

Redmond



2011 GUIDE TO SHAREPOINT

By Joshua Hoffman
& Brien Posey

1 Delivering Intelligence with
SharePoint Dashboards

5 Optimizing SharePoint
Workspace Storage

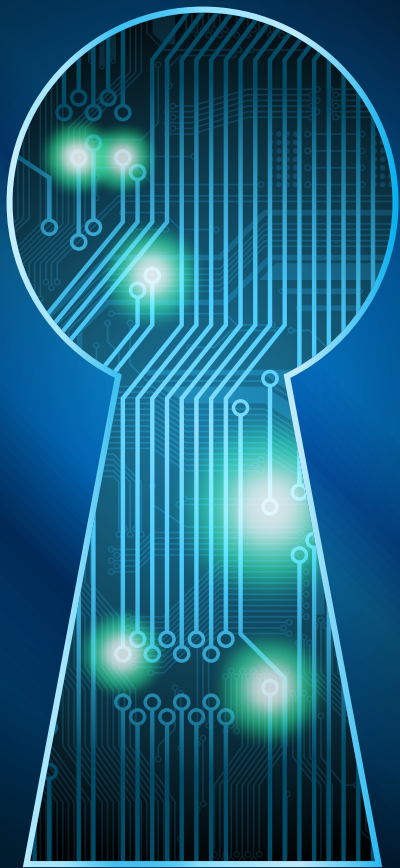
SharePoint 2010

Certification Practice Tests are Here!

Extensive IT Pro +
Developer titles to help
pass your Certification
exam, fast.

- No frills Test-Pass Guarantee
- Exam-like questions match objectives with detailed explanations & references
- Study mode, score report and certification mode with bookmarking
- Ranked “*Best Exam Preparation Vendor*” by the readers of *Redmond Magazine* - 2010

Find out more at www.measureup.com



Delivering Intelligence with SharePoint Dashboards

Integrate data from disparate sources into scorecards with rich data visualization for interactivity and workflow automation.

■ By Joshua Hoffman

We live in the era of data-driven decision making. Robust data infrastructures help organizations collect unlimited volumes of data from myriad sources. They can then integrate and analyze that data, driving intelligent business decisions based on concrete information.

A powerful data back-end like Microsoft SQL Server is essential, but so, too, is a rich presentation layer—one that harnesses information and helps drive the decision-making process. You want to present this Business Intelligence (BI) in the most effective way possible. You want to give your users control over their experience, and leverage the existing presentation and collaboration resources in your IT infrastructure.

SharePoint 2010 can help you deliver rich BI solutions directly to the information workers in your organization. By leveraging easy-to-use tools and a familiar environment, SharePoint 2010 helps you provide self-service BI functionality, empowering users and reducing costs for your IT department.

As part of that BI infrastructure, SharePoint 2010 dashboards and PerformancePoint Services are powerful decision-making tools. SharePoint dashboards integrate data from disparate sources into scorecards, enhance scorecards with rich data visualizations, and enable deep interactivity and workflow automation.

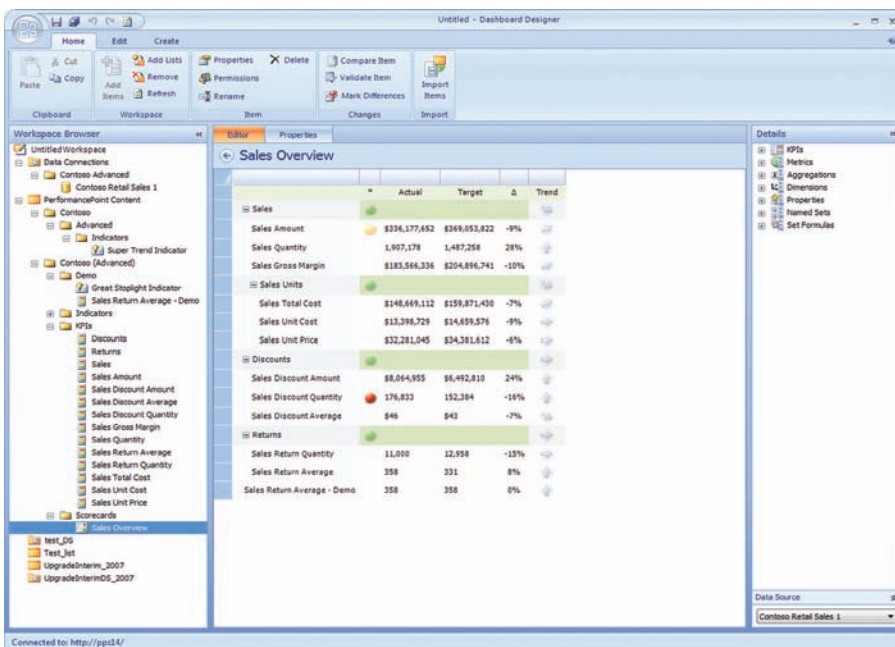


Figure 1. An assembled scorecard in PerformancePoint Dashboard Designer.

SharePoint Dashboards

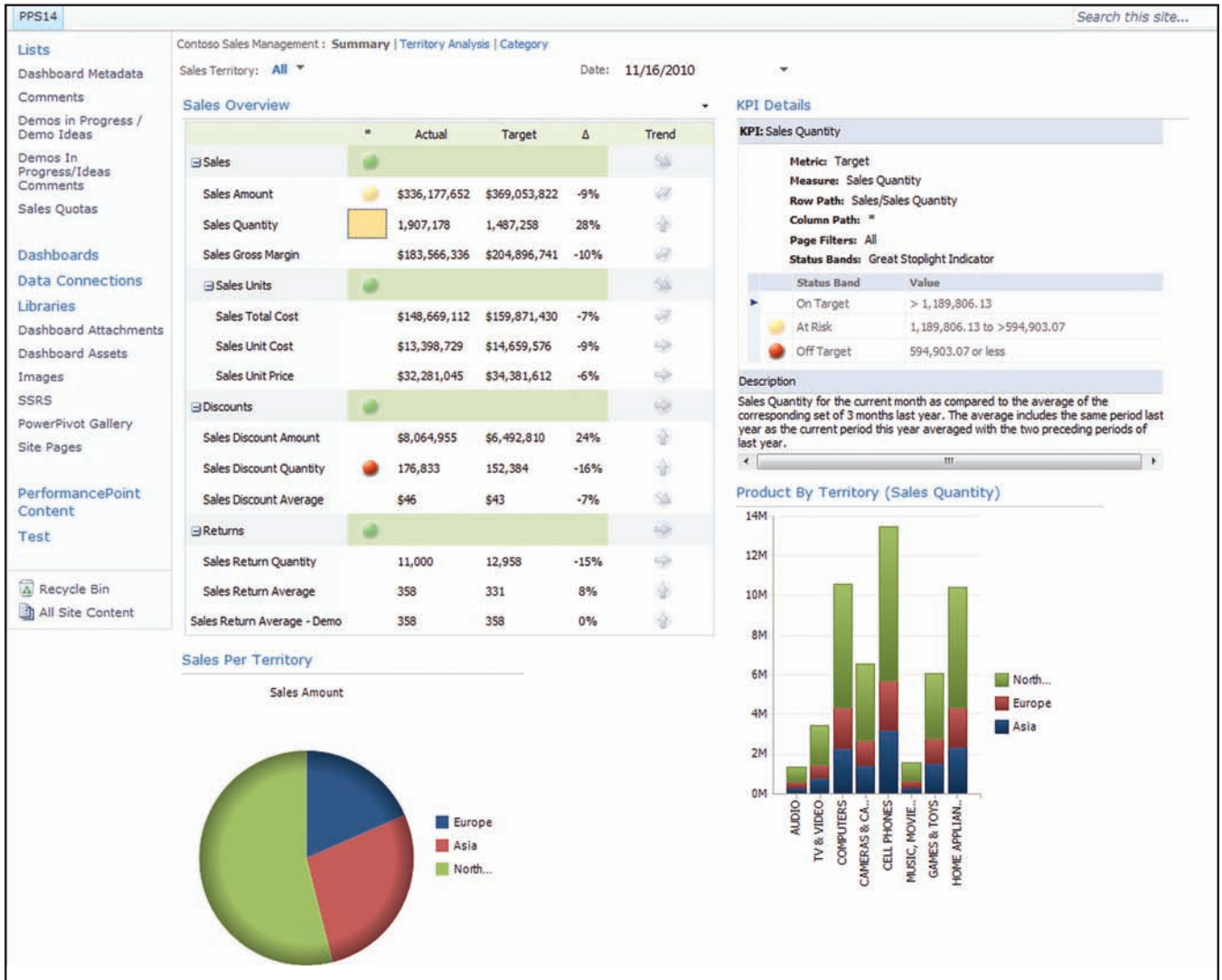


Figure 2. An assembled SharePoint dashboard including visualizations.

Information vs. Intelligence

The first step in empowering users to make data-driven decisions is not a technical feat. Instead, you must carefully consider the most important kinds of information to present to your business decision makers.

What components of your amalgamated business data actually count as intelligence? What information can users actually act upon when making decisions? It may be sales data, job performance, customer satisfaction, logistics or supply chain information. It may also cut across numerous variables, such as sales data by region, inventory by supplier and so on.

These critical measures are called Key Performance Indicators (KPIs). They represent the metrics you set to define success. It's crucial that you and your IT staff and the business decision makers work together in establishing the appropriate KPIs. You want your information workers have the best intelligence upon which to act when making those decisions.

Build Your First Dashboard

The first step in building a SharePoint dashboard is installing PerformancePoint Dashboard Designer. The Dashboard Designer is a rich client application that lets you create data sources, dashboards, scorecards, KPIs, custom indicators, filters and reports—all of which you can publish directly to SharePoint Web sites.

Once you've configured PerformancePoint Services for your organization, you can install Dashboard Designer by visiting the Business Intelligence Center site within your SharePoint infrastructure. After completing the initial installation, you can access the Dashboard Designer directly from your Start menu.

Your next step is to select the data sources you need to contribute to your dashboard. Those data sources can include SharePoint lists, instances of SQL Server, SQL Server Analysis Services, Excel Services or even Excel workbooks.



SharePoint Dashboards

Once the data source connections are active, you can begin to build KPIs. When creating KPIs, select the data points you want to measure—for example, sales data from SQL Server Analysis Services. You also need to choose targets against which you want to measure that data, which might be sales quotas as defined in a SharePoint list of your sales associates.

Once the KPIs are accepting data from multiple data sources, PerformancePoint Services helps connect critical business data and portray it in a meaningful way to business decision makers. You can also base SharePoint 2010 KPIs on calculated values, like the sum of several sales figures representing revenue for a defined sales territory. When defining KPIs, you can also select appropriate visual indicators. This is often something like red/yellow/green stoplights that indicate when the values meet, exceed or drop below certain targets.

After defining your KPIs, you can build scorecards for your dashboard. Scorecards display a collection of KPIs to give you a high-level overview of organizational performance. For example, you can build a scorecard that shows sales performance against quotas across every sales territory or different product lines. Once you've added the appropriate

From within a SharePoint dashboard, users can perform business tasks, which are then executed by the SharePoint workflow engine.

KPIs to your scorecard in Dashboard Designer (see Figure 1, p. 1), you can publish your scorecard to a SharePoint dashboard.

Data Visualizations

They say a picture is worth a thousand words, and with good reason. Visual images display a rich depth of information at a glance. With PerformancePoint Dashboard Designer, you can create and publish data visualizations that help you to present critical business data in a visually compelling way (see Figure 2, p. 2).

Dashboard Designer lets you create reports that leverage familiar analytic chart and graph controls, but also provide a high degree of depth and interactivity. For example, you can create a report with a pie chart of sales revenue broken down by sales representative. You can also let your business users redisplay the report as a bar chart or line graph, re-sort the data, apply value filters, show or hide particular information and more.

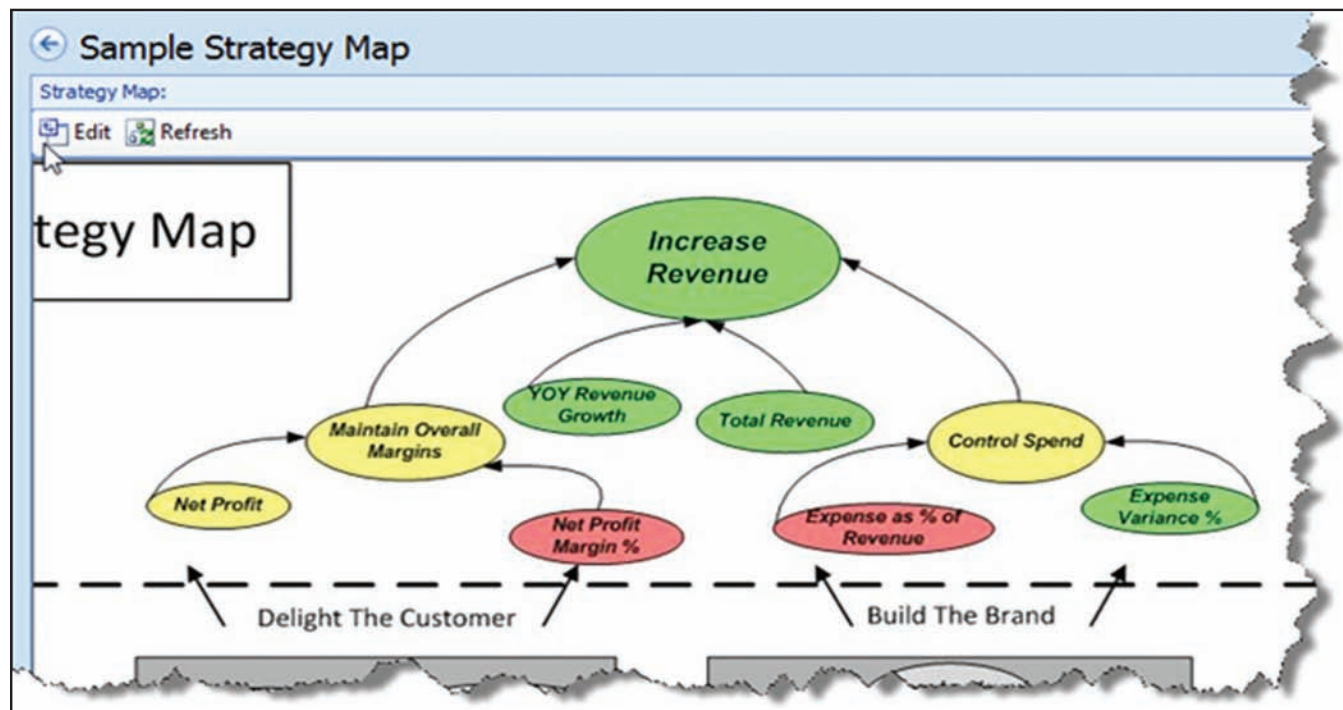


Figure 3. A strategy map connects business data to visual representations.

SharePoint Dashboards

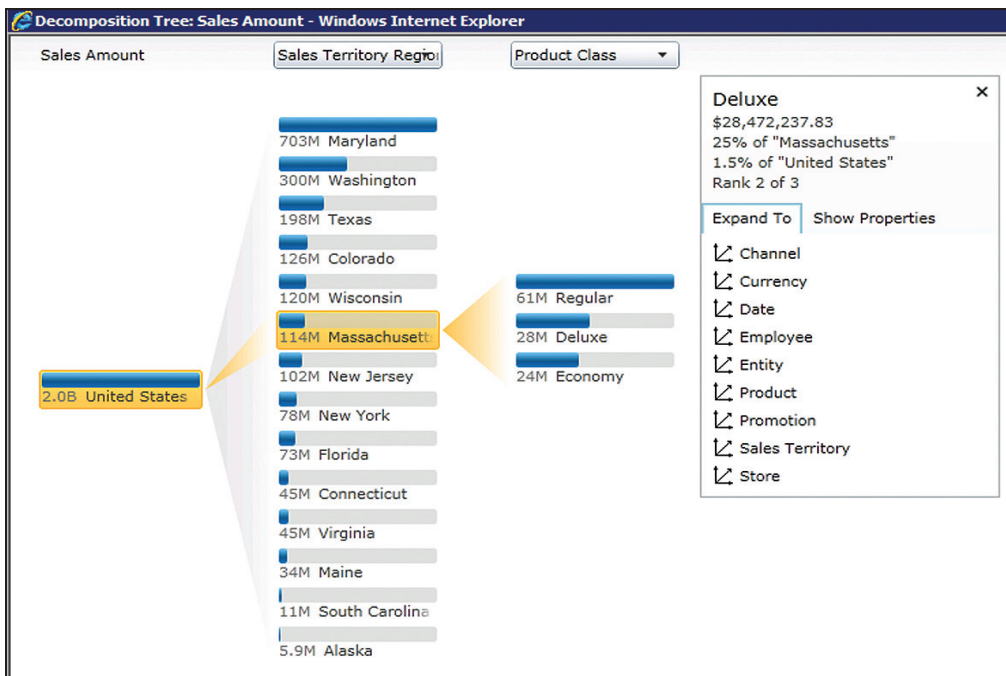


Figure 4. A decomposition tree shows contributing factors to a KPI.

Besides using traditional visualization forms like charts and graphs, PerformancePoint gives you some innovative new approaches to data visualization. Strategy Maps, for example, let you connect business data to Visio diagram shapes, such as geographic maps or process diagrams, as shown in Figure 3, p.3. Strategy maps help connect business data to visual representations of real business processes. With strategy maps, you can get a quick glance of sales performance by region, progress against your strategic plan, or supply chain performance.

Interactive Intelligence

By delivering business data dashboards with SharePoint 2010, you can give your business users a level of interactivity they won't find in other BI solutions. In SharePoint dashboards, users can dig deeper into the data, drilling into the KPIs to develop a better understanding of the information that lies within and how it impacts organizational performance.

In a KPI that displays sales revenue by region, for example, a user may wish to drill down further to see what product lines are performing best, and where underperformance needs to be addressed. They can also pivot on data within those KPIs, applying filters and combining additional data sources to understand the root causes of the data results.

To that end, one of the most helpful analytical features of the PerformancePoint dashboards is the Decomposition Tree. The Decomposition Tree (see Figure 4) is an analytics tool that helps users perform root-cause analyses. Using an interactive, Silverlight-based control, they can deconstruct report elements to see the individual components of a composite figure. This helps them understand how various contributors impact the final number.

When you connect dashboard elements, you get an additional level of interactivity. For example, you can configure a dashboard so that when a user selects a region on a scorecard of regional sales data, another Web part on the page—a KPI Details report—refreshes to show additional information. This could be data about the salesperson responsible for that region, their quota, contact information and so on. You can retrieve this data from completely disparate data sources, but continue to connect it by common attributes (like sales territory) by way of the dashboard.

Working with Workflow

The SharePoint dashboards also use the powerful workflow functionality already built into SharePoint. From within a SharePoint dashboard, users can perform business tasks, which are then executed by the SharePoint workflow engine. For example, if a salesperson reviews his dashboard and finds he's likely to miss his quota, he can submit a request to his manager for an adjustment. Then his manager can approve or reject the request before any change is reflected in the dashboard.

SharePoint dashboards provide integrated, tailored BI. They empower information workers to make data-driven decisions. With rich, visual, interactive intelligence, the decision makers in your organization have access to the information they need quickly and easily, in useful and familiar formats. With its self-service-oriented approach, the burden on you and your IT staff is greatly reduced, helping to save both time and money.

Thanks to Leif Brenne and Craig Boobar for their assistance in the development of this article. R

Joshua Hoffman is the former editor in chief of TechNet Magazine. He's now an independent author and consultant, advising clients on technology and audience-oriented marketing. Hoffman also serves as editor in chief of ResearchAccess.com, a site devoted to growing and enriching the market research community. He lives in New York City.

Content provided by TechNet Magazine, Microsoft's premier publication for IT Professionals

Optimizing SharePoint Workspace Storage

You can still work with SharePoint even when you're working offline if you optimize your SharePoint Workspace storage architecture. ■ By Brien Posey

You can't always be connected to SharePoint. For those moments when you're not, SharePoint Workspace 2010 lets you work with SharePoint data—even when you're working offline. The underlying storage architecture, however, has several performance problems. Here's a look at why these problems occur and how you can work around them.

SharePoint Workspace refers to the storage space used to store workspace data. The client software is also called SharePoint Workspace, so we'll call that SPW 2010. You can think of a SharePoint workspace as similar to a Microsoft Groove workspace.

The basic idea is that you can synchronize either a full or a partial SharePoint document library to a SharePoint workspace on your local computer. That way, you can still access the library's contents when you're working offline. You perform the actual synchronization with SPW 2010. This is the client component that lets you set up and maintain synchronizations with library content.

Why Optimize?

When you synchronize SharePoint documents, the documents themselves are stored in your local Office Document Cache. The related lists, InfoPath forms, schemas and views are stored in the actual SharePoint workspace. This architecture works well if you only need to synchronize a handful of documents. It can break down as the number of synchronized documents increases.

According to Microsoft, SPW 2010 functions best if you're synchronizing fewer than 500 documents. Once you try to synchronize more than 500 documents, you'll see a

message warning you that SPW 2010 performance will gradually diminish as you increase the document synchronization workload.

If you try to synchronize 1,800 or more documents, SPW 2010 will give up trying to keep them all in sync. Instead, it will only download the document metadata to the

SharePoint workspace.

When you try to open one of those documents, it's synchronized on the fly.

So if it's more efficient for SPW 2010 to download document metadata instead of trying to synchronize an entire document, why doesn't SPW 2010 do this all the time? The whole point of SPW 2010 is to let you work

on SharePoint data even when you're offline. It's hard to work on a document if all you have is the metadata.

Optimizing Workspace Storage

At the moment, there are really only two ways to work around these limitations. One is to create Groove workspaces instead of SharePoint workspaces. According to Microsoft, these synchronization limitations only apply to the Office Document Cache, and not to Groove workspaces (which you can create and access through SPW 2010).

The other option for working around the SPW 2010 synchronization limitations is to reduce the number of documents you're synchronizing. You have several different ways to do this.

One is to get rid of any unused workspaces. The efficiency of the synchronization process is based on the total number of documents across all workspaces. If you have 10 workspaces with 100 documents each, then SPW 2010 will have to synchronize 1,000 documents, even though each workspace falls well below the 500-document threshold.



SPW 2010 functions best if you're synchronizing fewer than 500 documents.



Optimizing SharePoint Workspace Storage

SPW 2010 creates a new workspace for every connection to a library or folder within a library. Over time, you'll most likely accumulate a collection of workspaces you no longer use. Getting rid of these workspaces is a great way to reduce the number of documents SPW 2010 will have to synchronize.

You could also consider whether or not you really need caching for all your documents. Most of your mobile users would probably love to have offline access to SharePoint data when they're traveling. However, there's often a limited set of documents they really need. It's nice to have other documents available offline, but not truly necessary. Decreasing the number of cached documents can correct performance problems.

One more thing you can do to improve your users' experience is show them how to synchronize individual folders instead of entire SharePoint document libraries. When you create a SharePoint workspace, SPW 2010 asks for the URL associated with the document library you want to synchronize. You can actually append a file path to the URL.

For example, a server's Shared Documents library may contain folders named Finance, Marketing and HR. If you're a finance user, it wouldn't make sense to synchronize the entire document library because the other folders don't apply to you. In the real world, you may not even have access to these folders.

To create a workspace linked to the document library, use the following URL: <http://SharePoint/Shared%20Documents/Finance>. Doing so lets you create a workspace that includes only the Finance folder and anything beneath it. None of the parallel folders (HR and Marketing) would be included, nor would any documents residing within the Shared Documents folder.

When it comes to troubleshooting, begin your efforts on the client side. After all, because SPW 2010 experiences performance degradation after the 500-document threshold, there's a compelling case for client-side storage optimization. Optimizing the client side is only half the battle, though. Even though SPW 2010 is far more likely to experience performance issues, a SharePoint server can get bogged down with excessive synchronization requests.

Monitoring SQL Server

SharePoint stores site content within a SQL Server database. Therefore, if you want to optimize SharePoint storage architecture, you have to focus on SQL Server. Thankfully, Microsoft provides several Performance Monitors you can use with SQL Server.

These target values are specific to SQL Server 2008 or SQL Server 2008 R2 used by SharePoint 2010. The counter values do not necessarily apply to other types of SQL databases.

Microsoft recommends watching the General Statistics \ User Connections

counter. This shows you the total number of user connections to SQL Server. The reason Microsoft tells you to watch this is because performance problems can occur if the counter increases to 500 percent of your baseline value.

Another counter is the Databases \ Transactions / Sec counter. Even though Microsoft doesn't provide any specific recommendations on what this counter should be, it does recommend you record its value while the server is in a healthy state. That way, if you experience performance problems, you can compare the number of transactions occurring each second to your baseline values.

Monitoring the server locks is one way to get a good feel for how well SQL Server is performing. There are several different lock-related counters you can monitor, but the most useful is probably Locks \ Lock Waits / Sec. This shows you how many locking requests are occurring each second that it can't immediately fulfill.

Monitor the Locks \ Average Wait Time (ms) counter if locks aren't occurring immediately. This will tell you how long the average wait time is for a lock to occur. If this value rises steadily, your SQL server is suffering from performance problems.

Just as monitoring locks can indicate how well your SQL database is performing, so too can monitoring latches. The latch-related counters you should watch are Latches \ Latch Waits / Sec and Latches \ Average Latch Wait Time. You're looking for the number of waits occurring each second to steadily increase.

You should also be on the lookout for excessive wait times. It's helpful to record a baseline value when the server is running well, so you'll have a basis of comparison in the event of future problems.

One last thing is to check out the speed with which SQL Server processes user queries. Look at the number of compilations and re-compilations occurring each second on the SQL Statistics \ Compilations / Sec and the SQL Statistics \ Re-Compilations / Sec counters.

These last two counters will be meaningless unless you use them to establish a baseline value when the server is functioning properly. After that, you can monitor the number of queries being compiled or recompiled. If these numbers decrease with no corresponding drop in user load, it means that your SQL server is having difficulty keeping pace with user requests.

The Performance Monitors are all generalized SQL Server

counters you can use to gauge the overall performance of your SQL Server. If you discover any performance problems, there are also hardware-related counters you can use to further diagnose the issue. **R**

Brien Posey, MVP, is a freelance technical author with thousands of articles and dozens of books to his credit. You can visit Posey's Web site at brienposey.com.

GetMoreOnline

SharePoint 2010: Improve SharePoint 2010 Performance with RBS
(bit.ly/dOmenK)

Storage and SQL Server Capacity Planning and Configuration
(bit.ly/10m3Z)

Inside SharePoint: Securing External SharePoint Communications
(bit.ly/IQ74N)