Services in SharePoint 2010 Products

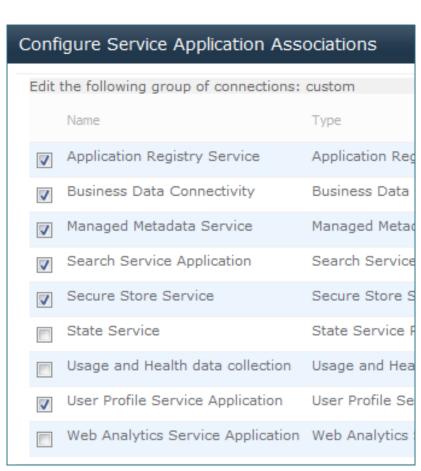## Updated services infrastructure

In Microsoft® SharePoint® Server 2010, services are no longer contained within a Shared Services Provider (SSP). Instead, the infrastructure for hosting services moves into SharePoint® Foundation 2010 and the configuration of service offerings is much more flexible. Individual services can be configured independently and third-party companies can add services to the platform.

More granular configuration of services

- You can deploy only the services that are needed to a farm. Services that are deployed are called *service applications*.
- Web applications can be configured to use only the services that are needed, rather than the entire set of services that are deployed. See the screen shot, right.
- You can deploy multiple instances of the same service in a farm and assign unique names to the resulting service applications (see Farms B and C below).
- You can share services across multiple Web applications within the same farm.

Configure Service Application Associations

Edit the following group of connections: custom

	Name	Type
☑	Application Registry Service	Application Reg
☑	Business Data Connectivity	Business Data
☑	Managed Metadata Service	Managed Meta
☑	Search Service Application	Search Service
☑	Secure Store Service	Secure Store S
☐	State Service	State Service F
☐	Usage and Health data collection	Usage and Hea
☑	User Profile Service Application	User Profile Se
☑	Web Analytics Service Application	Web Analytics

You can choose the service applications for a Web application when you create the Web application. You can also modify the services that are associated with a Web application later.

Sharing services across farms

- Some services can be shared across server farms. Other services can be shared only within a single server farm. Services that support sharing across farms can be run in a central farm and consumed from regional locations.
- Each Web application can be configured to use services from different farms. For example, you can share the User Profile Service across Web applications in several server farms while using some services, such as the Business Data Connectivity, locally.
- In large environments, computing-intensive services can be run in a central farm to minimize administration overhead and to scale out easily and efficiently as requirements grow.

For more information about sharing services across farms, see the model Cross-farm services in SharePoint Products and Technologies.

Logical architecture

- All service applications in a farm are deployed to the same IIS Web site.
- Service applications can be deployed to different application pools to achieve process isolation. However, farm performance is optimized if services are contained within one application pool.
- To achieve physical isolation of services, create separate instances of service applications and place them in different application pools (see Farm B below).

Farm 1

IIS Web site—"SharePoint Web Services"

Application pool: Service A, Service B, Service C, Service D, Service E, Service F

Default group / Custom group

Application pool: Web application, Web application

Application pool: Web application

This diagram illustrates two different groupings of service applications: the default group and a custom group.

Service groups

- By default, all service applications are included in the default group, unless you change this setting for a service application when it is created. You can add and remove service applications from the default group at any time.
- When you create a Web application, you can select the default group or you can create a custom group of services. You create a custom group of services by selecting only the service applications that you want the Web application to use.
- Custom groups are not reusable across multiple Web applications. Each time you select "custom" when creating a Web application, you are selecting services only for the Web application you are creating.

Deploying services

You deploy service applications within a farm by one of the following methods:

- Selecting services while running the Initial Configuration Wizard.
- Adding services one by one on the Manage Service Applications page in the Central Administration site.
- Using Windows PowerShell.

Connecting service applications to Web applications

- When you create a service application, a connection for the service application is created at the same time. A connection is a virtual entity that connects Web applications to service applications.
- In Windows PowerShell these connections are called proxies. The term "proxy" also appears at the end of the type description for connections on the Manage Service Applications page in Central Administration.
- Connections for services in the local farm are not created by the administrator, but these appear along with the list of service applications in Central Administration.
- Some connections might include settings that can be modified. For example, if a Web application is connected to multiple instances of the Managed Metadata service, you must indicate which of the connections is connected to the primary service application which hosts the corporate taxonomy.
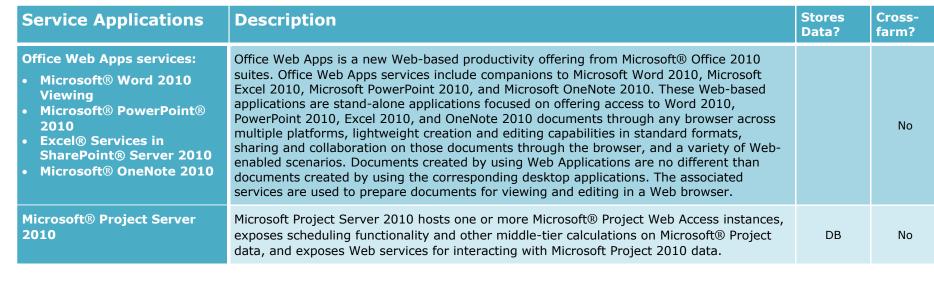
Services administration

- Services are managed directly in Central Administration rather than on a separate administration site.
- Services can be monitored and managed remotely.
- Services can be managed and scripted by Windows PowerShell.
- Remote farms do not need direct permissions to the parent farm's configuration or services databases.

Services

Service applications	Description	Stores data?	Cross-farm?	SharePoint Foundation 2010	SharePoint Server 2010 Standard	SharePoint Server 2010 Enterprise
Access Services	View, edit, and interact with Microsoft® Access® 2010 databases in a browser.	Cache				✓
Business Data Connectivity	Access line-of-business (LOB) data systems.	DB	✓	✓	✓	✓
Excel Services Application	Viewing and interact with Excel files in a browser.	Cache				✓
Managed Metadata Service	Access managed taxonomy hierarchies, keywords and social tagging infrastructure as well as Content Type publishing across site collections.	DB	✓		✓	✓
PerformancePoint	Provides the capabilities of PerformancePoint Services.	Cache				✓
Search	Crawls content, produces index partitions, and serves search queries.	DB	✓		✓	✓
Secure Store Service	Provides single sign-on authentication to access multiple applications or services.	DB	✓		✓	✓
State Service	Provides temporary storage of user session data for some SharePoint Server components.	DB			✓	✓
Usage and Health Data Collection	Collects farm wide usage and health data and provides the ability to view various usage and health reports.	DB		✓	✓	✓
User Profile	Adds support for My Sites, Profiles pages, Social Tagging and other social computing features.	DB	✓		✓	✓
Visio Graphics Service	Viewing and refresh of published Microsoft® Visio® diagrams in a Web browser.	Blob cache				✓
Web Analytics	Provides Web Service interfaces.	DB			✓	✓
Word Automation Services	Performs automated bulk document conversions.					✓
Microsoft SharePoint Foundation Subscription Settings Service	Tracks subscription IDs and settings for services that are deployed in partitioned mode. Windows PowerShell only.	DB		✓	✓	✓

Additional services provided by other Microsoft products

Service Applications	Description	Stores Data?	Cross-farm?
Office Web Apps services: Microsoft® Word 2010 Viewing, Microsoft® PowerPoint® 2010 Viewing, Excel® Services in SharePoint® Server 2010, Microsoft® OneNote 2010	Office Web Apps is a new Web-based productivity offering from Microsoft® Office 2010 suites. Office Web Apps services include companions to Microsoft Word 2010, Microsoft Excel 2010, Microsoft PowerPoint 2010, and Microsoft OneNote 2010. These Web-based applications are stand-alone applications focused on offering access to Word 2010, PowerPoint 2010, Excel 2010, and OneNote 2010 documents through any browser across multiple platforms, lightweight creation and editing capabilities in standard formats, sharing and collaboration on those documents through the browser, and a variety of Web-enabled scenarios. Documents created by using Web Applications are no different than documents created by using the corresponding desktop applications. The associated services are used to prepare documents for viewing and editing in a Web browser.		No
Microsoft® Project Server 2010	Microsoft Project Server 2010 hosts one or more Microsoft® Project Web Access instances, exposes scheduling functionality and other middle-tier calculations on Microsoft® Project data, and exposes Web services for interacting with Microsoft Project 2010 data.	DB	No

Architecture examples

Single-farm, single service group

Description

- The default group of services is used for all Web applications in a farm.
- All sites have access to all of the service applications that are deployed in the farm.

Advantages

- Simplest architecture.
- All services are available to all Web applications.
- Most efficient use of farm resources.
- All services are managed centrally.

Disadvantages

- Does not allow isolation of service data.
- Individual departments or groups cannot manage service applications on their own.

Recommendations

This is the recommended configuration for most companies, at least initially. This configuration works well for hosting a large number of sites for a single company on the same farm.
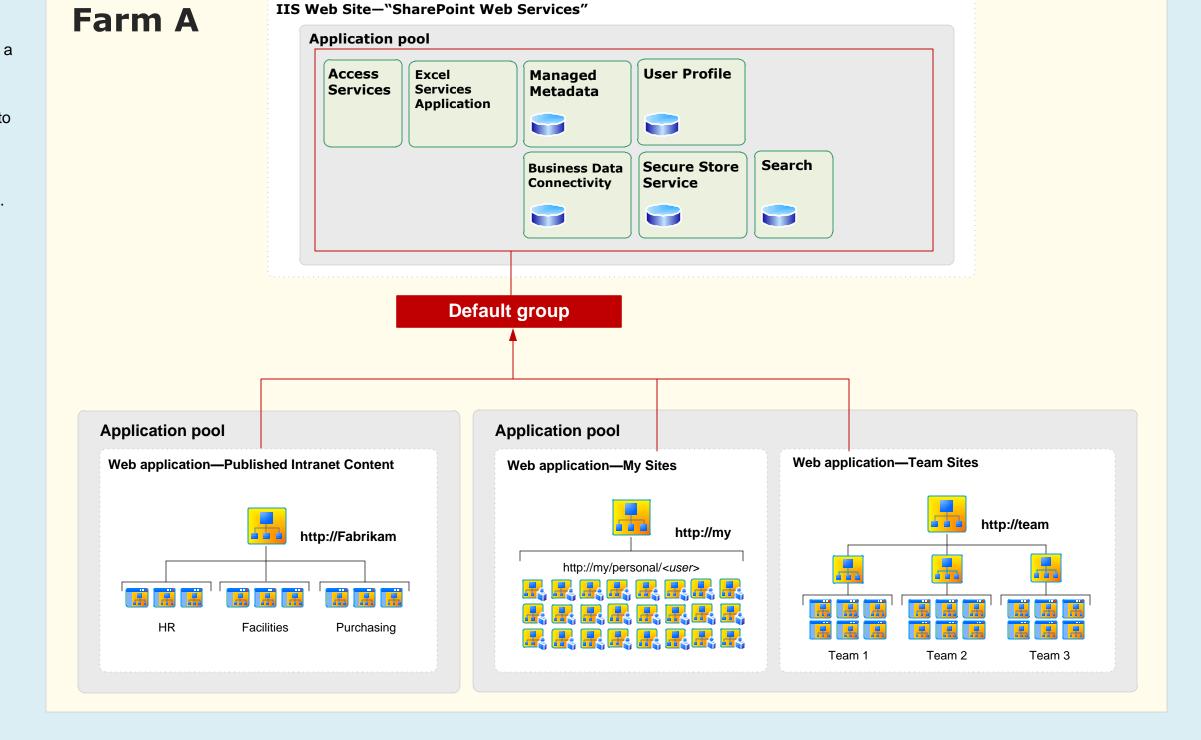
Use this configuration if:
- You want to optimize the resources required to run services within a farm.
- You are sharing content and profile data across sites that otherwise require process isolation, for performance or security reasons.

Farm A

IIS Web Site—"SharePoint Web Services"

Application pool: Access Services, Excel Services Application, Managed Metadata, User Profile, Business Data Connectivity, Secure Store Service, Search

Default group

Application pool: Web application—Published Intranet Content — http://Fabrikam — HR, Facilities, Purchasing

Application pool: Web application—My Sites — http://my — http://my/personal/<user>

Application pool: Web application—Team Sites — http://team — Team 1, Team 2, Team 3

Single-farm, multiple service groups

Description

- Targeted service applications are deployed for dedicated use by one or more groups within an organization. For example, in Farm B (right), an additional instance of Excel Services Application is deployed for the Finance group (bottom-right Web application). Access Services is also deployed for this group.
- One or more Web applications are created using a custom group of services. The SharePoint administrator selects the service applications that are included in the custom group. In Farm B, the custom group includes the two dedicated service applications as well as most of the services that are deployed to the farm.
- More than one custom group can be created. In Farm C (below), dedicated service applications for the Business Data Connectivity and the Managed Metadata services are deployed to the farm for use by the HR department, resulting in a second custom group (in addition to the dedicated services and group that are created for the Finance group).
- In some cases, a dedicated group of services is configured to narrow the list of services that are used by a Web application. For example, a partner collaboration site can be configured to consume a sub-set of the services that are offered by the farm.
- Farm B achieves process isolation for services that are deployed for the Finance group by placing these services in a dedicated application pool. Farm C, below, uses one application pool for all services, and consequently optimizes the deployment of services for performance instead.

Advantages

- Accommodates multiple organizational goals on the same farm.
- Service data can be isolated.
- Allows individual teams or departments to manage the services that are dedicated for their groups.
- Sites can be configured to use a subset of services.

Recommendations

This configuration works well for companies with divisions or teams that require dedicated services or isolated service data, or for sites that are set up with a narrower scope, such as partner collaboration.

Configuring multiple groups of services allows teams and sites to consume services that are offered enterprise-wide, such as profile and search services, while at the same time isolating the use of targeted services for security or performance reasons.

Services commonly deployed for dedicated use by an individual team or department include:

- **Excel Services Application** — To optimize performance for a targeted group or to isolate sensitive data.
- **Managed Metadata** — To allow a team or department to manage their own taxonomy, hierarchies, keywords, and so on. SharePoint Server 2010 combines the results of multiple instances of the Managed Metadata Web service, and so taxonomies, content types, and other elements can be shared across an organization.
- **Business Data Connectivity** — Individual teams or departments can integrate with their own line of business data systems and keep the data isolated from the rest of the organization.

Disadvantages

- More complex to configure and manage.
- Farm resources support multiple instances of some services.

Farm B

IIS Web Site—"SharePoint Web Services"

Application pool: Excel Services Application, Managed Metadata, User Profile, Business Data Connectivity, Secure Store Service, Search

Application pool: Excel Services Calculation, Access Services

Default group / Custom group

Application pool: Web application—Company Web — http://companyweb — http://my/personal/<user> — Division 1, Division 2, Division 3

Application pool: Web application—My Sites — http://my

Application pool: Web application—Finance Web — http://finance — HR, Facilities, Purchasing

Connecting to multiple instances of the Managed Metadata Service

- A grouping of services can include multiple instances of the Managed Metadata service. For example, in the illustration (right), both of the custom groups include two instances of the Managed Metadata service.
- In this scenario, the sites within the Web applications display taxonomy, social tagging, and other features provided by this service from both of instances of the services.
- If there are multiple instances of this service, one of the instances must be designated as the primary service which hosts the corporate taxonomy. All other instances of this service are then secondary instances, providing additional data to the primary data.
- Unlike other cross-farm services, Web parts by default include data from multiple instances of the Managed Metadata service.
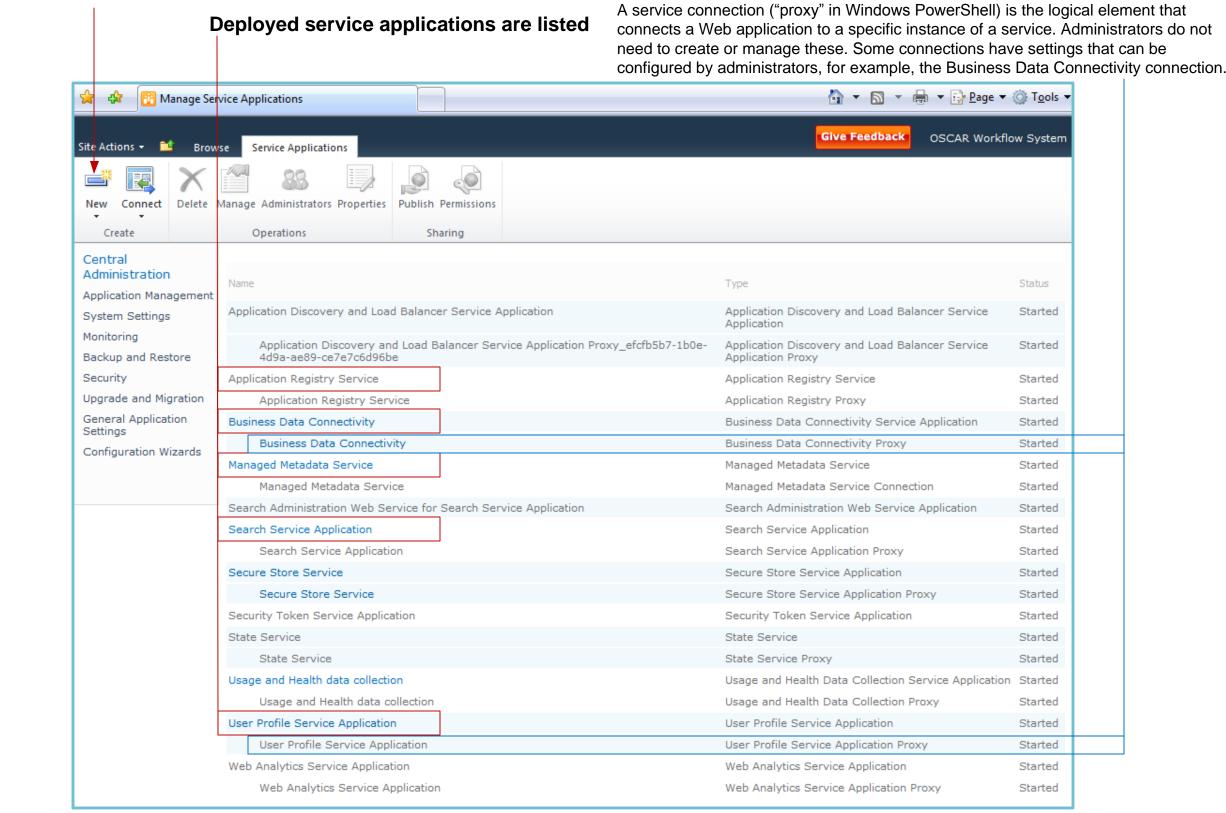
Managed Metadata / Managed Metadata

Manage Service Applications page

Add service applications by clicking New

Deployed service applications are listed

Service application connections are also listed

A service connection ("proxy" in Windows PowerShell) is the logical element that connects a Web application to a specific instance of a service. Administrators do not need to create or manage these connections. Some connections have settings that can be configured by administrators, for example, the Business Data Connectivity connection.

Service Application Associations page

Manage the association of services to Web applications

The grouping of services for a Web application is configured only when you first create a Web application. Use this page in Central Administration to edit the associations.

On this page:
- Click a Web application to edit the services within the group or to select the default group of service applications.
- Click a service group (proxy group) to edit the services associated with the group.

The service group assignment is either the default group or a custom group. Custom service groups are not re-usable across multiple Web applications. If you select "custom", you are creating a new set of associations for the Web application.

View which services are associated with a Web application

Farm C

IIS Web Site—"SharePoint Web Services"

Application pool: Managed Metadata, Excel Services Application, User Profile, Managed Metadata, Excel Services Application, Access Services

Business Data Connectivity, Secure Store Service, Search, Business Data Connectivity

Custom group / Default group / Custom group

Application pool: Web application—HRWeb — http://hrweb

Application pool: Web application—Company Web — http://companyweb — Division 1, Division 2, Division 3

Web application—My Sites — http://my — http://my/personal/<user>

Application pool: Web application—Finance Web — http://finance