

INTEGRATION BRIEF

# Backup in a Virtual Environment

## Using Veeam Backup & Replication and RDX QuikStor

December 8, 2020

**Virtualisation enables your computers to run multiple operating systems and applications, maximizing performance and efficiency of IT systems whilst reducing costs. Within a virtualised environment data is stored across multiple physical devices. The increased utilisation and complexity increase the risk of data loss. It is therefore imperative that businesses install robust data protection solutions.**

## Overland-Tandberg RDX QuikStor

The RDX QuikStor removable disk storage system offers rugged, reliable and convenient storage for backup, archive, data interchange and disaster recovery. RDX is endorsed by all major OEMs, provides high performance up to 430GB/hr\* and capacities up to 5TB per cartridge.

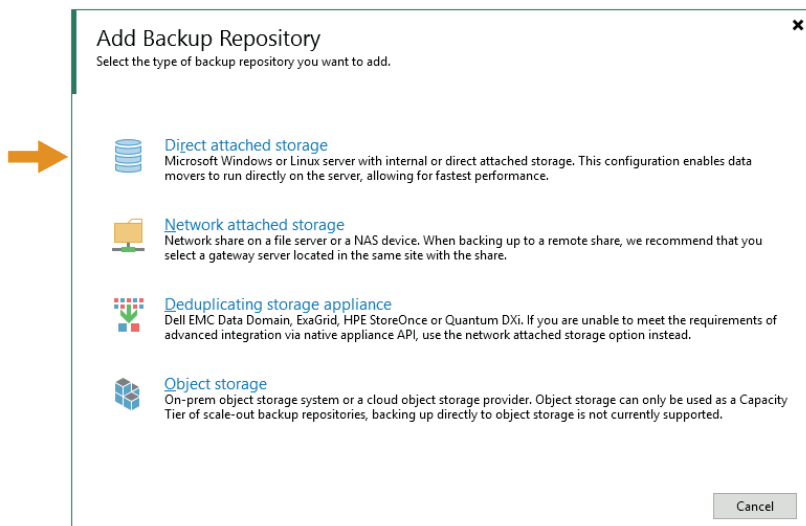
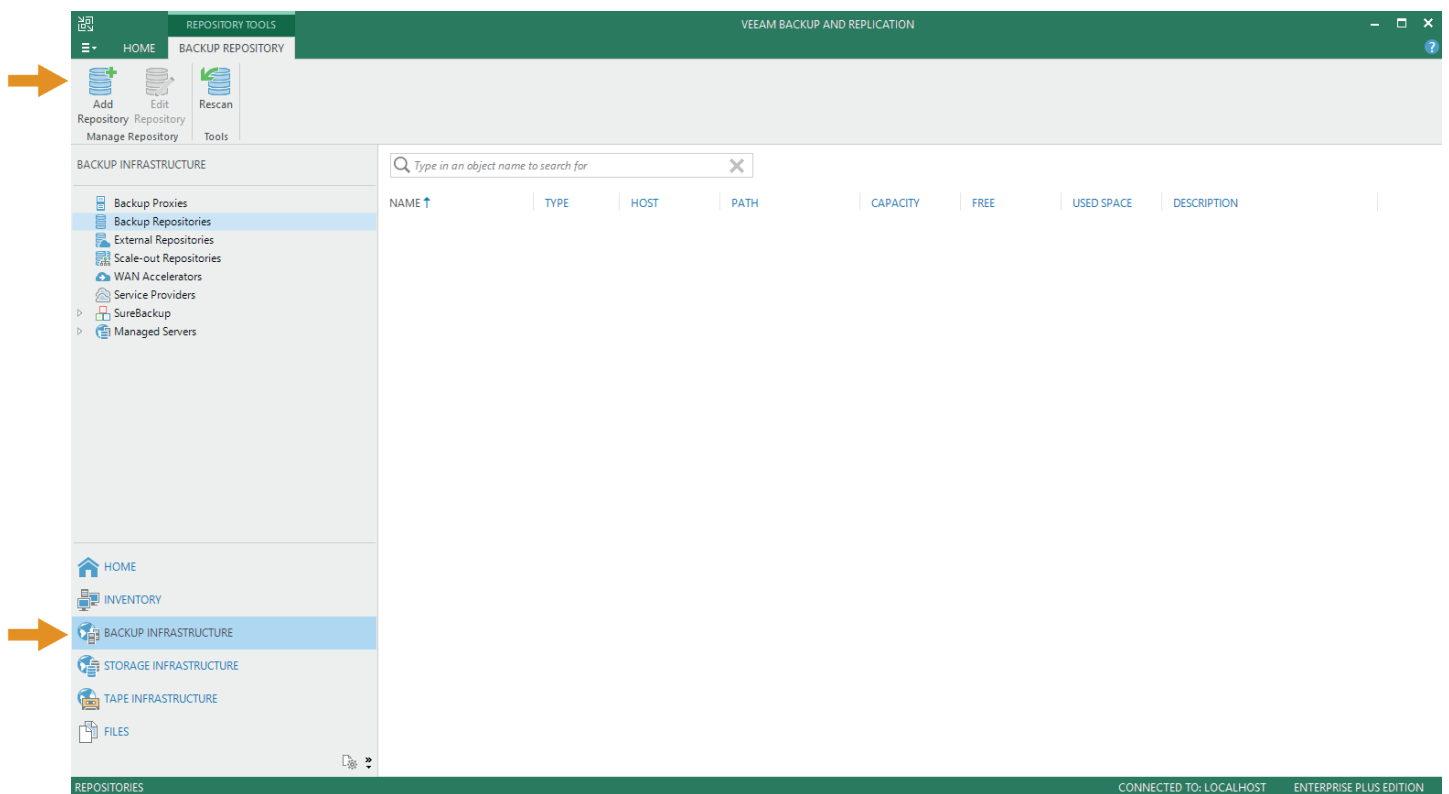
\* depending in media and interface type

## Veeam Backup & Replication

Veeam Backup & Replication is the industry leading data protection software for virtualised environments. Powered by Veeam vPower-Technology, Veeam Backup & Replication offers high performance, scalable and reliable data protection for VMware vSphere® and Microsoft® Hyper-V environments.

## Create a Backup Repository for RDX

Before RDX can be used as a backup target, a backup repository needs to be defined.



Go to Veeam Backup & Replication home screen:

Select **BACKUP INFRASTRUCTURE**

Select **Backup Repositories**

From the top menu:

Select **Add Repository**.

The Add Repository wizard starts up.

Select **Direct attached storage**.

### Direct Attached Storage

Select the operating system type of a server you want to use as a backup repository.

**Microsoft Windows**  
Adds local server storage presented as a regular volume or Storage Spaces. For better performance and storage efficiency, we recommend using ReFS.

**Linux**  
Adds local server storage, or locally mounted NFS share. The Linux server must use bash shell, and have SSH and Perl installed.

Select **Microsoft Windows** as the RDX QuikStor is directly attached to the server.

### New Backup Repository

**Name**  
Type in a name and description for this backup repository.

**Name:** RDX QuikStor

**Description:** Created by DEMO-VEEAM\Administrator at 12/3/2020 12:15 PM.

< Previous   **Next >**   Finish   Cancel

Assign a name for the backup repository.

Click **Next**.

### New Backup Repository

**Server**  
Choose repository server. You can select server from the list of managed servers added to the console.

**Repository server:** DEMO-Veeam (Backup server)   Add New...

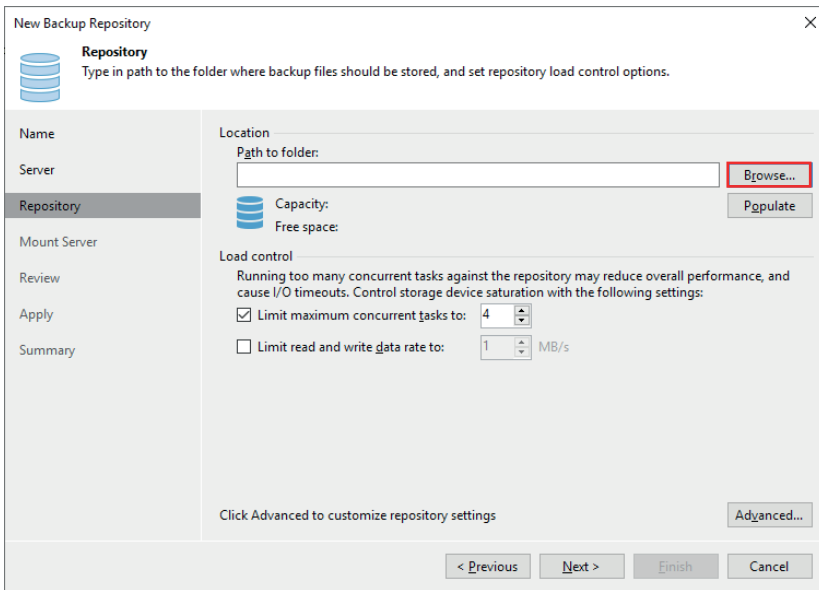
Path	Capacity	Free

Populate

< Previous   **Next >**   Finish   Cancel

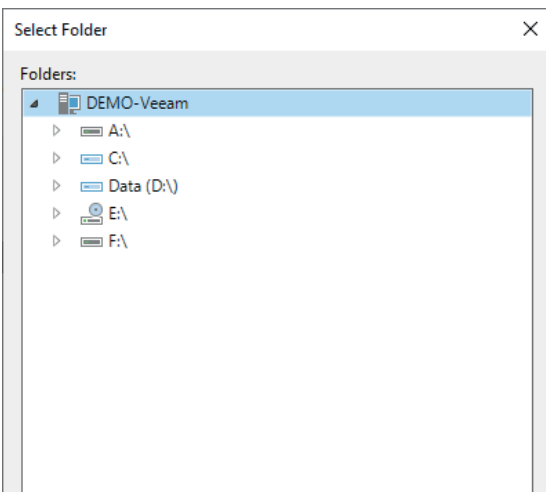
Select the repository server.

Click **Next**.



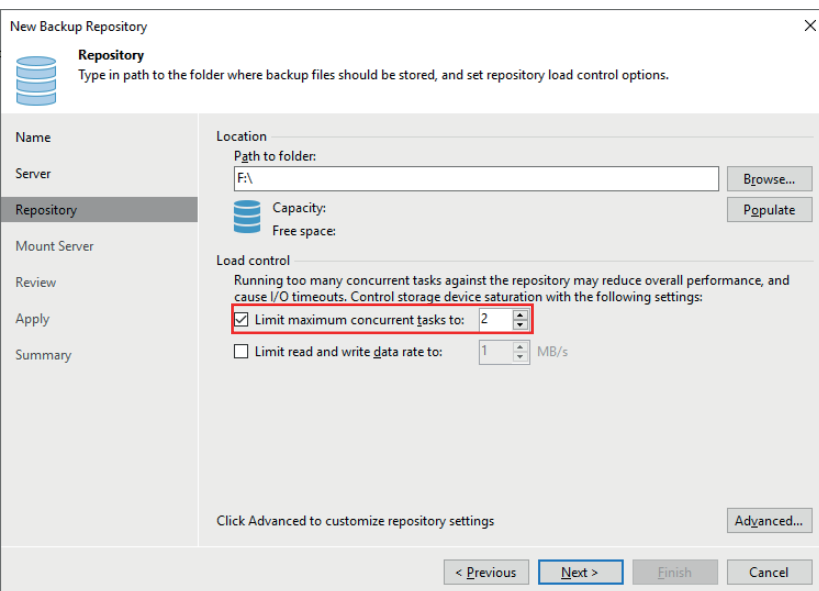
Now choose the backup repository. Click **Browse** and select the Server (**Demo-Veeam** in our case) by double-clicking.

All available drives will be displayed.



Choose the RDX drive (**F:\** in our case).

Click **OK**.



Limit the maximum concurrent tasks to 2.

Click **Advanced**.

Storage Compatibility Settings

**Align backup file data blocks**  
Allows to achieve better deduplication ratio on deduplicating storage devices leveraging constant block size deduplication. Increases the backup size when backing up to raw disk storage.

**Decompress backup data blocks before storing**  
VM data is compressed by backup proxy according to the backup job compression settings to minimize LAN traffic. Uncompressing the data before storing allows for achieving better deduplication ratio on most deduplicating storage appliances at the cost of backup performance.

**This repository is backed by rotated hard drives**  
Backup jobs pointing to this repository will tolerate the disappearance of previous backup files by creating new full backup, clean up backup files no longer under retention on the newly inserted hard drives, and track backup repository location across unintended drive letter changes.

**Use per-VM backup files**  
Per-VM backup files may improve performance with storage devices benefiting from multiple I/O streams. This is the recommended setting when backing up to deduplicating storage appliances.

OK Cancel

To be protected the against all types of disasters, businesses need to store copies of backed up data offsite. Therefore, media rotation with 3 different media is recommended.

Select **This repository is backed by rotated hard drives**.

Click **OK**.

Click **Next**.

New Backup Repository

**Mount Server**  
Specify a server to mount backups to when performing advanced restores (file, application item and instant VM recoveries). Instant recoveries require a write cache folder to store changed disk blocks in.

Name: Mount server:  
Server: DEMO-Veeam (Backup server) Add New...  
Repository: Instant recovery write cache folder:  
Mount Server: D:\VeeamCache\IRCACHE Browse...  
Review:  Enable vPower NFS service on the mount server (recommended) Ports...  
Apply: Ensure that the selected volume has sufficient free disk space to store changed disk blocks of instantly recovered VMs. We recommend placing write cache on an SSD drive.  
Summary: Unlocks instant recovery of any backup (physical, virtual or cloud) to a VMware vSphere VM. vPower NFS service is not used for instant recovery to a Microsoft Hyper-V VM.

< Previous Next > Finish Cancel

Mount a server for file-level restores (usually the same as the backup server).

Click **Next**.

New Backup Repository

**Review**  
Please review the settings, and click Apply to continue.

Name: Review  
Server: The following components will be processed on server DEMO-Veeam:  
Repository: 

Component name	Status
Transport	already exists
vPower NFS	already exists
Mount Server	already exists

  
Mount Server:  Search the repository for existing backups and import them automatically  
Review:  Import guest file system index data to the catalog  
Apply:   
Summary:

< Previous Apply > Finish Cancel

Review your settings, then click **Apply**.

**New Backup Repository**

**Apply**  
Please wait while backup repository is created and saved in configuration, this may take a few minutes.

Name	Message	Duration
Server	Starting infrastructure item update process	0:00:02
Repository	Discovering installed packages	
Mount Server	Package VeeamDeploymentSvc.exe has been uploaded	
	Package VeeamDeploymentDll.dll has been uploaded	0:00:02
Review	Registering client DEMO-VEEAM for package Transport	
	Registering client DEMO-VEEAM for package vPower NFS	
	Registering client DEMO-VEEAM for package Mount Server	
Apply	Discovering installed packages	
	All required packages have been successfully installed	
Summary	Detecting server configuration	
	Reconfiguring vPower NFS service	
	Creating configuration database records for installed packages	
	Collecting backup repository info	
	Creating database records for repository	
	Backup repository has been added successfully	

< Previous   **Next >**   Finish   Cancel

Your backup repository will be created.

Click **Next**.

**New Backup Repository**

**Summary**  
You can copy the configuration information below for future reference.

Summary:  
Windows backup repository 'RDX QuikStor' was successfully created.

Mount host: DEMO-Veeam  
Backup folder: F:\  
Write throughput: unlimited  
Max parallel tasks: 2

< Previous   Next >   **Finish**   Cancel

A summary will be displayed.

Click **Finish** to exit this task.

VEEAM BACKUP AND REPLICATION

REPOSITORY TOOLS   HOME   BACKUP REPOSITORY

Add   Edit   Rescan  
Repository   Repository   Tools  
Manage Repository

BACKUP INFRASTRUCTURE

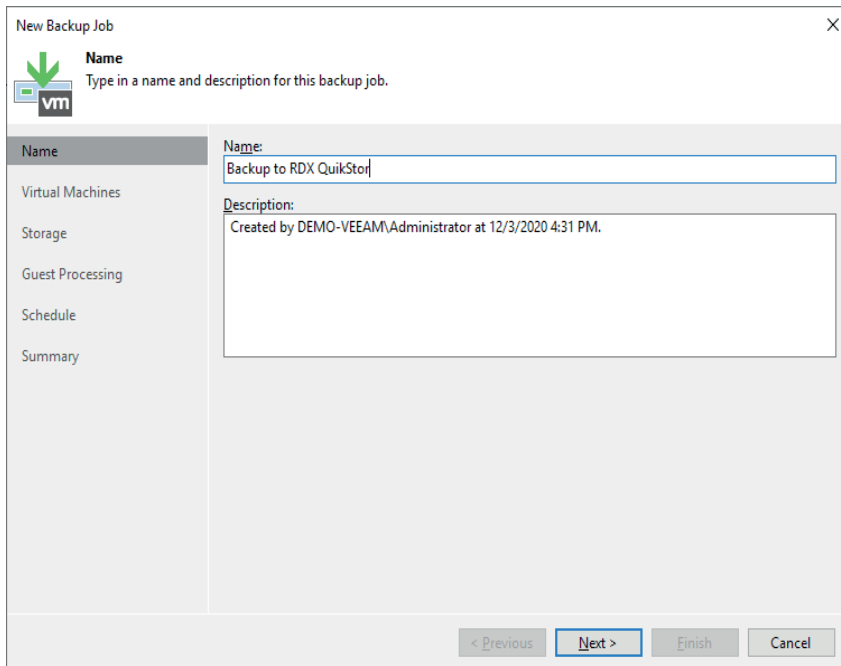
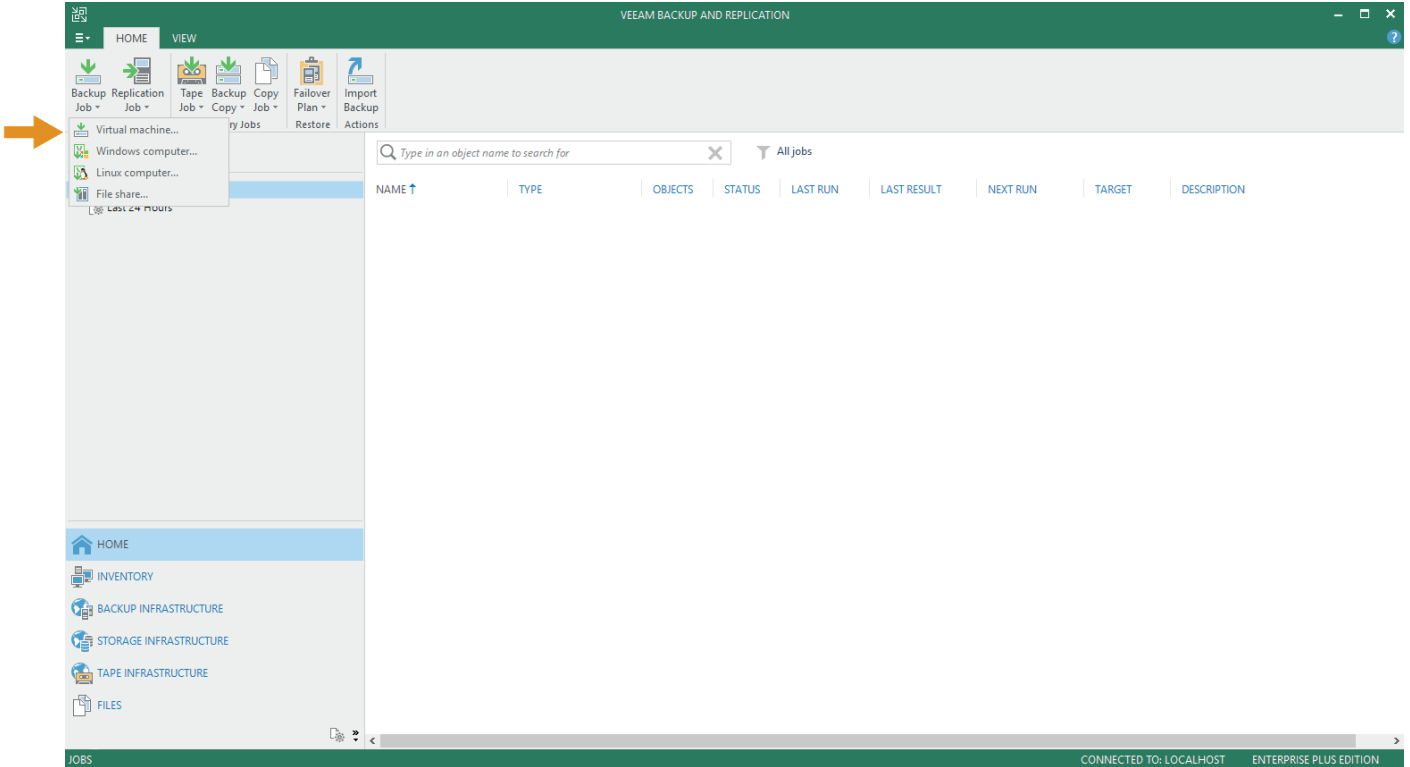
Backup Proxies  
Backup Repositories  
External Repositories  
Scale-out Repositories  
WAN Accelerators  
Service Providers  
SureBackup  
Managed Servers

Search: Type in an object name to search for

NAME ↑	TYPE	HOST	PATH	CAPACITY	FREE	USED SPACE	I
RDX QuikStor	Windows	DEMO-Veeam	F:\	931.5 GB	931.4 GB	0 B	

## Create a Backup Job

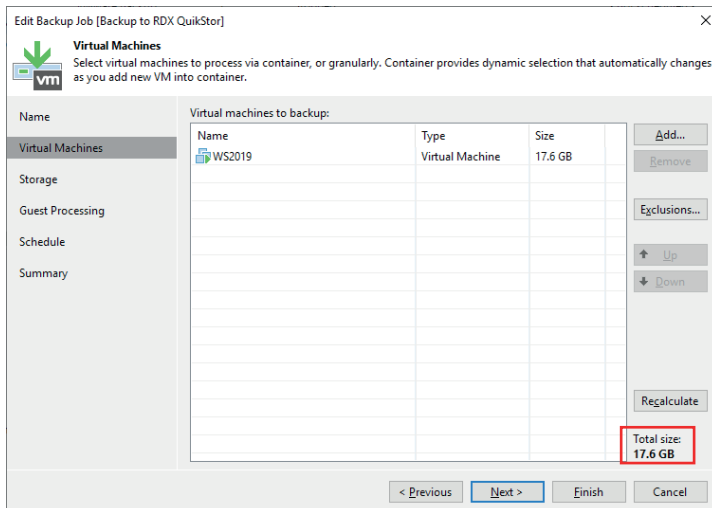
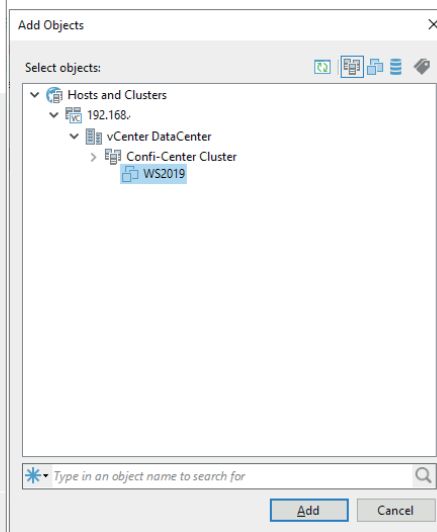
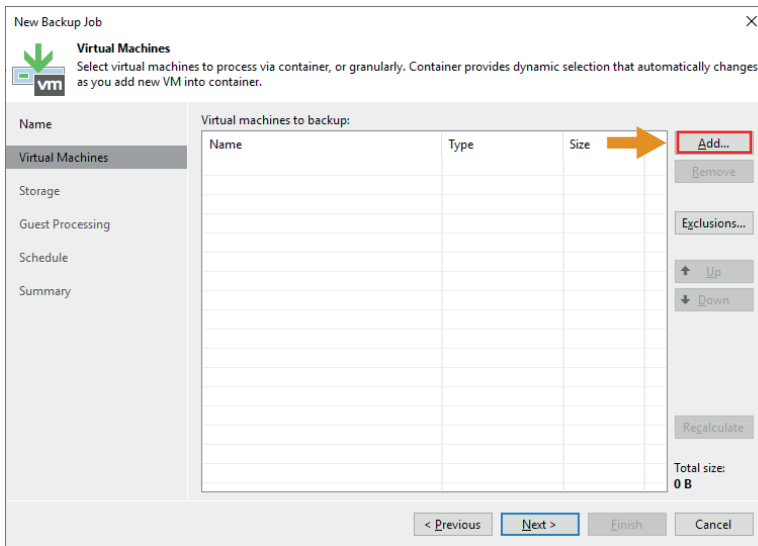
Now we are ready to create a backup job.



From your home screen:  
Select **Backup Job**, then select **Virtual Machine**.

The New Backup Job wizard starts, create a name for your new job.

Click **Next**.

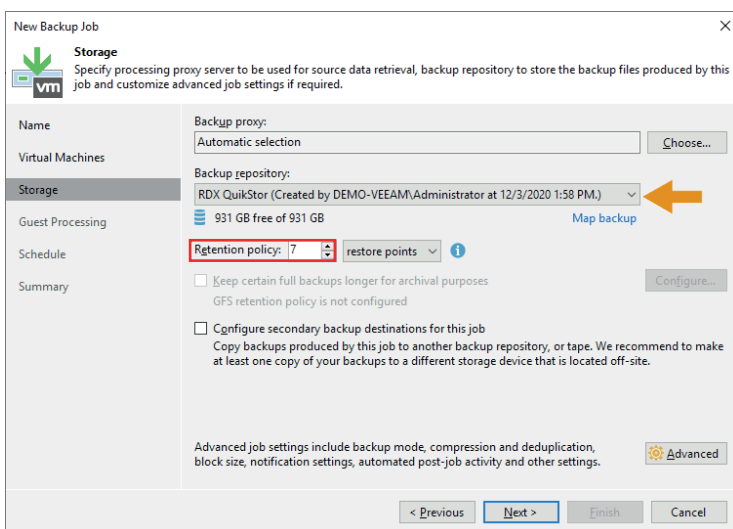


Click **Add** to open the virtual machine selection menu.

Select the desired machines and click **Add**.

The selected machines are displayed, and the total backup size is calculated.

Click **Next**.



Select the backup repository we just created as the backup target.

Specify the number of recovery points depending on your backup strategy.

You might choose some advanced options by clicking **Advanced**.

Click **Next**.



**New Backup Job**

**Guest Processing**  
Choose guest OS processing options available for running VMs.

**Enable application-aware processing**  
Detects and prepares applications for consistent backup, performs transaction logs processing, and configures the OS to perform required application restore steps upon first boot.  
Customize application handling options for individual machines and applications [Applications...](#)

**Enable guest file system indexing**  
Creates catalog of guest files to enable browsing, searching and 1-click restores of individual files. Indexing is optional, and is not required to perform instant file level recoveries.  
Customize advanced guest file system indexing options for individual machines [Indexing...](#)

Guest interaction proxy:  
Automatic selection [Choose...](#)

Guest OS credentials:  
[Add...](#) [Manage accounts](#)

Customize guest OS credentials for individual machines and operating systems [Credentials...](#)

Verify network connectivity and credentials for each machine included in the job [Test Now](#)

< [Previous](#) [Next >](#) [Finish](#) [Cancel](#)

In case of database or exchange backups, choose guest processing options. Otherwise skip this menu.

Click **Next**.

**New Backup Job**

**Schedule**  
Specify the job scheduling options. If you do not set the schedule, the job will need to be controlled manually.

**Run the job automatically**

**Daily at this time:** 12:00 PM [Days...](#) **Everyday** [Days...](#)

**Monthly at this time:** 10:00 PM [Months...](#) **Fourth** [Months...](#) **Saturday** [Months...](#)

**Periodically every:** 1 [Schedule...](#) **Hours** [Schedule...](#)

**After this job:** Backup Job 1 (Created by DEMO-VEEAM\Administrator at 7/8/2020 1)

**Automatic retry**

**Retry failed items processing:** 3 [times](#)  
Wait before each retry attempt for: 10 [minutes](#)

**Backup window**

**Terminate job if it exceeds allowed backup window** [Window...](#)  
If the job does not complete within allocated backup window, it will be terminated to prevent snapshot commit during production hours.

< [Previous](#) [Apply](#) [Finish](#) [Cancel](#)

Setup the backup schedule according to your requirements.

Click **Apply**.

**Edit Backup Job [Backup to RDX QuikStor]**

**Summary**  
The job's settings have been saved successfully. Click Finish to exit the wizard.

**Summary:**  
Name: Backup to RDX QuikStor  
Target Path: F:\  
Type: VMware Backup  
Source items: WS2019

Command line to start the job on backup server:  
"C:\Program Files\Veeam\Backup and Replication\Backup\Veeam.Backup.Manager.exe" backup 542d69be-48a6-43d1-b594-05a7d83969d7

**Run the job when I click Finish**

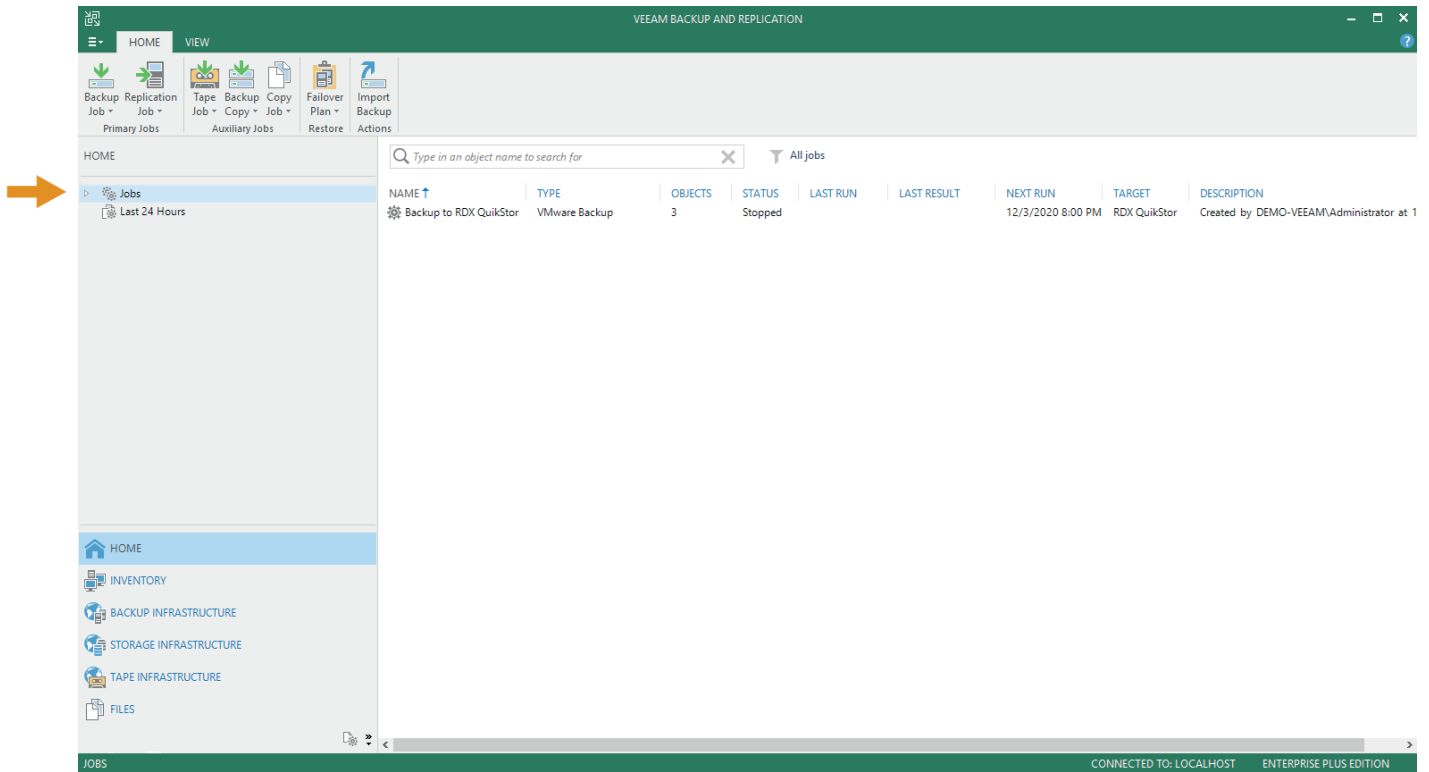
< [Previous](#) [Next >](#) [Finish](#) [Cancel](#)

The backup job is created, and your backup settings are displayed

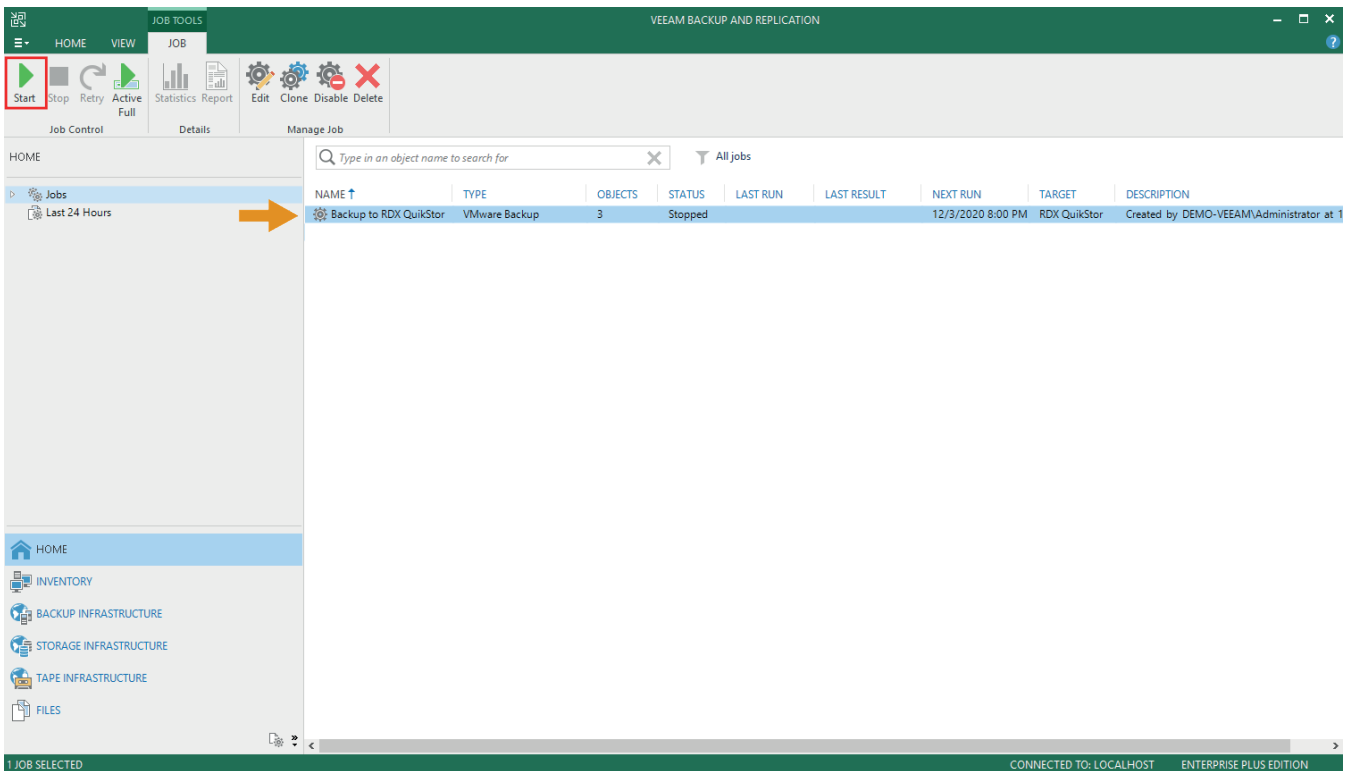
Click **Finish**.

## Run your Backup Job

The backup job has been created successfully and will run as per the specified schedule.



You can start the backup job at any time by selecting the job and clicking "Start (the green triangle)."



The backup job has started. Informations about status and progress are displayed.

The screenshot shows the Veeam Backup and Replication console with a backup job titled "Backup to RDX QuikStor" in progress. The job is 3% completed and has been running for 4 minutes. The console displays various metrics and a detailed action log.

NAME	TYPE	OBJECTS	STATUS	LAST RUN	LAST RESULT	NEXT RUN	TARGET	DESCRIPTION
Backup to RDX QuikStor	VMware Backup	1	3% completed a...	4 minutes ago		12/4/2020 8:00 PM	RDX QuikStor	Created by DEMO-VEEAM\Administrator at 12/3/2...

**Job progress:** 3% (0 of 1 VMs)

SUMMARY		DATA		STATUS		THROUGHPUT (LAST 5 MIN)	
Duration:	04:13	Processed:	5 GB (3%)	Success:	0		
Processing rate:	68 MB/s	Read:	5 GB	Warnings:	0		
Bottleneck:	Network	Transferred:	3 GB (1.7%)	Errors:	0		

NAME	STATUS	ACTION	DURATION
WS2019	3%	<ul style="list-style-type: none"> <li>Job started at 12/4/2020 12:06:40 PM</li> <li>Building list of machines to process</li> <li>WS2016 - Demo Server is no longer processed by this job. Make sure this change is intentional</li> <li>VM size: 140 GB (17.7 GB used)</li> <li>Changed block tracking is enabled</li> </ul>	00:02

The backup job has finished successfully.

The screenshot shows the Veeam Backup and Replication console with the same backup job "Backup to RDX QuikStor" now completed successfully. The job is 100% processed and has been running for 08:49. The console displays updated metrics and a detailed action log.

NAME	TYPE	OBJECTS	STATUS	LAST RUN	LAST RESULT	NEXT RUN	TARGET	DESCRIPTION
Backup to RDX QuikStor	VMware Backup	1	Stopped	10 minutes ago	Success	12/4/2020 8:00 PM	RDX QuikStor	Created by DEMO-VEEAM\Administrator at 12/3/2...

**Job progress:** 100% (0 of 1 VMs)

SUMMARY		DATA		STATUS		THROUGHPUT (ALL TIME)	
Duration:	08:49	Processed:	25.5 GB (100%)	Success:	1		
Processing rate:	80 MB/s	Read:	14.6 GB	Warnings:	0		
Bottleneck:	Network	Transferred:	9.1 GB (1.6%)	Errors:	0		

NAME	STATUS	ACTION	DURATION
WS2019	Success	<ul style="list-style-type: none"> <li>Job started at 12/4/2020 3:46:02 PM</li> <li>Building list of machines to process</li> <li>W10 64 - Sandkasten is no longer processed by this job. Make sure this change is intentional</li> <li>VM size: 140 GB (17.7 GB used)</li> <li>Changed block tracking is disabled</li> <li>Processing WS2019</li> <li>All VMs have been queued for processing</li> </ul>	00:02
		Load: Source 30% \ Drive 30% \ Network 0% \ Target 0%	08:00
			00:00

## Recommendations

The RDX QuikStor drives are recognized by Veeam as Removable Disk Devices which enables selection of a retention policy that specifies the number of restore points Veeam will retain on the RDX media (see page 6). Veeam will indicate the total number of restore points that are available on the existing media. When a new (blank) RDX media is inserted to do media rotation, Veeam Backup & Replication will perform a new full backup.

If you want to perform permanent full backups, the RDX cartridge needs to be deleted prior to the backup job. To do so, set the value of **ForceDeleteBackupFiles** to **3** in the registry entry of

*HKEY\_LOCAL\_MACHINE\Software\Veeam\Veeam Backup and Replication.*

**WARNING:** This will delete the entire content of the RDX media. All files will be lost.

For further information and registry values read [knowledge base article #1154](#) at the Veeam support webpage.

