ServiceProvider table add another Service Provider to represent the Service Provider being called interactively. The values for this record should be:

|  |  |
| --- | --- |
| Field | Value |
| serviceProviderID | 100 |
| displayName | “Invocation Register Destination” |
| serviceProviderTypeID | 100 |
| systemName | “Invocation Register Destination” |
| publicKey | <any non-null value> |
| webServiceURL | <any non-null value> |
| interactiveSessionURI | <http://HCE21TST> |
| interactiveSessionType | 1 |
| encryptionType | “TripleDES” |
| adminContact\* | Fields starting with “adminContact” contain contact details associated with the Administrator of the new Service Provider Sample.  The values for these fields should be set to any non-NULL value (e.g. all fields must not have the value of *NULL*) |

1. Open the ServiceProviderPool table to display the current records in that table and add a new record to the table using the following values for each field, leaving the values for all other fields set to *NULL.*  
     
   Service Providers can only communicate with other Service Providers in the same pool; therefore a record must be added to this table for every pool which contains service providers you would like the new Service Provider Sample to communicate with.

|  |  |
| --- | --- |
| Field | Value |
| serviceProviderID | 300 |
| poolID | 1 |

1. While in the ServiceProviderPool table add another record to represent the Service Provider being called interactively being placed in the same pool. The values for this record should be:

|  |  |
| --- | --- |
| Field | Value |
| serviceProviderID | 100 |
| poolID | 1 |

1. Open the MessageType table to display the current records in that table and add two new records to the table using the following values for each field, leaving the values for all other fields set to *NULL.*  
     
   The Invocation Register Test Harness requires two additional message types which represent the two sample invocation message types which can be tested using the test harness. The table below outlines the details of the two records which need to be added to the MessageType table.

|  |  |  |
| --- | --- | --- |
| Field | Value for MessageTypeID 9023 | Value for MessageTypeID 9025 |
| MessageTypeID | 9023 | 9025 |
| Description | Invocation Register Sample 1 | Invocation Register Sample 2 |
| xmlSchema | http://HCE21TST/InvocationRegister  TestHarness/Schemas/  interactivesessionsample1.xsd | http://HCE21TST/InvocationRegister  TestHarness/Schemas/  Interactivesessionsample2.xsd |
| Version | 1.0 | 1.0 |
| Status | 0 | 0 |

1. Open the ServiceProviderTypeMessageType table to display the current records in that table and add a new record to the table using the following values for each field, leaving the values for all other fields set to *NULL.*A record needs to be present in this table for every message type which can be sent or received by the Service Provider Type selected for the new Service Provider Sample.  
     
   At a minimum, the Service Provider Type selected for the Invocation Register Test Harness must be able to send MessageTypeID 1000 (Service Provider Search Request) and MessageTypeID 1002 (Health Service Directory Reference Data Request) to the Service Provider Register (ServiceProviderTypeID 101) and receive MessageTypeID 1001 (Service Provider Search Result) and MessageTypeID 1003 (Health Service Directory Reference Data Result) from the Service Provider Register as these messages are sent/received during the initialization of the Adapter associated with the new Service Provider Sample.  
     
   In addition to this minimum set of messages, the Invocation Register Test Harness also needs to be able to send additional messages related to the Invocation Register. The following records must be added to the ServiceProviderTypeMessageType table

|  |  |  |  |
| --- | --- | --- | --- |
| serviceProviderTypeMessageTypeID | messageTypeID | sourceServiceProviderTypeID | destinationServiceProviderTypeID |
| <autogenerated> | 1000 | 300 | 101 |
| < autogenerated> | 1001 | 101 | 300 |
| < autogenerated> | 1002 | 300 | 101 |
| < autogenerated> | 1003 | 101 | 300 |
| < autogenerated> | 9026 | 300 | 101 |
| < autogenerated> | 9027 | 101 | 300 |
| < autogenerated> | 9023 | 300 | 100 |
| < autogenerated> | 9025 | 300 | 100[[10]](#footnote-11) |

1. Open the web.config associated with the Invocation Register Test Harness and change the value of the key “SystemAdapterWS.ConnectionEngineAdapter” in the <appSettings> block to the URL of the Adapter. This value should be <http://HCE21TST/InvocationRegisterTestHarnessWS/ConnectionEngineAdapter.asmx> if the installation steps above have been followed.
2. Restart IIS
3. The Adapter to use with the Invocation Register Test Harness has now been configured.

## Change Notification Service

|  |  |
| --- | --- |
| Description | Installation Package |
| Service Provider Register – Change Notification Service | Microsoft.ConnectionEngine.ServiceProviderRegister.ChangeNotificationService.msi |

### Pre-requisites

Installation of the Service Provider Register is required before the Change Notification Service component is deployed. The Change Notification Service component assumes that the Service Provider Register database is available during installation as it attempts to add the SQL Server Notification Services tables to that database

### Package Installation

In this step we install the package locally on the server.

1. Open the Change Notification Service installation package
2. Click the Next button 1 times to accept the default settings
3. On the Service Provider Register database settings dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| SQL Server Host | Identifies the server where the Service Provider Register database is to be installed  By default the value for this parameter is set to the name of the current machine. |
| Database Name | Represents the name of the Service Provider Register database within SQL Server.  By default the value of this parameter should be left as “ServiceProviderRegister” |
| SQL Server Admin Username | Provides a SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should set to “SPRUser” |
| SQL Server Admin Password | Provides the password for the SQL Login with Administrator rights within SQL Server.  By default the value for this parameter should be set to “pass@word1” |

1. On the Service Provider Register Web Service dialog provide the full URL to the location of the Service Provider Register Adapter web service
2. On the Change Notification Service Credentials dialog, provide values for the following parameters. Click Next

|  |  |
| --- | --- |
| Parameter name | Description and default value |
| Windows Service Username | Provides a Windows Login to be used by the Change Notification Service SQL Server Notification NT service.  By default the value for this parameter should set to “BTSAdmin” |
| Windows Service Password | Provides the password for the Windows Login to be used by the Change Notification Service SQL Server Notification NT service.  By default the value for this parameter should set to “pass@word1” |

1. Click Next to start the installation
2. Click Close once the installation package has successfully completed

### Post Installation Configuration

These steps should be completed after the Change Notification Service installation package has been successfully installed on the server.

#### Associating Windows Service account for Change Notification Service with the correct databases

1. Verify that the Windows Service account for the Change Notification Service is associated to a SQL Server Login.
   * 1. Connect to the instance of SQL Server where the service was installed
     2. Expand Security / Logins.
     3. Verify that a sql logins with the format <servername>\<username> exists for the username associated with the Change Notification Service.
     4. If not, create a new Sql Server login based on windows authentication.
2. Associate the SQL Login with the HCENotificationServiceNSMain database.
   * 1. Select the SQL Login found/created in step 1 (e.g. hceserver\btsadmin). Right-click on that login and select properties.
     2. Select User Mappings from the left-hand side menu.
     3. From the “Users mapped to this login” grid, find the HCENotificationServiceNSMain database and check the box associated with this database.
     4. From the “Database role membership for: HCENotificationServiceNSMain” list, check db\_owner.
     5. Click Ok.
3. Associate the SQL Login with the Service Provider Register database.
   * 1. Select the SQL Login found/created on step 1 (e.g. hceserver\btsadmin). Right-click on that login and select properties.
     2. Select User Mappings from the left-handed side menu.
     3. From the “Users mapped to this login” grid, find the Service Provider Register database and check the box associated with this database.
     4. From the “database role membership for: <service provider register database>” list, check db\_owner.
     5. Click Ok.

#### Creating new subscribers

1. Open the Subscription Manager application from “C:\Program Files\Microsoft Connection Engine\Change Notification Service\Subscription Management Harness\Subscription Management.exe”
2. Verify if there are any existing subscribers called “HCESubscriber” by looking at the Existing Subscribers Drop-down list.
3. If not create, a new HCE Subscriber by writing “HCESubscriber” within the **New Subscriber** text box within the Scribers panel and clicking the Add button.
4. A message will confirm that HCE Subscriber was added successfully.

#### Subscribing a new service provider to the Change Notification Service

1. Open the Subscription Manager application from “C:\Program Files\Microsoft Connection Engine\Change Notification Service\Subscription Management Harness\Subscription Management.exe”
2. Select “HCESubscriber” from the Existing Subscribers drop-down list.
3. Enter the Service Provider ID in the **Service Provider ID** text box and click the Add button.
4. A message will confirm that new subscription was added successfully.
5. Repeat steps 3 and 4 for each Service Provider who needs to receive notification of changes to the Service Provider Register database

#### Set the Change Notification Service to start automatically and start the service for the first time

1. Open the Services management console and locate the service named “NS$HCENotificationService”
2. Double click on the service
3. Select “Automatic” from the Startup Type drop down list
4. Click the Start button
5. Click Ok

# Post Installation Testing

The following are a set of recommended tests to be applied following completion of the component installation.

## HCE Routing Services

#### Deployment and Configuration

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| --- | --- | --- |
| Package Installation | | Test #: ROT100 |
| Description | Tests the deployment of each component using the installation package and deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.1.2 * Package Installation has been completed successfully using parameter values outlined in the deployment guide | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open Add or Remove Programs within the Control Panel * Confirm that the application named “Microsoft Connection Engine 2.1.1 Routing Services” is present * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\Routing” * Confirm that a folder with a GUID as its name exists and that it contains the following files:   + ApplicationDefinition.adf   + ITEM~0.CAB   + ITEM~1.CAB   + ITEM~2.CAB   + ITEM~3.CAB * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\BTSAdmin Client Certificate” * Confirm the following files exist within the folder:   + Example – BTSAdmin Client Certificate.pfx   + Example – Trusted Root Authority Certificate.cer * Open BizTalk Server Administration * Navigate to the Applications node and confirm that an application named “Microsoft Connection Engine 2.1.1 Routing Services” exists * Open IIS Management Console and confirm that the web site named “RoutingServices” exists under the default web site | |
| Expected results | The application exists within the Add ort Remove Programs control panel component  The folders and files exist in the installation folder  The BizTalk Application is present within the BizTalk Server Administration utility  The web site exists within the IIS Management Console | |

|  |  |  |
| --- | --- | --- |
| Post installation configuration | | Test #: ROT101 |
| Description | Tests configuration of each component using the steps outlined in the deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.1.3 * Package Installation has been completed successfully using parameter values outlined in the deployment guide Package installation test case has been executed and passed * Post installation configuration has been completed successfully | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Log on to the server as BTSAdmin using the password available in section 2.1.1 of the Deployment guide * Open Internet Explorer * Click on Tools | Internet Options * Click on the Connection tab and then click on LAN Settings * Confirm that none of the check boxes on the Local Area Network (LAN) Settings dialog are selected. Click Ok. * Click on the Content tab and then click on the Certificates button * Ensure the Personal tab is displayed within the Certificates dialog * Confirm that the certificate named “Plug-and-Play Infrastructure Client” certificate exists within the Personal certificate store * Click on the Trusted Root Certificate Authorities tab within the Certificates dialog * Confirm that the certificate named “pftapcfg” exists within the Trusted Root Certificate Authorities * Log off the server as BTSAdmin and log on as a local administrator * Navigate to the folder “C:\Program Files\Microsoft BizTalk Server 2006” and open the file “BTSNTSvc.exe.config” * Open the file and confirm that the settings listed in the Deployment guide are present within the <appSettings> section of the file * Open IIS Management Console and confirm that the web site named “RoutingServices” exists under the default web site * Right click on the RoutingServices web site and select properties from the context menu * Confirm that the value “ConnectionEngineAppPool” is selected in the Application Pool drop down list | |
| Expected results | All configuration entries and artifacts are present as expected | |

#### Smoke tests

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| --- | --- | --- |
| Smoke tests | | Test #: ROT200 |
| Description | This test case confirms that the Routing Service connection engine adapter is available for use by other HCE components.  The actual operation of the web service and the BizTalk orchestrations within the routing service will be smoke tested by the successful completion of the smoke tests for the other components. | |
| Pre-requisites | * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully * Post installation configuration test case has been executed and passed | |
| Test case | On the server where the package was installed:   * Browse to the location: <http://localhost/RoutingServices/ConnectionEngineAdapter.asmx> * Confirm that the web page displayed outlines that the operation “ReceiveConnectionEngineMessage” is provided by the routing service connection engine adapter * Click on the link “ReceiveConnectionEngineMessage” * Confirm that the page displayed outlines that the operation expects a request and response message consistent with the Connection Engine Message XML schema outlined in section 6 | |
| Expected results | The routing service web service provides an operation called ReceiveConnectionEngineMessage which expects request and response messages consistent with the ConnectionEngineMessage schema. | |

## Service Provider Register

#### Deployment and Configuration

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| --- | --- | --- |
| Package Installation | | Test #: SPR100 |
| Description | Tests the deployment of each component using the installation package and deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.2.2 * Package Installation has been completed successfully using parameter values outlined in the deployment guide | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open Add or Remove Programs within the Control Panel * Confirm that the application named “Microsoft Connection Engine 2.1.1 Service Provider Register” is present * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\Service Provider Register” * Confirm that folders with the following names exist:   + Database Scripts   + WebService * Confirm that the following files exist:   + Microsoft.ConnectionEngine.Common.dll   + Microsoft.Practices.EnterpriseLibrary.Common.dll   + Microsoft.Practices.EnterpriseLibrary.ExceptionHandling.dll   + Microsoft.Practices.EnterpriseLibrary.Logging.dll   + Microsoft.Practices.ObjectBuilder.dll   + ServiceProviderRegisterInstaller.dll * Open the file “C:\Program Files\ Microsoft Connection Engine\Service Provider Register\WebService\web.config” * Confirm that the <appSettings> section matches the following:   <appSettings>  <add key="ConnectionEngine.WebServiceURL" value="http://HCE21TST/RoutingServices/ConnectionEngineAdapter.asmx" />  <add key="ConnectionEngine.UserName" value="" />  <add key="ConnectionEngine.Password" value="" />  <add key="ServiceProviderRegister.ServiceProviderID" value="101" />  <add key="ServiceProviderRegister.PublicKey" value="Bin\PublicKey.xml" />  <add key="ServiceProviderRegister.EncryptionType" value="TripleDES" />  <add key="SystemAdapter.ServiceProviderID" value="101" />  <add key="SystemAdapter.WebServiceURL" value="" />  <add key="SystemAdapter.EncryptionType" value="TripleDES" />  <add key="SystemAdapter.PrivateKey" value="Bin\PrivateKey.xml" />  <add key="SystemAdapter.MessageHandlerList" value="Bin\HSDMessageHandlers.xml"/>  <add key="SystemAdapter.ClientCertificateName" value=""/>  </appSettings>     * Confirm that the <connectionSettings> section contains the following:   <add name="ServiceProviderRegister" connectionString="Data Source=HCE21TST;Initial Catalog=ServiceProviderRegister;User Id=SPRUser;Password=pass@word1;" providerName="System.Data.SqlClient"/>   * Open IIS Management Console and confirm that the web site named “ServiceProviderRegisterWS” exists under the default web site * Right click on the web site and select properties from the context menu * Confirm that the value “ConnectionEngineAppPool” is selected in the Application Pool drop down list | |
| Expected results | The application exists within the Add ort Remove Programs control panel component  The folders and files exist in the installation folder  All configuration entries and artifacts are present as expected  The web site exists within the IIS Management Console and is running within the expected application pool | |

|  |  |  |
| --- | --- | --- |
| Post installation configuration | | Test #: SPR101 |
| Description | Tests configuration of each component using the steps outlined in the deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.2.3 * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed | |
| Test case | No post installation configuration changes were applied to this solution. | |
| Expected results | n/a | |

#### Smoke tests

|  |  |  |
| --- | --- | --- |
| Smoke tests | | Test #: SPR200 |
| Description | This test case confirms that the Service Provider Register connection engine adapter is available for use by other HCE components.  The actual operation of the web service exposed by the register will be smoke tested by the successful completion of the smoke tests for the other components. | |
| Pre-requisites | * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully * Post installation configuration test case has been executed and passed | |
| Test case | On the server where the package was installed:   * Browse to the location: <http://localhost/ServiceProviderRegisterWS/ConnectionEngineAdapter.asmx> * Confirm that the web page displayed outlines that the following operations are provided by the connection engine adapter:   + GetInteractiveSessionInformation   + ReceiveConnectionEngineMessage   + SendConnectionEngineMessage * Click on the link “GetInteractiveSessionInformation” and confirm that the page displayed outlines that the operation expects a request message which has a SOAP Body consistent with the following:   <GetInteractiveSessionInformation xmlns="http://Microsoft.ConnectionEngine.Services">  <serviceproviderid>string</serviceproviderid>  <messagetypeid>int</messagetypeid>  <args>  <KeyValueItem>  <Key>string</Key>  <Value>string</Value>  </KeyValueItem>  <KeyValueItem>  <Key>string</Key>  <Value>string</Value>  </KeyValueItem>  </args>  </GetInteractiveSessionInformation>   * And response message which has a SOAP Body consistent with the following:   <GetInteractiveSessionInformationResponse xmlns="http://Microsoft.ConnectionEngine.Services">  <GetInteractiveSessionInformationResult>string  </GetInteractiveSessionInformationResult>  </GetInteractiveSessionInformationResponse>   * Click on the link “ReceiveConnectionEngineMessage” and confirm that the page displayed outlines that the operation expects a request and response message consistent with the Connection Engine Message XML schema outlined in section 6 * Click on the link “SendConnectionEngineMessage” and confirm that the page displayed outlines that the operation expects a request message which has a SOAP Body consistent with the following:   <SendConnectionEngineMessage xmlns="http://Microsoft.ConnectionEngine.Services">  <objMessage />  <msgType>int</msgType>  <conversationID>guid</conversationID>  <destinationID>string</destinationID>  </SendConnectionEngineMessage>   * And response message consistent with the Connection Engine Message XML schema outlined in section 6 * Browse to the location: <http://localhost/ServiceProviderRegisterWS/ConnectionEngineValidation.asmx> * Confirm that the web page displayed outlines that the following operations are provided by the connection engine adapter:   + ValidateConnectionEngineMessage * Click on the link “ValidateConnectionEngineMessage” and confirm that the page displayed outlines that the operation expects a request and response message consistent with the Connection Engine Message XML schema outlined in section | |
| Expected results | The Service Provider Register web services provide the expected operations and that these operations expect request and response messages consistent with the details provided | |

## Service Provider Register Administration

#### Deployment and Configuration

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| --- | --- | --- |
| Package Installation | | Test #: SPA100 |
| Description | Tests the deployment of each component using the installation package and deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.3.2 * Package Installation has been completed successfully using parameter values outlined in the deployment guide | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open Add or Remove Programs within the Control Panel * Confirm that the application named “Microsoft Connection Engine 2.1.1 Service Provider Register Administration” is present * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\Service Provider Register Admin” * Confirm that folders with the following names exist:   + Database Scripts   + WebService   + WebSite * Confirm that the following files exist:   + Microsoft.ConnectionEngine.Common.dll   + Microsoft.Practices.EnterpriseLibrary.Common.dll   + Microsoft.Practices.EnterpriseLibrary.ExceptionHandling.dll   + Microsoft.Practices.EnterpriseLibrary.Logging.dll   + Microsoft.Practices.ObjectBuilder.dll   + ServiceProviderRegisterAdminInstaller.dll * Open the file “C:\Program Files\ Microsoft Connection Engine\Service Provider Register Admin\WebService\web.config” * Confirm that the <appSettings> section matches the following:   <appSettings>  <add key="ConnectionEngine.WebServiceURL" value="http://HCE21TST/RoutingServices/ConnectionEngineAdapter.asmx"/>  <add key="ConnectionEngine.UserName" value="" />  <add key="ConnectionEngine.Password" value="" />  <add key="ServiceProviderRegister.ServiceProviderID" value="101"/>  <add key="ServiceProviderRegister.EncryptionType" value="TripleDES"/>  <add key="ServiceProviderRegister.PublicKey" value="Bin\SPRPublicKey.xml"/>  <add key="SystemAdapter.ServiceProviderID" value="102"/>  <add key="SystemAdapter.PrivateKey" value="Bin\SPRAPrivateKey.xml"/>  <add key="SystemAdapter.PublicKey" value="Bin\SPRAPublicKey.xml"/>  <add key="SystemAdapter.EncryptionType" value="TripleDES" />  <add key="SystemAdapter.ClientCertificateName" value=""/>  <add key="SystemAdapter.ProxyTimeout" value="120000"/>  </appSettings>     * Confirm that the <applicationSettings> section contains the following   <Microsoft.ConnectionEngine.Administration.Core.ServiceProvider.Business.Properties.Settings>  <setting name="Microsoft\_ConnectionEngine\_Administration\_Core\_ServiceProvider\_  Business\_SystemAdapterWS\_ConnectionEngineAdapter" serializeAs="String">  <value>http://HCE21TST/ServiceProviderRegisterAdminWS/ConnectionEngineAdapter.asmx</value>  </setting>  </Microsoft.ConnectionEngine.Administration.Core.ServiceProvider.Business.Properties.Settings>   * Open the file “C:\Program Files\ Microsoft Connection Engine\Service Provider Register Admin\WebSite\web.config” * Confirm that the <appSettings> section matches the following:   <appSettings>  <add key="System.Version" value="1.3"/>  <add key="AdminServices.AdminServices" value="http://HCE21TST/ServiceProviderRegisterAdminWS/AdminServices.asmx"/>  </appSettings>   * Open IIS Management Console and confirm that the web site named “ServiceProviderRegisterAdminWS” exists under the default web site * Right click on the web site and select properties from the context menu * Confirm that the value “ConnectionEngineAppPool” is selected in the Application Pool drop down list * Open IIS Management Console and confirm that the web site named “ServiceProviderRegisterWebAdmin” exists under the default web site * Right click on the web site and select properties from the context menu * Confirm that the value “ConnectionEngineAppPool” is selected in the Application Pool drop down list | |
| Expected results | The applications exists within the Add ort Remove Programs control panel component  The folders and files exist in the installation folder  All configuration entries and artifacts are present as expected  The web sites exist within the IIS Management Console and are running within the expected application pool | |

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| --- | --- | --- |
| Post installation configuration | | Test #: SPA101 |
| Description | Tests configuration of each component using the steps outlined in the deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.3.3 * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed | |
| Test case | No post installation configuration changes were applied to this solution. | |
| Expected results | n/a | |

#### Smoke tests

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| --- | --- | --- |
| Smoke tests – Service Provider Register Administration Services connection engine adapter | | Test #: SPA200 |
| Description | This test case confirms that the Service Provider Register Administration Services connection engine adapter is available for use by other HCE components.  The actual operation of the web service exposed by the component will be smoke tested by the successful completion of the smoke tests for the other components. | |
| Pre-requisites | * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully * Post installation configuration test case has been executed and passed | |
| Test case | On the server where the package was installed:   * Browse to the location: <http://localhost/ServiceProviderRegisterAdminWS/ConnectionEngineAdapter.asmx> * Confirm that the web page displayed outlines that the following operations are provided by the connection engine adapter:   + GetInteractiveSessionInformation   + ReceiveConnectionEngineMessage   + SendConnectionEngineMessage * Click on the link “GetInteractiveSessionInformation” and confirm that the page displayed outlines that the operation expects a request message which has a SOAP Body consistent with the following:   <GetInteractiveSessionInformation xmlns="http://Microsoft.ConnectionEngine.Services">  <serviceproviderid>string</serviceproviderid>  <messagetypeid>int</messagetypeid>  <args>  <KeyValueItem>  <Key>string</Key>  <Value>string</Value>  </KeyValueItem>  <KeyValueItem>  <Key>string</Key>  <Value>string</Value>  </KeyValueItem>  </args>  </GetInteractiveSessionInformation>   * And response message which has a SOAP Body consistent with the following:   <GetInteractiveSessionInformationResponse xmlns="http://Microsoft.ConnectionEngine.Services">  <GetInteractiveSessionInformationResult>string  </GetInteractiveSessionInformationResult>  </GetInteractiveSessionInformationResponse>   * Click on the link “ReceiveConnectionEngineMessage” and confirm that the page displayed outlines that the operation expects a request and response message consistent with the Connection Engine Message XML schema outlined in section 6 * Click on the link “SendConnectionEngineMessage” and confirm that the page displayed outlines that the operation expects a request message which has a SOAP Body consistent with the following:   <SendConnectionEngineMessage xmlns="http://Microsoft.ConnectionEngine.Services">  <objMessage />  <msgType>int</msgType>  <conversationID>guid</conversationID>  <destinationID>string</destinationID>  </SendConnectionEngineMessage>   * And response message consistent with the Connection Engine Message XML schema outlined in section 6 | |
| Expected results | The Service Provider Register Administration connection engine adapter web service provides the expected operations and that these operations expect request and response messages consistent with the details provided | |

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| Smoke tests – Service Provider Register Administration Services Admin Services | | Test #: SPA201 |
| Description | This test case confirms that the Service Provider Register Administration Services provide the web services expected by the Admin Interface.  The test case also confirms that a call to one of these operations results in a request being sent all the way from the Service Provider Register Administration Services component to the Service Provider Register, via the Routing Services. I.e.: This test case is the first case which tests the end-to-end conductivity from once component to another via the Routing Services. | |
| Pre-requisites | * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully * Post installation configuration test case has been executed and passed | |
| Test case | On the server where the package was installed:   * Browse to the location: <http://localhost/ServiceProviderRegisterAdminWS/AdminServices.asmx> * Confirm that the web page displayed outlines that 48 operations are provided, including:   + [GetReferenceData](http://localhost/ServiceProviderRegisterAdminWS/AdminServices.asmx?op=GetReferenceData) * Click on the link “[GetReferenceData](http://localhost/ServiceProviderRegisterAdminWS/AdminServices.asmx?op=GetReferenceData)” and confirm that the page displayed outlines that the operation expects a request message which has a SOAP Body consistent with the following:   <GetReferenceData xmlns="http://Microsoft.ConnectionEngine.Administration.Services" />   * Click on the Invoke button. This places a call to the GetReferenceData operation, which in turn causes a HSDReferenceData ConnectionEngineMessage to be sent to the Service Provider Register, via the Routing Services * Confirm that a new browser window is displayed showing the results of invoking the GetReferenceData operation and that the XML displayed in the new browser window begins with:   <?xml version="1.0" encoding="utf-8" ?>  - <ReferenceData xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="http://Microsoft.ConnectionEngine.Administration.Services">  - <MessageStatuses>  - <MessageStatus>  <MessageStatusID>0</MessageStatusID>  <DisplayName>Ok</DisplayName>  <CanBeSetBy>Destination Connected System Adapter</CanBeSetBy>  </MessageStatus> | |
| Expected results | The Service Provider Register Administration Services web service provides the expected operations and that these operations expect request and response messages consistent with the details provided  Invoking the GetReferenceData operation causes the expected result to be returned by the Service Provider Register | |

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| Smoke tests – Service Provider Register Administration Interface | | Test #: SPA202 |
| Description | This test case confirms that the Service Provider Register Administration web interface is available and that the interface can be used to search for data already present within the Service Provider Register database | |
| Pre-requisites | * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully * Post installation configuration test case has been executed and passed | |
| Test case | On the server where the package was installed:   * Browse to the location: <http://localhost/ServiceProviderRegisterWebAdmin/Default.aspx> * Confirm that the page displayed is similar to the image below:      * Click on the  button to the right of the Pool Name text box and confirm that the page displayed contains the table in the image below:      * Click on the Home link in the page header. Click on the  button to the right of the SPT Code text box and confirm that the page displayed contains the table in the image below:      * Click on the Home link in the page header. Select the value “Service Provider Register” from the SP Type and then click on the  button to the right of the drop down list. Confirm that the page displayed contains the table in the image below: | |
| Expected results | The Service Provider Register Administration web interface is available and performing the operations results in the expected pages being displayed. | |

## Patient Register

#### Deployment and Configuration

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| --- | --- | --- |
| Package Installation | | Test #: PR100 |
| Description | Tests the deployment of each component using the installation package and deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.4.2 * Package Installation has been completed successfully using parameter values outlined in the deployment guide | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open Add or Remove Programs within the Control Panel * Confirm that the application named “Microsoft Connection Engine 2.1.1 Patient Register” is present * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\Patient Register” * Confirm that folders with the following names exist:   + Database Scripts   + WebService * Confirm that the following files exist:   + Microsoft.ConnectionEngine.Common.dll   + Microsoft.Practices.EnterpriseLibrary.Common.dll   + Microsoft.Practices.EnterpriseLibrary.ExceptionHandling.dll   + Microsoft.Practices.EnterpriseLibrary.Logging.dll   + Microsoft.Practices.ObjectBuilder.dll   + PatientRegisterInstaller.dll * Open the file “C:\Program Files\ Microsoft Connection Engine\Patient Register \WebService\web.config” * Confirm that the <appSettings> section matches the following:   <appSettings>  <add key="ConnectionEngine.WebServiceURL" value="http://HCE21TST/RoutingServices/ConnectionEngineAdapter.asmx" />  <add key="ConnectionEngine.UserName" value="" />  <add key="ConnectionEngine.Password" value="" />  <add key="serviceProviderRegister.ServiceProviderID" value="101"/>  <add key="ServiceProviderRegister.PublicKey" value="Bin\SPRPublicKey.xml"/>  <add key="serviceProviderRegister.EncryptionType" value="TripleDES"/>  <add key="SystemAdapter.ServiceProviderID" value="117"/>  <add key="SystemAdapter.WebServiceURL" value=""/>  <add key="SystemAdapter.EncryptionType" value="TripleDES"/>  <add key="SystemAdapter.PublicKey" value="Bin\PRPublicKey.xml"/>  <add key="SystemAdapter.PrivateKey" value="Bin\PRPrivateKey.xml"/>  <add key="SystemAdapter.MessageHandlerList" value="Bin\PRMessageHandlers.xml"/>  <add key="SystemAdapter.ClientCertificateName" value=""/>  <add key="PatientRegister.ServiceProviderID" value="110"/>  </appSettings>     * Confirm that the <applicationSettings> section contains the following   <Microsoft.ConnectionEngine.Adapters.Properties.Settings>  <setting name="SystemAdapterBase\_CollaborationEngineAdapter\_CollaborationEngineAdapter" serializeAs="String">    <value>http://HCE21TST/RoutingServices/ConnectionEngineAdapter.asmx</value>  </setting>  </Microsoft.ConnectionEngine.Adapters.Properties.Settings>   * Confirm that the <connectionSettings> section contains the following:   <add name="PatientRegister" connectionString="Data Source=HCE21TST;Initial Catalog=PatientRegister;User Id=PRUser;Password=pass@word1;" providerName="System.Data.SqlClient"/>   * Open IIS Management Console and confirm that the web site named “PatientRegisterWS” exists under the default web site * Right click on the web site and select properties from the context menu * Confirm that the value “ConnectionEngineAppPool” is selected in the Application Pool drop down list | |
| Expected results | The application exists within the Add ort Remove Programs control panel component  The folders and files exist in the installation folder  All configuration entries and artifacts are present as expected  The web site exists within the IIS Management Console and is running within the expected application pool | |

|  |  |  |
| --- | --- | --- |
| Post installation configuration | | Test #: PR101 |
| Description | Tests configuration of each component using the steps outlined in the deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.4.3 * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed | |
| Test case | No post installation configuration changes were applied to this solution. | |
| Expected results | n/a | |

#### Smoke tests

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| Smoke tests | | Test #: PR200 |
| Description | Consists of a small sub-set of test cases which are used to ensure that each component has been deployed and configured correctly and that the service is available for use within the wider HCE solution. | |
| Pre-requisites | * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully * Post installation configuration test case has been executed and passed * Patient Register Test Harness configured using the Service Provider Sample provided as part of the Adapter Development Kit and configured using the parameters provided in section 3.4.3. | |
| Test case | No smoke tests have been defined for the Patient Register as the Patient Register component is provided as a sample implementation and is not intended to be used within a HCE solution in its current form | |
| Expected results | N/A | |

## Connection Engine Adapter Development Kit

#### Deployment and Configuration

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| --- | --- | --- |
| Package Installation | | Test #: SDK100 |
| Description | Tests the deployment of each component using the installation package and deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.5.2 * Package Installation has been completed successfully using parameter values outlined in the deployment guide | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open Add or Remove Programs within the Control Panel * Confirm that the application named “Microsoft Connection Engine 2.1.1 Adapter Development Kit” is present * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit” * Confirm that folders with the following names exist:   + Binaries   + Deployment   + Documentation   + Images   + Source Code   + Tools * Confirm that the following files exist:   + Intro.htm   + Main.ico * Navigate to Start/Program Files//Microsoft HCE – Adapter Development Kit and confirm that the following shortcuts exist:   + Deploy – Service Provider Sample   + HCE 2.1.1 – Adapter Development Guide   + HCE 2.1.1 – Adapter Development Kit Help   + Read me First * Click on the shortcut “Deploy – Service Provider Sample” and confirm that the following page is displayed:      * Click on the shortcut “HCE 2.1.1 – Adapter Development Guide” and confirm that the document named “HCE 2.1.1 – Adapter Development Guide.doc” is opened * Click on the shortcut “HCE 2.1.1 – Adapter Development Kit Help” and confirm that the following dialog is displayed:      * Click on the shortcut “Read me First” and confirm that the following page is displayed: | |
| Expected results | The application exists within the Add ort Remove Programs control panel component  The folders and files exist in the installation folder and on the Start menu  The expected applications/documents/pages are displayed when the Start menu shortcuts are selected | |

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| --- | --- | --- |
| Post installation configuration – Service Provider Sample package installation | | Test #: SDK101 |
| Description | Tests installation of the Service Provider Sample which is provided as part of the Adapter Development Kit | |
| Pre-requisites | * Deployment Guide section: 3.5.3 * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Service Provider Sample package installation has been completed successfully | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServiceProviderSample” * Confirm that folders with the following names exist:   + IncomingFolder   + ServiceProvider   + SystemAdapter * Open the file “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServiceProviderSample\SystemAdapter\web.config” * Confirm that the <appSettings> section matches the following, where “XXX” should be the Service Provider ID specified during the installation of the Service Provider Sample:   <appSettings>  <add key="ConnectionEngine.WebServiceURL" value="http://HCE21TST/RoutingServices/ConnectionEngineAdapter.asmx"/>  <add key="ConnectionEngine.UserName" value=""/>  <add key="ConnectionEngine.Password" value=""/>  <add key="ServiceProviderRegister.ServiceProviderID" value="101"/>  <add key="ServiceProviderRegister.PublicKey" value="Bin\SPRPublicKey.xml"/>  <add key="ServiceProviderRegister.EncryptionType" value="TripleDES"/>  <add key="SystemAdapter.ServiceProviderID" value="XXX"/>  <add key="SystemAdapter.EncryptionType" value="TripleDES"/>  <add key="SystemAdapter.PublicKey" value="Bin\SAPublicKey.xml"/>  <add key="SystemAdapter.PrivateKey" value="Bin\SAPrivateKey.xml"/>  <add key="SystemAdapter.ClientCertificateName" value=""/>  <add key="SystemAdapterExample.ProcessMessage.IncomingFolder" value="C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServiceProviderSample\IncomingFolder"/>  <add key="SystemAdapterExample.ProcessMessage.MessagePrefix" value="SP\_XXX"/>  </appSettings>   * Open IIS Management Console and confirm that the web site named “SystemAdapterSampleWS” exists under the default web site * Right click on the web site and select properties from the context menu * Confirm that the value “ConnectionEngineAppPool” is selected in the Application Pool drop down list | |
| Expected results | The folders and files exist in the installation folder  All configuration entries and artifacts are present as expected  The web site exists within the IIS Management Console and is running within the expected application pool | |

|  |  |  |
| --- | --- | --- |
| Post installation configuration – Service Provider Sample configuration | | Test #: SDK102 |
| Description | Tests configuration of the Service Provider Sample which is provided as part of the Adapter Development Kit | |
| Pre-requisites | * Deployment Guide section: 3.5.3 * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Service Provider Sample configuration has been completed successfully | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open SQL Server Management Studio on the server where the ServiceProviderRegister database has been installed * Locate the ServiceProviderRegister database * Confirm that the expected records are present in the following tables:   + ServiceProviderType   + ServiceProvider   + ServiceProviderPool   + ServiceProviderTypeMessageType | |
| Expected results | All records are present as expected | |

#### Smoke tests

|  |  |  |
| --- | --- | --- |
| Smoke tests | | Test #: SDK200 |
| Description | Consists of a small sub-set of test cases which are used to ensure that each component has been deployed and configured correctly and that the service is available for use within the wider HCE solution. | |
| Pre-requisites | * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully * Post installation configuration test case has been executed and passed | |
| Test case | On the server where the Service Provider Sample was installed:   * Open the test harness located at: C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServieProviderSample\ServiceProvider\ Microsoft.ConnectionEngine.Samples.ServiceProviderSample.exe * Enter the following values for the Outgoing Message within the test harness:   + Message Type ID: 1002   + Master Message ID: <blank>   + Destination Provider ID: 101   + Payload:   <HSDReferenceDataRequest xmlns="http://Microsoft.ConnectionEngine/Schemas/ServiceProviderRegister" />   * Press the Send button within the test harness * Confirm that the reply received back (details displayed in the Incoming Message block within the test harness) contains the following values:   + Message Type ID: 1003   + Conversation ID: <any valid GUID>   + Source Provider ID: 101   + Destination Provider ID: <ID provided during installation>   + Status Code: 0   + Status Description: Ok | |
| Expected results | Message of type 1002 can be sent from the Service Provider Sample to the Service Provider Register and the replied received from the Service Provider Register contains the Status Code 0 and Status Description Ok | |

## Invocation Register Test Harness

#### Deployment and Configuration

|  |  |  |
| --- | --- | --- |
| Package Installation | | Test #: IR100 |
| Description | Tests the deployment of each component using the installation package and deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.6.2 * Package Installation has been completed successfully using parameter values outlined in the deployment guide | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open Add or Remove Programs within the Control Panel * Confirm that the application named “Microsoft Connection Engine 2.Invocation Register Test Harness” is present * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\Invocation Register Test Harness” * Confirm that folders with the following names exist:   + WebSite * Confirm that the following files exist:   + InvocationRegisterTestInstaller.dll   + Microsoft.ConnectionEngine.Common.dll   + Microsoft.Practices.EnterpriseLibrary.Common.dll   + Microsoft.Practices.EnterpriseLibrary.ExceptionHandling.dll   + Microsoft.Practices.EnterpriseLibrary.Logging.dll   + Microsoft.Practices.ObjectBuilder.dll * Open IIS Management Console and confirm that the web site named “InvocationRegisterTestHarness” exists under the default web site * Right click on the web site and select properties from the context menu * Confirm that the value “ConnectionEngineAppPool” is selected in the Application Pool drop down list | |
| Expected results | The application exists within the Add ort Remove Programs control panel component  The folders and files exist in the installation folder  The web site exists within the IIS Management Console and is running within the expected application pool | |

|  |  |  |
| --- | --- | --- |
| Post installation configuration – Adapter package installation | | Test #: IR101 |
| Description | Tests installation of an Adapter for the Invocation Register Test Harness to use | |
| Pre-requisites | * Deployment Guide section: 3.5.3 * Invocation Register Test Harness Package Installation has been completed successfully using parameter values outlined in the deployment guide * Invocation Register Test Harness Package installation test case has been executed and passed * Invocation Register Test Harness Adapter package installation has been completed successfully | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\InvocationRegisterTestHarness” * Confirm that folders with the following names exist:   + IncomingFolder   + ServiceProvider   + SystemAdapter * Open the file “C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ InvocationRegisterTestHarness\SystemAdapter\web.config” * Confirm that the <appSettings> section matches the following, where “XXX” should be the Service Provider ID specified during the installation of the Service Provider Sample:   <appSettings>  <add key="ConnectionEngine.WebServiceURL" value="http://HCE21TST/RoutingServices/ConnectionEngineAdapter.asmx"/>  <add key="ConnectionEngine.UserName" value=""/>  <add key="ConnectionEngine.Password" value=""/>  <add key="ServiceProviderRegister.ServiceProviderID" value="101"/>  <add key="ServiceProviderRegister.PublicKey" value="Bin\SPRPublicKey.xml"/>  <add key="ServiceProviderRegister.EncryptionType" value="TripleDES"/>  <add key="SystemAdapter.ServiceProviderID" value="XXX"/>  <add key="SystemAdapter.EncryptionType" value="TripleDES"/>  <add key="SystemAdapter.PublicKey" value="Bin\SAPublicKey.xml"/>  <add key="SystemAdapter.PrivateKey" value="Bin\SAPrivateKey.xml"/>  <add key="SystemAdapter.ClientCertificateName" value=""/>  <add key="SystemAdapterExample.ProcessMessage.IncomingFolder" value="C:\Program Files\Microsoft Connection Engine\Adapter Development Kit\Deployment\ServiceProviderSample\IncomingFolder"/>  <add key="SystemAdapterExample.ProcessMessage.MessagePrefix" value="SP\_XXX"/>  </appSettings>   * Open IIS Management Console and confirm that the web site named “InvocationRegisterTestHarnessWS” exists under the default web site * Right click on the web site and select properties from the context menu * Confirm that the value “ConnectionEngineAppPool” is selected in the Application Pool drop down list | |
| Expected results | The folders and files exist in the installation folder  All configuration entries and artifacts are present as expected  The web site exists within the IIS Management Console and is running within the expected application pool | |

|  |  |  |
| --- | --- | --- |
| Post installation configuration – Adapter configuration | | Test #: IR102 |
| Description | Tests the configuration of the Adapter for the Invocation Register Test Harness to use | |
| Pre-requisites | * Deployment Guide section: 3.5.3 * Invocation Register Test Harness Package Installation has been completed successfully using parameter values outlined in the deployment guide * Invocation Register Test Harness Package installation test case has been executed and passed * Invocation Register Test Harness Adapter package installation has been completed successfully | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open SQL Server Management Studio on the server where the ServiceProviderRegister database has been installed * Locate the ServiceProviderRegister database * Confirm that the expected records are present in the following tables:   + ServiceProviderType   + ServiceProvider   + ServiceProviderPool   + MessageType   + ServiceProviderTypeMessageType | |
| Expected results | All records are present as expected | |

#### Smoke tests

|  |  |  |
| --- | --- | --- |
| Smoke tests | | Test #: IR200 |
| Description | Consists of a small sub-set of test cases which are used to ensure that each component has been deployed and configured correctly and that the service is available for use within the wider HCE solution. | |
| Pre-requisites | * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully * Post installation configuration test case has been executed and passed | |
| Test case | On the server where the Invocation Register Test Harness was installed   * Browse to <http://localhost/InvocationRegisterTestHarness/Default.aspx> * Click on the radio button next to Sample Message 1 * Enter the following details in the text boxes displayed:   + First Name: Mark   + Last Name: Simmons   + NHI: ABC125 * Click the Submit button | |
| Expected results | The following URL is displayed confirming that the interaction session details were correctly retrieved from the Service Provider Register:  http://hce21tst/?messagetypeid=9023&serviceproviderid=300&  FirstName=Mark&LastName=Simmons&NHI=ABC125 | |

## Change Notification Service

#### Deployment and Configuration

|  |  |  |
| --- | --- | --- |
| Package Installation | | Test #: CNS100 |
| Description | Tests the deployment of each component using the installation package and deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.7.2 * Package Installation has been completed successfully using parameter values outlined in the deployment guide | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open Add or Remove Programs within the Control Panel * Confirm that the application named “Microsoft Connection Engine 2.1.1 Service Provider Register – Change Notification Service” is present * Navigate to the folder “C:\Program Files\Microsoft Connection Engine\Change Notification Service” * Confirm that folders with the following names exist:   + Database Scripts   + Subscription Management Harness * Confirm that 27 files exist including the following:   + HCENotificationServiceADF.xml   + HCENotificationServiceICF.xml * Open SQL Server Management studio and confirm that   + the database named “HCENotificationServiceNSMain” exists   + the notification service named “HCENotificationService” exists under the Notification Services node   + there are 66 tables with the namespace “CN” exist in the database named “ServiceProviderRegister” | |
| Expected results | The application exists within the Add ort Remove Programs control panel component  The folders and files exist in the installation folder  All databases and notification service components exist as expected within SQL Server | |

|  |  |  |
| --- | --- | --- |
| Post installation configuration | | Test #: CNS101 |
| Description | Tests configuration of each component using the steps outlined in the deployment documentation. | |
| Pre-requisites | * Deployment Guide section: 3.7.3 * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully | |
| Test case | Navigate to the section listed in the pre-requisites section  On the server where the package was installed:   * Open SQL Server Management studio and confirm that the SQL Login HCE21TST\BTSAdmin has db\_owner rights on the databases   + HCENotificationServiceNSMain   + ServiceProviderRegister * Confirm that the service named “NS$HCENotificationService” exists in the Services management console and that it is started and running using the identity BTSAdmin * Open the Subscription Management Harness from “C:\Program Files\Microsoft Connection Engine\Change Notification Service\Subscription Management Harness\Subscription Management.exe” and confirm that the entry “HCESubscribers” exists in the Existing Subscribers drop down list | |
| Expected results | The database permissions are configured as expected  The Change Notification Service NT Service is configured as expected  The notification services subscriptions are configured as expected | |

#### Smoke tests

|  |  |  |
| --- | --- | --- |
| Smoke tests | | Test #: CNS200 |
| Description | Consists of a small sub-set of test cases which are used to ensure that each component has been deployed and configured correctly and that the service is available for use within the wider HCE solution. | |
| Pre-requisites | * Package Installation has been completed successfully using parameter values outlined in the deployment guide * Package installation test case has been executed and passed * Post installation configuration has been completed successfully * Post installation configuration test case has been executed and passed | |
| Test case | No smoke tests have been defined for the Change Notification Service as the Change Notification Service component is provided as a sample implementation and is not intended to be used within a HCE solution in its current form.  Smoke tests for the Change Notification Service can be formulated based on the test cases present within the document “HCE 2.0 - Iteration 4 - Change Notification Service - Test Plan and Execution” listed in section 1.1 | |
| Expected results | N/A | |

# Appendix 1: Windows SharePoint Services Pre-Configuration Steps

If Windows SharePoint Services is installed on the server then we need to change the trust level defined to support HCE.

1. Change the value of trust level to full in the web.config file in the root of the Default Web Site (c:\inetpub\wwwroot\web.config)
2. Replace the line that starts with <trust level=”WSS\_Minimal”... /> with <trust level="Full" />

Also, any web application installed by HCE must be removed from Share Points Managed Paths. In order to remove an application form the managed paths, the steps below must be followed:

1. Open IIS Management Console (%SystemRoot%\system32\inetsrv\iis.msc)
2. Navigate to **Web Sites/SharePoint Central Administration**
3. Right click on **default.aspx** and select browse.
4. Under Virtual Server Configuration click on **Configure virtual server settings**
5. Select **Default Web Site**
6. Under Virtual Server Management click on **Define managed paths**
7. Under Add a New Path write the name of the web application to be removed preceded by a slash (/) (e.g. /RoutingServices).
8. Select **Excluded path**
9. Click on **OK.**

You must repeat steps 07 to 09 for each one of the web applications installed. Those steps should count as a post-installation step.

# Appendix 2: Service Provider Register database values

This section outlines the data inserted into the major tables within the Service Provider Register during the installation of HCE components.

The text within the table has been colored using the following key to represent which rows are inserted during the installation of each component

1. Black text - Rows inserted during Service Provider Register deployment
2. Blue text - Rows inserted during Service Provider Register Administration deployment
3. Pink text - Rows inserted during Patient Register deployment

### Table: dbo.MessageType

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| MessageTypeID | description | xmlSchema | version | lockedUserID | lockedDate | status |
| 1000 | Service Provider Search Request | http://HCE21TST/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/ServiceProviderID.xsd | 1.0 | NULL | NULL | 0 |
| 1001 | Service Provider Search Result | http://HCE21TST/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/serviceproviderlist.xsd | 1.0 | NULL | NULL | 0 |
| 1002 | Health Service Directory Reference Data Request | http://HCE21TST/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/hsdreferencedatarequest.xsd | 1.0 | NULL | NULL | 0 |
| 1003 | Health Service Directory Reference Data Result | http://HCE21TST/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/hsdreferencedata.xsd | 1.0 | NULL | NULL | 0 |
| 9026 | Interactive Session URI List Request | http://HCE21TST/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/ServiceProviderID.xsd | 1.0 | NULL | NULL | 0 |
| 9027 | Interactive Session URI List Result | http://HCE21TST/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/InteractiveSessionList.xsd | 1.0 | NULL | NULL | 0 |
| 1014 | Service Provider Search Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviderSearchRequest.xsd | 1.0 | NULL | NULL | 0 |
| 1008 | Service Provider Lock | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovideridrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1006 | Service Provider Delete | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovideridrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1007 | Service Provider UnLock | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovideridrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1009 | Service Provider Update | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidereditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1010 | Service Provider Insert | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidereditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1012 | Service Provider Update Result | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovider.xsd | 1.0 | NULL | NULL | 0 |
| 1013 | Service Provider Check- Out Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovider.xsd | 1.0 | NULL | NULL | 0 |
| 1016 | Pool Delete | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1017 | Pool Check-In | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1018 | Pool Check-Out | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1019 | Pool Update | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/pooleditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1020 | Pool Insert | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/pooleditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1021 | Pool Insert Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/pool.xsd | 1.0 | NULL | NULL | 0 |
| 1022 | Pool Update Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/pool.xsd | 1.0 | NULL | NULL | 0 |
| 1023 | Pool Check-Out Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/pool.xsd | 1.0 | NULL | NULL | 0 |
| 1026 | Remove ServiceProvider From Pool | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviderPoolInsertDelete.xsd | 1.0 | NULL | NULL | 0 |
| 1027 | Add ServiceProvider To Pool | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviderPoolInsertDelete.xsd | 1.0 | NULL | NULL | 0 |
| 1015 | Service Provider Search Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviders.xsd | 1.0 | NULL | NULL | 0 |
| 1024 | Pool Search Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolsearchrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1025 | Pool Search Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/pools.xsd | 1.0 | NULL | NULL | 0 |
| 1028 | Remover ServiceProviderType From Pool | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolserviceprovidertypeeditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1029 | Add ServiceProviderType To Pool | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolserviceprovidertypeeditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1030 | ServiceProviderType Delete | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertypeidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1011 | Service Provider Insert Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovider.xsd | 1.0 | NULL | NULL | 0 |
| 1031 | ServiceProviderType Check-In | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertypeidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1032 | ServiceProviderType Check-Out | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertypeidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1033 | ServiceProviderType Update | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertypeeditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1034 | ServiceProviderType Insert | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertypeeditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1035 | ServiceProviderType Insert Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertype.xsd | 1.0 | NULL | NULL | 0 |
| 1036 | ServiceProviderType Update Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertype.xsd | 1.0 | NULL | NULL | 0 |
| 1037 | ServiceProviderType Check-Out Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertype.xsd | 1.0 | NULL | NULL | 0 |
| 1038 | Pool Check-In All | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolunlockall.xsd | 1.0 | NULL | NULL | 0 |
| 1039 | ServiceProviderType Check-In All | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertypeunlockall.xsd | 1.0 | NULL | NULL | 0 |
| 1040 | ServiceProvider Unlock All | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceproviderunlockall.xsd | 1.0 | NULL | NULL | 0 |
| 1041 | ServiceProviderType Search Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertypesearchrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1042 | ServiceProviderType Search Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertypes.xsd | 1.0 | NULL | NULL | 0 |
| 1043 | MessageType Search Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetypesearchrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1044 | MessageType Search Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetypelist.xsd | 1.0 | NULL | NULL | 0 |
| 1045 | MessageType Check-In | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetypeidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1046 | MessageType Check-Out | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetypeidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1047 | MessageType Check-Out Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetype.xsd | 1.0 | NULL | NULL | 0 |
| 1054 | Add Service Provider Types to MessageType | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviderTypeMessageTypeLinkEditRequest.xsd | 1.0 | NULL | NULL | 0 |
| 1055 | Remove Service Provider Types from Message Type | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviderTypeMessageTypeIDRequest.xsd | 1.0 | NULL | NULL | 0 |
| 1064 | ServiceProviderType SelectItem Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertypeidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1065 | ServiceProviderType SelectItem Result | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovidertype.xsd | 1.0 | NULL | NULL | 0 |
| 1063 | PoolServiceProviderTypes Insert List Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolserviceprovidertypelinkListEdit.xsd | 1.0 | NULL | NULL | 0 |
| 1048 | MessageType Check-In All | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetypeunlockall.xsd | 1.0 | NULL | NULL | 0 |
| 1049 | MessageType Insert | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetypeeditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1050 | MessageType Insert Result | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetype.xsd | 1.0 | NULL | NULL | 0 |
| 1051 | MessageType Update | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetypeeditrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1052 | MessageType Update Result | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetype.xsd | 1.0 | NULL | NULL | 0 |
| 1053 | MessageType Delete | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetypeidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1058 | ServiceProviderType MessageType Insert List | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviderTypeMessageTypeLinkListEdit.xsd | 1.0 | NULL | NULL | 0 |
| 1059 | ServiceProviderTypeMessageType Search Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviderTypeMessageTypeSearchRequest.xsd | 1.0 | NULL | NULL | 0 |
| 1060 | ServiceProviderTypeMessageType Search Result | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviderTypeMessageTypeList.xsd | 1.0 | NULL | NULL | 0 |
| 1056 | MessageType SelectItem Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetypeidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1057 | MessageType SelectItem Result | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/messagetype.xsd | 1.0 | NULL | NULL | 0 |
| 1066 | Pool SelectItem Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolidrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1067 | Pool SelectItem Result | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/pool.xsd | 1.0 | NULL | NULL | 0 |
| 1061 | Pool ServiceProviderType Search Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolServiceProviderTypeSearchRequest.xsd | 1.0 | NULL | NULL | 0 |
| 1062 | Pool ServiceProviderType Search Result | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolServiceProviderTypelist.xsd | 1.0 | NULL | NULL | 0 |
| 1068 | Pool ServiceProviderType Delete List | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/poolserviceprovidertypelinkListEdit.xsd | 1.0 | NULL | NULL | 0 |
| 2000 | Validate User Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/usercredentials.xsd | 1.0 | NULL | NULL | 0 |
| 2001 | Validate User Response | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/hsdprincipal.xsd | 1.0 | NULL | NULL | 0 |
| 1069 | ServiceProviderType MessageType Delete List | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/ServiceProviderTypeMessageTypeLinkListEdit.xsd | 1.0 | NULL | NULL | 0 |
| 1070 | ServiceProvider Select Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovideridrequest.xsd | 1.0 | NULL | NULL | 0 |
| 1071 | ServiceProvider Select Result | http://hce21tst/ServiceProviderRegisterWS/Schemas/ServiceProviderRegister/Admin/serviceprovider.xsd | 1.0 | NULL | NULL | 0 |
| 9003 | ServiceProviderPool Delete List Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/serviceproviderpoollinkListEdit.xsd | 1.0 | NULL | NULL | 0 |
| 9004 | ServiceProviderPool Insert List Request | http://hce21tst/ServiceProviderRegisterWS/Schemas/serviceproviderpoollinkListEdit.xsd | 1.0 | NULL | NULL | 0 |
| 9005 | Patient Register Patient Insert | http://HCE21TST/PatientRegisterWS/Schemas/PatientRequest.xsd | 1.0 | NULL | NULL | 1 |
| 9006 | Patient Update | http://HCE21TST/PatientRegisterWS/Schemas/PatientRequest.xsd | 1.0 | NULL | NULL | 0 |
| 9007 | Patient Search | http://HCE21TST/PatientRegisterWS/Schemas/PatientSearch.xsd | 1.0 | NULL | NULL | 0 |
| 9008 | Patient Search Result | http://HCE21TST/PatientRegisterWS/Schemas/Patients.xsd | 1.0 | NULL | NULL | 0 |
| 9009 | Patient Select | http://HCE21TST/PatientRegisterWS/Schemas/PatientIDRequest.xsd | 1.0 | NULL | NULL | 0 |
| 9010 | Patient Select Result | http://HCE21TST/PatientRegisterWS/Schemas/Patient.xsd | 1.0 | NULL | NULL | 0 |
| 9011 | Patient Lock | http://HCE21TST/PatientRegisterWS/Schemas/PatientIDRequest.xsd | 1.0 | NULL | NULL | 0 |
| 9012 | Patient Unlock | http://HCE21TST/PatientRegisterWS/Schemas/PatientIDRequest.xsd | 1.0 | NULL | NULL | 0 |
| 9013 | Patient Unlock All | http://HCE21TST/PatientRegisterWS/Schemas/PatientIDRequest.xsd | 1.0 | NULL | NULL | 0 |
| 9014 | Patient Update Result | http://HCE21TST/PatientRegisterWS/Schemas/Patient.xsd | 1.0 | NULL | NULL | 0 |
| 9015 | Patient Insert Result | http://HCE21TST/PatientRegisterWS/Schemas/Patient.xsd | 1.0 | NULL | NULL | 0 |
| 9018 | Patient Search Result2 | http://HCE21TST/PatientRegisterWS/Schemas/Patients.xsd | 1234567890 | NULL | NULL | 0 |

### Table: dbo.ServiceProviderType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| serviceProviderTypeID | displayName | serviceProviderTypeCode | lockedUserID | lockedDate | status |
| 101 | Service Provider Register | SPR | NULL | NULL | 0 |
| 102 | Service Provider Register Admin Services | SPRAdmin | NULL | NULL | 0 |
| 117 | Patient Register | PTREG | NULL | NULL | 0 |
| 118 | Patient Register Client | PTREGC | NULL | NULL | 0 |

### Table: dbo.PoolServiceProviderType

|  |  |
| --- | --- |
| serviceProviderTypeID | poolID |
| 101 | 1 |
| 102 | 1 |
| 117 | 1 |
| 118 | 1 |

### Table: dbo.Pool

|  |  |
| --- | --- |
| poolID | poolName |
| 1 | Default Pool |

### Table: dbo.ServiceProvider

(Note: not all fields and field values from this table are shown.)

|  |  |  |  |
| --- | --- | --- | --- |
| serviceProviderID | displayName | serviceProviderTypeID | systemName |
| 101 | Service Provider Register | 101 | Service Provider Register |
| 102 | Service Provider Register Administration | 102 | Service Provider Register Admin |
| 117 | Patient Register | 117 | Patient Register |

|  |  |
| --- | --- |
| serviceProviderID | webServiceURL |
| 101 | http://HCE21TST/ServiceProviderRegisterWS/ConnectionEngineAdapter.asmx |
| 102 | <http://hce21tst/ServiceProviderRegisterAdminWS>/ConnectionEngineAdapter.asmx |
| 117 | http://HCE21TST/PatientRegisterWS/PatientRegisterWS.asmx |

### Table: dbo.ServiceProviderPool

|  |  |
| --- | --- |
| serviceProviderID | poolID |
| 101 | 1 |
| 102 | 1 |
| 117 | 1 |

### Table: dbo.ServiceProviderTypeMessageType

|  |  |  |  |
| --- | --- | --- | --- |
| serviceProviderTypeMessageTypeID | messageTypeID | sourceServiceProviderTypeID | destinationServiceProviderTypeID |
| 70 | 1000 | 102 | 101 |
| 71 | 1001 | 101 | 102 |
| 72 | 1002 | 102 | 101 |
| 73 | 1003 | 101 | 102 |
| 74 | 1006 | 102 | 101 |
| 75 | 1007 | 102 | 101 |
| 73 | 1008 | 102 | 101 |
| 76 | 1009 | 102 | 101 |
| 77 | 1010 | 102 | 101 |
| 103 | 1011 | 102 | 101 |
| 78 | 1012 | 102 | 101 |
| 79 | 1013 | 102 | 101 |
| 72 | 1014 | 102 | 101 |
| 90 | 1015 | 102 | 101 |
| 80 | 1016 | 102 | 101 |
| 81 | 1017 | 102 | 101 |
| 82 | 1018 | 102 | 101 |
| 83 | 1019 | 102 | 101 |
| 84 | 1020 | 102 | 101 |
| 85 | 1021 | 102 | 101 |
| 86 | 1022 | 102 | 101 |
| 86 | 1022 | 102 | 101 |
| 87 | 1023 | 102 | 101 |
| 91 | 1024 | 102 | 101 |
| 92 | 1025 | 102 | 101 |
| 88 | 1026 | 102 | 101 |
| 89 | 1027 | 102 | 101 |
| 93 | 1028 | 102 | 101 |
| 94 | 1029 | 102 | 101 |
| 95 | 1030 | 102 | 101 |
| 96 | 1031 | 102 | 101 |
| 97 | 1032 | 102 | 101 |
| 98 | 1033 | 102 | 101 |
| 99 | 1034 | 102 | 101 |
| 100 | 1035 | 102 | 101 |
| 101 | 1036 | 102 | 101 |
| 102 | 1037 | 102 | 101 |
| 104 | 1038 | 102 | 101 |
| 105 | 1039 | 102 | 101 |
| 106 | 1040 | 102 | 101 |
| 107 | 1041 | 102 | 101 |
| 108 | 1042 | 102 | 101 |
| 111 | 1043 | 102 | 101 |
| 113 | 1045 | 102 | 101 |
| 114 | 1046 | 102 | 101 |
| 116 | 1048 | 102 | 101 |
| 117 | 1049 | 102 | 101 |
| 119 | 1051 | 102 | 101 |
| 121 | 1053 | 102 | 101 |
| 123 | 1054 | 102 | 101 |
| 149 | 1055 | 102 | 101 |
| 130 | 1056 | 102 | 101 |
| 125 | 1058 | 102 | 101 |
| 128 | 1059 | 102 | 101 |
| 159 | 1061 | 102 | 101 |
| 134 | 1063 | 102 | 101 |
| 132 | 1064 | 102 | 101 |
| 135 | 1066 | 102 | 101 |
| 147 | 1068 | 102 | 101 |
| 196 | 1068 | 102 | 101 |
| 152 | 1069 | 102 | 101 |
| 162 | 1070 | 102 | 101 |
| 71 | 1200 | 102 | 101 |
| 222 | 1200 | 22 | 101 |
| 70 | 1201 | 102 | 101 |
| 109 | 2000 | 102 | 101 |
| 166 | 9000 | 102 | 101 |
| 164 | 9003 | 102 | 101 |
| 165 | 9004 | 102 | 101 |
| 112 | 1044 | 101 | 102 |
| 115 | 1047 | 101 | 102 |
| 118 | 1050 | 101 | 102 |
| 120 | 1052 | 101 | 102 |
| 131 | 1057 | 101 | 102 |
| 129 | 1060 | 101 | 102 |
| 160 | 1062 | 101 | 102 |
| 133 | 1065 | 101 | 102 |
| 136 | 1067 | 101 | 102 |
| 163 | 1071 | 101 | 102 |
| 110 | 2001 | 101 | 102 |
| 234 | 1000 | 117 | 101 |
| 235 | 1000 | 118 | 101 |
| 236 | 1001 | 101 | 117 |
| 241 | 1001 | 101 | 118 |
| 238 | 1002 | 117 | 101 |
| 239 | 1002 | 118 | 101 |
| 240 | 1003 | 101 | 117 |
| 237 | 1003 | 101 | 118 |
| 242 | 2000 | 117 | 101 |
| 243 | 2000 | 118 | 101 |
| 224 | 9006 | 118 | 117 |
| 225 | 9007 | 118 | 117 |
| 232 | 9008 | 117 | 118 |
| 226 | 9009 | 118 | 117 |
| 231 | 9010 | 117 | 118 |
| 227 | 9011 | 118 | 117 |
| 228 | 9012 | 118 | 117 |
| 229 | 9013 | 118 | 117 |
| 233 | 9014 | 117 | 118 |
| 230 | 9015 | 117 | 118 |

### Table: dbo.PnPMessageStatus

|  |  |  |
| --- | --- | --- |
| messageStatusID | displayName | canBeSetBy |
| 0 | Ok | Destination Connected System Adapter |
| 1 | Connection Engine Message format not valid | HCE Routing Services |
| 2 | PnPMessage content not valid | HCE Routing Services |
| 3 | Source and Destination Service Providers not in the same pool | HCE Routing Services (based on Status provided by the Service Provider Register) |
| 4 | Message Type not valid for delivery from Source Service Provider to Destination Service Provider | HCE Routing Services (based on Status provided by the Service Provider Register) |
| 5 | Connection Engine Message Payload format not valid | Destination Connected System Adapter |
| 6 | Connection Engine Message Payload content not valid | Destination Connected System Adapter |
| 7 | Error decrypting Connection Engine Message payload | Connected System Adapter |
| 8 | Error encrypting Connection Engine Message payload | Connected System Adapter |
| 99 | Unhandled error occurred | Connected System Adapter or HCE Routing Services |
| 9 | Error Creating Connection Engine Message Payload | Service Provider Register Adapter |
| 10 | Object is not checked out | Service Provider Register Adapter |

### Table: aspnet\_Applications

|  |  |  |  |
| --- | --- | --- | --- |
| ApplicationName | LoweredApplicationName | ApplicationID | Description |
| HSD | hsd | 936be925-be69-46ee-a072-0d028df0a981 | *NULL* |

### Table: aspnet\_Membership

(Note: not all fields and field values from this table are shown.)

|  |  |  |
| --- | --- | --- |
| ApplicationID | UserID | Password |
| 936be925-be69-46ee-a072-0d028df0a981 | 64fa71f5-d257-4efb-963b-cc956f3defcd | !password01 |

### Table: aspnet\_Roles

(Note: not all fields and field values from this table are shown.)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ApplicationID | RoleID | RoleName | LoweredRoleName | Description |
| 936be925-be69-46ee-a072-0d028df0a981 | befe00b9-af06-419a-a8bb-ef8d6bca7896 | Administrator | administrator | admin |
| 936be925-be69-46ee-a072-0d028df0a981 | f616104a-3b4d-4a34-863a-338b0728bf6a | Client | client | client |

### Table: aspnet\_SchemaVersions

|  |  |  |
| --- | --- | --- |
| Feature | CompatiableSchemaVersion | IsCurrentVersion |
| membership | 1 | True |
| role manager | 1 | True |

### Table: aspnet\_Users

(Note: not all fields and field values from this table are shown.)

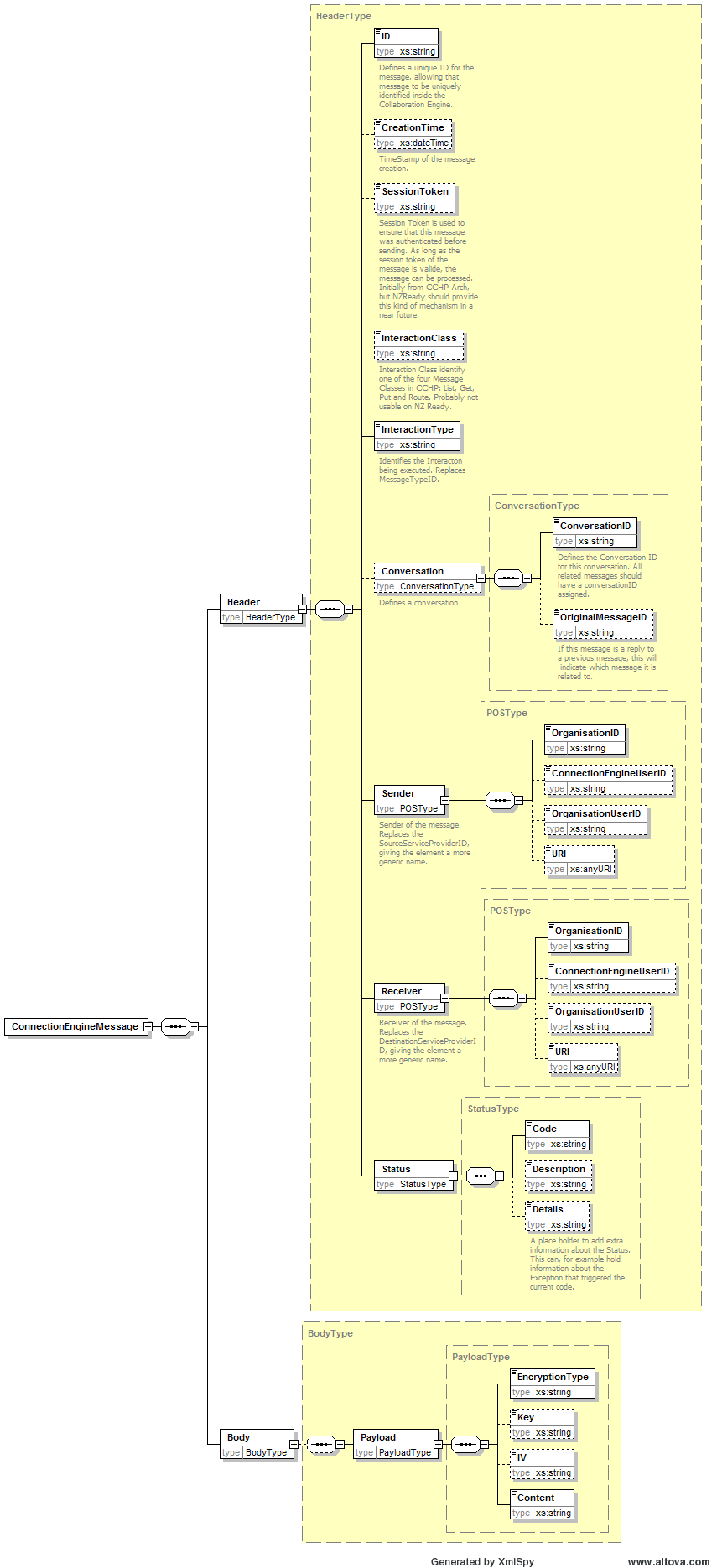
|  |  |  |  |
| --- | --- | --- | --- |
| ApplicationID | UserID | UserName | LoweredUserName |
| 936be925-be69-46ee-a072-0d028df0a981 | 64fa71f5-d257-4efb-963b-cc956f3defcd | me | me |

### Table: aspnet\_UsersInRoles

|  |  |
| --- | --- |
| UserId | RoleId |
| 64fa71f5-d257-4efb-963b-cc956f3defcd | f616104a-3b4d-4a34-863a-338b0728bf6a |
| 64fa71f5-d257-4efb-963b-cc956f3defcd | befe00b9-af06-419a-a8bb-ef8d6bca7896 |

# Appendix 2: ConnectionEngineMessage Schema

The following diagram depicts the HCE ConnectionEngineMessage schema used within HCE 2.1.1. All messages sent within the HCE solution conform to this schema.



1. Output from “ver” command: Microsoft Windows [Version 5.2.3790] [↑](#footnote-ref-2)
2. Version number reported on Properties for “C:\WINDOWS\System32\inetsrv\asp.dll”: Version 6.0.3790.2684 [↑](#footnote-ref-3)
3. Version number reported on About dialog in Microsoft Visual Studio 2005: Version 2.0.50727 [↑](#footnote-ref-4)
4. Version number reported on About dialog in Microsoft Visual Studio 2005: Version 8.0.50727..42 (RTM.050227-4200) [↑](#footnote-ref-5)
5. Output from “SELECT @@VERSION” command: Microsoft SQL Server 2005 - 9.00.2047.00 (Intel X86) Apr 14 2006 01:12:25 Enterprise Edition on Windows NT 5.2 (Build 3790: Service Pack 1) [↑](#footnote-ref-6)
6. Version number reported on About dialog in Microsoft BizTalk Server 2006 Configuration Wizard: Version 3.5.1602.0 [↑](#footnote-ref-7)
7. Reported using Microsoft Update [http://update.microsoft.com/microsoftupdate/v6/default.aspx?ln=en-us] [↑](#footnote-ref-8)
8. The fully qualified domain name for the server should be provided if the server is part of a Domain [↑](#footnote-ref-9)
9. Note this piece of the path should be set to the name of the virtual directory provided during the installation of the Service Provider Register (as detailed in section 3.2). By default this virtual directory is named “ServiceProviderRegisterWS” and so this value should be used if the Service Provider Register is to be installed using the default settings. [↑](#footnote-ref-10)
10. Service Provider Type 100 will be set up in the next set of steps [↑](#footnote-ref-11)