

Hyper-V 2016 Rapid Recovery Backup

<https://campus.barracuda.com/doc/77402122/>

Applicable Products

These instructions apply to the following products:

- Barracuda Intronis Backup - MSP

Hyper-V 2016

With this release of Hyper-V 2016, Barracuda MSP extends support of current Hyper-V features (Standard and Rapid Recovery) to the latest Hyper-V 2016 platform released by Microsoft. Microsoft's RCT technology is used to determine the changed blocks in a virtual disk for a VM running on a Windows Server 2016 system.

Because RCT works only for VMs using the new configuration format introduced with Windows Server 2016 (version 8.0 or later) the backup agent can no longer backup VMs running the older version of the configuration format.

To backup VMs using RCT, the VM's configuration format must be upgraded to the latest version (8.0). Older VMs still can be added to Hyper-V backups sets, but a warning is displayed that the VMs must be upgraded before being backed up. If the Agent detects a VM using a pre-version 8.0 configuration format running on Windows Server 2016, it does not attempt to back up the VM, instead it logs an error message, and then moves to the next VM in the backup set.

Windows Server 2016 Hyper-V Deployment Considerations

To reduce downtime and allow for an acceptance period, it is recommended that you perform a clean installation of Windows Server 2016 Hyper-V when migrating from previous Hyper-V server versions.

The following table provides the deployment tasks.

Stage	Task
1	Plan the move of existing virtual machines.
2	Create or move the virtual machines.
3	Upgrade the configuration file format to v8.0, where applicable.
4	Create new sub-accounts.
5	Create and run new backup sets.
6	Delete old subaccounts.

For existing Windows Server 2016 Hyper-V deployments, do the following:

1. Install/upgrade the latest agent.
2. Upgrade the virtual machine configuration file format to v8.0, if necessary.
3. Create and run new Hyper-V 2016 backup sets.

If you are running Physical Imaging backups of virtual machines and you want to migrate to Hyper-V 2016, do the following:

1. Ensure you have the latest backup set.
2. After your new Hyper-V backups have been created, delete the old Physical Imaging subaccounts.

Hyper-V 2016 Backup Agent Software Requirements

The following table provides the requirements for running the Backup Agent software.

Hyper-V Backup Agent Software Requirements	
Supported Operating Systems <ul style="list-style-type: none">• MS Windows Server 2008 SP2/2008 R2 SP1, SP2/2012/2012 R2/2012 R2 Essentials/2016• MS Windows 7 SP1/8.0/8.1/10• MS Windows Small Business Server 2011 SP1 Web Portal Requirements <ul style="list-style-type: none">• Chrome (most recent version)• Edge (most recent version)• Internet Explorer 10/11 (desktop mode)• Firefox (most recent version)	Minimum Requirements for Exchange, SQL, Imaging, VMware, and Hyper-V Backups <ul style="list-style-type: none">• 2GHz quad-core CPU• 4 GB of Total RAM (1 GB free RAM during backup, restore, or delete operation)• Free disk space equaling twice the size of your largest protected file (not required for VM backups)• Broadband Internet Connection• MS.NET Framework 4.5.2 (to allow backup/restore/delete management from the web) Virtual Machines <ul style="list-style-type: none">• VMware ESXi/vCenter 5.0/5.1/5.5/6.0/6.1/6.5/• VMware vSphere 6.5 (TLS 1.0 must be enabled on all hosts managed by the vCenter Server.)• All supported VMware versions require VMware Essentials license or higher. Includes support for clustered environments.• Hyper-V 2016/2012 R2/2012/2008 R2 (does not include clustered support)/• Windows Server 2012 R2 Essentials is not supported as a virtualization host

Hyper-V Rapid Recovery Backup Overview

Hyper-V Rapid Recovery is a backup set type that backs up full Hyper-V VMs to local storage and allows you to recover important servers quickly.

Hyper-V Rapid Recovery backups protect VMs in a reverse incremental manner. This method allows the most recent state (and the one most likely to be recovered in a disaster) to be recovered in the

shortest amount of time. In addition, this method provides a more stable revision chain and requires no scheduled consolidation.

With changed block tracking and an improved recovery point objective, the rapid recovery backup set tracks changes on protected VMs efficiently. This efficiency allows you to schedule VM backups up to every 15 minutes. In case of a disaster, almost no data is lost because the most recent known good state is only a few minutes old.

The backup storage location is where all the backup data (fulls and incrementals) are stored locally.

Local Storage can be on the following:

- Directly attached storage location
- Network share
- Remote share
- Standard disk (512)
- 4K disk
- Sparse file
- When backing up a VHD disk on a 4K disk, the backup data is converted to a VHDX format.

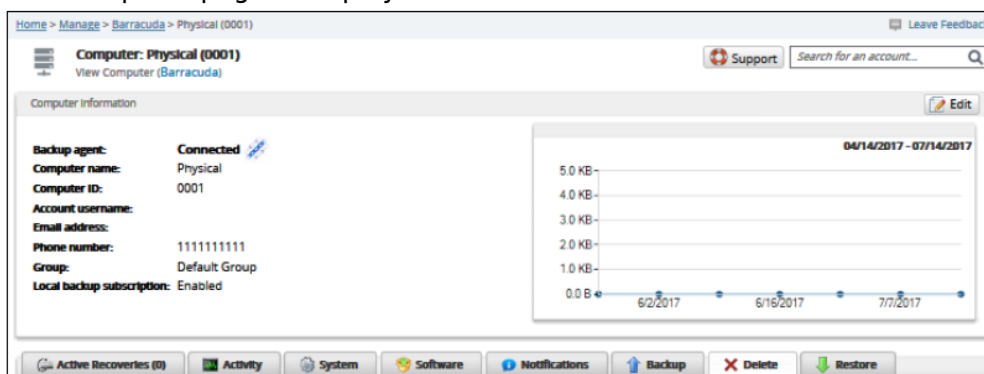
Temporary space of 1 GB is recommended for Hyper-V backups.

Note: The agent must be installed on the Hyper-V host.

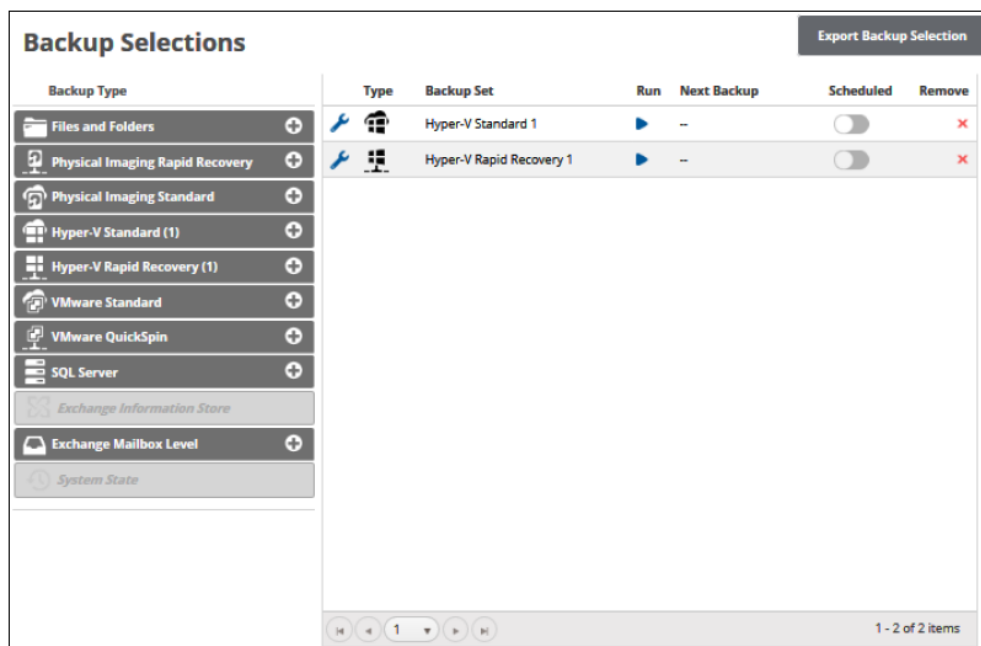
Creating Hyper-V Rapid Recovery Backup Sets

To create a Hyper-V Rapid Recovery backup set, perform the following steps.

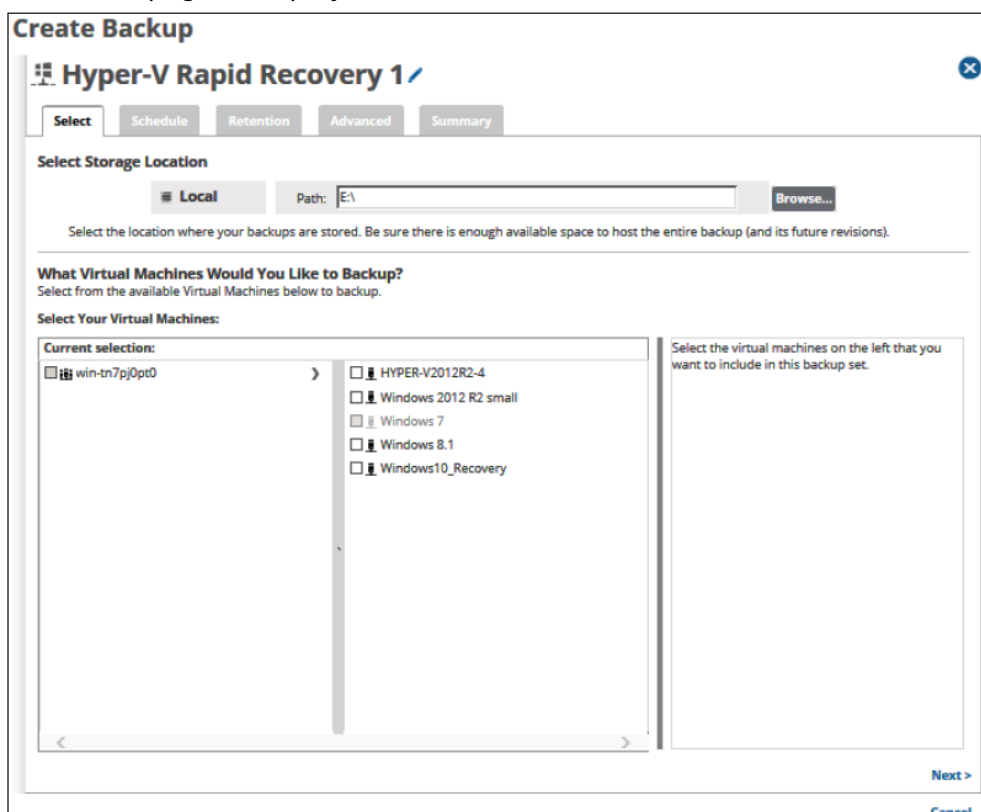
1. Navigate to the Computer page.
The Computer page is displayed.



2. Click the **Backup** tab.
The Backup Selections page is displayed.



- In the Backup Type pane, click **Hyper-V Rapid Recovery**.
The Select page is displayed.




- Click the Backup Name to provide a new name for your backup set or accept the default.
- At the Select Storage Location Path field, type a path, or click the **Browse** button to select the storage location of your backup.
Important! Ensure there is enough space available to host the entire backup and its future revisions.


Note: Changed locations of the destination hosts of the recovery VMs, are not changed until the next backup set is run.

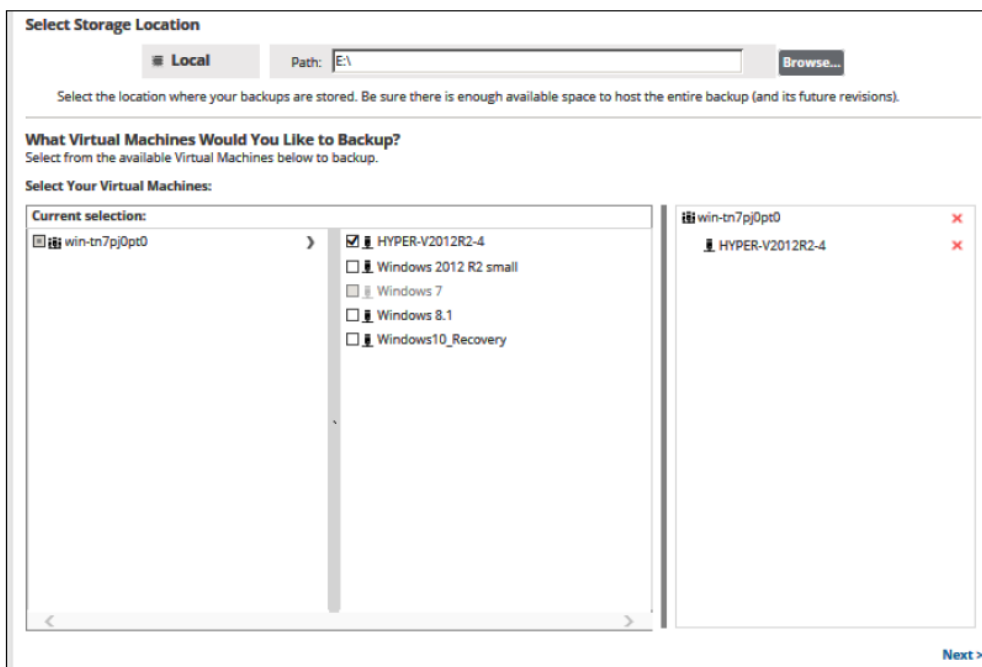
6. In the Current selection pane, select the virtual machines you would like to back up.

Notes:

- Any VMs that already are included in other backup sets are grayed out.
- A warning icon is displayed for VMs that have not been upgraded.
- Multiple VMs can be included in the same backup set.

Clicking the arrow  at the right of the VM displays more revisions of the VM.

Your selections are displayed in the far-right pane. Click the remove icon  to remove any selections or clear the item check box.

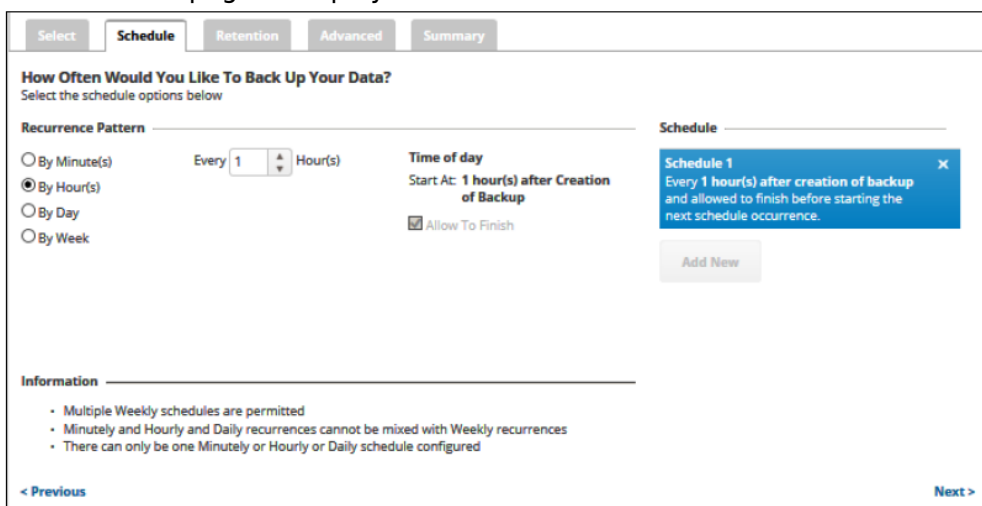


The screenshot shows the 'Select Storage Location' dialog box. At the top, there's a 'Local' button and a 'Path' field with 'E:\' and a 'Browse...' button. Below this is a note: 'Select the location where your backups are stored. Be sure there is enough available space to host the entire backup (and its future revisions).' The main section is titled 'What Virtual Machines Would You Like to Backup?' with the instruction 'Select from the available Virtual Machines below to backup.' Under 'Select Your Virtual Machines:', there are two panes. The 'Current selection:' pane on the left shows 'win-tn7pj0pt0' with a right-pointing arrow. The right pane shows a list of VMs: 'win-tn7pj0pt0' (with a red 'x' icon), 'HYPER-V2012R2-4' (with a red 'x' icon), 'Windows 2012 R2 small', 'Windows 7', 'Windows 8.1', and 'Windows10_Recovery'. A 'Next >' button is at the bottom right.

7. At the Name field, type a unique name for the backup set.

8. After making your selections, click **Next**.

The Schedule page is displayed.




The screenshot shows the 'Schedule' page of the backup configuration wizard. It has tabs for 'Select', 'Schedule', 'Retention', 'Advanced', and 'Summary'. The main heading is 'How Often Would You Like To Back Up Your Data?' with the instruction 'Select the schedule options below'. Under 'Recurrence Pattern', there are radio buttons for 'By Minute(s)', 'By Hour(s)', 'By Day', and 'By Week'. 'By Hour(s)' is selected. There are fields for 'Every 1 Hour(s)' and 'Time of day' with 'Start At: 1 hour(s) after Creation of Backup' and a checked 'Allow To Finish' box. On the right, under 'Schedule', there's a blue box for 'Schedule 1' with the text 'Every 1 hour(s) after creation of backup and allowed to finish before starting the next schedule occurrence.' and a red 'x' icon. Below this is an 'Add New' button. At the bottom, there's an 'Information' section with three bullet points: 'Multiple Weekly schedules are permitted', 'Minutely and Hourly and Daily recurrences cannot be mixed with Weekly recurrences', and 'There can only be one Minutely or Hourly or Daily schedule configured'. Navigation buttons '< Previous' and 'Next >' are at the bottom.

9. Accept or edit the default schedule.

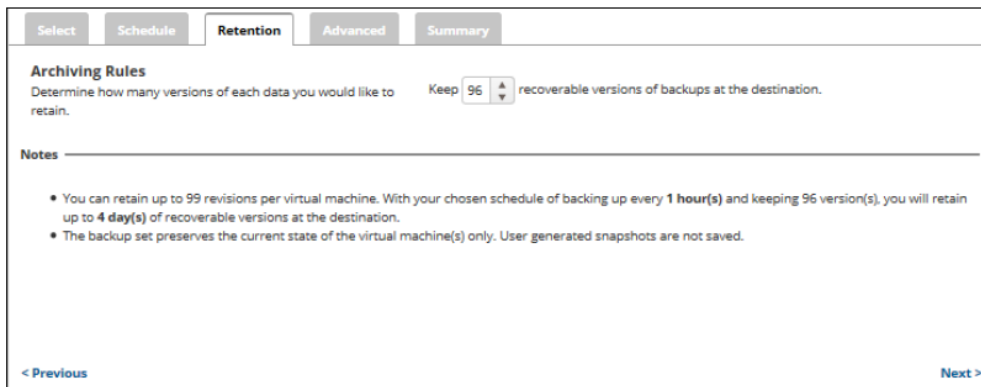
Notes:

- The default schedule is every hour.
- Multiple weekly schedules are permitted (if they do not overlap).
- By the minute, hourly or daily recurrences cannot be mixed with weekly recurrences.
- There can only be one by the minute, hourly or daily schedule configured.
- The **Allow to Finish** check box is always selected and grayed-out.

Your schedule is displayed in the Schedule column. Click the remove icon  to delete schedule.

10. After setting your schedule, click **Next**.

The Retention page is displayed.



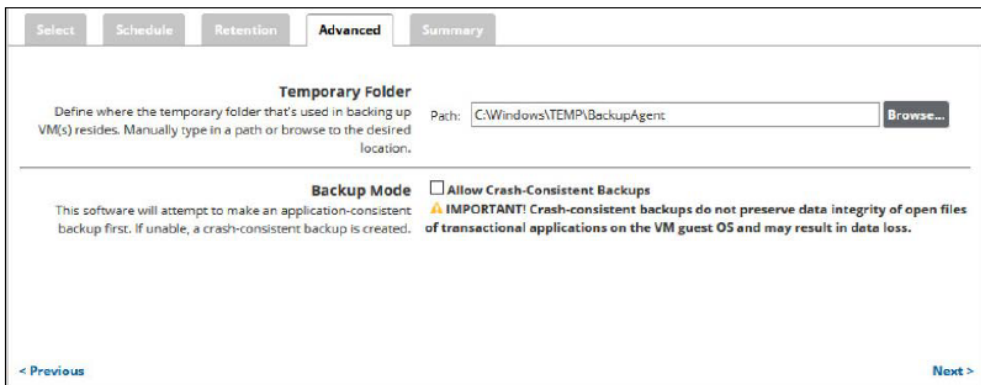
The screenshot shows the 'Retention' tab of the backup configuration wizard. It includes a 'Select' tab, a 'Schedule' tab, and a 'Summary' tab. The main section is titled 'Archiving Rules' and contains a text box: 'Determine how many versions of each data you would like to retain.' To the right of this text is a 'Keep' field with a dropdown menu set to '96' and a description: 'recoverable versions of backups at the destination.' Below this is a 'Notes' section with two bullet points: '• You can retain up to 99 revisions per virtual machine. With your chosen schedule of backing up every 1 hour(s) and keeping 96 version(s), you will retain up to 4 day(s) of recoverable versions at the destination.' and '• The backup set preserves the current state of the virtual machine(s) only. User generated snapshots are not saved.' At the bottom left is a '< Previous' link and at the bottom right is a 'Next >' link.

Notes:

- You can retain up to 99 revisions per virtual machine. With the default schedule of backing up every 1 hour and keeping 96 versions, up to 4 days of recoverable versions are retained at the storage location.
- The backup set preserves the current state of the virtual machines only. User-generated snapshots are not saved.

11. Specify how many recoverable versions of backups at the storage location you would like to retain, and then click **Next**.

The Advanced page is displayed.



The screenshot shows the 'Advanced' tab of the backup configuration wizard. It includes a 'Select' tab, a 'Schedule' tab, a 'Retention' tab, and a 'Summary' tab. The main section is titled 'Temporary Folder' and contains a text box: 'Define where the temporary folder that's used in backing up VM(s) resides. Manually type in a path or browse to the desired location.' To the right of this text is a 'Path:' field with the value 'C:\Windows\TEMP\BackupAgent' and a 'Browse...' button. Below this is a 'Backup Mode' section with a checkbox labeled 'Allow Crash-Consistent Backups' which is currently unchecked. To the right of the checkbox is a warning message: '⚠ IMPORTANT! Crash-consistent backups do not preserve data integrity of open files of transactional applications on the VM guest OS and may result in data loss.' At the bottom left is a '< Previous' link and at the bottom right is a 'Next >' link.

Requirement: You must specify a temporary folder located on a disk with sufficient space. Temporary space of 1 GB is recommended for Hyper-V backups.

12. At the Temporary Folder field, accept the default, type a new path, or click the **Browse** button to locate the temporary folder that is used during backing up.

13. At the Backup Mode section, optionally select the **Allow Crash-Consistent Backups** check box.

CAUTION! Crash-consistent backups do not preserve the integrity of data for open files of transactional applications on the VM guest OS and may result in data loss.

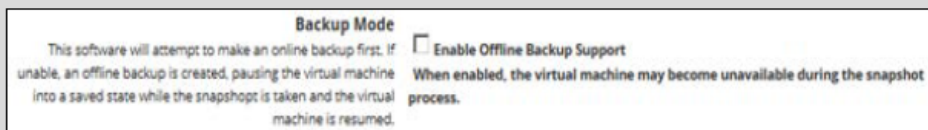
Definitions: A *crash-consistent* backup captures all the virtual machine's data at the same time.

An *application-consistent* backup captures all the data including the data in memory and all transactions in process.

Notes:

- When crash-consistent backups are enabled, the virtual machine may become unavailable during the snapshot process.
- The software attempts to make an application-consistent backup. If unable, a crash-consistent backup is created

Pre-Windows Server 2016 versions display a different backup mode option as shown below.

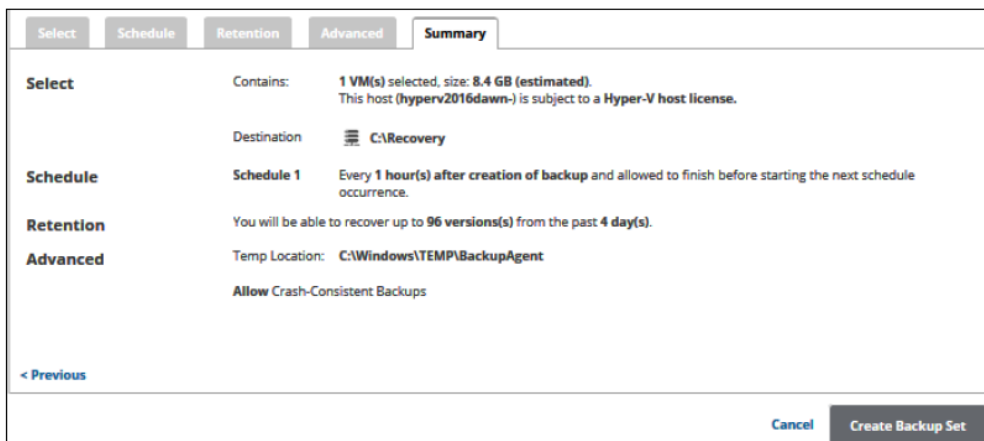


When enabled, the virtual machine may become unavailable during the snapshot process.

The software attempts an online backup first. If unable, an offline backup is created. The virtual machine is paused and put into a saved state while the snapshot is taken, and then the virtual machine resumes operation. VMs in a saved or a paused state can be backed up. The imported recovery VMs are in a saved state in both cases.

Tip: This mode is useful if an online backup cannot be taken. For instance, if the guest VM has dynamic disks, this mode allows guest VMs to be backed up in a non-quiesced, offline state.

14. Click **Next**.
The Summary page is displayed.

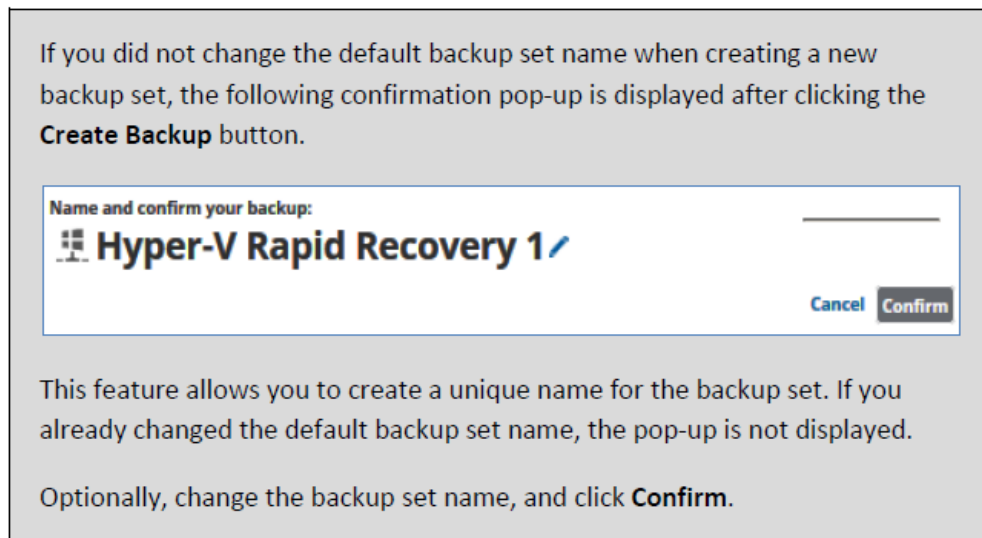


The screenshot shows the 'Summary' tab of a backup configuration window. It contains the following information:

- Select:** Contains: 1 VM(s) selected, size: 8.4 GB (estimated). This host (hyperv2016dawn-) is subject to a Hyper-V host license.
- Destination:** C:\Recovery
- Schedule:** Schedule 1: Every 1 hour(s) after creation of backup and allowed to finish before starting the next schedule occurrence.
- Retention:** You will be able to recover up to 96 versions(s) from the past 4 day(s).
- Advanced:** Temp Location: C:\Windows\TEMP\BackupAgent; Allow Crash-Consistent Backups.

At the bottom, there is a '< Previous' link and 'Cancel' and 'Create Backup Set' buttons.


15. After reviewing your selections, click the **Create Backup Set** button.



The screenshot shows a confirmation pop-up dialog with the following content:

If you did not change the default backup set name when creating a new backup set, the following confirmation pop-up is displayed after clicking the **Create Backup** button.

Name and confirm your backup:

 **Hyper-V Rapid Recovery 1** ✓

Buttons: **Cancel** **Confirm**

This feature allows you to create a unique name for the backup set. If you already changed the default backup set name, the pop-up is not displayed.

Optionally, change the backup set name, and click **Confirm**.

Your scheduled backup is displayed on the Backup Selections page.

Figures

1. HV 2016_1.png
2. HV 2016_2.png
3. HV 2016_3.png
4. HV 2016_4.png
5. HV 2016_16.png
6. Arrow.png
7. Remove.png
8. HV 2016_17.png
9. HV 2016_18.png
10. Remove blue.png
11. HV 2016_19.png
12. HV 2016_20.png
13. HV 2016_21.png
14. HV 2016_22.png
15. HV 2016_23.png
16. HV 2016_24.png

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