IBM Asset Transformation Workbench
v1.1

Profiling Projects

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Profiling Projects

IBM

Note:

Before using this information and the product it supports, read the information in "Notices."

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2   **Using WebGen**

Preface

The IBM Asset Transformation Workbench (ATW) is a suite of PC-based software products for analyzing, re-architecting, and transforming legacy applications. The products are deployed in an integrated environment with access to a common repository of program objects. Repository models serve as the basis for a rich set of diagrams, reports, and other documentation.

The ATW suite consists of customizable modules that together address the needs of organizations at every stage of legacy application evolution — maintenance/enhancement, renovation, and modernization.

Audience

This guide assumes that you are a corporate Information Technology (IT) professional with a working knowledge of the legacy platforms you are using the product to analyze. If you are transforming a legacy application, you should also have a working knowledge of the target platform.

Organization

This guide contains the following chapters:

- Chapter 1, "Introducing Application Profiler," provides an overview of the Application Profiler product.

- Chapter 2, "Using WebGen," describes how to use WebGen to generate HTML views of the repositories on your workstation.

- Chapter 3, "Installing Profiler," describes how to install Profiler and configure your Web server for Profiler processing.

- Chapter 4, "Using Profiler," describes how to use Profiler to access HTML views of repositories throughout your organization.

- The Glossary defines the names, acronyms, and special terminology used in this guide.

Conventions

This guide uses the following typographic conventions:

- **Bold type** — Indicates a specific area within the graphical user interface, such as a button on a screen, a window name, or a command or function.

- *Italic type* — Indicates a new term. Also indicates a document title. Occasionally, italic type is used for emphasis.

- `Monospace type` — Indicates computer programming code.

- **`Bold monospace type`** — Indicates input you type on the computer keyboard.

- **1A**/**1B**, **2A**/**2B** — In task descriptions, indicates mutually exclusive steps: perform step A or step B, but not both.

Related Manuals

This document is part of a complete set of ATW manuals. Together they provide all the information you need to get the most out of the system.

- *Getting Started* introduces ATW. This guide provides an overview of the workbench tools and discusses basic concepts. It describes how to install the product and how to manage licenses. It also describes how to use common product features.

- *Preparing Projects* describes how to set up ATW projects. This guide describes how to load applications in the repository and how to use reports and other tools to ensure that the entire application is available for analysis.

- *Analyzing Projects* describes how to analyze applications at the project level. This guide describes how to create diagrams of applications and how to perform impact analysis across applications. It also describes how to estimate project complexity and effort, and how to create a project dictionary.

- *Analyzing Programs* describes how to analyze applications at the program level. This guide describes how to use HyperView tools to view programs interactively and perform program analysis in stages. It also describes how to analyze procedure and data flows, search the repository, and extract business rules with HyperView.

- *Creating Components* describes how to extract program components from a legacy application.

- *Parser Reference Manual* describes legacy constructions supported by Application Analyzer in reference format.

- *Architecture Reference Manual* describes legacy constructions supported by Application Architect in reference format.

Online Help

In addition to the manuals provided with the system, you can learn about the product using the integrated online help. All GUI-based tools include a standard Windows **Help** menu.

You can display:

- The entire help system, with table of contents, index, and search tool, by selecting **Help: Help Topics**.

- Help about a particular ATW window by clicking the window and pressing the **F1** key.

Many ATW tools have *guides* that you can use to get started quickly in the tool. The guides are help-like systems with hyperlinks that you can use to access functions otherwise available only in menus and other program controls.

To open the guide for a tool, choose **Guide** from the **View** menu. Use the table of contents in the **Page** drop-down to navigate quickly to a topic.

Introducing Application Profiler

1

When you verify a legacy application, the ATW parser generates a repository model of the application that defines the objects it uses and how they interact. A *profile* is an HTML view into the repository that shows all of the analysis you have done on the application. Profiles are convenient ways to share information about applications across your organization.

The *Application Profiler* comprises two tools:

- *WebGen* generates HTML views of the repositories on your workstation. You can publish the views to Profiler, where they can be accessed by any member of your organization with a browser.

- *Profiler* is a Web server-based tool that offers company-wide access to any repository in your organization. It gives managers, business analysts, testers, and customer support personnel convenient, browser-based access to analyzed legacy code.

This chapter introduces the Application Profiler tools and describes how they are related.

Introducing WebGen

WebGen generates three types of reports about the repositories on your workstation:

- *General reports* list ATW options and settings.

- *Analysis reports* contain information generated by the ATW analysis tools.

- *Document reports* comprise user documents, generated documents, and documents in tool-specific report formats.

WebGen project options control the types of reports the tool generates. Figure 1-1 shows the WebGen output for a program-to-program diagram.

Figure 1-1   *WebGen Program-to-Program Diagram Output*
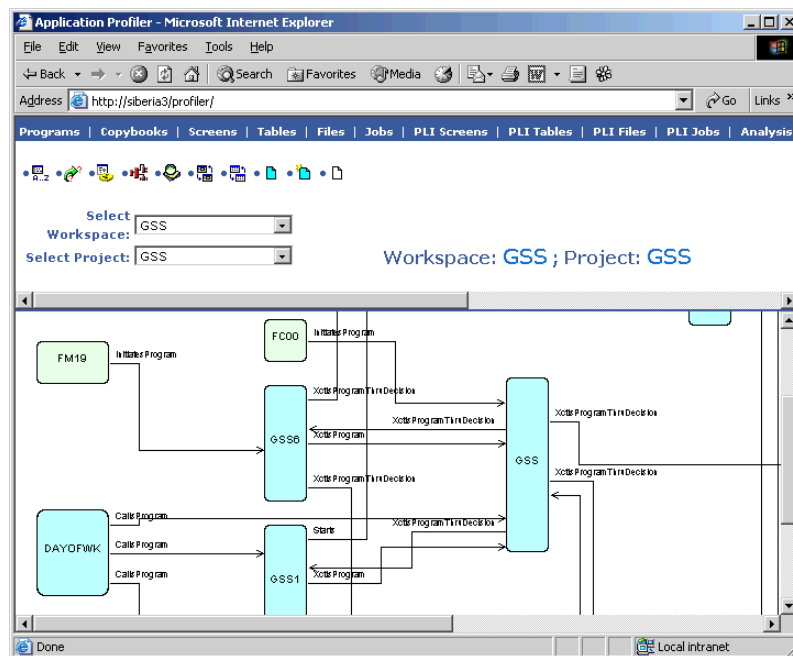
Introducing Profiler

Profiler is a Web server-based tool that offers HTML views of each local or remote repository to which it has access (Figure 1-2):

- By default, Profiler displays basic information about repository entities and relationships, and lets you generate complexity statistics for the application.

- If WebGen information has been generated for a repository, Profiler also displays that information.

Figure 1-2   *How Profiler Works*
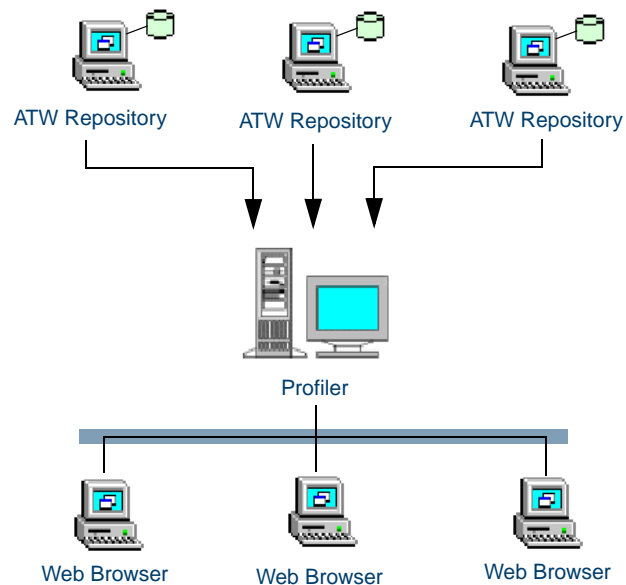
Profiler offers company-wide access to any ATW repository in your organization.

What's Next?

Those are the basic concepts underlying Application Profiler. Now let's look at how you use WebGen.

Using WebGen

2

The Application Profiler *WebGen* tool generates HTML views of the repositories on your workstation. You can publish the views to Profiler, where they can be accessed by any member of your organization with a browser.

WebGen generates three types of reports about the repositories on your workstation:

- *General reports* list ATW options and settings.

- *Analysis reports* contain information generated by the ATW analysis tools.

- *Document reports* comprise user documents, generated documents, and documents in tool-specific report formats.

Note: You must open the Application Namespace, Database Schema, and User Interface tools at least once for the project you want to view before generating WebGen Analysis reports for these tools.

Generating WebGen Views

WebGen views are generated for the current project. Project options control the types of reports the tool generates. You can set options in the WebGen Options window, or directly in the WebGen Wizard. For more information, see "Setting WebGen Options" on page 2-4.

To generate WebGen views:

1 In the Repository Browser, select the project you want to view and choose **Application** in the **Profile** menu. The WebGen Wizard opens (Figure 2-1)

Figure 2-1 *WebGen Wizard*
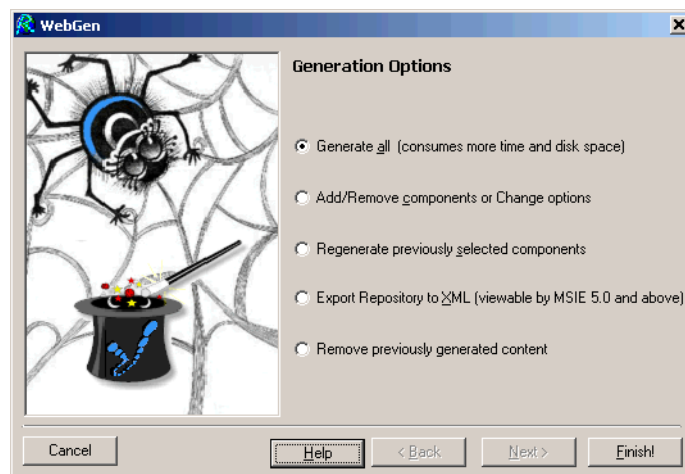
2A To generate complete project information, select **Generate all**.

2B To generate only the project information specified in the Webgen Options window, select **Add/Remove components or Change options** and click **Next**. The Wizard displays the option settings for general information and lets you change the settings if necessary (Figure 2-2 on page 2-3).

Click **Next** until you have reviewed the option settings for each type of information. Usage is identical to that for the WebGen Options window, as described in "Setting WebGen Options" on page 2-4.

Figure 2-2   *WebGen Wizard — Options for General Information*
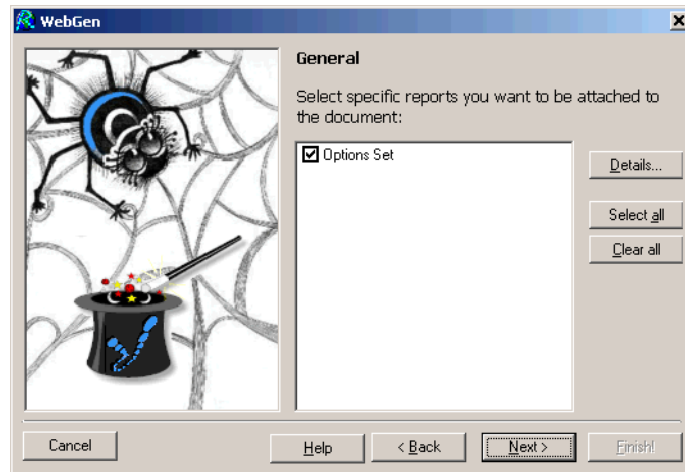
Tip: To regenerate the information specified in step 2B, without having to review the options again, select **Regenerate previously selected components**.

2C   To generate the repository metamodel in XML, select **Export repository to XML**. You can view the XML file in Internet Explorer 5.0 or later only.

Note: Take care in using this feature. You will overwrite previously generated HTML information for the repository.

3   Click **Finish**. A ✔ symbol next to an entry in the Wizard indicates that WebGen generated the information successfully. A ⚠ symbol indicates that WebGen failed to generate the information. Check the generation log at the bottom of the window to learn more about the error that caused WebGen to fail.

Tip: To remove WebGen output from your file system, select **Remove previously generated content** in the WebGen Wizard.

Setting WebGen Options

WebGen project options control the types of reports the tool generates. You can set options in the WebGen Options window, or directly in the WebGen Wizard. For more information on setting WebGen options in the Wizard, see step 2B on page 2-2.

To set WebGen options:

1   In the ATW **Tools** menu, choose **Project Options**. The Project Options window opens. Click the **WebGen** tab. The WebGen tab opens. Click the **General** tab. The General tab opens (Figure 2-3 on page 2-6).

2   In the General tab, select:

  • **Options Set** to generate ATW option settings. Double-click the label for the option if you want to generate the settings for specific types of options only. The types correspond to the option sets in the ATW **Tools** menu. Place a check mark next to each type of option you want to generate.

3   Click the Analysis tab. In the Analysis tab, select:

  • **Complexity** to generate application complexity statistics.

  • **Effort** to generate application effort statistics.

Tip: You can also generate application complexity and effort information using the Profiler Application Assessment feature, as described in "Viewing Application Complexity Statistics" on page 4-8.

  • **Application Namespace** to generate project dictionary information. Double-click the label for the option if you want to generate information for specific types of dictionary items only. Place a check mark next to each type of item you want to generate.

  • **Reference Reports** to generate unresolved, unreferred, and cross-reference reports.

- **Change Analyzer** to generate information used to determine the class of data items that need to be changed to accommodate a change to a member of the class.

- **Diagrammer** to generate high-level information on program relationship flows.

- **Batch Application Viewer** to generate low-level information on batch processes.

- **HyperView** to generate HyperView information. Double-click the label for the option if you want to generate HyperView information for specific types of objects only. In the top part of the dialog that opens, place a check mark next to each type of object you want to generate. In the bottom part of the dialog, place a check mark next to each type of construct you want to generate for the object.

4 Click the **Documents** tab. In the Documents tab, select the document types you want to generate.

Double-click **Other Documents** to generate documents in tool-specific report formats. The recognized folder locations for the documents are listed in the Other Documents dialog.

Right-click in the Other Documents dialog and choose **Add** in the pop-up menu to add a location to the list. The system displays an empty text field next to a selected check box. Enter the name of the new location in the field and click outside the field. You can use wildcard patterns allowed in LIKE statements by Visual Basic for Applications (VBA).

You can edit a location by right-clicking it and choosing **Edit** in the pop-up menu. You can delete an extension by right-clicking it and choosing **Delete** in the pop-up menu. Deselect a location if you do not want the system to recognize it.

Figure 2-3   *WebGen Options — General Tab*

double-click to view
subchoices in dialog
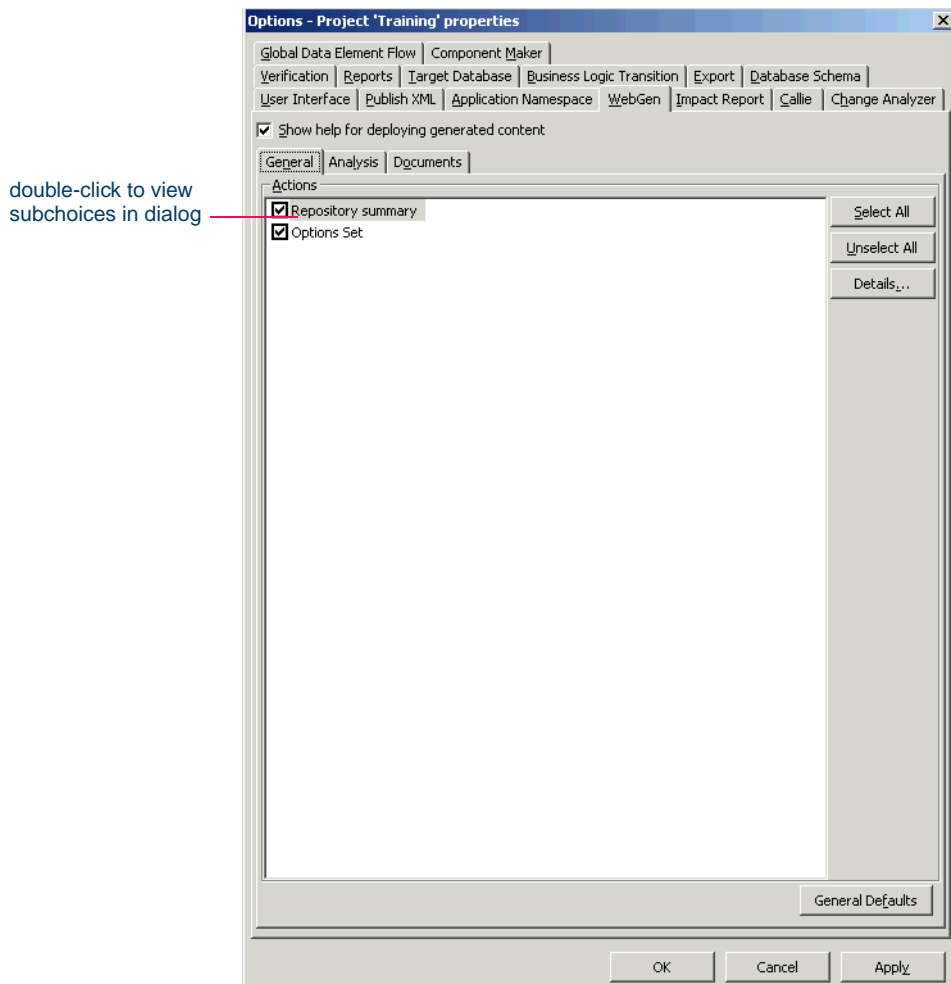
Tip: You can restore the default option settings by clicking *Option Type* **Defaults**, then choosing **Restore Defaults** in the drop-down menu. Choose **Save To** in the drop-down menu to save the option settings to a file. Choose **Load From** in the menu to restore the option settings from a file.

5A   Click **Apply** if you want to save your settings without dismissing the Project Options window.

5B   Click **OK** if you want to save your settings and dismiss the Project Options window.

What's Next?

Now that you know how to generate HTML views of local repositories in WebGen, let's look at how you set up Profiler to access HTML views of repositories throughout your organization.

Installing Profiler

P rofiler is a Web server-based tool that offers HTML views of each local or remote repository to which it has access. This chapter describes how to install Profiler. It lists the minimum hardware and software requirements for Profiler installations and describes the contents of the installation CD. It then shows you how to run the installation and configure a Web server for Profiler processing.

Hardware and Software Requirements

Microsoft Internet Information Services (IIS) and ATW must be installed on the machine on which you are installing the Profiler. For IIS installation instructions, see your operating system documentation. For workbench installation instructions, see *Getting Started* in the ATW document set.

Important: The IIS Default Web Site must be present before you install Profiler. If the Default Web Site is not present, you must recreate it or reinstall IIS.

Table 3-1 lists the hardware, disk space, operating system, and software requirements for Profiler installations.

Table 3-1   *Hardware and Software Requirements*

	Intel-compatible PC
Operating System	Windows NT Server Windows 2000 Server/ Advanced Server Windows 2003 Server
Web Browser	Internet Explorer 5.5 or higher
Processor/CPU	2 GHz or higher
Memory	1 GB minimum 2 GB recommended 1 GB to 3 GB swap space
Disk Space for Workbench	200 MB
Disk Space for Profiler	380 KB
Other	IIS 4.0 or higher ATW 1.1

Note: Profiler can be installed on a Windows 2000 workstation as well as the servers listed in the requirements. Keep in mind, however, that the operating system will limit the number of connections to IIS.

Contents of Installation CD

Profiler software ships on the same CD as ATW. The CD also contains the WSAA Bridge.

Note: The CD autoruns the ATW installation program. Cancel the installation program if ATW is already installed.

Running the Installation Program

Before running the installation program, make sure you have administrative permissions for the server machine on which you are installing the workbench. If you do not have administrative permissions, the installation program will not let you continue.

To install Profiler:

1   Insert the installation CD into your CD-ROM drive. In the Profiler folder, double-click the `setup.exe` program. The Welcome screen opens (Figure 3-1).

Figure 3-1   *Welcome Screen*
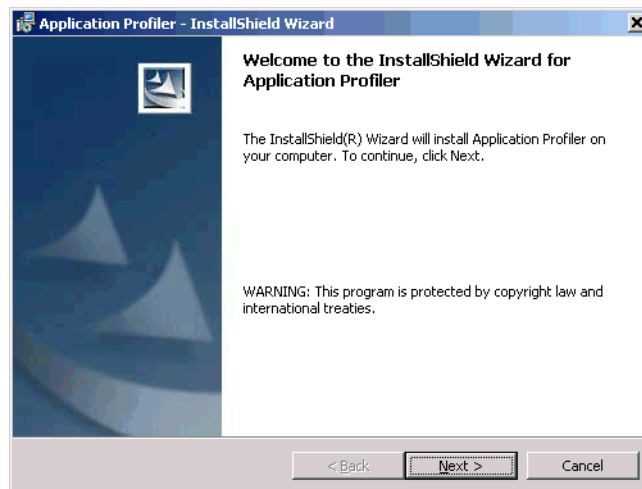
2   Click **Next** to continue. The License Agreement screen opens (Figure 3-2 on page 3-4).

Figure 3-2 *License Agreement Screen*
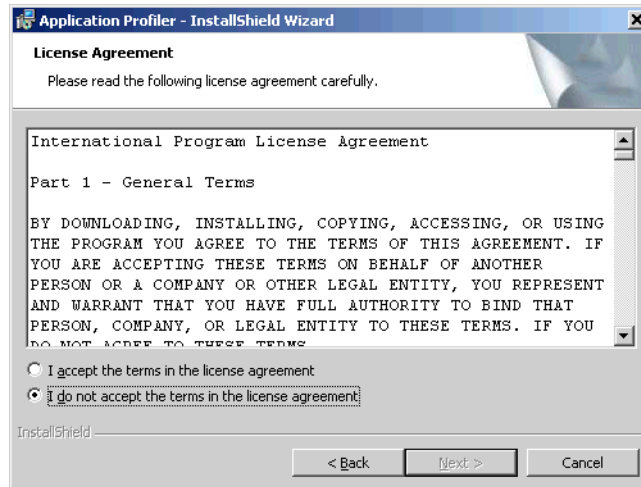
3 Read the License Agreement carefully. Select **I accept the terms in the license agreement** to accept its terms. Click **Next** to continue.

4 The Customer Information screen opens (Figure 3-3).

Figure 3-3 *Customer Information Screen*
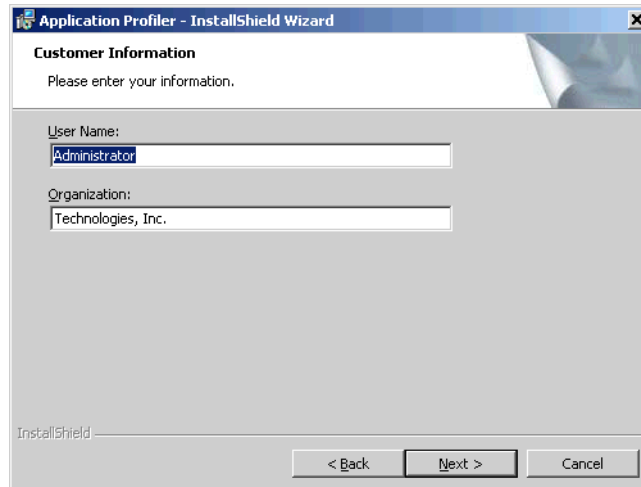
5   The fields are prefilled with your name and company. Click **Next** to continue. The Setup Type screen opens (Figure 3-4).

Figure 3-4   *Setup Type Screen*
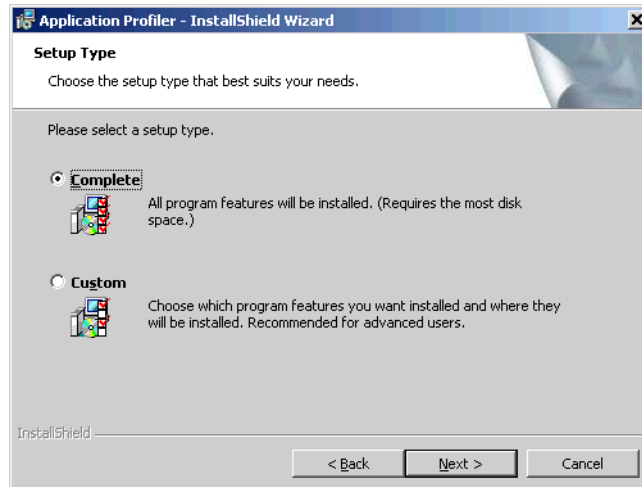
6   Choose the installation type:

- **Complete** to install the Profiler to the default location `C:\Pro-gram Files\Application Profiler`.
- **Custom** to install the Profiler to a location other than the default.

7   If you chose **Custom** in step 6, the Custom Setup screen opens (Figure 3-5 on page 3-6).

Figure 3-5   *Custom Setup Screen*
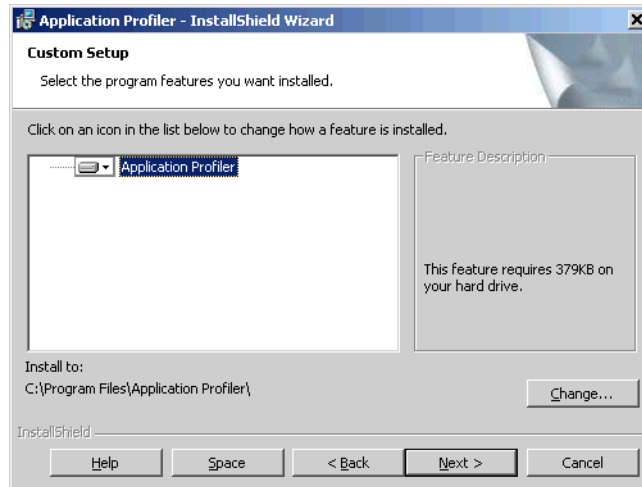
8A   Figure 3-5 shows the screen prefilled with the default `C:\Program Files\Application Profiler`. To accept the prefilled value, click **Next**.

8B   To specify a different folder, click **Change**. The Change Current Destination Folder screen opens (Figure 3-6).

Figure 3-6   *Change Current Destination Folder Screen*
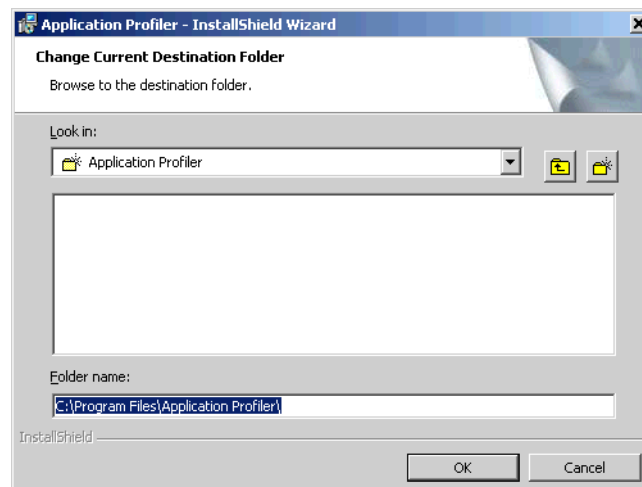
Navigate the folder structure to find a suitable location. Edit the path if necessary. If the destination folder does not exist, the installation creates it. Click **OK** to exit the Change Current Destination Folder screen and return to the Custom Setup screen. Click on **Next** in the Custom Setup screen to continue. The Ready to Install the Program screen opens (Figure 3-7).

Note: To make changes to your installation settings, click **Back** repeatedly until you find the information you are looking for, make your changes, then click **Next** until you return to the Ready to Install the Program screen.

Figure 3-7   *Ready to Install the Program Screen*
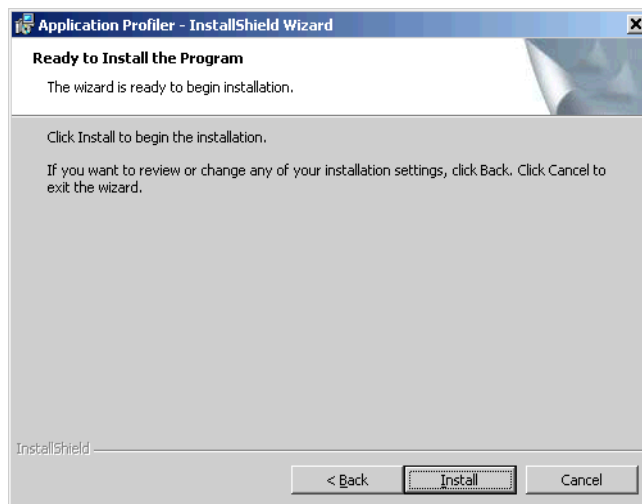
9   Click **Install** to begin transferring files to the server machine. A progress meter indicates the progress of the transfer.

10   When the transfer is complete, the InstallShield Wizard Completed screen opens (Figure 3-8 on page 3-8). Click **Finish** to dismiss the screen.

Figure 3-8   *InstallShield Wizard Completed Screen*
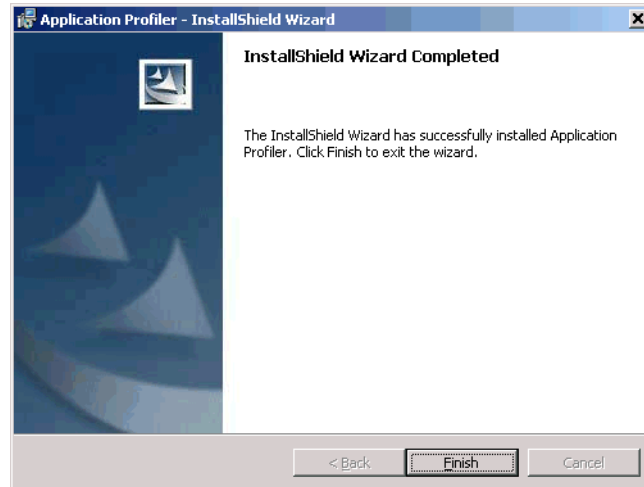
Configuring the Web Server for Profiler

To configure the Web server for Profiler:

- Set up a domain user account for Profiler on the machine where IIS is running.

- Configure IIS for Profiler.

Setting Up a Domain User Account for Profiler

Before you can configure IIS for Profiler, you must set up a Profiler domain user account with administrative privileges on the machine where IIS is running.

To set up a domain user account:

1   In the Windows **Start** menu, go to the **Settings** folder. Choose **Control Panel**. The Control Panel window opens. Double-click **Users and Passwords**. The Users and Passwords window opens (Figure 3-9 on page 3-9).

Figure 3-9   *Users and Passwords Window*
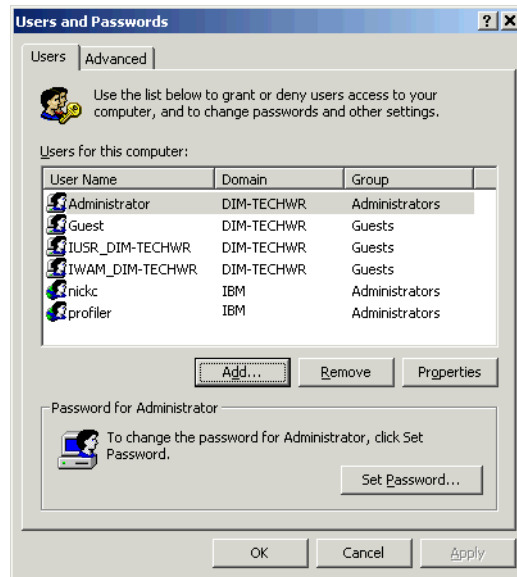
2   Click **Add**. The Add New user window opens (Figure 3-10).

Figure 3-10   *Add New User Window*
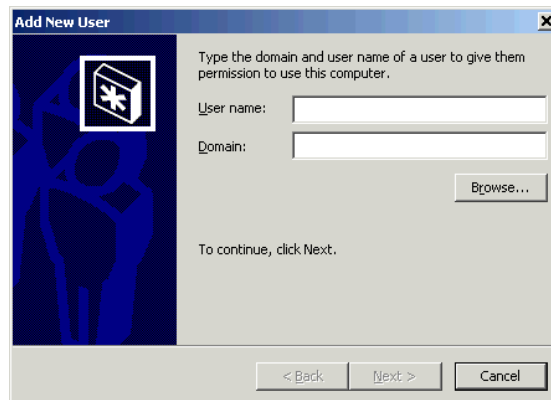
3   In the **User name** field, enter the name of the Profiler user. In the **Domain** field, enter the domain of the Profiler user. Use the **Browse** button to search for users and domains. When you are satisfied with

your choices, click **Next**. Another Add New User window prompts you to specify the privileges of the user (Figure 3-11).

Figure 3-11 *Add New User Window*
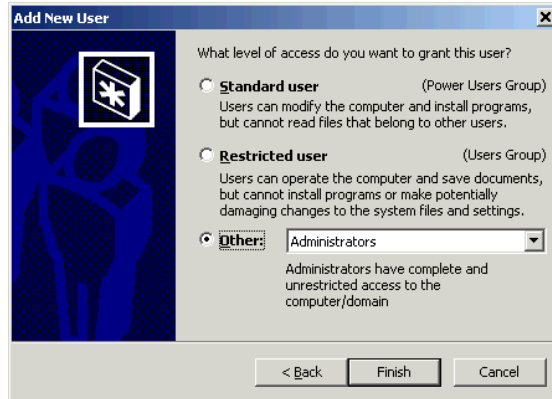
4 Select **Other**, then choose **Administrators** in the adjoining drop-down. Click **Finish**. The new user appears in the Users and Passwords window (Figure 3-12).

Figure 3-12 *Users and Passwords Window*
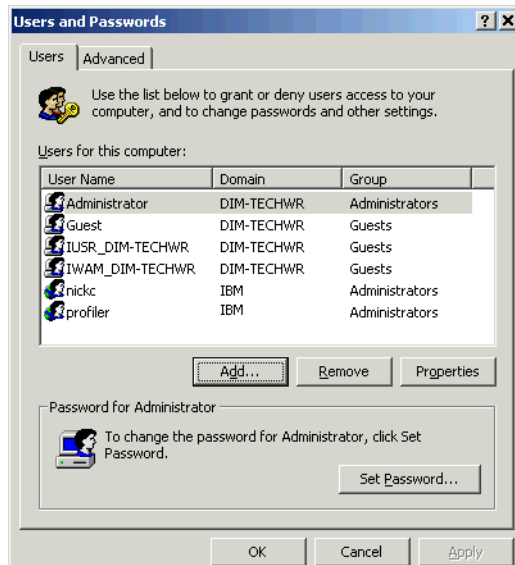
Configuring IIS for Profiler

You can set up Profiler to access workspace repositories on the local machine, on different machines in the same domain, or on different machines in different domains.

Important: If the workspace repositories to be accessed by Profiler reside in different domains, the network administrator must create a *trusted* relationship between the domains containing the workspaces and the domain containing the Profiler:

To configure IIS for Profiler:

1 In the Windows **Start** menu, go to the **Settings** folder. Choose **Control Panel**. The Control Panel window opens. Double-click **Administrative Tools**. The Administrative Tools window opens.

Note: On Windows NT, choose **Windows NT Options Pack:Microsoft Transaction Server:Transaction Server** in the Programs folder on the Windows **Start** menu.

2 In the Administrative Tools window, double-click **Internet Information Services** or, in older Windows systems, **Internet Services Manager**. The Internet Information Services window opens (Figure 3-13 on page 3-12).

3 In the Internet Information Services window, expand the entry for your machine, then expand the entry for the Default Web Site. Make sure there is a virtual folder for Profiler. If there is not a virtual folder for Profiler, create one.

Important: The IIS Default Web Site must be present before you install Profiler. If the Default Web Site is not present, you must recreate it or reinstall IIS.

Figure 3-13   *Internet Information Services (IIS) Window*
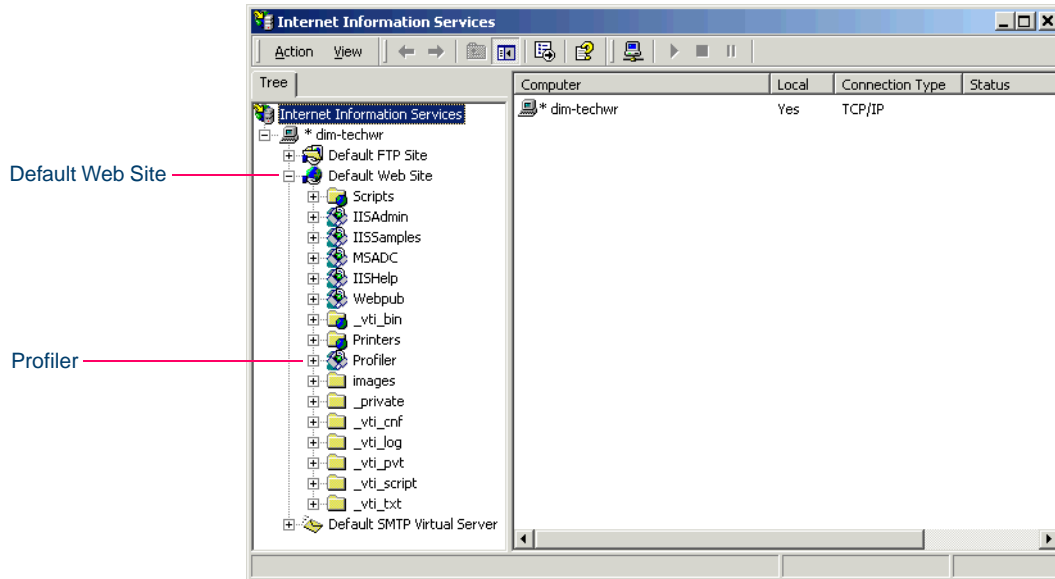
4   In the Internet Information Services window, right-click the Profiler virtual folder and choose **Properties** in the pop-up menu. The Profiler Properties window opens. Click the **Directory Security** tab.

5   In the Directory Security tab, click the **Edit** button. The Authentication Methods dialog opens:

- In versions of Windows newer than Windows 2000, the Authentication Methods dialog contains a check box named **Allow IIS to control password**. Deselect the check box. Enter the Profiler domain user name and password in the **Username** and **Password** fields and click **OK**.

- In Windows 2000 or older versions, click **Edit** in the Anonymous access pane of the Authentication Methods dialog. The Anonymous User Account dialog opens (Figure 3-14 on page 3-13).

  Deselect the **Allow IIS to control password** check box or, in Windows NT, the **Enable Automatic Password Synchronization** check box. Enter the Profiler domain user name and password in the **Username** and **Password** fields and click **OK**.

Figure 3-14   *Anonymous User Account Dialog*
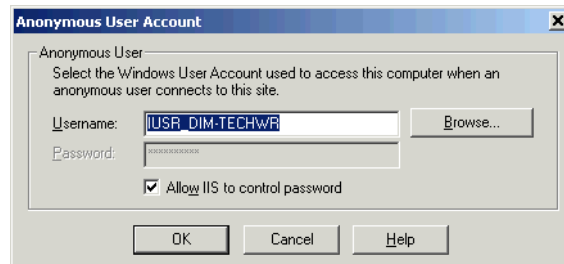
6   Give the Profiler domain user full control access to each folder containing a workspace:

a.   In Windows Explorer, right-click the folder containing the workspace and choose **Properties**. The Properties window for the folder opens. Click the **Security** tab.

b.   In the Security tab, click **Add**. The Select Users or Groups window opens. In the **Look in** drop-down, choose the domain that contains the Profiler user, then select the Profiler user in the pane below the drop-down. Click **Add**, then click **OK**.

c.   In the Security tab, select the Profiler user in the Name pane. In the Permissions pane, select the **Allow** check box for Full Control, then click **OK**.

d.   If the folder exists on a machine different from the one on which Profiler resides, click the **Sharing** tab. In the Sharing tab, select **Share this folder** and click **OK**.

Tip: To avoid having to repeat <u>step 6</u> for each folder containing a workspace, put all the workspaces in the same folder. Make sure to include the subfolder with the name of the workspace as well as the .rwp file.

7   Configure COM+ properties for the Profiler:

a.   In the Windows **Start** menu, go to the **Settings** folder. Choose **Control Panel**. The Control Panel window opens. Double-click **Administrative Tools**. The Administrative Tools window opens.

Note: On Windows NT, choose **Windows NT Options Pack:Microsoft Transaction Server:Transaction Server** in the Programs folder on the Windows **Start** menu.

b. In the Administrative Tools window, double-click **Component Services**. The Component Services window opens (Figure 3-15).

Figure 3-15 *Component Services Window*
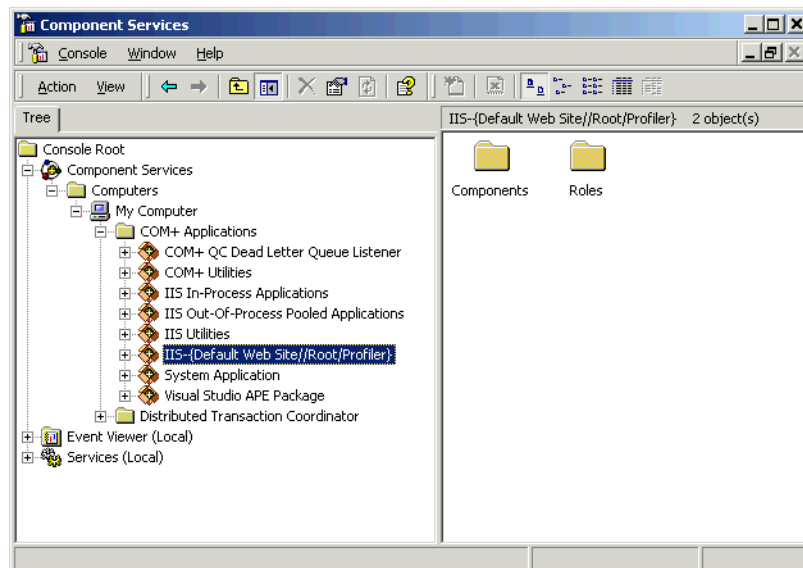
c. In the Component Services window, expand the entries for Component Services, Computers, My Computer, and COM+ Applications or, on Windows NT, Microsoft Transaction Server, Computers, My Computer, and Packages Installed. Right-click the IIS-{Default Web Site//Root/Profiler} entry and choose **Properties** in the pop-up menu. The Properties window for the entry opens. Click the **Identity** tab.

d. In the Identity tab, select **This user**, then click the **Browse** button. The Select User or Group window opens. In the **Look in** drop-down, select the machine for the Profiler domain user. In the list box below the drop-down, select the domain user, then click **OK**. The Select User or Group window is dismissed. The

name of the Profiler domain user appears in the **User** field in the Identity tab of the IIS-{Default Web Site//Root/Profiler} Properties window. Click **OK**.

8   Restart IIS. Open the Internet Information Services window, as described in steps 1-2 on <u>page 3-11</u>. Right-click the entry for the local machine and choose **Restart IIS** in the pop-up menu.

What's Next?

You have successfully installed Profiler and configured your Web server for Profiler processing. Now let's look at how you access and view repositories in Profiler.

Using Profiler

4

This chapter describes how to access and view workstation repositories in Profiler. By default, Profiler displays basic information about repository entities and relationships, and lets you generate complexity statistics for the application. If WebGen information has been generated for a repository, Profiler also displays that information. For background on WebGen, see Chapter 2.

Configuring Profiler

Use the Profiler configuration tool to specify:

- The workspace repositories you want to access in Profiler.

- The corporate logo you want to display in the Profiler window.

- The authorized users of the Profiler configuration tool.

Note: The configuration tool can be run by only one user at a time. After ten minutes without activity, Profiler issues a warning that it is about to time out. Click **OK** to continue the session.

To configure Profiler:

1 In Internet Explorer, go to http://*server name*/profiler/ where *server name* is the name of the machine running Profiler.

- If you are opening Profiler for the first time, the Logon Profiler Administration dialog opens above a blank Profiler window (Figure 4-1).

- If you have previously configured Profiler, the Profiler window displays the last workspace accessed. In the **Configure** menu, choose **Configure Profiler**. The Logon Profiler Administration dialog opens above the Profiler window.

Figure 4-1 *Profiler Window with Logon Profiler Administration Dialog*
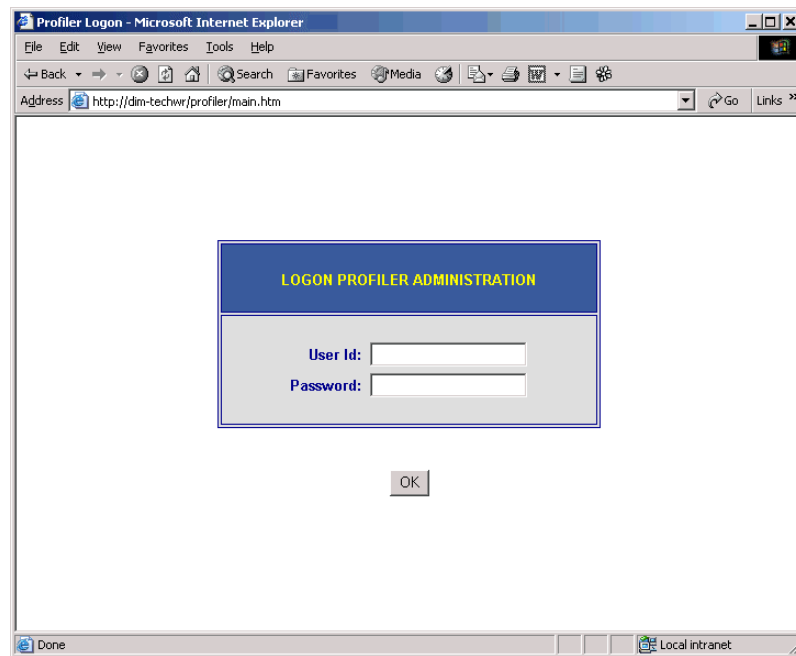
2 In the Logon Profiler Administration dialog, enter the user name and password of the Profiler administrator in the **User ID** and **Password** fields. By default, the user name is `administrator` and the password is `admin`. You can create a new administrator and/or password

as described in <u>step 6 on page 4-4</u>. The **User ID** and **Password** fields are not case-sensitive. Click **OK**.

3   The Select Table to Configure dialog opens above the Profiler window (Figure 4-2).

Figure 4-2   *Profiler Window with Select Table to Configure Dialog*
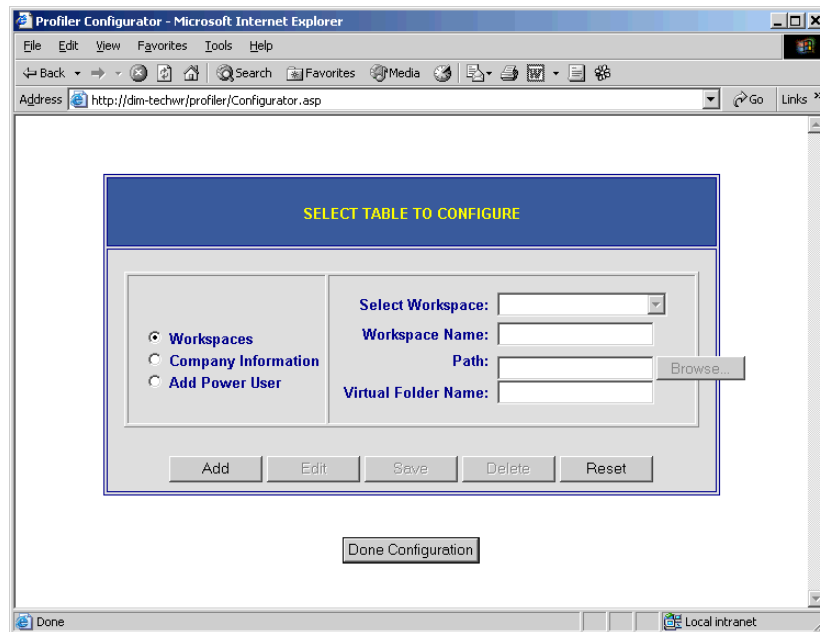
4   To set up access to a workspace repository:

- Select the **Workspaces** radio button, then click **Add**.

- In the **Workspace Name** field, enter the name of the workspace.

- In the **Path** field, enter the path of the Rescue.mdb file for the workspace. Rescue.mdb is stored in the *Workspace Name* folder. Use the **Browse** button to locate the file. Enter a UNC path if the workspace resides on a different machine, in the form *Machine Name\Share Name\Workspace Name*\Rescue.mdb.

- In the **Virtual Folder Name**, enter the name of the virtual folder for the workspace in IIS. The name can be anything you want, but it must be unique in IIS.

- Click **Save**. You are notified that the workspace was configured successfully. Click **OK**.

Note: To edit access to a workspace repository, select the workspace in the **Select Workspace** drop-down, then click **Edit**. Enter the new information for the workspace in the **Workspace Name**, **Path**, and/or **Virtual Folder Name** fields and click **Save**.

To clear unsaved edit fields, click **Reset**. To delete a workspace repository, select the workspace in the **Select Workspace** drop-down, then click **Delete**. You are prompted to confirm the deletion. Click **OK**.

5 To specify the corporate information you want to display in the Profiler window:

- Select the **Company Information** radio button, then click **Edit**.
- In the **Company Name** field, enter the name of your company.
- In the **URL** field, enter the URL of your company's web site.
- In the **Logo Path** field, enter the path of the JPEG or GIF file for your company's logo. Adjust the size of the logo image to the Profiler window to avoid compression.
- Click **Save**. You are notified that the company information was configured successfully. Click **OK**.

6 To set up Profiler administrators:

- Select the **Add Power User** radio button, then click **Add**.
- In the **User Name** field, enter the user name of the administrator.
- Click **Save**. You are prompted to enter and confirm the password for the user. Enter the password in the **Password** field and re-enter it in the **Confirm Password** field. Click **OK**. You are notified that the user information was configured successfully. Click **OK**.

Note: To edit user information, select the user name in the **Select User** drop-down, then click **Edit**. Enter a new user name in the **User Name** field and/or select **Change Password**. Click **Save**. If you selected **Change Password**, you are prompted to

enter and confirm the password for the user, as described above.

To delete a user, select the user in the **Select User** drop-down, then click **Delete**. You are prompted to confirm the deletion. Click **OK**.

7   When you are satisfied with your choices in the Select Table to Configure dialog, click **Done Configuration** to dismiss the dialog and return to the Profiler window.

Note: Make sure to click **Done Configuration** so that other users will be able to access the Profiler configuration tool.

Viewing Basic Repository Information

Profiler offers HTML views of each local or remote repository to which it has access (Figure 1-2 on page 1-3). By default, Profiler displays basic information about repository entities and relationships.

To view basic repository information:

1   In Internet Explorer, go to http://*server name*/profiler/ where *server name* is the name of the machine running Profiler. The Profiler window opens (Figure 4-3 on page 4-6).

2   In the **Select Workspace** and **Select Project** drop-downs, select the workspace and project whose repository information you want to view.

3   Use the **Programs**, **Copybooks**, **Files**, and **Jobs** menus at the top of the window to access basic repository information for the selected project. Each menu choice corresponds to a search you can perform against the repository — copybooks included in a given program, for example.

Tip: Choose **List All** to view all the repository objects of a given type.

Specify the search object in the Results pane (which opens after you select a menu choice). So, to search for all copybooks included in the

GSS4 program, for example, choose **Is Included In Program** in the **Copybooks** menu and GSS4 in the Results pane drop-down. Click **Get Results** to return the results.

Basic repository information is displayed in two panes:

- *Results Pane* — the Results pane displays the results of the search performed in the Search pane. Click **Print Results** to print the results. Click the **Source** link for a returned object or a related object to view its source code. If available, click the **HyperView** link for an object to view its source code and the source code for all the objects to which it is related.

- *Source Pane* — the Source pane displays the source for the object selected in the Results pane.

Figure 4-3   *Profiler Window with Copybooks for the GSS4 Program*
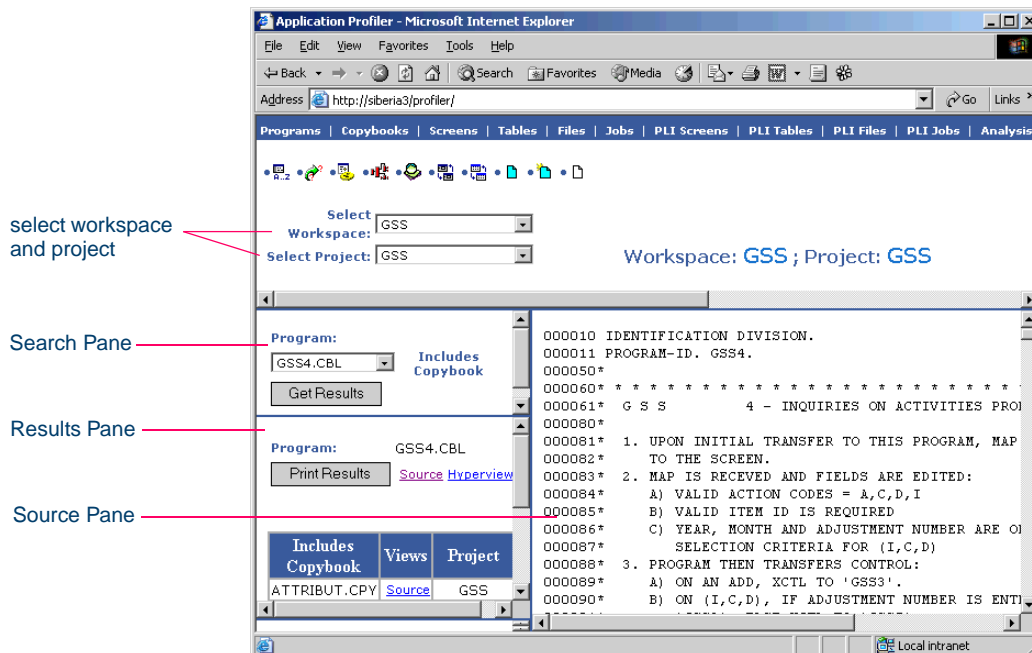
Viewing WebGen Repository Information

If WebGen information has been generated for a repository, you can use Profiler to view that information.

Note: The following procedure assumes that Profiler is open. For information on how to open Profiler, see "Viewing Basic Repository Information" on page 4-5.

To view WebGen information:

1   Use the **Analysis** and **Diagrammer** menus at the top of the Profiler window to view WebGen information. For example, to view the program-to-program diagram for the selected project (Figure 4-4), choose **Program2Program** in the **Diagrammer** menu. When the Diagrammer window opens, click the link for the type of diagram you want to view: Compact, Expanded, or EMF. You can also view diagram information in a list.

Figure 4-4   *Profiler Window with Program-to-Program Diagram*
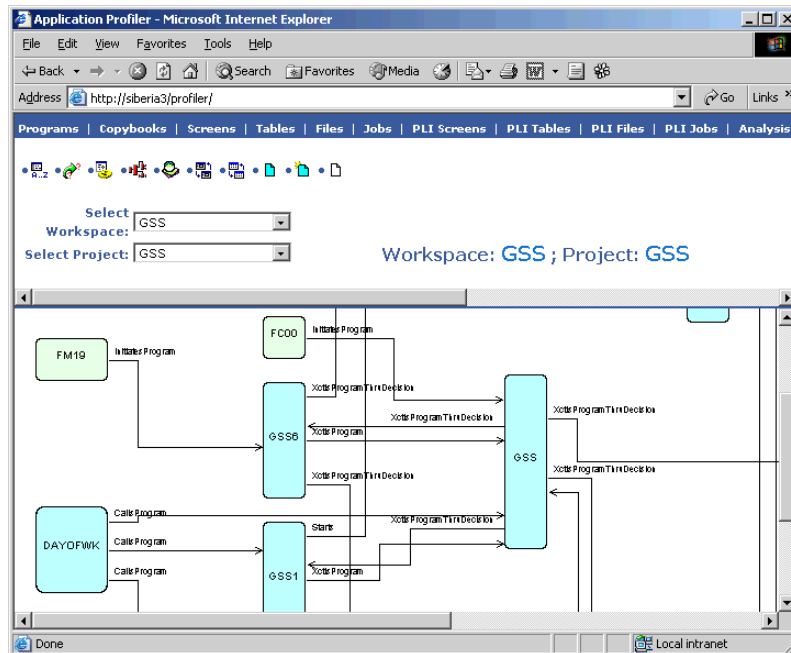
Viewing Application Complexity Statistics

An application's *complexity* is an assessment of how difficult it is to maintain, analyze, transform, and so forth, based on weighted values for selected metrics. You need not have run WebGen to view complexity statistics in Profiler.

Note: The following procedure assumes that Profiler is open. For information on how to open Profiler, see "Viewing Basic Repository Information" on page 4-5.

To view complexity statistics:

1 In the **Analysis** menu at the top of the Profiler window, choose **Application Assessment**. The Application Assessment dialog opens above the Profiler window (Figure 4-5).

Figure 4-5 *Application Assessment Dialog*
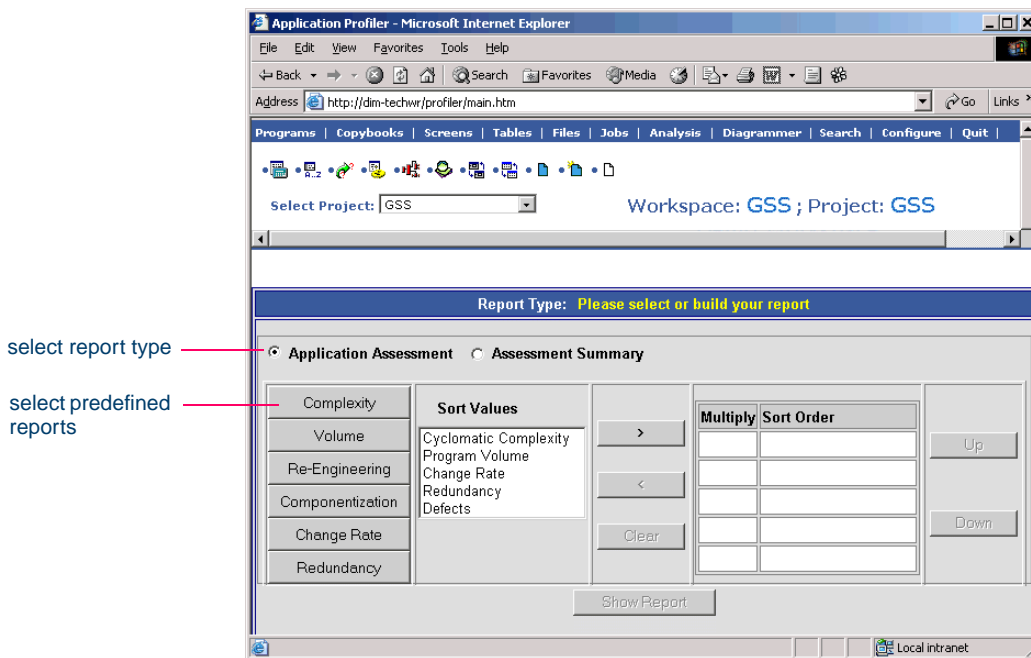
2 The lefthand pane lists standard complexity measures. Select each measure you want to view and click the right-arrow button to move

the measure into the righthand pane. Use the **Up** and **Down** buttons in the righthand pane to specify the sort order of the measures in the complexity report.

Note: The Change Rate and Redundancy measures are available only if their values have been populated in the database by support services. For more information, consult your support services representative.

If you select more than one measure, you have the option of multiplying each measure by the others. To multiply measures by each other, place a check mark next to the measures in the Multiply column in the righthand pane. The first column in the complexity report will show the multiplied values.

Use the buttons in the lefthand pane to select predefined reports. The definitions determine the measures in the report, their sort order, and whether or not they are multiplied. You can change the default values if you like.

Note: The **Componentization**, **Change Rate**, and **Redundancy** buttons are available only if the Change Rate and Redundancy measures have been populated in the database, as described in the note above.

Select a measure and click the left-arrow button to move the measure back to the lefthand pane. Click the **Clear** button to clear the dialog.

3 Choose the radio button at the top of the window for the type of report you want to generate:

- **Application Assessment** generates all complexity statistics for the project (Figure 4-6 on page 4-10).

- **Application Summary** generates counts of the reports in which given programs appear. Programs are selected if they fall within a specified percentage of programs in the project. Specify the percentage at the prompt you are given before the report is generated. If you specify 50%, for example, the first half of the programs listed in the repository for the project are selected for the report.

Note: The **Application Summary** choice is available only if the Change Rate and Redundancy measures have been populated in the database, as described in the first note on page 4-9.

4 Click **Show Report** to generate the report (Figure 4-6).

Figure 4-6 *Application Assessment Report*

Searching for Variables in the Repository

Profiler provides a sophisticated search mechanism for browsing variables in application programs.

Note: The following procedure assumes that Profiler is open. For information on how to open Profiler, see "Viewing Basic Repository Information" on page 4-5.

To search for variables in the repository:

1   In the **Search** menu at the top of the Profiler window, choose **Search Repository**.

2   In the Search pane, enter the pattern for the search in the **Variable** field and click **Search Programs**. You can use wildcard patterns allowed in LIKE statements by SQL-92. Search results are returned in the Results pane.

What's Next?

That completes your tour of the Application Profiler! You have learned how to use:

• WebGen to generate HTML views of the repositories on your workstation.

• Profiler to access HTML views of repositories throughout your organization.

Glossary

Activity Log

The Activity Log is a chronological record of your activities in the current Asset Transformation Workbench (ATW) session.

ADABAS

ADABAS is a Software AG relational DBMS for large, mission-critical applications.

Animator

Animator lets you step through the code displayed in a HyperView pane. You can choose program branches yourself, or have the animator choose them randomly.

API

API stands for application programming interface, a set of routines, protocols, and tools for building software applications.

applet

See Java applet.

Application Analyzer

Application Analyzer is a set of non-invasive interactive tools used to analyze and document legacy systems.

Application Architect

Application Architect uses advanced algorithms to partition code into new components and perform Dead Code Elimination.

Application Namespace tool

The Application Namespace tool creates a conveniently organized dictionary that helps you navigate through your system's terminology and modify it as necessary.

Application Partitioner

Application Partitioner identifies legacy subsystems and partitions them into self-contained projects based on an analysis of repository contents.

Application Profiler

Application Profiler, consisting of WebGen and Profiler, generates a set of HTML views of a legacy application based on the object model created in a previous analysis.

AS/400

The AS/400 is a midrange server designed for small businesses and departments in large enterprises.

Asset Transformation Workbench (ATW)

Asset Transformation Workbench (ATW) is a suite of PC-based software products for analyzing, re-architecting, and transforming legacy applications.

Batch Application Viewer

Batch Application Viewer performs low-level analysis of batch processes.

batch refresh

The batch refresh feature lets you register and verify source files in batch mode. Other utilities packaged with the feature let you analyze application complexity, run WebGen, and, if you are licensed to use the Application Architect product, perform Dead Code Elimination.

Bird's Eye pane

The Bird's Eye pane works with the HyperView Source pane to let you quickly identify the location of a code construct relative to the entire program.

BMS

BMS stands for Basic Mapping Support, an interface between application formats and CICS that formats input and output display data.

BSTR

BSTR is a Microsoft format for transferring binary strings.

business rule

A business rule is a named container that identifies and documents code segments according to their business function. Business rules encapsulate an application's business logic, making the application easier to understand, document, maintain, and test.

Business Rule Manager

Business Rule Manager lets you generate business rules from code segments extracted manually from source or autodetected.

Callie pane

The HyperView Callie pane displays a diagram that shows the flow of control between paragraphs or procedures in a program.

CDML

CDML stands for Cobol Data Manipulation Language, an extension of the Cobol programming language that enables applications programmers to code special instructions to manipulate data in a DMS database and to compile those instructions for execution.

Change Analyzer

Change Analyzer identifies the class of data items used to perform a business function in a legacy application. Among other uses, it lets you answer the kinds of "What if?" questions posed in the recent past by the industry-wide changes for Y2K, Zip+4, and the Euro dollar: "What if I change the type of this variable, or the length of this field — what *other* fields will I also have to change?"

CICS

CICS stands for Customer Information Control System, a program that allows concurrent processing of transactions from multiple terminals.

Clipper

The HyperView Clipper tool lets you create lists of candidates for business rule extraction, event injection, and other tasks. Each list captures the results of a different stage of your analysis and serves as input for subsequent tasks.

Cobol

Cobol stands for Common Business-Oriented Language, a high-level programming language used for business applications.

COM

COM stands for Component Object Model, a software architecture developed by Microsoft to build component-based applications. COM objects are discrete components, each with a unique identity, which expose interfaces that allow applications and other components to access their features.

complexity

A project's complexity is an estimate of how difficult it is to maintain, analyze, transform, and so forth.

component

A component is a self-contained program that can be reused with other programs in modular fashion.

Component Maker

The HyperView Component Maker tool lets you "slice out" components from legacy applications — not only component executables but associated Cobol copybooks, PL/I includes, and Natural data areas as well.

computation-based component extraction

Computation-based component extraction lets you build a component that contains all the code necessary to calculate the value of a variable at a particular point in a program — the value of a DayOfTheWeek variable, for example, where it is used to populate a report attribute or screen.

Configuration Manager

Configuration Manager is a tool used to enable Asset Transformation Workbench (ATW) products and configure your workbench for the

tools, programming languages, legacy dialects, and character sets in use at your site.

construct

A construct is an item in the parse tree for a source file — a section, statement, condition, variable, or the like. A variable, for example, can be related in the parse tree to any of three other constructs — a declaration, a dataport, or a condition. You view the parse tree for a source file in the HyperView Context pane.

Context pane

The HyperView Context pane displays the parse tree for the selected source file. The parse tree displays source code constructs — sections, paragraphs, statements, conditions, variables and so forth — in hierarchical form, making it easy to locate code constructs quickly.

copybook

A copybook is a common piece of source code to be copied into many Cobol source programs. Copybooks are functionally equivalent to C and C++ include files.

CORBA

CORBA stands for Common Object Request Broker Architecture, an architecture that enables distributed objects to communicate with one another regardless of the programming language they were written in or the operating system they are running on.

CSD file

CSD stands for CICS System Definition. A CSD file is a VSAM data set containing a resource definition record for every resource defined to CICS.

database schema

A database schema is the structure of a database system, described in a formal language supported by the DBMS. In a relational database, the schema defines the tables, the fields in each table, and the relationships between fields and tables.

dataport

A dataport is an input/output statement or a call to or from another program.

DB/2

DB/2 stands for Database 2, an IBM system for managing relational databases.

DBCS

DBCS stands for double-byte character string, a character set that uses two-byte (16-bit) characters rather than one-byte (8-bit) characters.

DBMS

DBMS stands for database management system, a collection of programs that enable you to store, modify, and extract information from a database.

DDL

DDL stands for Data Description Language (DDL), a language that describes the structure of data in a database.

Dead Code Elimination

Dead code elimination is a type of component extraction that removes unused ("dead") code from a legacy application.

decision resolution

Decision resolution lets you identify and resolve dynamic calls and other relationships that the parser cannot resolve from static sources.

Diagrammer

Diagrammer lets you view the relationships between the objects in a project interactively — programs, files, DDL, Java, screen maps, and more. These relationships describe the ways in which application objects interact. Compare Quick Diagrammer.

DMS

DMS stands for Data Management System, a Unisys database management software product that conforms to the CODASYL (network) data model and enables data definition, manipulation, and maintenance in mass storage database files.

domain-based component extraction

Domain-based component extraction "specializes" a program based on the values of one or more variables. The specialized program is typically intended for reuse "in place" — in the original application but under new external circumstances.

DPS

DPS stands for Display Processing System, a Unisys product that enables users to define forms on a terminal.

ECL

ECL stands for Executive Control Language, the operating system language for Unisys OS 2200 systems.

effort

Effort is an estimate of the time it will take to complete a task related to a project, based on weighted values for selected complexity metrics.

EJB

EJB stands for Enterprise JavaBeans, a Java API developed by Sun Microsystems that defines a component architecture for multi-tier client/server systems.

EMF

EMF stands for Enhanced MetaFile, a Windows format for graphic images.

entity

An entity is an object in the repository model for a legacy application. The relationships between entities describe the ways in which the elements of the application interact.

entry point isolation

Entry point isolation extracts a component that contains only the functionality and data definitions required for invocation from the selected entry point.

event injection

Event injection is a type of component extraction that adapts a legacy program to asynchronous, event-based programming models.

Execution Path pane

The HyperView Execution Path pane displays a hierarchical view and diagram of the conditions that determine the flow of control in a program.

external subroutine extraction

External subroutine extraction is a type of structure-based component extraction that replaces a single internal subroutine in a Natural program with an external subroutine.

FCT

FCT stands for File Control Table (FCT), a CICS table that contains processing requirements for output data streams received via a remote job entry session from a host system. Compare PCT.

Flowchart pane

The HyperView Flowchart pane displays a diagram of the flow of control between statements in a paragraph or procedure.

Global Data Flow tool

The HyperView Global Data Flow tool performs low-level analysis of program data flows.

HTML

HTML stands for HyperText Markup Language, the authoring language used to create documents on the World Wide Web.

HyperView

HyperView is a set of program analysis tools that let you analyze legacy programs interactively, by examining synchronized, complementary views of the same information — source, context, impacts, and so forth.

IDL

IDL stands for Interface Definition Language (IDL), a generic term for a language that lets a program or object written in one language communicate with another program written in an unknown language.

IDMS

IDMS stands for Integrated Database Management System, a Computer Associates database management system for the IBM mainframe and compatible environments.

Impact pane

The HyperView Impact pane displays a hierarchical view and diagram of the *impact trace* for a program variable. An impact trace describes

how data items interact with each other in a program — exchange values, use each other in computations, and so forth.

Impact Report pane

The HyperView Impact Report pane shows the flow of data from a startup item to every data item that would be affected by its modification. The report is organized in hierarchical form according to the depth of the affected item.

IMS

IMS stands for Information Management System, an IBM program product that provides transaction management and database management functions for large commercial application systems.

Java

Java is a high-level object-oriented programming language developed by Sun Microsystems.

Java applet

A Java applet is a program that can be sent with a Web page. Java applets perform interactive animations, immediate calculations, and other simple tasks without having to send a user request back to the server.

JavaBeans

JavaBeans is a specification developed by Sun Microsystems that defines how Java objects interact. An object that conforms to this specification is called a JavaBean.

JCL

JCL stands for Job Control Language, a language for identifying a job to OS/390 and for describing the job's requirements.

JDBC

JDBC stands for Java Database Connectivity, a standard for accessing diverse database systems using the Java programming language.

job

A job is the unit of work that a computer operator or a program called a *job scheduler* gives to the operating system. In IBM mainframe operating systems, a job is described with job control language (JCL).

job dependencies

Batch Application Viewer treats jobs as dependent if one writes to a dataset and the other reads from the same dataset. Occasionally, you may want to define dependencies between jobs based on other criteria — administrative needs such as scheduling, for example.

logical component

A logical component is an abstract repository object that gives you access to the source files that comprise a component.

MFS

MFS stands for Message Format Service, a method of processing IMS input and output messages.

Missing Copybooks Resolution tool

The Missing Copybooks Resolution tool resolves undefined variables in missing copybooks for Cobol programs verified with the relaxed parsing option.

Model Reference pane

The HyperView Model Reference pane displays the parse tree meta-model in text and diagram form.

name-based partitioning

Name-based partitioning is a partitioning algorithm that assigns source files to projects based on text matching of source file names with specified patterns.

Natural

Natural is a programming language developed and marketed by Software AG for the enterprise environment.

object model

An object model is a representation of an application and its encapsulated data.

object-oriented programming

Object-oriented programming organizes programs in terms of objects rather than actions, and data rather than logic.

ODBC

ODBC stands for Open Database Connectivity, a standard for accessing diverse database systems.

orphan

An orphan is an object that does not exist in the reference tree for any startup object. Orphans can be removed from a system without altering its behavior.

Orphan Analysis tool

The Orphan Analysis tool lets you analyze and resolve orphan*s*.

parser

The Asset Transformation Workbench (ATW) parser defines the object model and parse tree for a legacy application.

parse tree

A parse tree defines the relationships among the constructs that comprise a source file — its sections, paragraphs, statements, conditions, variables, and so forth.

PCT

PCT stands for Program Control Table, a CICS table that defines the transactions that the CICS system can process. Compare FCT.

PL/I

PL/I stands for Programming Language One, a third-generation programming language developed in the early 1960s as an alternative to assembler language, Cobol, and FORTRAN.

PL/I Call Diagrammer

PL/I Call Diagrammer performs low-level analysis of PL/I programs. Use it to examine call flows for internal procedures that the Diagrammer is unable to model.

profile

Profiles are HTML views into a repository that show all of the analysis you have done on an application. Profiles are convenient ways to share information about legacy applications across your organization.

Profiler

Profiler is a Web server-based tool that offers company-wide access to profiles of any repository in your organization. It gives managers, business analysts, testers, and customer support personnel convenient, browser-based access to analyzed legacy code.

project

A project is a logical subdivision of a workspace. You might have a project for the batch portion of your application and another project for the online portion, for example. You can also use a project to collect items for discrete tasks — all the source files affected by a change request, for example.

QSAM

QSAM stands for Queued Sequential Access Method, a type of processing that uses a queue of data records—either input records awaiting processing or output records that have been processed and are ready for transfer to storage or an output device.

Quick Diagrammer

The Quick Diagrammer tool lets you view relationships for selected objects only, rather than an entire project. Compare Diagrammer.

refactoring

Refactoring translates a program into a component with the same functionality and control flow, but a simpler syntax structure.

reference reports

Asset Transformation Workbench (ATW) offers three related reports that you can use to identify missing or unneeded program elements in application source: an unresolved report, an unreferred report, and a cross-reference report.

relationship

The relationships between entities in the repository model for a legacy application describe the ways in which the elements of the application interact.

relationship-based partitioning

Relationship-based partitioning is a partitioning algorithm that assigns source files to projects based on the extent to which the source

files are related. If two source files reference the same copybook, for example, they can be regarded as "tightly related," at least as compared with source files that do not reference the same copybook.

relationship weight

A relationship weight determines the importance of that relationship in calculating the connection between source files in relationship-based partitioning.

relaxed parsing

Relaxed parsing lets you verify a source file despite errors. Ordinarily, the parser stops at a statement when it encounters an error. Relaxed parsing tells the parser to continue to the next statement.

repository

A repository is a database of program objects that comprise the model for a workspace.

Repository Browser

The Asset Transformation Workbench (ATW) Repository Browser displays the contents of the current workspace.

Resource Retriever

The Resource Retriever tool lets you identify and restore missing CICS file connectors and transactions in file control tables (FCT) and program control tables (PCT) for Cobol and PL/I programs.

Rules pane

The HyperView Rules pane lets you create business rules from code segments extracted manually from source or autodetected. You can also create business rules from candidates listed in Clipper.

schema

See database schema.

scope

The scope of a diagram determines the objects and relationships it displays. See Diagrammer.

seed field

A seed field is the object of a Change Analyzer search for the class of data items that need to be changed.

Source pane

The HyperView Source pane displays view-only source code for the selected file and included files.

SQL

SQL stands for Structured Query Language, a standard language for relational database operations

structure-based component extraction

Structure-based component extraction is a type of component extraction that builds a component from a range of inline code — Cobol paragraphs, for example.

synonym

A synonym is a data field whose value is related to the value of the matched seed field — a field whose value is assigned by a MOVE or REDEFINE statement, for example.

system program

A system program is a generic program — a mainframe sort utility, for example — provided by the underlying system and used in unmodified form in the legacy application.

TIP

TIP stands for Transaction Processing, the Unisys real-time system for processing transactions under Exec control.

token

In the Application Namespace tool, a token is an element in a program identifier delimited by a hyphen (-) or underscore (_). In the identifier WS01-CUST-FIELD, for example, there are three tokens: WS01, CUST, and FIELD.

transaction

A transaction is a sequence of information exchange and related work (such as database updating) that is treated as a unit for the purposes of satisfying a request and for ensuring database integrity.

Unknown Statements Resolution tool

The Unknown Statements Resolution tool resolves incorrect or unsupported statements in Cobol programs verified with the relaxed parsing option.

User Interface tool

The User Interface tool lets you analyze the interaction between legacy screens and program logic, and generate an HTML or Java GUI based on the interaction.

VALTAB

VALTAB stands for Validation Table, which contains the information the system needs to locate, load, and execute transaction programs. See also TIP.

VSAM

VSAM stands for Virtual Storage Access Method, an IBM program that controls communication and the flow of data in a Systems Network Architecture network.

WebGen

WebGen generates HTML views of the repositories on your workstation. You can publish the views to Profiler, where they can be accessed by any member of your organization with a browser.

workspace

A workspace is a named container for an application or a portion of an application. Workspaces can be divided into projects.

XML

XML stands for Extensible Markup Language, a specification for creating common information formats.

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