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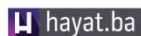
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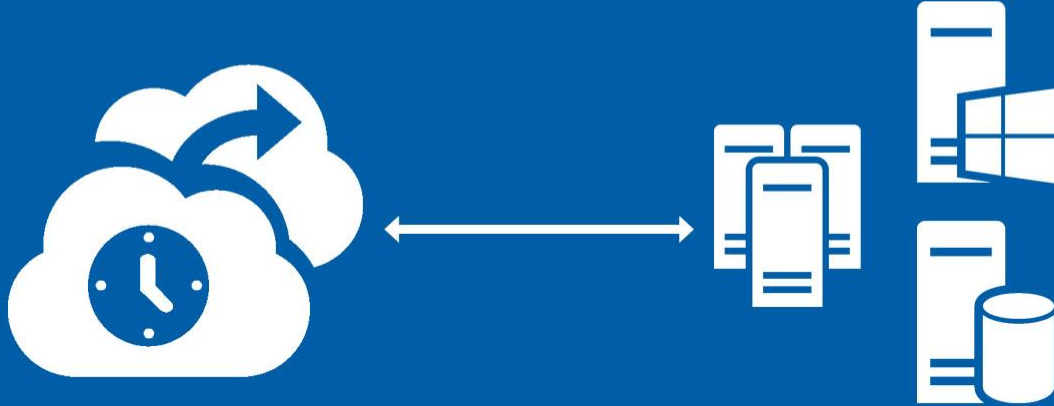
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Microsoft Azure Backup

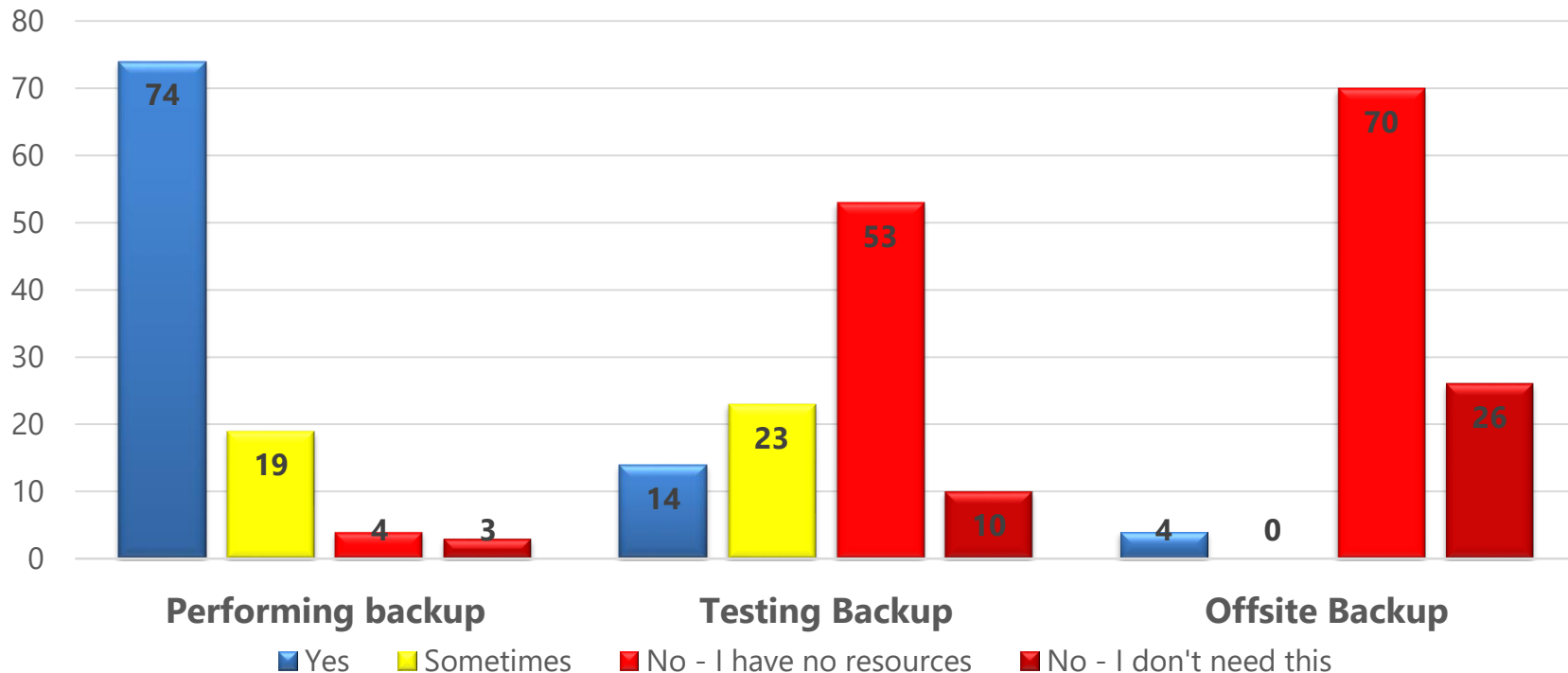
Full Stack Backup Solution

Who am I

- Vladimir Stefanović
- Lead System Engineer / CSA
@SuperAdmins
- 10+ years of experience
- MCT, MCSE, Azure Architect
- Author, speaker, trainer and Azure UG Leader
- @Wladinho31



Some (stupid) stats



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Azure Backup Features



- Microsoft implementation of cloud backup solution
- Azure Backup features
 - *There is no cost for using on-premises storage **
 - *There are no maintenance or monitoring. Azure Backup is PaaS **
 - *Multiple storage options are supported (LRS, GRS)*
 - *Azure Backup doesn't limit or charge for the amount of data you transfer, except if you use the Import/Export service to import large amounts of data*
 - *Data encryption securely transmit and store your data in the public cloud*
 - *Application-consistent backup guarantee you that a recovery point has all required data to restore the backup copy*
 - *Azure Backup has a limit of 9999 recovery points per protected instance*

Azure Backup Components (1)



- Azure Backup (MARS) agent
 - *Backup files, folders and System State on Windows OS*
 - *Max 3x per day*
 - *No Linux support, no application-aware support*
- System Center DPM
 - *Application-aware backup and granular restore*
 - *Back up and restore VMware VMs using DPM 2012 R2*
 - *Linux support on Hyper-V and VMware VMs*
 - *Cannot backup Oracle databases*

Azure Backup Components (2)



- Azure Backup Server (SC DPM with limited features)
 - *Application-aware backup and granular restore*
 - *Back up and restore VMware VMs*
 - *Linux support on Hyper-V and VMware VMs*
 - *Doesn't require a SC license, but requires live Azure subscription*
 - *No support for tape backup, no support for Oracle databases*
- Azure IaaS VM backup
 - *Application-aware backup*
 - *Native backups for Windows/Linux*
 - *No agent installation required, no backup infrastructure needed*

Backup Azure VMs



- What you need before start
 - *Azure virtual machines*
 - *Recovery services vault*
- What can be backed up
 - *Azure VMs, Windows and Linux*
 - *Azure SQL VM*
- What can be restored
 - *Complete virtual machine*
 - *Virtual machine disk(s)*
 - *Files from virtual machine*

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Backup Azure Files



- Support for Azure Files backup in ZRS storage accounts is currently limited
- There is no CLI available for protecting Azure Files using Azure Backup
- Azure Backup currently supports once-daily scheduled backups
- The maximum number of on-demand backups per day is four
- Resource locks on the storage account are not supported
- Deleting of snapshots created by Azure Backup will delete recovery points
- Deleting of file shares will delete all snapshots taken by Azure Backup

On-prem backup with MABS



- Azure backup can be used for on-premise backup
 - *Hyper-V environment*
 - *Vmware environment*
 - *Single physical or virtual machine using agent*
- For virtualized environments you need:
 - *Valid Azure subscription and Recovery Services vault*
 - *Domain environment*
 - *System Center DPM or Azure Backup Server (DPM with limited features)*
 - *Enough storage for backup on local disks (1.5x of data size)*

- Prerequisites
 - **Supported OS:** *Windows Server 2016 or Windows Server 2019*
 - **Processor:** *Minimum: 1 GHz, Recommended: 2.33 GHz*
 - **RAM:** *Minimum: 8GB, Recommended: 10GB*
 - **Hard Drive Space:** *Minimum 5GB, Recommended 10GB*
 - **Local disk for backup:** *1.5 times size of data to be protected*
 - **Hyper-V PowerShell** *need to be installed*
 - **MABS** *must be domain joined machine*



Preparing Azure Environment



Recovery Services vault □ ✕
Recovery Services vault

* Name
 ✓

* Subscription
 ▼

* Resource group
 ▼
[Create new](#)

* Location
 ▼

Where is your workload running?
 ▼

What do you want to backup?
 ▼

Step: Prepare Infrastructure

Install MABS v3



Prepare infrastructure

☐ Already using [System Center Data Protection Manager](#) or any other [System Center Product](#)

Azure Backup Server
Please follow the steps mentioned below.

1. Install Microsoft Azure Backup Server
[Download](#)

2. Download vault credentials to register the server to the vault. Vault credentials will expire after 2 days.
☐ Already downloaded or using the latest Azure Backup Server installation

Download

3. Post infrastructure preparation, please use Microsoft Azure Backup Server UI(on-premises) to configure backup.

[Learn More](#)

Microsoft

Microsoft Azure Backup Server

Data Protection Manager

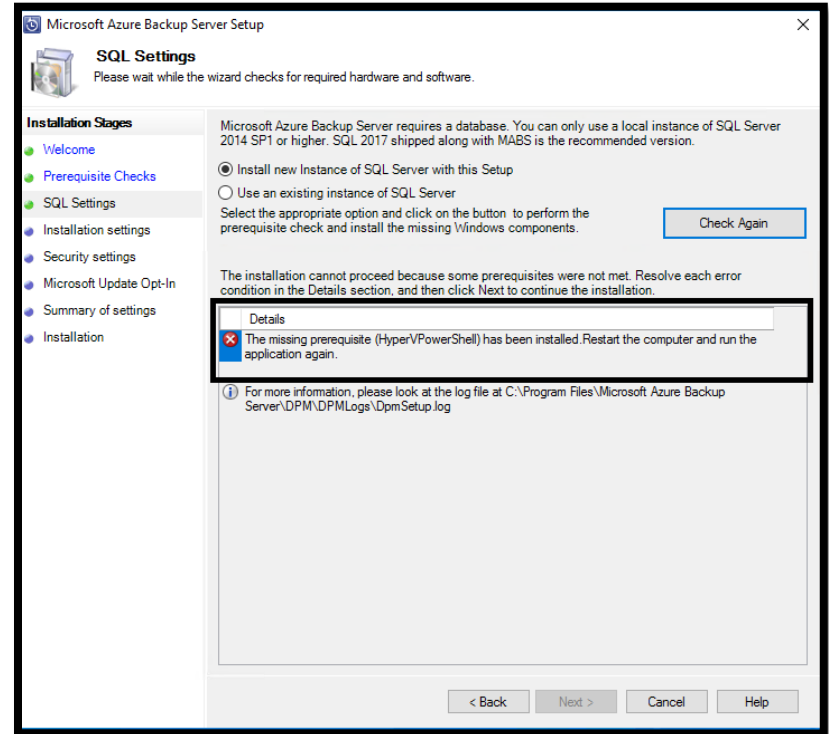
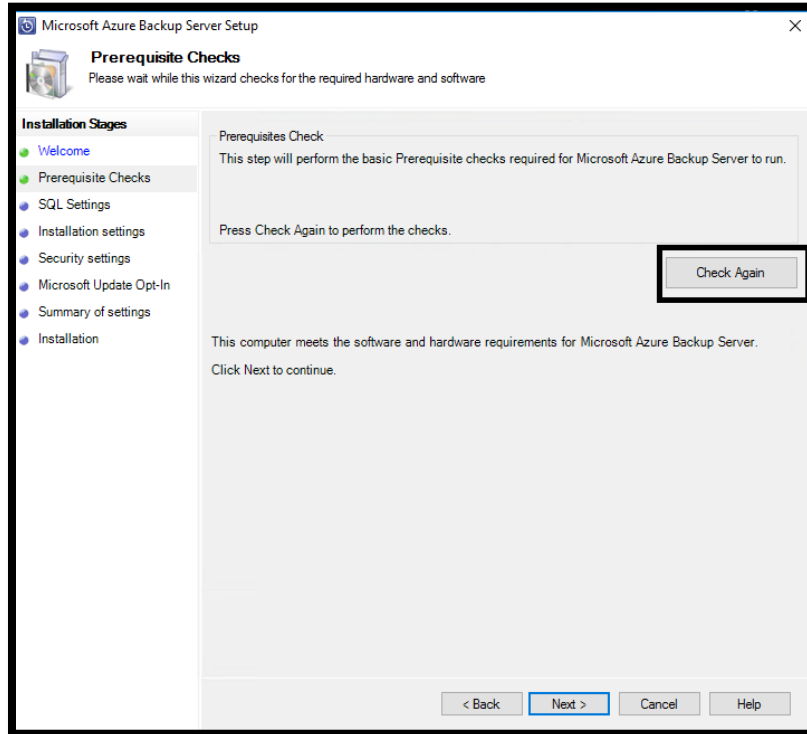
Install
[Microsoft Azure Backup Server](#)

[DPM Protection Agent](#)
[DPM Remote Administration](#)
[SQL Self Service Recovery](#)

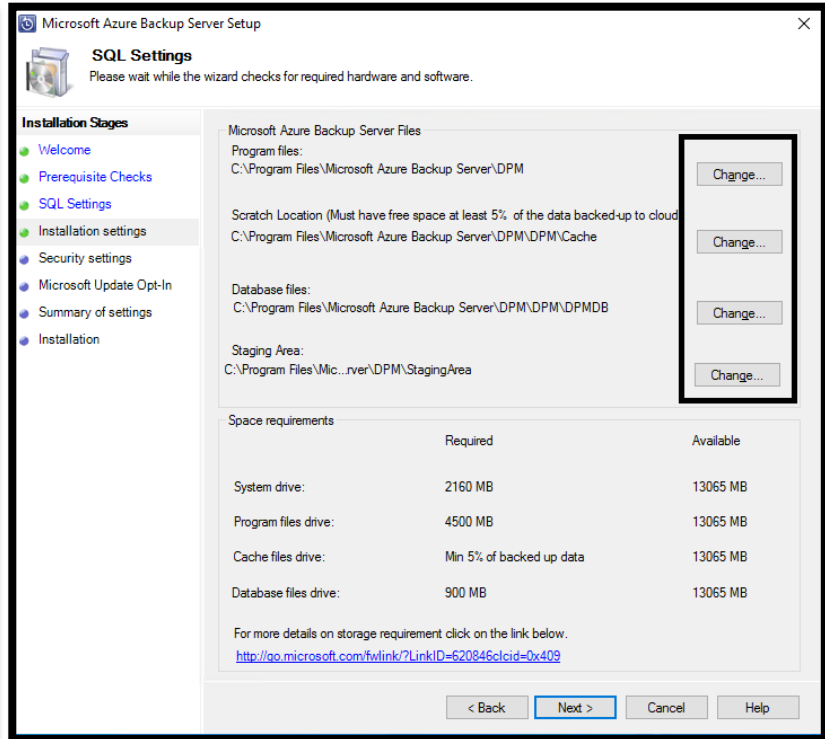
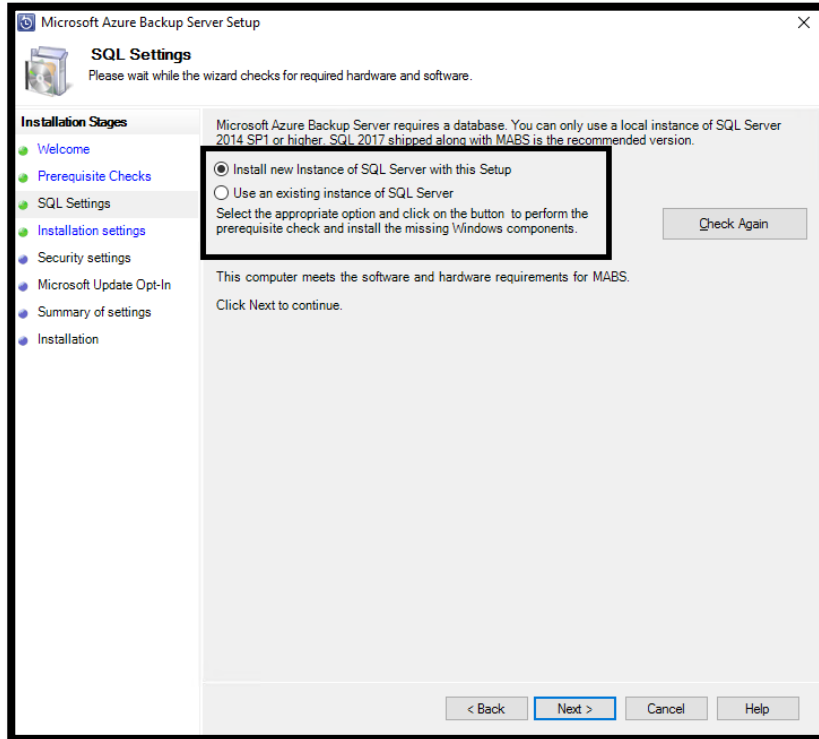
Additional Resources
[Microsoft Azure Backup Server Documentation](#)

[Exit](#)

Install MABS v3



Install MABS v3



Install MABS v3



Microsoft Azure Backup Server Setup

Security Settings

Enter security settings information.

Installation Stages

- Welcome
- Prerequisite Checks
- SQL Settings
- Installation settings
- Security settings**
- Microsoft Update Opt-In
- Summary of settings
- Installation

Microsoft Azure Backup Server Setup creates the following restricted local user accounts. Specify a strong password for the accounts. This password does not expire.

MICROSOFT\$DPM\$Acct	Runs the SQL Server service and the SQL Server Agent service.
DPMR\$ABS-01	Securely generates reports.

Password:

Confirm password:

< Back **Next >** Cancel Help

Microsoft Azure Backup Server Setup

Microsoft Update Opt-In

Installation Stages

- Welcome
- Prerequisite Checks
- SQL Settings
- Installation settings
- Security settings
- Microsoft Update Opt-In**
- Summary of settings
- Installation

SQL Server instance:	ABS-01\MSDPMINSTANCE
Reporting instance:	ABS-01\MSDPMINSTANCE
Program files location:	C:\DPM\Microsoft Azure Backup Server\DPM
Database location:	C:\DPM\DPMDB

< Back **Install** Cancel Help

Install MABS v3



Microsoft Azure Recovery Services Agent Setup Wizard

Proxy Configuration

Installation Stages

- Proxy Configuration
- Installation

Specify how you want to connect to the internet whenever the provider connects to site recovery portal.

☒ **You are connected to the internet though default proxy settings.**

☐ Use custom proxy settings.

Address

Port

☐ This proxy server requires authentication

User name

Password

< Back **Next >** Cancel

Microsoft Azure Recovery Services Agent Setup Wizard

Installation

Installation Stages

- Proxy Configuration
- Installation

Microsoft Azure Recovery Services Agent uses some optional Windows features that might not be installed on this server. The setup wizard is checking that the prerequisite software is installed.

Any missing software will be installed along with Microsoft Azure Recovery Services Agent.

Required software	Status
<input checked="" type="checkbox"/> Microsoft .NET Framework 4.5	Available
<input checked="" type="checkbox"/> Windows Powershell	Available

< Back **Install** Cancel

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Install MABS v3



Register Server Wizard

Vault Identification

Select the vault credentials downloaded from the quick start page in the Microsoft Azure Backup Vault.

Vault Credentials:

Backup Vault: AzureBackup

Region: northeurope

Subscription Identifier: 0b1d3e99-8eab-4d19-9d64-7245a98c21ea

< Previous Next > Finish Cancel

Register Server Wizard

Encryption Setting

Backups are encrypted to protect the confidentiality of your data.

Generate or type a passphrase to encrypt and decrypt backups from this server.

Enter Passphrase (minimum of 16 characters)
 (36)

Confirm Passphrase
 (36)

Enter a location to save the passphrase

If your passphrase is lost or forgotten, the data cannot be recovered. Microsoft Online Services does not save or manage this passphrase. It is strongly recommended you save your passphrase to an external location like a USB drive or network drive.

< Previous Next > Finish Cancel

Configure MABS v3



[Production Servers](#)

Protected: 0
Unprotected: 0
Upgrade available: 0

[Disk Storage](#)

Number of disks: 0
Number of volumes/folders: 0
Total capacity: 0 KB

[Online](#)

Registration status: Registered
Azure backup agent version: 2.0.9127.0
Used space: 0 KB
Subscription Id: 0b1d3e99-8d

Monitoring
Protection
Recovery
Reporting
Management

Add Disk Storage

Select volumes to add to storage pool.
DPM will format these volumes and use them to store backed up data.

Available volumes:

Volume	Capacity
D:\	31.99 GB
E:\	19.99 GB

Add >
< Remove

Selected volumes:

Volume	Friendly Name	Capacity
--------	---------------	----------

OK Cancel Help

Microsoft Azure Backup Server

DPM will format the volume before adding it to storage pool. Any data present on the volume will be deleted permanently. Do you want to continue?

ID: 33508

Yes No

[Production Servers](#)

Protected: 0
Unprotected: 0
Upgrade available: 0

[Disk Storage](#)

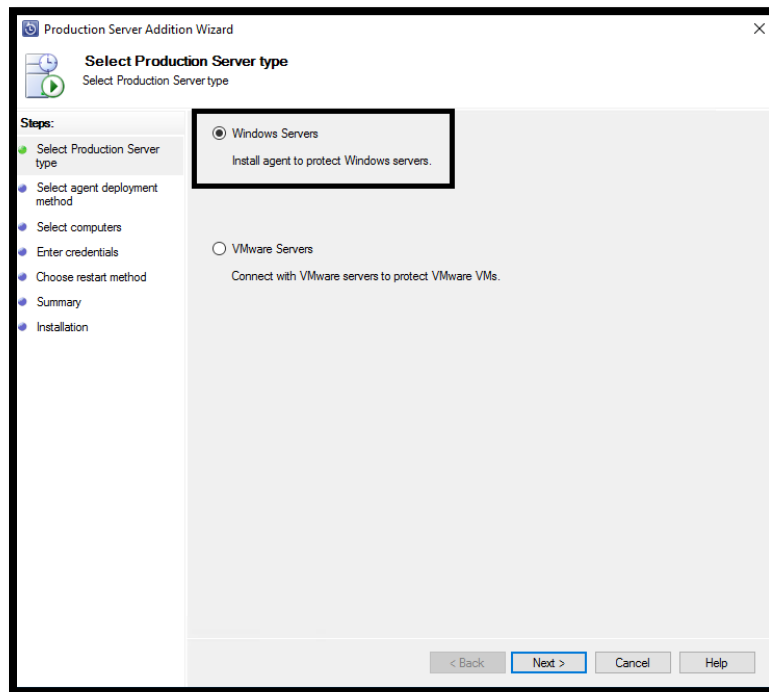
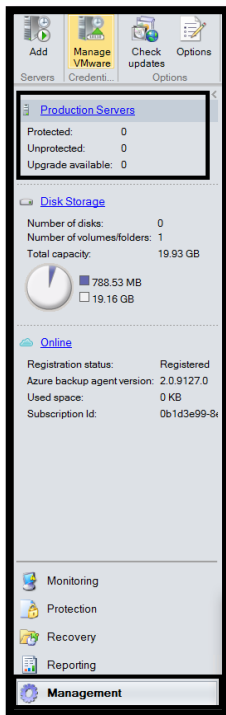
Number of disks: 0
Number of volumes/folders: 1
Total capacity: 19.93 GB

[Online](#)

Registration status: Registered
Azure backup agent version: 2.0.9127.0
Used space: 0 KB
Subscription Id: 0b1d3e99-8d

Monitoring
Protection
Recovery
Reporting
Management

Configure MABS v3



Configure MABS v3



Production Server Addition Wizard

Select Production Server type
Select Production Server type

Steps:

- Select Production Server type
- Select agent deployment method
- Select computers
- Enter credentials
- Choose restart method
- Summary
- Installation

☒ **Install agents**

Recommended for computers that are not behind firewalls, or computers that have the required exceptions created in the firewall. Selecting this option will install protection agent in the computers. Click help for more information.

☐ **Attach agents**

Recommended for

- computers behind firewall.
- computers on which agent is already installed.
- computers on which agent will be installed externally.

Selecting this option will add the protected computers to the DPM server. If you have not already installed the agent, then you must manually install it on the protected computer by executing the DPMAgentInstaller. Click help for more information.

☐ **Computer on trusted domain**
The computer belongs to the same domain as, or is in a domain that has a two-way trust with, the DPM server domain.

☐ **Computer in a workgroup or untrusted domain**
The computer is part of a workgroup or on a domain that does not have two-way trust with the DPM server domain.

< Back Next > Cancel Help

Production Server Addition Wizard

Select Computers
Select the computers on which to install the protection agents.

Steps:

- Select Production Server type
- Select agent deployment method
- Select computers
- Enter credentials
- Choose restart method
- Summary
- Installation

The computers listed are in the same domain as the DPM server. To add a computer from a different domain, type the fully qualified domain name. For example: machinename.domain.contoso.com

Computer name: HYPERV-01.tech-trainer.info

Computer	Domain
DC-01	tech-trainer.l...
EXCHANGE-01	tech-trainer.l...
HYPERV-01	tech-trainer.l...

Add > < Remove

Selected computers:

Computer	Domain
----------	--------

Click Advanced to install an earlier version of the protection agent. Advanced...

< Back Next > Cancel Help

Configure MABS v3



Production Server Addition Wizard

Enter Credentials

Enter the credentials for a domain account that has administrator rights on all selected computers.
DPM uses the credentials to install the protection agents.

Steps:

- Select Production Server type
- Select agent deployment method
- Select computers
- Enter credentials
- Choose restart method
- Summary
- Installation

Please specify username and domain for a domain account that has administrator rights on the computers on which you wish to install agents.

User name:
vladimir

Password:
••••••••

Domain:
tech-trainer.info

< Back Next > Cancel Help

Production Server Addition Wizard

Choose Restart Method

Steps:

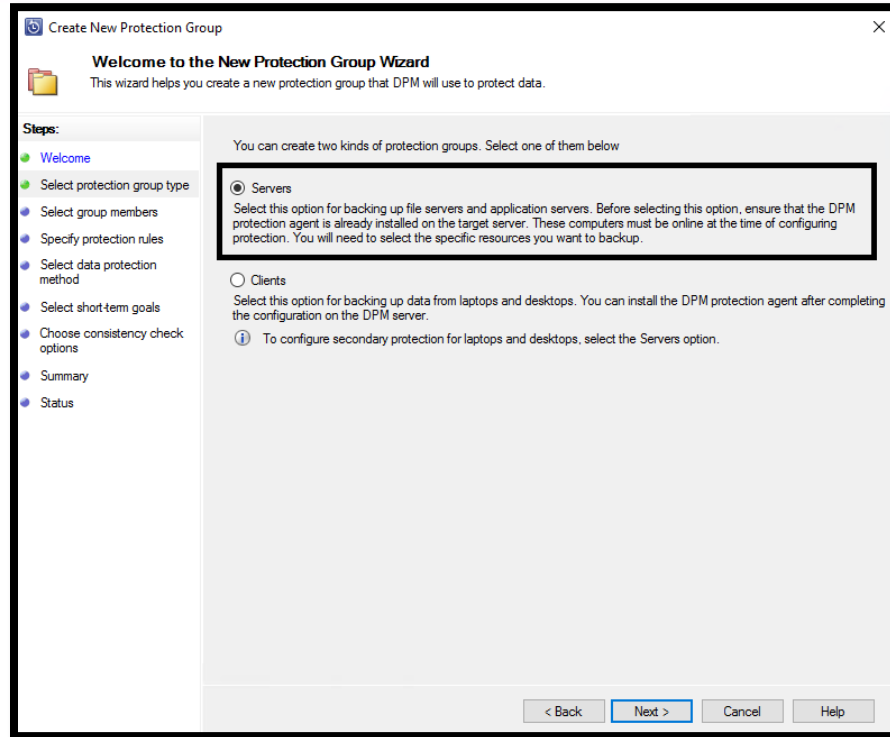
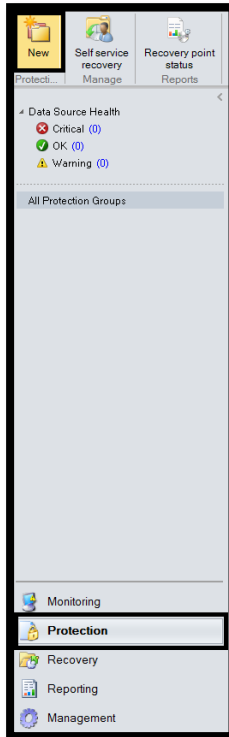
- Select Production Server type
- Select agent deployment method
- Select computers
- Enter credentials
- Choose restart method
- Summary
- Installation

Tasks

Task	Results
Install protection agent on HyperV-01.tech-trainer.info	Performing: 28%

Close

Configure Protection Group



Configure Protection Group



Create New Protection Group

Select Group Members.
Select the data that you want to protect.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Choose consistency check options
- Summary
- Status

To choose the data to protect, select the check boxes in the Available members section. To exclude a folder, expand the folder if you do not see the data source you want to protect in the tree below, click the following link for a list of unsupported [Unsupported configurations](#)

Available members

- tech-trainer.info
 - ABS-01
 - HYPERV-01
 - All Shares
 - All Volumes
 - HyperV
 - Host Component
 - RCT\centOS-1
 - RCT\centOS-2
 - System Protection

Selected members

Selected Members	Computer
Host Component	HyperV-01.tech-trainer...
RCT\centOS-1	HyperV-01.tech-trainer...
RCT\centOS-2	HyperV-01.tech-trainer...

Update data sources
Refresh to clear the cache and retrieve the latest data
Refresh

Remove

Excluded folders: 0 View
Excluded file types: 0 Exclude Files ...

< Back Next > Cancel Help

Create New Protection Group

Select Data Protection Method
DPM can help provide disk, online and tape based data protection.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Choose consistency check options
- Summary
- Status

Protection group name: Hyper-V Host

Protection method
Select your protection method.

☒ I want short-term protection using: Disk

☒ I want online protection

< Back Next > Cancel Help

Configure Protection Group



Create New Protection Group

Specify Short-Term Goals

DPM will create a protection plan using your short-term recovery goals.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

Specify your short-term recovery goals for disk-based protection.

Retention range:

3

days

Application recovery points

For applications the recovery point is as per synchronization frequency when they support incremental, otherwise the recovery point is as per express full backup.

Recovery points:

Based on express full schedule (18:00 Everyday)

Express Full Backup:

18:00 Everyday

Modify ...

< Back

Next >

Cancel

Help

Create New Protection Group

Review Disk Storage Allocation

Review disk space allocated in the storage pool for this protection group.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

Review target storage assigned for each data source and change if need be.

Disk storage allocation for new members

Total data size: 3.57 GB

Disk storage to be provisioned on DPM: 4.11 GB

Disk storage allocation details:

Data Source /	Data Size	Space To ...	Target Storage
Host Component on HyperV-01.tech-trainer...	0.01 GB	10.00 MB	BackupData - 15.05 GI
RCT\centOS-1 on HyperV-01.tech-trainer.in...	1.79 GB	2.05 GB	BackupData - 15.05 GI
RCT\centOS-2 on HyperV-01.tech-trainer.in...	1.79 GB	2.05 GB	BackupData - 15.05 GI

Available target disk storage:

Name /	Friendly N...	Allowed Dataso...	Total Spa...	Free Space	Underpro...
E:\	BackupData	All	19.93 GB	15.05 GB	0 KB

< Back

Next >

Cancel

Help

Configure Protection Group



Create New Protection Group

Choose Replica Creation Method

To protect the data you have selected, you must initially copy the selected data to the Data Protection Manager computer.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

DPM must create a replica to copy the selected data to the DPM server. How do you want to create the replica?

Replica in DPM Server

☒ Automatically over the network

☒ Now ☐ Later

15-May-19 08:17:47

☐ Manually

You must transfer the data using removable media.
For large amounts of data, this operation may be faster than replica creation across the network.

< Back Next > Cancel Help

Create New Protection Group

Choose Replica Creation Method

To protect the data you have selected, you must initially copy the selected data to the Data Protection Manager computer.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

Running a consistency check on a replica that has become inconsistent allows DPM to continue protecting the data source. You can start a consistency check manually or allow DPM to run it automatically. Use the methods below to customize how DPM can run a consistency check.

☒ Run a consistency check if a replica becomes inconsistent

Select this method if you want DPM to automatically run a consistency check when it finds a replica in an inconsistent state. This method may require DPM to use additional CPU and disk resources.

☐ Run a daily consistency check according to the following schedule

Select this method if you want DPM to check for inconsistent replicas at a specified time every day and then run a consistency check if it finds one. This method may require additional CPU and disk resources during the specified hours.

Start time: 00:00

Maximum duration: 480 hours

Cannot exceed 480 hours (20 days).

< Back Next > Cancel Help

Configure Protection Group



Create New Protection Group

Specify Online Protection Data

Specify the data that you would like DPM to help protect online.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

Select the data source you want to protect online.

☐ Protect auto protected SQL DBs, VMs to disk to cloud automatically

Selected members	Computer
<input checked="" type="checkbox"/> Host Component	HyperV-01.tech-trainer.info
<input checked="" type="checkbox"/> RCT\centOS-1	HyperV-01.tech-trainer.info
<input checked="" type="checkbox"/> RCT\centOS-2	HyperV-01.tech-trainer.info

Select All Deselect All

< Back Next > Cancel Help

Create New Protection Group

Specify Online Protection Data

Specify the data that you would like DPM to help protect online.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

Define the schedule when you want to create a backup copy

Schedule a backup every

☒ Day ☐ Week ☐ Month ☐ Year

At following times (Maximum allowed is two times a day)

21:00 None

DPM will create an online recovery point using the latest DPM replica on disk. No new data will be transferred from the protected computers. If you would like DPM to help protect the latest computer data online, please create a new recovery point on disk before creating an online recovery point.

< Back Next > Cancel Help

Configure Protection Group



Create New Protection Group

Specify Online Protection Data
Specify the data that you would like DPM to help protect online.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data**
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

Specify the retention policy which DPM will use to generate your protection plan

☒ Daily Retention policy
Retain backup copies taken on _____ At 21:00 for 180 Days

☒ Weekly Retention Policy
Retain backup copies taken on Saturday At 21:00 for 104 Weeks

☒ Monthly Retention Policy
Retain backup copies taken on Last Saturday At 21:00 for 60 Months

☐ Day(s) 1

☒ Yearly Retention Policy
Retain backup copies taken on Last Saturday of March At 21:00 for 10 Years

☐ Day(s) 1 of March

< Back Next > Cancel Help

Create New Protection Group

Specify Online Protection Data
Specify the data that you would like DPM to help protect online.

Steps:

- Welcome
- Select protection group type**
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

DPM must create initial backup copy to the Azure Backup storage. How do you want to create the initial backup?

☒ Automatically over the network

☐ Offline Backup

To create an offline backup, please read the instructions for the Import Workflow here

Staging Location
Enter local folder or network share to which the initial backup copy needs to be staged
Browse

Azure Publish Settings
Select Azure Publish Settings file for the Azure account where the initial backup copy would be shipped
Browse

Azure Import Job Name
Define a name for the Azure Import Job which would be used as a reference to ship the initial copy of disk

Azure Subscription ID
Enter Azure Subscription ID associated with the Azure Import Job mentioned above

Azure Storage Account
Enter Azure Storage Account associated with the Azure Import Job mentioned above

Azure Storage Container
Enter destination blob storage container to which the files will be imported

< Back Next > Cancel Help

Configure Protection Group



Create New Protection Group

Summary

DPM is ready to create the Hyper-V Host protection group.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

Review the settings, and then click Create Group to create the Hyper-V Host protection group.

Protection group members:

Host Component
RCT\centOS-1
RCT\centOS-2

Protection group settings:

Setting	Details
Short-term retention range	3 Day(s)
Recovery points (applications)	18:00 Everyday
Replica creation	Now
Online backup members	3 of 3
Online backup frequency	Daily
Online backup schedule	21:00 Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Sa...
Online retention range	180 day(s) 21:00 Sunday, Monday, Tuesday, Wednesday, Thursday...

i You can [optimize performance](#) of this protection group now or you can do it later from the actions pane.

! Important: Installation of hardware snapshot providers on each node of the protected CSV (Cluster Shared Volume) cluster is recommended for optimal performance. Click [here](#) for details.

! Item level recovery is supported for disk protection based recovery points only. For these, item level recovery will work only if the base VHD and differencing VHDs are on the same volume.

< Back Create Group Cancel Help

Create New Protection Group

Status

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Select short-term goals
- Review disk storage allocation
- Choose replica creation method
- Choose consistency check options
- Specify online protection data
- Specify online backup schedule
- Specify online retention policy
- Choose online replication
- Summary
- Status

Tasks

Task	Results
Create protection group: Hyper-V Host	Success
Allocate replica for Host Component	Success
Allocate replica for RCT\centOS-1	Success
Allocate replica for RCT\centOS-2	Success
Update online backup policy for Host Component	Success
Update online backup policy for RCT\centOS-1	Success
Update online backup policy for RCT\centOS-2	Success

i DPM does not protect reparse points found in file systems, except for deduplication reparse points, which are protected. If you have selected volumes or folders in this protection group, all data is protected except for the unprotected reparse points. Read [this link](#) page of DPM 2016 Help for more details on unsupported data.

Close

HVALA NA PAŽNJI! //GR8!

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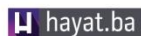
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