A Governance Guide for Hybrid SharePoint Migrations

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Abstract

Effectively managing enterprise content is a growing challenge for organizations today. Cloud-based computing represents a powerful new option, offering increased flexibility, efficiency, and reduced cost for IT infrastructure, data storage, and applications. However, for a variety of business and technical reasons, most organizations will take a phased approach to adopting cloud-based services, which will require them to continue to maintain their on-premises SharePoint environments during the transition.

Therefore, many organizations will have, at least for a time, a “hybrid” SharePoint deployment — one in which they must partition the capabilities of business applications across both their on-premises environment and a cloud-hosted environment. Investing in maturing a strong IT governance model will be essential to managing those hybrid deployments effectively.

This white paper discusses some of the benefits and risks of hybrid SharePoint deployments, and presents governance considerations that are essential for ensuring a successful migration.

Introduction

Effectively managing enterprise content today is a challenge: business executives and IT management are grappling with the often incongruent requirements of reducing costs, improving user access to information, and ensuring compliance and data security. Two enterprise strategies for achieving these goals are the migration of disparate information silos to Microsoft SharePoint 2010 and the shift to cloud-based computing.

Cloud computing offers a significant opportunity for increased flexibility, improved efficiency, and reduced cost for IT infrastructure, data storage, and applications. Cloud services are maturing rapidly, backed by stable and experienced IT vendors such as Microsoft, Google and Amazon. However, for a variety of business and technical reasons, most organizations will take a phased approach to adopting cloud-based services; therefore, they will continue to need their on-premises environments during and after the transition.

Such “hybrid” deployments enable organizations to take advantage of the unique benefits offered by each deployment model; they partition the capabilities of business applications across both their on-premises environment and a cloud environment. Hybrid deployments are expected to be the de facto approach for organizations seeking to manage risk associated with migrating complex enterprise applications to cloud-based services.

Organizations embracing this new paradigm will most likely be undertaking almost continuous migration activities, at least in the short term, which will introduce a whole new set of challenges to managing continuous change initiatives. Investment in maturing a strong IT governance model will be essential to managing hybrid migrations effectively.

This white paper discusses some of the benefits and risks of hybrid SharePoint deployments, and presents governance considerations that are essential for ensuring a successful migration.

Understanding Cloud Services

Benefits of Cloud Services

Recent industry surveys indicate that most organizations expect to have 60-70 percent of their business applications in the cloud within five years. It is not hard to understand why, considering the many potential benefits. The key business drivers associated with the migration to cloud services include:

- **Reduced cost** – Cloud service providers benefit from economies of scale that allow them to provide computing resources at a lower cost than is required to acquire, deploy, manage and support those resources within your own organization.

- **Increased business agility** – By removing the upfront capital costs typically associated with on-premises technology deployments, cloud-based services help mitigate risks associated with poor purchasing decisions. Lower risk allows organizations to experiment more freely, which stimulates increased innovation. And rapid provisioning of new services allows companies to respond to opportunities faster.

- **Better use of internal talent** – Cloud-based applications reduce or eliminate tedious administrative tasks that do not directly provide business value, and allow internal IT human resources to be allocated to higher-priority business objectives.

- **Increased mobility** – Organizations competing in a global and connected world need an increasingly mobile workforce, which places greater emphasis on the need to access data and applications from anywhere. Cloud service providers are better situated to provide high-speed and reliable access from globally distributed locations.

Despite the benefits, cloud services are not a panacea. A variety of risks and constraints—such as security concerns, space restrictions, and compliance requirements—will prevent organizations from fully migrating all data and applications to cloud-based hosting, as discussed below in “Risks of Hybrid Deployments.” Some of these risks and constraints will ultimately be mitigated over time as cloud services improve; others may not. In either case, the migration from an on-premises IT environment to cloud services will likely span multiple years, during which organizations must effectively manage a hybrid deployment.

Cloud Computing Service Models

To understand hybrid deployments, it helps to have a clear understanding of the standard terminology related to cloud-based computing which includes terms for service models and terms for deployment models. The common definitions for cloud computing service models are as follows:

- **Infrastructure as a Service (IaaS)** – Allows companies to contract the basic network, server processing, and storage capacity, but does not include business applications. IaaS providers commonly using virtualization software to provide rapid provisioning of new servers, but customers are still required to deploy and manage their own applications. IaaS is often used by organizations to build a *private* cloud, giving organizations the benefits of tighter control, while still benefiting from reduced administration and improved user access from the Internet. Examples of cloud service providers of IaaS include managed virtual server companies like Rackspace and Amazon.

- **Platform as a Service (PaaS)** – Provides an additional layer of abstraction between the customer and the technology infrastructure. PaaS service providers provide tools for building and deploying applications that commonly run under various defined "roles". Microsoft Azure, Salesforce AppExchange, and Google Apps are examples of PaaS. Despite the fact that SharePoint is often referred to as a "platform" for business applications, hosted SharePoint environments do not fall into the PaaS model of cloud services.

- **Software as a Service (SaaS)** – Supports access a fully managed business application that users can interact with directly. Microsoft Office 365 and the bundled business applications of Exchange Online, Lync Online, and SharePoint Online are an example of SaaS.

Cloud Computing Deployment Models

Two key dimensions are used to classify cloud computing deployment models:

- Where the service is running (on-premises or hosted)

- The level of access (shared or dedicated)

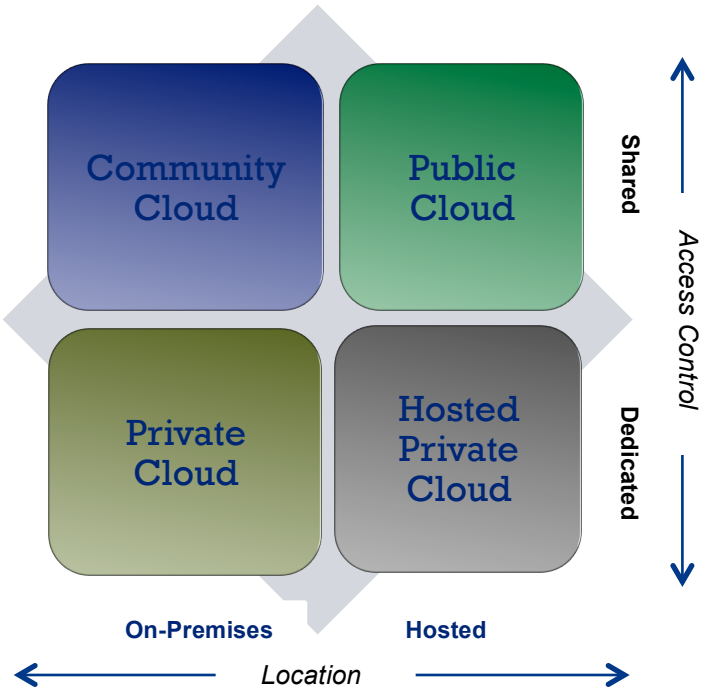


Figure 1. The two key dimensions of cloud computing deployment models: location and access control

Hybrid SharePoint Deployments

What is a Hybrid SharePoint Deployment?

Hybrid SharePoint deployments use a combination of environments:

- **On-premises environments** – Microsoft SharePoint environments deployed on infrastructure owned and managed internally by an organization
- **Hosted SharePoint environment** – A SharePoint environment hosted by a cloud services provider

These deployments are also sometimes referred to as “co-existence” or “cross-premises” deployments.

Use of the SaaS Model

These deployments use SharePoint in a Software as a Service model. Some of the characteristics of the SaaS model include:

- **Fast deployment** – Service providers frequently provide self-service provisioning that can provide a fully-functional deployment in minutes.
- **On-demand or transparent scalability** – Cloud providers have massive amounts of computing and storage capacity that, depending on your service plan, can increase capacity and performance either on-demand or transparently as load increases.
- **Business continuity** – Having applications and data stored in highly redundant and geographically replicated cloud storage mitigates many disaster recovery and business continuity concerns. As long as your employees can gain access to the Internet, they can continue to support business operations from anywhere.
- **Anywhere access** – Hosted on high-speed Internet trunk lines, many cloud service provider data centers provide high-speed, high-capacity and redundant network access to the Internet from anywhere. While client access network considerations still apply, cloud providers provide an enhanced user access experience.
- **Subscription pricing** – The subscription pricing model does not require the upfront capital costs associated with on-premises application deployment. Pricing can be more predictable; it is often based on a number of users per month. In some cases, fees are incurred based on resources consumed. Subscription-based pricing also allows costs to be allocated from operational budgets without the overhead of treating them as depreciating capital assets.
- **Expert administration and continuous improvements** – Cloud service providers benefit from economies of scale that allow them to support the environment with highly specialized experts who work to continuously improve services, ensure the safety and security of data, perform software upgrades, and deploy new software features.

Multi-tenancy

One characteristic of business applications that are well suited for the SaaS model is support for multi-tenancy. Multi-tenancy is the ability of a software installation to support many customers by defining each customer as a separate "tenant" and then partitioning configuration settings, content and access between tenants. Multi-tenancy can reduce the infrastructure, maintenance and administration costs a cloud service provider will incur in supporting many customers. But it may require the service provider to limit the amount of customization that can be supported for any individual customer.

Microsoft SharePoint 2010 includes support for multi-tenancy, paving the way for Office 365 and SharePoint Online to be delivered to customers at a very cost-effective price for shared service accounts.

Benefits of Hybrid Deployments

Many of the early adopters of cloud services have been small businesses that simply cannot afford the capital costs of acquiring either the necessary hardware and software for their own technology infrastructure, or the expertise required to configure and manage it. Many of these businesses have the advantage of starting from scratch—in other words, without the added complication of migrating content or applications from on-premises deployments. They are also less likely to be subject to the kinds of complex compliance obligations that larger organizations more commonly have to deal with that can potentially make cloud-based services less feasible.

For organizations with existing on-premises deployments, a hybrid deployment can offer advantages not available with a pure cloud-based deployment. Some of the advantages of maintaining a hybrid deployment include:

- **Phased migration** – Organizations can selectively transition workloads, where appropriate, to take advantage of the improved network accessibility and scalability of the cloud. As cloud service capabilities improve over time, additional workloads can be migrated when feasible.
- **On-demand provisioning and scalability** – Sites supporting heavy or variable workloads can scale up additional capacity in the cloud virtually on demand. Capacity can be added without having to allocate capital costs, as would be required for new hardware, software, and human resources to expand on-premises environments.
- **User access and security** – Security is often a concern related to mixing Intranet and Internet-facing sites in the same environment. Hybrid environments allow workloads to be separated by access requirement.
- **Customizations** – Organizations preserving an on-premises environment retain the ability to customize SharePoint in ways that may not be supported in a cloud environment.
- **Application integration** – Some SharePoint workloads may require tight integration with equipment or enterprise applications that cannot be easily accomplished in a cloud-based environment. On the other hand, sometimes integration with Internet services cannot be easily achieved with on-premises environments due to data security or other business or technical restrictions, and a cloud-based environment may provide improved integration with EDI or other kinds of integration with external commercial services. A hybrid environment enables you to match each SharePoint workload with the right SharePoint environment: on-premises or cloud-based.
- **Compliance** – Although cloud providers are working hard to meet broad compliance specifications, organizations with industry-specific rules and regulations may have to manage their data locally to ensure and demonstrate compliance.

"Workload" is often used to refer to combinations of SharePoint product features that support a functional capability. An example might be the various features used to support records management or web content publishing. To fully realize the benefits of a hybrid SharePoint deployment, it is important to assess your specific objectives and make careful choices when designing and allocating workloads across multiple environments. Making good choices requires a clear understanding of the risks and benefits provided by each environment.

Risks of Hybrid Deployments

Despite many of the advantages to be realized from hybrid environments, there will be the extra associated costs of maintaining two environments, as well as a number of risks that need to be considered. Below are some common risks associated with cloud-based deployments:

- **Compliance** – Businesses are facing an increasing number of regulations related to the processing and storing of information. In some cases, cloud-hosted environments may help mitigate compliance issues by offloading the complexity of meeting compliance standards to a service provider. In other cases, compliance issues may make the use of a cloud services provider unfeasible for specific workloads or content classes.

- **Service provider reliability** – Will the provider be here today, gone tomorrow? What happens to your data if they cease operations? Not having service failures under your control can expose your organization to business continuity risks. What if users report performance issues? No cloud vendor is infallible. If these issues are important to your organization, negotiate a service level agreement that includes a penalty if the agreement is violated.

- **Privacy and security risks** –Cloud providers can afford to invest in certification against external standards like SAS70, HIPAA, etc. They will also generally employ the latest in anti-intrusion detection, firewall, anti-virus and other protections. At the same time, there is always an associated risk with storing company information in a location that you do not own.

- **Access to information** – Where cloud providers rely on access to the Internet, internal environments require only the local company network and provide better isolation for accessing local resources. Consider the needs of mobile workers and geo-distributed locations that do not offer high-speed or reliable Internet traffic.

- **Customization** – Cloud service providers are normally restrictive of many types of customizations. Does your provider support SharePoint Designer? Do they support sandboxed solutions? Verify with your cloud service provider what customizations are supported and ensure the list matches your requirements.

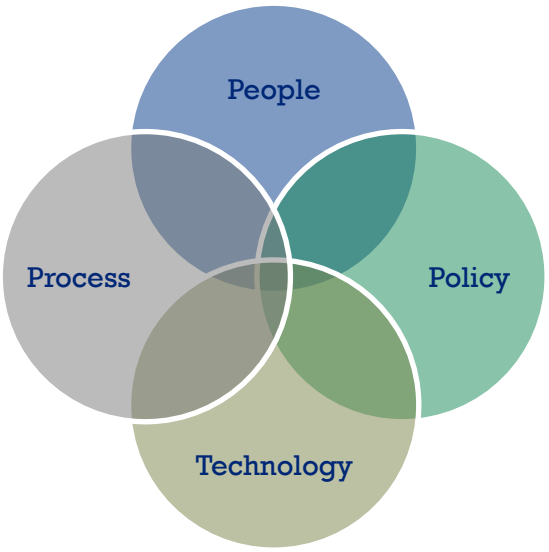
- **Migration costs** – There will be costs involved in moving content and applications to the cloud, both initially and on a recurring basis. Some business processes may need to be re-designed, incurring user re-training and process interruption.

- **Integration** – Direct access to data structures for cloud-based applications is often highly restricted, so integrating those applications with customizations or applications hosted on-premises can be difficult or impossible. In particular, SharePoint and SharePoint Online have virtually no real integration features; without the support of extra tools and custom integration, each environment is completely separate. However, integration options are improving (e.g., Microsoft Azure AppFabric).

Governance Considerations

What is Governance?

Governance combines people, process and policy to help ensure that organizations meet objectives. It centers on efficiently allocating resources and capital towards achieving organizational goals (i.e., doing the right thing), and ensuring the correct, appropriate and responsible performance of duties in pursuit of those goals (i.e., doing things right).



Governance is challenging for organizations in the best of times, but is particularly difficult during changes like application and data migrations. However, in many cases, migrations provide an excellent opportunity for organizations to optimize business processes, information structure, and management.

Many of the risks inherent in migration projects can be mitigated by having a good system of governance in place from project inception. In some cases, governance may be the difference between a successful migration and a failure.

The following are some common areas of IT governance related to deploying SharePoint and performing migration activities:

- **Demand (or project) governance** is responsible for ensuring new project requests are aligned with business objectives. A mature demand governance model will include project portfolio management. Projects should be prioritized based on projected measurements of expected outcomes, return on investment to the organization, or other metrics defined by senior management. Demand governance will also include policies and standards for how projects are chartered and executed, project leadership accountability, status reporting, etc.

- **Information (or data) governance** is responsible for ensuring that enterprise data is formally managed within the enterprise; it is concerned with data quality, integrity, and security. It is often heavily influenced by external compliance obligations and closely associated with information assurance. It can also be concerned with effectiveness, including find-ability, relevance, and other aspects related to maximizing the value of information to the organization.

- **IT assurance (IA)** is responsible for managing risks related to technology infrastructure and communications, guarding against data loss, enhancing reliability, and maximizing system performance.

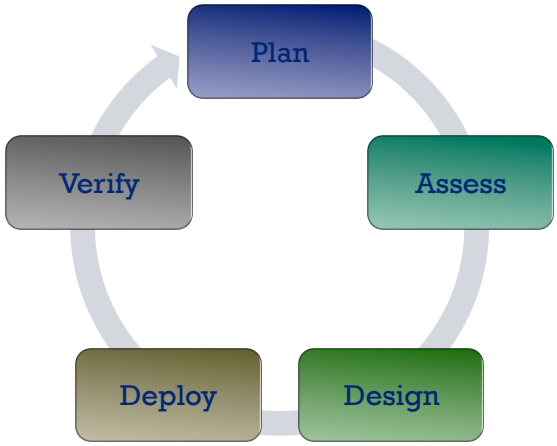
None of these areas of governance is specific to SharePoint, but each needs to be reviewed and updated appropriately when introducing a new enterprise technology to an organization. Below is a brief introduction to considerations for other important areas of governance and some best practice recommendations.

Migration Strategy and Planning

One of the key principles of good governance is ensuring that resources are efficiently allocated to achieving organizational goals (i.e., doing the right thing). Migration activities often have relatively wide impact zones within the organization. The impact on business processes that interact with migrated content can require changes to roles and responsibilities, and to the ways employees complete tasks. Some changes may be significant enough to trigger re-training or re-staffing.

The first step in a successful hybrid migration is establishing a clear vision and a well-defined scope for the project, and communicating both to the internal project team and the wider collection of stakeholders. Establishing a shared understanding of the business drivers and expectations related to successful business outcomes will improve decisions made throughout the project. It can also help ensure stakeholders support (or at least don't impede) required change initiatives.

The next step is to establish the process the team will follow. Migrations for all but the smallest of organizations are rarely simple, and good process can help ensure that correct procedures are created and followed at each step. Most migrations can be broken down into a portfolio of small sub-projects, and phased migrations that incrementally migrate content are an effective way to manage complexity and minimize risk.



An example of a phased migration would be the migration of the content for a single department or business application. Between each migration, the process can be refined and improved before proceeding with the next iteration. These are two key benefits of a well-defined process: being ***repeatable*** through iterative cycle and allowing ***continuous improvement*** as the team learns from experience.

Another benefit of a good process is that is provides the opportunity to take a structured look at the key tasks and deliverables and identify the roles and responsibilities required to support the migration project. This should extend beyond just the technical project team to also include roles and responsibilities for business stakeholders, subject matter experts, site administrators, and other support resources.

Information Architecture and Management

Two areas that factor heavily in data governance are information architecture and information management. Expect both to be significantly impacted during migration activities.

- **Information architecture** is concerned with the organization, structure and classification of content. When applied to SharePoint, it includes both the structure where content is stored (e.g., web applications, content databases, and site collections) and dynamic navigation supported by search—how people find and consume information based on keywords and metadata tags.

- **Information management** complements good information architecture; it concerns the lifecycle and appropriate access and use of content. Information management is often rule-driven by policies that define elements such as information rights, certification, retention policy, record declaration, and other aspects (often driven by external compliance regulations).

SharePoint Features that Support Information Architecture and Information Management

Content types and ***metadata*** support the goals of both information architecture and management in SharePoint. In addition to the configuration of metadata columns, SharePoint content types also support features for enforcing data governance with information management policies to control lifecycle through included or custom workflows.

SharePoint Server 2010 and SharePoint Online Enterprise accounts support hierarchal taxonomies based on the use of the Managed Metadata Service (MMS). ***Terms sets*** can be associated with metadata fields on content types to consistently tag content across multiple sites, and are an essential foundation to an enterprise content management strategy for SharePoint. Importantly, term sets also provide the basis for policy-driven migration of content for hybrid deployments.

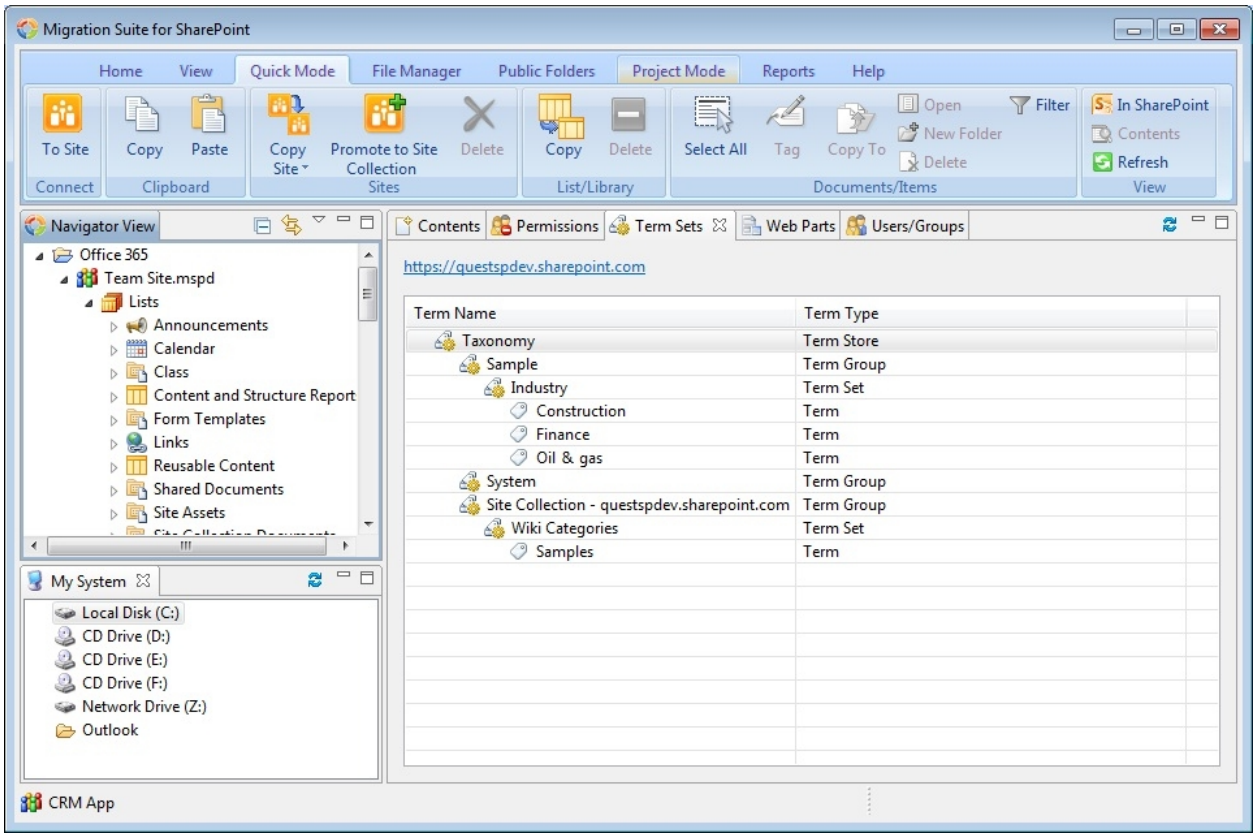


Figure 2. Quest Migration Suite for SharePoint allows you to migrate terms sets between environments.

An information architecture for hybrid deployments must effectively span both environments. This requires, among other things, maintaining enterprise taxonomies between multiple environments. This can be complicated for users

and error-prone if done manually. Quest Migration Suite for SharePoint provides the ability to migrate terms sets between environments. This provides the foundation allowing metadata to be used to provide users with consistent search and navigation. More importantly, it supports metadata-driven rules that can be used to accurately route content between environments based on geographic location, owning business unit or department, content file type or format, or other criteria. The use of metadata to support rule-driven content migration can help reduce complexity and a common source of errors.

Service Level Agreements

Service level agreements (SLA) are a method of establishing clear expectations with business stakeholders about the capacity and capabilities provided through technology and associated support resources. An SLA identifies key aspects of commitments that relate to IT assurance, and can serve as the effective measurement for policies and procedures related to SharePoint Administration activities.

While many people often associate an SLA with the well-known uptime availability measurement (i.e., “the Nine’s”), a well-crafted SLA should include a comprehensive combination of service commitments to stakeholders, including:

- **Provisioning** – How are new services provisioned (e.g., centralized vs. self-service)? How quickly can new capacity be added, and when can stakeholders expect to be able to access it?
- **Availability** – What is the expected uptime of the solution, and what are the schedule maintenance windows when services may be impacted? For various disaster scenarios, what is the recovery time objective (RTO) before services can be restored?
- **Data security and integrity** – What measures are in place to ensure protection against data loss? What is the recovery point objective (RPO) for how much data may be potentially lost during a disaster scenario?
- **Supported capabilities** – What capabilities of the software are supported and which are not supported?
- **Supported customizations** – What customizations are supported? Be specific; include support for customizations made using SharePoint Designer or solutions deployed as sandboxed solutions.
- **Acceptable use** – Include any acceptable use policies related to how users are expected to use the system.
- **Service boundaries** – Include any known limitations in the capacity, performance, or scalability of services, such as maximum storage quotas, upload file sizes, allowed file types, etc.
- **Compliance standards** – Include any external compliance standards that are supported by the environment such as HIPPA, SAS70, etc.
- **Support services** – Define the channels of support available to users, methods of access, and service desk and support line hours of operation. Include any self-service support tools. Identify escalation rules for unresolved help desk tickets and standard response times.

For organizations with little variation between SharePoint workloads, a single SLA may be appropriate. For many organizations however, different business applications and classes of content require variations in availability, service

boundaries, support, and level of customization. For example, one collection of sites may require considerably higher storage quotas than normal (e.g., a document center), or have a much higher load profile (e.g., a public-facing website).

When planning a hybrid deployment, be sure to align workloads with service levels appropriate to each environment (on-premises or cloud-hosted). Significant portions of the SLA that you can provide to business stakeholders will be dictated by the SLA negotiated with your cloud services provider.

Service tiers can help shape workloads to appropriate environments. For example, a “High Security” service tier may necessitate deployment in a private cloud rather than a shared hosted environment. Clearly, there are costs associated with this increased level of support that need to be measured, and appropriate budget allocation or charge-backs need to be designed.

Hybrid Migration Challenges and Opportunities

While the governance considerations outlined in this whitepaper provide a sound foundation for a successful migration, the technical deployment associated with hybrid migrations can be complex; and “complex” translates to “time-consuming” and “expensive.” Hybrid migrations provide special challenges with the additional burden of migrating content to multiple target environments.

Quest Migration Suite for SharePoint is part of a family of products that can help you better manage and maintain your SharePoint infrastructure, on-premises or in the cloud.

Consolidation

One of the benefits of a powerful business platform like Microsoft SharePoint is the ability to consolidate information silos on a single technology. It is common to see organizations planning the deployment of SharePoint to include migration activities that span multiple sources; common examples include network file shares and legacy collaboration tools like Lotus Notes.

Migrating content manually can be tedious, time-consuming, and error-prone, and often results in sub-standard application of policies concerning appropriate metadata tagging and other data integrity or compliance rules. Writing custom tools can mitigate these risks, but it can be expensive, and it requires specialized knowledge of the programming interfaces for both SharePoint and the source application.

Quest Migration Suite for SharePoint provides a simple but powerful interface that enables drag-and-drop migration of content from SharePoint 2003 or 2007, network file shares, and Exchange public folders to SharePoint 2010 and/or SharePoint Online in Office 365. By supporting both on-premises and cloud-hosted environments, Quest provides a single tool that can be used to resolve migration headaches even when dealing with the complexity of moving to a hybrid SharePoint deployment.

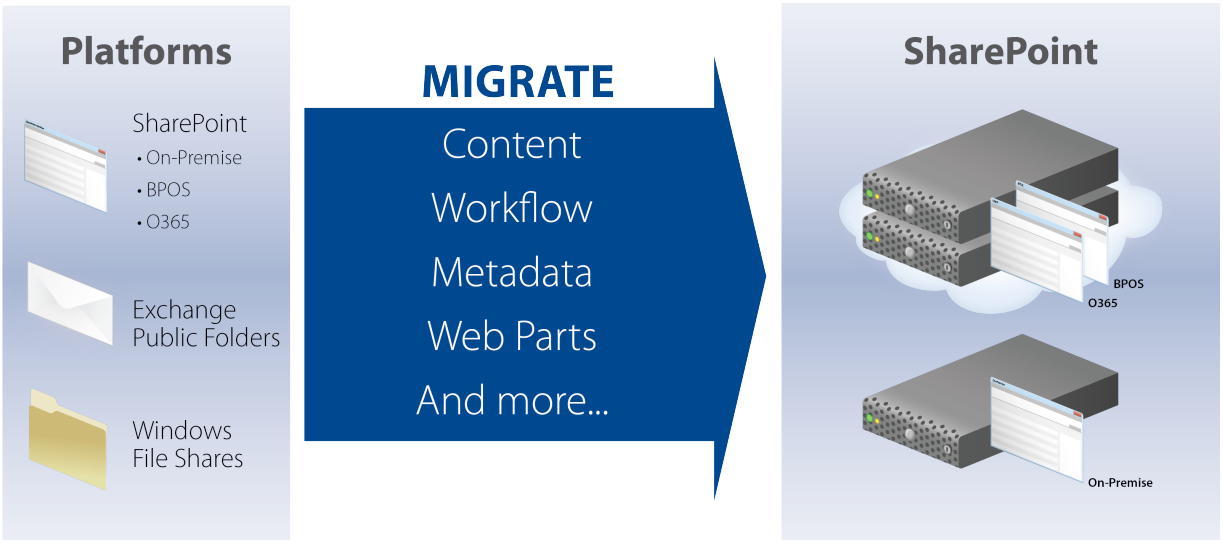


Figure 3. Quest Migration Suite for SharePoint enables drag-and-drop migration of a variety of content from SharePoint, Exchange public folders, and Windows file shares to SharePoint 2010 and SharePoint Online in Office 365.

Cleansing and Reorganization

Migrations provide an excellent opportunity to cleanse and re-organize content. This can increase the value of your organization's information by removing obsolete or irrelevant content; applying appropriate metadata tagging to support findability and automated information management policies; and adding other data integrity improvements. A data governance plan for a hybrid SharePoint deployment should include information architecture and content management policies that identify the appropriate target migration environments based on rules associated with specific workloads, business processes, organizational units, or other criteria.

Cleansing and reorganization can offer significant benefits, but they also introduce added complexity related to the bulk migration of content, often requiring a more granular and incremental migration strategy. Quest Migration Suite for SharePoint provides features for bulk, gradual, and granular migrations that you need to efficiently support content cleansing and reorganization goals. Scheduled migration tasks support phased migration processes and can synchronize post-migration changes during verification activities.

Federation, Synchronization, and Propagation

In order to ensure data security, preserve change history, and reconcile information audits, federated identity is a requirement for supporting hybrid SharePoint deployments. SharePoint Server 2010 and SharePoint Online in Office 365 support claims-based authentication and federated user identity using Microsoft ADFSv2.

However, with regard to SharePoint service applications such as search, managed metadata, and content stored in site collections, the on-premises and cloud-based environments remain completely separate. SharePoint Online in Office 365 does not support cross-farm service subscriptions, and a key technical constraint— network latency boundaries between farms—usually prevents hosted private or dedicated cloud environments from supporting this functionality either.

In all likelihood, managing a hybrid environment will introduce requirements for recurring content synchronization (content migration in both directions between environments) or propagation (content migration in a single direction) between your environments. An example of this type of requirement may be to author content on-premises that is published to a public-facing SharePoint site hosted in the cloud.

SharePoint provides very limited support to allow users to move or copy content between SharePoint farms without resorting to using client applications like Microsoft Outlook or SharePoint Workspaces. In addition to being manual and providing no ability for scheduling, these tools do not provide full fidelity content migration and have a high risk of metadata loss. Custom synchronization tools can be developed using the SharePoint Client Object Model or SOAP-based web services, but content syndication can be complex, and developing custom synchronization tools requires advanced knowledge of SharePoint programming and can be error-prone and costly.

Quest Migration Suite for SharePoint can help mitigate synchronization and propagation risks with support for content migration templates and scheduled migration tasks.

Conclusion

Hybrid SharePoint deployments that combine on-premises and cloud-hosted environments are a pragmatic way for organizations to transition to the benefits of cloud-based computing while mitigating the business and technical risks to their organizations. In some cases, organizations simply have no choice. While cloud service providers are developing increasingly mature offerings, data security, compliance restrictions, and “on-premises only” features will mandate that organizations preserve their investments in on-premises deployments while migrating workloads to the cloud selectively.

A good governance model and effective planning can help ensure a successful migration process, and the Quest Migration Suite for SharePoint can also provide essential features required to mitigate the significant technical complexity of managing hybrid SharePoint environments.

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