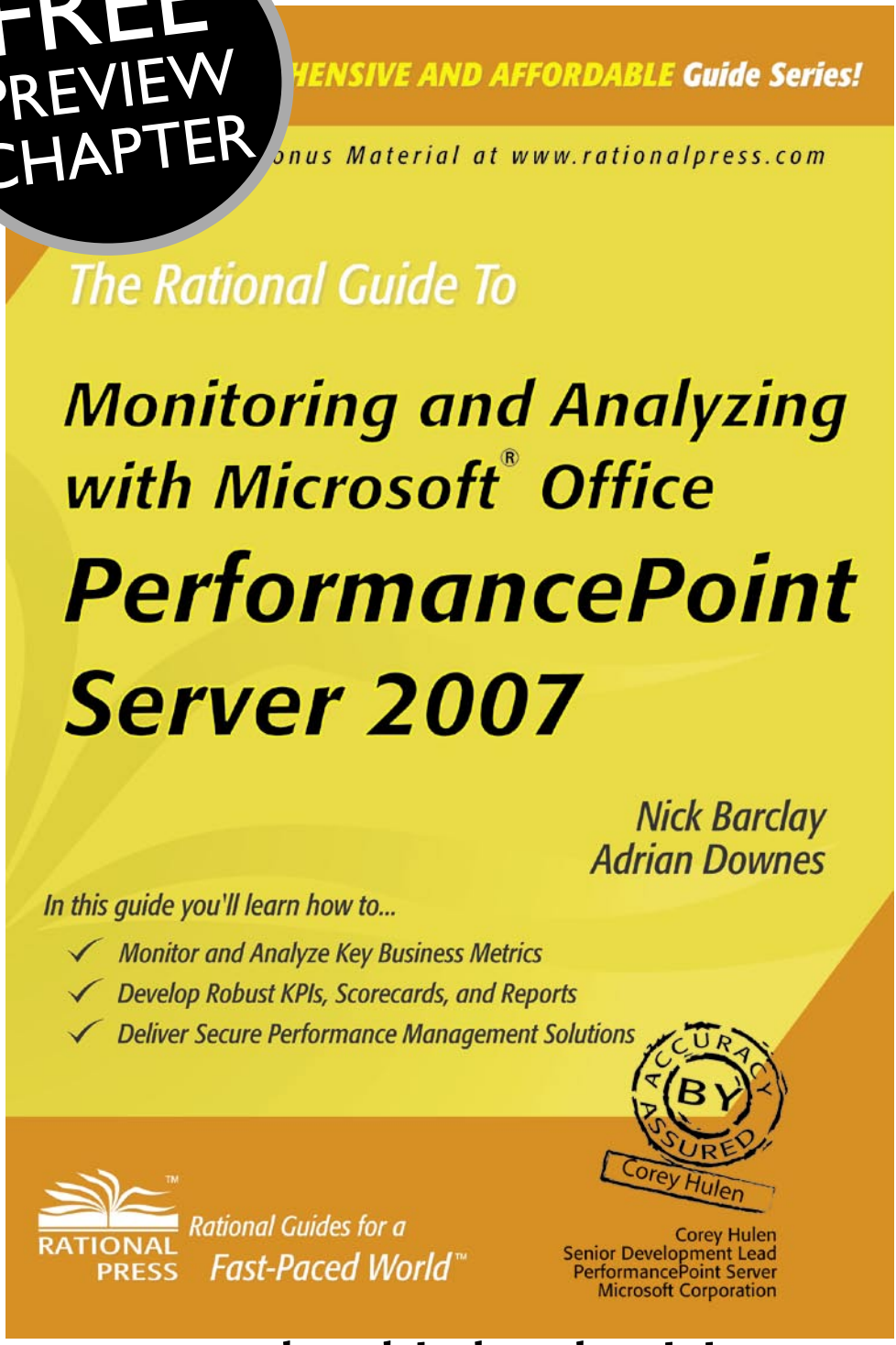

PUBLISHED BY

Rational Press - An imprint of the Mann Publishing Group
710 Main Street, 6th Floor
PO Box 580
Rollinsford, NH 03869, USA
www.rationalpress.com
www.mannpublishing.com
+1 (603) 601-0325

ISBN-10: 1-932577-41-6
ISBN-13: 978-1-932577-41-9
Library of Congress Control Number (LCCN): 2007936575
Printed and bound in the United States of America.
10 9 8 7 6 5 4 3 2 1

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Book Contents

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Chapter 4

Introducing Dashboard Designer

In order to provide dashboards, reports, and scorecards to end users, these elements and the elements that make them up must be built. Then they need to be published to a Monitoring server, which may also need attention from time to time. Virtually all design and management tasks for Monitoring are performed using a Windows Forms application named *Microsoft Office PerformancePoint Dashboard Designer* (DD). Using DD, we are able to:

- Create new elements from scratch
- Publish to or delete elements from a Monitoring server
- Alter elements already published to a Monitoring server
- Manage element security, versions and metadata
- Manage Monitoring server settings and security

Technically, DD is a member of the Office 2007 family, but it is not an application you will see on a great many desktops around the enterprise alongside Office stalwarts like Excel, Word, and PowerPoint. Nonetheless, DD should not be viewed as a tool reserved only for use by developers—quite the opposite, in fact. Other BI tools in the Microsoft stack such as Integration, Analysis, and Reporting Services have their primary development environment integrated into Visual Studio by means of customized snap-ins. While the more technically-savvy power users will use DD, this application has no ties to Visual Studio. DD's place in the Office

family has a purpose: to provide a familiar, unintimidating environment to those who are not hardcore developers in which to design and manage the components that make up a performance management solution.

Installing and Launching

DD is a ClickOnce application, which enables it to be installed and run from a web page. The Monitoring Central web page that was created as part of the installation contains a link to the *Dashboard Designer Installation Site*. Like all ClickOnce applications, after DD has been installed on a machine, subsequent initialization of the application triggers a call to the server to check for newer versions. If updates are available, they will be downloaded and applied.

Tech Tip:

There are a number of configuration options available to administrators for controlling the specific behavior of ClickOnce applications. For more information, refer to `http://msdn2.microsoft.com/en-us/vbasic/ms789088.aspx`.

Follow these steps to launch DD for the first time from the Monitoring Central site:

1. Open Internet Explorer and browse to `http://<servername>:40000/Central/`. This will be the link that can be sent to DD users in order to get set up initially.

2. Click the **Run** button or click the **Download Dashboard Designer** link. The ClickOnce technology will check to see whether the application is already installed.

3. Click **Run** when prompted by the **Security Warning** dialog. The necessary files will be downloaded and DD will launch.

The first time the installation is run, a **Start** menu item is added on the user's machine at **Start** ⇨ **All Programs** ⇨ **Microsoft Office PerformancePoint**

Server 2007 ⇨ **Dashboard Designer** for subsequent use. Regardless of whether DD is launched from the browser or the **Start** menu, a check for the latest updates will be made to the server from which DD was last launched.

Tech Tip:

Because it is a ClickOnce application, DD allows users to add or remove file associations and Start menu items associated with the program. This setting can be adjusted in the DD options dialog by clicking either the Add File Associations or Reset File Associations buttons.

User Interface

DD has a three-paned user interface as shown in Figure 4.1. The three panes from left to right are the *workspace browser*, *workspace pane* and the *details browser*. All the functionality provided by the application is within easy reach, thanks to the new Office 2007 *ribbon* interface.

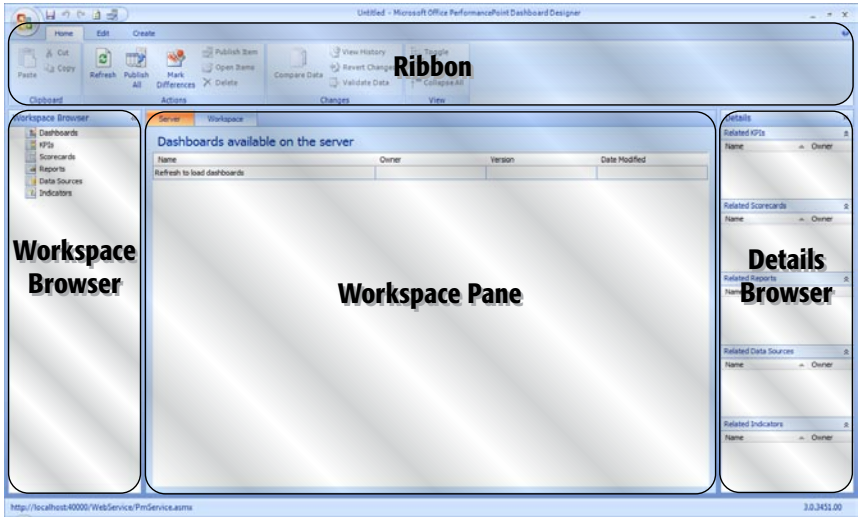

Figure 4.1: Three-paned User Interface.

Workspace Browser

The workspace browser displays a hierarchically organized list of the six element types defined in an open workspace under correspondingly named parent nodes. The elements can be further grouped into folders underneath these parent nodes. Selecting a parent node, folder, or individual element in the workspace browser hierarchy will expose specific user interfaces and metadata in both the workspace pane and details pane.

Workspace Pane

A different user interface is displayed in the workspace pane depending on the level or the element type selected in the workspace browser hierarchy. Selecting an individual element at the bottom (leaf) of the hierarchy will bring up the design UI in the workspace pane, allowing creation and configuration of properties for that element. Figure 4.2 shows a selected KPI element in the workspace browser and the corresponding user interface in the workspace pane.

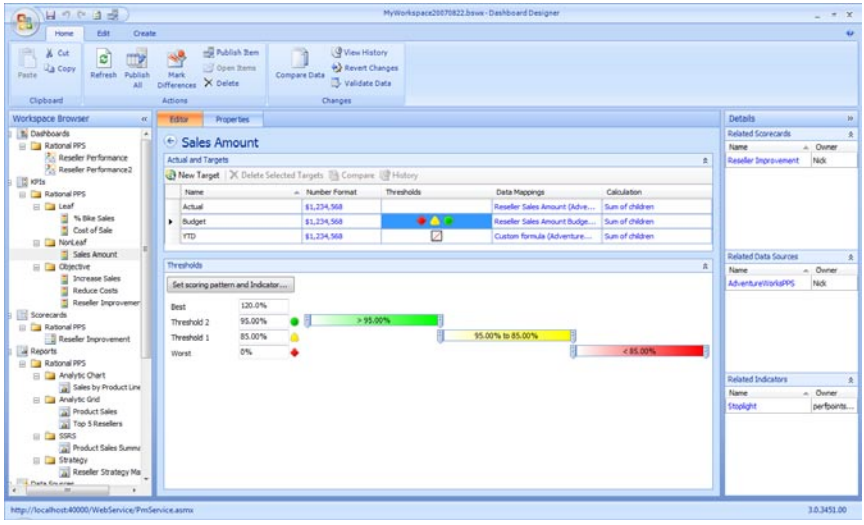

Figure 4.2: A KPI Workspace Pane User Interface.

Selecting any folder or element root node in the workspace browser hierarchy will display a summary view of all elements located beneath it in the workspace pane. In summary view for an element root node, the workspace pane is tabbed

so the view can be switched from either the elements in the open workspace or those published to the server to which DD is currently connected by selecting the corresponding **Workspace** or **Server** tab (see Figure 4.3). This shows how DD facilitates easy interaction with both elements in the open workspace or published to the server within one simple interface.

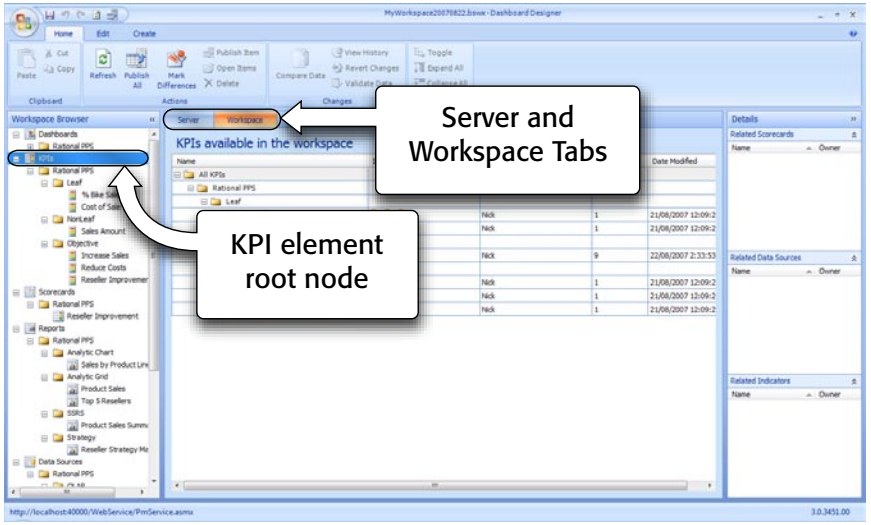

Figure 4.3: KPI Summary View with Workspace and Server Tabs.

Details Pane

The details pane plays different roles depending on the element selected in the workspace browser or workspace pane. In certain situations, this pane displays links to elements used by (or required by) the currently selected element. In other cases, the details pane provides access to items required to build out scorecard, report, and dashboard definitions. The many uses of the details pane will become much clearer in subsequent chapters.

The Ribbon

As member of the Office 2007 family, DD's user experience is improved by the incorporation of the new *ribbon* interface. The DD ribbon is divided into three different tabs: *Home*, *Edit*, and *Create*. Within each of these tabs, the buttons for related functions are organized into *chunks*. The organization of the ribbon, along with intuitive icons and tooltips, means that all the functionality that DD provides is visible and within easy reach.

Home

The tools on the **Home** tab (Figure 4.4) are those that are common to all elements.

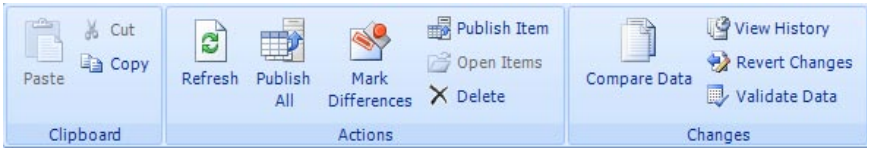

Figure 4.4: The Home Tab.

Edit

The ribbon is a dynamic user interface that automatically adjusts the contents of certain tabs depending on the actions being performed by the user. Of the three DD ribbon tabs, the most dynamic by far is the **Edit** tab. Depending on the element selected in the workspace browser, the **Edit** tab will display chunks containing tools specific to that element. Because of its dynamic nature, it is not worth including screenshots showing the many different chunks hosted by the **Edit** tab. Instead, the varied contents of the **Edit** tab will feature in the chapters that cover each element.

Create

The **Create** tab (Figure 4.5) is home to buttons used to create each element type. Because the report element supports a number of different types, a separate **Reports** chunk has been created.

Figure 4.5: The Create Tab.

For a complete breakdown of the contents of each ribbon tab and chunk, refer to the product documentation.

Workspaces

Work is done in DD using files called *workspaces* that have a file extension of .bswx. DD provides a simple Graphical User Interface (GUI) that allows designers to create definitions for each of the six elements. Within a workspace file, DD creates detailed XML definitions of elements as a result of user interaction with its GUI. Designers need not have any working knowledge of XML; DD ensures that well-formed, PPS schema-compliant XML is created as a result of designers' efforts. Each individual element (e.g., KPIs) created in DD is represented as an XML node that exists inside the workspace file. Using DD's ability to connect directly to a Monitoring server, these XML definitions can be easily published to the Monitoring server one-by-one or en masse. Because a single workspace can contain the definitions of elements that make up a complete dashboard solution, it is a useful container and deployment mechanism—especially when it comes to moving through the development cycle (e.g., Development > Test > QA > Production). For example, once development is complete, migration of elements to the test server is done by simply connecting to the Monitoring server on the appropriate machine and publishing.

Workspace files should be treated the same as any other piece of source code. They should be managed through some form of source control, such as Microsoft Visual Source Safe. When the contents of a workspace are published to the Monitoring server, the XML element definitions are stored and managed in the Monitoring server database. Ensuring that this database is regularly backed up is essential, in addition to the .bswx files in which the elements were originally defined.

Note:

It is important to understand that the eventual end users do not interact with the workspaces themselves. The elements developed in workspaces must first be published to the Monitoring server in order for users to access and interact with them through SharePoint.

Tech Tip:

A workspace is actually nothing more than a well-formed XML document. Changing the .bswx file extension to .xml and then opening the file with Internet Explorer will allow a clear view of the element definitions created by DD. Naturally, before making any change to a file extension, make a backup of the original file.

Creating a Workspace

Follow these steps to create and save a workspace. If you already have DD open as a result of the previous exercise, you can skip Step 1.

1. Click **Start** ⇨ **All Programs** ⇨ **Microsoft Office PerformancePoint Server 2007** ⇨ **Dashboard Designer**. A window pops up to inform you that it is checking back with the server to see if there are any new updates to the application.

2. When DD opens, a blank workspace is created by default; this is the same behavior as other Office applications like Word or Excel. Click the **Office** button in the top left corner of the screen and select **Save As**.

3. Save the .bswx with the name **MyWorkspace** to a directory of your choice.

Workspace Configuration

When DD launches, it connects to the Monitoring server it was originally installed from, and it also creates a blank workspace. Each individual workspace file can be configured to connect to a specific Monitoring server if required. By default, the connection for new workspaces is set to the Monitoring server that DD was initialized from. The *Server URL* property can be changed on the **Server** tab of the DD Options dialog while the workspace is open by clicking the **Office** button and then clicking the **Options** button in the bottom right of the menu (next to the **Exit** button). The address of the Monitoring server web service to which DD is currently connected is displayed in the status bar in the bottom left of the application.

Element Synchronization

DD provides an environment in which elements can be created and managed both in a local workspace file and on the connected Monitoring server. Because of this, it is possible to have two differing versions of the same element—one in the workspace and one on the server. It is important to be able to determine quickly which workspace element definitions differ from those on the server.

Clicking the **Refresh** button on the **Home** tab of the ribbon will "pull down" the latest versions of all elements published to the currently connected Monitoring server. If an element exists in the workspace but hasn't been modified by a user, clicking the **Refresh** button will prompt the user to overwrite the current workspace definitions with the version from the server, if there are any differences. Once the refresh process has finished, clicking the **Mark Differences** button will compare element definitions in the open workspace to their published version (if they have been published). If the workspace definition of an element differs in any way from the server version since the last refresh (or is simply not published), a pencil is superimposed on that element's icon to indicate a difference between the workspace and server versions. Figure 4.6 shows that the Gross Margin % KPI's definition is not the same as that on the server (or may not have been published).

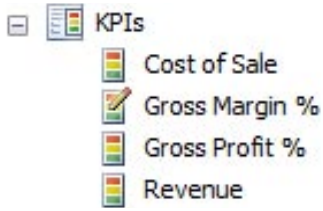

Figure 4.6: Gross Margin % KPI Out of Sync with the Server.

The pencil icon will also appear whenever an element definition is altered in any way or initially created. Publishing the element to the Monitoring server will remove the pencil.

Element Metadata

Metadata is a vital part of any business intelligence project and should not be overlooked. All elements have the same framework to ensure that appropriate metadata is captured and maintained consistently. Good metadata management will only serve to improve any business intelligence implementation. Element metadata can be accessed and configured in each element's **Properties** tab (see Figure 4.7).

Table 4.1 details the common metadata properties that can be accessed via the **Properties** tab.

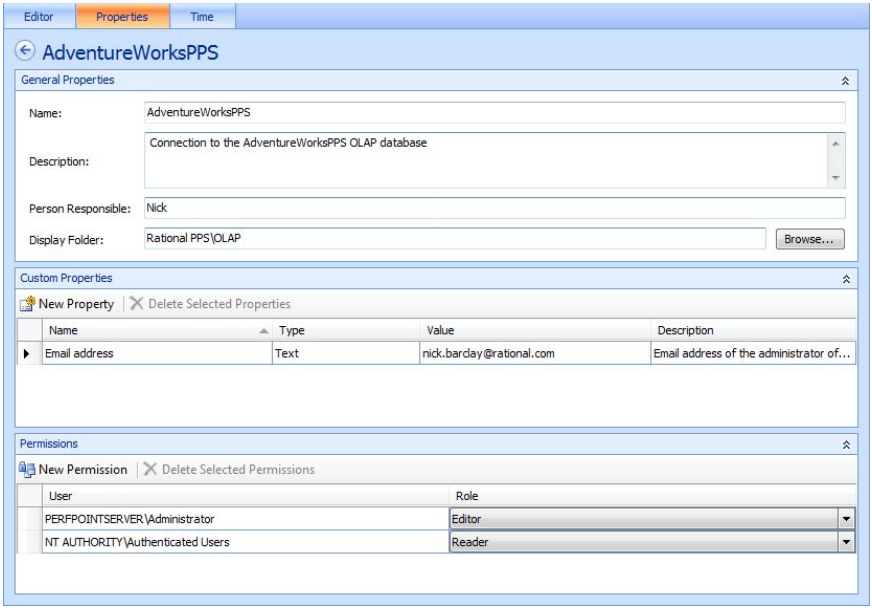

Figure 4.7: Element Properties Tab.

Property	Description
Description	Textual description of the element.
Person Responsible	This field is auto-populated with DomainName\UserName of the user currently logged in when the element is created. The value can be changed to whatever is desired.
Display Folder	Used to organize elements within the workspace and those published to the Monitoring server. Display folder settings exist as a property on an element rather than as an independent object. The hierarchy UI for specifying a display folder is generated on the fly, based on the properties of other elements in the workspace or on the server. To exist on the server, a display folder must contain at least one published element.
Custom Properties	A simple user interface for adding custom element metadata. Each custom property is made up of a name, description, data type, and value. Custom properties can then be exposed using a scorecard to add further context to the data contained within it.

Table 4.1: Element Metadata Properties.

Server Administration

DD provides simple administrative capability over the Monitoring server. The Monitoring server web service itself is actually quite simple and does not require too much work to administer and maintain. Server administration options can be accessed on the **Server** tab of the DD **Options** dialog. To configure global settings for a particular Monitoring server, the server name and port number of the corresponding Monitoring server instance should be entered into, or selected from, the available list in the **Server name** dropdown list.

Once the server has been selected, clicking the **Connect** button (see Figure 4.8) will bring the grayed out **Server Options** and **Permissions** buttons to life, enabling access to these areas.

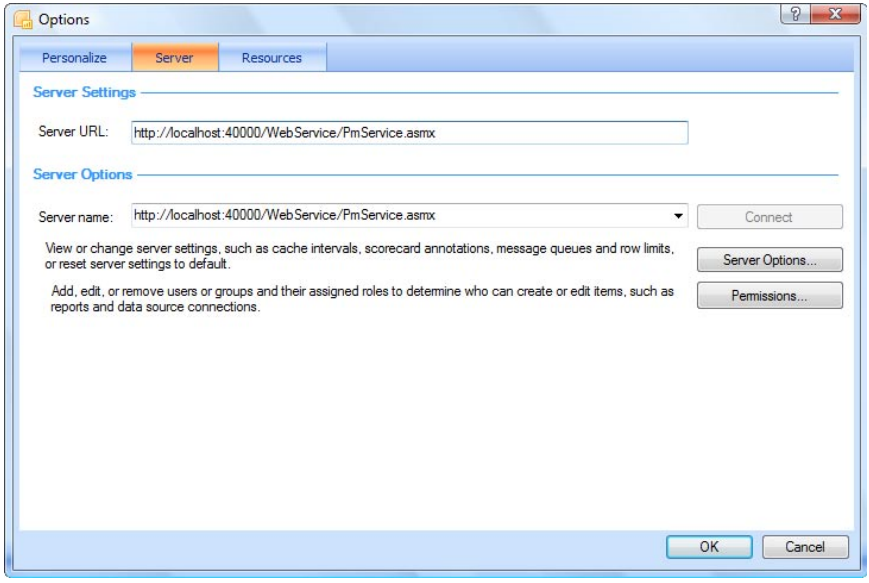

Figure 4.8: Server Tab of Dashboard Designer Options.

By default, the Monitoring server web service listens on port 40000. If a standard Monitoring install has been performed, the path to connect to a Monitoring server will be `http://<servername>:40000/WebService/PmService.asmx`. Naturally, if the Monitoring server is located on the same machine as DD, this path can be `http://localhost:40000/WebService/PmService.asmx`.

Tech Tip:

There is a simple trick to finding the path to a particular Monitoring server web service if you are unable to find or remember it. Simply browse to the monitoring central web page on that server `http://<servername>:40000/Central`**. Launch DD using the link provided. DD will be automatically be configured to connect to** *that* **particular Monitoring server. Check the Server URL property in the Personalize tab and the Server Name property in the Server tab of the Options dialog in the default workspace. Remember that on subsequent initializations of DD from the Start menu, it will automatically connect to the Monitoring instance on the server it was last launched from.**

Server Options

Once connected to the server, clicking the **Server Options** button brings up a grid that lists the configurable server options. These fit into five broad categories:

- **Comments** allow users to add comments to scorecards from within SharePoint. Before this functionality can be enabled for individual scorecards, it must first be configured at the server level.
- **Cache settings** determine the amount of time that an element is kept in the web server cache.
- **Microsoft Message Queue** enables the Monitoring server to send messages to a stipulated MSMQ.
- **Analysis Services** server name information facilitates data mining functionality used by Trend Analysis reports.
- **Row Limit** sets the threshold for OLAP "Show Detail" functionality.

The **Server Options** dialog can be seen in Figure 4.9. Each item can be configured by double-clicking it.

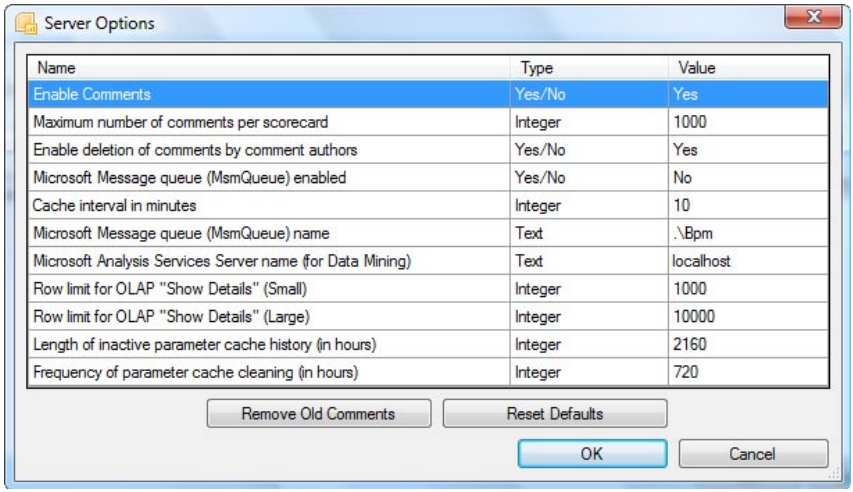

Figure 4.9: Server Options Dialog.

Note:

Alerts are not currently supported in this version of PPS. In BSM 2005, alerts were dependant on the SQL Server 2000 notification framework. This framework has been superseded by SQL Server 2005 Notification Services. An alerting mechanism is currently a candidate feature for a future version or service pack.

Permissions

Global security settings for the currently connected Monitoring server can be configured by clicking the **Permissions** button. Domain users or Windows groups can be assigned one of four different Roles: Admin, Creator, Power Reader, or Data Source Manager. Chapter 12 provides in-depth coverage of these roles and their application.

Migrating from BSM

As mentioned in Chapter 2, a significant portion of Monitoring functionality could otherwise be referred to as the next version of Business Scorecard Manager (BSM). Many businesses have already invested significant time and money in setting up BSM environments (creating KPIs, scorecards, etc.). Naturally, there is a migration path from BSM to PPS. It is not, however, an in-place upgrade of a BSM installation; it would be more aptly called a workspace migration.

The *Performance Point Server 2007 Scorecard Migration Tool* converts a BSM workspace (.bsw) schema to the new schema required by PerformancePoint workspaces (.bswx). Once the .bsw workspace has been converted to a .bswx workspace, the contents can be published to the newly configured Monitoring server. The upgraded elements are now available to be incorporated into dashboard elements, which did not exist in BSM. A detailed breakdown of which BSM items can or cannot be migrated to corresponding PPS elements is contained in the product help files. The Scorecard Migration Tool can be downloaded from `www.microsoft.com/downloads`.

Extensibility

The Monitoring server and DD are both built on rich, well-documented APIs. These APIs provide a plug-in architecture that has been used by the PPS team to build the product itself. The plug-in architecture supports the creation of custom wizards, reports, and data source providers.

DD is an application for interacting with the Monitoring server via a web service. There is no functionality provided by DD that a developer can't replicate and extend using the Monitoring web service and Monitoring Software Development Kit (SDK). This provides a great opportunity for customers and Independent Software Vendors (ISVs) alike to create customized functionality.

The ribbon is also a highly extensible interface. Aside from its usability, the ribbon interface places great emphasis on extensibility. Adding custom buttons and dynamic chunk functionality in DD is made very simple when leveraging the flexibility inherent in the ribbon interface.

Tech Tip:

Keep a close eye on the official PPS team blog (`http://blogs.msdn.com/performancepoint/default.aspx`**) for posts detailing extensibility features and techniques.**

Summary

In this chapter, we looked at PerformancePoint Dashboard Designer and the part it plays in building and publishing elements as well as server administration. DD is a ClickOnce application that uses files called workspaces to store and manage completed work. At any one time, DD can be connected to a single Monitoring server and have one workspace file open. The workspace pane's tabbed interface enables a user to easily work with element definitions located in either area. As a member of the Office family, DD provides usability benefits in the form of the ribbon interface.

In this chapter, we launched Dashboard Designer for the first time and created a workspace that we will build out throughout the remainder of this book.

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