Microsoft Azure - Starter Kits for Partners

Azure Assessment

Archiving and Backup

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# Overview

The purpose of this document is to provide Microsoft Partners with an assessment to identify key components in the customer scenario and serve as a guide to the available resources. This will help the partner to build an efficient architecture for the customer scenario and have an accurate cost proposal based in the customer needs.

In this document, we will cover the following topics:

* Common Scenarios
* Questionnaire
* Resources and Tools
* FAQ

# Common Scenarios

## Backup and Recovery from on-premises to Azure

Data is the heart of any organization and backing up this data is a key part of a business strategy. Cloud based backup solutions provide a reliable, inexpensive and scalable solution with zero capital investment and minimal operational expense.

There are several options for using Azure as a backup site for on-premises data; using Microsoft Azure Backup Services, Database

### Microsoft Azure Backup Services

Microsoft Azure Backup Services enables cloud backups using the familiar backup tools in Windows Server 2012, Windows Server 2012 Essentials, and System Center 2012 Data Protection Manager (DPM). These tools provide a workflow for backup management that is independent of the storage location of the backups, whether a local disk or Azure Storage. After data is backed up to the cloud, authorized users can easily recover backups to any server.

### SQL Server Backup to Microsoft Azure Storage

You can have a disaster recovery solution for your SQL Server databases in a hybrid-IT environment using AlwaysOn Availability Groups, database mirroring, log shipping, and backup and restore with Azure blog storage. All of these solutions use SQL Server running on Azure Virtual Machines.

In this document we explore Backup and Restore with Azure blob storage, and the rest of the options will be include in a Recovery Services Starter kits.

### Distributed File System in Microsoft Azure

You can replicate File Server content to the Cloud with Distribute File System (DFS). DFS is an efficient multiple master replication engine that you can keep folder synchronized between servers across limited bandwidth network connections. DFS Replication uses a compression algorithm known as remote differential compression (RDC). RDC detects changes to the data in a file and enables DFS Replication to replicate only the changed file blocks instead of the entire file.

## Backup and Recovery from Azure

### System Center Data Protection Manager (DPM) as an Azure virtual machine

System Center Data Protection Manager (DPM) is an established backup product for protecting Microsoft on-premise workloads. As our customers move some or all of their infrastructure to Micrososft Azure, a key ask is the ability to back up workloads now running in Microsoft Azure. Microsoft now supports DPM running in an Azure IaaS VM, to protect Azure IaaS workloads.

### Storage (Blob Snapshot)

Note that while Azure Storage provides data resiliency through automated replicas, this does not prevent your application code (or developers/users) from corrupting data through accidental or unintended deletion, update, and so on. Maintaining data fidelity in the face of application or user error requires more advanced techniques, such as copying the data a secondary storage location with an audit log. Developers can take advantage of the blob [snapshot capability](http://msdn.microsoft.com/en-us/library/windowsazure/ee691971.aspx), which can create read-only point in time snapshots of blob contents. This can be used as the basis of a data-fidelity solution for blobs

# Questions - Backup and Recovery from on-premises to Azure

## Microsoft Azure Backup Service

|  |  |  |
| --- | --- | --- |
| Question | Answer | Read more & Considerations |
| 1. Do you have a Backup Strategy for critical workloads? | Yes/No | If there is not a backup strategy, the customer needs to identify the critical workload, a plan for recovery and data storage.   * [Plan recovery settings for protection groups](http://technet.microsoft.com/en-us/library/hh758076.aspx) * [Data backup and protection overview](https://technet.microsoft.com/en-us/library/jj642923.aspx) * [DPM Support Matrix](http://technet.microsoft.com/en-us/library/jj860400.aspx) * [Plan DPM storage](https://technet.microsoft.com/en-us/library/hh757941.aspx) |
| 1. Are you using any module of System Center 2012 in your on-premises environment? | Yes /No | * You can leverage System Center capabilities if you have not used Data Protection Manager as a backup tool |
| 1. If you are using DPM, what version is it? |  | * [Prerequisites and limitations](https://msdn.microsoft.com/en-us/library/azure/dn337337.aspx) |
| 1. Is the installation of System Center Data Protection Manager new in your on-premises environment? |  | * [Supported and unsupported scenarios in DPM](http://technet.microsoft.com/en-us/library/dn554221.aspx) |
| 1. Are you using Windows Server Essentials, 2012 as a backup tool? |  | * You can leverage the Windows Server backup tool to extend its capabilities to the Cloud |
| 1. Are you using Windows Server Operating System (2008 r2, 2012 OR 2012 R2)? And, does it need to be protected directly to the cloud? |  | * [Microsoft Azure Recovery Service Agent](https://support.microsoft.com/en-us/kb/2997692) |
| 1. Are you using Windows Client platforms? and does it need to be protected directly to the Cloud? |  | * [Windows Client Operating Systems](https://support.microsoft.com/en-us/kb/3015072) |
| 1. What kind of workload will be protected by DPM? | Microsoft workload  Non- Microsoft workload (not supported) | * [DPM Support Matrix](http://technet.microsoft.com/en-us/library/jj860400.aspx) |
| 1. What is the size of the workload protected by DPM or directly to the Cloud? |  | * [Protected workload size limits](http://technet.microsoft.com/en-us/library/hh758176.aspx)   [Backup & Retention](https://azure.microsoft.com/en-us/documentation/articles/backup-azure-backup-faq/)  As of August 2015, maximum size of data source size limit is [54 TB](https://support.microsoft.com/en-us/kb/2989574). except, Windows Server 2008&R2, Windows 7 the limit is 1.7 TB   * File/Folder volume * SQL DB * Sharepoint farm * Exchange server * Hyper-V VM |
| 1. What are the plans for long and short term protection? |  | * [Plan for long-term and short-term protection](http://technet.microsoft.com/en-us/library/hh758197.aspx) * [Long Term Retention for DPM Azure cloud backups](http://blogs.technet.com/b/dpm/archive/2014/08/27/introducing-long-term-retention-for-dpm-azure-cloud-backups.aspx) |
| 1. What are the format of the volumes to be protected? |  | * Protected volumes must be at least 1 GB in size with NTFS formatting. * Server operating systems protected by DPM must be 64-bit. * [Microsoft Azure Backup](http://msdn.microsoft.com/en-us/library/azure/jj573031.aspx#BKMK_faq_4) * [Protected workloads](http://technet.microsoft.com/en-us/library/hh758176.aspx) |
| 1. How much bandwidth is available to protect the volumes over the WAN? |  | * If you are protecting data over a wide area network (WAN), you will need a minimum bandwidth of 512 kilobits per second (Kbps). * [Network Requirements](http://technet.microsoft.com/en-us/library/hh758176.aspx) |
| 1. How much disk do you have available to backup jobs? |  | * [Disk and Storage](http://technet.microsoft.com/en-us/library/hh758176.aspx) |
| 1. How many servers of System Center DPM or Windows Server do you have to register in Microsoft Azure Backup Service? |  | * [Limit on the number of backup vaults per Azure Subscription](https://azure.microsoft.com/en-us/documentation/articles/backup-azure-backup-faq/)   As of July 2015, you can create 25 vaults per subscription. If you need more vaults, then create a new subscription, you can register upto 50 machines per vault. |

## SQL Server Backup to Microsoft Azure Storage

|  |  |  |
| --- | --- | --- |
| Question | Answer | Read more & Considerations |
| * 1. Do you have Microsoft SQL in your on-premises or in the Cloud as a critical workload? | Yes/No | * You can leverage the capabilities of Microsoft SQL to back up the database in the Cloud. * [Microsoft SQL Server Backup to Microsoft Azure](http://www.microsoft.com/en-us/download/details.aspx?id=40740) |
| * 1. What is the version of your SQL Server? |  | * For SQL Server versions previous to SQL Server 2014, you can use the add-in SQL Server Backup to Windows Azure Tool to quickly and easily create backups to Windows Azure storage. * [Microsoft SQL Server Backup to Microsoft Azure](http://www.microsoft.com/en-us/download/details.aspx?id=40740) |
| * 1. Do you need to back up the SQL Server? | Yes/No | * You can leverage the backup capability of Microsoft SQL without include any additional Software.   [SQL Server Managed Backup to Windows Azure](http://msdn.microsoft.com/en-us/library/dn449496.aspx) |
| * 1. What are the retention ranges that you need for SQL Server backups? |  | * [Term and Definitions Topic](http://msdn.microsoft.com/en-us/library/dn449496.aspx)   The minimum is 1 day, and maximum is 30 days |
| * 1. Do you have a backup Strategy for the SQL Server? |  | * [Backup Strategy Topic](http://msdn.microsoft.com/en-us/library/dn449496.aspx), you need to be familiar with Backup Scheduling, Backup File Naming Conventions, Full Database Backup and transaction Log Backup. |
| * 1. What is the size of the SQL Database? |  | * [Supportability](http://msdn.microsoft.com/en-us/library/dn449496.asp)   SQL Server Managed Backup to Windows Azure uses the Backup to Block Blob feature. The maximum size of a block blob is 200 GB. But by utilizing striping, the maximum size of an individual backup can be up to 12 TB. If your backup requirements exceed this, consider using compression, and test the backup file size prior to setting up SQL Server Managed Backup to Windows Azure. You can either test by backing up to a local disk or manually backing up to Microsoft Azure storage using **BACKUP TO URL** Transact-SQL statement. For more information, see [SQL Server Backup to URL](https://msdn.microsoft.com/en-us/library/dn435916.aspx). |
| * 1. Do you have an HA Strategy for SQL Server? Which one? |  | * [SQL Server Managed Backup to Windows Azure: Interoperability and Coexistence](http://msdn.microsoft.com/en-us/library/dn449493.aspx) |

## Distribute File System to Microsoft Azure

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| Question | Answer | Read more & Considerations |
| * 1. Do you use Distribute File System (DFS) as a tool to publish documents, software, and line-of-business data to users throughout an organization? | Yes/No | You can leverage the DFS to extend its capabilities to the Cloud.   * [DFS Namespaces and DFS Replication Overview](http://technet.microsoft.com/en-us/library/jj127250.aspx) |
| * 1. Do you have branch office environment where data originates on one or more hub servers in a hub site? | Yes/No | You can deploy DFS as a part of the on-premise environment and it has interoperability with Azure VM’s to have a replica in the Cloud.   * [Interoperability with Azure Virtual Machines](http://technet.microsoft.com/en-us/library/jj127250.aspx) |
| * 1. If you can leverage the Cloud to extend DFS, you require storage in Virtual Machines |  | * [About Virtual Machine Disks in Azure](https://msdn.microsoft.com/en-us/library/azure/dn790303.aspx) |
| * 1. How much data would be replicate through DFS? | * 1 TB or less * 16 TB or less * 500 TB or less * More than 500 TB | * [AzCopy Command-Line Utility](http://azure.microsoft.com/en-us/documentation/articles/storage-use-azcopy/) |
| * 1. Do you have fails in your local branch server of DFS? | Yes/No | * [DFS Replication](http://blogs.technet.com/b/keithmayer/archive/2014/02/20/step-by-step-file-server-disaster-recovery-in-the-clouds-with-windows-azure-and-windows-server-2012-r2.aspx) |
| * 1. What kind of VPN Device Do you have? Hardware or Software? |  | * To extend the DFS to the cloud you need to create a VPN, you must consider the information below: * [Gateways](http://msdn.microsoft.com/en-us/library/azure/jj156075.aspx#bkmk_Gateways) * [VPN Devices](http://msdn.microsoft.com/en-us/library/azure/jj156075.aspx#bkmk_VPN_Devics) * [IPsec Parameters](http://msdn.microsoft.com/en-us/library/azure/jj156075.aspx#bkmk_IPsecParameters) |

# Questions for Backup and Recovery from Azure

## System Center Data Protection Manager (DPM) as an Azure virtual machine

|  |  |  |
| --- | --- | --- |
| Question | Answer | Read more & Considerations |
| 1. Do you have a Backup Strategy for critical workloads? | Yes/No | If there is not a backup strategy, the customer needs to identify the critical workloads, a plan for recovery and data storage.   * [Plan recovery settings for protection groups](http://technet.microsoft.com/en-us/library/hh758076.aspx) * [Data backup and protection overview](https://technet.microsoft.com/en-us/library/jj642923.aspx) * [DPM Support Matrix](http://technet.microsoft.com/en-us/library/jj860400.aspx) |
| 1. Can you migrate your critical workload to the Cloud? | Yes /No | * You can use System Center Data Protection Manager as a backup tool in an Azure VM. * [Install DPM as an Azure virtual machine](http://technet.microsoft.com/en-us/library/jj852163.aspx). |
| 1. What kind of workload will be protected? | Microsoft workload  Non- Microsoft workload (Not supported) | * DPM can protect workloads running as Azure virtual machines mentioned [here](https://technet.microsoft.com/en-us/library/jj852163.aspx) |
| 1. What are the plans for long and short term protection? |  | We recommend you [retain data for one day on DPM-attached Azure disk](http://technet.microsoft.com/en-us/library/jj852163.aspx), and store data older than one day in the Azure Backup service. This provides data storage for a longer retention range, and allows you to protect a larger amount of data by offloading it to Azure Backup.   * [Plan for long-term and short-term protection](http://technet.microsoft.com/en-us/library/hh758197.aspx) * [Long Term Retention for DPM Azure cloud backups](http://blogs.technet.com/b/dpm/archive/2014/08/27/introducing-long-term-retention-for-dpm-azure-cloud-backups.aspx) |
| 1. What is the format of the volumes to be protected? |  | * Protected volumes must be at least 1 GB in size with NTFS formatting. * Server operating systems protected by DPM must be 64-bit. * [Protected workloads](http://technet.microsoft.com/en-us/library/hh758176.aspx) |
| 1. How much disk do you have available to backup jobs? |  | * [Disk and Storage](http://technet.microsoft.com/en-us/library/hh758176.aspx) |
| 1. How many servers of System Center DPM or Windows Server do you have to register in Microsoft Azure Backup Service? |  | * [Limit on the number of backup vaults per Azure Subscription](https://azure.microsoft.com/en-us/documentation/articles/backup-azure-backup-faq/)   As of July 2015, you can create 25 vaults per subscription. If you need more vaults, then create a new subscription, you can register upto 50 machines per vault. |
| 1. What is the architecture of your Cloud workloads to be protected? Do they have the same network, are they in the same cloud service? |  | * DPM can protect workloads that run across multiple Azure cloud services that have the same Azure virtual network and Azure subscription. * DPM running as an Azure virtual machine can’t protect on-premises data. |
| 1. How many workloads do you need protected? |  | * There are [maximum number of protected workloads](http://technet.microsoft.com/en-us/library/jj852163.aspx) for each DPM virtual machine size in the table included [here](http://technet.microsoft.com/en-us/library/jj852163.aspx). |

## Storage (Blob Snapshot)

|  |  |  |
| --- | --- | --- |
| Question | Answer | Read more & Considerations |
| 1. Can you migrate your critical workloads to the Cloud? | Yes /No | * If you already have your workloads in Microsoft Azure, you can leverage the capabilities of the Azure storage to have a recovery option in case of failure. |
| 1. Do you have a strategy for Data Corruption or accidental deletion? | Yes/No | * IT Pros or Developers can take advantage of the blob [snapshot capability](http://msdn.microsoft.com/en-us/library/windowsazure/ee691971.aspx) |
| 1. What are the size of the blobs? |  | * [About Page and Block Blobs](http://msdn.microsoft.com/en-us/library/azure/ee691964.aspx) |

# Resources and Tools

## Resources

### Azure Technical Documentation Library

Looking for Microsoft’s technical documentation library for Windows Azure services? You’ve found the right place! You’ll find in-depth content that can help you get the most value from Windows Azure.

<http://msdn.microsoft.com/en-us/library/azure/dn578280.aspx>

### Patterns and Practices

* [Microsoft Azure Business Continuity Technical Guidance](https://msdn.microsoft.com/library/azure/hh873027.aspx)
* [Cloud Design Patterns](http://msdn.microsoft.com/en-us/library/dn568099.aspx)
* [Building an On-Demand Video Service with Microsoft Azure Media Services](http://msdn.microsoft.com/en-us/library/dn735912.aspx)
* [Moving Applications to the Cloud, Third Edition](http://msdn.microsoft.com/en-us/library/ff728592.aspx) on Microsoft Azure
* [Building Hybrid Applications in the Cloud](http://msdn.microsoft.com/en-us/library/hh871440.aspx) on Microsoft Azure

## Tools

### Azure Virtual Machine Readiness Assessment

The Virtual Machines Readiness Assessment tool will automatically inspect your on-premises environment, whether it is physical or virtualized, and provide you with a check list and detailed report on steps you need to take to move your environment to the cloud.

<http://azure.microsoft.com/en-us/downloads/vm-readiness-assessment/>

### Microsoft Azure Virtual Machine Optimization Assessment

The Microsoft Azure Virtual Machine Optimization Assessment tool will automatically inspect your Virtual Machines running in Microsoft Azure. Optimize your investment in Azure with the prioritized recommendations provided.

<http://www.microsoft.com/en-us/download/details.aspx?id=43377>

# Technical FAQ

## Azure Backup Frequently Asked Questions FAQ

<https://azure.microsoft.com/en-us/documentation/articles/backup-azure-backup-faq/>

<http://blogs.technet.com/b/dpm/archive/2014/09/12/faq-azure-iaas-workload-protection-using-data-protection-manager.aspx>

## Microsoft Azure IaaS workload protection using Data Protection Manager

<http://azure.microsoft.com/blog/2014/09/08/azure-iaas-workload-protection-using-data-protection-manager/>

## Distribute File System Replication FAQ

<http://technet.microsoft.com/library/cc773238.aspx>

## Distribute File System Namespaces FAQ

<http://technet.microsoft.com/library/ee404780.aspx>

Understanding How Snapshots Accrue Charges  
<http://msdn.microsoft.com/en-us/library/azure/hh768807.aspx>

## Azure Virtual Machines FAQ

<https://azure.microsoft.com/en-us/documentation/articles/virtual-machines-questions/>