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IT'S TIME TO get the new year on track. When you're making your resolutions, don't forget SharePoint. Here are ways you can tune up your expertise in 2009:

Resolve to follow SharePoint best practices. Shortcuts can be good if they save work, but they can be bad if they lead to bad habits. In this month's issue, SharePoint MVP Paul Galvin outlines a simple step-by-step method in "How to Control Workflow Behavior with Custom Lists." At the end, you'll have an audit trail. Now, don't you feel better about yourself already?

Resolve to create an orderly process for document modifications. As document libraries grow, there needs to be a process in place for requesting modifications. Microsoft MVP Brien M. Posey walks you through the process in "Managing Changes in a SharePoint Document Library."

Resolve to learn more about SharePoint's Business Data Catalog. The BDC is a new feature in Microsoft Office SharePoint Server 2007 that integrates business data from back-end server applications. Find out how to put it to good use in "Business Data Catalog Adds Functionality Without Coding" by SharePoint expert Shawn Shell.

What SharePoint topics are on your radar? Let us know. We resolve to cover them in our SharePoint e-zine in 2009. ■

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Cathy Gagne, Editorial Director, cgagne@techtarget.com
Christine Casatelli, Editor, ccasatelli@techtarget.com
Martha Moore, Copy Editor, mmoore@techtarget.com
Linda Koury, Art Director of Digital Content, lkoury@techtarget.com
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How to Control Workflow Behavior with Custom Lists

Need a way to control SharePoint Designer workflows at runtime? Here's a simple approach with a powerful control mechanism.

BY PAUL GALVIN

HAVE YOU EVER wished you could temporarily disable a SharePoint Designer workflow? You may want to do this in order to mass-approve a large number of documents without setting off dozens—or possibly hundreds—of unnecessary workflows.

One way to accomplish this is to access the workflow using SharePoint Designer and disable it. To do that, you'll need to open up SharePoint Designer, access the workflow, change its properties and re-save it.

The problem with that method is that it's a little messy and likely to ring lots of alarm bells at most companies. In general, fiddling about with SharePoint Designer workflows is not a good practice in a production environment, nor is it part of a well-controlled process.

Want a better solution that allows you to enable or disable a workflow solution using a custom list? Wondering how to enhance it to make it more robust and useful?

It's possible—just access data from a custom list and use it in your workflow. Start by creating a custom list to hold the control information.

For our purposes, the control information is a simple Yes/No value

Fiddling about with SharePoint Designer workflows is not a good practice in a production environment, nor is it part of a well-controlled process.

indicating whether the workflow is enabled or not. At runtime, the workflow queries this custom list to determine whether it should operate or not. If the answer is "No," the workflow gracefully aborts.

HOW TO CREATE AN ENVIRONMENT

To follow along with this process, create a document library and a custom list as shown in FIGURE 1.

Add a new column named "Workflow Is Enabled" to the custom list "Workflow Control," whose type is "Yes/No (checkbox)."

Using SharePoint Designer, open up the site (see FIGURE 2) and create a simple workflow solution on the document library—"Managed Documents Approval."

Note: This is an extremely simple workflow process designed to demonstrate the point. This approach will work, however, regardless of how many steps or how complex your real-world workflow is.

Click the Finish button, upload a document to the library and test the workflow. It logs a message to the workflow history list.

FIGURE 1

IMPLEMENTING THE CONTROL MECHANISM

The objective is to provide systems administrators with a mechanism

FIGURE 2

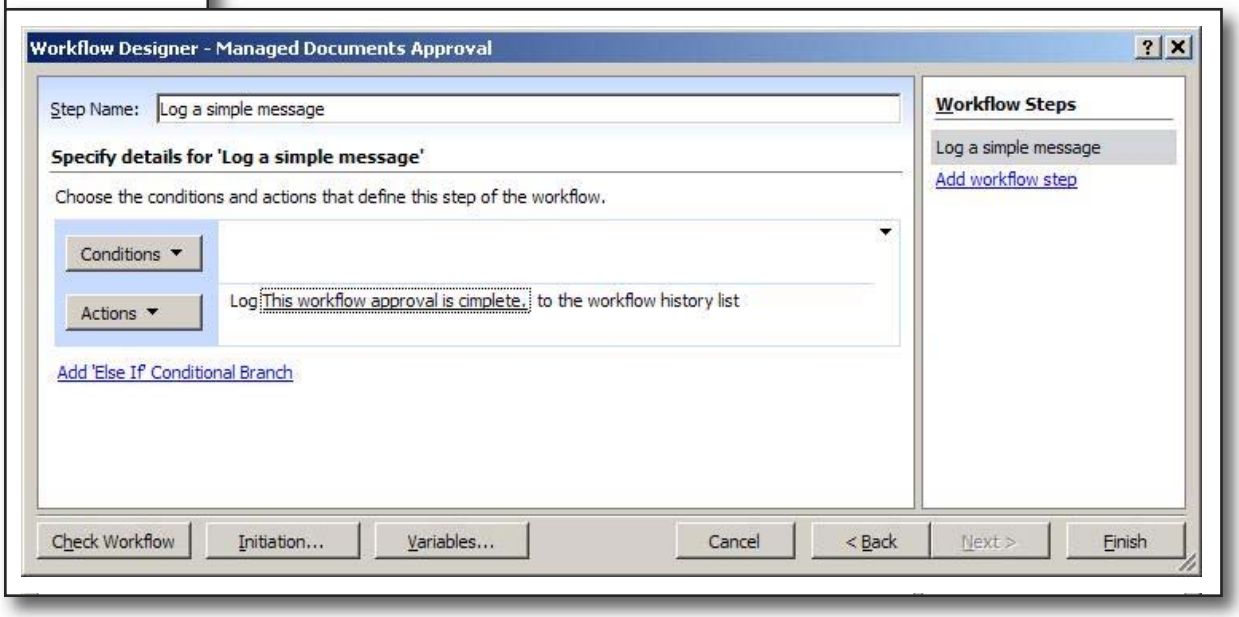

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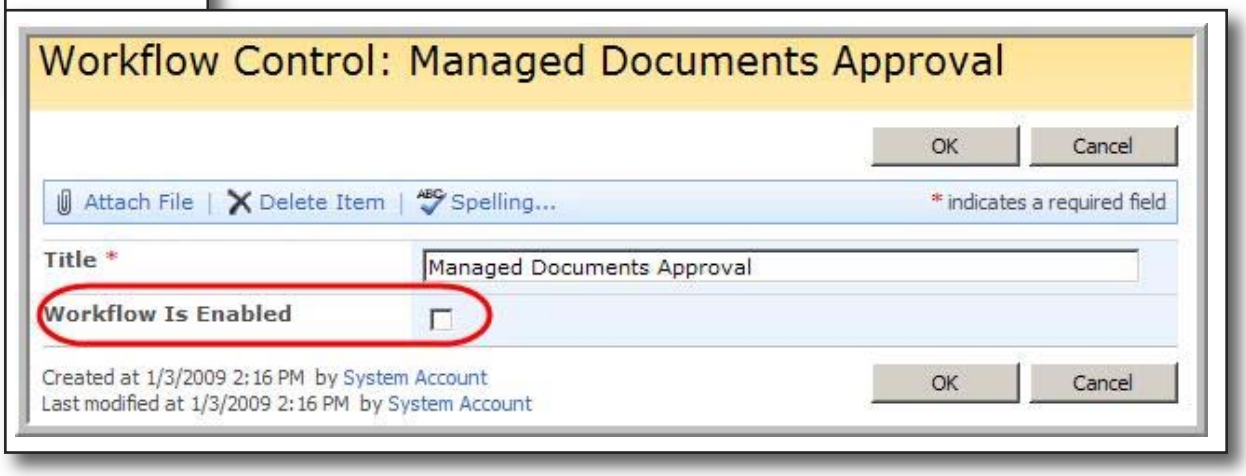
FIGURE 3



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that allows them to enable or disable a workflow without opening up SharePoint Designer. To accomplish this, you have to create a list named "Workflow Control" and add an item, as in FIGURE 3.

Make a note of the title, "Managed Documents Approval." It doesn't really matter what you give as a title, but it should be unique within that list. It should also clearly relate to the workflow you want to control with this setting. In this case, because I named the workflow itself "Managed Documents Approval," I used the same name here.

Leave "Workflow Is Enabled" off (false). That means you don't want the workflow to run.

In the final step, enhance the SharePoint Designer workflow to take advantage of the control information in this custom list.

Fire up SharePoint Designer again and pull up the workflow. Add a new step (FIGURE 4):

- **Step Name:** "Access WF Control List and Continue/Abort as Indicated"
- **Add a condition:** "Compare any data source"

FIGURE 4

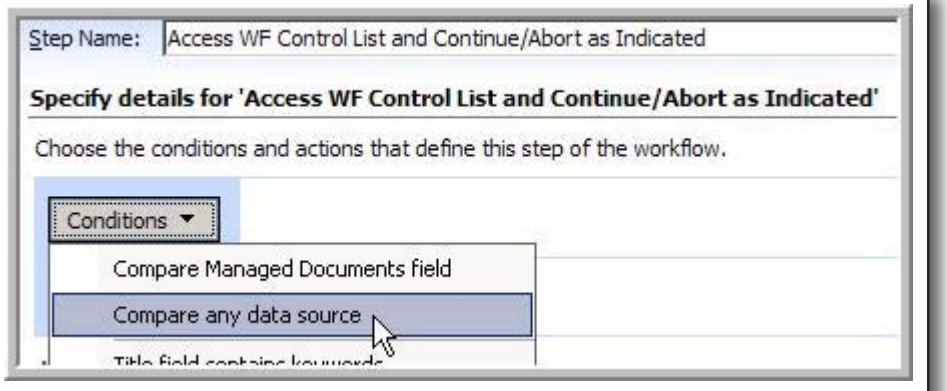


FIGURE 5

Click on the little F(x) button to pull up a set of dialog boxes as shown in FIGURE 5.

This is a common SharePoint dialog. You use this dialog box to tell SharePoint workflow to do two things:

① Get a piece of information.

② Describe how to find that information.

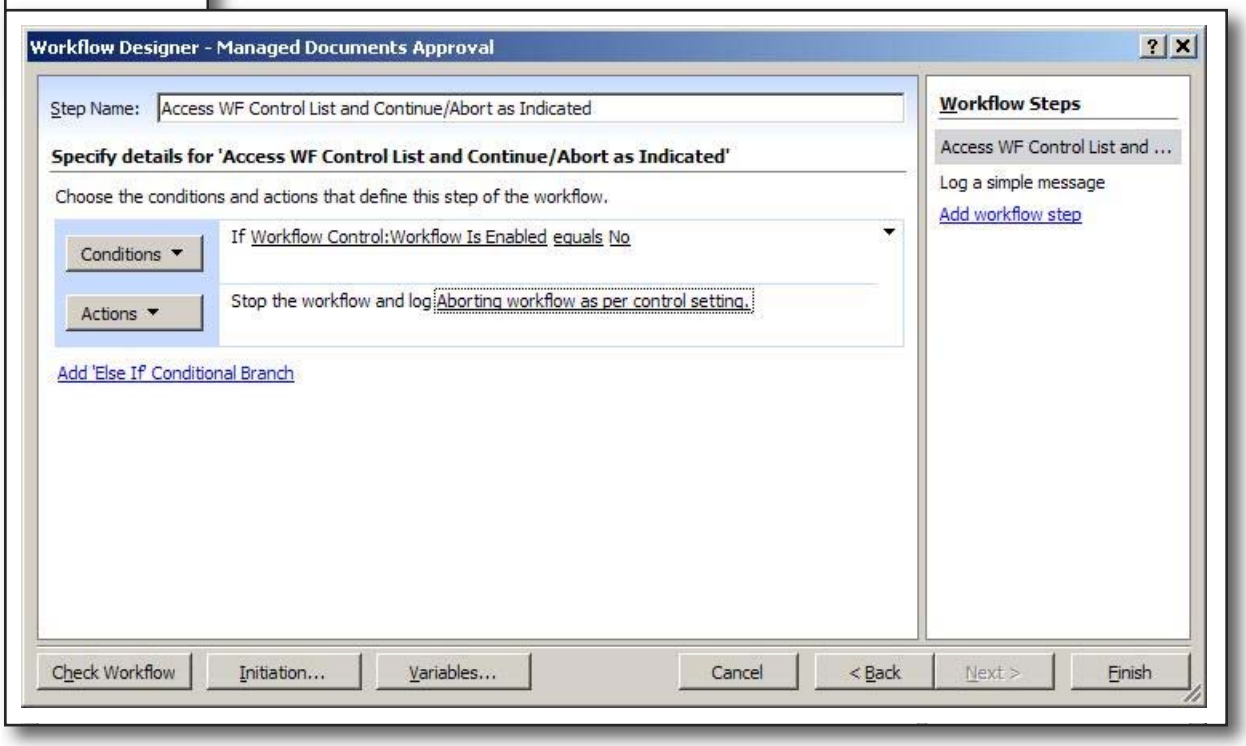
In this case, you're telling SharePoint Designer to get the value of the column *Workflow Is Enabled* from the custom list *Workflow Control* where the title equals *Managed Documents Approval*.

FIGURE 6 displays what SharePoint Designer says when you click the OK button in FIGURE 5.

In this case it's not a problem, but it *could* be a problem. What would

FIGURE 6

FIGURE 7



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happen if two entries were created in the Workflow Control List, both with the title "Managed Documents Approval"? At runtime, workflow wouldn't know which one to pick, so it would pick one on its own. SharePoint administrators must ensure that they use unique names for their workflows. Otherwise, the results may be unpredictable.

FIGURE 7 shows what the new workflow looks like.

Note that a new step was added and moved to the first step in sequence. This is important. Otherwise, the logic would execute after the workflow proper and defeat the whole purpose of this exercise.

Now the workflow can be tested. To complete the test, go back to the workflow control list, edit the lone item and change the value of "Workflow Is Enabled" to Yes (check the checkbox). Re-run the workflow, and it won't abort this time.

EXTENDING THE SOLUTION

As it stands, this solution allows SharePoint administrators who are responsible for a given workflow process to enable or disable the workflow as needed. To make this solution even more useful, consider the following enhancements:

Version control. Enable version control on the list. This will provide an audit mechanism and auditors can determine every time the workflow is disabled or enabled by looking at the version history of the list.

Security. Turn on item-level security. Configure security in such a way that a "super" administrator can create and update items in the control list and that lower-level administrators are allowed to only update the list—not create or delete items. Finally, it allows everyone that would ever run that workflow to read from the list—and that's important. The workflow will always attempt to read from that list. If a given user does not have read access to the item, the workflow process will fail for them.

Multiple workflows. This solution allows you to control more than one workflow with the list. Use it for that purpose if it makes sense in your organization. Just be sure to keep the names unique or you will run into problems.

Workflows change over time, which is a challenge in a SharePoint environment that leverages SharePoint Designer for workflow solutions. SharePoint Designer does not provide any kind of version control on a workflow itself. If you go live with a workflow on Monday and want to change it on Tuesday, you have a problem on your hands, particularly when Monday's workflows are still running.

What happens to those workflows when you update the system on Tuesday? It's not pretty. So instead of updating the existing workflow, simply create a new one with the same name but with a version tagged to its name. Disable Monday's workflow to prevent any new processes from starting. That allows any in-process Monday workflows to complete, and any new workflow processes will use the new version.

Couple this with version control on the list level and you have a well-controlled environment to manage your SharePoint Designer workflow solutions. The technique is a simple one, but it offers an effective way to keep workflow in check. ■

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ABOUT THE AUTHOR

Paul Galvin is a Microsoft SharePoint MVP and a SharePoint solutions architect at EMC Corp. Galvin has worked in the IT industry for more than 15 years in areas such as software development, consulting and SharePoint solutions design, where he works with clients to create business solutions using the SharePoint platform. He contributes to the SharePoint community through MSDN forums and his blog at http://paulgalvin.spaces.live.com.

What Happens When SharePoint Goes Down?

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Managing changes in a SharePoint Document Library

The good news is that you don't have to create a change management application from scratch. **BY BRIEN M. POSEY**

AS DOCUMENTS ARE added to document libraries, there needs to be an orderly process in place for requesting modifications to those documents. Every SharePoint governance plan must deal with how those requests are submitted, approved and implemented and for how long previous document versions are retained.

SharePoint can actually help with the process because it provides an ideal framework for integrating change management into a document library.

Microsoft actually makes a Change Request Management site template available for download. Importing the template and creating a site involves a little bit of work, but it is still easier than creating a site.

Keep in mind that Microsoft designed its Change Request Management template for Windows SharePoint Services 3.0, but it is compatible with Microsoft Office SharePoint Server (MOSS) 2007. Having said that, though, the instructions that Microsoft provides for installing the template are designed for those who are running Windows SharePoint Services 3.0. The instructions in this article have been revised for those who are running MOSS 2007.

INSTALLING THE APPLICATION TEMPLATE CORE

Before you can install the Change Request Management template, you have to install something called the Application Template Core. As the name implies, this is a core template that contains some of the elements that the Change Request Management template depends on.

Before you can install the template that you just downloaded, you have to start the Windows SharePoint Services Administration Service. To do this, open the Administrative Tools menu and choose the Services option. When Windows opens the Service Control

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Manager, scroll through the list of services until you locate the Windows SharePoint Services Administration service. Right-click on this service and choose the Start command from the resulting shortcut menu. When the service has started, you can close the Service Control Manager.

The next step in the process is to extract the template from the file that you downloaded. To do so, double-click on the file you downloaded. When you do, Windows will display the license agreement for the template. Click Yes to accept the terms of the license, and then provide a path to extract the Change Request Management template to. Click OK, and the template will be extracted.

Now import the template. Begin the process by making a note of the path you used. Next, open a Command Prompt Window and enter the following commands, substituting <path> with the actual path where your template file resides:

- Cd\Program Files\Common Files\Microsoft Shared\Web Server Extensions\12\BIN
- Stsadm –o addsolution –filename <path>\ApplicationTemplateCore.wsp
- Stsadm –o deploysolution –name ApplicationTemplateCore.wsp –AllowGacDeployment –immediate
- Stsadm –o execadmsvcjobs
- Stsadm –o CopyAppBinContent

USING THE CHANGE REQUEST MANAGEMENT TEMPLATE

Now that you have imported the core template, you can download and import the Change Request Management template. That procedure is similar to the previous one.

When the download is completed, double-click on the file that's just been downloaded to begin the extraction process. When you do, Windows will display the license agreement. Click Yes to accept the terms of the license, and then provide a path to extract the Change Request Management template to. Click OK, and the template will be extracted.

After extracting the template, you have to perform a procedure similar to that of importing the Application Template Core. To do so, make note of the template's path, and then open a Command Prompt window and enter the following commands:

- Stsadm –o addsolution –filename <path>\ChangeRequest.wsp
- Stsadm –o deploysolution –name changerequest.wsp –allowgacdeployment -immediate
- Stsadm –o execadmsvcjobs

Now, give the server 10 or 15 minutes just to make sure that it has time to finish processing all of your changes and then enter the IISRESET command at the command prompt. This command will reset IIS and dis-

connect any Web sessions that are currently in use.

CREATING THE CHANGE REQUEST MANAGEMENT SITE

Now that you have imported the necessary templates, all you have to do is create and configure a SharePoint site that is based on those templates. This is easier than it sounds. Start by opening your primary SharePoint site and sign in as an administrator. Next, choose the Create Site option from the Site Actions drop-down list.

Internet Explorer will now display the New SharePoint site page. Toward the middle of this page is a Template Selection section. Choose the Application Templates tab, and select the Change Request Management template, as shown in FIGURE 1.

Next, enter a title, description and

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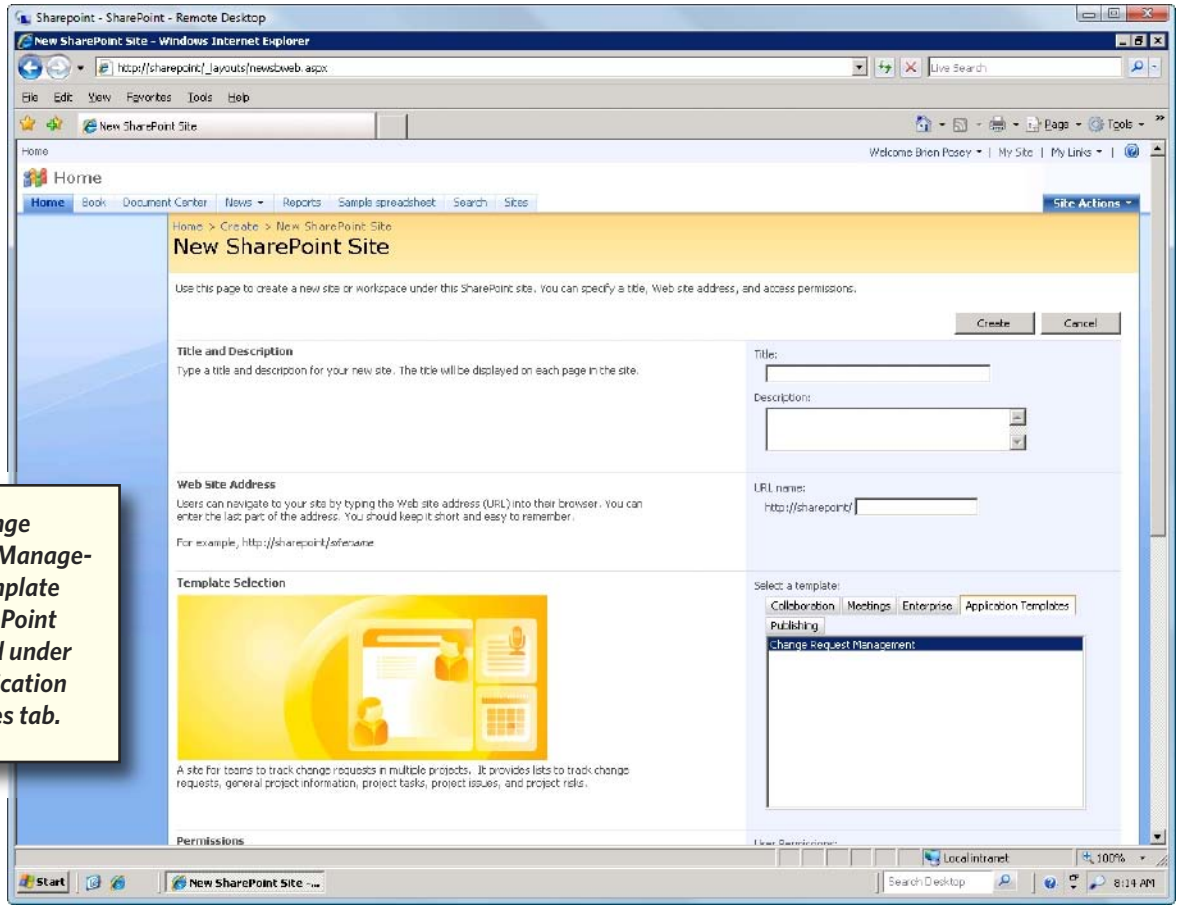
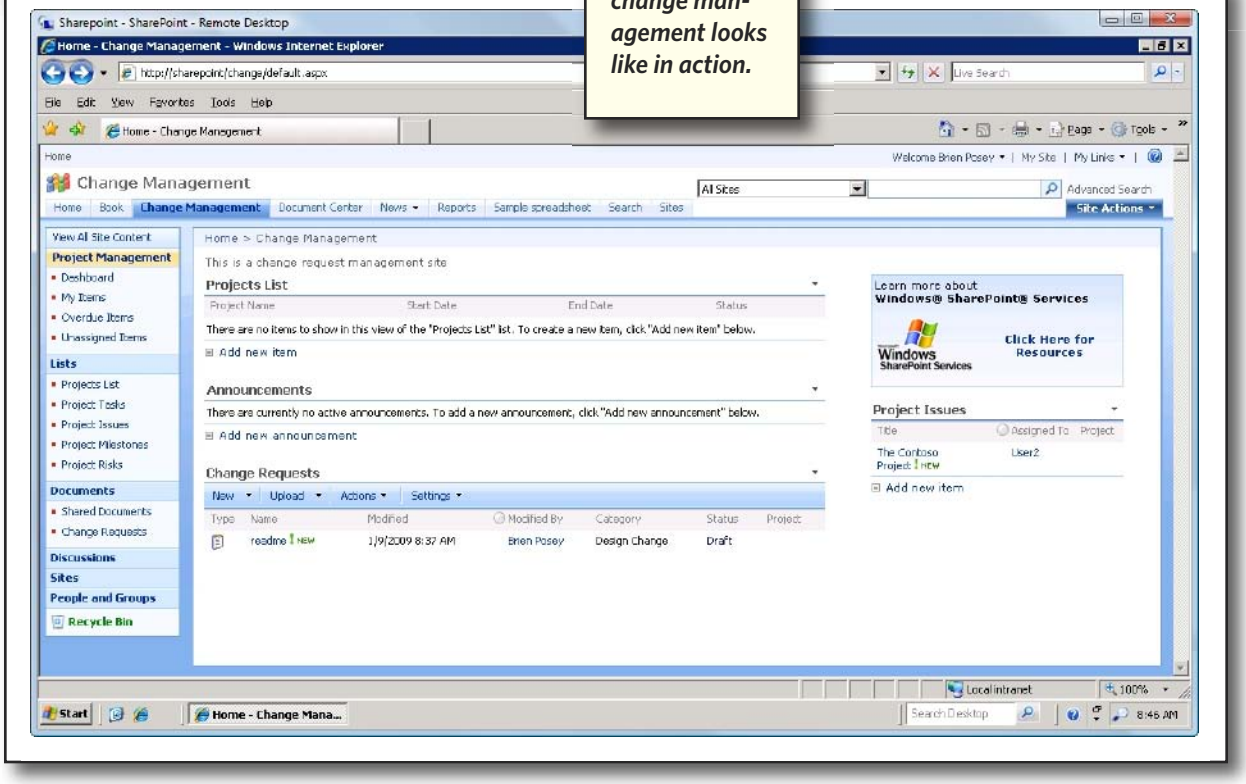
FIGURE 1



The Change Request Management template for SharePoint is located under the Application Templates tab.

FIGURE 2

This is what SharePoint change management looks like in action.



URL for the new Change Request Management site. Enter any additional attributes for the site, and then click the Create button.

As you can see in FIGURE 2, the Change Request template is integrated into a document library. Users can upload documents and request changes to those documents simultaneously and have the option of submitting change requests for existing documents within the library.

The Change Request Management template probably won't be ideal for every situation. Even so, it is important to remember that like any other SharePoint component, it can be customized to meet your specific needs. ■

ABOUT THE AUTHOR

Brien M. Posey has received Microsoft's Most Valuable Professional award five times for his work with Windows Server, IIS, file systems/storage, and Exchange Server. He has served as CIO for a nationwide chain of hospitals and healthcare facilities and was once a network administrator for Fort Knox.

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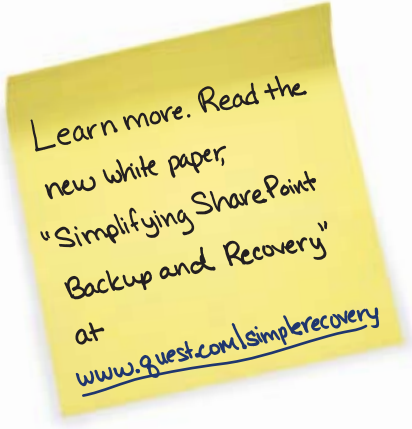

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Business Data Catalog Adds Functionality Without Coding

Learn how BDC can help enterprise users share business data with less need for custom development. **BY SHAWN SHELL**

ONE OF THE new major features in Microsoft Office SharePoint Server (MOSS) 2007 is the Business Data Catalog, or BDC, which integrates business data from back-end server applications within SharePoint without the need for custom code.

Microsoft included this new functionality to enable organizations to both display and index—and, therefore, search—data contained in line-of-business applications or databases. In essence, the BDC exposes structured data from outside of SharePoint through Web parts and search results. This allows organizations to share data with portal users through a process that historically required custom development.

To understand the basic concepts behind the BDC, first and foremost you need to understand that the BDC uses something called an Application Definition, which is a complex XML file that is loaded into SharePoint. This file contains the structure and connection details of the data source and defines what data should be available and how it's viewed.

WHAT IS... Business Data Catalog?

INTRODUCED AS PART of Microsoft Office SharePoint Server 2007, Business Data Catalog (BDC) is a shared service that enables SharePoint administrators to bring in data from various business applications to MOSS 2007 lists, Web parts, search, user profiles and custom applications without writing code to do it. BDC provides built-in support for displaying data from databases and Web services, and it's the key infrastructural component around which the other Business Data features of MOSS 2007 are built. —MICROSOFT

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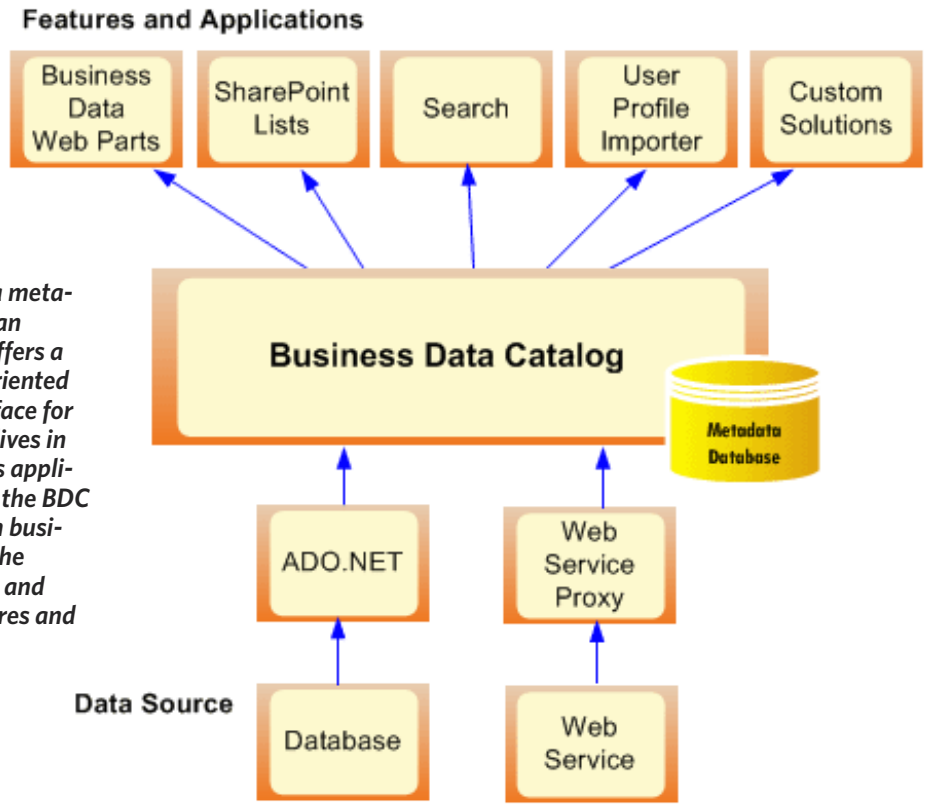
COOL TOOLS FOR CREATING THE APPLICATION DEFINITION

At the time of SharePoint's release, Microsoft did not provide any tools for constructing this XML file, so users were left to either hand-code the file or use third-party tools when they became available. Today, there are two good tool options for creating the Application Definition:

- **Microsoft's own free BDC utility that shipped as a part of the MOSS 2007 software development kit**
- **Lightning Tools Ltd.'s BDC Meta Man for SharePoint developers and administrators**

Both tools have their strengths and weaknesses, but the Lightning Tools utility tends to be more functionally rich. But, no matter which one you choose, just be sure to get one of them. Don't try to hand code the Application Definition—the files

HIGH-LEVEL ARCHITECTURE OF THE BUSINESS DATA CATALOG



BDC is made up of a metadata database and an object model that offers a consistent object-oriented programming interface for business logic that lives in the various business applications. This shows the BDC interaction between business data sources, the metadata database and business data features and solutions.

SOURCE: MICROSOFT

can become quite complex, and hand coding can introduce errors into the process.

ANATOMY OF AN APPLICATION DEFINITION

The Application Definition is made up of several parts. First, it contains information on how to connect to the data source. It supports several different connection types, including SQL databases, Oracle databases and Web services. Generally, if there is a native .NET client available to connect to a data source, you can connect to it through the BDC.

In addition to the connection type, you also have to decide on the authentication type. The data source will largely dictate which, among many, authentication mechanism to use, such as using Windows authentication and the single sign-on facilities of SharePoint.

Just keep in mind that, with the

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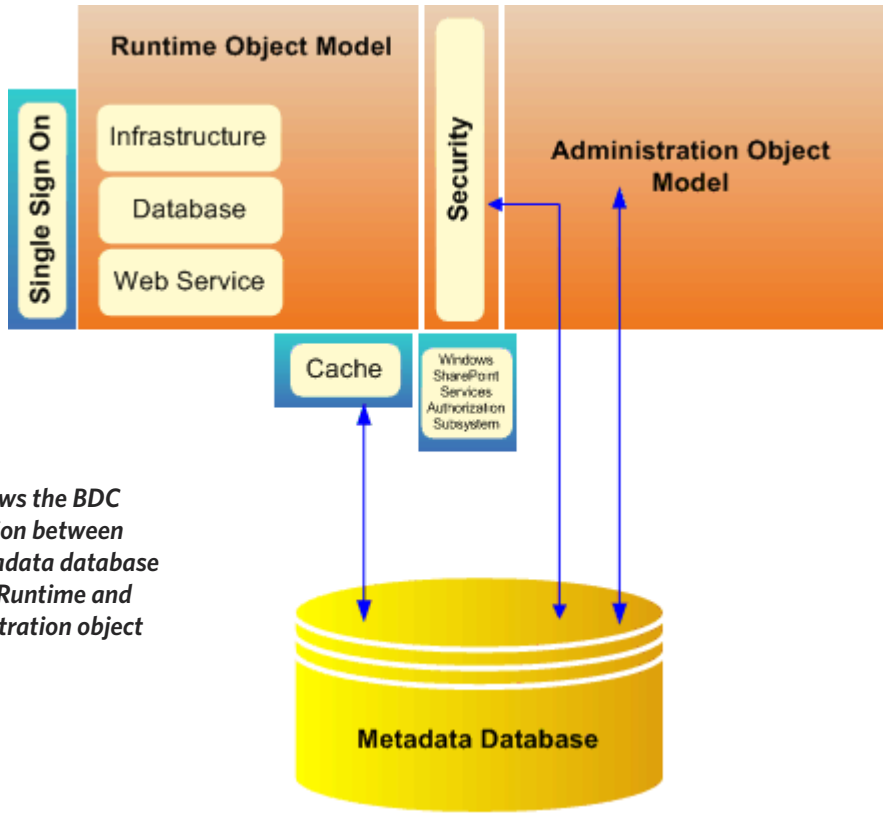
LOW-LEVEL ARCHITECTURE OF THE BUSINESS DATA CATALOG



This shows the BDC interaction between the metadata database and the Runtime and Administration object models.

SOURCE: MICROSOFT

exception of single sign-on and Windows authentication, the BDC will be connecting to your data source using a service account. This means that you should carefully consider what you're exposing to your audience. You will have a limited ability to restrict what portions of the data your users will see through the BDC, but the control may not be as precise as some organizations require.

You will have a limited ability to restrict what portions of the data your users will see through the BDC, but the control may not be as precise as some organizations require.

After you've chosen your connection type and authentication mechanism, it's time to add entities, which are the "business objects" within your data source. They would be roughly equivalent to tables or views in a database. When you use the corresponding Web parts to the BDC, they are all based on displaying a single entity or related entities.

Finally, security within the BDC—in other words, the ability to restrict what users see and don't see—is based on entities as well. Therefore, it's critical to ensure you have added all of the entities you want to display and that you've properly set up entity relationships. This is essentially re-creating the database between keys and foreign keys in the tables. ■

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ABOUT THE AUTHOR

Shawn Shell is the founder of Consejo Inc., a consultancy based in Chicago that specializes in Web-based applications, employees and partner portals, as well as enterprise content management. He has spent more than 19 years in IT, with the last 10 focused on content technologies. Shell is a co-author of Microsoft Content Management Server 2002: A Complete Guide, published by Addison-Wesley, and the lead analyst/author on the CMS Watch SharePoint Report 2009.

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