



Hybrid SharePoint Environments with Office 365

White paper

Paul Robinson, Microsoft Services, United Kingdom

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For the latest information, please see [Microsoft Office 365](#).

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Contents

Introduction	4
When to choose a hybrid environment	5
Designing an initial environment	8
Prerequisites of a hybrid design.....	8
Plan to deploy single sign-on.....	8
Plan where to run SharePoint workloads.....	8
Plan your information architecture	12
Strategies for deciding where to place content.....	12
Plan Navigation and Branding.....	13
Strategies for Enterprise Metadata	14
<i>More information about orphaned terms</i>	14
<i>Avoiding orphaned terms</i>	15
Plan User Profiles and My Sites	15
Configuring My Sites	16
<i>Configure Trusted Host Locations</i>	16
Mapping an account through different membership providers.....	18
<i>Configure social features in the secondary environment</i>	20
Plan Compliance and Security	21
Using an on-premises Records Centre.....	21
Plan Search	22
Strategies for two search centres.....	22
Implementing side-by-side results	23
Plan Site Lifecycle	23
Plan Customization	23
Conclusion	24
Additional Resources	24
About the Author	24
Appendix: Using Smart Links	25
Planning when to use Smart Links	25
Creating an on-premises Smart Links redirector	25

Introduction

Hybrid SharePoint environments combine on-premises Microsoft SharePoint Server 2010 with Office 365 — Microsoft SharePoint Online.

Hybrid environments enable organizations to achieve a higher degree of flexibility than forcing a choice between either an on-premises or cloud model. Organizations can start to achieve the benefits associated with the use of cloud computing coupled with the customization flexibility and tight data governance of an on-premises system, while delivering a consistent experience to users.

Hybrid environments can be helpful when it is not possible for an organization to migrate to the cloud immediately or in full, due to business, technical or other reasons. Common scenarios of where hybrid environments can be useful include:

- Rapid provisioning of new workloads on Office 365 while maintaining existing on-premises workloads
- Organizations wishing to migrate workloads from an existing on-premises environment to the cloud over time, in a phased approach
- Organizations wanting to supplement their cloud environment with additional features or customizations which are currently only possible on-premises
- Compliance or data sovereignty reasons which might stipulate certain data be hosted in a particular location

Office 365 offers many features which can aid an organization in deploying a robust hybrid environment. In SharePoint 2010, the two SharePoint installations that make up a hybrid environment — on-premises and Office 365 — are largely separate. A thoughtful hybrid design helps bridge the gap between these two distinct deployment environments.

Organizations can choose how tightly they want to blend their on-premises and cloud environments, depending on their appetite for configuring or adding customizations, and their long term-plans.

Creating and maintaining a hybrid design will introduce additional complexity to both SharePoint environments, including making changes to both the on-premises and Office 365 environment. Organizations must be in control of their existing SharePoint Server on-premises farm(s) and be confident they have a mature level of operational governance. SharePoint 2010 includes features useful to the smallest companies and the largest enterprises — but the Hybrid environment design discussed in this paper is intended for Designers of enterprise-scale SharePoint deployments.

This paper provides information, advice and guidance to help organizations determine whether a hybrid approach is beneficial. In addition, it highlights how best to approach a hybrid solution and how to best plan for distributed workloads.

Note: This paper is specific to Office 365 for midsize businesses and enterprises and excludes capabilities that may be possible with Office 365 dedicated and federal service offerings.

When to choose a hybrid environment

For many organizations, a purely cloud-based SharePoint environment will deliver the features they need, with the flexibility and cost reductions they want.

A hybrid environment allows organizations to preserve the value of the investment they have made in an on-premises SharePoint Server environment while allowing them to transition some workloads to the cloud.

SharePoint 2010 includes six primary areas of capability, designed to address specific business scenarios:

- Sites
- Communities
- Composites
- Insights
- Content
- Search

For general information see 'What is SharePoint? SharePoint Capabilities and Features':

<http://sharepoint.microsoft.com/en-us/product/capabilities/Pages/default.aspx>

Workloads are collections of product features sharing a common architectural or technical platform which are run and administered together — such as all the features that provide enterprise content management. While some capabilities align directly with a workload, other capabilities might require a collection of complementary workloads, and some capabilities will share workloads. Therefore, decisions about how and where to run workloads (on-premises or in the cloud) are the building blocks of a solid hybrid design.

Hybrid environments are likely to include:

- Active Directory Single-sign on — giving users the ability to authenticate seamlessly across both the on-premises and Office 365 environments
- Common site and document templates plus a consistent user interface — so that users can easily navigate a familiar user interface across both on-premises and Office 365 environments
- A licensing model that gives organizations the freedom to deploy SharePoint Online and SharePoint Server.

A full description of which features are available in Office 365 can be found in Appendix B of the Office 365 SharePoint Online Service Description:

<http://go.microsoft.com/fwlink/?LinkId=207232>

While hybrid environments can be helpful, they may introduce additional complexities. Therefore organizations should carefully consider their own circumstances and readiness for a hybrid design. Following are some scenarios where a hybrid design is likely to be successful and some where it should be avoided.

Example scenarios where a hybrid design may be appropriate:

Scenario	Hybrid environment considerations
<p>Requires features not yet available in Office 365</p> <p>Your portal relies on features such as PerformancePoint, advanced business intelligence or Records Center.</p>	<p>Use features or advanced configurations not yet available in Office 365 in your on-premises environment, but use Office 365 as the platform for the majority of your content where these features are not required.</p>
<p>Significant investment in customizations</p> <p>You have a heavily customized on-premises environment (for example using custom-developed code or partner solutions).</p>	<p>Continue to get the value from your existing customization investments on-premises while you migrate eligible customizations to the cloud.</p> <p>Running in a hybrid state affords you time to assess and potentially re-architect your solution for use in Office 365. Note, however that some integration options — such as access to Line Of Business data — might not be available with the current Office 365 service.</p>
<p>Concerns over global network performance</p> <p>You have a distributed workforce and concerns over global network performance with your on-premises environment.</p>	<p>Your current on-premises deployment may offer good performance for users physically near your datacenter, but remote users in other worldwide locations may not experience the performance they desire.</p> <p>A hybrid solution could allow you to locate your Office 365 environment in a Microsoft datacenter closer to your remote users.</p>

Example scenarios where a hybrid design should be approached with caution:

Scenario	Hybrid environment considerations
<p>Heavily regulated industry or substantial compliance and security requirements</p> <p>You have legal or compliance reasons for some content staying on-premises or complex auditing requirements</p>	<p>Your data in Office 365 may reside outside of your organization's home country. Some organizations may have a duty to ensure certain content is held in a specific geography for compliance and data-sovereignty purposes. This content could remain on-premises, with less restricted content being stored in the cloud.</p> <p>If you are using a custom or third-party security product to manage access rights to content, this system may not work with Office 365.</p> <p>Additionally, be mindful that there are no product features which will allow records administrators to manage records in both the on-premises and Office 365 environments in a central location. Actions such as declaring records and retrieving auditing information would need to be conducted in both environments, and any underlying compliance configurations — such as content types and information management policies — would also need to be duplicated and maintained in the two environments.</p> <p>Organizations should consider the additional administrative resources required depending on the anticipated volume of regulated content.</p>
<p>Search and discovery centric organizations where content will be stored in two environments</p>	<p>While there are approaches to improving the search experience when searching multiple environments (see Plan Search), it is not possible to search a single index and return content from both environments ranked together on the same results page.</p> <p>Organizations making heavy use of search should be cautious of distributing content between the two environments without a structured information architecture: If users are unaware which environment contains the required content, they will have to search both environments.</p>

Designing an initial environment

Prerequisites of a hybrid design

There are some key prerequisites for organizations building a robust hybrid environment. Organizations should plan to:

- Deploy Active Directory Federation Services for single sign-on
- Create a strategy to determine which workloads and content to place in the cloud
- Create a consistent information architecture and navigation experience for users
- Plan how and where to deploy shared service applications such as User Profiles, My Site and Search

Plan to deploy single sign-on

Single sign-on is an important component of all hybrid designs, as it allows users to navigate two environments seamlessly — following navigation links which may take them from on-premises to cloud and back again in a single user session.

When you configure single sign-on, your users can access services in Office 365 with their existing Active Directory corporate credentials. This means users do not have to remember multiple passwords.

When single sign-on is combined with a common navigation and user experience, users can also follow links to content that may reside on-premises or in the cloud without necessarily realizing where the content is stored.

For information on how to configure single sign-on, review 'Directory synchronization and single sign-on' in the Office 365 online help:

<http://onlinehelp.microsoft.com/office365-enterprises/ff637606.aspx>

Plan where to run SharePoint workloads

SharePoint 2010 includes six primary capabilities, which are collections of product features that enable specific business scenarios. Depending on the capability, Office 365 may support some, most, or all of the underlying product features. Workloads are collections of features that share a similar technical architecture, often with dependencies that necessitate the features being administered together.

- Some workloads can be run both in the cloud and on-premises.
- Some workloads can run either in the cloud or on-premises, but should not be run in both locations.
- Some workloads give richer capabilities if they are run exclusively on-premises.

This paper discusses each of the capabilities in terms of the major workload components, and it gives guidance on how to choose where to place each component.

It is important to remember that aside from single sign-on to unify user access across the two environments, the SharePoint environments themselves are separate. For Administrators who have previously managed multiple on-premises environments, there are important distinctions between integrating Office 365 as opposed to multiple on-premises environments.

- With hybrid Office 365 environments, SharePoint Service Applications such as the User Profile Service, Managed Metadata Service, and Search cannot be shared between on-premises farm(s) and Office 365. Instead, Administrators should choose to either fully deploy a Service Application in only one location, or configure an instance of the service in each environment. The exact configuration depends on the service and is covered in more detail through the rest of the paper.
- It is not possible to use full-trust code solutions (farm solutions) in Office 365. If you need to use code-based customizations, only Sandboxed Solutions or client solutions that use the exposed SharePoint web services or Client API can be used.
- Most of the administrative options exposed through the SharePoint Central Administration web site are not available on Office 365, nor are commands which are available on-premises through Windows PowerShell.

For more information on these restrictions, consult the Service Description and Developer Center, listed in [Additional Resources](#).

The following table summarizes hybrid considerations for each of the main capabilities:

Capabilities and common features	Hybrid considerations
<p>Sites</p> <p>Lists, Document Libraries, Web Parts</p>	<p>Hybrid environments will have content in site collections in both environments.</p> <p>To make this more seamless for users, follow the recommendations in Plan your Information Architecture to implement a common navigation structure and site templates.</p>

Capabilities and common features	Hybrid considerations
<p>Communities</p> <p>Blogs and wikis; My Site; My Profile; Tags and Notes</p>	<p>You can create blogs and wikis in either environment. A user’s My Site and My Profile should exist in a single environment only to ensure that there is a single correct and complete source of user data.</p> <p>Although the User Profile Service cannot be shared between environments, it is possible to link on-premises SharePoint User Profiles to Office 365 and vice versa — using the mechanism described in Plan User Profiles and My Sites — so whichever environment a user is currently browsing, if they access their own or another user’s profile, it will redirect to the environment that is hosting the service.</p> <p>Limitations apply to how Tags and Notes operate across environments. Audiences will need to be configured in both environments, and audience rules using user profile properties will only be available in the environment that contains the completed User Profiles.</p>
<p>Composites</p> <p>Sandboxed solutions; Forms; Workflows</p>	<p>Access Services, InfoPath Form Services and SharePoint Designer generated workflows are all available in the Office 365 environment and can connect to data held in Office 365. However, these services cannot connect directly to data in the on-premises environment (although InfoPath Forms Services can connect to external web services by using the InfoPath Forms Services Web Service Proxy feature).</p> <p>Business Data Connectivity Services are currently not available in Office 365. If your solution requires this service, it will have to be deployed on-premises.</p>

Capabilities and common features	Hybrid considerations
<p>Insights</p> <p>Excel Services; PerformancePoint Services; Visio Services; Dashboards</p>	<p>The features in the Insights workload are associated with the SharePoint Enterprise set of features. The only services available in Office 365 are Excel Services and Visio Services.</p> <p>You can still create basic business intelligence solutions in Office 365 by using SharePoint Designer to customize lists and libraries, and Excel Services to display calculated information from data stored in the Office 365 environment.</p> <p>If you wish to use PerformancePoint Services, or make programmatic access to enterprise or remote data, or create full-featured dashboards and KPIs, you have to use an on-premises SharePoint Enterprise installation.</p> <p>If you need to create business intelligence solutions that use data from both Office 365 and an on-premises installation, consult the ‘SharePoint Online Developer Resource Center’ for a range of integration options:</p> <p>http://msdn.microsoft.com/en-us/sharepoint/gg153540</p>
<p>Content</p> <p>Document Sets; Legal Holds; Shared Content Types</p>	<p>In-place records management, including legal holds and disposition, is available in Office 365, along with shared content types from a Content Type Hub. A Content Type Hub is automatically created as part of a new Office 365 environment and will be separate from any Content Type Hub available on-premises.</p> <p>The Records Center site template is not available, although in-place records management features such as auditing and disposition policies are available. If you need to use a Records Center, this will need to be created in your on-premises environment. It is possible to send documents from Office 365 to your on-premises Records Center. See Plan Compliance and Security.</p>

Capabilities and common features	Hybrid considerations
<p>Search</p> <p>Site search, people search, best bets</p>	<p>Many of the features of on-premises SharePoint search are available in Office 365, although some advanced features, such as custom ranking, federated search and searching LOB business data are not available.</p> <p>It is not possible to see results from the on-premises environment and Office 365 environment merged into the same result set. By adding customization there are mechanisms to see results side-by-side. However, it will be much easier to keep two separate search centers. See Plan Search.</p>

Plan your information architecture

In a hybrid scenario, many organizations will want to place content both in Office 365 and on-premises. A well-designed information architecture will ensure that users can find content quickly and easily decide where to place new content.

For general guidance on SharePoint information architecture, review Step 3 'Plan Content on Sites' in the SharePoint Online planning guide for Office 365 for enterprises:

<http://office.microsoft.com/redirect/HA101988931.aspx>

Strategies for deciding where to place content

Organizations always need to have a clear policy on where content should be stored and held. The policy should be understood by users. This needs to include whether content is placed on-premises or in the cloud. This is helpful for a number of reasons:

- Similar content can be managed together — including records policy, retention strategies and security
- Similar content will appear appropriately in the contextual navigation on the relevant environment
- Search on each environment will index a distinct set of content, and users will be able to predict which Search Center is most likely to contain the content
- Content in each environment will align to that environment's enterprise metadata — as taxonomy terms cannot be shared between environments
- Business solutions, customizations and dashboards that are targeted at particular types of content can be installed and managed in a single environment

Some potential strategies for deciding where to place content include:

- Organize by business unit or department — Users are more likely to work from a single environment, although they have access to both environments.
- Organize by geography or network conditions — Place content in on-premises sites only when network conditions make it unfeasible to store content in the cloud.
- Organize by customization dependency — If an on-premises code customization or third-party product does not yet work with Office 365, it may be necessary to store content used/aggregated by the customization in a specific location.
- Organize by security or compliance — Place content with specific access or compliance requirements in the same environment. This avoids the need to implement and maintain duplicate compliance policies, and it may reduce the burden of records administration across two environments.
- Organize content chronologically — For example, all new projects or matters could have sites created on Office 365, with existing sites remaining on-premises, or migrated over time.

If you feel that your organization would struggle to adhere to any of the above strategies, but you still want to design a hybrid environment, consider other ways you can direct users to the right location for content. Creating a searchable list of sites that includes sites from both environments may be helpful.

Plan Navigation and Branding

Your navigation and branding strategy will depend on whether you want users to be aware of which environment they are using or whether this distinction should be hidden. As a baseline, consider deploying consistent branding across both portals – by using style sheets or master pages to brand the user interface.

Next, decide whether or not you want to make users aware of which environment they are currently using – on-premises or Office 365. The approach you take is likely to depend on how tightly integrated you have decided to design the two environments:

- If you have a clear information architecture (so users can easily decide where to locate and place content) and if both environments have a common implementation of features (such as content types, records management strategy, custom solutions available, and so on) it might not be important that the user realize which environment she or he is currently browsing. In this case, it might be preferable to brand the environments identically, so the hybrid solution looks like one system to the user.
- If environments differ in the features offered, make it clear to users which environment they are using, so they are not confused by feature inconsistencies. Consider differentiated branding such as color changes in banners/user interface and clear labeling. This will help users understand the differences and use the correct environment for their needs. Finally, ensure users retrieve appropriate training in this regard.

Whichever method you chose, it is important to provide visual hints to users as to their current location as they navigate between environments — even if the environment boundaries themselves are not highlighted — and provide an easy way to move between the two environments.

This could be achieved by adding a common set of global navigation links to the links bar in every site collection in both environments, which could link to the top level elements of your information architecture.

Strategies for Enterprise Metadata

Organizations need to plan their metadata strategy carefully if they are using enterprise taxonomy features in both an on-premises and Office 365 environment. The features under consideration are keyword tagging and taxonomies. If content is tagged in one environment and then moved to another environment, the tags and managed metadata on the content will be lost, including the unique Document ID.

Like other Service Applications, the two environments cannot share the same instance of the Managed Metadata Service that provides access to the Term Store that is hosting the keywords and taxonomies.

It is possible to load the Term Store in both environments with the same set of terms, but this should be approached with caution. Although two terms with the same name in each environment may appear the same in the user interface, the underlying unique values saved against the content will be different. If content is moved between environments, the meta information will be lost (the fields will be blanked). Even if content is unlikely to be moved, the terms would still need to be administered in both environments in parallel. Some third-party tools may assist, depending on your specific requirements.

More information about orphaned terms

For terms to be considered the same, they need to have not just the same display name but also the same underlying ID (GUID). The ID is important because it enables the UI to display the correct display name for the Term in the given language, and it enables a term's display name to be updated or shown in another language whilst keeping the same ID on content already tagged with the term.

When a document containing a term is moved from one environment to another (for example, by downloading and uploading; by opening and saving to a new location; or by a migration tool) the terms will be blanked as there is no associated ID in the destination environment.

It is not possible to specify the ID to use for a new term that is created in the Term Store Administration page, through uploading a .CSV file, or by using the TaxonomyClientService web service. Therefore terms created in an identical manner in both environments will have different IDs. It is only possible to read or specify the ID of a new term by using the APIs in the Microsoft.SharePoint.Taxonomy namespace, which are not available in Sandboxed Solutions. This means that the APIs are not available for Office 365 development.

Avoiding orphaned terms

If you plan to tag content by using terms from the Managed Metadata Service, you should plan to avoid moving this content between environments once the content is tagged with the Managed Metadata. If you need to move content between environments, it will be necessary to retag the content at the destination. Planning your information architecture to avoid content requiring the same tags to be placed in both environments may help.

Plan User Profiles and My Sites

Although each environment could host a User Profile and My Site for each user, we recommend that users have a single My Site and a single User Profile. It is possible to host a user's My Site and User Profile either on premise or on Office 365 and to link to the primary profile location from the second environment.

Advantages of single My Site and User Profile	Considerations
<ul style="list-style-type: none"> • Users can store and find all their personal documents in one place. • Administrators have a single, central location to manage per user. • All information about a user is in a single Profile location, including social information and details added by the user. • People search can locate any user by using the search engine in the environment where the User Profiles are set up. • If a user has a profile in each location, it is possible to populate both profiles with information about the user from a directory service, but information added by a user on the profile edit page will only exist in the location in which it is added — leaving users having different profiles in each environment. 	<ul style="list-style-type: none"> • Some social features, such as tags and notes, will not post to the user profile if the profile is in another environment. Only content in the environment that contains the User Profile will post to a user's tag cloud and activity feed. • Consider moving as much profile information into the source of record (AD user object) so that it is available in both environments – for use in Audiences for example. • You may wish to turn off social features in the second environment to avoid users having an inconsistent experience, or use external site tagging (see Configure social features in the secondary environment).

Note that although the full User Profile page will only be accessed and updated in a single environment, it is necessary to have a basic User Profile for every user in the other environment. This is because the other SharePoint environment will not redirect users to the primary User Profile unless the user has a user profile in that environment. The basic profile itself will never be seen because the redirection will point users to the primary User Profile.

If you have not yet enabled User Profiles and My Sites on your on-premises environment, you can configure the environment to point users to Office 365 to create My Sites and User Profiles.

If you already have users with My Sites and Profiles on-premises, you have three options, as detailed in the following table. Each option requires the on-premises and Office 365 environment to be configured appropriately. The simplest option is the first option – to continue your on-premises My Site deployment.

Option	Action to take
<ul style="list-style-type: none"> • Do not migrate existing My Sites • Continue to create new My Sites on-premises. 	<ul style="list-style-type: none"> • Configure Office 365 to point to your on-premises My Site deployment
<ul style="list-style-type: none"> • Do not migrate existing My Sites • Create new My Sites in Office 365 	<ul style="list-style-type: none"> • Configure Office 365 to allow new My Site creation for new users, but point existing users to the on-premises deployment
<ul style="list-style-type: none"> • Migrate all existing sites to Office 365 (advanced — would require third-party tools) • Create new My Sites in Office 365 	<ul style="list-style-type: none"> • Configure the on-premises installation to redirect users to Office 365 • Consider using third-party migration tools to move My Site content • Write a utility or script or use third-party tools to copy user profile information to Office 365

Configuring My Sites

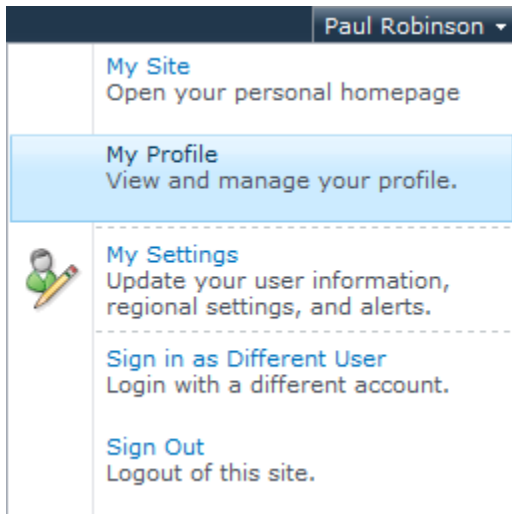
You have to make configuration changes to each of the SharePoint environments to ensure that My Sites and User Profiles are only created and accessed from one location. Suggested configurations are explained below. Adjust each of the configuration points depending on your desired outcome.

Configure Trusted Host Locations

Office 365: Under User Profiles in the SharePoint Administration Center

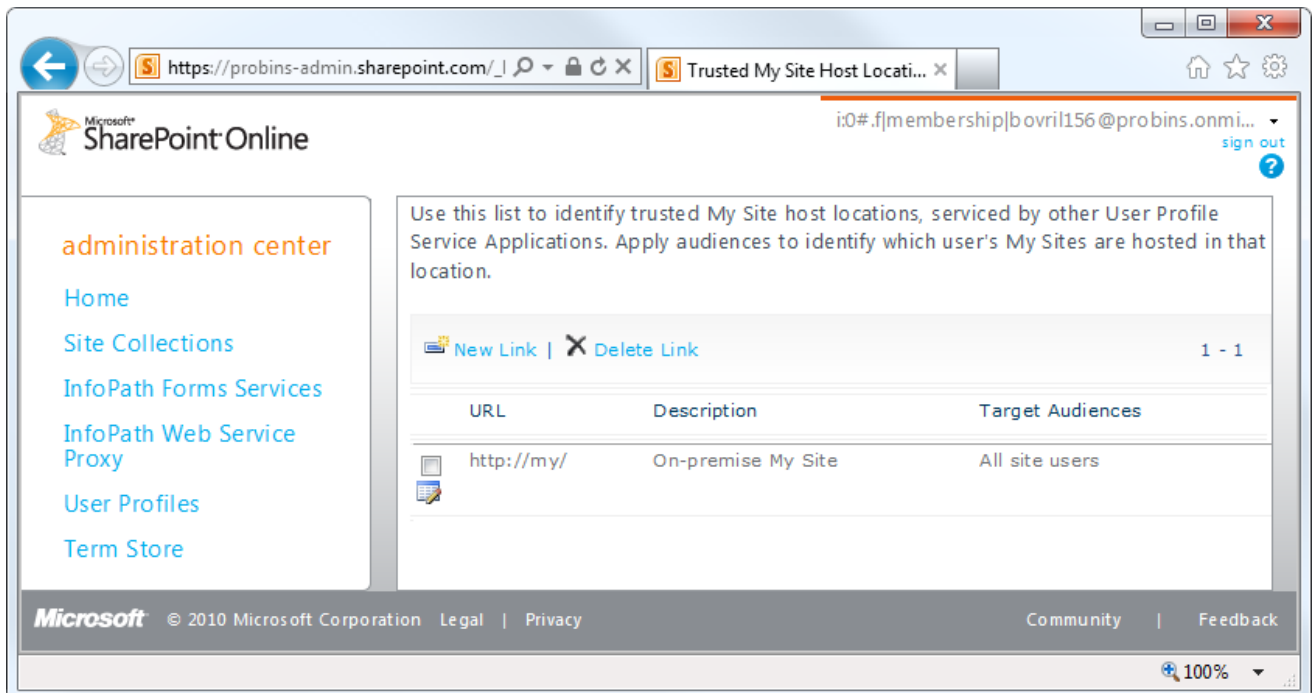
On-premises: In the User Profiles Shared Services Application in Central Administration

Trusted Host Locations — a feature in both SharePoint Server and Office 365 — inform the SharePoint environments where a user’s My Site and User Profile is located based on Audiences. Audiences are sets of rules which use properties of a user’s profile to determine whether the user is included in the audience. Locations are then mapped to matching audiences. The location specified can be in a different SharePoint farm, so the on-premises installation can include locations on Office 365 and vice versa. The location is used to automatically redirect users when they pick their My Site or User Profile from the User drop-down menu, or when clicking a user in lists and libraries:



A connection to the location entered is not validated or accessed from the server; it is only used in the client web browser. Therefore there does not need to be connectivity between the server environment running SharePoint Server on-premises and Office 365, as long as the users themselves can access both locations from their client devices.

In the example below, Office 365 has been configured to point to an on-premises My Site host:



The Target Audience can be used to determine which My Site Host will be selected for groups of users. If you have multiple on-premises My Site Host locations currently segmented with Audiences, you should recreate the same audiences on Office 365 to point to the correct internal My Site host.

If you wish to keep existing My Site users on premise but have new users create My Sites and Profiles on Office 365, create two audiences, one for your existing users and one for new users, and direct users accordingly.

If some or all My Sites and User Profiles will be placed on Office 365, you should use the Trusted My Site Host locations on your on-premises SharePoint Server installation to point to the My Site host you are using in Office 365.

Mapping an account through different membership providers

Federated user identities in Office 365 are prefixed with the membership provider that provides claims-based access. An on-premises user identity of *bob@contoso.com* may become *i:0#.f|membership|bob@contoso.com* in Office 365.

The My Site host uses this identity to display the correct My Site or User Profile by including it in the *accountname* querystring on the User Profile URL. An example User Profile URL for an on-premises installation may look as follows:

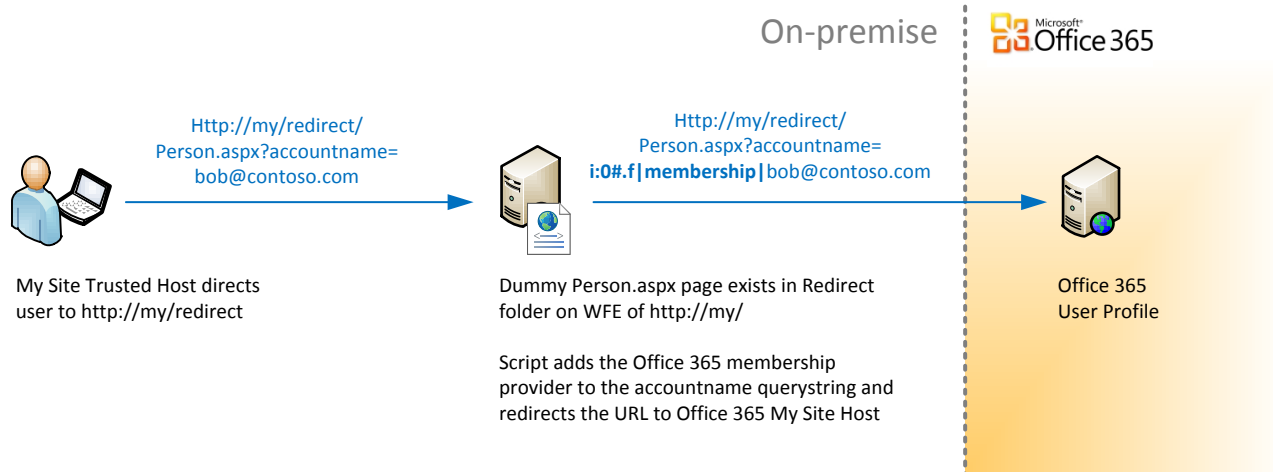
<http://my/profile.aspx?accountname=bob@contoso.com>

The formatting differences mean that the two environments will not automatically be able to resolve the requested user identity. A simple approach to work around this formatting is to use an ASP.NET page running on the on-premises installation that can resolve the identities and then redirect the request to the real on-premises or Office 365 location.

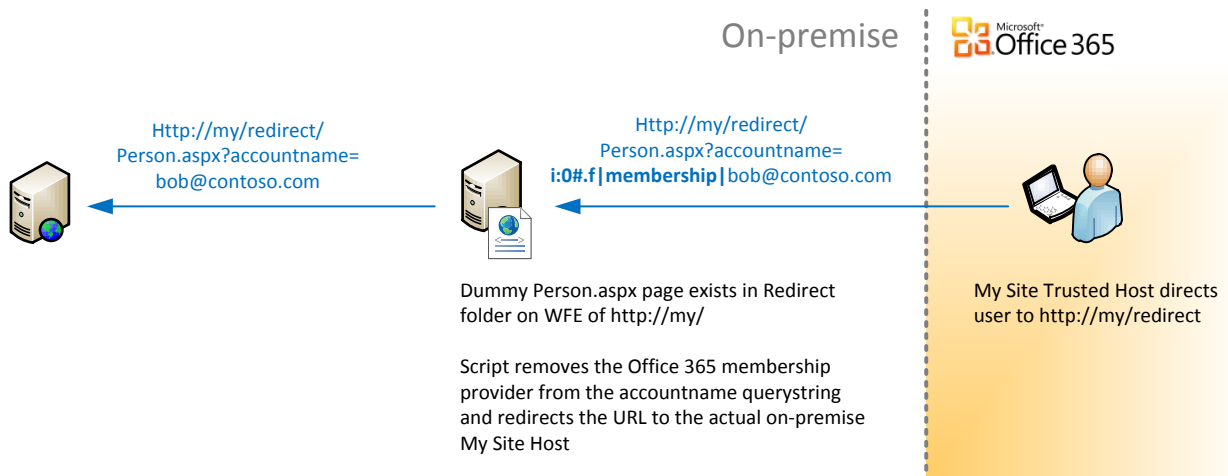
In the above example, some string manipulation would be sufficient to remove the *'i:0#.f|membership|'* part of the user identity so that it could be resolved on-premises, or to add it so that it can be resolved by Office 365. You may wish to use this in connection with Smart Links (see [Appendix](#)) to ensure that users are not prompted for credentials if they have not yet logged on to Office 365.

The script can be placed as inline code in a dummy *profile.aspx* page in a directory on each SharePoint front-end Web. Configure the My Site Trusted Host locations to point to the directory that contains the script, rather than the actual destination, and allow the script to perform the redirect.

A user browsing the on-premises environment requests a User Profile that is stored in Office 365:



A user browsing the Office 365 environment requests a User Profile that is stored on-premises:



Configure social features in the secondary environment

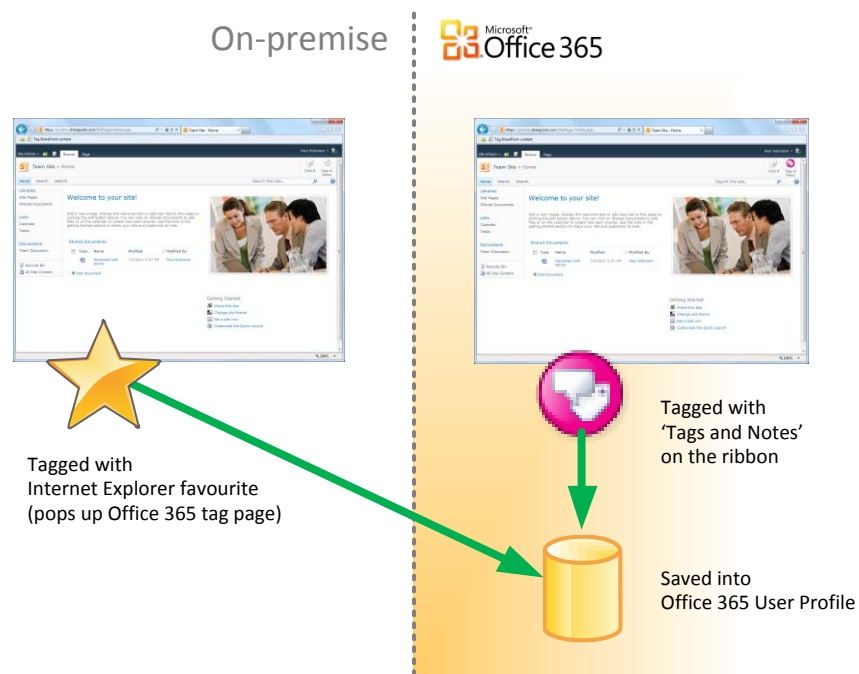
When you choose to place User Profiles and My Sites in a single environment, you may optionally wish to disable certain social features in the secondary environment, and/or use 'external tagging'.

Tags and Notes provide users with the ability to tag pages, items and documents, and to create and view notes posted by others. These tags appear aggregated in the user's tag cloud on the User Profile, and notes appear aggregated on the note board.

The feature works in two parts — the initial tag creation experience and the display of tags and notes in User Profiles. The initial tagging experience needs to be planned carefully when there is more than one environment. Tags can be created in two ways — directly from a SharePoint page by using an integrated tagging feature, or by using a special browser Favorite to tag any web site.

By default, each SharePoint page and item has a 'Tags and Notes' button on the ribbon which can be used to quickly add tags and notes. The initial tagging will work as expected when a user is tagging content from SharePoint pages in the environment that contains the user's User Profile (primary environment for the purposes of this example), but any tags and notes saved against SharePoint pages in the secondary environment using the 'Tags and notes' button on the ribbon will be saved into that environment — where User Profiles are not accessible. These are not propagated to the primary User Profile environment as the two environments are separate. This would result in users tagging content in the secondary environment, the tags appearing on the content but not being aggregated into the User Profile. This is likely to cause confusion.

An additional tagging feature allows any web address to be tagged. This works by adding a favorite to Internet Explorer's favorites toolbar. The favorite is a special link into the SharePoint environment that is holding the User Profile. As users browse web sites they can click the favorite link that opens a popup allowing tags and notes to be entered. This is then saved into the User Profile (no information is exchanged with the tagged web site).



This feature is primarily designed to allow external web sites to be tagged, but could also be used to allow the secondary SharePoint environment to be tagged from the primary environment.

You may wish to disable the ability to tag pages in the secondary environment so that users are not confused as to why some content is aggregated and other content is not. This would remove the 'Tags and notes' button from the ribbon but would not stop users tagging content using the external tagging method mentioned above. To do this, remove the Use Social Features permissions for users in the environment that does not contain their User Profile. These settings are stored under the User Profiles page in the Office 365 administration center/on-premises User Profile Service application.

Plan Compliance and Security

Many of the on-premises SharePoint Server 2010 compliance features are available in Office 365, including in-place records management and multi-stage disposition. However, the Records Center site template is not available.

For general information, see 'Records management and compliance' in the Office 365 Help:

<http://office.microsoft.com/en-us/sharepoint-online-enterprise-help/CL102029651.aspx?CTT=5&origin=HA102049397>

Using an on-premises Records Center

If you wish to use a Records Center, you can configure a Records Center on your on-premises installation that can accept content from both the on-premises and Office 365 environments by using the Send To feature in SharePoint Server. Content is copied from the Office 365 environment to the on-premises environment by using a control on the client workstation provided as part of the Microsoft Office 2010 or 2007 client installation.

- The two server environments do not need to have connectivity between each other.
- The client workstation needs to have connectivity to both environments at the time of the copy, that is, the user needs to be able to browse the on-premises environment either because the user is accessing the corporate network locally, using a VPN, or the on-premises site is published over the Internet.

For more information, see 'Specify a Send To destination for a library' in SharePoint Help (note that in Office 365 this can only be set at the library level, not globally):

<http://office.microsoft.com/en-us/sharepoint-foundation-help/specify-a-send-to-destination-for-a-library-HA101944946.aspx?CTT=1>

Plan Search

Currently it is not possible to share search indexes between an on-premises SharePoint Server 2010 installation and Office 365, nor to set up a search crawl to either location from the other. If you plan to use search in both environments, you have two choices for delivering search results to users:

Choice	Suitable for
<p>Two separate search centers</p> <p>One search center for all on-premises content and a second search center for all Office 365 content. Users need to navigate to the search center that is most likely to contain the information they need.</p>	<p>Organizations where users are aware of which types of content are stored on-premises and which are stored in the cloud, based on a structured and well understood information architecture.</p> <p>Less suitable for organizations with organic information architecture or a mix of similar content in the cloud and on-premises (users may need to search both locations).</p>
<p>One search center with side-by-side results</p> <p>One environment is selected to hold the Search Center. Results from the second environment are shown side-by-side by using client-side federation.</p>	<p>Organizations where content could equally be stored in either environment or where users will not be able to predict which Search Center to use.</p> <p>This solution requires some code customization, as the Federated Search feature is not available in Office 365.</p>

Strategies for two search centers

The easiest implementation is to keep two search centers — one on-premises and one in Office 365. Whilst these are separate, there are some steps you can take to ensure that the experience is not too disconnected.

- Add Best Bets to the other environment:** Add Best Bets to a keyword to mark content that is most relevant for that keyword. When a user types a keyword into the search box, all keyword Best Bets for that keyword are displayed prominently in search results. The address you add for Best Bets can be external to the SharePoint environment, so you can cross-link content by adding Best Bets for Office 365 content to your on-premises installation and vice versa. Consider using Smart Links (see [Appendix 1](#)) to ensure that users are not prompted for credentials if they have not yet logged on to Office 365.
- Add links to the second Search Center:** Cross-link between the two search centers by adding a link to the search query and search results page of each search center. If you have a structured Information Architecture, consider hinting which search center is most likely to contain specific content. Again, Smart Links may assist in this scenario.

Implementing side-by-side results

Currently it is not possible to connect any additional search sources to Office 365, and it is not currently possible to consume Office 365 Federated Search results from an on-premises SharePoint Server installation. Federated Results are inserted into the search results page server-side, and this is not possible because the authentication scheme used by Office 365 is not yet compatible with the various authentication methods that SharePoint Federated Results supports.

However, it is possible to browse to the raw federated results feed from an Office 365 Search Center in a browser. The address is <http://<server>/layouts/srchrss.aspx?k={searchTerm}>. Therefore, this content could be consumed by a custom Web Part and displayed on the results page of an on-premises environment. This assumes that the user has already authenticated to Office 365.

Plan Site Lifecycle

With content distributed over multiple environments, it is important to have a comprehensive plan made available to users, assisted by technological solutions where possible, as a guide to the proper use of each environment. An example may be instructions on which environment is the most appropriate place to store content depending on a specific business task. This should be included as part of a unified governance plan covering both on-premises and Office 365 environments.

If you have implemented a custom site creation process in your on-premises environment, consider extending this to cover Office 365. This will typically collect meta information and business justifications regarding site usage and use a workflow or offline process to determine where and how a site is to be provisioned. Note that there are no automated methods to create site collections in Office 365 — the process would need to be completed by administrative staff that is using the Office 365 SharePoint Administration web site.

Site creation information could then be used to provide a comprehensive cross-environment site directory.

Plan Customization

As the workloads may shift environments over time, customizations should be designed with environment portability in mind, and should adhere to Office 365 restrictions and best practices unless specific requirements interfere. Therefore, new customization projects in the hybrid environment should strive to stay within the SharePoint 2010 Sandbox, and should leverage, wherever possible, the techniques described in the Office 365 Developer Guide:

<http://www.microsoft.com/download/en/details.aspx?id=17069>

Conclusion

Hybrid environments allow organizations the flexibility to move to cloud-hosted SharePoint Online at their own pace. Office 365 makes it possible to implement a hybrid environment with SharePoint on-premises and SharePoint in the cloud. Designing the hybrid environment will add to the complexity of your implementation, and it involves making configuration changes to both environments. Some SharePoint capabilities have limitations if they are run in more than one environment, although a thorough hybrid design can reduce these limitations.

Additional Resources

Office 365 SharePoint Online for Enterprise Service Description:

<http://go.microsoft.com/fwlink/?LinkId=207232>

SharePoint Online for Enterprises Planning Guide:

<http://office.microsoft.com/redirect/HA101988931.aspx>

SharePoint Online Developer Resource Center (on MSDN):

<http://msdn.microsoft.com/sharepointonline>

SharePoint Online Administration Center (on TechNet):

<http://technet.microsoft.com/sharepoint/gg144571.aspx>

About the Author

Paul Robinson is a Senior Consultant in the Business Productivity practice at Microsoft Services in the United Kingdom. Microsoft Services deliver leading-edge technical consulting and support to help you gain maximum value from your investment in Microsoft technology.

Appendix: Using Smart Links

When you are using single sign-on with ADFS, Smart Links are a special URL format to content on Office 365 that bypasses the 'home realm discovery' page. This has two advantages:

- Two fewer redirects means content loads faster
- The content appears immediately without users having to click to sign-in.

To learn more about Smart Links — how they work and how to create them — read [Using smart links or IdP initiated authentication with Office 365](#):

<http://community.office365.com/en-us/w/sso/using-smart-links-or-idp-initiated-authentication-with-office-365.aspx>

Using Smart Links is the only way to guarantee that users will not see a login page when they access Office 365 content for the first time, or after a delay (when the cookie that holds their credentials has expired).

Planning when to use Smart Links

Because Smart Links use a more complex URL format than the format normally used in a browser's address bar in Office 365, it is unlikely that users will create and share Smart Links for all Office 365 content. However, as an administrator, you might choose to use Smart Links for Office 365 pages that will receive high traffic, or when it is important that users are not prompted for credentials. Examples of uses of Smart Links could be:

- Adding a favorite for the Office 365 homepage to a user's browser by using Group Policy
- When linking to the homepage or Search Center of an Office 365 environment from an on-premises environment (for example, in site navigation or a prominent hyperlink)
- When sending out links to Office 365 content in mass communications, such as a company-wide e-mail message

Creating an on-premises Smart Links redirector

If you wish to use Smart Links extensively, consider implementing a redirector on your on-premises environment which takes as a parameter the Office 365 URL and redirects to the full Smart Link URL (similar to popular Internet URL shortening services). This will make it easy for power users to construct their own Smart Links or for your corporate communications team to send Smart Links in documents and e-mail messages.