Installation, Upgrade and Configuration Guide

Portal Development Kit for Microsoft .NET

Release 2.x

September 2006
# Typographic Conventions

<table>
<thead>
<tr>
<th>Type Style</th>
<th>Represents</th>
<th>Icon</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example Text</td>
<td>Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options. Cross-references to other documentation</td>
<td><img src="image" alt="Caution" /></td>
<td>Caution</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Emphasized words or phrases in body text, titles of graphics and tables, names of programs and files.</td>
<td><img src="image" alt="Example" /></td>
<td>Example</td>
</tr>
<tr>
<td>EXAMPLE TEXT</td>
<td>Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.</td>
<td><img src="image" alt="Note" /></td>
<td>Note</td>
</tr>
<tr>
<td>Example text</td>
<td>Screen output. This includes file and directory names and their paths, messages, names of variables and parameters, source code as well as names of installation, upgrade and database tools.</td>
<td><img src="image" alt="Recommendation" /></td>
<td>Recommendation</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.</td>
<td><img src="image" alt="Syntax" /></td>
<td>Syntax</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.</td>
<td><img src="image" alt="Syntax" /></td>
<td>Syntax</td>
</tr>
<tr>
<td>EXAMPLE TEXT</td>
<td>Keys on the keyboard, for example, function keys (such as F2) or the ENTER key.</td>
<td><img src="image" alt="Syntax" /></td>
<td>Syntax</td>
</tr>
</tbody>
</table>
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1. Introduction

PDK for .NET is a set of tools that enable Microsoft Visual Studio .NET developers to build portal content for SAP NetWeaver Portal. Organizations that have an existing investment in Microsoft .NET technology can leverage their developers’ skills to take advantage of the SAP NetWeaver technology.

This guide provides detailed instructions for installing, upgrading and configuring Portal Development Kit for Microsoft .NET (PDK for .NET). The information in this guide applies to versions 2.x (2.5 and 2.0) of PDK for .NET.

2. Installation Checklist

Use the tables in this section as checklists to make sure you cover all the required installation steps.

**Process Flow**
1. Print out the checklists.
2. Follow the installation sequence as shown in the tables.
   - For each step, follow the link to the corresponding section, and perform the procedure described there.
   - After you have successfully completed the installation step, mark the corresponding entry in the printed table with ✓ to log the progress of your installation.
   - Proceed with the next step listed in the table.

**Planning and Preparation**

<table>
<thead>
<tr>
<th>✓ Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take into account the <a href="#">System Landscape Considerations</a></td>
</tr>
<tr>
<td>Check the <a href="#">Hardware and Software Requirements</a></td>
</tr>
<tr>
<td>Download the <a href="#">Installation Package</a></td>
</tr>
<tr>
<td>Make sure you have access to the relevant <a href="#">SAP Notes</a></td>
</tr>
</tbody>
</table>

**Installation**

<table>
<thead>
<tr>
<th>✓ Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="#">Install Portal Add-in for Visual Studio</a></td>
</tr>
<tr>
<td><a href="#">Install Portal Runtime for .NET</a></td>
</tr>
<tr>
<td><a href="#">Install Java - .NET Interoperability Components</a></td>
</tr>
</tbody>
</table>

**Post-Installation**

<table>
<thead>
<tr>
<th>✓ Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="#">Create a Logon Account for Portal Runtime for .NET</a></td>
</tr>
<tr>
<td><a href="#">Configure Portal Runtime for .NET</a></td>
</tr>
<tr>
<td><a href="#">Activate Portal Runtime for .NET</a></td>
</tr>
<tr>
<td><a href="#">Configure Portal-Side Settings of Portal Runtime for .NET</a></td>
</tr>
</tbody>
</table>
# Upgrade

<table>
<thead>
<tr>
<th>✔️</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If required, <a href="#">Upgrade from Previous Versions</a></td>
</tr>
<tr>
<td></td>
<td>To enable the use of PDK for .NET with SAP NetWeaver 2004s, <a href="#">Install the Hotfix</a></td>
</tr>
</tbody>
</table>

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3. Planning

Plan your installation according to the requirements of your system landscape and possible deployment configurations.

3.1. System Landscape Considerations

The PDK for .NET package is comprised of the following components:

  An extension of Microsoft Visual Studio that allows .NET developers to build, deploy and debug portal components for SAP NetWeaver Portal

- **Portal Runtime for Microsoft .NET (.NET Runtime)**
  A service used to process .NET portal components at runtime

- **Java - .NET Interoperability Framework**
  A mechanism that enables API calls between the Java stack and the .NET stack. It allows invoking Java-based portal services from .NET code, and permits SAP NetWeaver Portal to pass requests to the Portal Runtime for .NET service. It includes components that are installed on the portal server.

The following figure illustrates the technical system landscape for PDK for .NET.
### 3.2. Deployment Configurations

PDK for .NET supports a number of deployment configurations both for development and production:

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Development</strong></td>
<td></td>
</tr>
<tr>
<td>Single Host</td>
<td>Portal Add-in for Visual Studio, SAP NetWeaver Portal and Portal Runtime for .NET are installed on the same developer’s host.</td>
</tr>
</tbody>
</table>
| Multiple development hosts + single portal host | Developer’s host: Portal Add-in for Visual Studio  
Portal host: SAP NetWeaver Portal and Portal Runtime for Microsoft .NET.  
Recommended for team development. |
| **Production**         |                                                                                                                                              |
|                        | In a clustered environment, multiple nodes of *SAP NetWeaver Portal* and *Portal Runtime for Microsoft .NET* are installed on multiple servers.  |
|                        | If the portal servers run on a non-Windows operating system, you need to install *Portal Runtime for Microsoft .NET* on separate Windows hosts. |
|                        | It is recommended to have one or more *Portal Runtime for Microsoft .NET* failover hosts.                                                |
|                        | For more information about configuring and managing multiple *Portal Runtime for .NET* servers and server nodes, see section *Configuring Portal Runtime for .NET*. |
### 3.3. Hardware and Software Requirements

<table>
<thead>
<tr>
<th>Requirement Type</th>
<th>PDK 2.5 for .NET</th>
<th>PDK 2.0 for .NET</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Platform</strong></td>
<td>Windows 2003 or Windows XP (IA32 platforms only)</td>
<td></td>
</tr>
<tr>
<td><strong>Software requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for the <strong>development environment</strong></td>
<td>Microsoft Visual Studio 2005 Professional Edition or higher</td>
<td>Microsoft Visual Studio 2003</td>
</tr>
<tr>
<td></td>
<td><a href="KB915364">Microsoft Visual Studio 2005 - Update to Support Web Application Projects</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td><a href="KB915364">Visual Studio 2005 Web Application Projects package</a></td>
<td></td>
</tr>
<tr>
<td><strong>Software requirements</strong></td>
<td>Microsoft .NET Framework 2.0</td>
<td>Microsoft .NET Framework 1.1</td>
</tr>
<tr>
<td>for the <strong>runtime environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hardware requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for the <strong>development environment</strong></td>
<td>Same as for Microsoft Visual Studio 2005</td>
<td>Same as for Microsoft Visual Studio 2003</td>
</tr>
<tr>
<td><strong>Hardware requirements</strong></td>
<td>Minimal: same as for Microsoft .NET Framework 2.0</td>
<td>Minimal: same as for Microsoft .NET Framework 1.1</td>
</tr>
<tr>
<td>for the <strong>runtime environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For more information about determining hardware requirements for your system, see <a href="KB915364">Appendix A: Sizing and Performance</a></td>
<td></td>
</tr>
<tr>
<td><strong>Other requirements</strong></td>
<td>SAP NetWeaver Portal 6.0 on SAP NetWeaver 2004s SP Stack 09 and above, or on SAP NetWeaver 2004 SP Stack 16 or above, is installed and available (it does not have to be on the same host as PDK for .NET). To enable the use of PDK for .NET with SAP NetWeaver 2004s, you need to install it as described below, and then install the hotfix.</td>
<td></td>
</tr>
<tr>
<td><strong>Permissions</strong></td>
<td>Your portal logon account should have system administrator permissions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Your logon account on each of the installation hosts should have administrator permissions.</td>
<td></td>
</tr>
</tbody>
</table>

#### 3.3.1. Downloading the Installation Package

1. Download the installation package from SAP Service Marketplace at: [service.sap.com/swdc](service.sap.com/swdc) → SAP Installations and Upgrades → Entry by Application Group → SAP NetWeaver → PDK for MS.NET → PDK PORTAL SERVICES 2.x → Win32.

2. Save the downloaded .zip file on your host, and extract its contents to a location of your choice.
3.4. SAP Notes

The SAP Notes listed below contain the most recent information about the installation, as well as corrections to the installation documentation.

Make sure that you have the up-to-date version of each SAP Note, which you can find at SAP Service Marketplace: service.sap.com/notes

<table>
<thead>
<tr>
<th>SAP Note Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>800842</td>
<td>Central Note for PDK for MS .NET</td>
</tr>
</tbody>
</table>
4. Installation and Upgrade

The installation of PDK for .NET includes installation procedures for each of its three components.

1. Log on to your host as a user with administrator permissions.

2. Go to the folder that contains the installation files, and follow the instructions below.

4.1. Portal Add-In Installation

To install SAP Portal Add-in:


2. In the Welcome screen, click Next to continue.

3. In the Destination Folder screen, select the destination folder for the installation. Click Change if you want to install to a folder different from the default. Click Next to continue.

4. In the Setup Type screen, select Complete or Custom, and click Next.
   a. If you have chosen Custom, select the program features you want to install in the Custom Setup screen. You can select whether to install the Documentation.

5. In the Ready to Install the Program screen, click Install to begin the installation, or click Back to review or change your settings. The installation program installs the software and updates your system.

6. The installation of Portal Add-in for Visual Studio is completed. Click Finish to close the InstallShield wizard.

During the installation, the following actions are performed automatically:

- Runtime assemblies are registered in the Global Assembly Cache.
- The Portal Add-in for Visual Studio 2005 or Portal Add-in for Visual Studio 2003 registry key is created on the HKEY_LOCAL_MACHINE\SOFTWARE registry branch.

4.2. Portal Runtime for .NET Installation

To install SAP Portal Runtime for .NET:

1. Double-click SAP Portal Runtime 2.5 for Microsoft .NET.exe or SAP Portal Runtime 2.0 for Microsoft .NET.exe to launch the InstallShield Wizard.

2. In the Welcome screen, click Next to continue.

3. In the Destination Folder screen, select the destination folder for the installation. Click Change if you want to install to a folder different from the default one. Click Next to continue.

4. In the Configuration screen, configure the TCP port for communication with the portal. The default value is 8050.

5. In the Ready to Install the Program screen, click Install to begin the installation, or click Back to review or change your settings. The installation program installs the software and updates your system.

6. The installation of Portal Runtime for .NET is completed. Click Finish to close the InstallShield wizard.

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During installation, the following actions are performed automatically:

- The ability to run ASP.NET applications on the Portal Runtime for .NET host is verified.
- Runtime assemblies are registered in the Global Assembly Cache.
- The **Portal Runtime for Microsoft.NET** folder is created on the local hard drive.
- The **Portal Runtime for Microsoft.NET** registry key is created on the HKEY_LOCAL_MACHINE\SOFTWARE registry branch.
- The **SAP NetWeaver Portal Runtime for Microsoft .NET Server 00** Windows service is created.

### 4.3. Installation of Java - .NET Interoperability Components

Java - .NET Interoperability components (**com.sap.portal.dotnet.framework.sda** and **com.sap.portal.dotnet.services.systems.sda**), which enable communication with Portal Runtime for .NET, are installed in the portal server.

> These files come preinstalled with SAP NetWeaver Portal 6.0 on SAP NetWeaver 2004s SPS 09 and higher, or SAP NetWeaver 2004 SPS 17. However, if your portal is upgraded from an earlier version, you need to redeploy them manually using the **Software Deployment Manager** tool (SDM).

**To redeploy the SDA files:**

1. Log on to the portal host.
2. **Back up** the **com.sap.portal.dotnet.framework.sda** and **com.sap.portal.dotnet.services.systems.sda** files, located in the `<sdm_home>\root\origin\sap.com\com.sap.portal.dotnet.framework\SAP AG\2\<version number>` folder, in a local folder on your host.
3. Change to the `<sdm_home>/program` subfolder in your SAP Web Application Server folder.
4. Start SDM GUI in remote mode with the start script `RemoteGui.bat` (Windows host) or `RemoteGui.sh` (UNIX host).
5. Log on to SDM GUI.
6. Click the **Undeployment** tab of Software Deployment Manager.
   a. Select the **com.sap.portal.dotnet.framework.sda** and **com.sap.portal.dotnet.services.systems.sda** files, and click **Select SDA for Undeployment** to move them to the window **SDAs Selected for Undeployment**.
   b. Click **Start Undeployment**. The selected SDAs are removed from the J2EE Engine.
7. Click the **Deployment** tab of Software Deployment Manager.
   a. Click either the icon **Add SCAs/SDAs to Deployment List (Local File Browser)** or **Add SCAs/SDAs to Deployment List (Server Side File Browser)**, depending on the location of the SDA files.
   b. Browse to the location of the backup SDA files, and add them to the deployment list:
      - **com.sap.portal.dotnet.framework.sda**
      - **com.sap.portal.dotnet.services.systems.sda**
   c. Follow the instructions to deploy these files to the portal.

For more information, see:
8. After deployment of the SDA files, restart the portal.

4.4. Upgrading from Previous Versions


Portal Runtime 2.5 for .NET supports content created with the previous versions. If you have mixed content, created with different versions of PDK for .NET, you must install Portal Runtime 2.5 for .NET on all runtime hosts.

If you have a previous version of Portal Runtime for .NET installed on any of your hosts, the installation wizard will automatically detect and upgrade your installation.

Prior to upgrading, you need to stop all Portal Runtime for .NET server nodes on the host.

After upgrading, you need to:
- Reassign the logon account to all existing Portal Runtime for .NET server nodes. For more information, see Configuring Portal Runtime for .NET.
- Assign full control permissions for the <Portal Runtime for .NET Installation folder> to the logon account. For more information, see Creating a logon account for Portal Runtime for .NET.
- Configure the portal-side settings of Portal Runtime for .NET (see Configuring Portal-Side Settings).

4.5. Installing the Hotfix

To enable the use of PDK for .NET on SAP NetWeaver 2004s, you need to install Hotfix 1 on top of your existing installation of the respective version of PDK.

Download the hotfix installation package (for the exact location on SAP Service Marketplace, see the Central Note for PDK for MS .NET #800842), save the .zip file on your host, and extract its contents to a location of your choice.

To install the Portal Add-in hotfix

2. In the Welcome screen, click Update to continue. The installation program installs the software and updates your system.
3. The installation of the hotfix is completed. Click Finish to close the InstallShield wizard.

To install the Portal Runtime hotfix

After the hotfix installation, the TCP port number used for communication with the portal is reset to its default value 8050. If you are using another port number, you need to redefine it in the
1. Double-click SAP Portal Runtime 2.5 for Microsoft .NET- Hotfix 1.exe or SAP Portal Runtime 2.0 for Microsoft .NET- Hotfix 1.exe to launch the InstallShield Wizard.

2. In the Welcome screen, click Update to continue. The installation program installs the software and updates your system.

3. The installation of the hotfix is completed. Click Finish to close the InstallShield wizard.

Java-.NET Interoperability components are preinstalled in the portal. However, in some cases you might need to redeploy them. For more information, see Installation of Java-.NET Interoperability Components.

To upgrade from PDK 2.0 for .NET on NetWeaver 2004 to PDK 2.5 for .NET on NetWeaver 2004s, you need to upgrade to PDK 2.5 for .NET, and then install the hotfix.

4.6. Copying an Existing Installation

To copy an existing Portal Runtime for .NET installation to another host, you need to install it on a new host (see Portal Runtime for .NET Installation for instructions), and then perform the necessary configuration tasks, using the parameters of the existing installation. However, in the portal-side settings you should adapt the host name to the new host.
5. Post-Installation Activities

5.1. Creating a Logon Account for Portal Runtime for .NET

The portal authentication and authorization scheme requires the Portal Runtime for .NET service to provide logon credentials. For this purpose, a dedicated Windows user account should be configured and assigned to the Portal Runtime for .NET service.

Creating a Logon Account

1. In Windows, choose Start → Programs → Administrative Tools → Computer Management.
2. In the Computer Management tool, expand the Local Users and Groups node.
3. Right-click the Users node and select New User.
4. In the New User dialog box:
   a. Specify any name and password.
   b. Clear the option User must change password at next logon.
   c. Select the options User cannot change password and Password never expires.

Assigning Permissions to the Logon Account

2. In the Local Security Settings tool, choose Local Policies → User Rights Assignment → Log On as a Service.
3. In the Local Security Policy Setting dialog box that opens, check whether your logon account appears in the list. If not, click Add…
4. In the Select Users or Groups dialog box that opens, select your logon account, and click OK.

Your account has been added to the list of accounts that have the Log on as service permission.

This account must have full control permissions for the following folders:

- Portal Runtime for .NET installation root folder that is by default C:\Program Files\SAP\Portal Runtime for Microsoft .NET
- Temporary ASP.NET Files folder, automatically generated by ASP.NET, which is by default %windir%\Microsoft.NET\Framework\v2.0.50727\Temporary ASP.NET Files (for version 2.5) or %windir%\Microsoft.NET\Framework\v1.1.4322\Temporary ASP.NET Files (for version 2.0).
- %windir%\Temp folder

To assign permissions for the folders:

1. In the Explorer window, select and right-click the <folder>.
2. Select Properties from the context menu, and click the Security tab.
3. Select your account and check the Allow box for the Full Control.
4. Click OK.

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## 5.2. Configuring Portal Runtime for .NET

The SAP Portal Runtime for .NET Snap-In for Microsoft Management Console (MMC) provides tools to create, configure and manage the Portal Runtime for .NET server nodes on your local or remote servers.

A **server** is the local or remote host, on which Portal Runtime for .NET is installed.

A **server node** is a separate instance of the Portal Runtime for .NET service, installed on the same host. The corresponding service name is **SAP NetWeaver Portal Runtime for Microsoft .NET Server XX**, where XX is the server node ID.

### Starting the SAP Portal Runtime for .NET Snap-In

1. Choose **Start → Programs → SAP Portal Runtime for Microsoft.NET → Management Console**. An MMC window with the **SAP Portal Runtime for .NET** node opens.
2. In the left pane, expand the **SAP Portal Runtime for .NET** node. In the right pane, the currently defined server nodes are displayed.

### Initial Configuration

To start using the Portal Runtime for .NET service, perform the following configuration steps:

1. By default, the server **This computer** and the node **Server00** are defined. If you have installed Portal Runtime for .NET on a remote server, **connect to this server**.
2. If necessary, **create new server node(s)** on your server.
3. **Set the properties** of each server node.
4. **Start** each server node.

For detailed instructions on performing the required tasks, see Configuration and Management Tasks.

### Configuration and Management Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecting to a server</td>
<td>Right-click the <strong>SAP Portal Runtime for .NET</strong> node and select <strong>Connect to Server</strong>.</td>
</tr>
<tr>
<td></td>
<td>In the <strong>Connect to Server</strong> dialog box select either <strong>Connect to the local computer</strong> or <strong>Connect to a remote server</strong>; for a remote server, enter the <strong>Server name or IP address</strong>. <strong>Important</strong>: Portal Runtime for .NET should be installed on this server.</td>
</tr>
<tr>
<td>Disconnecting a server</td>
<td>Right-click a server and select <strong>Disconnect</strong> from the context menu.</td>
</tr>
<tr>
<td>Displaying the list of existing server nodes</td>
<td>Double-click a server. The list of existing server nodes is displayed in the right pane.</td>
</tr>
<tr>
<td>Creating a new server node</td>
<td>Right-click a server and select <strong>New node</strong> from the context menu. Set the properties of the new node as required (see below).</td>
</tr>
</tbody>
</table>
### Task Description

#### Setting the properties of a server node

Double-click a server node. In the *Properties* dialog box that opens, set the properties as follows:

- **TCP Port**: Enter the port number to be used by this node to communicate with the portal.
- **Assign Service Logon Account**:
  
  Enter the credentials of the dedicated logon account that was previously created for the service and granted full control permissions for the following folders:
  
  - `%Program Files%\SAP\Portal Runtime for Microsoft .NET`
  - `%windir%\Microsoft.NET\Framework\v2.0.50727\Temporary ASP.NET Files` (for version 2.5) or `%windir%\Microsoft.NET\Framework\v1.1.4322\Temporary ASP.NET Files` (for version 2.0)
  - `%windir%\Temp`

  This account should have the “Log on as service” permission. For more information, see [Creating a Logon Account for Portal Runtime for .NET](#).

- If you do not select a dedicated account, the default *LocalSystem* account will be used. This account has more permissions than necessary, so for security reasons it is not recommended for this purpose.
- You can use the same account for all nodes on one server.
- It is possible to assign the logon account to the service in the Windows *Services* tool.
- Click **OK** to assign this account to the service.

#### Deleting a server node

Right-click a server node and select **Delete** from the context menu. Confirm or cancel the deletion in the message box that appears.

#### Starting, stopping, or restarting a server node

Right-click a server node and select the relevant option from the context menu. You can also use the toolbar buttons which are enabled when a node is selected.

**Important**: To activate a service, you need to start the relevant server node.

#### Saving state

To save the list of servers to an `.msc` file, select **Save** or **Save As** from the Console menu. The list is also saved automatically when you exit MMC.

---

To ensure uninterrupted operation of the Portal Runtime for .NET service, disable the Windows Installer service on all .NET runtime servers.
5.3. Configuring Portal-Side Settings

To enable effective communication between the portal and the .NET runtime environment, you have to configure a number of portal-side settings.

In a clustered environment, multiple portal server nodes communicate with multiple .NET runtime server nodes. The following procedure describes how to configure their communication parameters.

1. Log on to the portal as a system administrator.
2. In top-level navigation, choose System Administration → Support.
4. Click .NET Runtime Service Configuration. The .NET Runtime Service Configuration page opens.
5. Configure the portal-side settings as described below.
Portal Servers

Configure each portal server node to enable communication with a .NET runtime server node:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portal Node</td>
<td>The ID property of a portal server node. If this is a single node, leave empty; otherwise, specify a different &lt;Portal Server ID&gt; for each portal node.</td>
</tr>
<tr>
<td>Host: Port</td>
<td>The host and port on which the portal server node listens for a .NET runtime server connection: &lt;Portal Server Host&gt;:&lt;Portal Server Port for .NET&gt;. If there are multiple portal nodes, specify a different combination of host and port for each node. Default: localhost:8051 (valid for a single portal node)</td>
</tr>
</tbody>
</table>

Example:
- Single node
  Portal Node Host: Port
  localhost:8051
- Multiple nodes
  Portal Node Host: Port
  4279850 localhost:8051
  4279851 localhost:8052

Add Add a new portal server node.
Remove Remove the selected portal server node.
**Important:** Make sure that at least one node remains.

.NET Runtime Servers

Configure each .NET runtime server node to enable communication with a portal server node:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portal Node</td>
<td>The ID property of a portal server node. For example: 3200150 Default:* - means that all portal nodes listen to the specified .NET runtime server node</td>
</tr>
<tr>
<td>Host:Port</td>
<td>The host and port on which a .NET runtime server node listens for the connection from a portal server node; the port number should match the TCP Port property of the server node. Example: p504:8050 Default: localhost:8050</td>
</tr>
</tbody>
</table>

Add Add a new .NET runtime server node configuration.
Remove Remove the selected .NET runtime server node configuration.
**Important:** Make sure that at least one node remains.
Check Server Check response of the selected .NET runtime server node.
The Check Server command performs a connection check with the specified server, which might cause a delay. If, during this delay, the operation is interrupted by a user action in the current browser window, such as clicking a button or closing the browser, the operation of the iViewProcessor portal service is disrupted. To restore the normal operation, you need to restart the portal.

.NET Runtime Failover Servers

To ensure reliability of the operation, specify the failover .NET runtime server nodes to use when none of the servers in the current configuration is responding. It is similar to the .NET runtime servers configuration.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portal Node</td>
<td><code>&lt;Portal Server ID&gt;</code></td>
</tr>
<tr>
<td>Example:</td>
<td>3200150</td>
</tr>
<tr>
<td>Default:</td>
<td>* - means all portal nodes listen to the specified .NET</td>
</tr>
<tr>
<td></td>
<td>runtime server node</td>
</tr>
<tr>
<td>Host:Port</td>
<td>The host and port on which a .NET runtime server listens</td>
</tr>
<tr>
<td></td>
<td>for the connection from a portal server; the port number</td>
</tr>
<tr>
<td></td>
<td>should match the TCP Port property of the server node.</td>
</tr>
<tr>
<td>Example:</td>
<td>p504:8050</td>
</tr>
<tr>
<td>Default:</td>
<td>localhost:8050</td>
</tr>
<tr>
<td>Add</td>
<td>Add a new failover .NET runtime server node configuration.</td>
</tr>
<tr>
<td>Remove</td>
<td>Remove the selected failover .NET runtime server node</td>
</tr>
<tr>
<td>Check Server</td>
<td>Check response of the selected failover .NET runtime server node.</td>
</tr>
</tbody>
</table>

Service Parameters

Configure the general service parameters.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow Server Affinity</td>
<td>If selected, all requests from a specific client session are directed to</td>
</tr>
<tr>
<td></td>
<td>the same .NET runtime server until the end of the session; otherwise, the</td>
</tr>
<tr>
<td></td>
<td>server is randomly selected by the load balancing mechanism.</td>
</tr>
<tr>
<td>Default:</td>
<td>selected</td>
</tr>
<tr>
<td>Warning:</td>
<td>If this checkbox is unselected, the state management, implemented with the</td>
</tr>
<tr>
<td></td>
<td>Session and Application objects in the .NET portal components, does not work</td>
</tr>
<tr>
<td></td>
<td>as expected.</td>
</tr>
<tr>
<td>Display ASP.NET Stack on</td>
<td>If selected, the ASP.NET call stack is displayed on an ASP.NET runtime error;</td>
</tr>
<tr>
<td>ASP.NET Error</td>
<td>otherwise, a regular portal error message is displayed.</td>
</tr>
<tr>
<td>Default:</td>
<td>cleared</td>
</tr>
<tr>
<td>Enable Ja.NET Logging</td>
<td>If selected, writing Ja.NET (Java -.NET interoperability framework) log</td>
</tr>
<tr>
<td></td>
<td>entries to the portal log is enabled.</td>
</tr>
<tr>
<td></td>
<td>You also need to configure the portal logger to assign Debug or higher</td>
</tr>
<tr>
<td></td>
<td>severity level for the com.sap.portal.dotnet component.</td>
</tr>
<tr>
<td></td>
<td>For more information about tracing and logging, see Trace and Log Files in</td>
</tr>
<tr>
<td></td>
<td>Administration of PDK for .NET.</td>
</tr>
</tbody>
</table>
It is recommended to clear this checkbox in a production environment.
Default: cleared

**Production Mode**
Defines the runtime operation mode.
If unselected (Development mode), each request is processed by the specific .NET runtime server indicated in the request parameter. This mode enables a group of developers to use a single portal for simultaneous debugging sessions.
If selected (Production mode), the requests are processed according to the configuration of .NET runtime servers.
Default: selected

**Lease Duration (seconds)**
The initial lifetime of a Java object in seconds and the amount of time to renew the lease each time the object is accessed. If necessary, this value can be increased in the development mode.
Default: 5

**Request Timeout (milliseconds)**
.NET iView request timeout in milliseconds.
Default: 5000

6. Click **Save** to save your changes, **Cancel** to restore previous settings, or **Reset** to restore defaults.
7. To activate the changes, restart the portal service by clicking **Restart** in the **Application Details** pane.

When you restart the portal service, the status indicators of all services in the **List of Services** panel indicate **Stopped**. However, you do not need to start the services manually, as they will be started automatically upon the first request.
6. Troubleshooting

This section lists possible errors/problems that might occur during or after the installation, and provides solutions. If a problem persists, contact your local support center or software supplier.

6.1. Installation Problems

Error messages

Following is the list of error messages that might appear during installation, their possible causes, and recommended solutions.

Error message

Error code 1327, 2755 or 2336.

Solution

To install the product, you must use Windows Installer 2.0 or higher.

Error message

"Installation Incomplete"

Cause

Windows Installer packages cannot be run from an encrypted directory on your file system.

Workaround

Run the installer from an unencrypted directory.

Message

Your logon account does not have the administration permissions to install Portal Runtime for Microsoft.NET / Portal Add-in for Visual Studio on this host.

Solution

Log on with an account that has administration permissions.

6.2. Installation Check

If other problems occur during or after the installation, you should perform the following checks:

6.2.1. Portal Add-In for Visual Studio

1. Start Microsoft Visual Studio 2005 or 2003, depending on your version of PDK for .NET.

2. Choose Tools → Add-in Manager.

   If the installation was successful, you see Portal Add-in 2.5 for Visual Studio 2005 or Portal Add-in 2.0 for Visual Studio 2003 checked as an Available Add-in.

3. Create a new SAP Portal Application project, and check that the add-in elements are available in the IDE:
   - The SAP Portal Application project templates for C# and VB.NET
   - The SAP Portal Component, SAP Portal System Template and SAP Portal Page new item templates
• The Portals node in Server Explorer
• The SAP NetWeaver tab in the Toolbox
• SAP menu and toolbar icons
• Project context menu
• Portal Component context menu
• Tools → Options → SAP
• Help → Contents – SAP Portal Development Kit for Microsoft .NET documentation

6.2.2. Portal Runtime for .NET

1. Choose Start → Settings → Control Panel.
2. Double-click Administrative Tools, and double-click Services.
3. Check that the SAP NetWeaver Portal Runtime for Microsoft .NET Server 00 service appears in the Services window.

6.2.3. Installation Verification Tool

You can use the Installation Verification tool to check the problems with your installation.

For tool availability information, see SAP Note #800842.

The Installation Verification tool lets you verify that all the supporting files for your components have been properly installed.

To use the Installation Verification tool:

1. Choose the <Installation Verification Tool> folder.
2. In this folder, select and start the Installation Verification Tool for PDK for .NET.
3. In the selection screen, select the relevant checkboxes, or click Select All to verify all components.
4. Click Verify.

When verification is completed, the Verification Summary screen opens. The navigation area on the left displays the components selected for verification. The output area on the right displays in tabular form the results returned by each test. In the output section, see the instructions for installing the missing files.
5. Click Close to close the tool, or Back to return to the selection screen.

September 2006
7. Modifying, Repairing, or Removing PDK for .NET

The InstallShield Wizard allows you to modify, repair or remove your current installation of the PDK for .NET components.

Modifying, Repairing, or Removing Portal Add-in for Visual Studio


2. In the Program Maintenance screen, select one of the Modify, Repair or Remove options, and click Next.

3. Follow the instructions of the wizard.

4. Click Finish to exit the wizard.

Modifying, Repairing or Removing Portal Runtime for .NET

1. Choose Start → Settings → Control Panel → Add/Remove Programs, choose SAP Portal Runtime 2.5 for Microsoft .NET or SAP Portal Runtime 2.0 for Microsoft .NET and click Change or Remove.

2. In the Program Maintenance screen, select one of the Modify, Repair or Remove options, and click Next.

3. Follow the instructions of the wizard.

4. Click Finish to exit the wizard.
8. Additional Information

8.1. Appendix A: Sizing and Performance

To help you determine the hardware requirements for the best performance of your system, the following configuration has been tested and measured:

Configuration
- One portal host with two portal server nodes (processes)
- One Portal Runtime for .NET (.NET Runtime) host with four server nodes
- Each portal node is configured to communicate with two .NET Runtime server nodes.

Hardware
Two hosts, each with the following capacity: Xeon, 2 CPU 2.80 Ghz, 3.82 GB RAM

Software
- Operating system: Microsoft Windows Server 2003
- Portal host: SAP NetWeaver Portal 6.0 in NW '04 SP Stack 16
- PDK for .NET host: Portal Runtime 2.5 for Microsoft .NET

Test scenario
- Each user performs login and navigates 16 times to 2 pages: one page with 4 URL iViews and the other page with 4 embedded iViews.
- Each iView has a response size of 100K.
- The test runs without using a caching mechanism.

Users
In SAP sizing terminology, an active user is a user that goes through a given number of business processes in a given time period. A named user is a user with an account. The number of the active users is 10% of the named users. Concurrent users work in the system simultaneously.

The number of users is measured when the portal host reaches 60% CPU consumption. In the same time the .NET host reaches 20% CPU consumption.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Named users</td>
<td>3200 users</td>
</tr>
<tr>
<td>Active users</td>
<td>320 users with average one minute think time</td>
</tr>
<tr>
<td>Concurrent users</td>
<td>50 users, no think time</td>
</tr>
</tbody>
</table>
Notice

This measurement shows that the limitation of the users number is in the portal, therefore adding another .NET hosts to this configuration will not improve performance.

Disclaimer

The above measurements are based on the specific scenario and configuration that were defined for the performance tests of PDK for .NET. Other scenarios and configurations might yield different results.

For more information about SAP sizing solutions, see Hardware Sizing at service.sap.com/sizing.