

Altaro Hyper-V Backup - User Guide

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Introducing Altaro Hyper-V Backup

Altaro Hyper-V Backup

HYPER-V Backup LTARO

Your Backup Drive is **connected** Last Backup on 31 Jan 2012 at 15:09
[Click here to setup a Mirrored Backup Drive...](#)
[Refresh status](#) No backup scheduled

Dashboard

Backup Drive Status Show Backup Size / VM

Backup: 26.1GB
Other: 189.4GB
Free Space: 250.25GB

Total Backup Size / Day All Hyper-V Guests Total Backup Size / Day

Date	Total Backup Size / Day
31 Jan	26.5GB
01 Feb	26.5GB
02 Feb	26.5GB

Cluster Status Latest Backups Mirror Backup Drive History Restore History Errors Since Last Backup

HWN3-1 Current Node (Master Controller) Selected VMs will be backed up [Click here to configure...](#)

hwn3-2 Altaro Agent detected and active Selected VMs will be backed up [Click here to configure...](#)

hwn3-3 Altaro Agent detected and active Selected VMs will be backed up [Click here to configure...](#)

Updated node status at 12:43 PM
[Refresh node status now](#)

About Altaro Hyper-V Backup License Key Support User Guide 3.0.47.0

Main features in Altaro Hyper-V Backup:

♥ Hot Backups - MS VSS Integration

Back up live VMs with zero downtime by leveraging the Microsoft VSS Hyper-V Writer.

♥ Restore Clones

Restore VMs to the same Hyper-V Host but with a different name.

♥ Restore to different Hyper-V host

Restore an individual or a group of VMs to a different Hyper-V Host.

♥ ReverseDelta Incremental Backup

Incremental Backup Technology for hyper-speed efficiency.

♥ File Level Restore

Mount backed up VHDs and restore files without having to restore a whole Virtual Machine.

♥ Backs up Hyper-V clusters

Cluster support for larger installations.

♥ Backup schedules

Set different backup schedules for different VMs.

♥ [Restore different versions](#)

Restore from multiple points in time rather than 'the most recent backup'

♥ [Supports Microsoft Hyper-V Server \(Core\)](#)

Works with the free Microsoft S Hyper-V Server (Core).

♥ [FireDrill Restore Tests](#)

Build a plan to make sure that in case of disaster you're fully covered.

♥ [Backs up Hyper-V Snapshots](#)

If your VMs have snapshots than you can back up the snapshots as well.

Different Editions

Free Edition

Back up 2 Hyper-V Guest VMs per Hyper-V Host	Yes
Store up to 4 weeks of old versions	Yes
Restore as clone.	No
Restore backups from different hosts	No
File Level Restore	No
Backs up VMs on Hyper-V Cluster (Full CSV Support)	No

Standard Edition

Back up 5 Hyper-V Guest VMs per Hyper-V Host	Yes
No limit on number of old versions stored	Yes
Restore as clone	Yes
Restore backups from different hosts	Yes
File Level Restore	Yes
Backs up VMs on Hyper-V Cluster (Full CSV Support)	No

Unlimited Edition

Back up unlimited Hyper-V Guest VMs per Hyper-V Host	Yes
No limit on number of old versions stored	Yes
Restore as clone	Yes
Restore backups from different hosts	Yes
File Level Restore	Yes
Backs up VMs on Hyper-V Cluster (Full CSV Support)	Yes

Getting Started

- ♥ [System Requirements](#)
- ♥ [Supported Backup Destinations](#)
- ♥ [Contacting Technical Support](#)

System requirements

Supported Host Operating Systems:

- ♥ Windows 2008 R2 (all editions)
- ♥ Windows 2008 R2 SP1
- ♥ Windows Hyper-V Server R2 (core installation)

Please note that Altaro Hyper-V Backup needs to be installed on the Hyper-V Host (not within the guest).

Required Specifications:

- ♥ 128 MB RAM
- ♥ 100 MB Hard Disk Space (for Altaro Hyper-V Backup Program and Settings files)
- ♥ MS .NET Framework 2.0

Supported Backup Destinations

Altaro Hyper-V Backup supports backing up to:

- ♥ USB External Drives
- ♥ eSata External Drives
- ♥ USB Flash Drives
- ♥ Fileserver Network Shares using UNC Paths
- ♥ NAS devices (Network Attached Storage) using UNC Paths
- ♥ PC Internal Hard Drives (recommended only for evaluation purposes)
- ♥ RDX Cartridges

Contacting Technical Support

Email Support

Contact us via email - we will reply within 24 hours (business hours and weekdays)..

You can contact us via email on support@altaro.com.

Check our Online Community Forum

Find answers to most common questions, suggest new feature ideas and see how other users are making use of our software.

Access the Online Community Forum here: <http://community.altaro.com>

Installing & Uninstalling

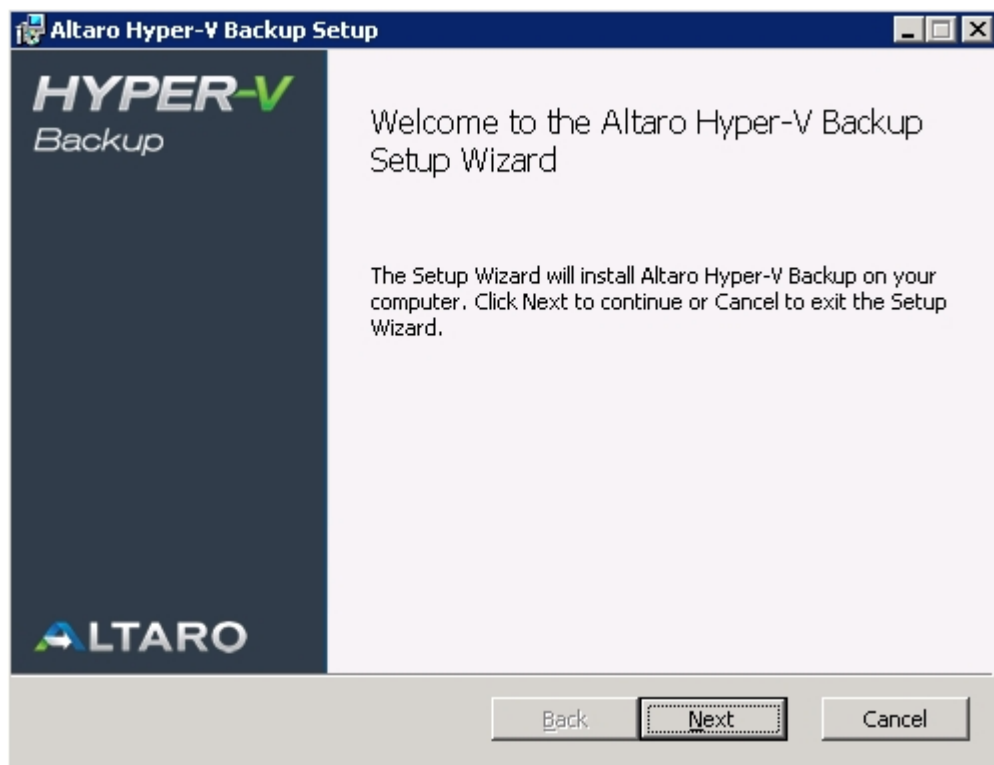
- ♥ [Installing Altaro Hyper-V Backup](#)
- ♥ [Entering the License Key](#)
- ♥ [Checking which version is installed](#)
- ♥ [Upgrading to a new build](#)
- ♥ [Uninstalling Altaro Hyper-V Backup](#)

Installing Altaro Hyper-V Backup

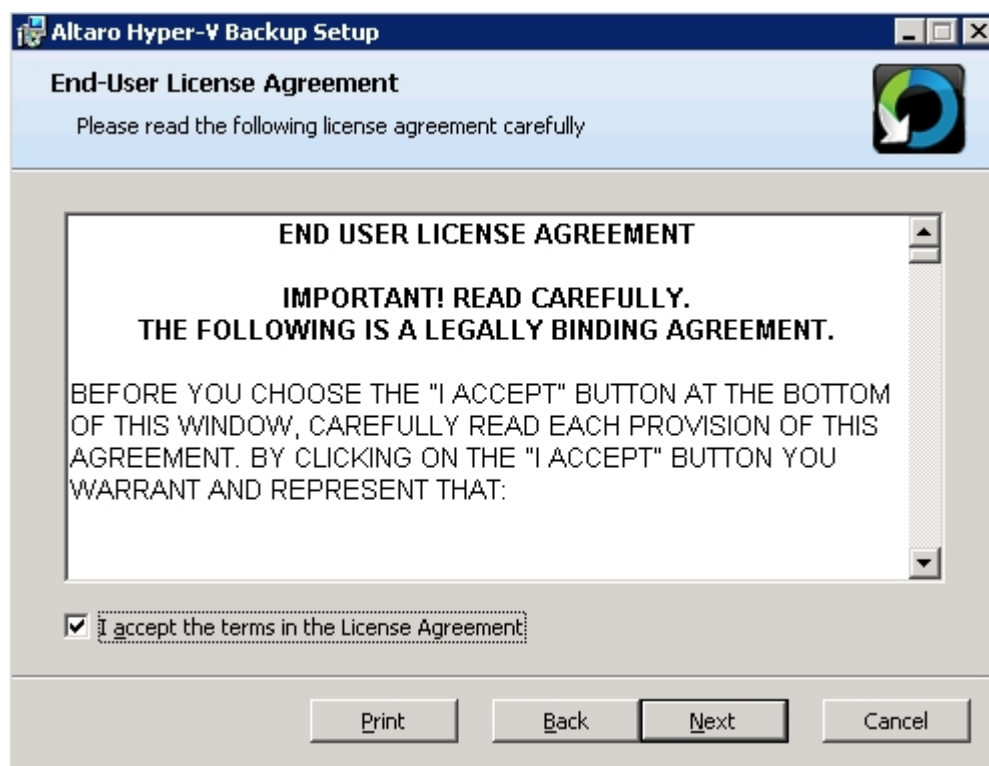
If you do not have a copy of the installer for Altaro Hyper-V Backup please obtain a copy from www.altaro.com before following this tutorial.

1. Launch the downloaded file: **altarohypervbackupsetup.exe**. On certain Operating Systems you may receive a warning informing you that certain downloads may be unsafe. Altaro Hyper-V Backup is signed using Altaro's digital signature and therefore this warning can be ignored.

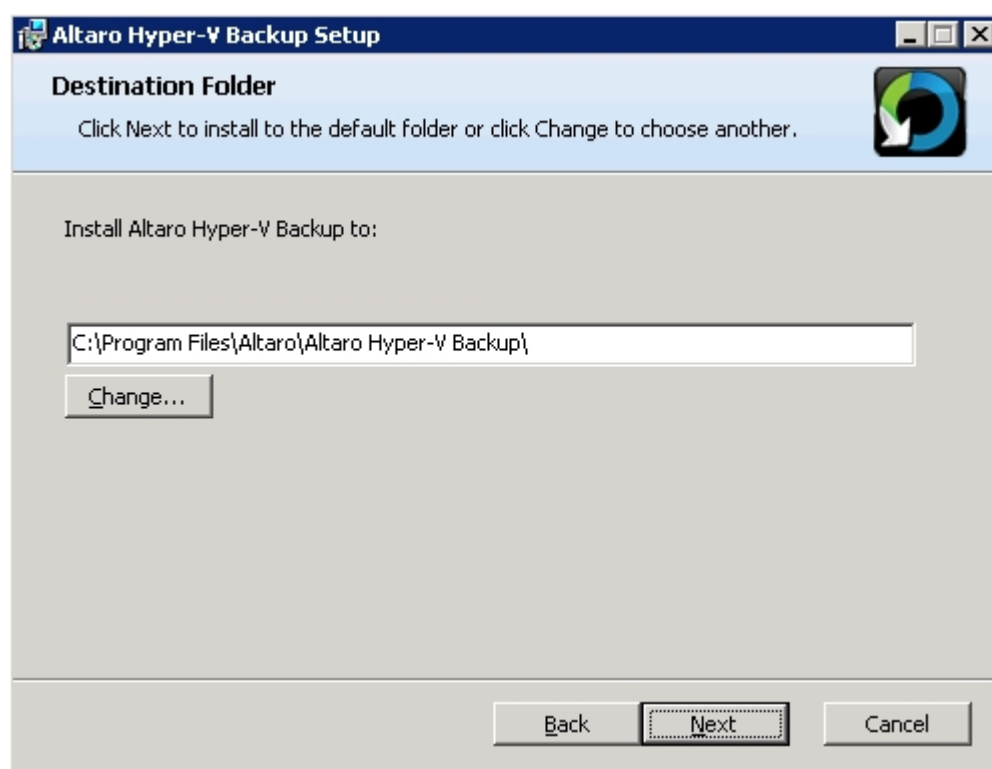
2. Next you will be presented with the welcome screen of the installer. Simply click [Next].



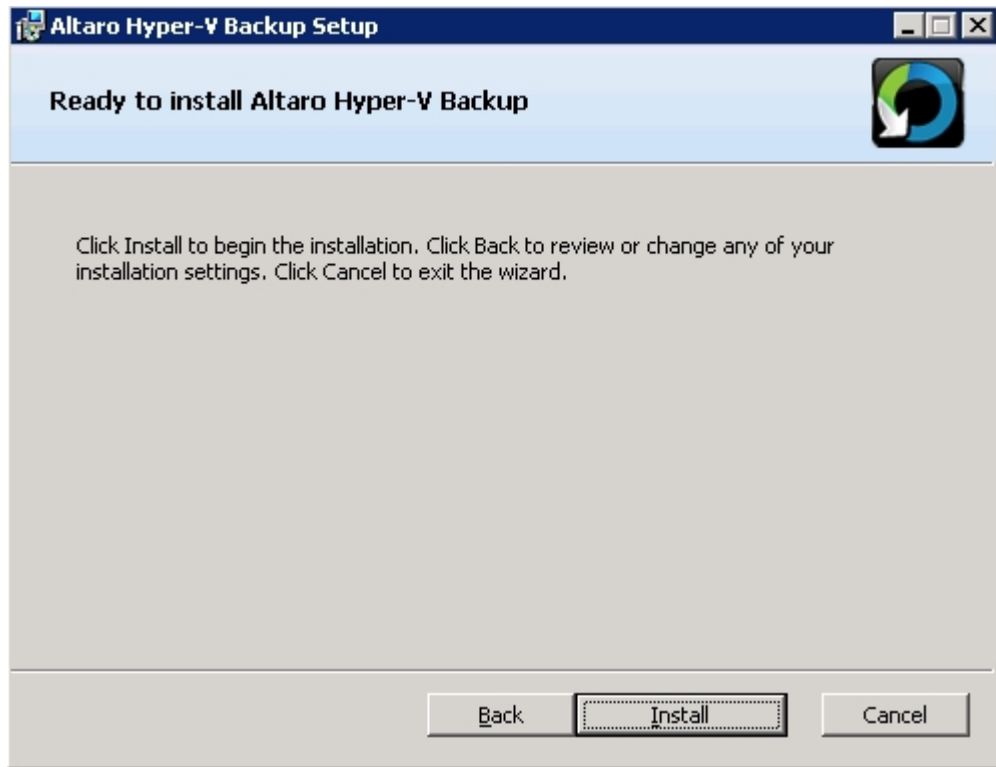
3. You will now see the End User License Agreement into which you will enter with Altaro Ltd. Please read through the agreement and check the "I Accept..." checkbox. Once you have agreed to the terms and conditions in the EULA you can press [NEXT].



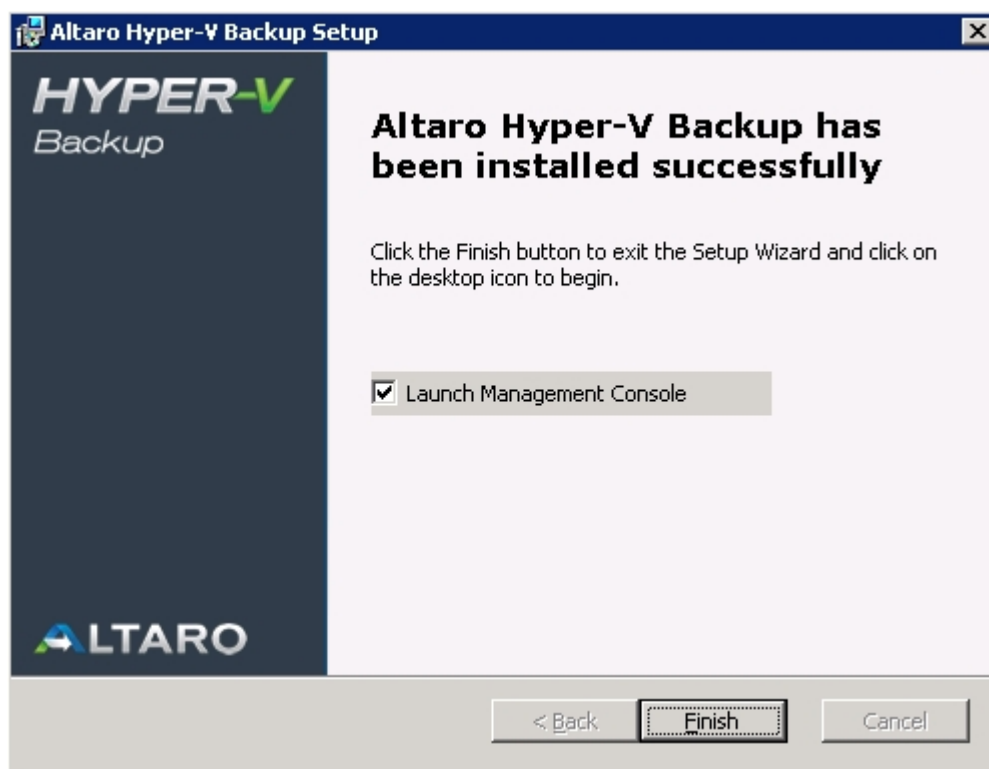
4. At this point you will be prompted for the Destination Folder of the installation. In most normal cases you should leave the installation path as default. Altaro Hyper-V Backup will be installed within your Program Files folder.



5. Next you will see a screen asking you for confirmation to install. Please press [Install].



6. At this point the installation will begin. You will be presented with a progress bar updating you with the progress of the installation. Installation should only take a few seconds. **Please note that if you have UAC enabled on the Server then a UAC prompt may be displayed.** Please click allow for the installation to complete. UAC is required for the following reasons:
 - ♥ Files are being copied to the Program Files Folder.
 - ♥ A Windows Service is being installed.
7. Once the installation is done you will be presented with the successful installation screen. A checkbox is displayed and checked by default indicating whether the **Management Console** should be launched automatically.



Should a screen informing you that the installation has failed appear please contact [support](#).

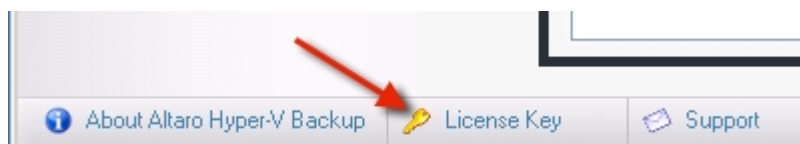
8. Finally the Altaro Hyper-V Backup Management Console will appear. [Please click here for a tutorial on configuring your Backup Profile.](#)

Entering the License Key

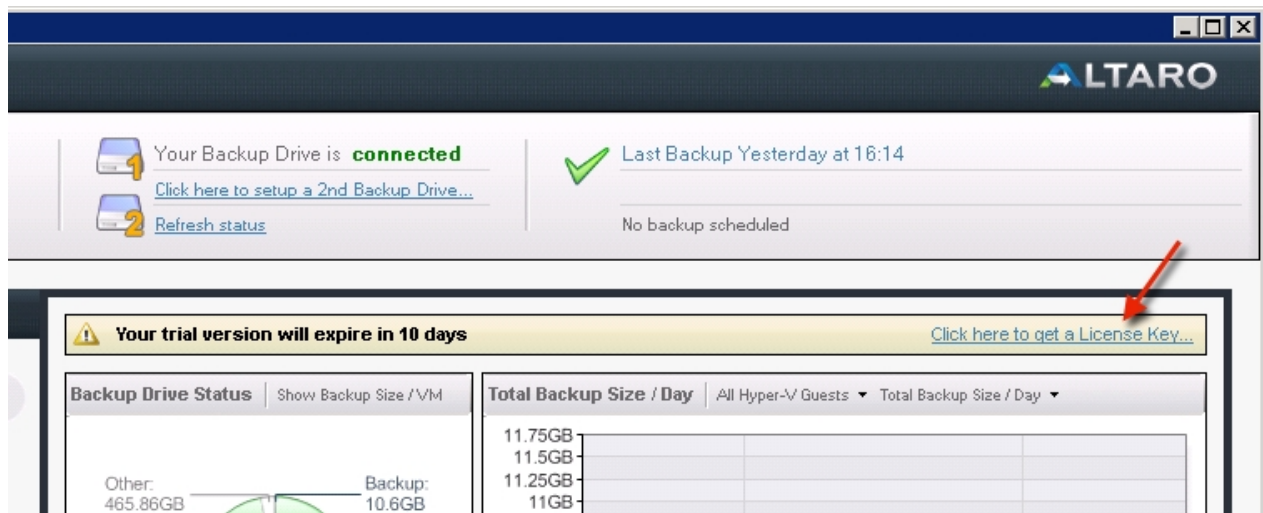
Once you order Altaro Hyper-V Backup you will receive an email containing your unique License Key. The License Key is a block of letters.

To enter your license key please follow these steps:

1. Launch the Altaro Hyper-V Backup **Management Console**.
2. Click '**Enter your License Key...**' from the bottom menu:



OR you may click on '**Click here to get License Key**' from the dashboard screen.



3. Next the license key window will appear as shown below.

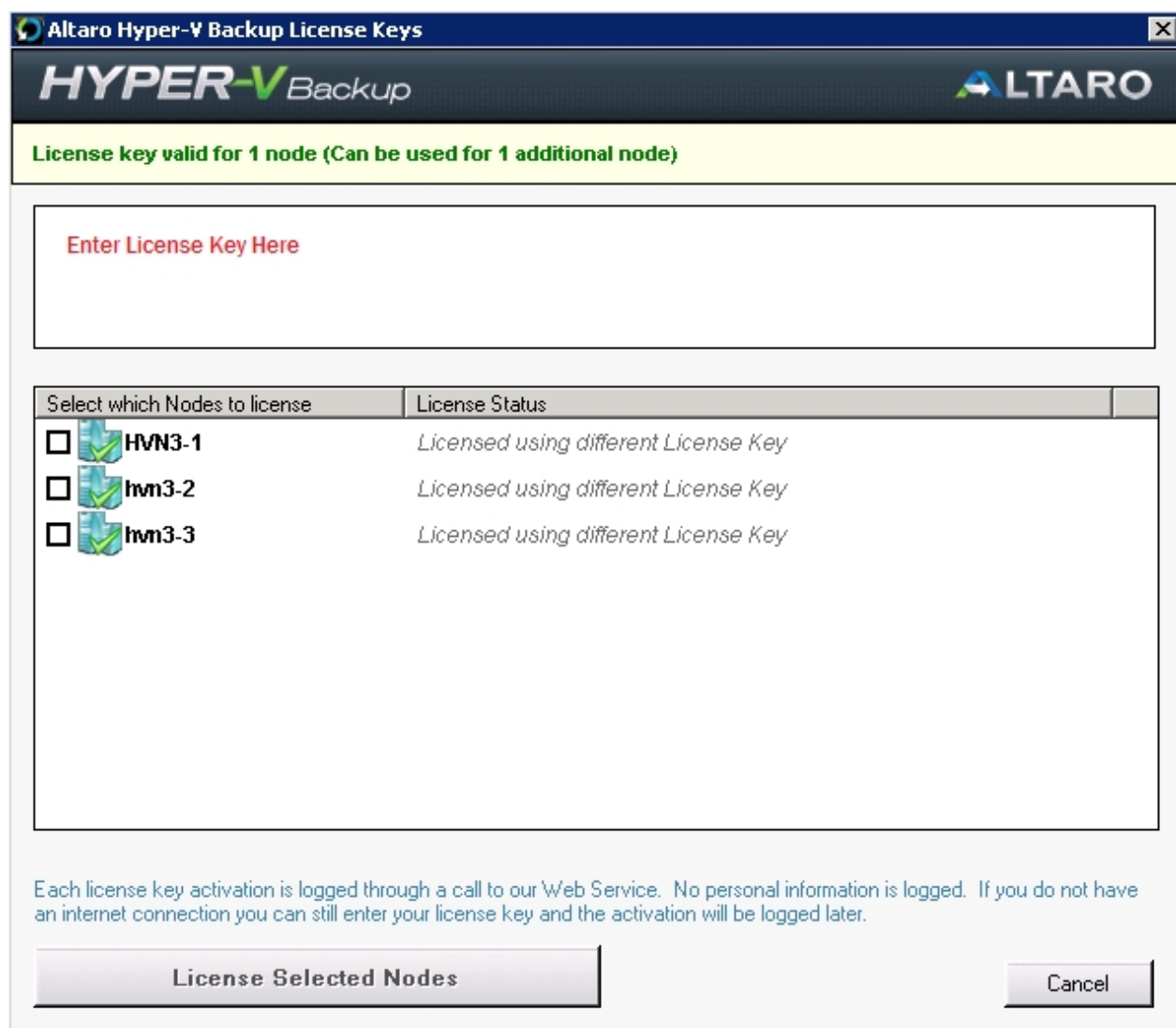


4. Now open the email that contains your License Key. Once you select the License Key, right-click on it and select Copy.
5. Go back to the License Key window, right-click on the white text box and select Paste.
6. Click the button [Verify License Key] to verify your License Key. Once verified the window will change to confirm that the License Key was accepted by thanking you for purchasing the product.

Additional Steps when running under a Hyper-V Cluster Environment:

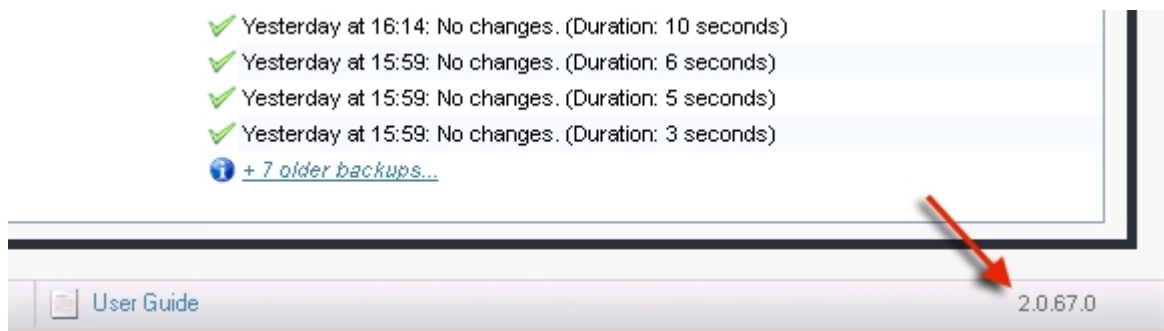
If a Cluster Environment is detected, then in the steps above, instead of the [Verify License Key] button you will see a [Choose Nodes...] button. This button will bring up the following Window which facilitates the licensing of each Node in the cluster.

Simply use the checkboxes in the list to identify which Nodes you would like to license. The number of Nodes allowed is dependent on the number of activations allowed by the License Key.



Checking which version is installed

Checking which version of Altaro Hyper-V Backup is installed is easy. Simply launch the Management Console by clicking on the **Altaro Hyper-V Backup** Start Menu item and check for the version number at the bottom right hand side of the Window.



In the example above version 2.0.67 is installed.

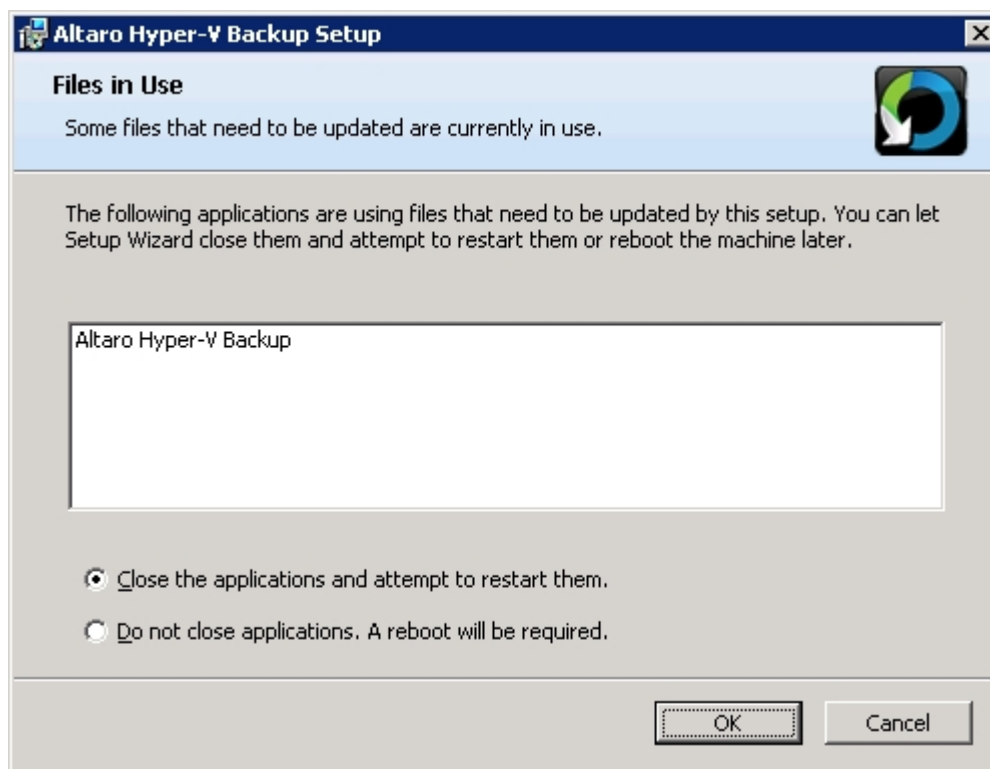
Upgrading to a new build

To upgrade Altaro Hyper-V Backup please follow the following three steps:

1. Exit the Altaro Hyper-V Backup Management Console from the top right control box.
2. Download the latest version of Altaro Hyper-V Backup from www.altaro.com. You can download the evaluation version and your license key information will be transferred to the new version.
3. Launch the installer and follow the [Installing Altaro Hyper-V Backup](#).

Your old backup settings, backup history and license key information will be migrated to the new version.

Important Note: The only difference between a first time installation and an upgrade is that the management console must be closed before attempting to upgrade. If the installer detects that the management console is running then you will be prompted to close it with the following dialog box.



Uninstalling Altaro Hyper-V Backup

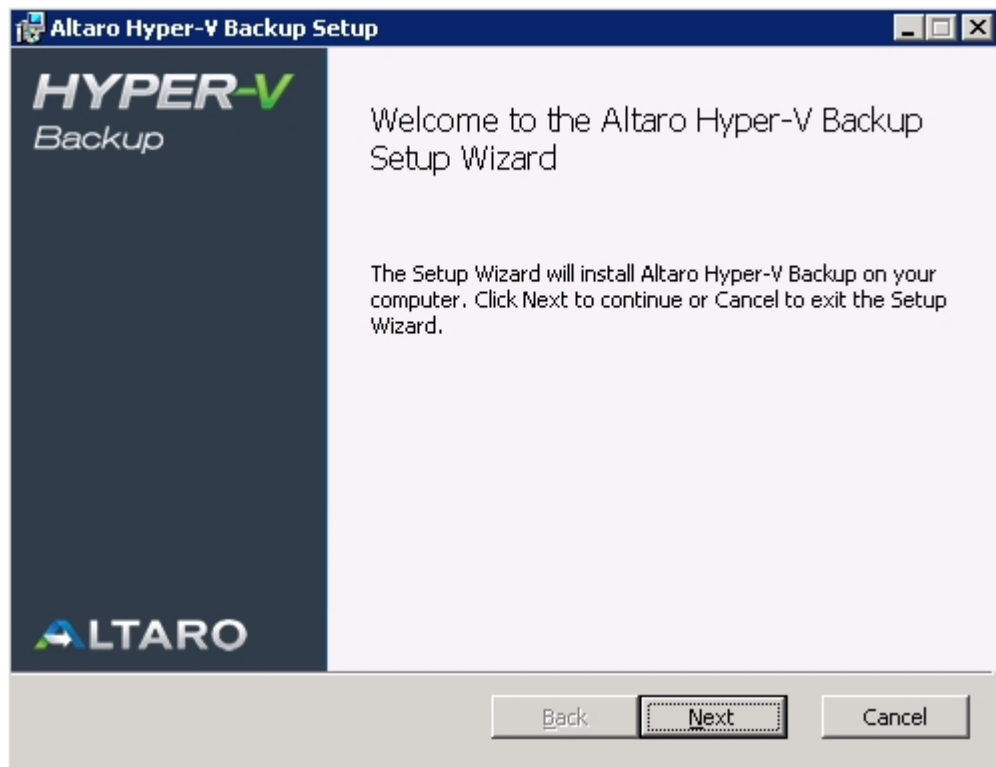
Important Note: Uninstalling **Altaro Hyper-V Backup** will only remove the software from your Server. Any backup data and settings created during usage of the application will be left on the Server and Backup Drive. This is important in case you need to restore data in the future.

Method 1: Using the Uninstall a program feature under the Windows Control Panel

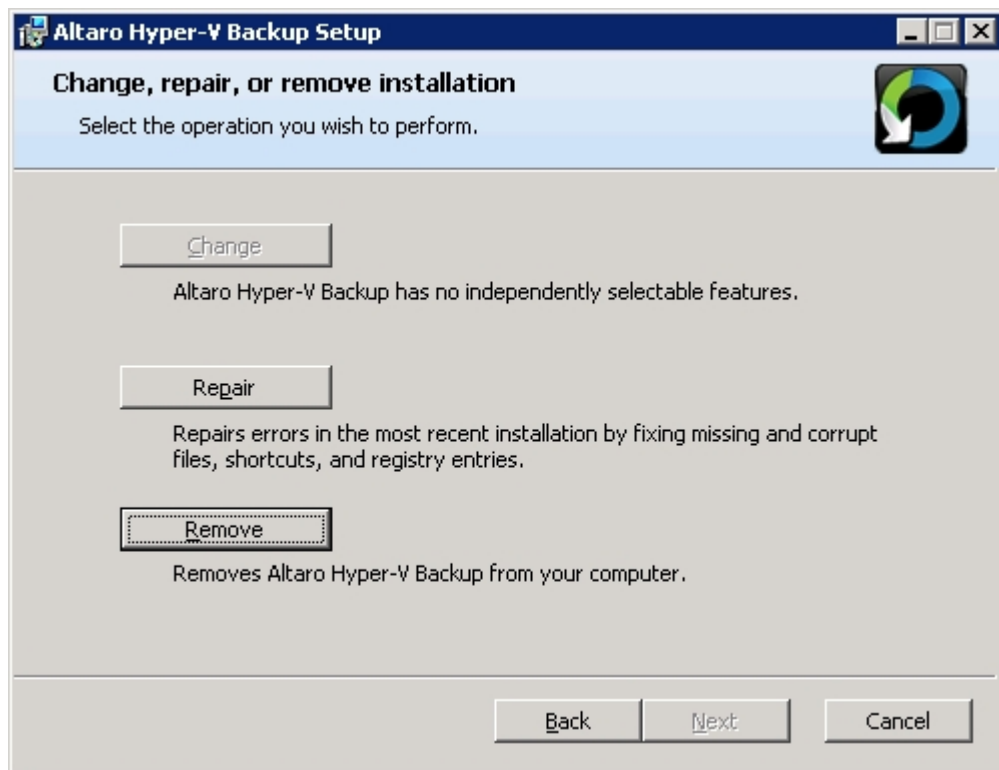
1. Click Start, then on Settings, then click Control Panel.
2. In Control Panel select **[Uninstall a program]**.
3. Once the window opens up you'll see a listing of the programs you have installed on your computer.
4. Highlight Altaro Hyper-V Backup and click **[Remove]** or **[Uninstall]**.
5. The program will begin to uninstall and will ask you for confirmation.
6. When the uninstall is completed you'll notice that it is no longer visible in the program list.
7. Close the dialog, and close the Control Panel.

Method 2: Using the original Altaro Hyper-V Backup installer

1. Launch the original installer: **altarohypervbackupsetup.exe**. On certain Operating Systems you may receive a warning informing you that certain downloads may be unsafe. Our software is signed using Altaro's digital signature and therefore this warning can be ignored.
2. Next you will be presented with the welcome screen of the installer. Simply click **[Next]**.

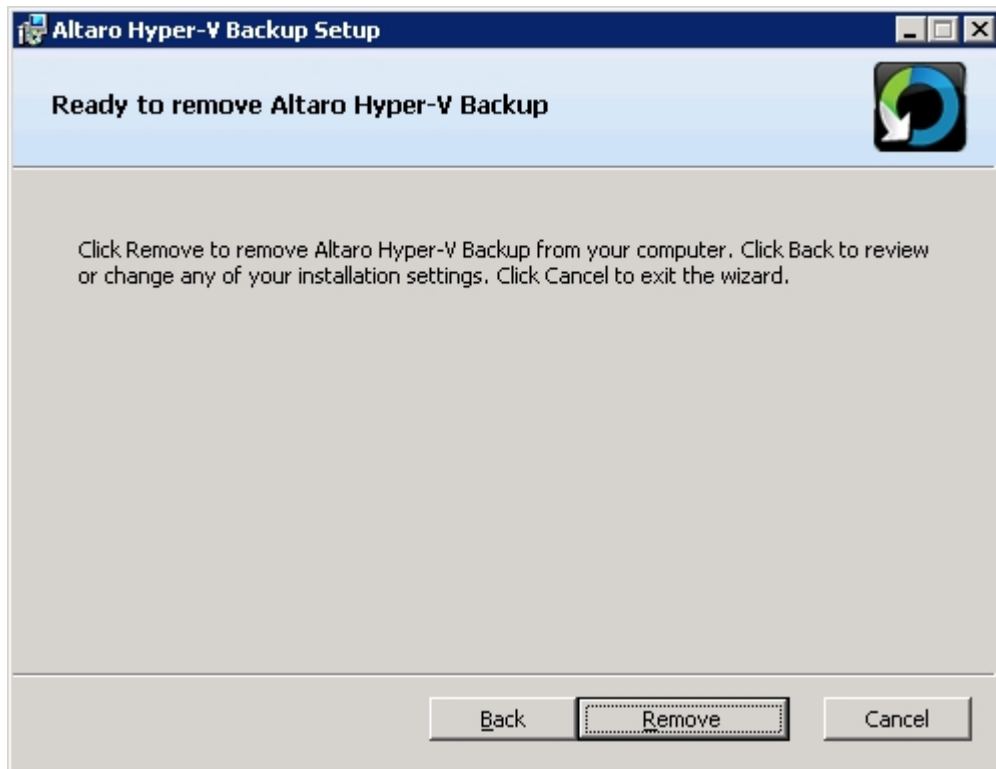


3. You will now see a screen with three options. At this point please choose the [Remove] option.

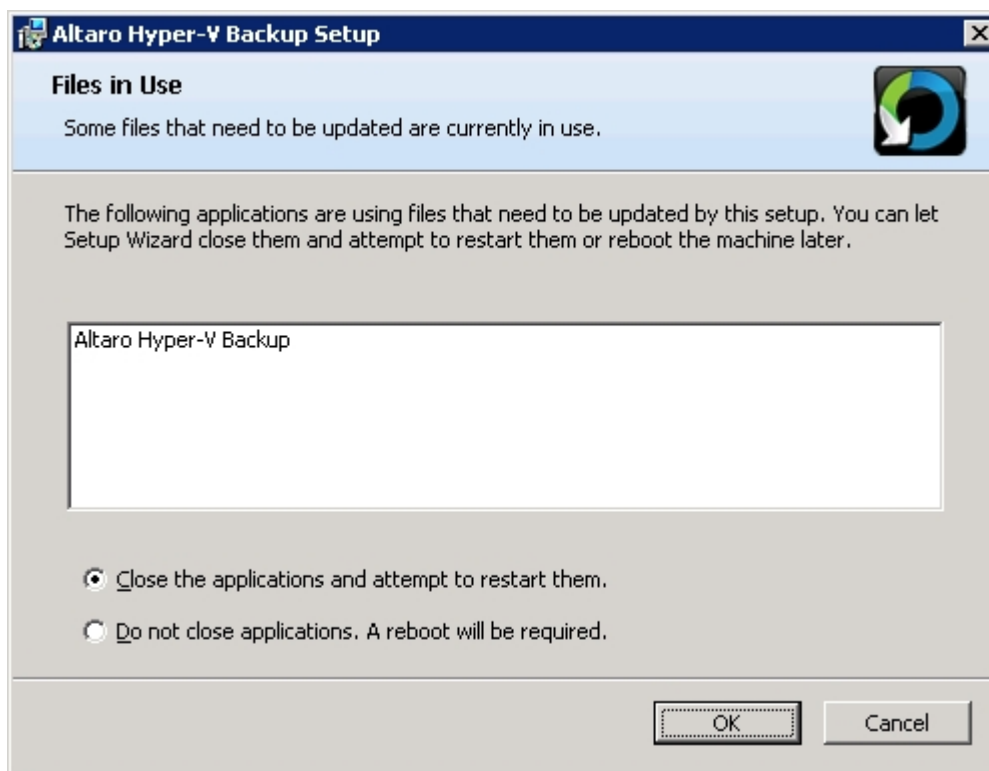


4. You will now be prompted with a confirmation to remove Altaro Hyper-V Backup. Please choose

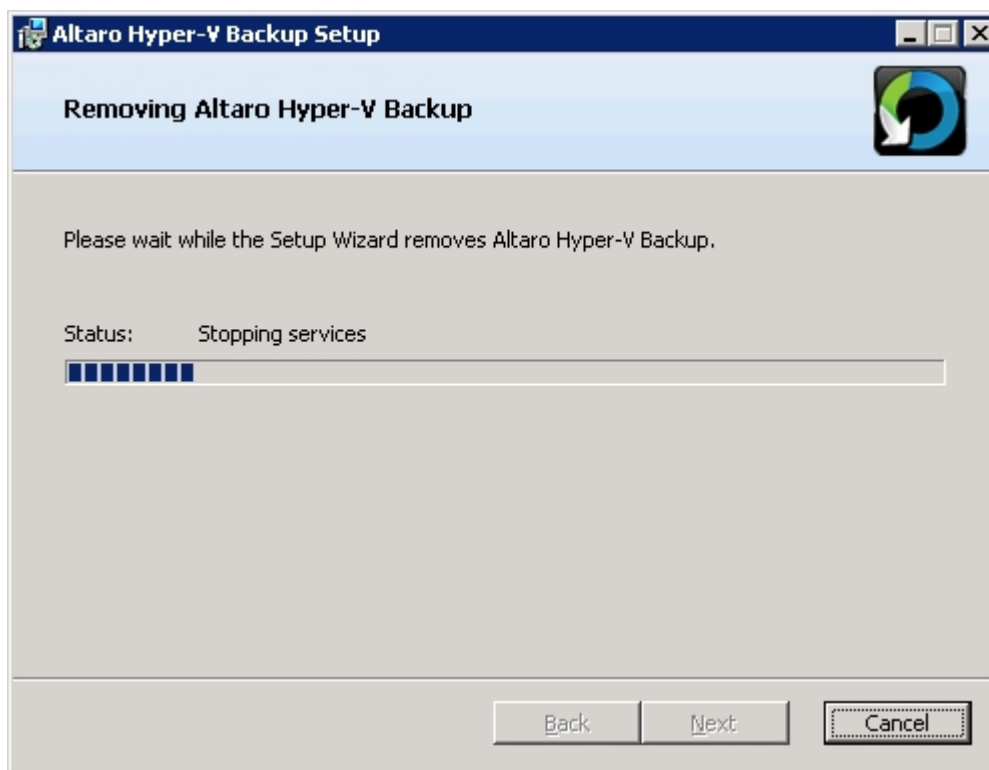
[Remove] again.



5. If the Hyper-V Backup **Management Console** is running you will be prompted to close it. Please close it and proceed.

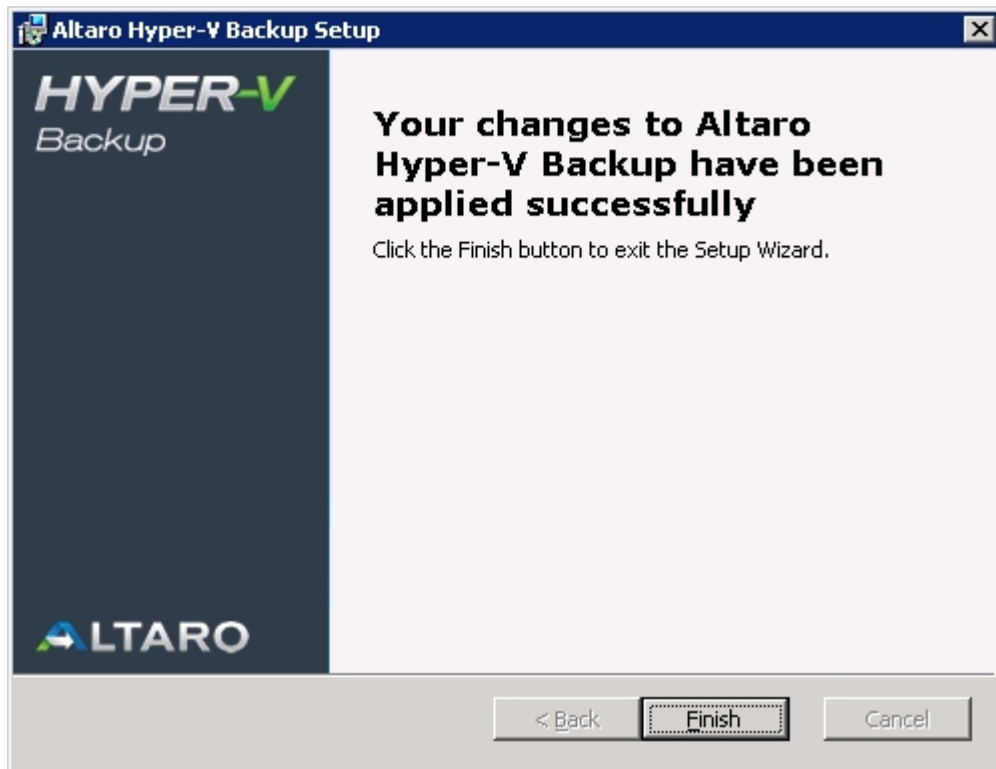


6. The uninstall progress will be displayed now. This should only take a few seconds.



7. Once Hyper-V Backup has been removed completely from your Server you will be presented with

the following screen.

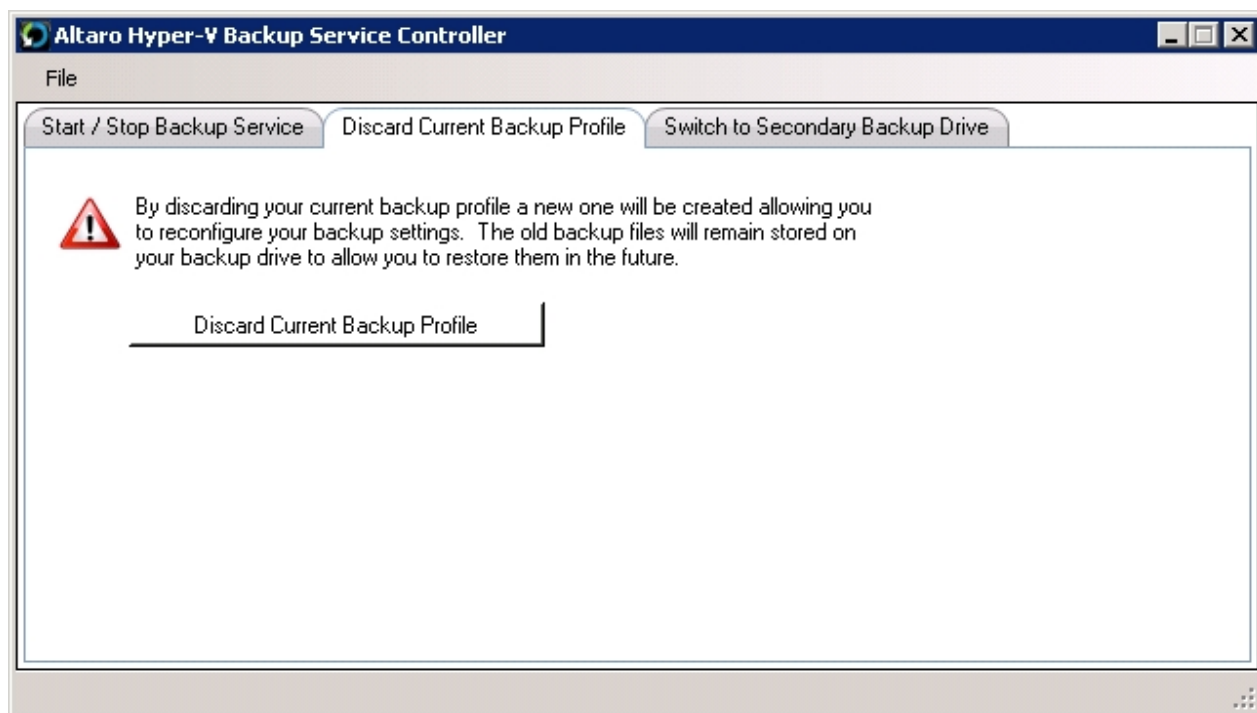


Should a screen informing you that the changes have failed appear please contact [support](#).

Restart Backup From Scratch

To start backing up again from scratch you can simply use the "Discard Current Backup Profile" feature in the **Altaro Hyper-V Backup Service Controller**. You can learn how to access the service controller [here](#).

Discard Current Backup Profile: This tab allows the user to discard the current backup profile and start a new one. Once the old backup profile is discarded, Hyper-V Backup can be reconfigured using the Management Console as described [here](#).



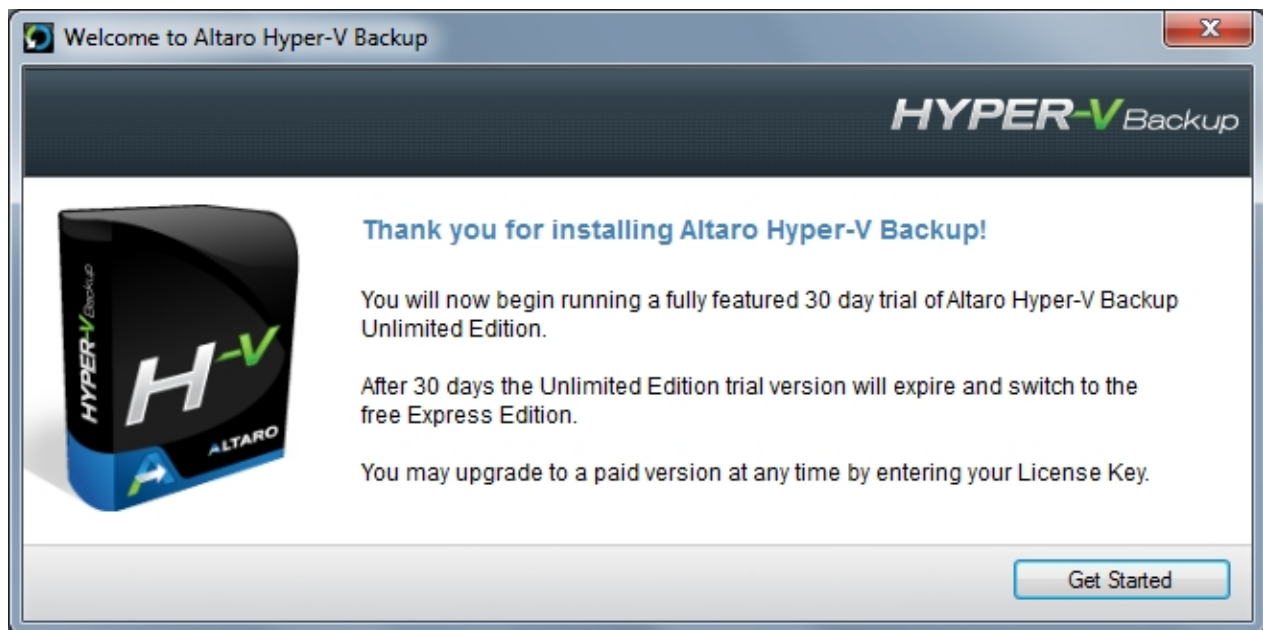
Configuration - Quick Start

Installing Altaro Hyper-V Backup in a Cluster CSV Environment

[Instructions for setting up Altaro Hyper-V Backup within a Cluster Environment](#)

Altaro Hyper-V Backup First Run

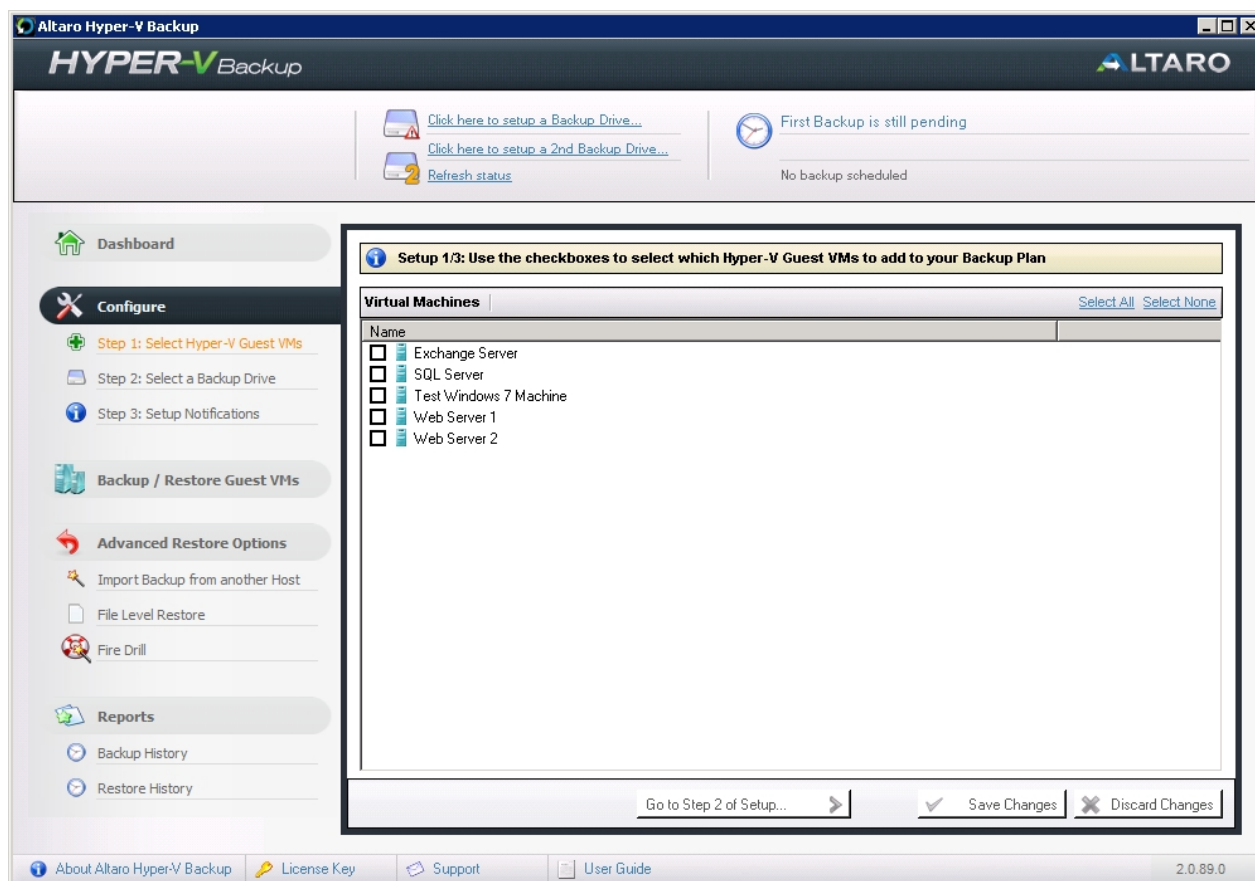
On first launch the Altaro Hyper-V Backup Evaluation mode will be enabled and you will be presented with the following dialog:



At any point during the evaluation you will be able to enter a License Key to activate a Hyper-V Backup Edition. If you choose not to purchase the software then you can activate the free Express Edition at the end of the Evaluation period. Read instructions on entering your license key [here](#).

The first time that you run Altaro Hyper-V Backup the **Management Console** will launch into a special configuration mode. This will help you to:

1. Select which Hyper-V Guest VMs you would like to backup. Read instructions [here](#).
2. Select which Backup Drive to backup to. Read instructions [here](#).
3. Enable and disable backup and restore notifications. Read instructions [here](#).



Opening the Management Console

The **Management Console** is opened automatically after you first install **Altaro Hyper-V Backup**.

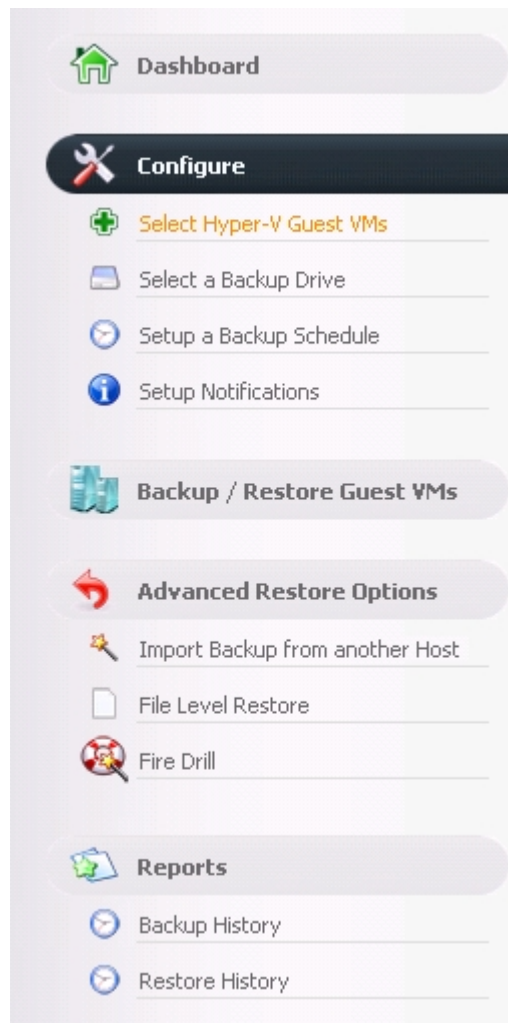
After this you can launch it easily using one of the following methods:

- ♥ Clicking on the **Altaro Hyper-V Backup** item within the "Start Menu > All Programs > Altaro" group.
- ♥ Launching "Altaro Hyper-V Backup.exe" application from the install location. By default this is "C:\Program Files\Altaro\Altaro Hyper-V Backup".
- ♥ Enter the command **STARTALTARO** into a command prompt window. This may not work immediately after first install until you log out and in to the Server due to the Environment Variables not being refreshed.
- ♥ If the **Management Console** is already running in the background simply double click on the Altaro Hyper-V Backup System Tray icon.

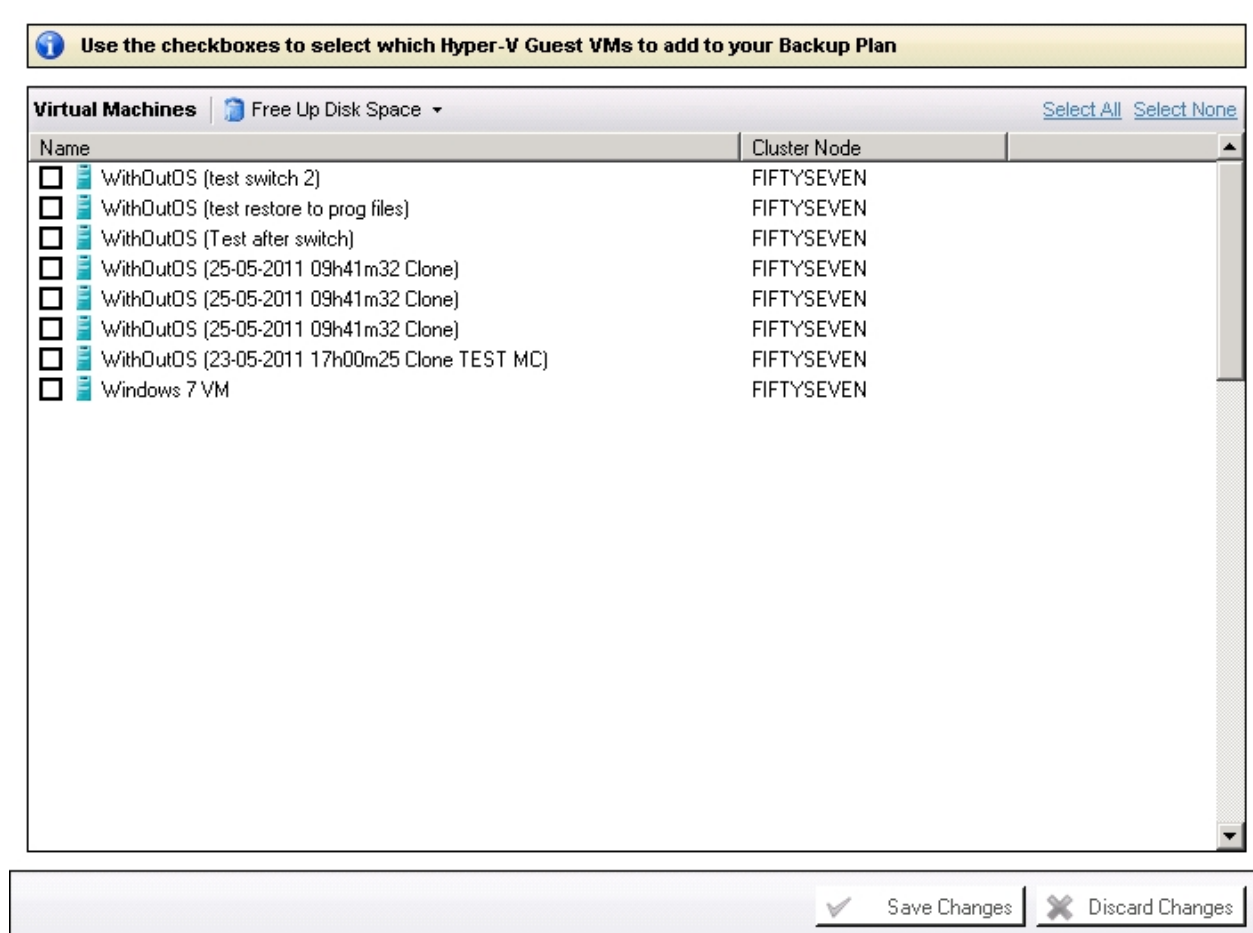
Choosing VMs to back up

To select which Hyper-V Guest VMs to backup simply open the **Management Console** and select the option [**Select Hyper-V Guest VMs**] from the left hand side main menu.

Read instructions on how to open the Management Console [here](#).



1. Once you select "Step 1" you will be presented with the following panel:



2. Simply use the checkboxes to select which Hyper-V Guest VMs you would like to add to your backup plan.

- You can return to this screen at any time to add / remove Hyper-V Guest VMs.
- The selected VMs will not be backed up automatically until you setup a backup schedule or take a manual backup.
- Hyper-V Guests that have been deleted from the Hyper-V Host but have already been backed up will continue to show up in this list.

3. Once the selections have been made simply click on [Save Changes] to update your backup plan.

Selecting VMs on another Node within the Cluster:

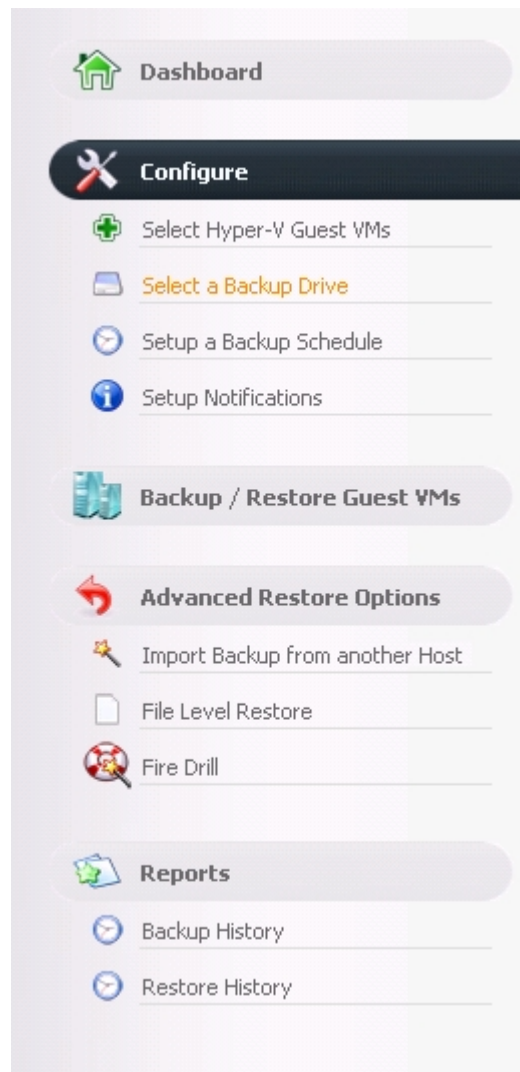
If you wish to select VMs for backup which are currently hosted upon another Node within the cluster, you simply select them using the same steps above. The user interface will be a bit different within a cluster environment and you can read further instructions [here](#).

You must have first configured Altaro Hyper-V correctly for Cluster Support as explained [here](#).

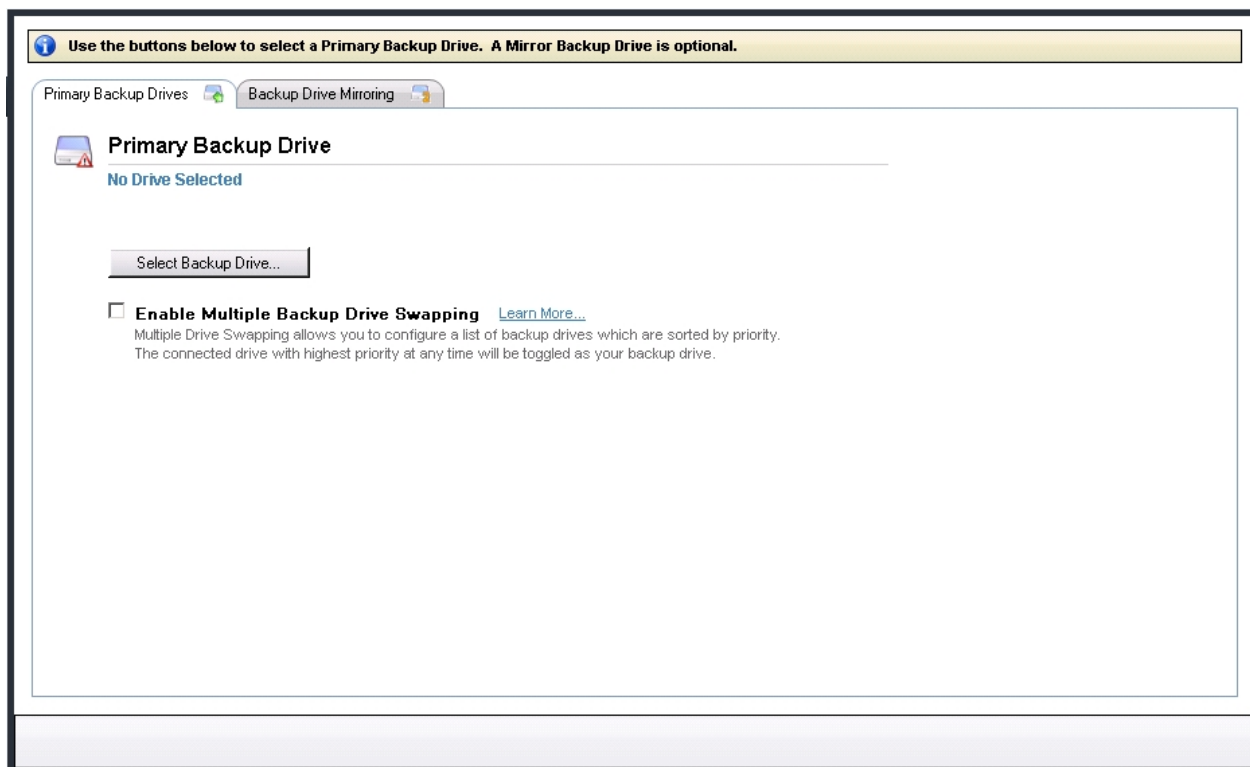
Selecting Backup Drive

To select a drive or network path as your backup destination, open the **Management Console** and select the option **[Select a Backup Drive]** from the left hand side menu.

Read instructions on how to open the Management Console [here](#).



Once you select "Step 2" you will be presented with the following panel:



2. Simply use the [Select Backup Drive...] and [Select Mirror Backup Drive...] buttons to select your backup drives.

- For instructions on configuring a backup drive click [here](#).
- For instructions on configuring a mirror backup drive click [here](#).
- For instructions on backing up to UNC network paths click [here](#).

3. Once the selections have been made there is no need to click save as changes are saved automatically.

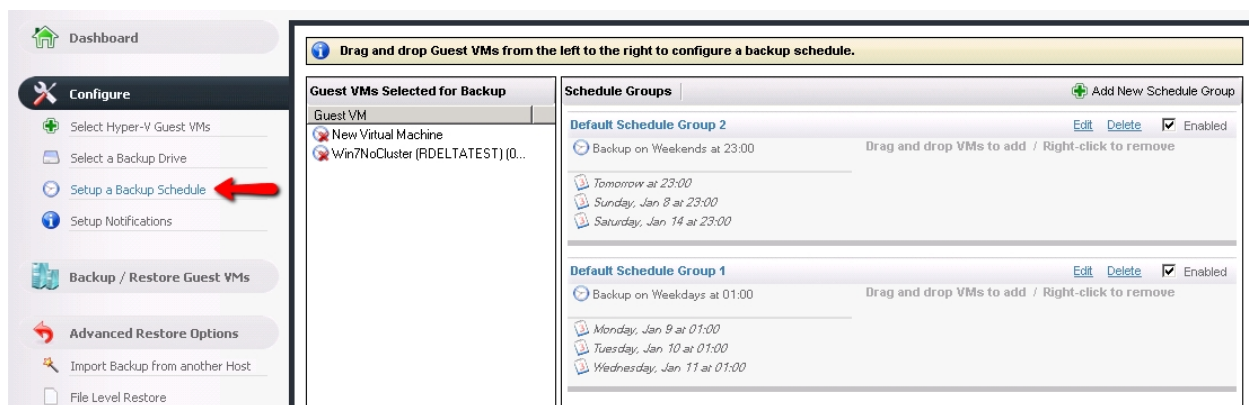
Selecting a Backup Drive within a Cluster Environment:

An additional step is required to share the backup drive with any Altaro Agents upon other nodes as explained [here](#).

Scheduling VM Backups

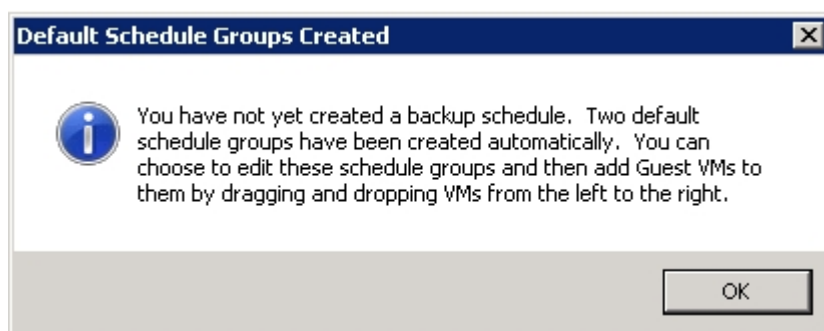
To schedule automatic backups for the selected VMs you need to create a number of Schedule Groups and add the VMs to them. To do this simply open the **Management Console** and select the option **[Setup a Backup Schedule]** from the left hand side main menu.

Read instructions on how to open the Management Console [here](#).

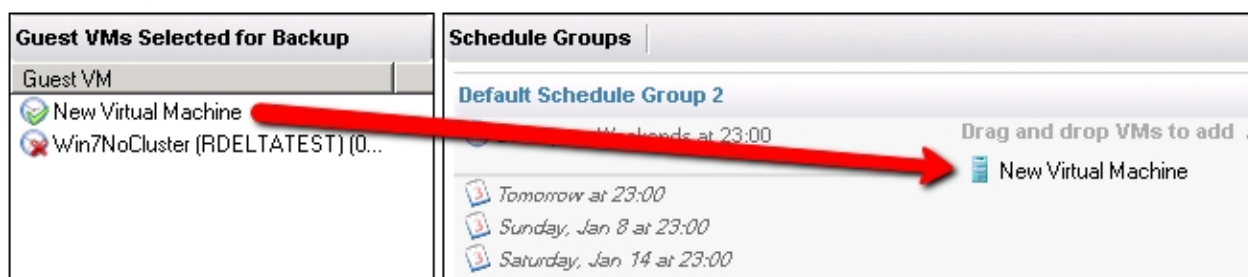


Default Backup Schedule Groups

If you have not yet created any backup schedule groups then two default groups will be created for you. These default groups can be used as they are, edited or deleted. In any case when the default groups are created you will be notified by the following Dialog prompt.



Adding a VM to a Schedule Group



Simply drag a VM (or multiple VMs) from the left hand side panel to the right hand side panel to add it to a Schedule Group. Once the VM is added it will be listed within the Schedule Group panel to indicate that it has been added successfully.

A single VM can be added to multiple schedule groups and a single schedule group can contain multiple VMs.

You must press [Save Changes] at the bottom of the screen to commit changes.

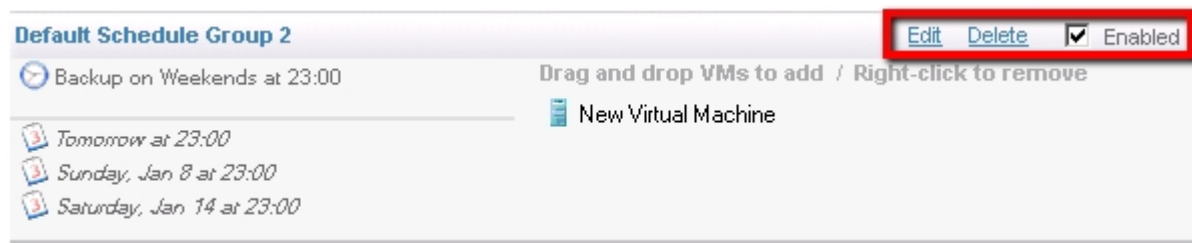
Removing a VM from a Schedule Group



To remove a VM from a schedule group simply right-click on the VM in the group's VM list and choose "Remove VM from this Schedule Group". The VM can be re-added at any time in the future.

You must press [Save Changes] at the bottom of the screen to commit changes.

Editing / deleting / disabling Schedule Groups



At the top left of each schedule group are three buttons:

- Edit - change the schedule group backup schedule.
- Delete - discard the schedule group. Any VMs belonging to it will be unassigned from it first.
- Enabled [y/n] - choose whether the group is active or has been disabled. Backups will not take place for disabled schedule groups.

You must press [Save Changes] at the bottom of the screen to commit changes.

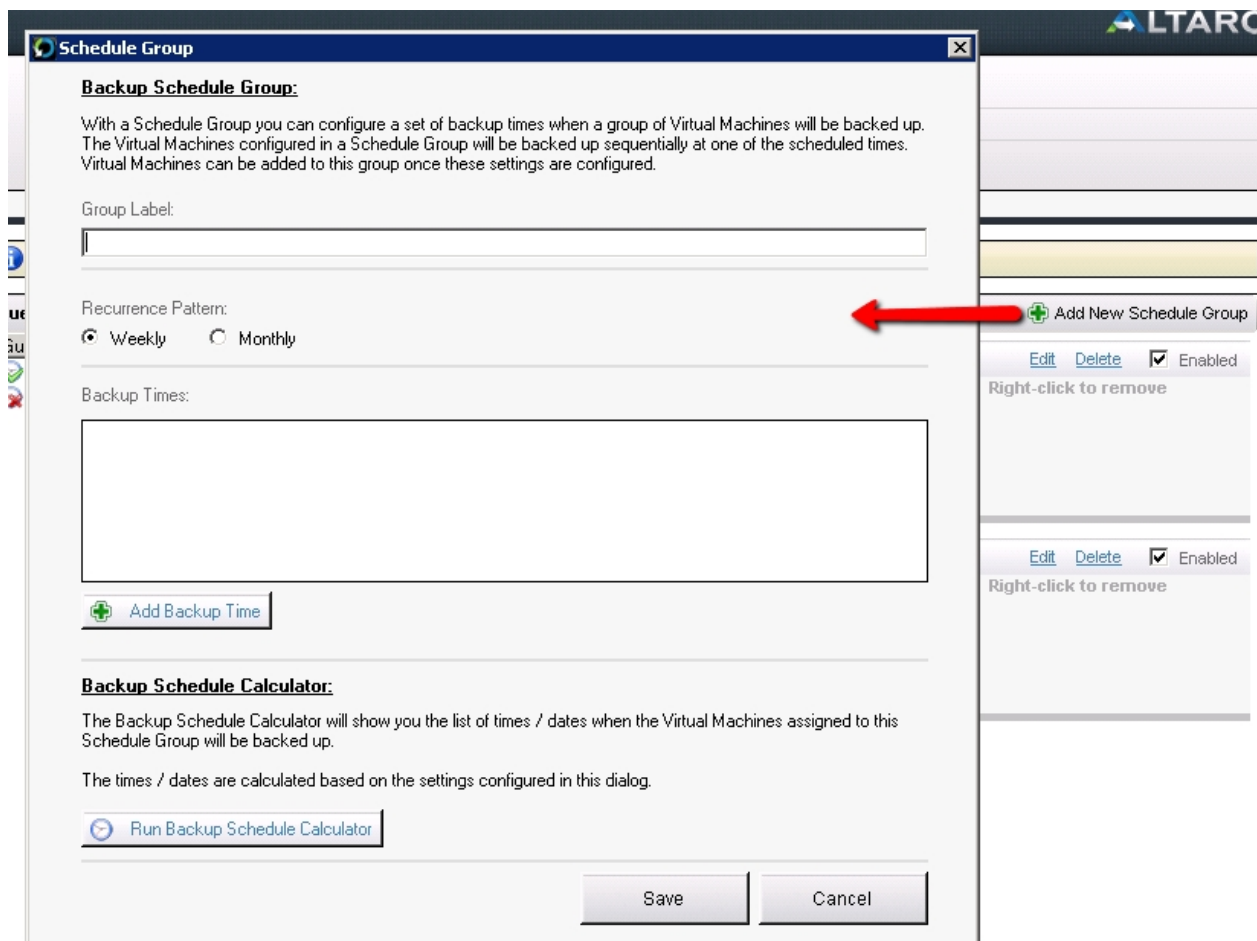
Create a Schedule Group

To create a new schedule group click on the "Add New Schedule Group" button. You will be presented by a Window which will prompt you for the schedule group settings.

Group Label: a name given to the group to help you to identify it. This name is simply used for the user to identify the group easily.

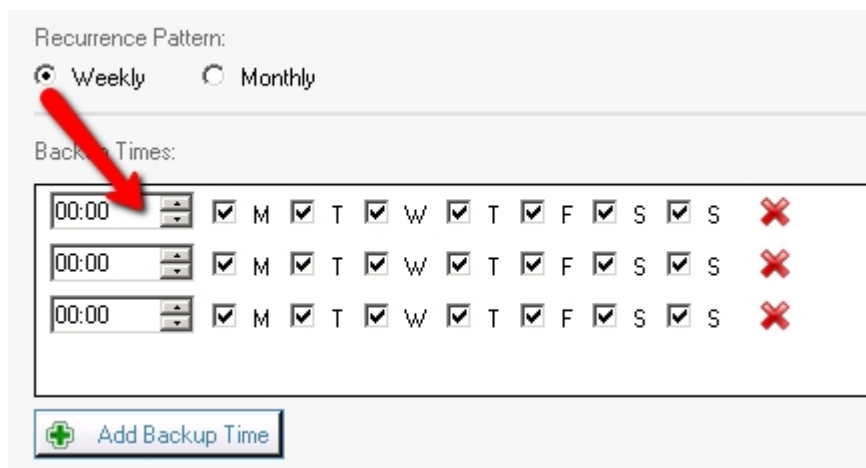
Recurrence Pattern: whether you would like to configure a weekly or monthly recurrence.

Backup Times / Options: settings to specify the backup times / days



Weekly Recurrence

1. Select the weekly radio button.
2. Click "Add Backup Time" to add a new backup time entry to the list.
3. Configure multiple backup times. eg. 10am on Mon, Tue and Friday.
4. These backup times will be repeated on a weekly basis.



Monthly Recurrence

1. Select the monthly radio button.
2. Choose whether you wish the backup to take place on the:
 - Xth day of every month. eg: 10th day of every month.
 - The Xth day of week of every month. eg: 2nd Wed of every month.

Recurrence Pattern:
 Weekly Monthly

Backup Times:
 Day of every Month at
 The of every Month at
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

A red arrow points to the 'Monthly' radio button.

Run the Backup Schedule Calculator before saving changes

You can verify the above settings by simulating the next 25 backup times. To do this click on [Run Backup Schedule Calculator] and you will see a list of the next 25 backup times.

Backup Schedule Calculator:
The Backup Schedule Calculator will show you the Schedule Group will be backed up.
The times / dates are calculated based on the se

Run Backup Schedule Calculator

Guest VM - Backup Schedule Overview
Schedule Overview:
The list below displays the times and dates when these times are based on the configured schedule settings (only the next 25 backup times are shown)

The 1st Tuesday of every Month at 10:00

- Tuesday, Feb 7 at 10:00
- Tuesday, Mar 6 at 10:00
- Tuesday, Apr 3 at 10:00
- Tuesday, May 1 at 10:00
- Tuesday, Jun 5 at 10:00
- Tuesday, Jul 3 at 10:00
- Tuesday, Aug 7 at 10:00
- Tuesday, Sep 4 at 10:00
- Tuesday, Oct 2 at 10:00
- Tuesday, Nov 6 at 10:00

A red arrow points to the 'Run Backup Schedule Calculator' button.

Conclusion

Once the Backup Schedule has been set you will notice that the schedule label in the [Backup / Restore](#) screen has changed.

In the case of a VM with no backup schedule set you will see:



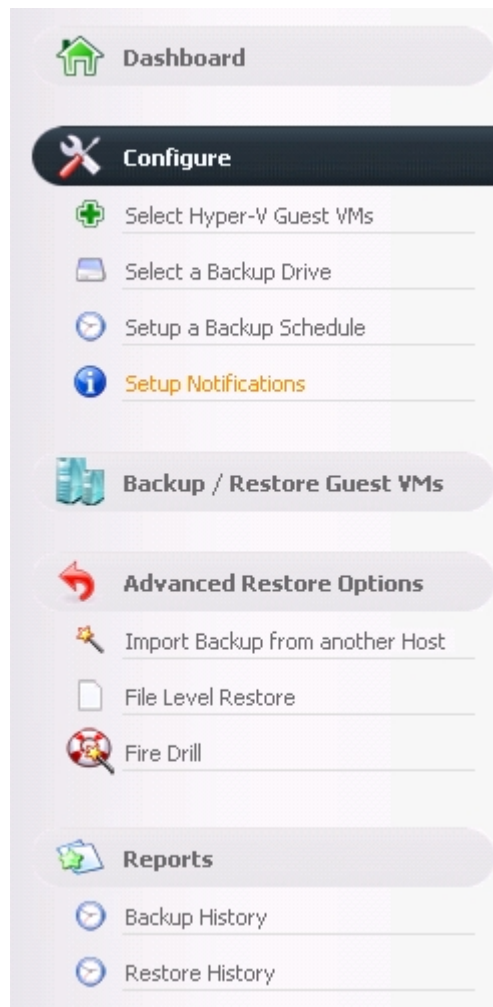
In the case of a VM where a backup schedule has been configured you will see:



Enabling Notifications

To select which notifications to receive simply open the **Management Console** and select the option **[Setup Notifications]** from the left hand side main menu.

Read instructions on how to open the Management Console [here](#).



1. Once you select "Setup Notifications" you will be presented with the following panel:

Notification Settings

Event Log Notifications | Email Notification Settings

- Add an entry to the Event Log for Successful Backups
- Add an entry to the Event Log for Backups with skipped files
- Add an entry to the Event Log for Failed Backups
- Add an entry to the Event Log for completed restore operations

Save Changes | Discard Changes

2. Simply use the checkboxes to select which notifications you would like to receive.
 - To learn how to configure Event Log notifications click [here](#).
 - To learn how to configure Email notifications click [here](#).
3. Once the selections have been made simply click on [Save Changes] to update your backup plan.

Email Notifications

Email Notifications allow users to receive Backup / Restore Reports by email. These reports indicate:

Backup Reports

- ♥ The status of each backup and the Hyper-V Guest VM that was backed up.
- ♥ The date and time of each backup.
- ♥ The amount of data backed up.
- ♥ The number of changed files.
- ♥ The number of skipped files.

- ♥ The duration of the backup.

Restore Reports

- ♥ The status of each restore operation and the Hyper-V Guest VM that was restored.
- ♥ The date and time of each restore operation.
- ♥ The duration of the restore operation.

Here is an example of a Backup Report:

Altaro Hyper-V Backup: Backup Report for C74 (08 Jun 2011 16:17) Inbox | X

[show details](#) 8 Jun (2 days ago) [Reply](#)



- ✓ **Today at 16:14** **Successful Backup** Testin2_scsi (08-06-2011 13h18m07 Clone)
Backed up a total of 532.02 MB for 4 changes. (Duration: 36 seconds)
- ✓ **Today at 16:14** **Successful Backup** Testin2_scsi (03-06-2011 12h24m46 Clone)1
No changes. (Duration: 18 seconds)
- ✓ **Today at 16:14** **Successful Backup** Testing3_iso
No changes. (Duration: 13 seconds)
- ✓ **Today at 16:14** **Successful Backup** Testing1
No changes. (Duration: 8 seconds)
- ✓ **Today at 16:14** **Successful Backup** Testin2_scsi
No changes. (Duration: 10 seconds)

Altaro Backup Software
<http://www.altaro.com>

Here is an example of a Restore Report:

Altaro Hyper-V Backup: Backup Report for C74 (08 Jun 2011 15:21) Inbox | X

☆ [show details](#) 8 Jun (2 days ago) ↩ Reply ▼



✓ **Today at 15:20** **Restore Successful Testing3_iso (03-06-2011 12h27m07 Clone)1**
Successfully restored the backup of 08-Jun-2011 14:17 in 32 seconds.

Altaro Backup Software
<http://www.altaro.com>

Configuring Email Notifications in order to receive Backup Reports:

- ♥ Navigate to the **Setup Notifications** screen as shown [here](#).
- ♥ Once within the **Setup Notifications** screen simply select the [Email Notification Settings] tab.

Configure the notification settings and mail server details below to receive alerts.

Notification Settings

Event Log Notifications | **Email Notification Settings**

- Send Email notifications for Successful Backups
- Send Email notifications for Backups with skipped files
- Send Email notifications for Failed Backups
- Send Email notifications for completed restore operations

Send Email notifications Immediately Emails will be sent at least 5 minutes apart
 Queue Email notifications and send as a daily Email at

SMTP Server Address

SMTP Server Port

Use SSL Encryption

The outgoing mail server (SMTP) requires authentication

User Name

Password

- ♥ Use the checkboxes to specify which notifications you would like to receive by email:
 - You can choose to receive notifications for: successful backups, backups in which one or more file was skipped, failed backups and completed restore operations.
 - If you choose to receive notifications for failed backups you will also be alerted when a backup is skipped because your backup drive is not connected.

- ♥ Next specify the frequency of your Email notifications. There are two options:
 - Immediately after the operation has completed. (Emails will be sent a minimum of 5 minutes apart and multiple notifications may be grouped into one email).
 - As a daily email digest at a specified time each day.

- ♥ Finally configure your SMTP mail server settings and the email recipients. The [Send Test Email] button can be used to test the SMTP settings.

- ♥ Once you've finished configuring the Email notifications click on the [Save Changes] button at the bottom of the screen.

Event Log Notifications

Event Log Notifications can be viewed within the Event Viewer console on Windows Server. These are ideal for monitoring the backup and restore operations remotely from another server.

These log entries indicate the following information:

Backup Reports

- ♥ The status of each backup and the Hyper-V Guest VM that was backed up.
- ♥ The date and time of each backup.
- ♥ The amount of data backed up.
- ♥ The number of changed files.
- ♥ The number of skipped files.
- ♥ The duration of the backup.

Restore Reports

- ♥ The status of each restore operation and the Hyper-V Guest VM that was restored.
- ♥ The date and time of each restore operation.
- ♥ The duration of the restore operation.

Configuring Event Log Notifications in order to receive Backup Reports:

- ♥ Navigate to the **Setup Notifications** screen as shown [here](#).
- ♥ Once within the **Setup Notifications** screen simply select the [Event Log Notifications] tab.

Configure the notification settings and mail server details below to receive alerts.

Notification Settings

Event Log Notifications | Email Notification Settings

- Add an entry to the Event Log for Successful Backups
- Add an entry to the Event Log for Backups with skipped files
- Add an entry to the Event Log for Failed Backups
- Add an entry to the Event Log for completed restore operations

♥ Use the checkboxes to specify which notifications you would like to log:

- You can choose to receive notifications for: successful backups, backups in which one or more file was skipped, failed backups and completed restore operations.
- If you choose to receive notifications for failed backups you will also be alerted when a backup is skipped because your backup drive is not connected.

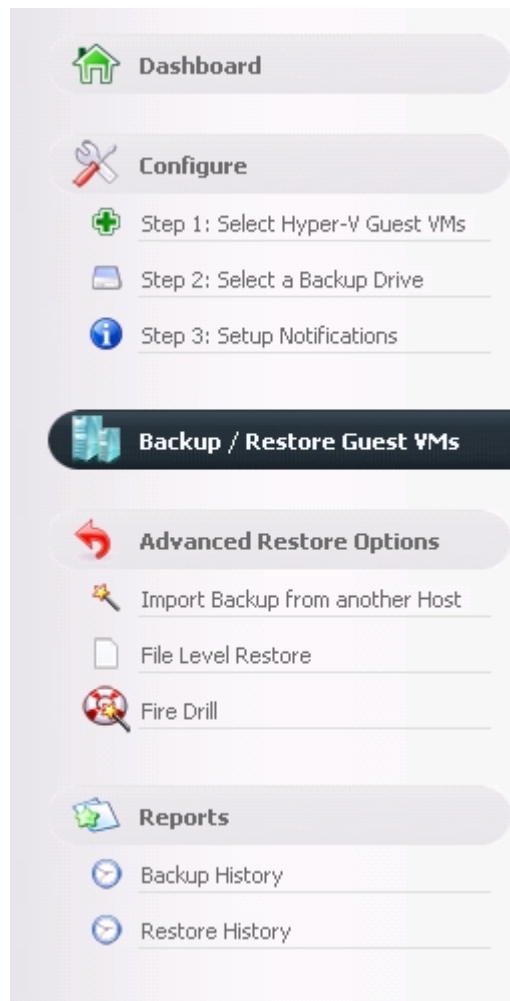
♥ Once you've finished configuring the Event Log notifications click on the [Save Changes] button at the bottom of the screen.

Configuring a VM's Backup Settings

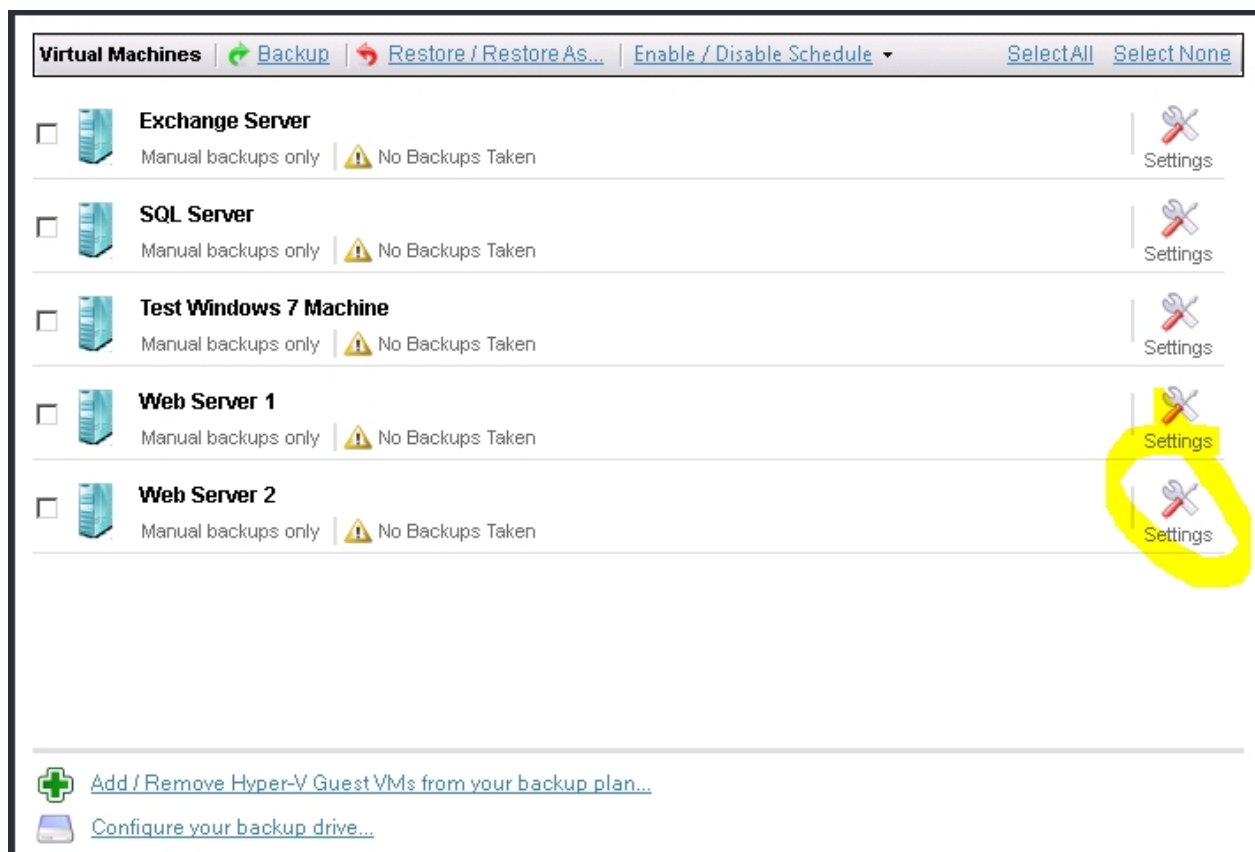
The final step in configuring **Altaro Hyper-V Backup** is to configure an actual Backup Plan for each selected Guest VM. This is simple and can be achieved by navigating to the "Advanced Settings" window of each Guest VM.

This can be achieved by following these steps:

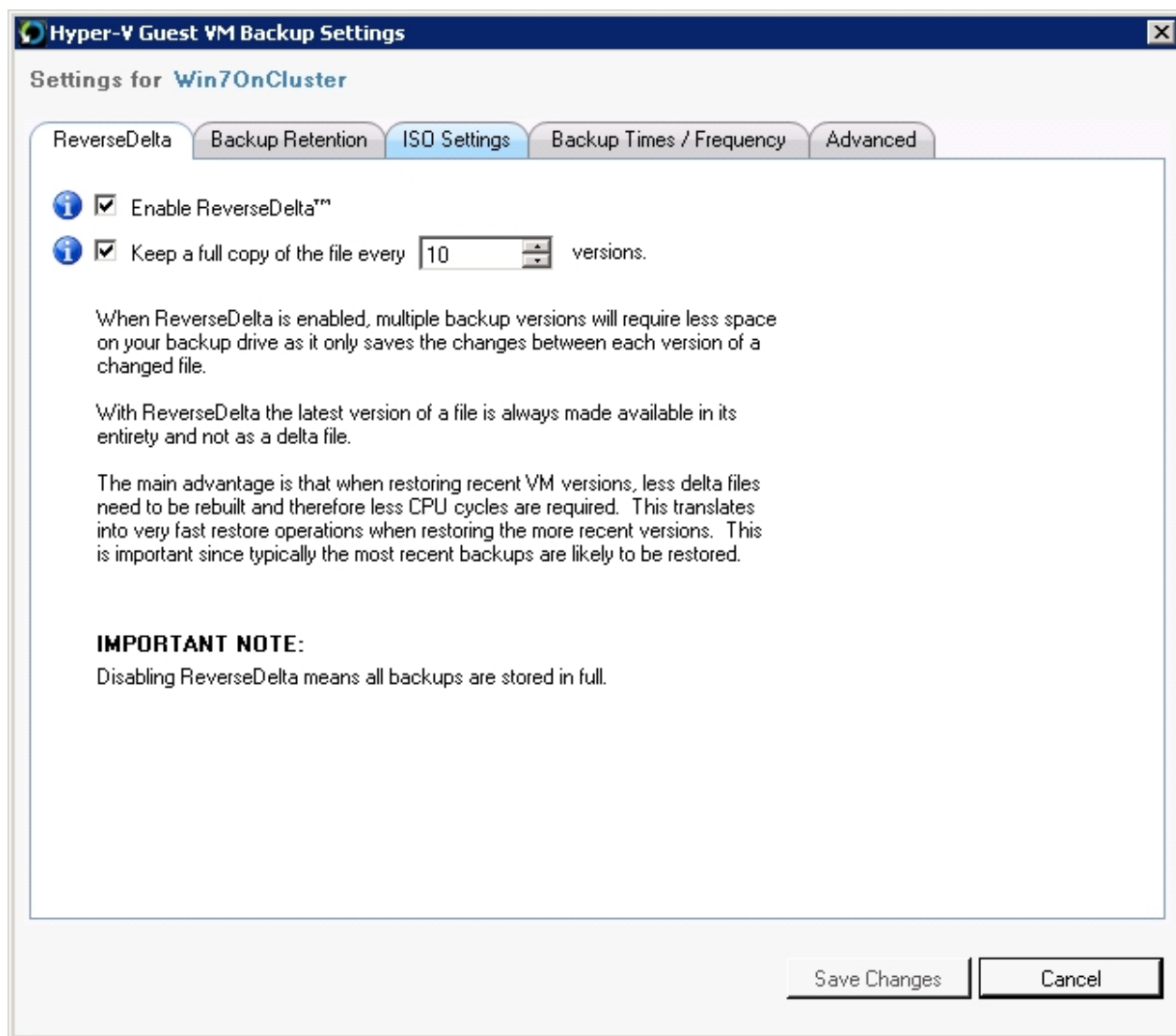
1. Open the **Management Console** as described [here](#).
2. Navigate to the "**Backup / Restore Hyper-V Guest VMs**" screen.



3. You will be presented with the following screen. Please note the "Spanner and Wrench" icons to the right hand side of each VM.



4. Clicking on a "Spanner and Wrench" icon will display the "Advanced Settings" window for the VM in question.



5. From the advanced settings Window you can do the following:
- Enable / Disable Reverse Delta. Click [here](#) fore more details.
 - Choose how many versions to keep of the VM and choose a schedule for deleting old versions. Click [here](#) fore more details.
 - Choose whether to backup ISO files which are attached to the VM. Click [here](#) fore more details.
 - Choose whether to enable Live Backups for Non-VSS Aware Guests (Crash-Consistent Backups). Click [here](#) fore more details.

Backup for Cluster Environments

[The Master Controller Node vs. Background Agents](#)

[Configuring for a Hyper-V Cluster Environment](#)

[Dashboard Cluster Status Tab](#)

[Selecting VMs for backup \(Cluster Environment\)](#)

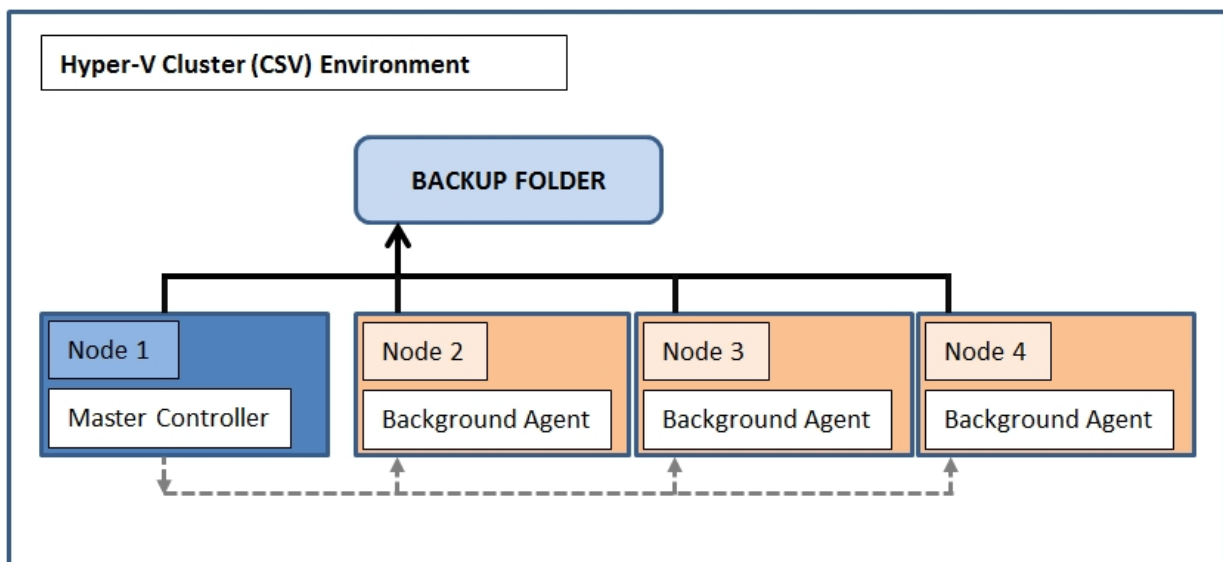
[Selecting a backup drive \(Cluster Environment\)](#)

[Configuring the Altaro Agent upon a remote Node](#)

[Other considerations when using Altaro Agents](#)

[Firewall Rules / Communication between nodes](#)

The Master Controller Node vs. Background Agents



The Master Controller Node

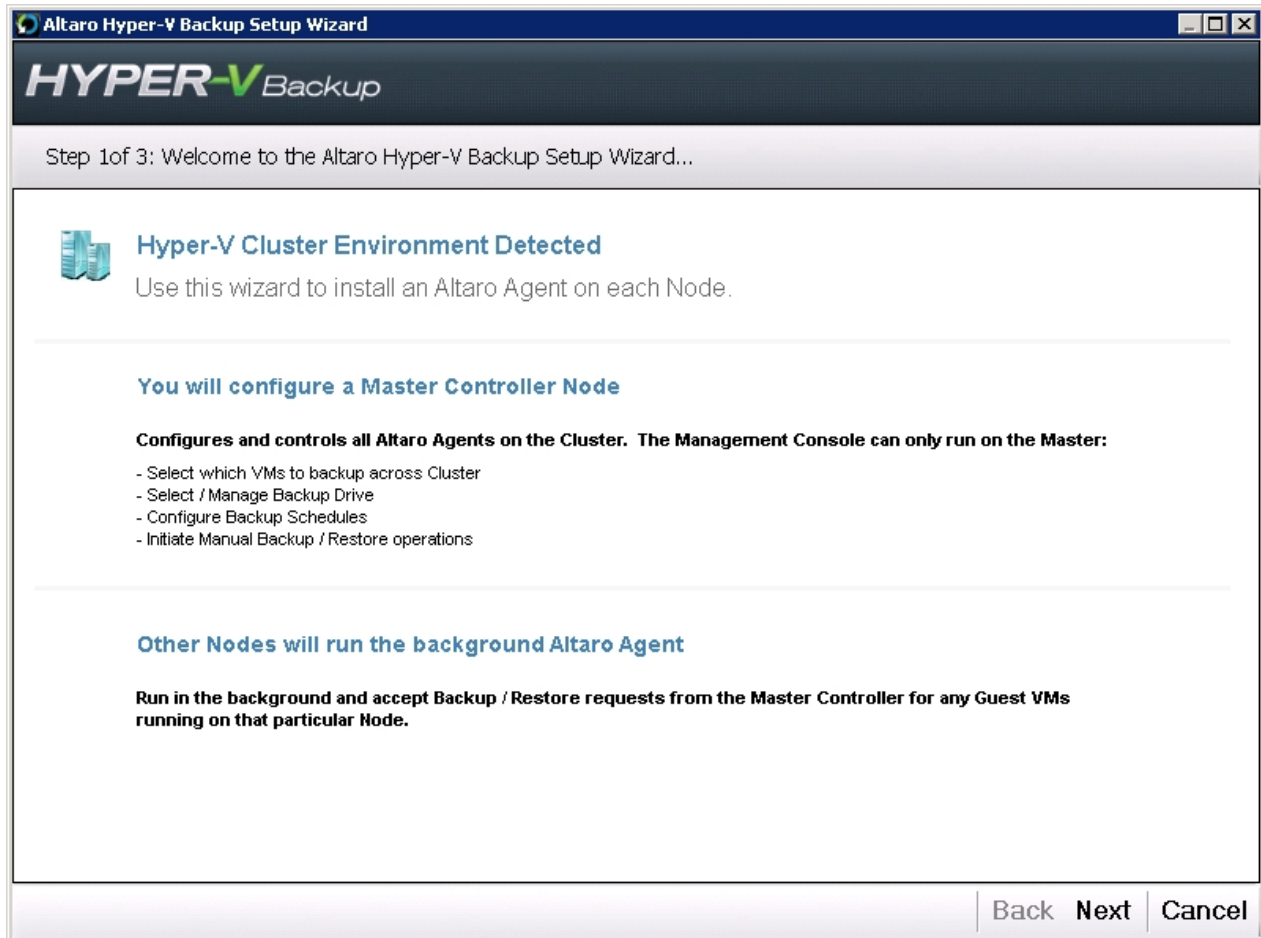
- ♥ The Master Controller node configures and controls all the Altaro Background Agents on the cluster.
- ♥ The Management Console User Interface must be run on the Master Controller.
- ♥ Select which VMs to backup across the Cluster
- ♥ Select / Manage Backup Drive
- ♥ Configure Backup Schedules
- ♥ Initiate Manual Backup / Restore Operations

Altaro Background Agent Nodes

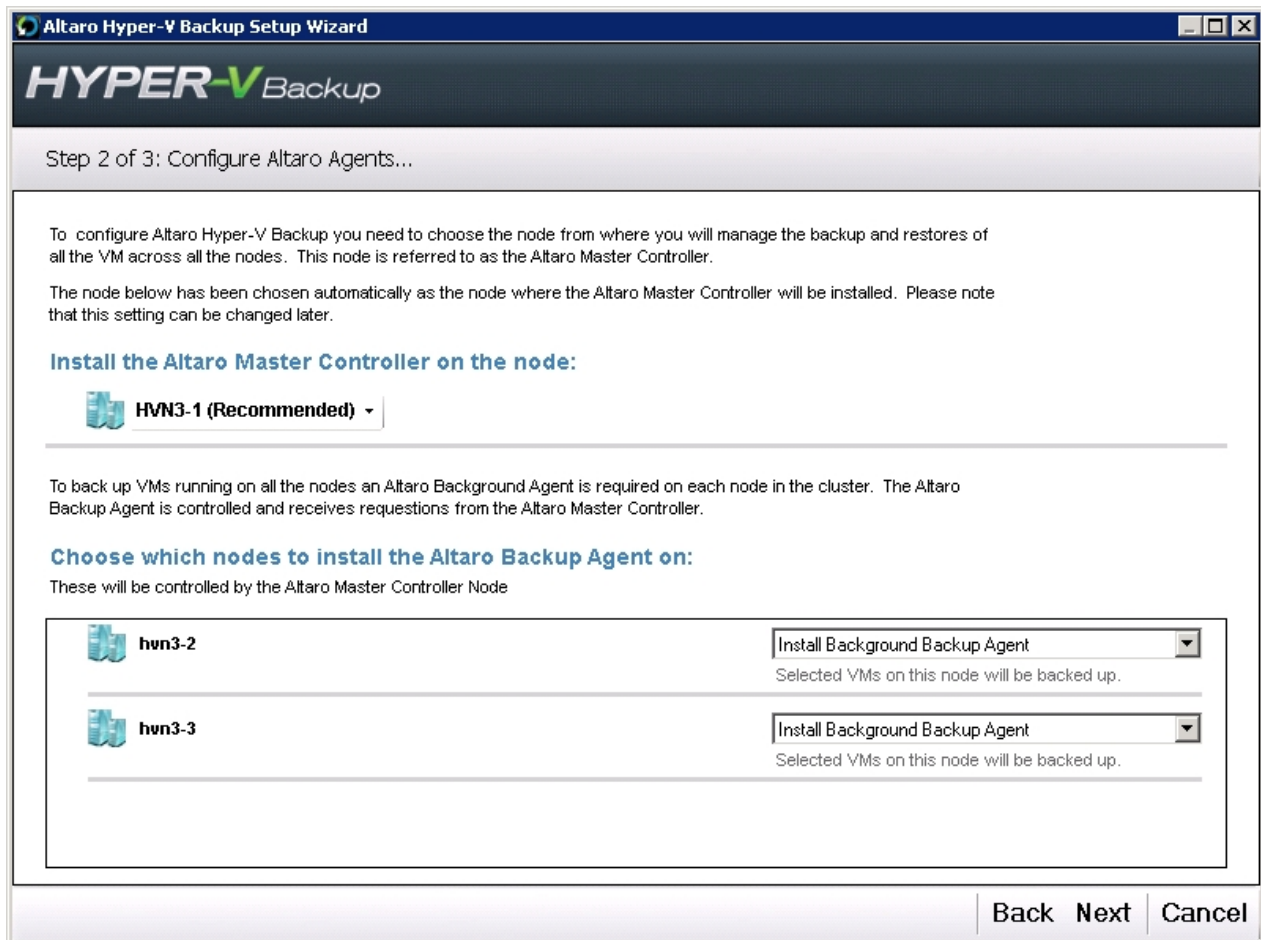
- ♥ Run in the background and accept backup and restore requests from the Master Controller node for any Guest VMs running on that particular Node.

Configuring for a Hyper-V Cluster Environment

When installing for the first time within a Hyper-V Cluster Environment a Setup Wizard will be displayed.



1. Choose which node will be the Master Controller Node and which nodes will be installed as Background Agents. It is recommended that the node upon which you are running the setup wizard is configured as the Master Controller Node.

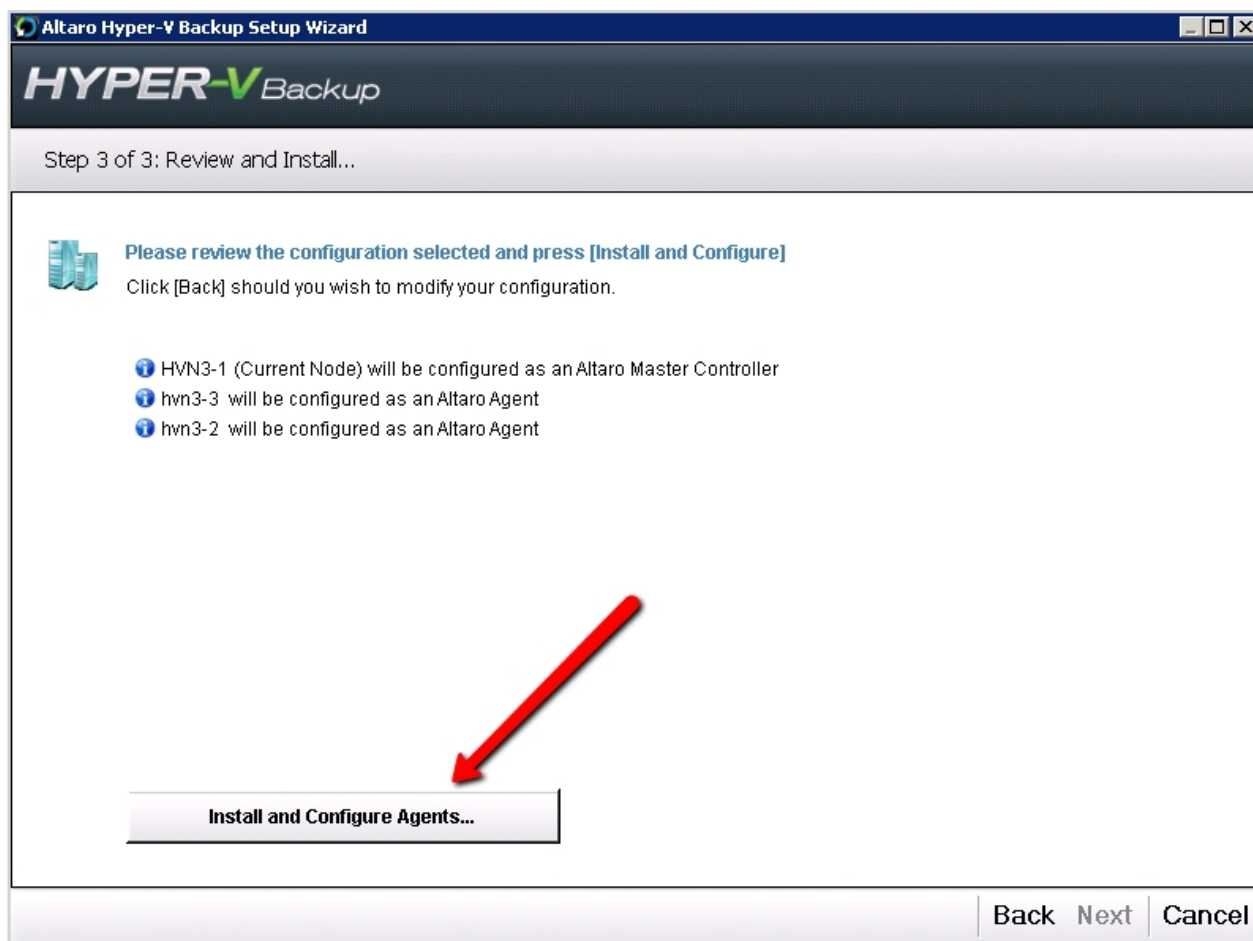


Any node which has not yet been configured can be chosen as a Master Controller Node.

Install the Altaro Master Controller on the node:






2. Review the configuration settings and click on "Install and Configure Agents".



3. You will now be presented with a progress bar. If you have many nodes then this may take a few minutes. Once the installation is complete you will see a summary of the installation results as shown below. If any of the nodes fail to install press [BACK] and try again. Otherwise press [NEXT].

 **Altaro Hyper-V Backup has been installed successfully**
Click [Next] to configure your backup settings.

-  HVN3-1 successfully configured as the Master Controller.
-  hvn3-3 successfully configured as an Altaro Agent.
-  hvn3-2 successfully configured as an Altaro Agent.

Note: If you chose to configure the current Node as a Background Agent then you must switch to the Master Controller Node to launch the Management Console.

4. The Management Console will now be launched automatically if the current node was configured as the Master Controller. You will be then be taken to the Hyper-V Guest Selection Screen.

Next Steps:

[Choosing which Guest VMs to backup within a Hyper-V Cluster Environment](#)

[Configuring a Backup Drive in a Hyper-V Cluster Environment](#)

Dashboard Cluster Status Tab

When running Altaro Hyper-V Backup in a Cluster Environment a new tab will appear within the Dashboard Screen.

Cluster Status Tab

The screenshot shows the Altaro Hyper-V Backup Dashboard. On the left is a sidebar with navigation options: Dashboard, Configure (Select Hyper-V Guest VMs, Select a Backup Drive, Setup a Backup Schedule, Setup Notifications), Backup / Restore Guest VMs, Advanced Restore Options (Import Backup from another Host, File Level Restore, Fire Drill), and Reports (Backup History, Restore History). The main content area has a yellow warning banner: "Your trial version will expire in 30 days". Below this is a "Backup Drive Status" section with a pie chart showing "Free Space: 105.12GB" and "Other: 50.61GB". To the right is a "Total Backup Size / Day" section showing "No Data". Below these are tabs for "Cluster Status", "Latest Backups", "2nd Backup Drive History", "Restore History", and "Errors Since Last Backup". The "Cluster Status" tab is active, showing a list of nodes: HVN3-1 (Current Node (Master Controller), Evaluation Mode: 30 days left), HVN3-2 (Altaro Agent detected and active, Evaluation Mode: 20 days left), and HVN3-3 (Altaro Agent detected and active, Evaluation Mode: 20 days left). At the bottom, it says "Updated node status at 1:23 PM" and "Refresh node status now".

The Cluster Status Tab will show a list of nodes on the cluster. The cluster status is refreshed every 5 minutes automatically, but a refresh can be forced by clicking on the "Refresh node status node" button. The following information is shown alongside each node:

- The **Name** of the node
- The **Status** of the Altaro Agent on that node:
 - Altaro Agent not detected.
 - Altaro Agent detected but must be upgraded to a newer version.
 - Altaro Agent detected and active.
 - Altaro Agent detected but is running as a Master Controller. This means that it cannot be configured from the current node. Click [here](#) to learn more.
- The **Evaluation Details** of the Altaro Agent on that node: (if the agent is currently within Evaluation mode)
 - Number of days left for evaluation.
 - Whether the evaluation period has expired or not.

- Whether the selected license key includes support for Cluster Environments.

- A **"Configure Button"**:

- Can be used to configure / update / install / uninstall the Altaro Agent upon that node.
- Can be used to license the Altaro Agent upon that node.

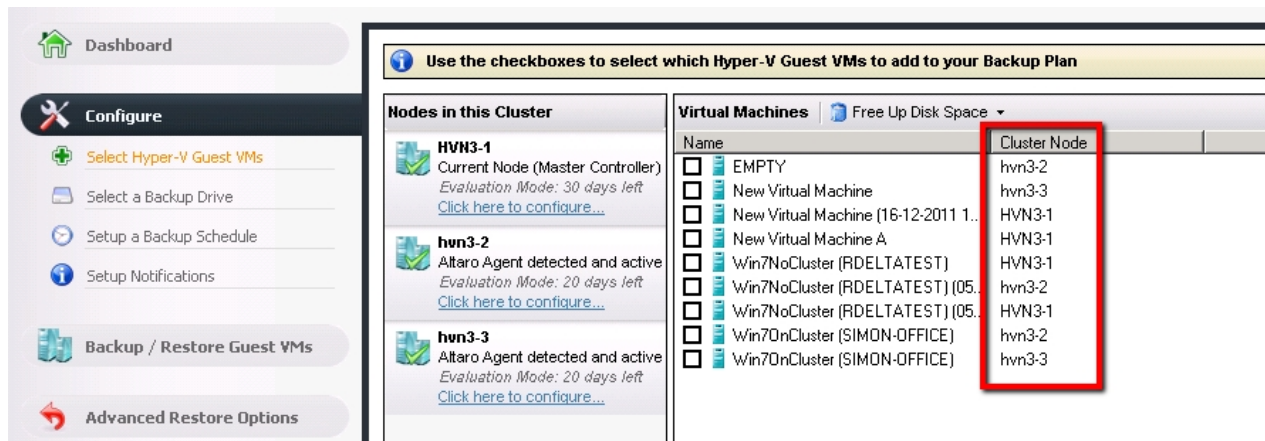
Click [here](#) to read more about configuring agents.

Selecting VMs for backup (Cluster Environment)

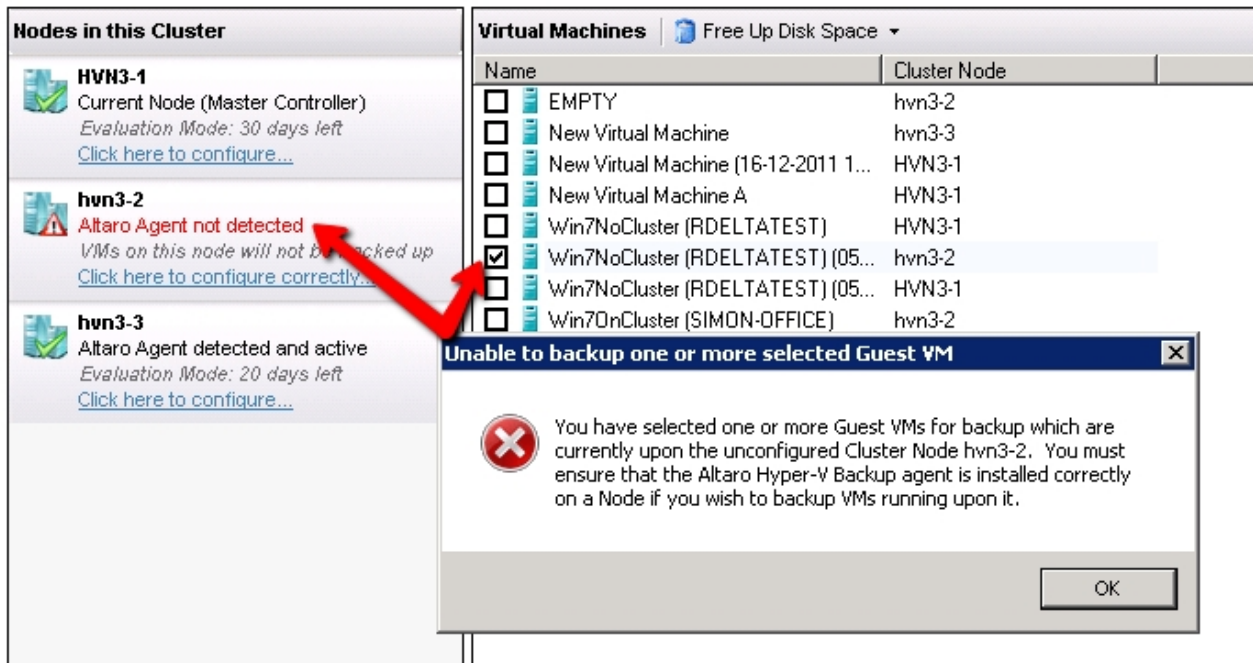
When selecting which Hyper-V Guests to add to your backup plan within a Hyper-V Cluster Environment an additional panel is displayed. This panel displays a list of nodes on the cluster and indicates the status of the Altaro Background Agent on each node.

The Hyper-V Guest VM list will now show all VMs available on the Cluster (including those that are not on the current node). An additional column will appear to show which node the VM is currently running upon. You can add any VM from any Node on the Cluster to your backup plan.

Before proceeding read the chapter on [Choosing which VMs to backup](#).



If a Background Agent on a specific node is not configured correctly then you will be unable to choose VMs from that node for backup. To configure the node correctly click on the button "[Click here to configure correctly...](#)".



Selecting a Backup Drive (Cluster Environment)

To see how to select a backup drive please [read this chapter](#). This article will describe an additional step which is required when selecting a backup drive in a Cluster Environment.

Also please note that [special considerations](#) must be taken when selecting a backup drive in a Cluster Environment.

Configuring the Altaro Agent upon a Node

At any point you may choose to configure an Altaro Agent upon a specific node. Configuration options include:

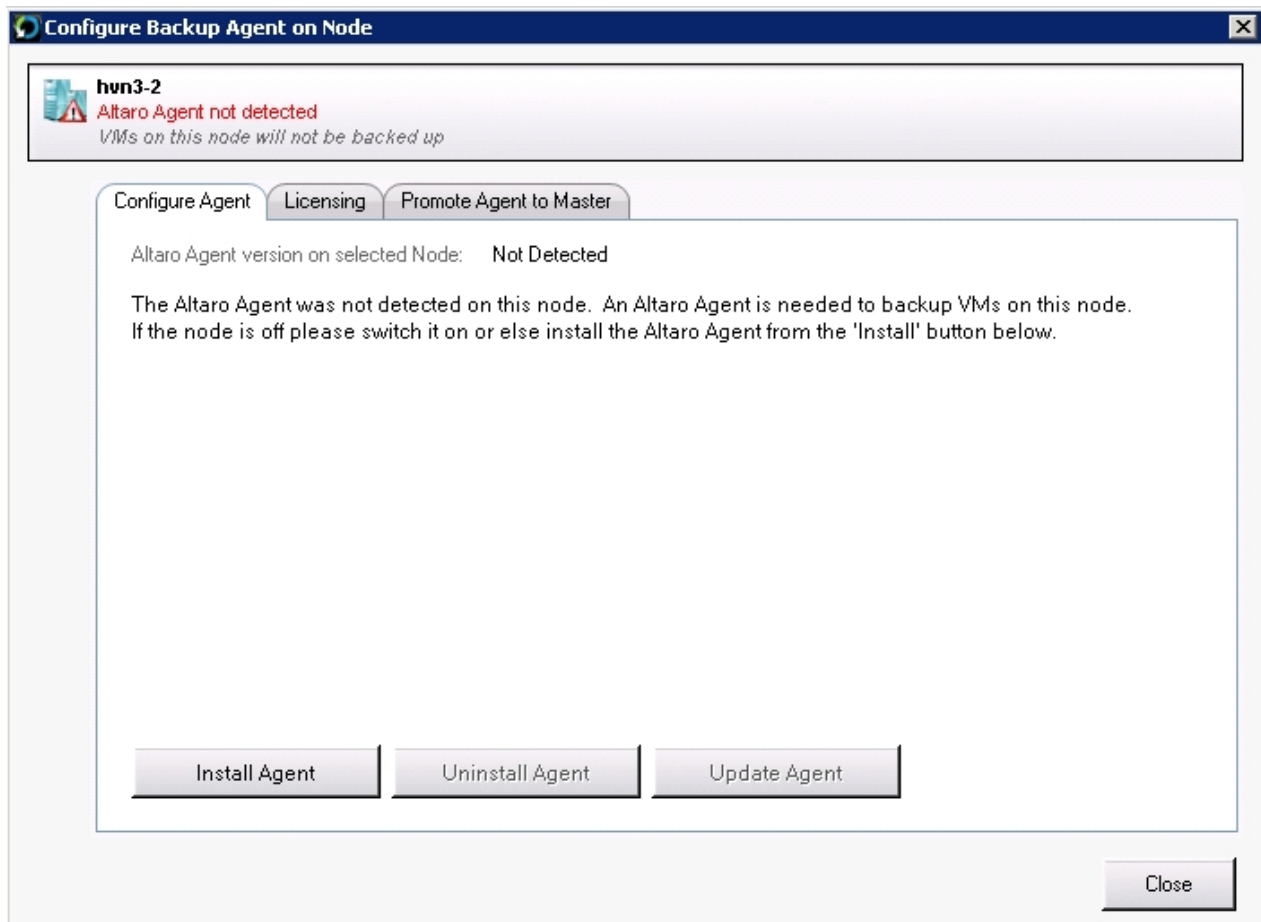
- Update / install / uninstall the Altaro Agent upon that node.
- Switch a node from a Master Controller to background agent.
- License the Altaro Agent upon that node.

To access the configuration panel simply use the [Dashboard Cluster Tab](#) and click on "Click here to configure..." besides the required Node.

Tab 1: Configure Agent

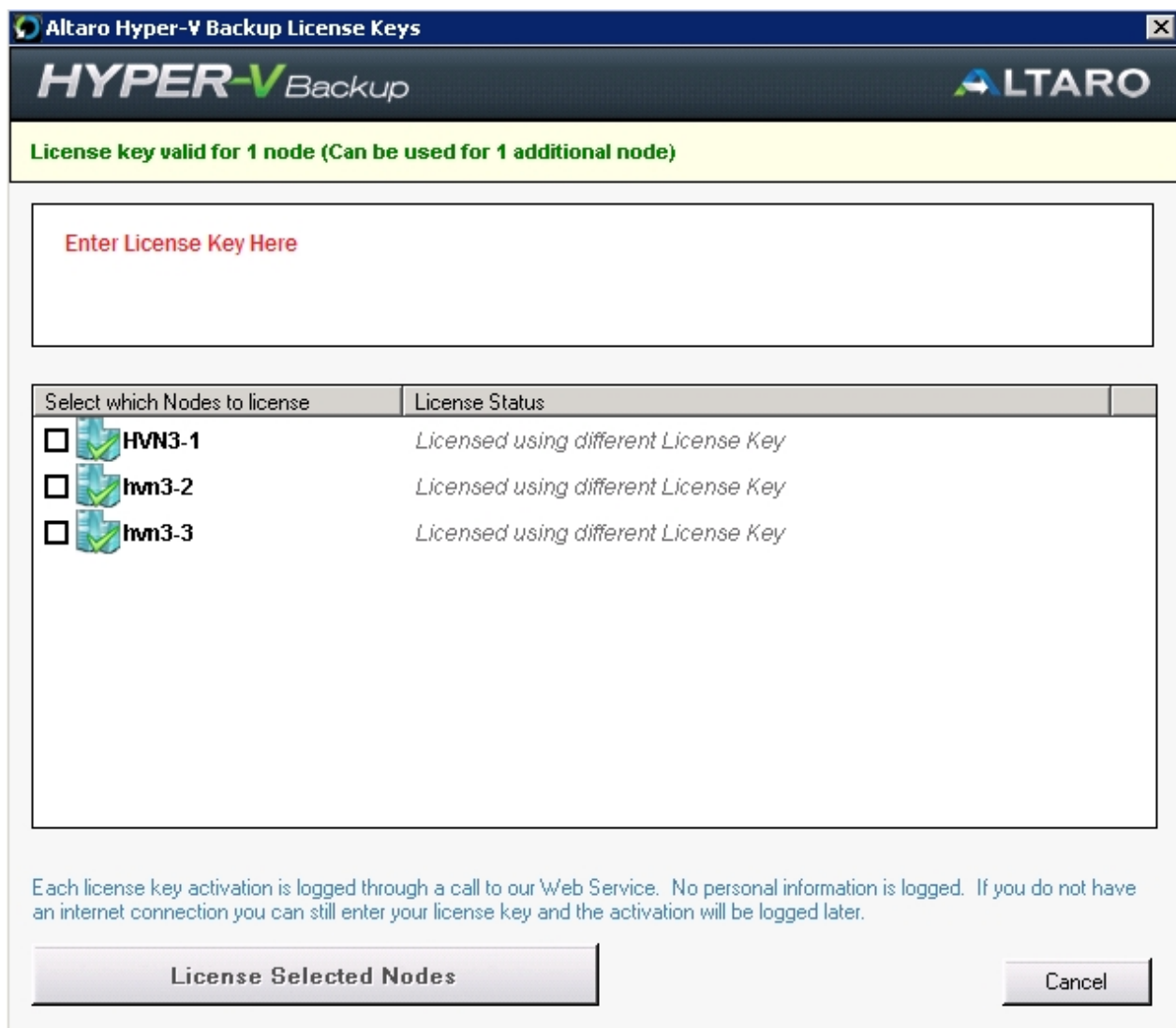
Three buttons are present at the bottom of the tab page:

- **Install Agent:** installs the Altaro Agent on the Node and configures it correctly.
- **Configure Agent:** switches a node from a Master Controller to background agent Node.
- **Uninstall Agent:** removes the Altaro Agent from the Node.
- **Update Agent:** Updates the Altaro Agent on the Node to the current Master Controller Version.



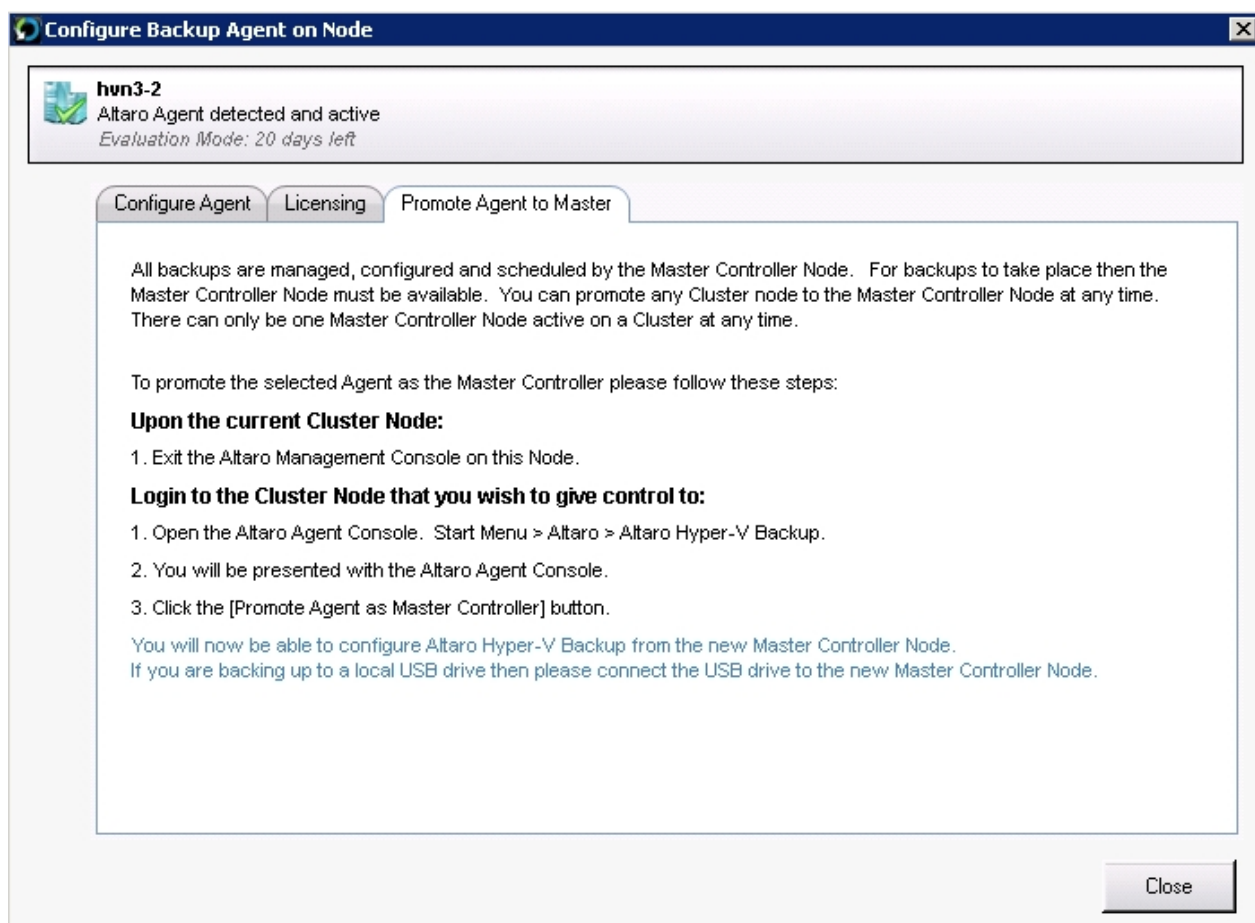
Tab 2: Licensing

This tab allows you to push a license key to the selected Node. Just click on the [Enter / View License Key] button and the following Window will appear which facilitates the licensing of each Node in the cluster. Simply use the checkboxes in the list to identify which Nodes you would like to license. The number of Nodes allowed is dependent on the number of activations allowed by the License Key.



Tab 3: Promote Agent to Master

This tab simply provides instructions on how to promote the selected Agent as a Master Controller. Click [here](#) for instructions on how to do this.



Other considerations when using Altaro Agents

[Altaro Agent User Interface](#)

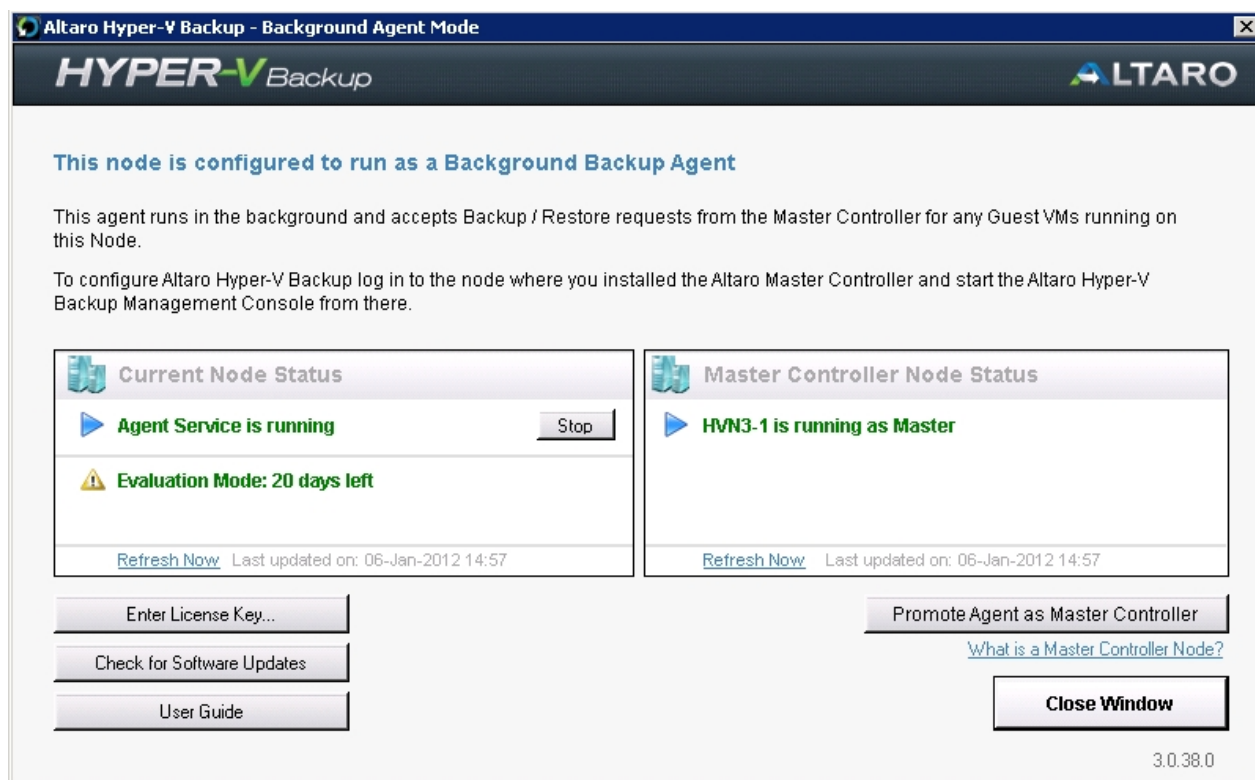
[Promoting an Altaro Agent as the Master Controller](#)

Altaro Agent User Interface

As discussed earlier in this section the Management Console can only be accessed from the Master Controller Node. Attempting to launch the Management Console from other nodes will only launch a simple Status Console as shown below.

To launch the Agent Console please use one of the following methods:

- ♥ Clicking on the **Altaro Hyper-V Backup** item within the "Start Menu > All Programs > Altaro" group.
- ♥ Launching "Altaro Hyper-V Backup.exe" application from the install location. By default this is "C:\Program Files\Altaro\Altaro Hyper-V Backup".
- ♥ Enter the command **STARTALTARO** into a command prompt window. This may not work immediately after first install until you log out and in to the Server due to the Environment Variables not being refreshed.



This console mainly provides status information but allows for the following:

- Entering a License Key.
- Checking for Software Updates.
- Accessing the User Guide.
- Stopping / Starting the Agent Windows Service.
- [Promoting the Agent as the new Master Controller.](#)

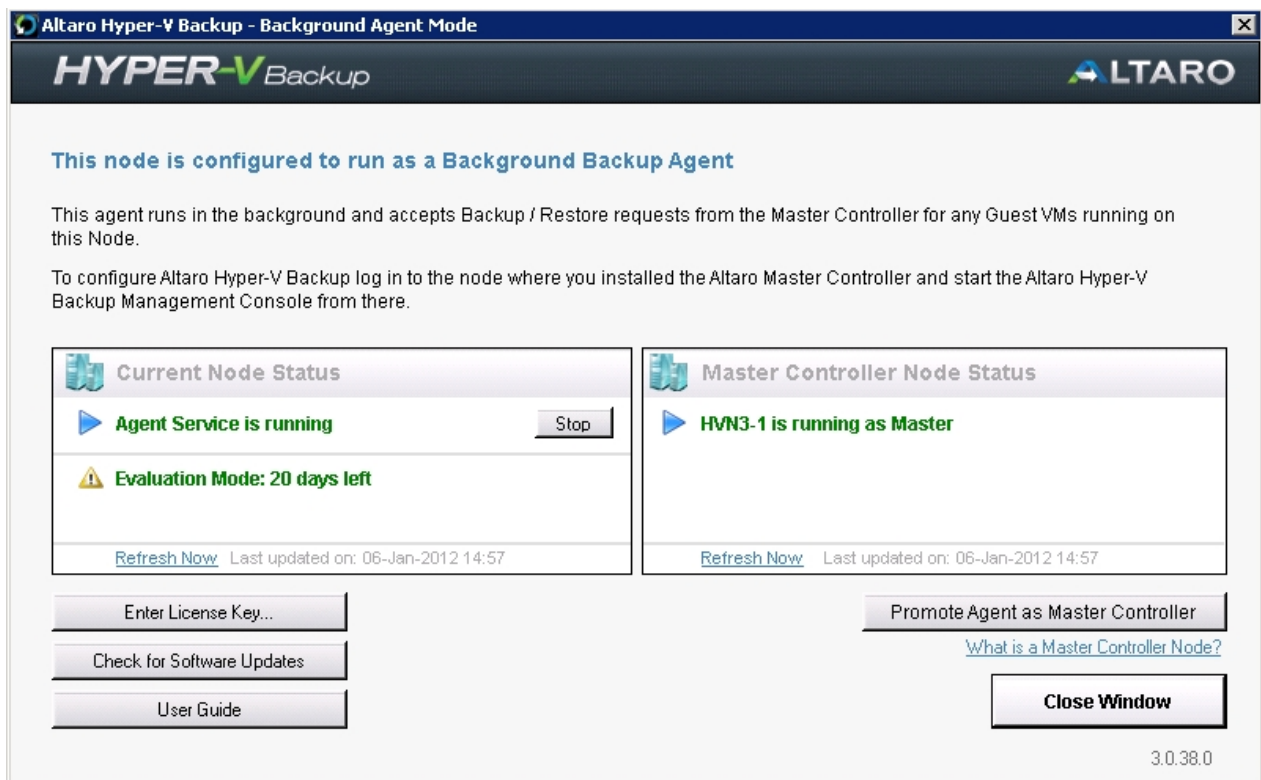
Promoting an Altaro Agent as the Master Controller

Please Note: Before reading this article it is important to understand the difference between a Master Controller Node and a Background Altaro Agent. [Click here to read more on this topic.](#)

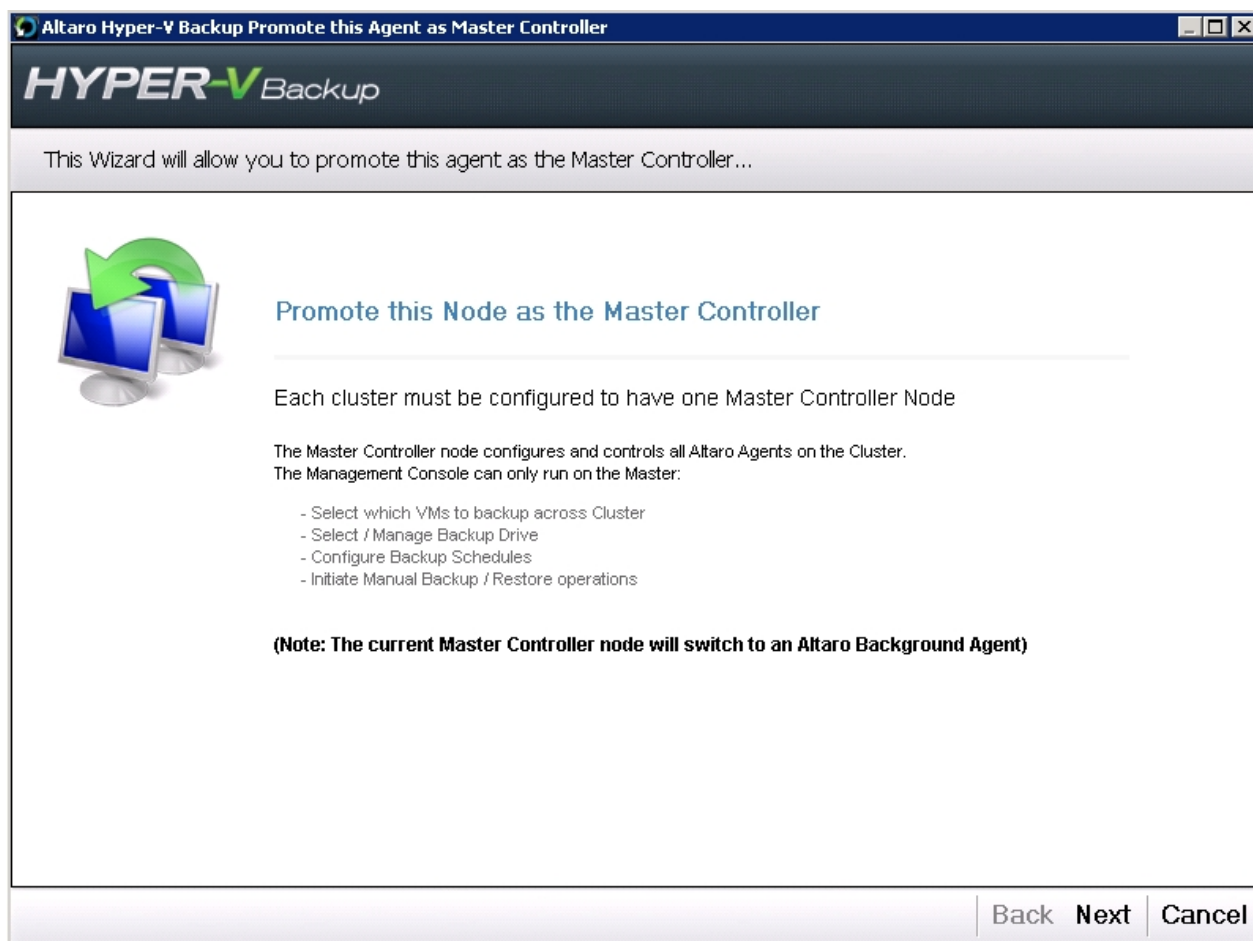
If you wish to promote a node to the Master Controller you must open the Agent Console using one of the following methods:

- ♥ Clicking on the **Altaro Hyper-V Backup** item within the "Start Menu > All Programs > Altaro" group.
- ♥ Launching "Altaro Hyper-V Backup.exe" application from the install location. By default this is "C:\Program Files\Altaro\Altaro Hyper-V Backup".
- ♥ Enter the command **STARTALTARO** into a command prompt window. This may not work immediately after first install until you log out and in to the Server due to the Environment Variables not being refreshed.

Once launched you will see the following screen:

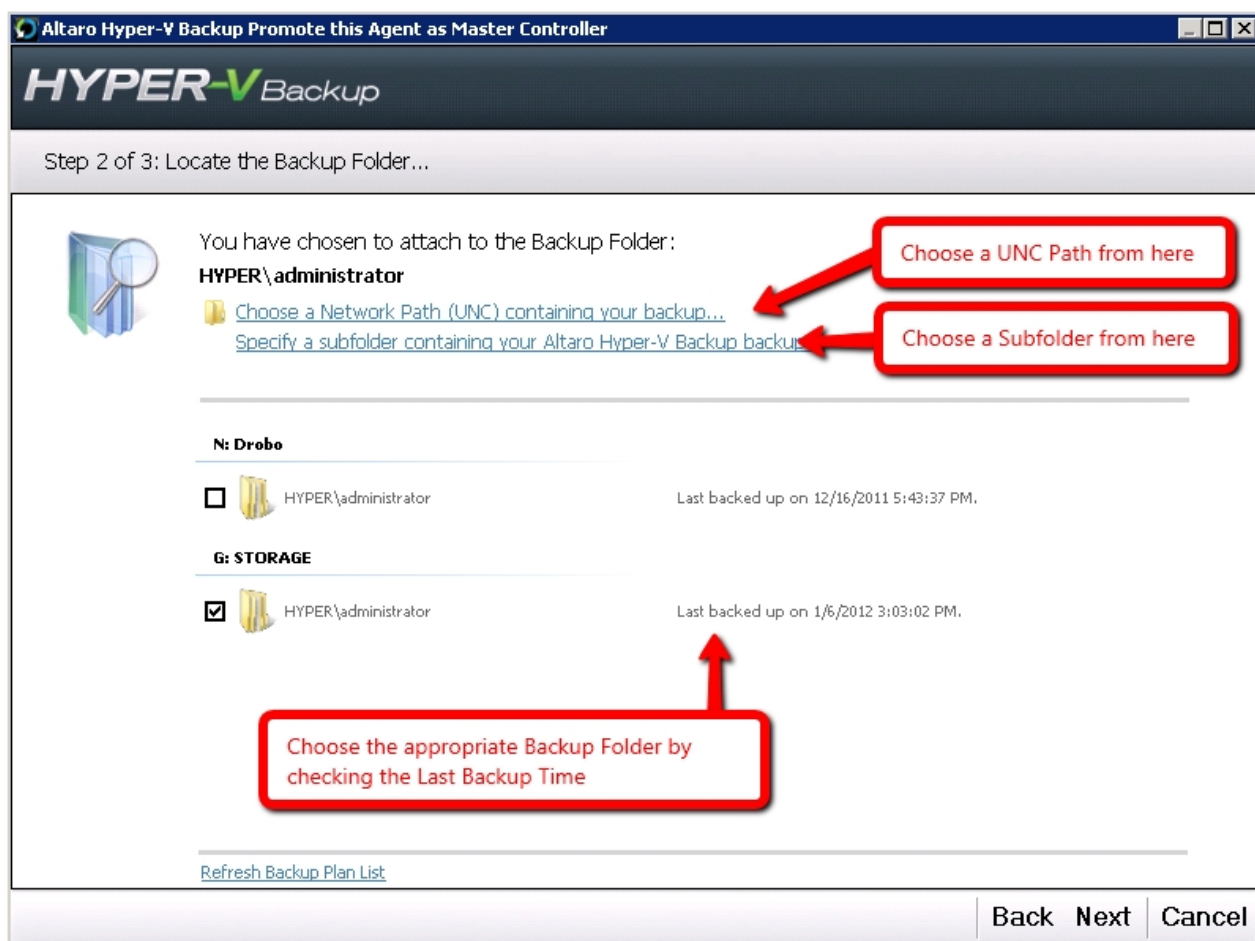


1. Click on "Promote Agent as Master Controller" to begin. The first screen that will appear is simply an information screen explaining what a Master Controller node does. Promoting an agent will demote the previous Master Controller.

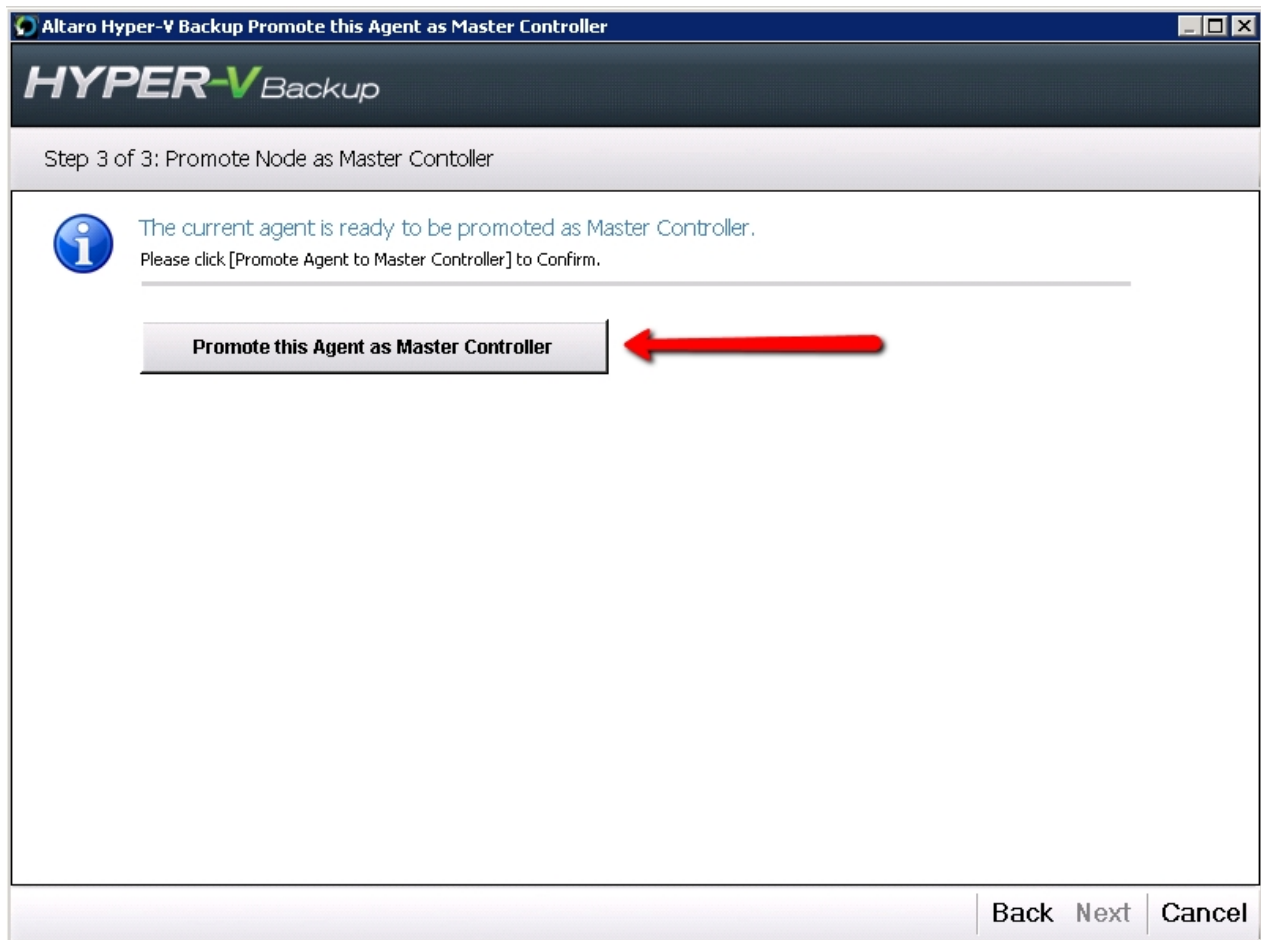


2. The next step is to select the backup folder currently being backed up to by the old Master Controller.

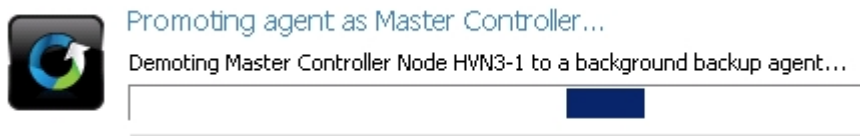
- Only backup folders of the same Cluster will be displayed.
- You may choose to attach to a UNC Path.
- You may choose to connect the backup drive directly to the new node.
- If you do not find the backup folder, click on "Specify a subfolder..." to choose the parent folder of the **AltaroHyperVBackup** folder which contains the backup files.
- You can check the "Last Backup Time" to ensure that you are attaching to the correct folder.



3. Confirm that you would like to promote the agent as Master Controller. Once again please note that the previous Master Controller will be demoted to a background Altaro Agent. If the old Master Controller node is currently offline / unavailable then it will be demoted the next time it starts or connects to the backup drive.

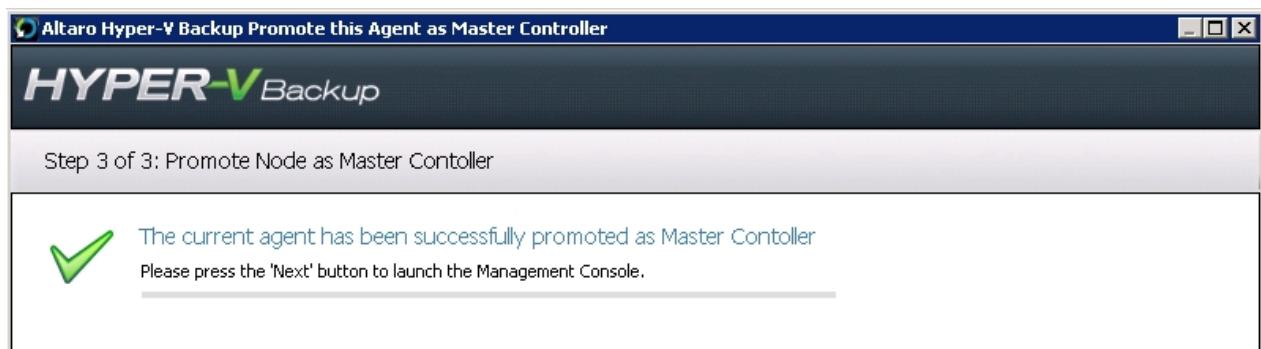


4. The operation will begin and a progress bar will show the current action. This may take a few minutes.

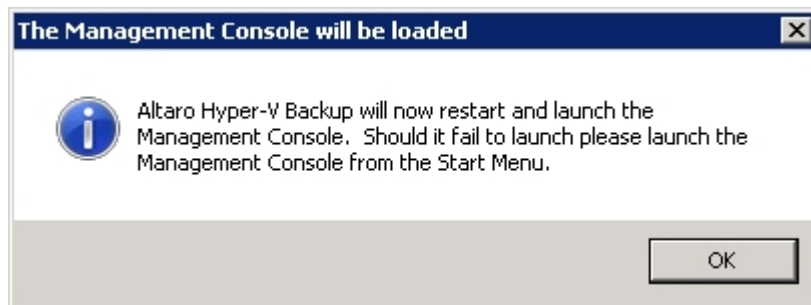


5. Once the promotion is completed the progress bar will be replaced by a message. It can either be successful as displayed in the example below or an error could be listed. In the case of an error please refer to the error message, resolve the issue and try again.

An example of an error is that the current Master Controller node is currently busy taking a backup - in that case promotion of other nodes is not allowed.



6. Finally if the promotion was successful the the Management Console will be launched. It is possible that the Management Console will not start automatically. If not please launch it manually from the Start Menu.



Firewall Rules / Communication between Nodes

It is important to note that Altaro Hyper-V Backup performs the following IPC and TCP communication:

1. Within the same Node

- Between the Management Console and the "Altaro Hyper-V Backup" Windows Service.

IPC Ports used

2. Between Nodes on the same Cluster

- Between the local Management Console and the "Altaro Hyper-V Backup" Windows Service on the remote node.

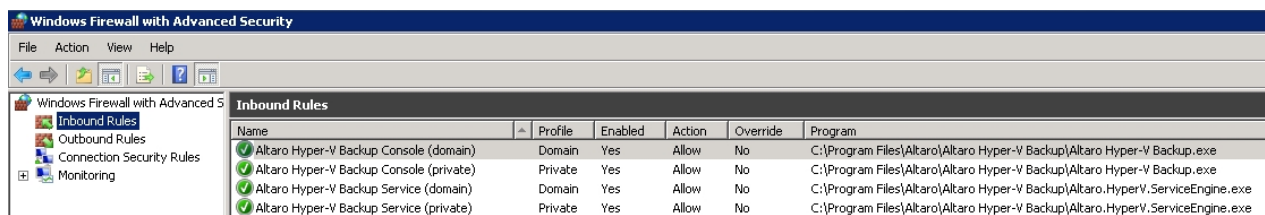
TCP Port: 24252

- Between the "Altaro Hyper-V Backup" Windows Service and the "Altaro Hyper-V Backup" Windows Service on the remote node.

TCP Port: 24251

To facilitate this communication the Altaro Hyper-V Backup Windows Installer create the Windows Firewall rules below which allow communication between the following processes:

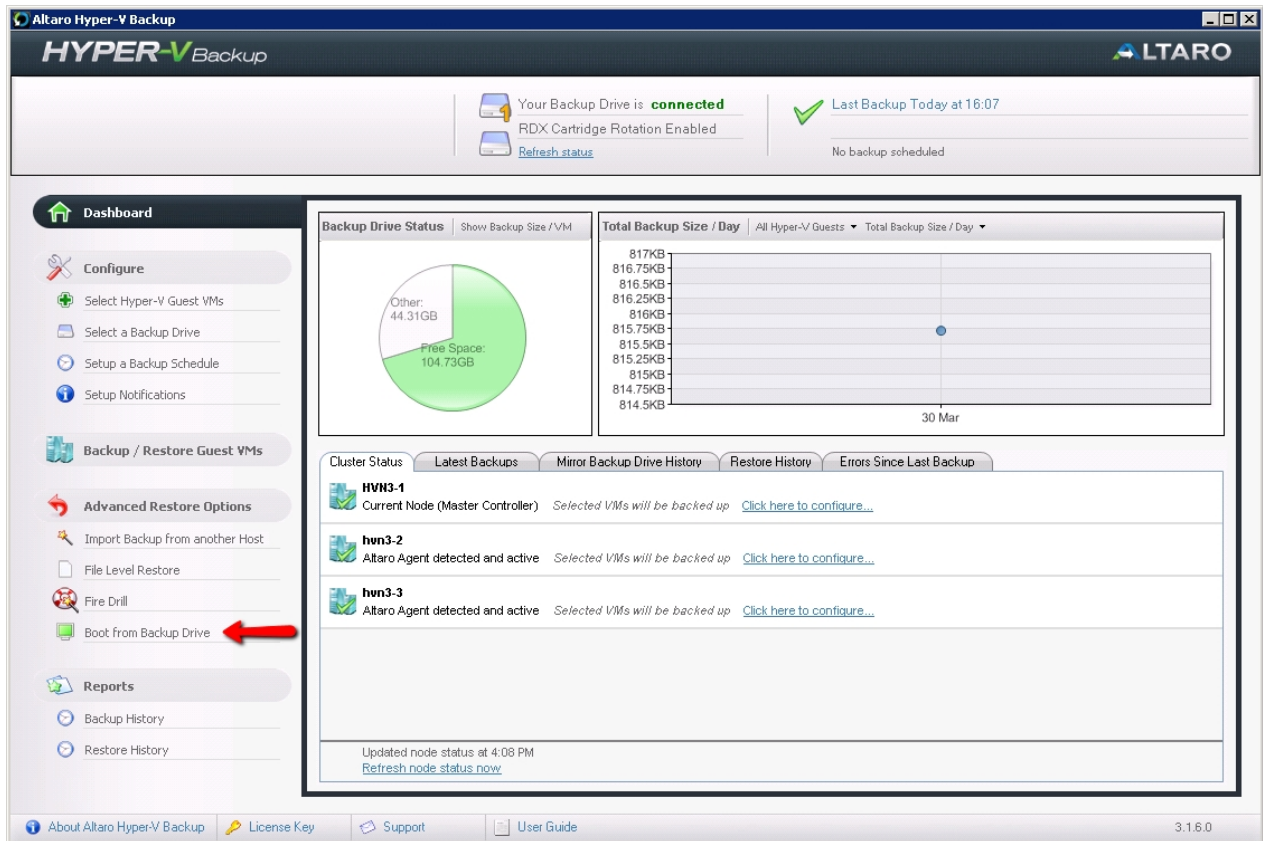
- Altaro Hyper-V Backup.exe
- Altaro.HyperV.ServiceEngine.exe



Phase 1: Boot a VM directly from the backup drive

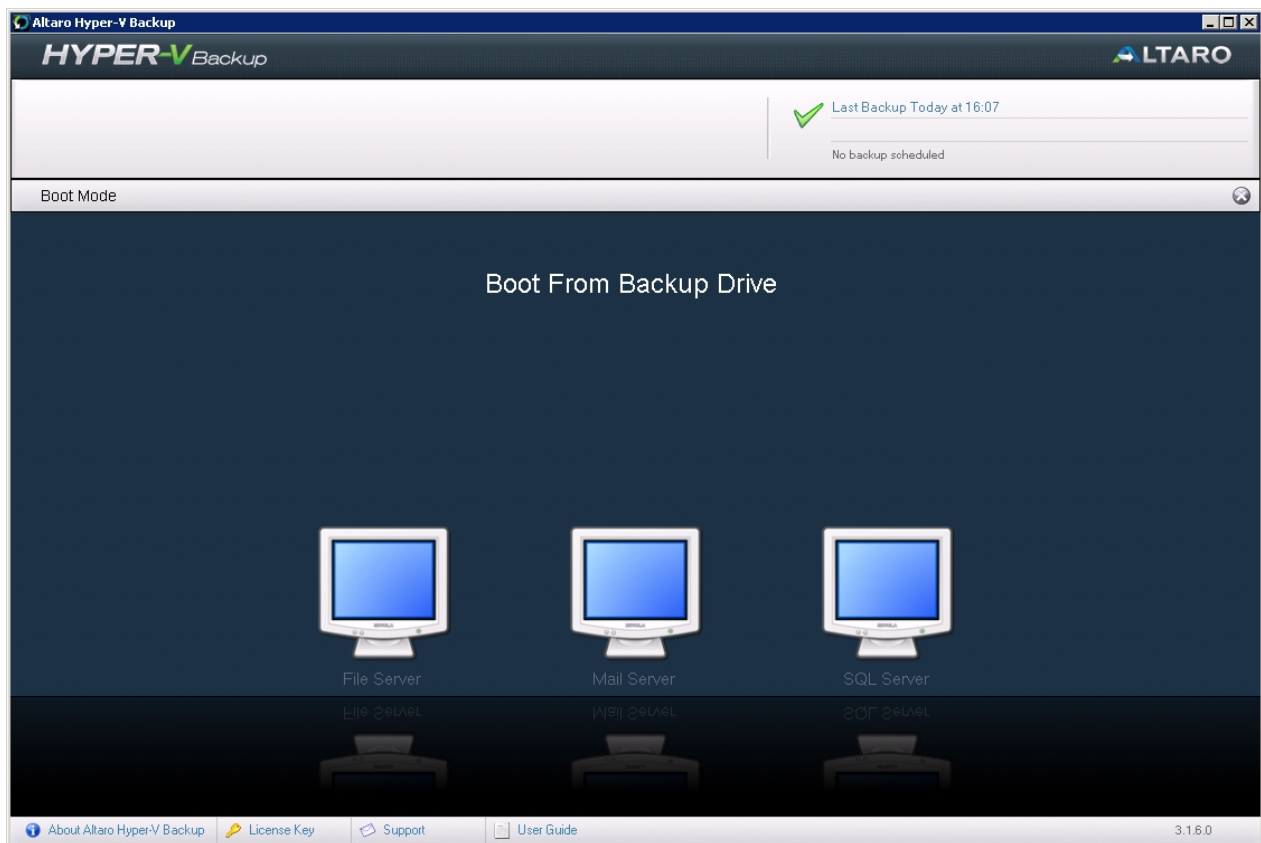
Before reading this step by step tutorial please read the this [section explaining the Boot From Backup drive feature and important considerations](#).

1. To Boot a VM directly from the VM backup first open the Altaro Management Console as explained [here](#).
2. Once the Management Console has opened click on "Boot From Backup Drive" on the left hand side menu under "Advanced Restore Options".

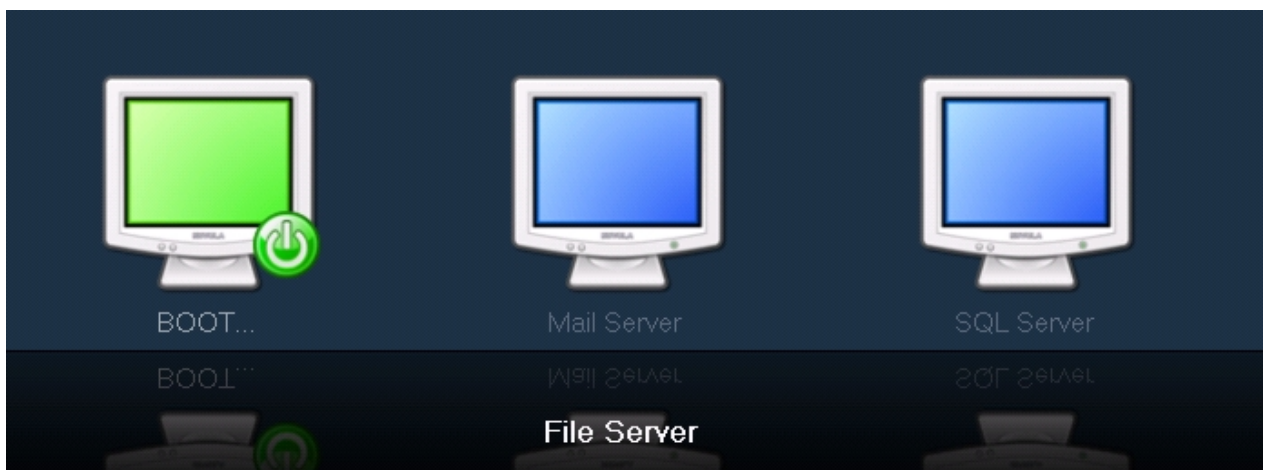


3. You will now be presented with the "Boot From Backup Drive" screen, assuming that the following requirements are met:

- You have selected a backup drive, selected VMs for backup and have taken at least one successful backup.
- The backup drive is connected.
- The backup drive is a locally connected / USB drive and not a network path.



4. The Boot From Backup Screen will display a list of backed up VMs in a horizontal row. A horizontal scroll bar will appear below if they do not fit in one screen. Hovering the mouse over a VM will highlight it.

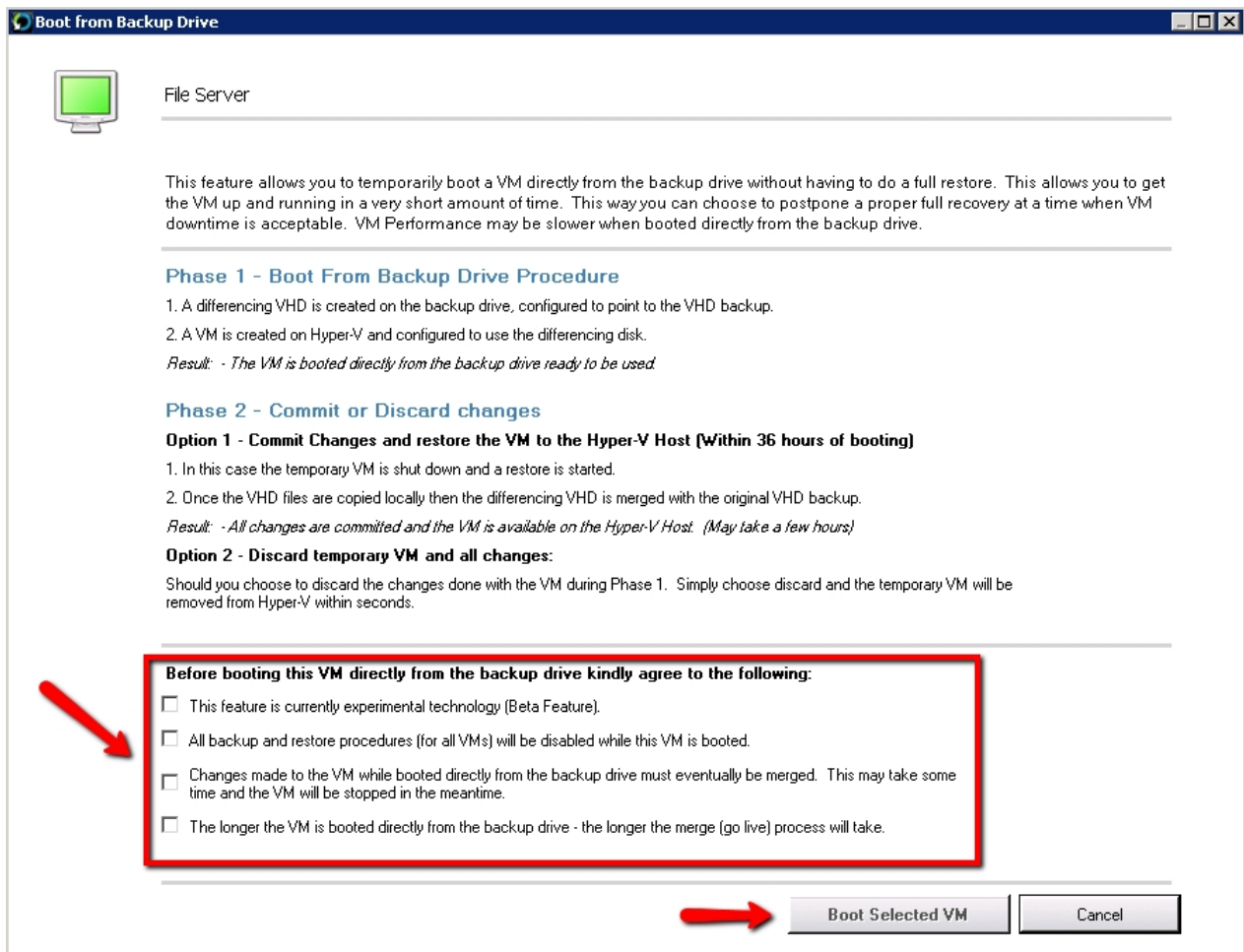


5. Click on a VM to bring up the Boot Window. This Window will allow you to boot the VM. Before you can click "Boot Selected VM" you must check all checkboxes on the Window. These Checkboxes ensure that you have read all the important considerations before proceeding.

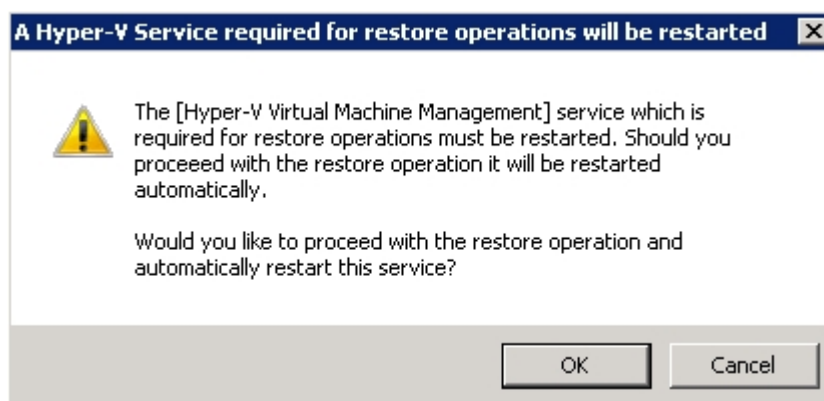
These are the important considerations:

- ♥ The longer the VM is booted directly from the backup drive - the longer the merge (go live) process will take.
- ♥ Beta Technology
- ♥ VM Performance may be slower when booted directly from the backup drive.

- ♥ All backup and restore operations will be disabled while a VM is booted directly from backup drive.
- ♥ Boot from backup drive is only supported on locally connected disks and USB disks. Booting from a network path is not supported.



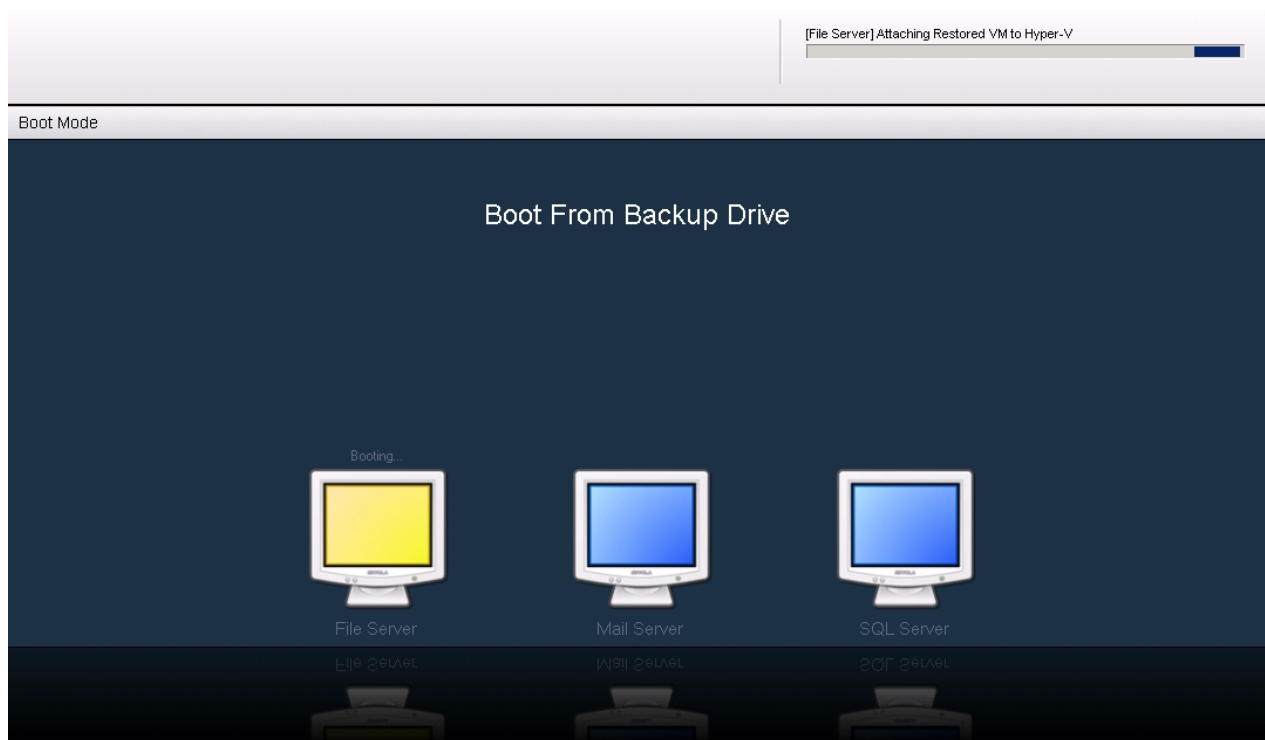
6. Click the "Boot Selected VM" to boot the VM from the backup drive. As with other restore operations the Hyper-V Virtual Machine Management Service must be restarted before you can proceed. Confirm that this is OK and the boot procedure will begin.





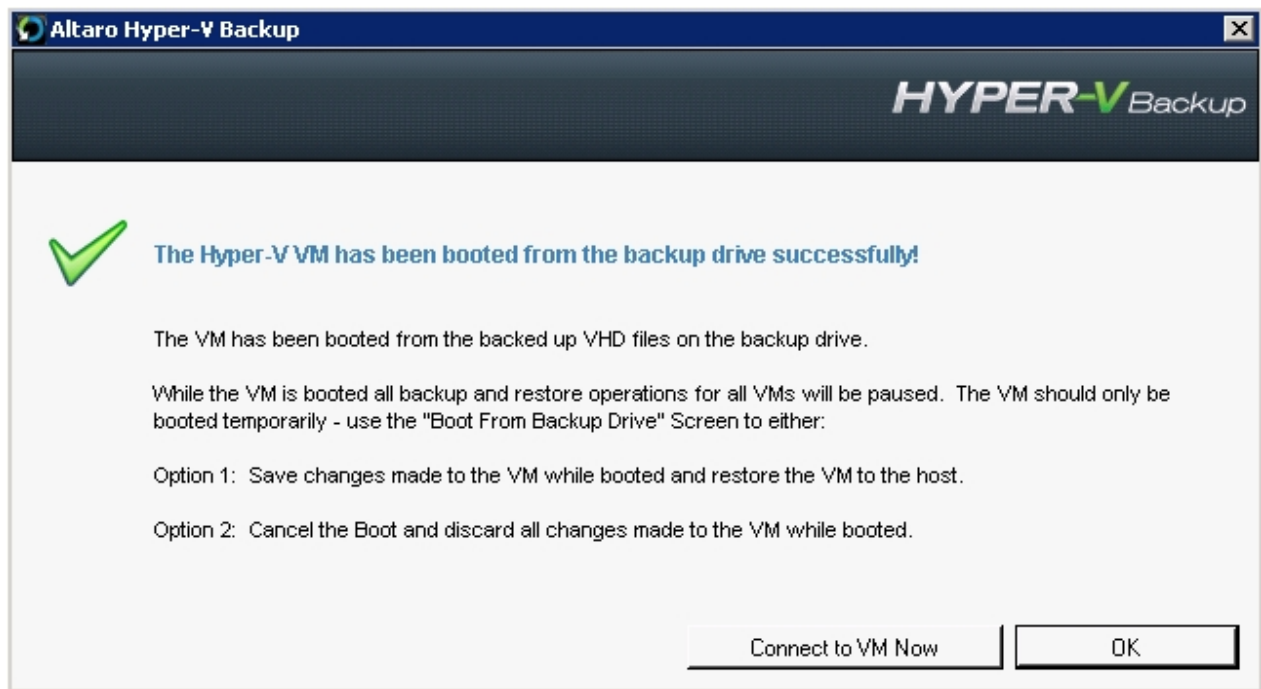
7. Once the Boot procedure begins you will see that the global progress bar is active and it will keep you updated on the progress. This will normally take a minute or two. You will also notice that the VM in the Boot From Backup drive screen is now highlighted and displayed in yellow. A small "Booting..." status will be displayed above it to indicate which VM is booting.

While a VM is booting you cannot close the Management Console or return to the Manage Screen.

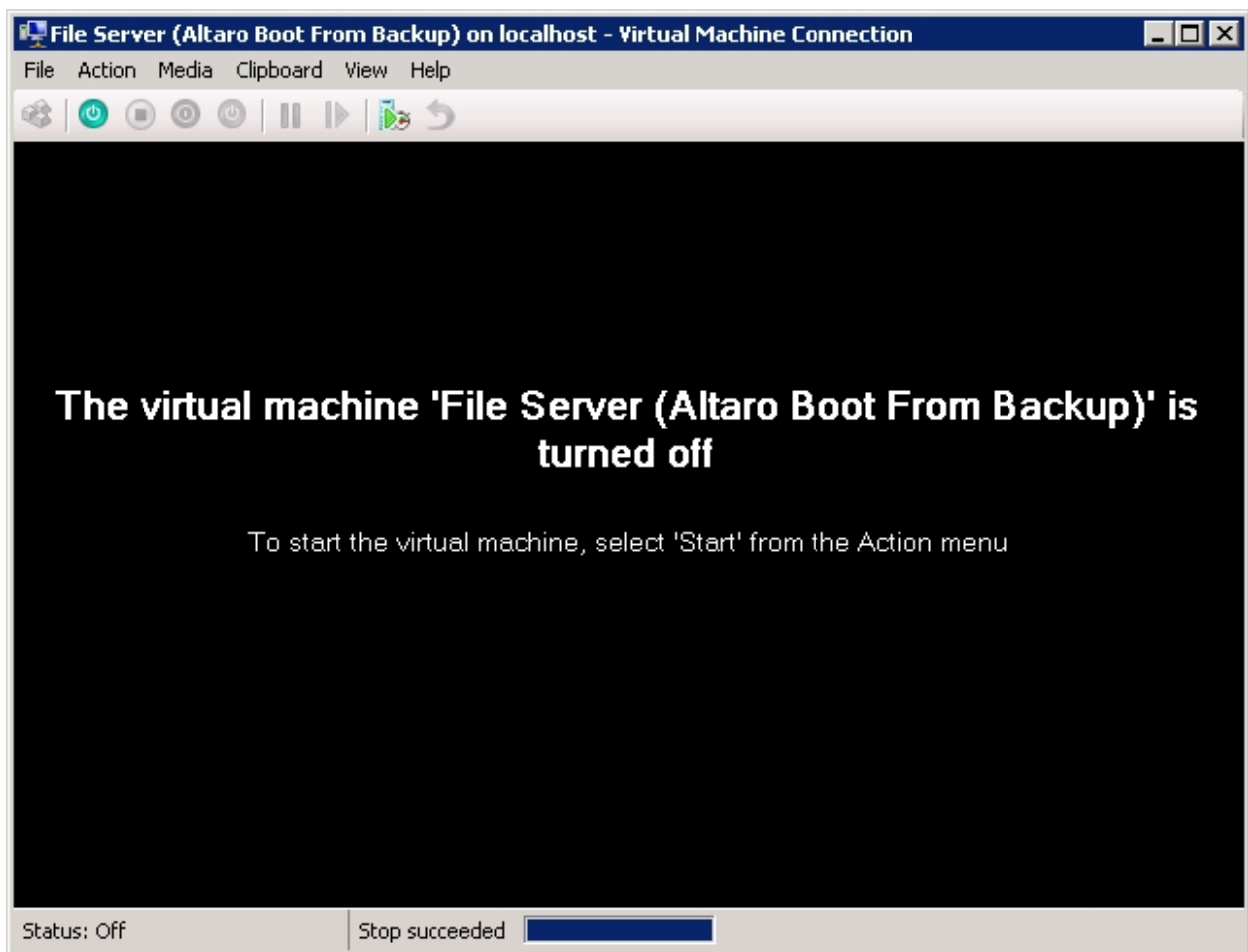


8. After a minute or two, the VM will be booted directly from the backup drive and a dialog will be displayed indicating this. From this dialog you can choose to start the VM and connect to it using VMCONNECT. To do this click on the "Connect to VM Now" Button.

Click OK to dismiss the dialog and return to the Management Console.



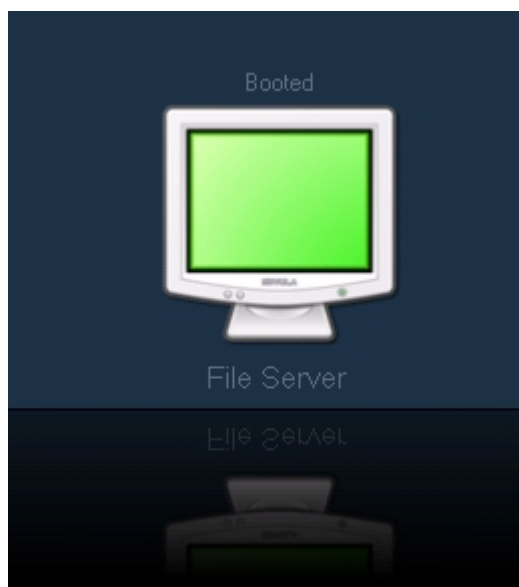
9. If you choose to connect to the Booted VM you will see the "Virtual Machine Connection" Window as displayed below.



10. You will also notice that the VM on the Boot From Backup drive screen is now displayed in green and a "Booted" status is displayed above.

You can boot multiple VMs simultaneously but when one or more VMs are booted you will be unable to return to the Manager Screen.

It is also important to note that all backup and restore operations for all VMs will be disabled while a VM is booted from the backup drive.



11. A quick look at the Hyper-V server manager will show that a new VM has been created and is listed in the VM list. This VM is booted directly from the backup drive and has a suffix of "(Altaro Boot From Backup)".



Phase 2:

While a VM is booted directly from the backup drive and is used it can be assumed that changes will be made to this VM. Therefore users have two options on how to deal with a VM that has been booted directly from the backup drive.

Option 1: Commit changes to the VM and restore it back to the host.

Option 2: Discard changes made to the VM and cancel the boot.

It is important that should Option 1 be chosen this is done **within a recommended 36 hours** from the boot from backup drive. This is recommended because a merge must be performed to commit the changes to the VM. The longer the VM has been booted for the more changes there will be and therefore the longer a merge will take.

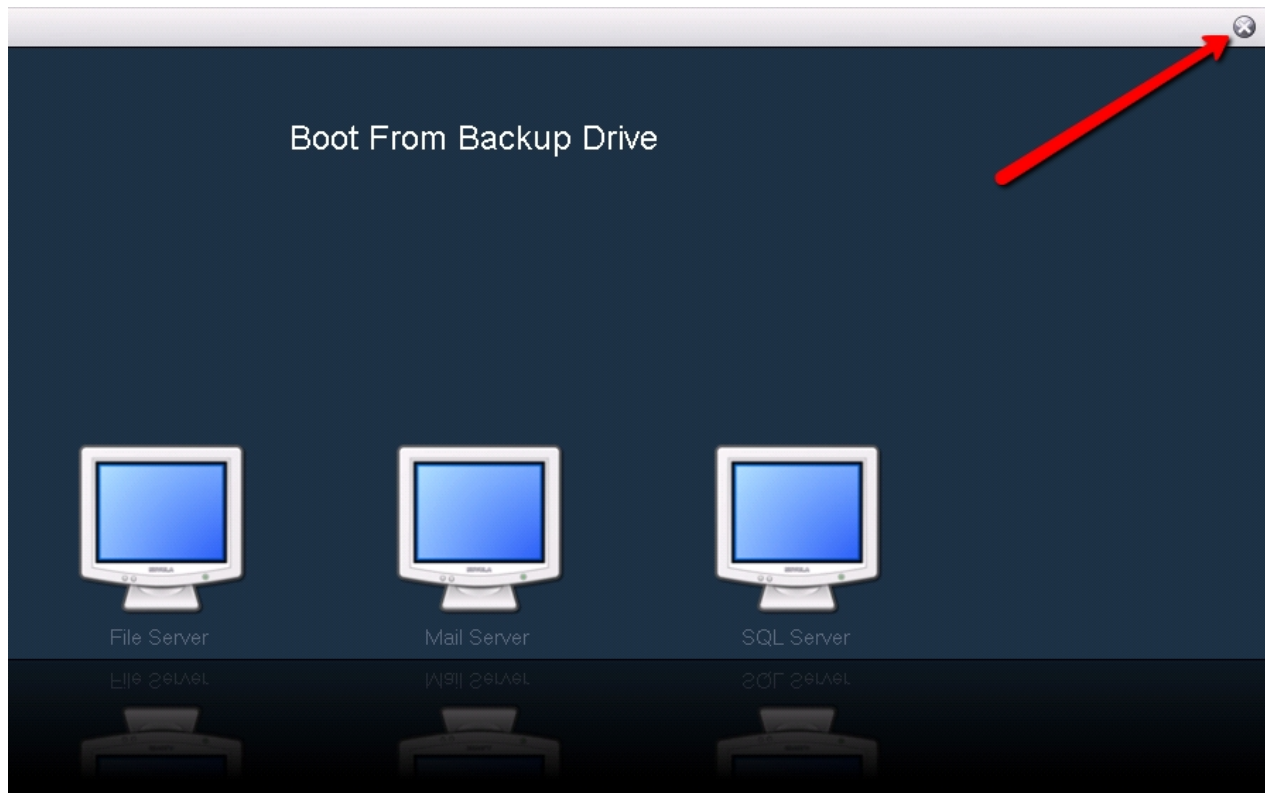
A merge can take many hours and during a merge the VM must be turned off. Therefore the merge should be scheduled when VM downtime is possible.

Follow a [step by step tutorial on Boot from Backup Drive: Phase 2 here](#).

Closing the Boot From Backup Drive screen and returning to the Manager Screen

At the top right corner of the Boot From Backup Drive screen is a close button which will return you to the Manager Screen.

This button is disabled while one or more VMs are booting or booted.



Phase 2: Commit Changes and Restore VM / Discard Changes

Before reading this step by step tutorial please read the this [section explaining the Boot From Backup drive feature and important considerations](#).

While a VM is booted directly from the backup drive and is used it can be assumed that changes will be made to this VM. Therefore users have two options on how to deal with a VM that has been booted directly from the backup drive.

Option 1: Commit changes to the VM and restore it back to the host.

Option 2: Discard changes made to the VM and unboot it.

It is important that should Option 1 be chosen this is done **within a recommended 36 hours** from the boot from backup drive. This is recommended because a merge must be performed to commit the changes to the VM. The longer the VM has been booted for the more changes there will be and therefore the longer a merge will take.

A merge can take many hours and during a merge the VM must be turned off. Therefore the merge should be scheduled when VM downtime is possible.

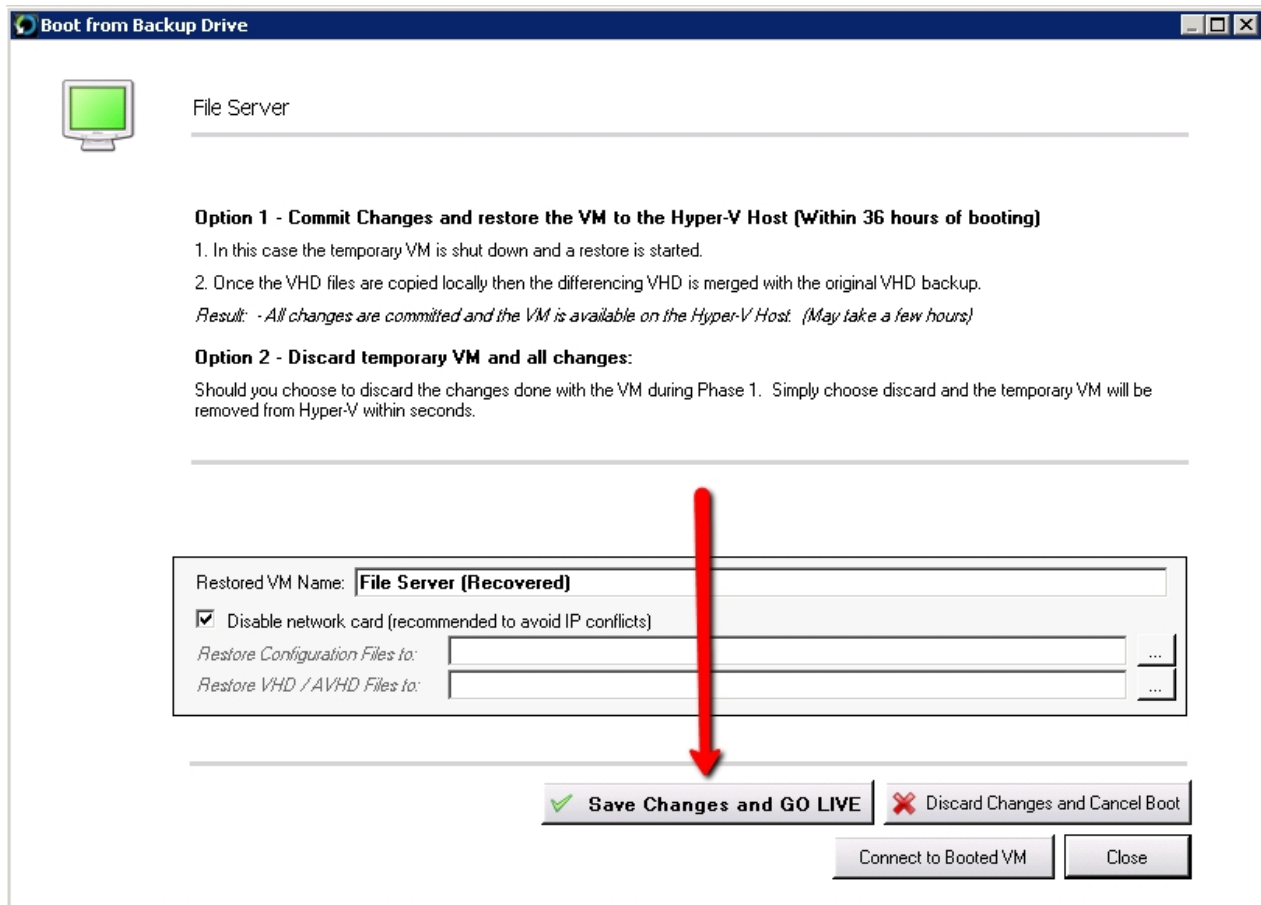
Option 1: Commit changes to the VM and restore it back to the host

- May take many hours.

- The VM must be turned off while restoring. (Schedule during acceptable VM downtime).

1. From the Boot From Backup screen click on a Booted VM. Booted VMs are always displayed in green and have a "booted" status displayed above them.

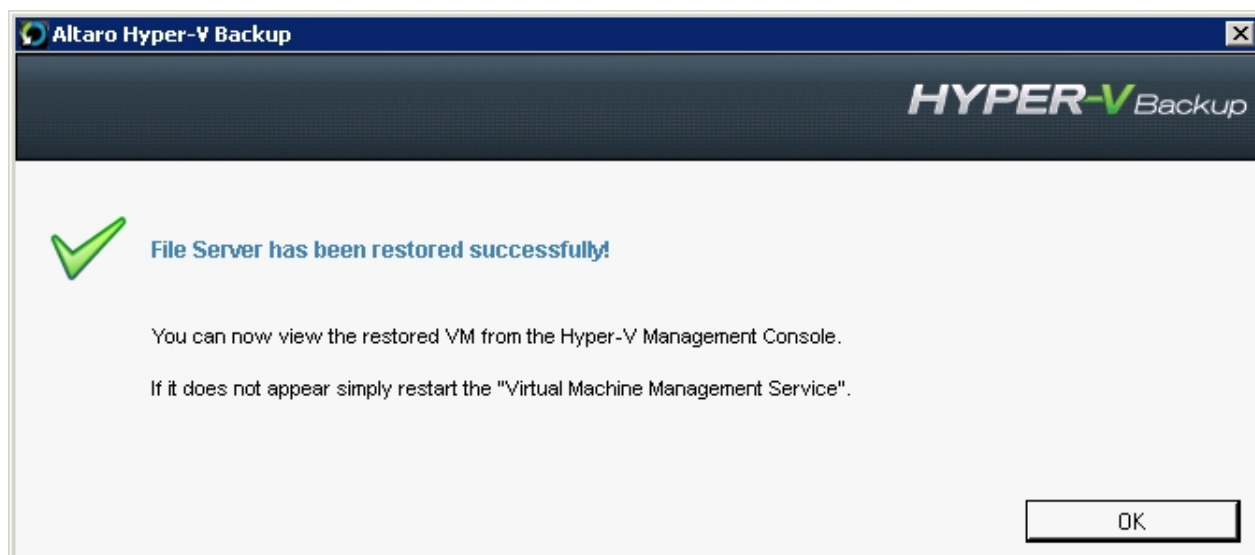
2. Once you click you will see the Boot Window. Three options are displayed: "Save Changes and Go Live", "Discard Changes and Cancel Boot", "Connect to VM". In this case we will be using the **"Save Changes and Go Live"** option.



3. This option will:

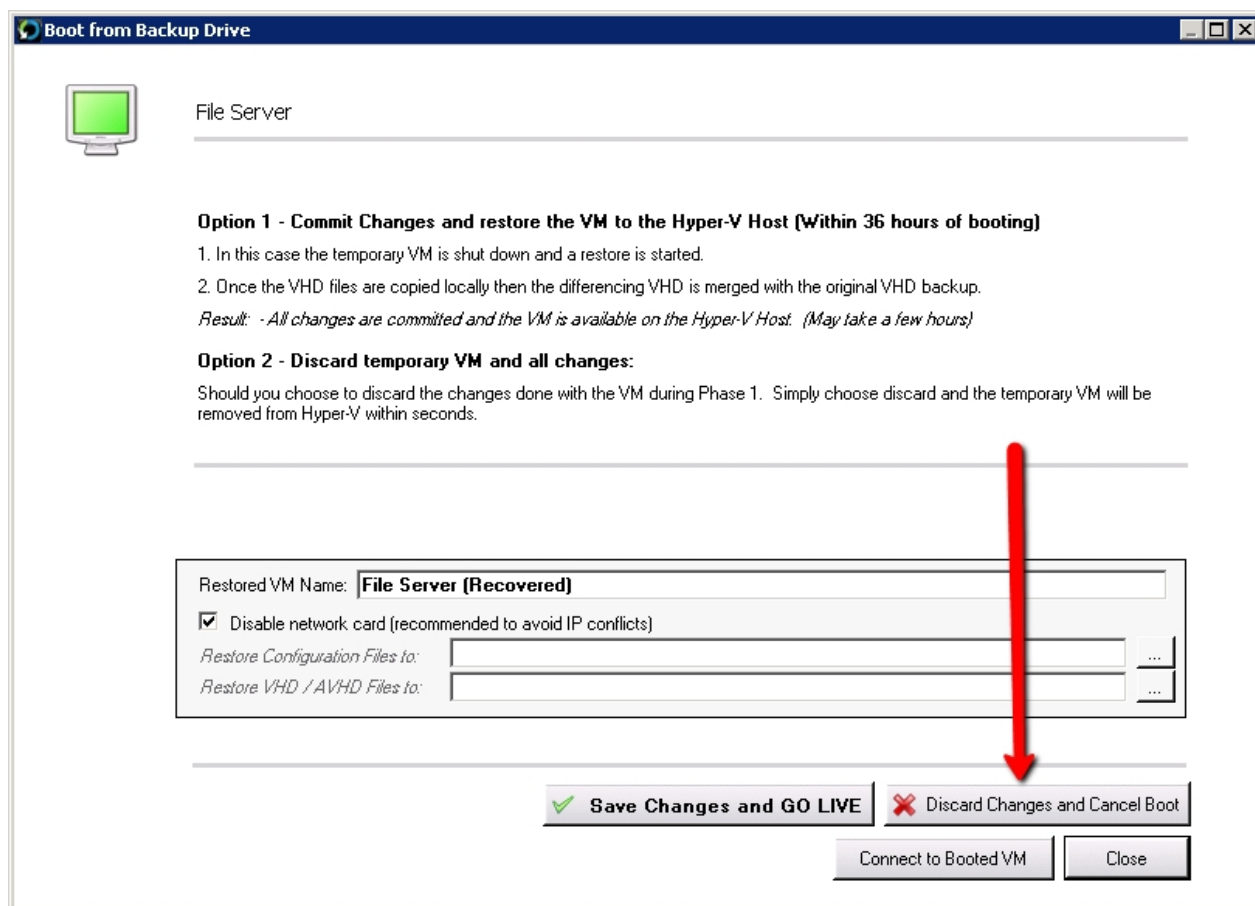
- Ensure that the Booted VM has been stopped.
- Copy all VM files from the backup drive to the Hyper-V Host.
- Merge all changes which were made to the VM while booted.
- Attach the newly restored VM to Hyper-V

4. Once the VM has been restored successfully the following dialog will be displayed. The new VM will be listed in the Hyper-V Server Manager and the VM will no longer be booted directly from the backup drive.



Option 2: Discard changes and cancel boot

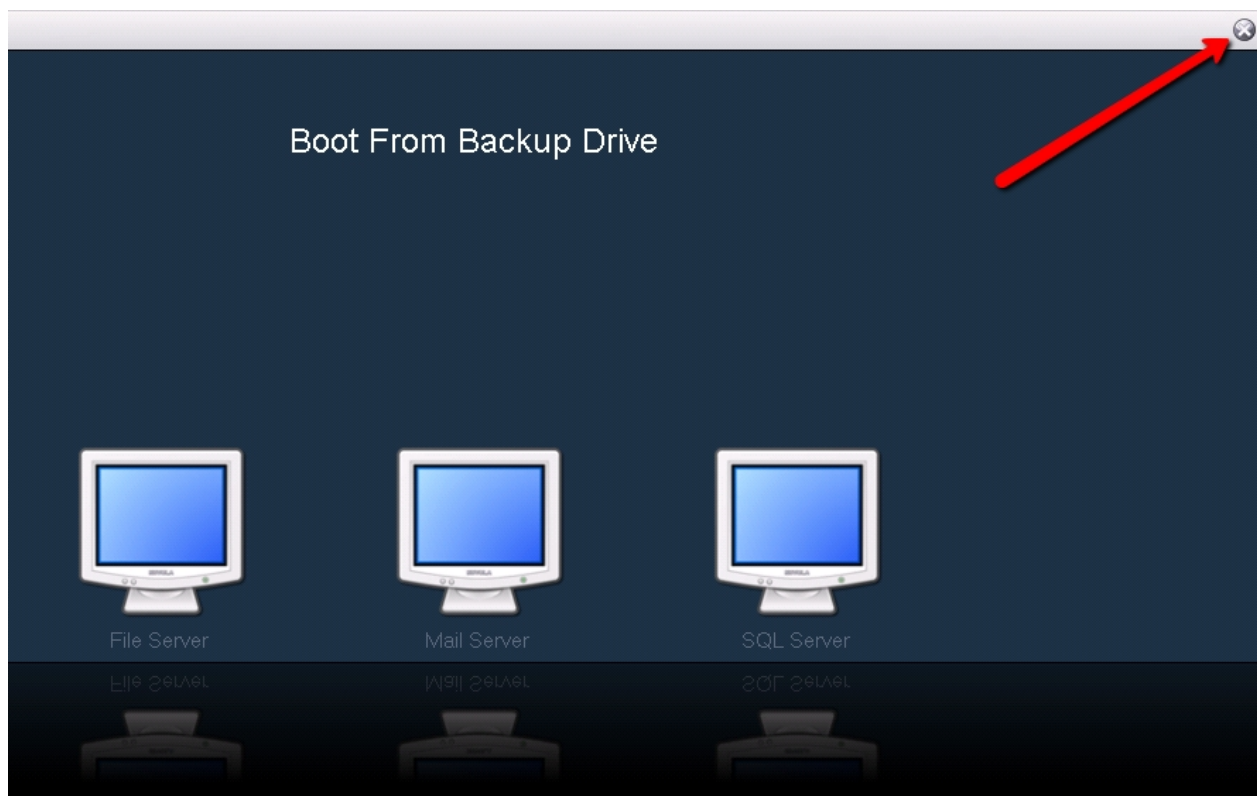
1. From the Boot From Backup screen click on a Booted VM. Booted VMs are always displayed in green and have a "booted" status displayed above them.
2. Once you click on a VM you will see the Boot Window. If you do not wish to commit any changes made while the VM was booted directly from the backup drive, you may simply click "**Discard Changes and Cancel Boot**".
3. This will only take a minute or two and the VM will no longer be booted from the backup drive. You may then choose to restore the last backed up version of that VM using the standard restore features.



Closing the Boot From Backup Drive screen and returning to the Manager Screen

At the top right corner of the Boot From Backup Drive screen is a close button which will return you to the Manager Screen.

This button is disabled while one or more VMs are booting or booted.



Microsoft VSS (Shadow Copy)

The Microsoft Volume Shadow Service (VSS) is Microsoft technology that forms part of Windows Server 2008 R2. This component allows applications to access a "point in time" snapshot of a logical drive on the host machine, including any VHD and related virtual machine files on that drive. This enables these files to be accessed even if they are in use or locked. It also ensured that the VHD and related files are in a consistent state and all data has been flushed to disk before they are accessed for backup purposes.

Altaro Hyper-V Backup comes with its own VSS Requester and communicates with the Microsoft Volume Shadow Copy Service in order to trigger off and release shadow copies on the host machine.

Important facts and FAQs:

The Volume Shadow Copy service is a part of the Windows operating system and any malfunctions in this component are outside of the control of Altaro Hyper-V Backup, which acts only as a shadow copy "requester" and does not possess any shadow copy functionality per se.

Shadow copies are done on a Volume basis, and cannot be done on a particular folder set only.

A shadow copy operation does not result in all the data on a volume being copied over to a shadow copy, but rather a point in time is set and any changes (writes) to the volume contents from that point on are kept in a "changes" area. In that way a shadow copy can be completed in a matter of seconds.

The shadow copy requested by Altaro Hyper-V backup is non-persistent and is disposed after a particular backup operation completes.

The overall process may be visualized in the following diagram, which is a considerably simplified version of what actually happens, but offers a good birds-eye view:



Altaro Hyper-V Backup first requests a list of VSS writers from the VSS service and then requests that all the writers affected start preparing for the shadow copy by making their data consistent on the disk. Once this is done, the VSS communicates with the VSS provider which actually executes the point in time snapshot. The VSS service then informs Altaro Hyper-V Backup about the details of the newly created shadow copy.

After the backup completes, Altaro Hyper-V Backup instructs the VSS service to release the shadow copy.

MS Hyper-V VSS Writer

One of the writers on a 2008 R2 system is called the Hyper-V VSS Writer, and this writer manages the shadow Copy of all files related to the virtual machines running on the host machine, such as the VHD files. When Altaro Hyper-V Backup triggers off a shadow copy (just before a backup starts), it integrates with the Hyper-V VSS writer and passes on information to this writer about which virtual machines are about to be backed up.

In turn, Hyper-V uses one of two mechanisms to prepare each VM for backup. The default backup mechanism is called the "Saved State" method, where the VM is put into a saved state during the processing of the shadow copy, snapshots are taken of the appropriate volumes, and the VM is returned to the previous state after the shadow copy.

The other backup mechanism is called the "Child VM Snapshot" method, which will be discussed [here](#).

ReverseDelta

RD Version 2 is now available with Altaro Hyper-V Backup version 3.0

Definition of Reverse Delta

Reverse Delta Version 2 offers two advantages:

1. It is a space-saving technology developed by Altaro Software that enables Altaro Hyper-V Backup to keep only the changes between each version of a changed VHD (or VHDX) file and another, rather than storing the version of a file as a whole file every time it is changed.

This means that keeping multiple backup versions will require less space on your backup drive. In other terms, chunks of a VHD file that are unchanged from one version of that file to the next are only stored once on the backup disk. This is called data deduplication.

2. It also enables Altaro Hyper-V Backup to transfer only the changed blocks in a VHD file when there is already a full backup available on the backup location, making incremental backups much faster than the first backup. Notwithstanding this, the latest version of a VHD file is always stored as a full file on the backup location.

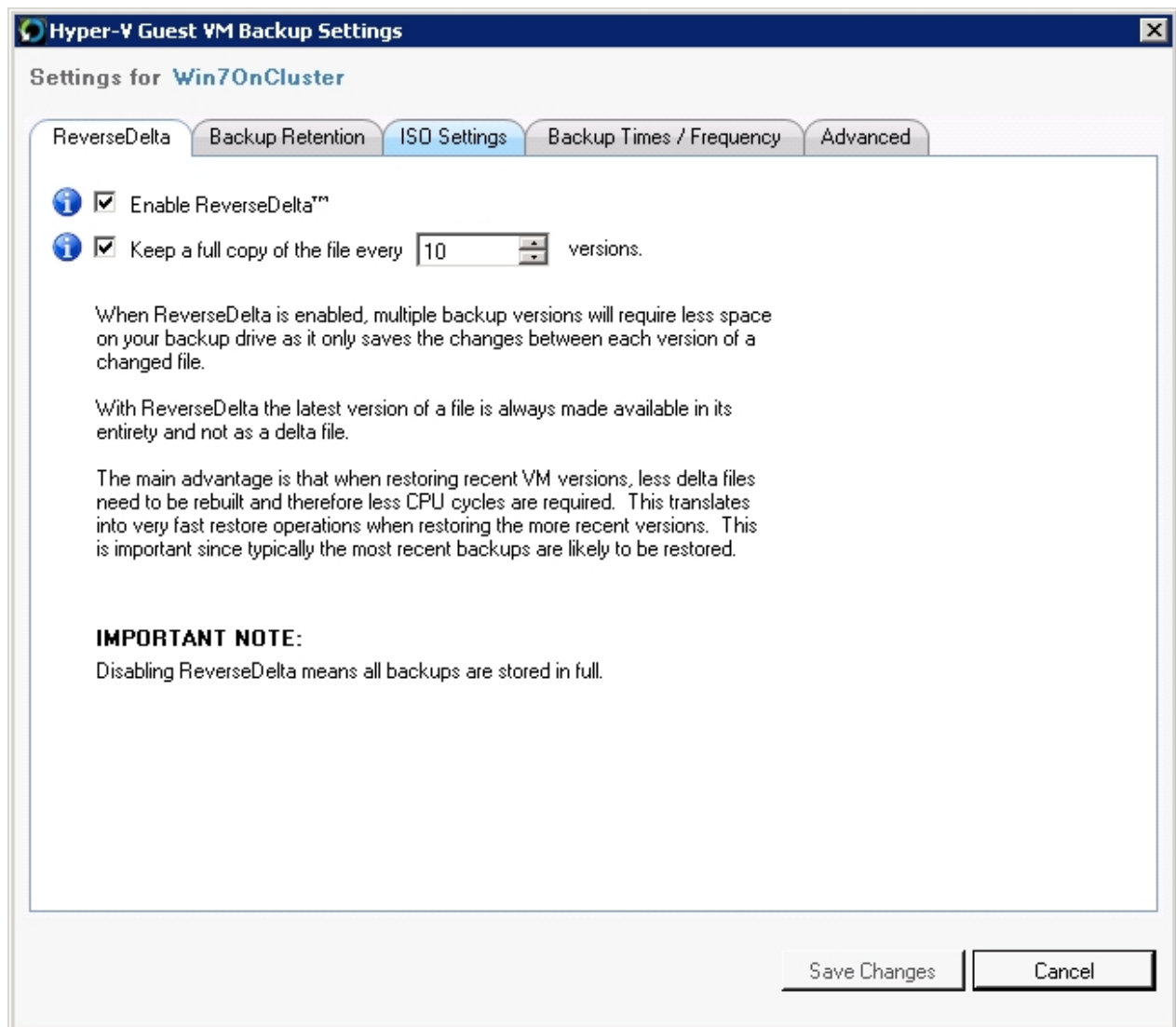
What distinguishes Reverse Delta from other deduplication technologies?

The main concern about delta files is usually that in the event of heavy data loss, the version of a file you are most likely to need is the latest one. Many users are apprehensive if this version may need to be rebuilt from an older version and one or more delta files. With Reverse Delta, the latest version of a file is always made available in its entirety and not as a delta file.

This means that if you require the latest version of a file, it is possible to access it directly from your backup drive without having to rebuild the file from delta files. The delta files are only used if you want to build a previous version of the file, building one delta file at a time for each version as you travel back in time in the reverse direction.

Periodically keeping full versions of the files

In the Advanced Settings window in Altaro Hyper-V Backup, there is an option to keep a full copy of a file every X versions as shown in the screenshot below:



Let's say we have a large file, say a 100GB VHD file, which is constantly changing and needs to be backed up every hour. The first backup is for example at 9:00am. When you back up that file the first time, it is simply copied over to the destination.

At 10:00am, it is copied over again, and at 11:00pm again and so on.

Without Reverse Delta, at this point we have 3 full versions on the backup drive: 9:00am, 10:00am, and 11:00am. That would mean 300GB are required on the backup drive in three hours, which is rather excessive.

Altaro Hyper-V Backup however creates delta files of the older files (9:00am and 10:00am) so that our latest file (11:00am) is available as a full file. The delta file is usually much smaller than the full file, and will typically be less than 10% of the size original file.

Number of delta files to keep by example:

If we choose "keep full file every 30 versions", this means that every 30 backups, the delta file is not taken, so that you never have more than 30 delta files to rebuild if you need to restore a file.

Let's say you set this setting to "5". The picture would look like this:

Full file 10:00pm (Latest, 100GB)

delta 9:00pm

delta 8:00pm

delta 7:00pm

delta 6:00pm

Full file 5:00pm (100GB)

delta 4:00pm

delta 3:00pm

delta 2:00pm

delta 1:00pm

Full file 12:00pm (100GB)

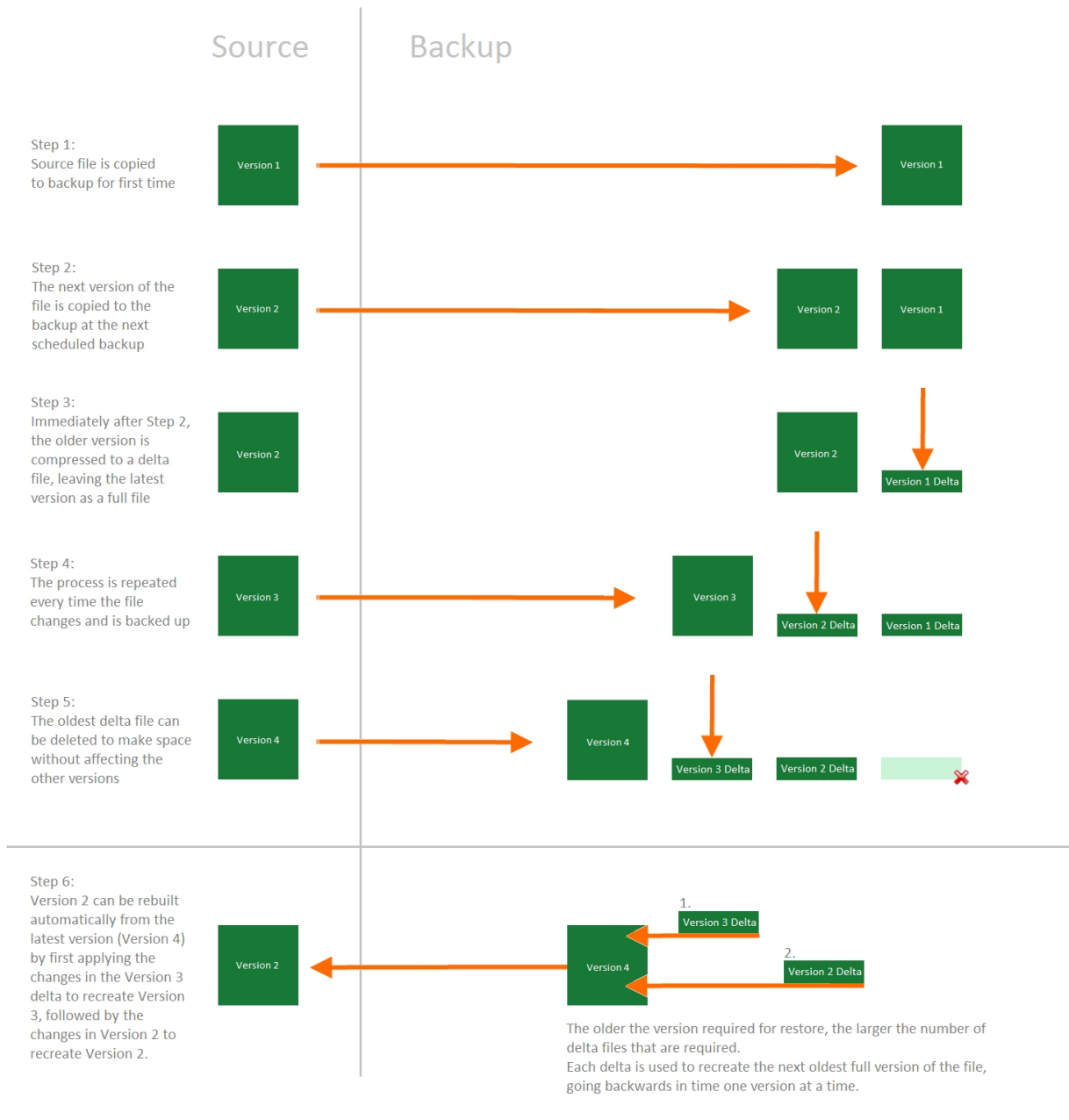
etc.. etc.

If you need to restore the 2:00pm file, then Altaro Hyper-V Backup starts from the 5pm full file, adds on the 4:00pm delta, 3:00 pm delta and finally, the 2:00pm delta. These steps take some time, so this setting ensures that you are never too far away from a full file. This of course happens in the background and is totally abstracted from the user.

With Version 3.0 of Altaro Hyper-V Backup, the recommended value for this setting is around 30.

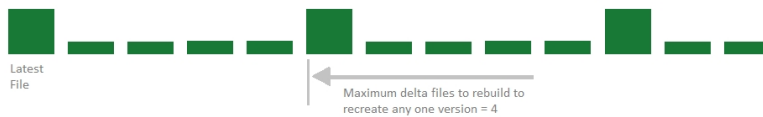
Visual representation of the Reverse Delta process:

The following image shows the way the process works in 5 steps. Step 6 shows a restoration procedure.



Note:
The full file is usually left in the backup every N versions (4 in this example), skipping the creation of the delta file.

In this way, the the number of delta files that need to be rebuilt in sequence (or "superimposed" on the full file) is limited, avoiding lengthy restore procedures.



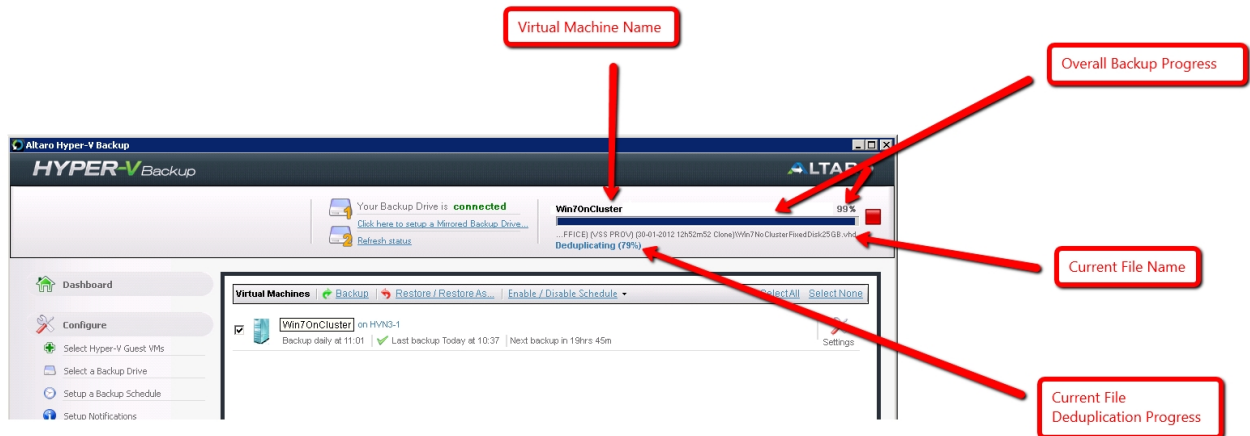
Display of Backup Progress with Reverse Delta

With Reverse Delta Version 2 (available in Altaro Hyper-V Backup version 3.0), the progress bar during a backup now shows further details about the current activity.

The main progress bar will show the current progress of the backup as in previous versions of Altaro Hyper-V Backup. However, when the software is creating a delta file, the main progress bar is paused, and the current “fine grain” progress showing the deduplication (or delta file creation).

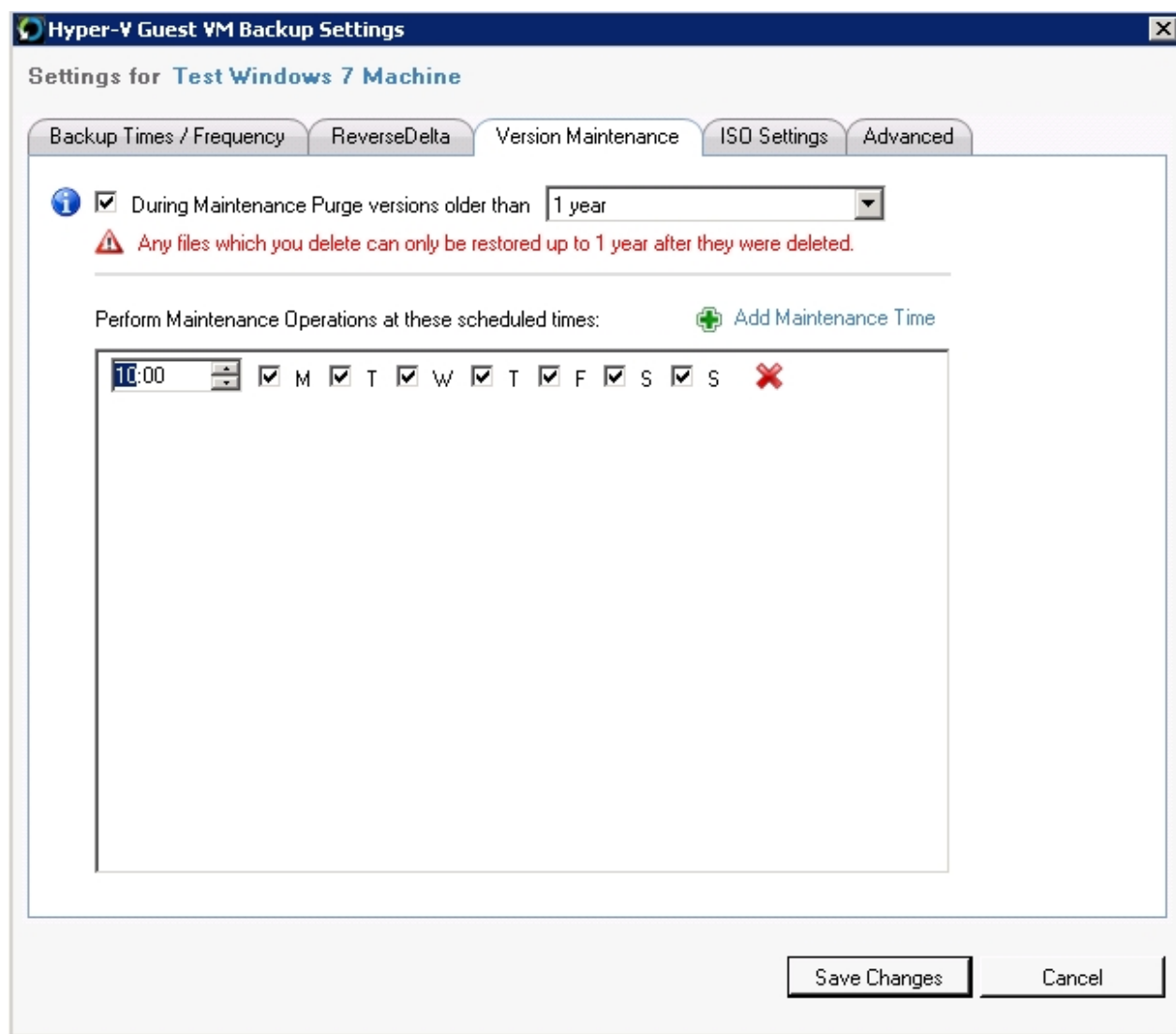
Once the deduplication progress is complete, the next file is started and the main progress bar will resume.

This is shown in the image below:



Version Maintenance

Version Maintenance can be configured using the VM Backup Settings screen as explained [here](#).



Once within the the VM Backup Settings screen select the **"Version Maintenance"** tab and you can choose to limit which old versions to keep by version age. Don't forget to set a version maintenance schedule otherwise maintenance will not run.

You can learn more on how version maintenance works [here](#).

You can also learn on how to manually delete old versions [here](#).

Cluster Support

Altaro Hyper-V Backup supports backing up virtual machines that are running on a failover cluster node, both if they are using cluster shared volumes (CSVs) or not.

Cluster Shared Volumes

Cluster Shared Volumes or CSVs are shared storage devices, usually on SANs and similar hardware, which are accessible from all nodes in a failover cluster. Altaro Hyper-V Backup supports backing up VMs that have data stored on CSVs. This is done by indicating to the Shadow Copy component that a backup of a VM on the failover cluster is about to begin. The node on which Altaro Hyper-V Backup is installed temporarily takes ownership of the CSV and enables redirected I/O. This enables the node to perform a shadow copy operation on the CSV. Once the backup is completed, redirected I/O is

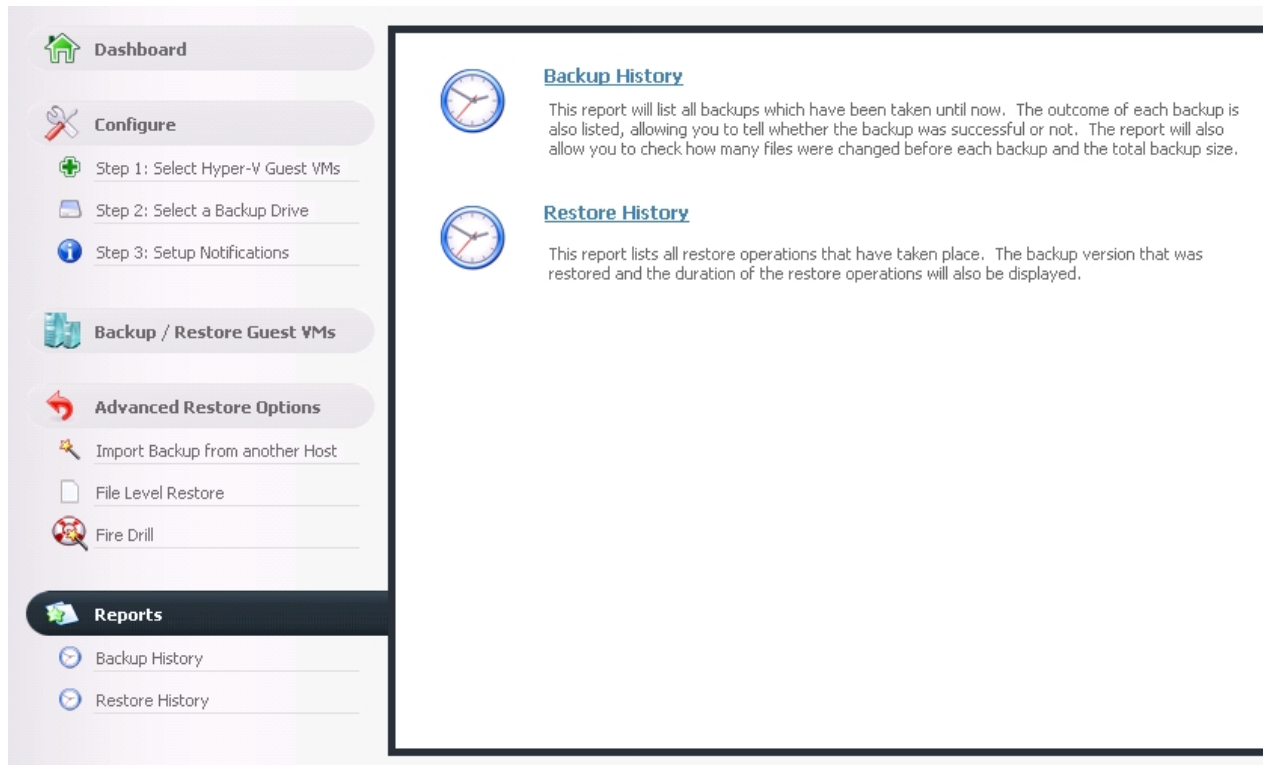
once again disabled.

Read this [chapter](#) for details on how to configure Altaro Hyper-V Backup in a Cluster Environment.

Reports

To view reports simply open the **Management Console** and select the option **[Reports]** from the left hand side main menu.

Read instructions on how to open the Management Console [here](#).



Three Reports are Available:

- ♥ [Backup History Report](#)
- ♥ [Restore History Report](#)
- ♥ [Errors since the last backup Report](#)

Backup History

The Backup History report displays the following information:

- ♥ The VM name that was backed up.
- ♥ Date and time of the backup.
- ♥ The backup status indicating whether the backup succeeded, succeeded with skipped files, or failed.
- ♥ The number of files backed up.
- ♥ The total size of the data that was backed up.

- ♥ The duration of the Backup.

View List of Skipped Files

Double-clicking on a backup which has a warning icon or error icon will bring up a list of files that were skipped during that backup. A reason why the file was skipped is also given.

View List of Backed up Files

Double-clicking on a successful backup will bring up a list of files that were backed up during that backup. Information on whether the file was created, changed, renamed or deleted is also given.

Alternatively you may right-click on a backup to bring up a context menu with all options.

Restore History

The Restore History report displays the following information:

- ♥ The VM name that was restored.
- ♥ Date and time of the restore operation.
- ♥ The restore status indicating whether the restore operation succeeded or failed.
- ♥ The duration of the restore operation.

Errors since the last Backup

The Errors report lists any errors that have occurred since the last successful backup. The following information is displayed:

- ♥ Date and time of the error.
- ♥ A description of the error.
- ♥ The error code.

This list will be cleared once the VM causing the error is backed up successfully.

Managing Backup Drives

♥ [Supported Backup Destinations](#)

♥ [Configuring Backup Destinations](#)

♥ [Managing Backup Space](#)

Supported Backup Destinations

The supported Backup Destinations are listed [here](#).

Configuring Backup Destinations

♥ [Configuring your backup destination](#)

♥ [Selecting a Backup Drive using the "Backup Drive Selector"](#)

♥ [Selecting a Network Path using the "Backup Drive Selector"](#)

♥ [Changing your Primary Backup Drive Selection](#)

♥ [Multiple Primary Backup Drive Swapping](#)

♥ [Drive Swap using RDX Cartridges](#)

♥ [Configuring a Mirror Backup Drive](#)

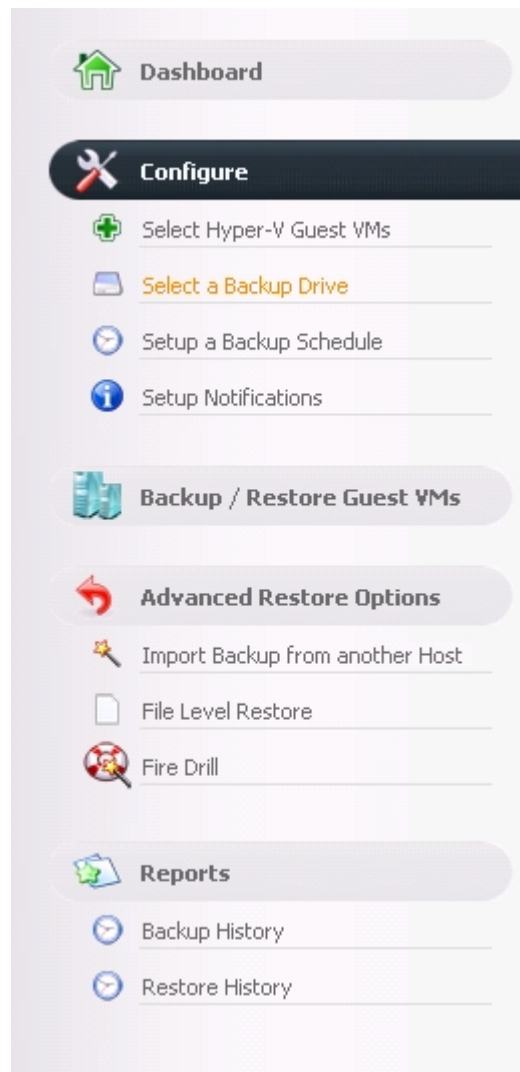
♥ [Switching to the Mirror Backup Drive](#)

♥ [Backup Drives in a Hyper-V Cluster Environment](#)

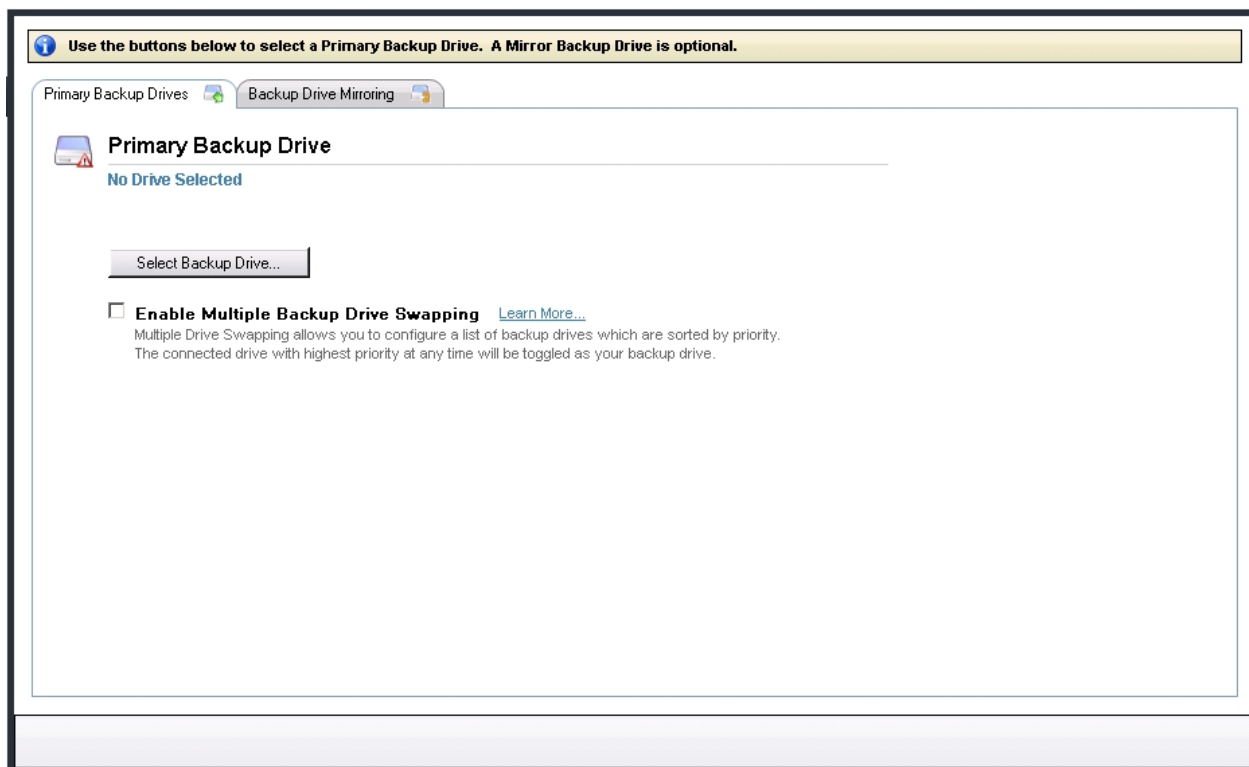
Configuring your backup destination

To select a drive or network path as your backup destination, open the **Management Console** and select the option **[Select a Backup Drive]** from the left hand side menu.

Read instructions on how to open the Management Console [here](#).



Once you select "Select a Backup Drive" you will be presented with the following panel:



The next step is to click on the “Select Backup Drive” button, before configuring any of the other options. This will bring up the “Backup Drive Selector” window described [here](#).

Important Terminology – Please read!

There are various ways the backup locations can be configured. Please read these definitions that are used throughout the rest of this document. Setting up the different configurations will be explained in more detail in the following sections of this document.

Primary drive:

A primary drive is a backup location to which the virtual machine files are copied directly from the host (via a shadow copy of the VM files). Multiple primary drives may be configured, as long as none of them are on a network path. If you specify a primary drive on a network path, then it must be the only configured primary drive.

Drive swapping:

If the primary drive selected is a locally connected drive (USB, eSATA or similar), then you may specify other *locally connected* drives as primary drives. Backing up different VMs to different primary drives is not supported, and all primary drives will contain backups for the same VMs. Only one primary drive can be active at any one time. If more than one primary drive is connected at the same time, the active primary drive will be selected according to a user-assigned priority.

Mirror drive:

If only one primary drive is selected (and this is a requirement if the primary drive is on a network path), then you may specify a *mirror drive* which is a redundant copy of the primary drive. Backup data is always synchronized from the primary drive to the mirror drive, and backup data is never copied to the mirror drive directly from the source files on the host. If the primary drive is not connected, no data can be synchronized to the mirror drive.

RDX cartridges:

A different way of drive swapping, instead of choosing multiple drives and assigning different priorities to them, is by selecting an RDX cartridge enclosure. Any cartridge inserted in the designated RDX enclosure will be used as a primary backup drive.

In summary, these are the possible configuration options available in Altaro Hyper-V Backup:

- 1) Primary backup location is a **network path** (for example “\\Backup-Server\backups”):
 - Drive swapping not supported.
 - Mirror drive is supported.

- 2) Primary backup location is a **locally attached drive**:
 - Addition of other locally attached primary drives for swapping is enabled.
 - Mirror drive:
 - o Only one primary drive selected: Mirror drive is available for configuration.
 - o More than one primary drive selected: Mirror drive is disabled.

- 3) Primary backup location is an **RDX enclosure**:
 - Drive swapping is supported in two ways:
 - o Addition of any locally attached drives including non-RDX drives, but each RDX cartridge must be inserted selected and added independently (as above).
 - o RDX drive rotation only: no other primary drives can be added, but any cartridge inserted in the enclosure will be used as a backup drive without any prior configuration or selection of the cartridge.
 - Mirror drive is not supported.

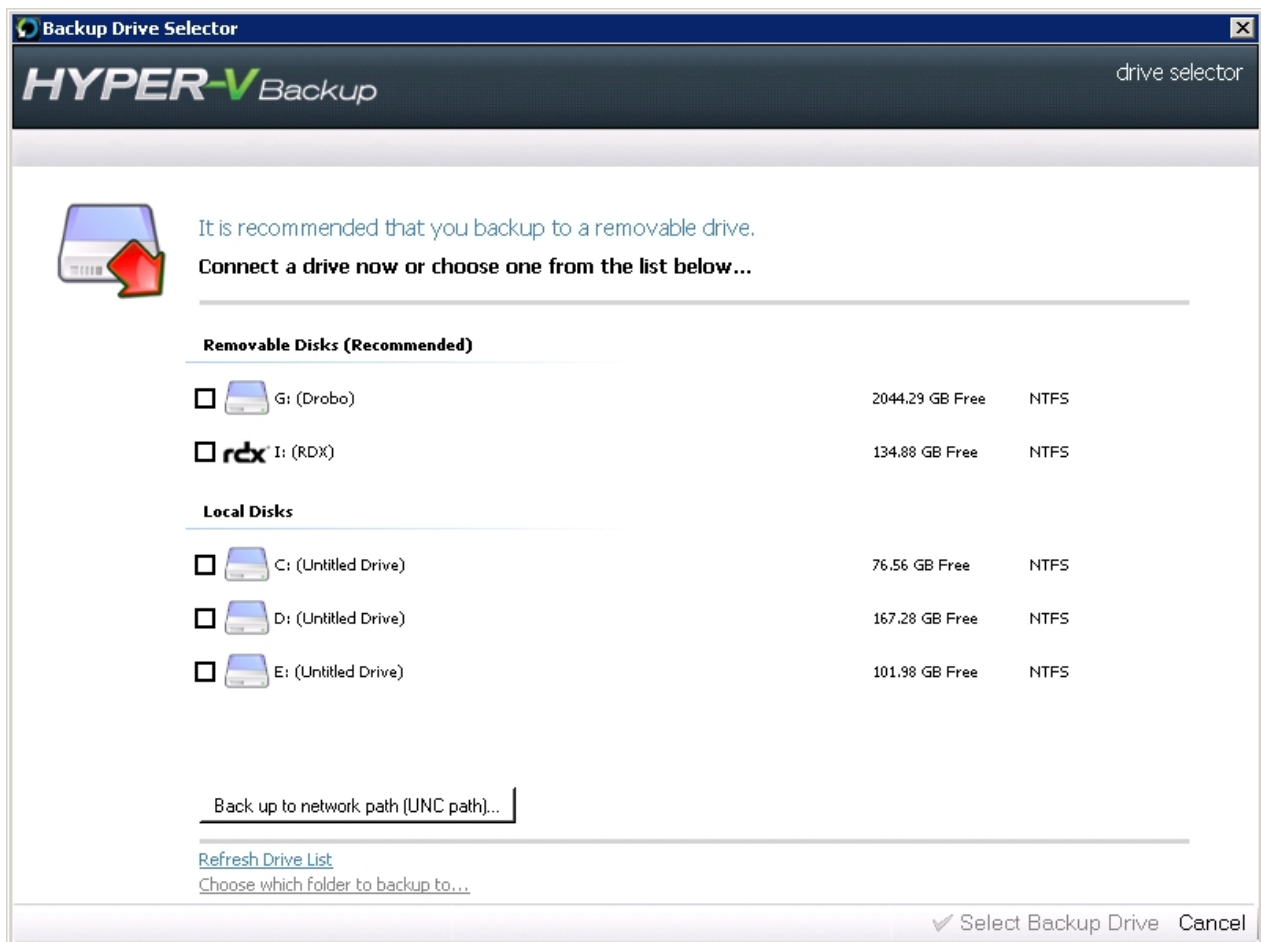
Selecting a Backup Drive using the "Backup Drive Selector"

The Backup Drive Selector will show after clicking the “Select Backup Drive” button [here](#).

However, this window is also used in other areas related to the backup storage options, and other sections further below will refer to this section when required.

This section will describe locally attached storage. For backup locations on a network path, see this [article](#).

This is an example of a typical Backup Drive Selector view:

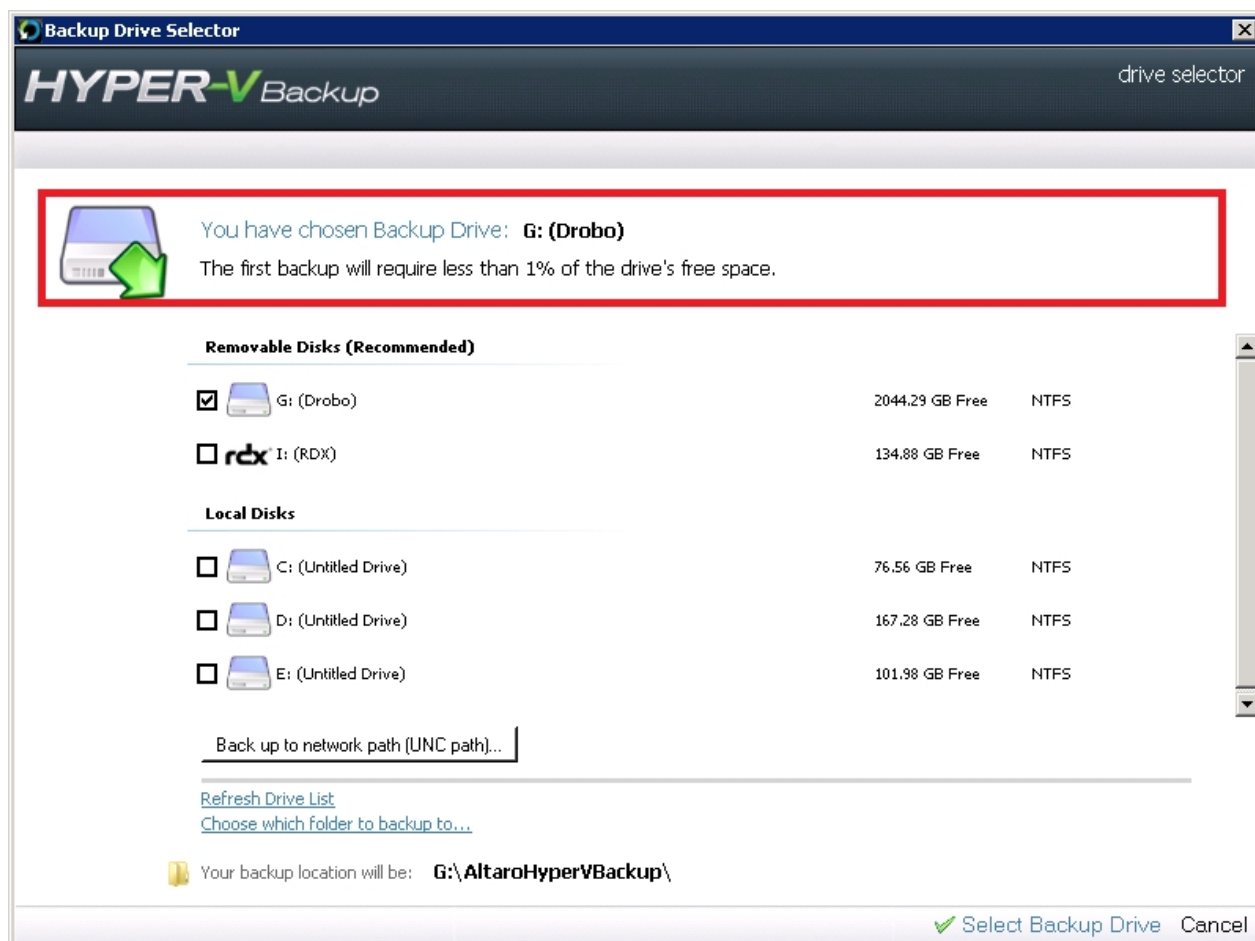


Removable Disks, which are usually recommended for this purpose over fixed local disks will be grouped together and shown at the top of the window.

Local Disks, although not recommended for backup storage, will still be shown under the heading “Local Disks” and will also be available for selection.

The right hand column will show the free space for each drive, and also the format of the drive, which for the purpose of Altaro Hyper-V Backup is recommended to be NTFS formatted.

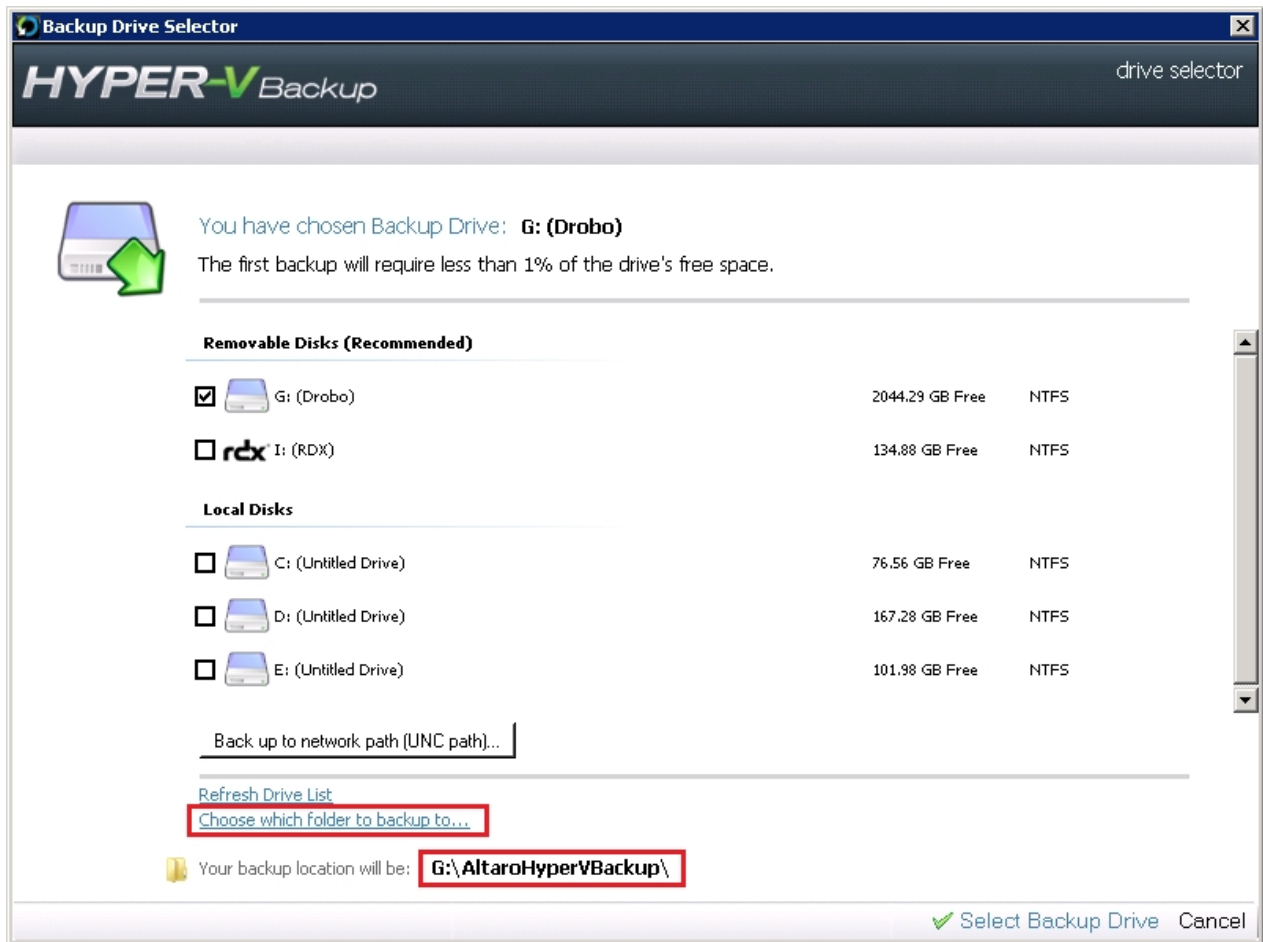
Once you select a drive by clicking on the checkbox to the left of the drive icon, you will see the amount of space on the drive to be used at the top of the window as shown in the example for Drive G: below:



Using the same drive letter in the example above, the destination folder will by default be chosen as **G:\AltaroHyperVBackup**.

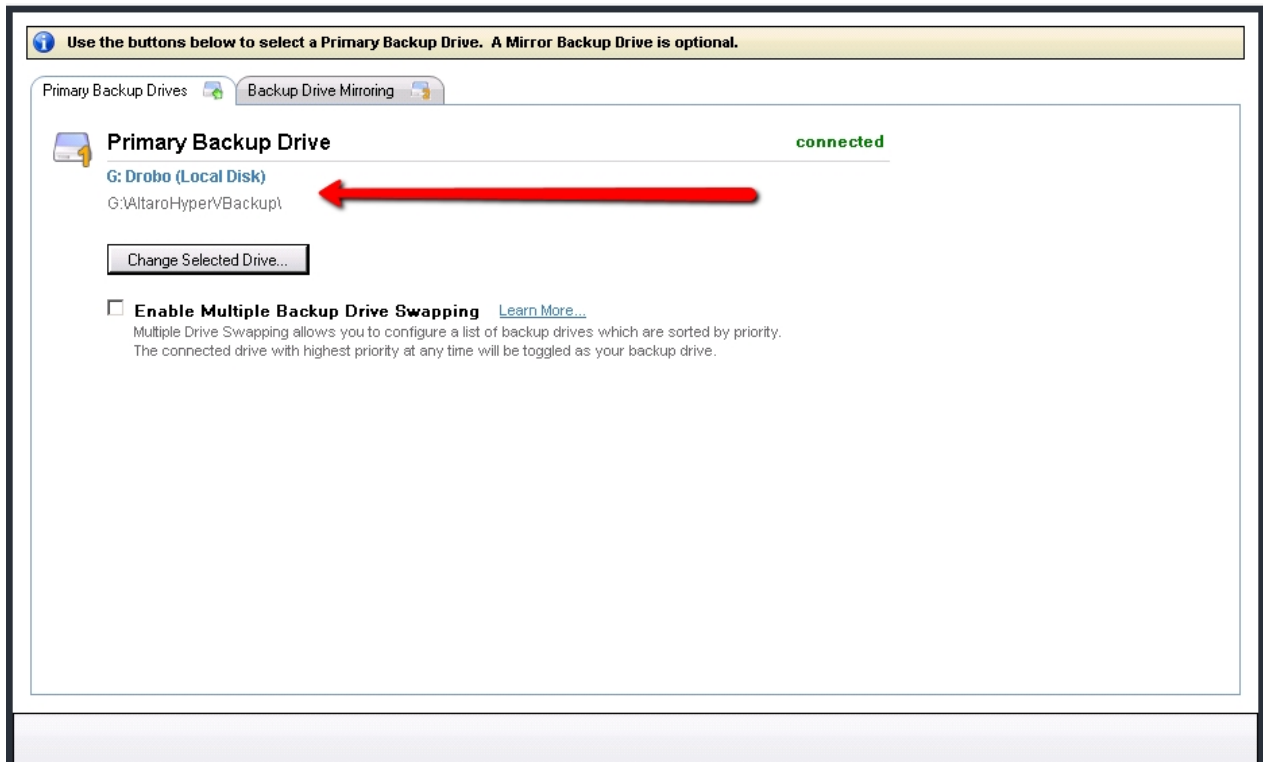
This may be automatically changed to **G:\AltaroSharedFolder\AltaroHyperVBackup** in case the backup location may need to be shared with other nodes on a cluster as described [here](#).

You can change the default backup folder by clicking on the “Choose with folder to backup to” link at the bottom of the window as shown in the image below. Your backup location will be updated in the bold text below the link:



Once you are done, click on the “Select Backup Drive” button at the bottom right of the window.

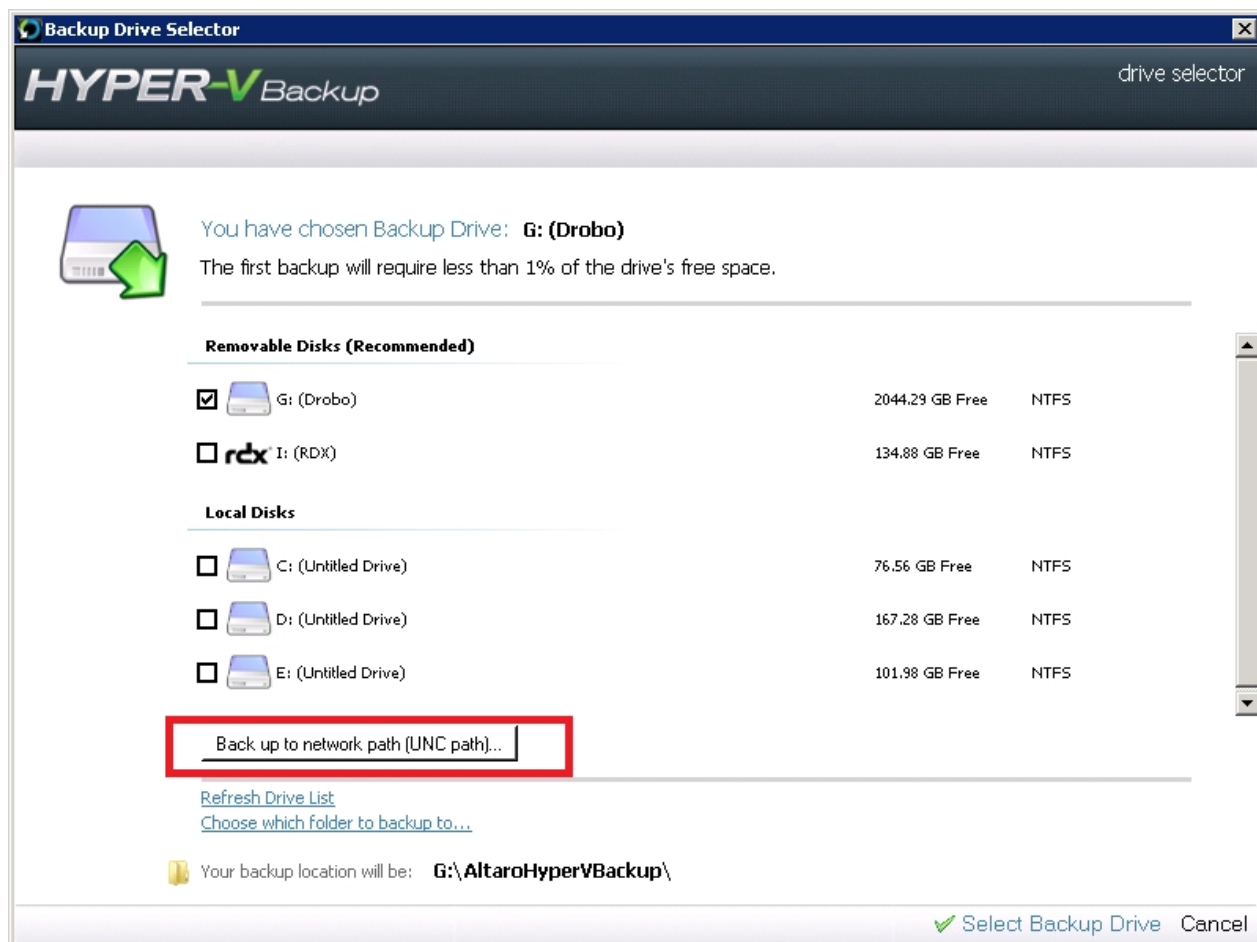
You will be returned to the main drive configuration panel, now showing the drive selected as shown below:



If you have a Hyper-V cluster set up, configuring a locally attached backup location may require an extra step as described [here](#).

Selecting a Network Path using the "Backup Drive Selector"

Selecting a UNC Path as your backup drive is very easy with Altaro Hyper-V Backup. Simply follow the instructions on selecting a backup drive [here](#) but click on the **[Backup up to a Network Path (UNC Path)...]** button when presented with the drive list.



This will bring up the following network path selection window:

Enter a UNC Network Path

HYPER-V Backup

UNC Network Path example: \\Server\Share
 \\192.168.1.10\Backups

Enter Account Credentials to use for Backup / Restore operations:

Domain OR Machine 192.168.1.10
 User Name administrator
 Password *****

Please update these credentials each time that the password expires or changes. You can do this from the Drive Manager screen.

Test Credentials

Add Network Location Cancel

Enter the network path in the topmost field. The supported formats here are:

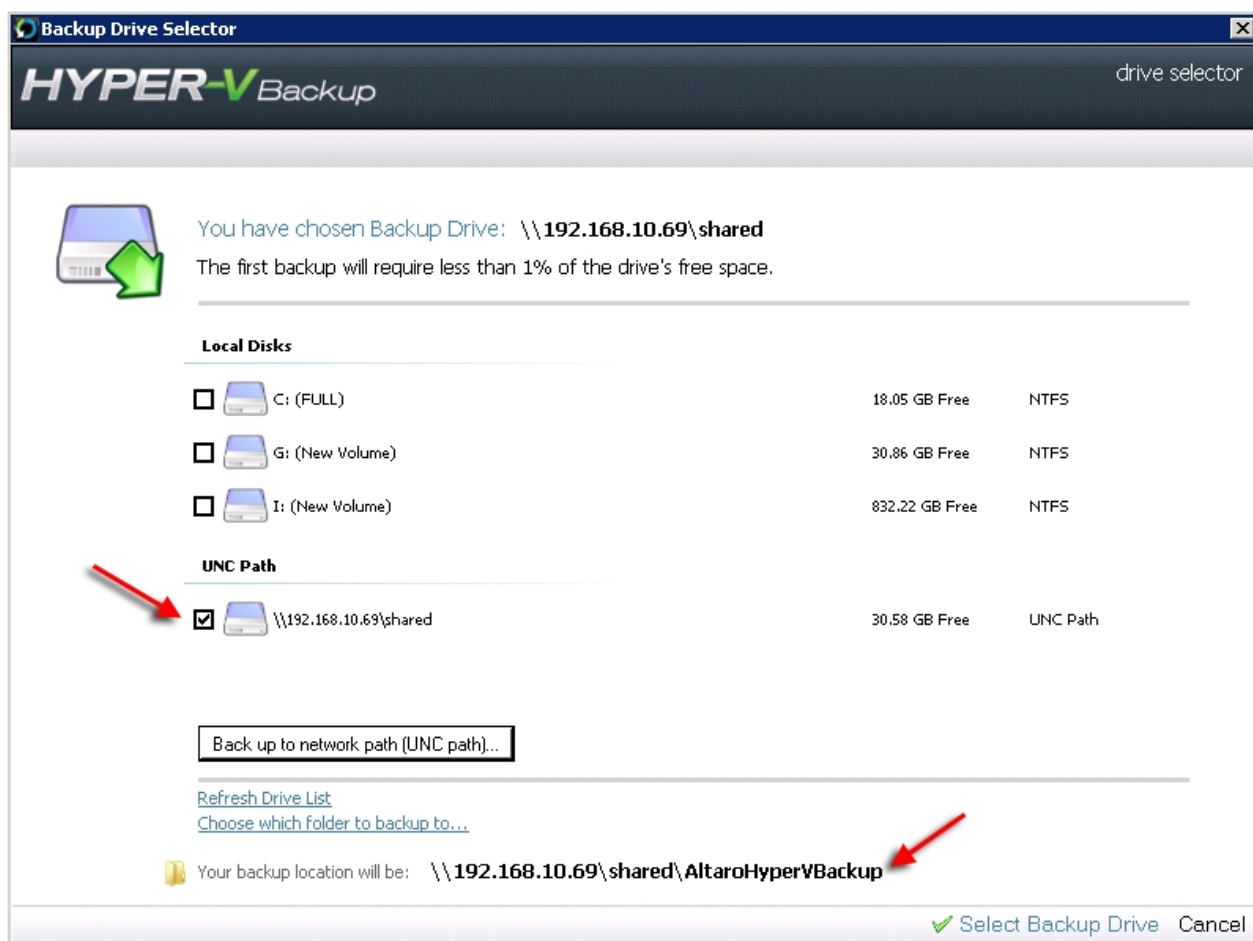
- \\IP Address\Share, for example \\192.168.1.10\Backups
- \\ServerName\Share, for example \\BackupServer\Backups
- Both of the above with one or more extra folders, for example \\192.168.1.10\Backup\Altaro

Entering a server name or IP address alone, for example “\\192.168.1.10” , alone with no share name, is not supported.

In the three lower fields, you must enter the domain name, or else the IP Address, with no slashes, of the backup destination, the username to be used to authenticate to the path, and the password. The password is never stored as plain text in the Altaro Hyper-V Backup configuration files.

An IP address is usually used instead of the domain name when the backup destination is not running Windows or is not part of the domain, for example a NAS drive enclosure or similar.

Once you are done, click on the “Test Credentials” to make sure the authentication works and then click “Add Network Location”. This will add the network path as an option in the drive selector window alongside the other detected drives:



You can also select any further subfolders to use for the backup location by clicking on “Choose with folder to backup to” link, as described [here](#).

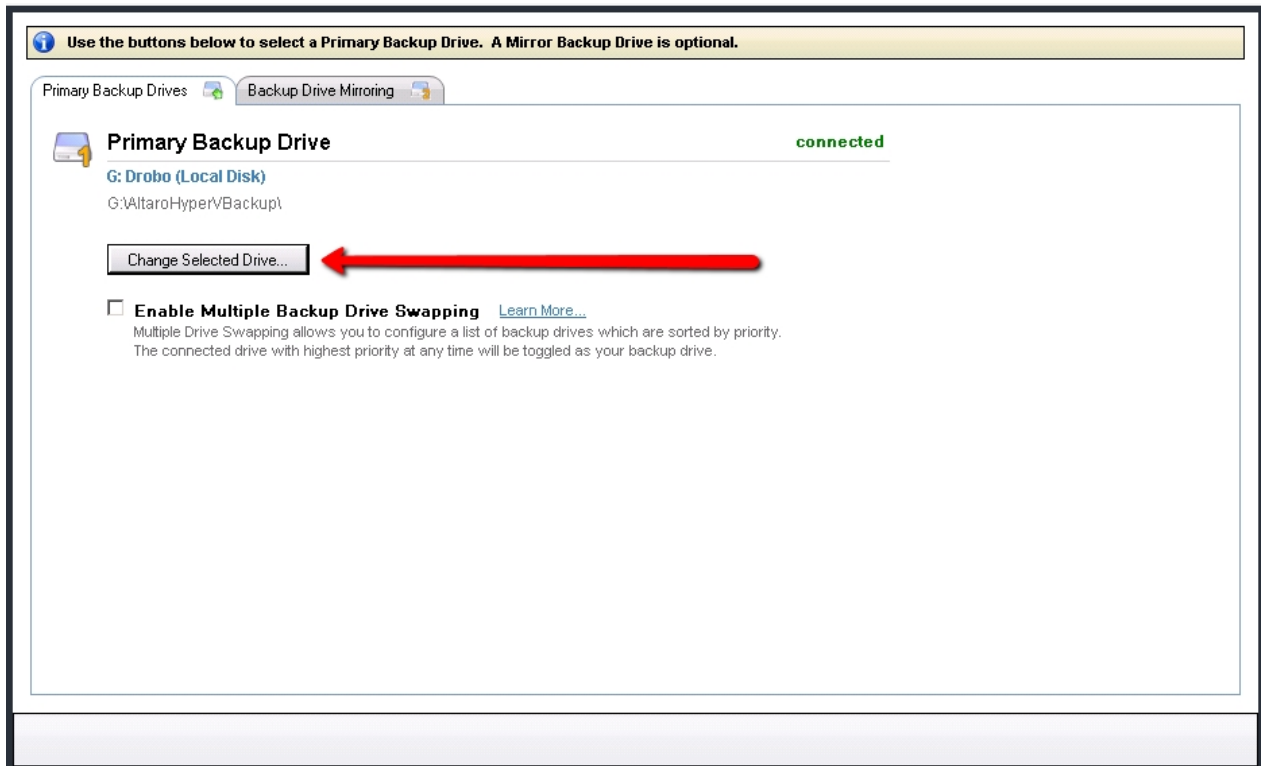
Once you are sure of your selection, click on “Select Backup Drive” at the bottom of the window as described [here](#).

Changing your Primary Backup Drive Selection

If you are using a network path as your primary drive, or you have decided not to use the drive swap feature as described [here](#) and use only one primary drive, you may want to change the drive to another primary drive.

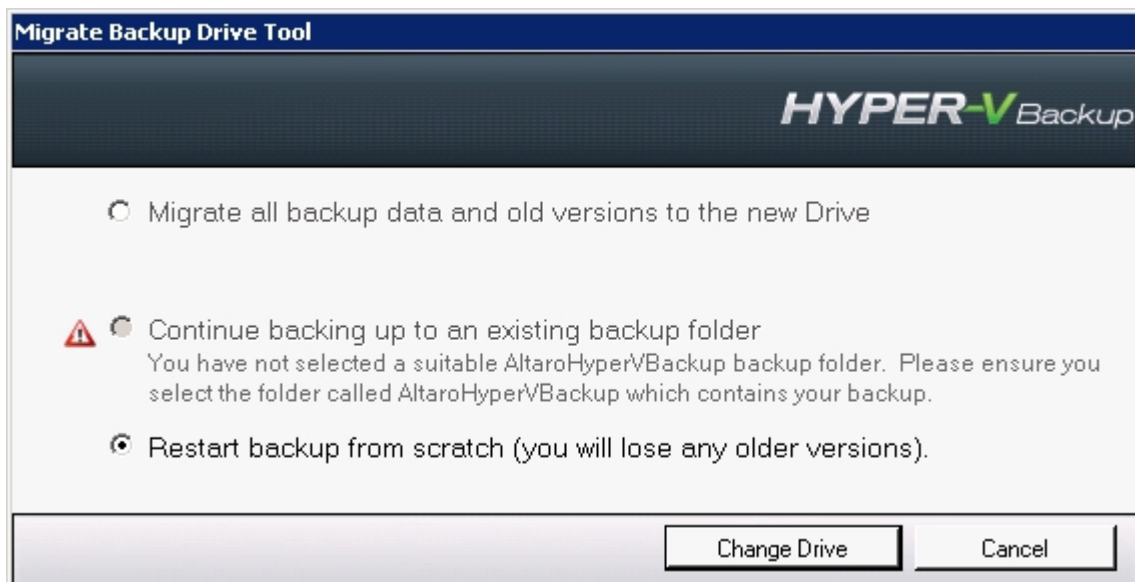
If you are using the drive swapping feature, you may also want to change the currently connected drive to a new location, with the option of migrating all the data as described further below.

To do this, click on the “Change Selected Drive” button shown in the image below:



Clicking the button will display the Drive Selector window, and you can choose an alternative primary drive location, locally attached or on a network path, as described [here](#) and [here](#) respectively.

Once you have chosen the new primary backup drive, you will be prompted with three options as shown below:



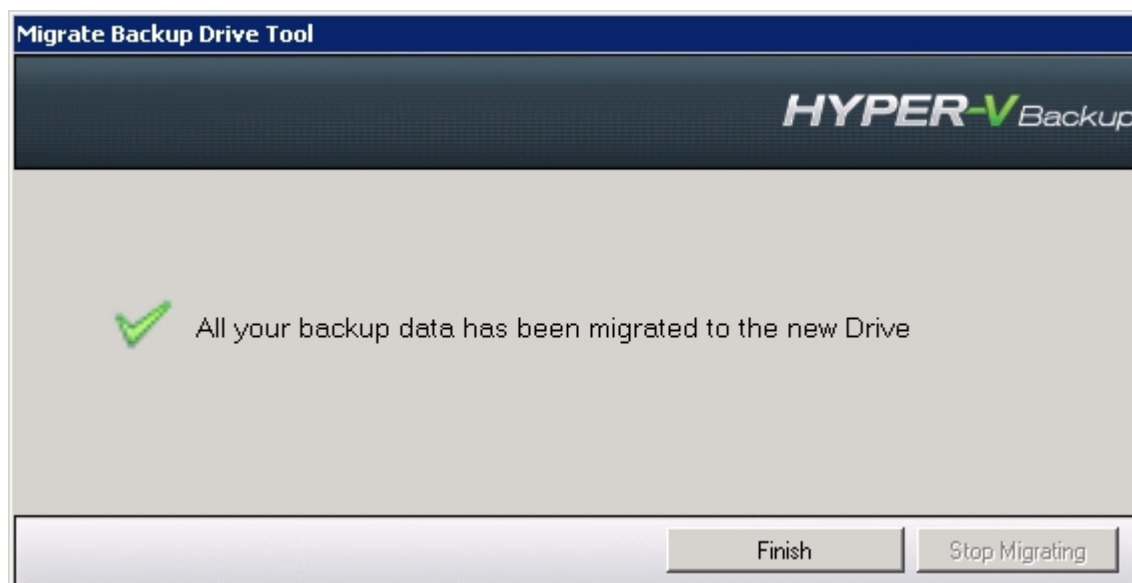
The three options are explained below:

1) Migrate all backup data and old versions to the new drive.

This option is available when the previously selected primary drive is still available. If you choose this option, all data will be copied over to the new backup location, and the new backup drive will resume

incremental backups seamlessly from the time of the last backup to the previously selected drive.

Please note that the migration procedure may take several hours depending on the amount of data that needs to be transferred. Once the migration is complete, you will be shown the following alert, and from that point on the backups may resume to the newly selected drive:



2) Continue backing up to an existing backup folder

This option is enabled if the software detects that the newly selected primary drive was already used with the same backup configuration. You may choose this option if you would like to resume incremental backups on the newly selected drive, automatically linking to the previous backup available on that drive.

This option is useful when you want to move the location of the primary drive. For example if you have performed the first backup on a drive connected via USB, and then connected that same drive on a shared network path on another computer, you may re-map to the same backup drive using this option.

3) Restart backup from scratch

Choose this option when you do not want to copy any backup data from the previously connected drive (if available) and start the backups on the newly selected drive from scratch.

Multiple Primary Backup Drive Swapping

As described [in more detail here](#):

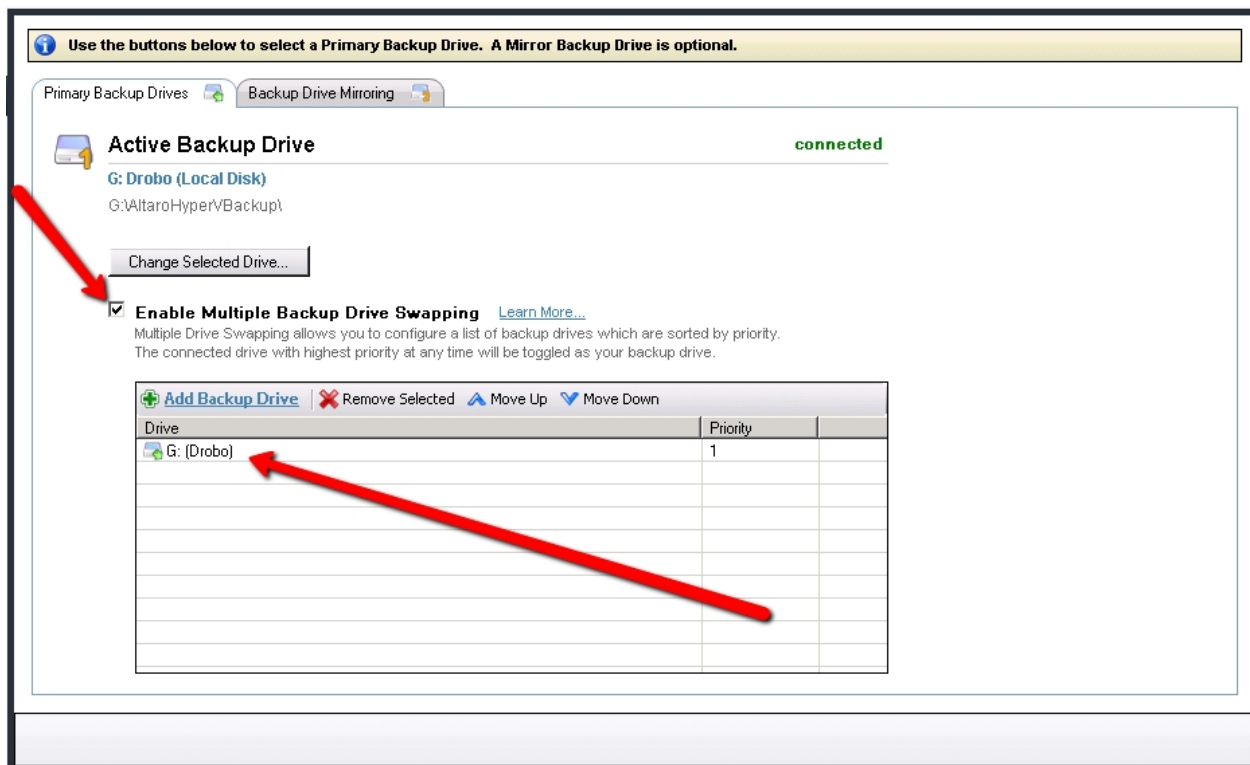
If the primary drive selected is a locally connected drive (USB, eSATA or similar), then you may specify other *locally connected* drives as primary drives. Backing up different VMs to different primary drives is not supported, and all primary drives will contain backups for the same VMs.

Only one primary drive can be active at any one time. If more than one primary drive is connected at the

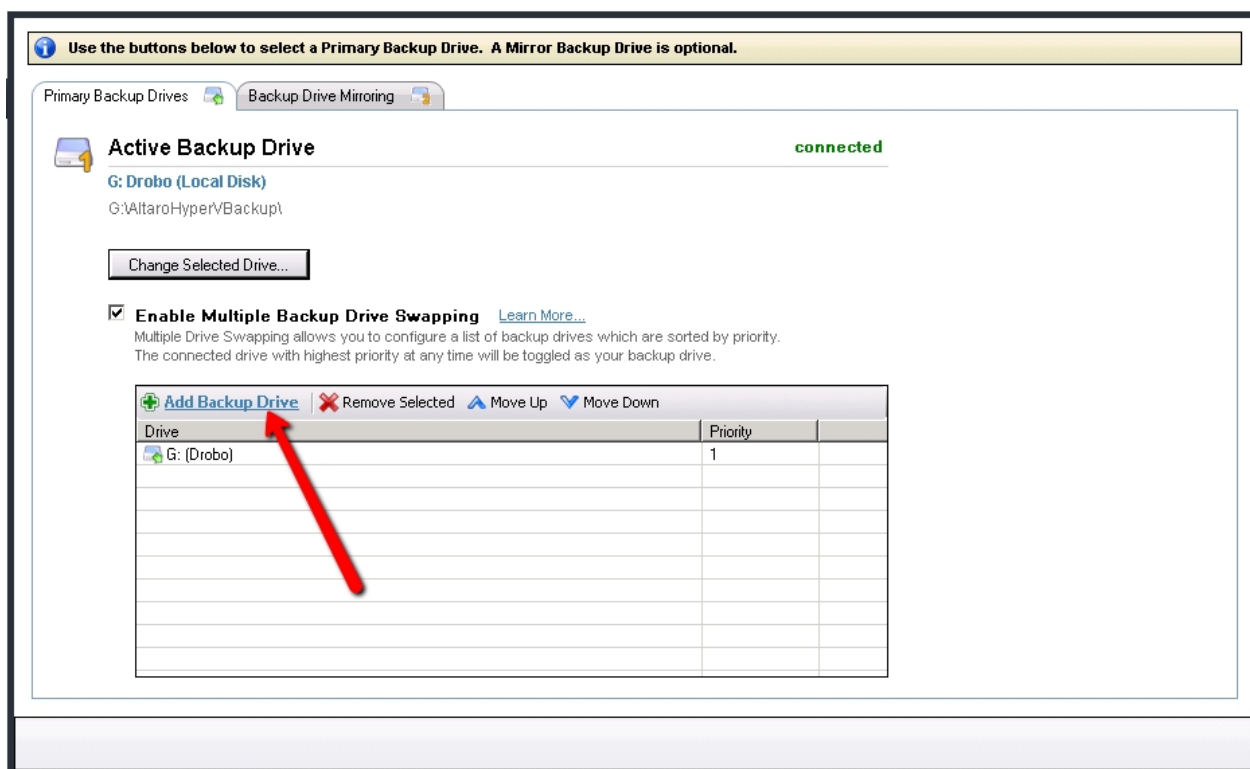
same time, the active primary drive will be selected according to a user-assigned priority.

To enable multiple primary drive swapping, first click on the “Enable Multiple Backup Drive Swapping” checkbox.

If you have already selected a network path as your primary drive, this checkbox will not be enabled. If you have already selected a locally connected drive as your primary drive, the checkbox will be enabled, and a list of drives will appear below the checkbox, showing the primary drive that has already been selected:



To add another primary backup drive, please click on the “Add Backup Drive” button as shown below.

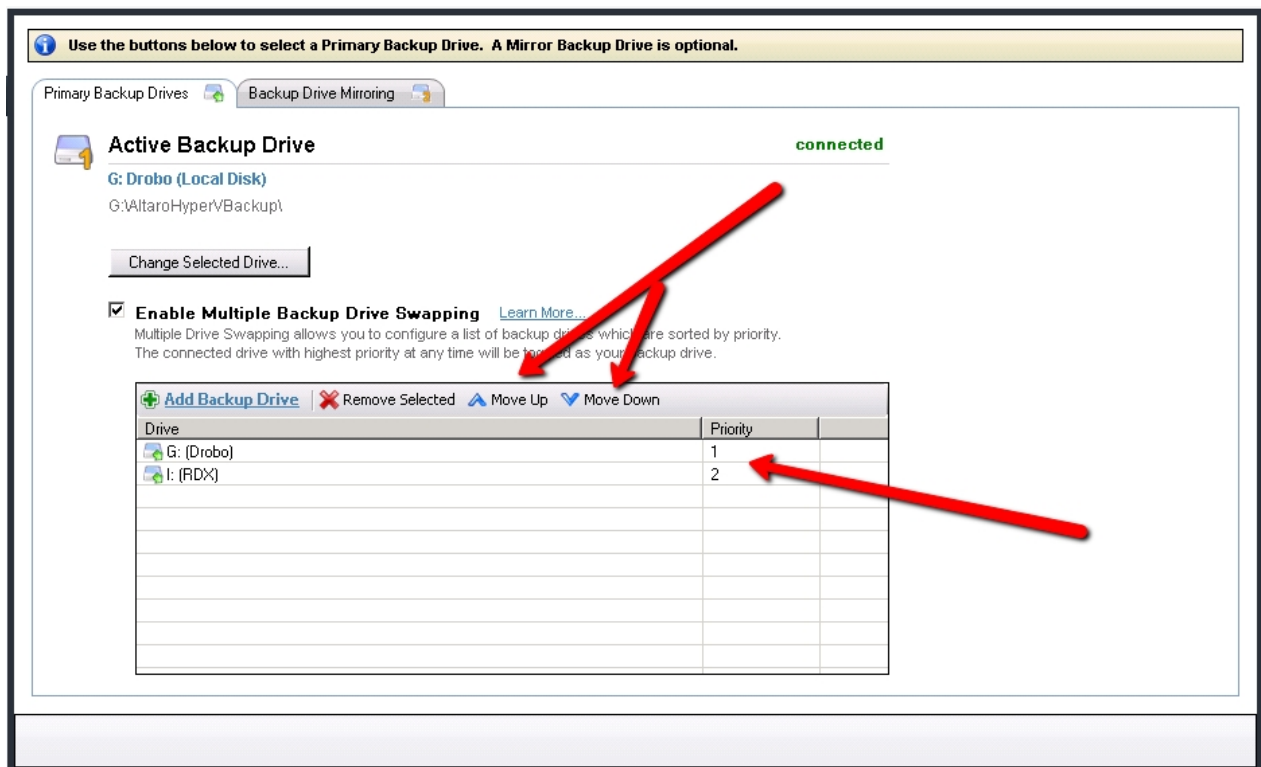


Clicking on the “Add Backup Drive” button, will bring up the **Drive Selector Window**. Please follow the procedure described [here](#) in order to choose another primary drive. Please note that selecting a network path will be disabled in this case.

You may repeat this procedure multiple times in order to add any number of primary drives. You may also add and remove primary drives at a later stage.

Only one primary backup drive may be active at any one time, so once the other primary drives have been selected, you must specify which drives will be activated if more than one primary drive is simultaneously connected. This is done by moving the drives' position up or down in the list in order to change their priority. A drive with a *lower number* in the priority column will be preferred over a simultaneously connected drive with a *higher number* in the column.

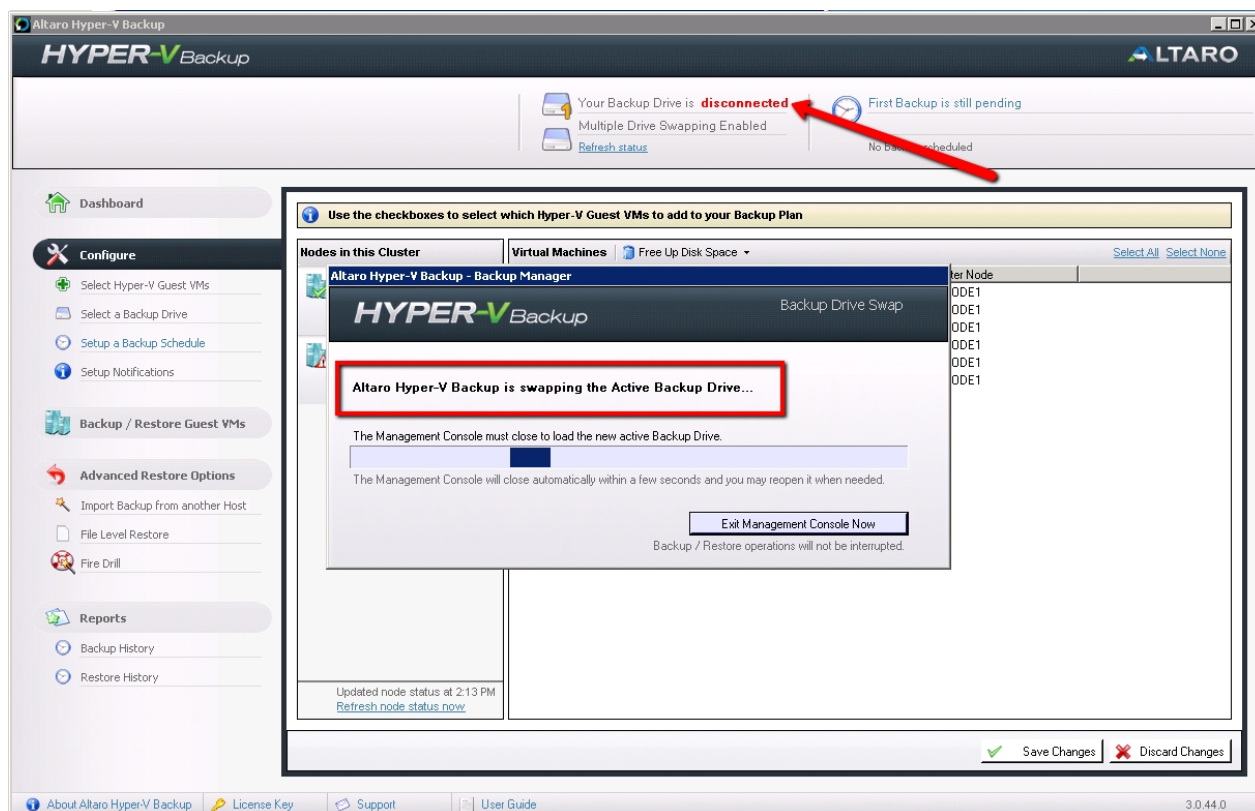
In other words, the drive with *Priority 1* will have a higher priority over any other selected primary drives. To change the relative priority of the drives, click on any one of the drives in the list and then click on the “Move Up” and “Move Down” buttons at the top of the list as shown in the image below:



The currently active drive is switched to another drive in two cases:

- 1) A drive with a higher assigned priority is connected.
- 2) The currently connected drive is disconnected and a drive with a lower priority is available.

If one of the above occurs, you will see the following alert appear if the Management Console is open:



After a few seconds, the Management Console (if open) will automatically close in order for the new drive details to be loaded. In the current version, the Management Console will not reopen automatically, and must be launched again by the user if required.

Once you reopen the Management Console, you will only see the backup history of the newly activated drive.

Please keep in mind that each independent primary backup drive will contain backup versions corresponding to different times, and no two primary drives will contain the same backup versions.

The backup history in the Management Console will change according to the active primary drive, and whilst a drive is active, the backup versions that are available for restore will only be for those backups that were done on the when the currently active drive.

Drive swap using RDX Cartridges

A different way of drive swapping is by using an RDX drive enclosure. If the first primary drive you choose is an drive within an RDX enclosure, this feature is automatically enabled.

RDX enclosures are distinguished by the RDX logo beside the drive letter in the Drive Selector window as shown below:



You have chosen Backup Drive: **I: (RDX)**

The first backup will require less than 1% of the drive's free space.

Removable Disks (Recommended)



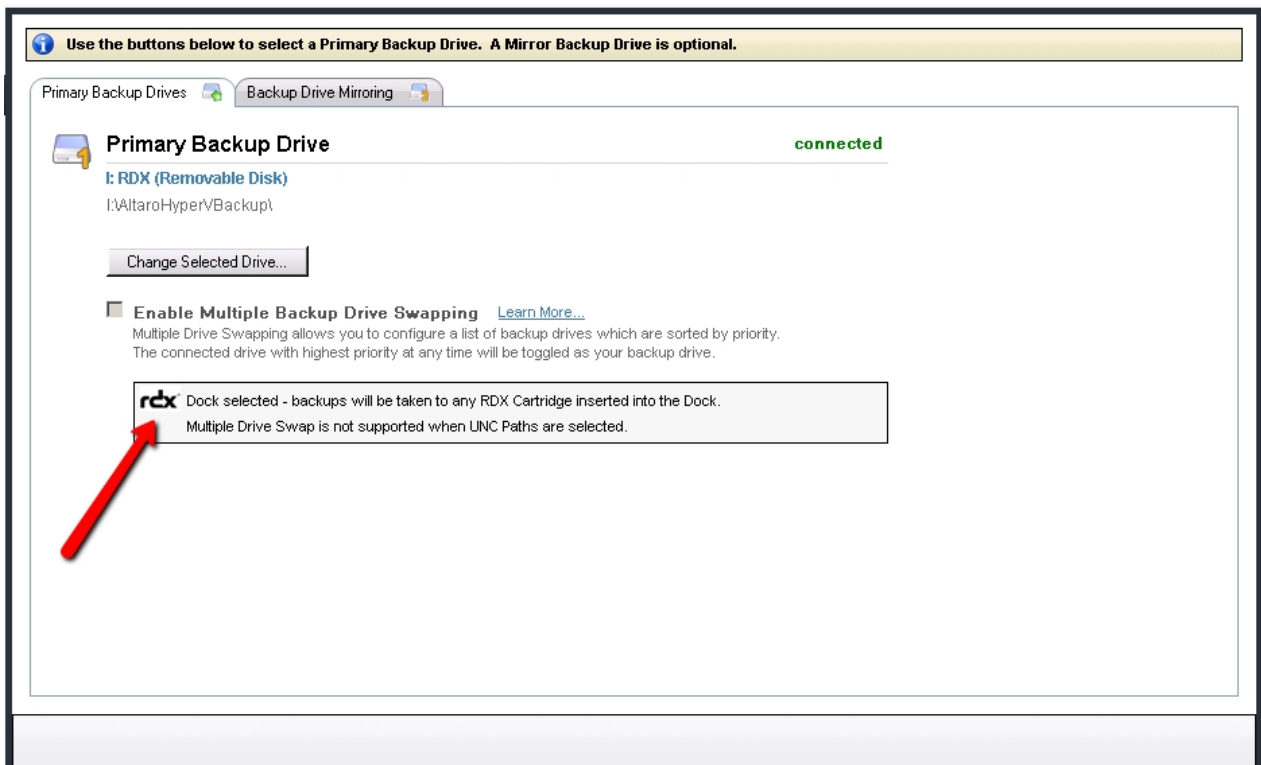
<input checked="" type="checkbox"/>	rdx I: (RDX)	134.88 GB Free	NTFS
-------------------------------------	---------------------	----------------	------

Local Disks

<input type="checkbox"/>	C: (Unlabeled Drive)	76.56 GB Free	NTFS
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If [drive swapping](#) is not enabled, then the RDX drive rotation feature becomes active and any cartridge inserted into that enclosure is used as a primary backup location without explicitly selecting each drive independently as with the standard drive swapping feature.

When the feature is enabled, are automatically disabled. You will see the RDX logo in the drive configuration panel as shown below:



As with the standard drive swapping feature, please keep in mind that each independent RDX cartridge will contain backup versions corresponding to different times, and no two cartridges will contain the same backup versions.

The backup history in the Management Console will change according to the active cartridge, and whilst a cartridge is active, the backup versions that are available for restore will only be for those backups that were done on the when the currently active cartridge.

Note:

In order to revert to standard [drive swapping](#), you will need to select the first primary drive as a non-RDX drive (as described [here](#)). Once drive swapping is enabled, you can then re-add the RDX enclosure as one of the primary backup drives, but only the currently inserted cartridge will be added to the list of multiple drives. You can add multiple RDX cartridges to the list by inserting them, selecting them and assigning their priority in turn.

If an RDX Cartridge is rotated while the Altaro Hyper-V Backup Management Console is open then the console must restart itself in order to attach to the new cartridge. In this case the user will temporarily see the following loading screen. This should only take a few seconds.

Configuring a Mirror Backup Drive

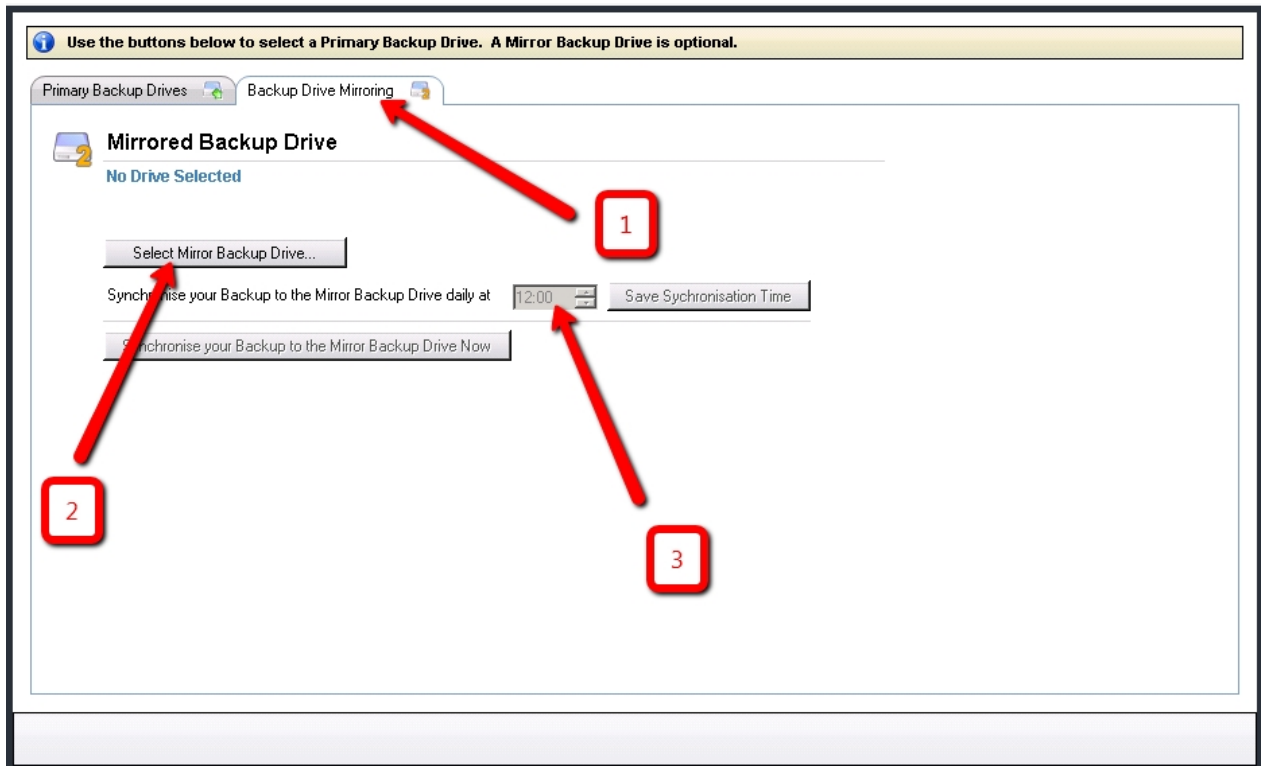
If you are using a network path as your primary drive, or you have decided not to use the [drive swap feature](#) and use only one primary drive, then you have the option of assigning another drive as a mirror drive. As described in [here](#), a mirror drive is a redundant copy of the primary drive.

Backup data is always synchronized from the primary drive to the mirror drive, and backup data is never copied to the mirror drive directly from the source files on the host. If the primary drive is not connected, no data can be synchronized to the mirror drive.

To select a mirror drive, follow the following steps:

- 1) Click on the “Backup Drive Mirroring” tab at the top of the drive configuration panel
- 2) Click on the “Select Mirror Backup Drive” button. Then follow the “Drive Selector” procedure as described in [here](#) and [here](#) to choose a locally attached or network mirror drive respectively.
- 3) You can then set a time (once per day) at which the drive synchronization from the primary backup drive to the secondary backup drive will take place automatically. Please note that until the synchronization is ready, **no backups will take place**. The synchronization will only start **if the primary drive is connected**.

The three steps above are shown in the image below:

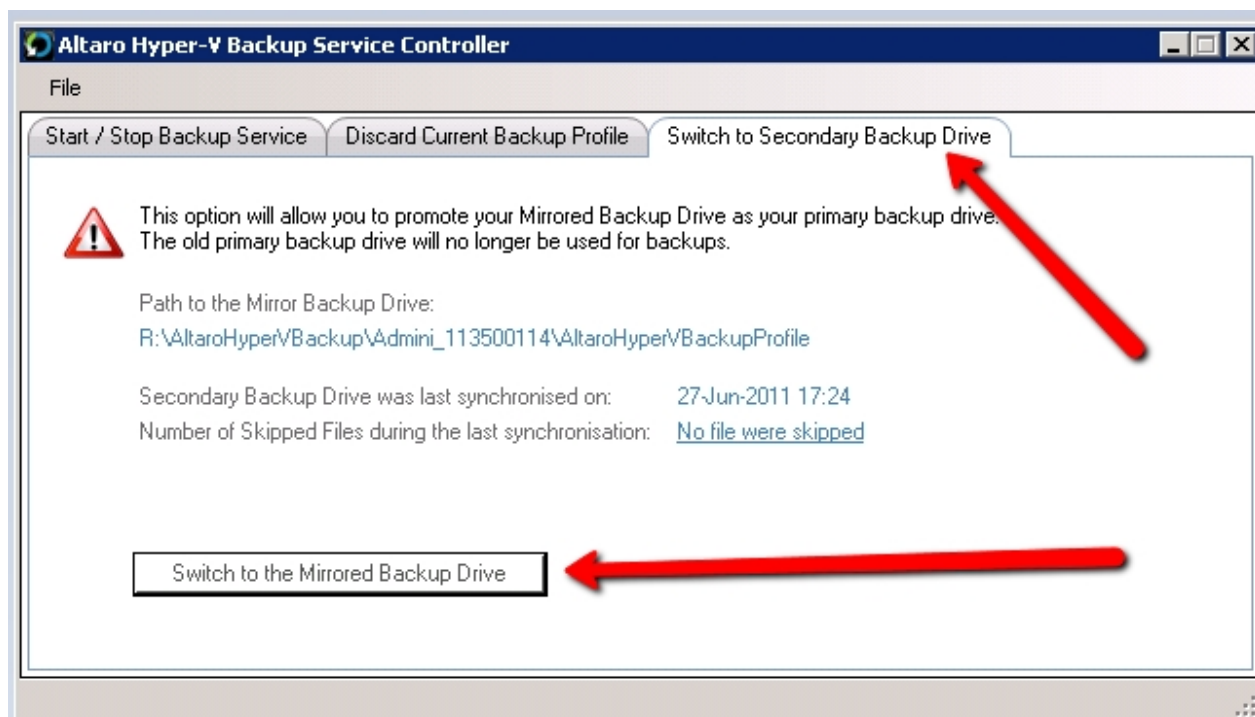


You may start the synchronization manually at any time by clicking on the “Synchronize your Backup to the Mirror Drive” button in the image above.

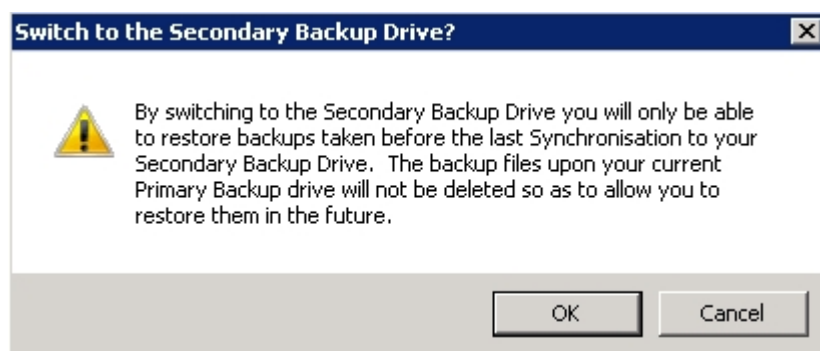
Switching to the Mirror Backup Drive

To switch to the Mirror Backup Drive simply use the "Switch to Mirror Backup Drive" tab in the **Altaro Hyper-V Backup Service Controller**. You can learn how to access the service controller [here](#).

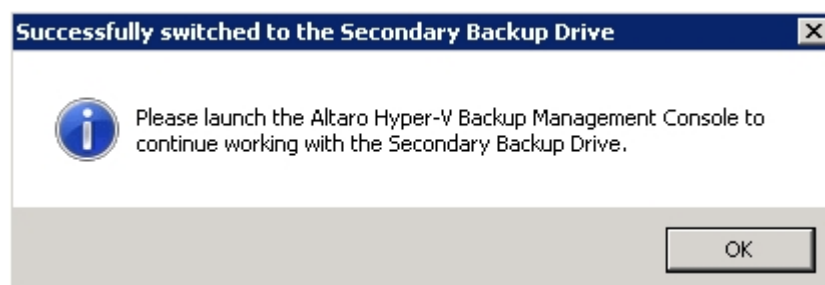
Switch to Mirror Backup Drive: This tab allows the user to discard the current backup profile and import the backup profile saved on the Mirror backup drive. Once the backup profile is switched Hyper-V Backup will treat the Mirror backup drive as the primary backup drive.



Once the "Switch to Mirror backup drive" button is clicked then the user will be prompted to confirm.



Once the switch is performed successfully then the user will be notified.



Important Note: Should the switch fail then you will find a backup of the old profile folder as follows:

C:\ProgramData\Altaro\AltaroHyperVBackupProfile_BACKUP_TimeStamp

Simply rename this backup to:

C:\ProgramData\Altaro\AltaroHyperVBackupProfile

You may need to stop the service first as explained [here](#).

Backup Drives in a Hyper-V Cluster Environment

If you have a Hyper-V cluster set up, Altaro Hyper-V Backup will communicate with other cluster nodes and instruct them to back up any selected VMs to the same backup location.

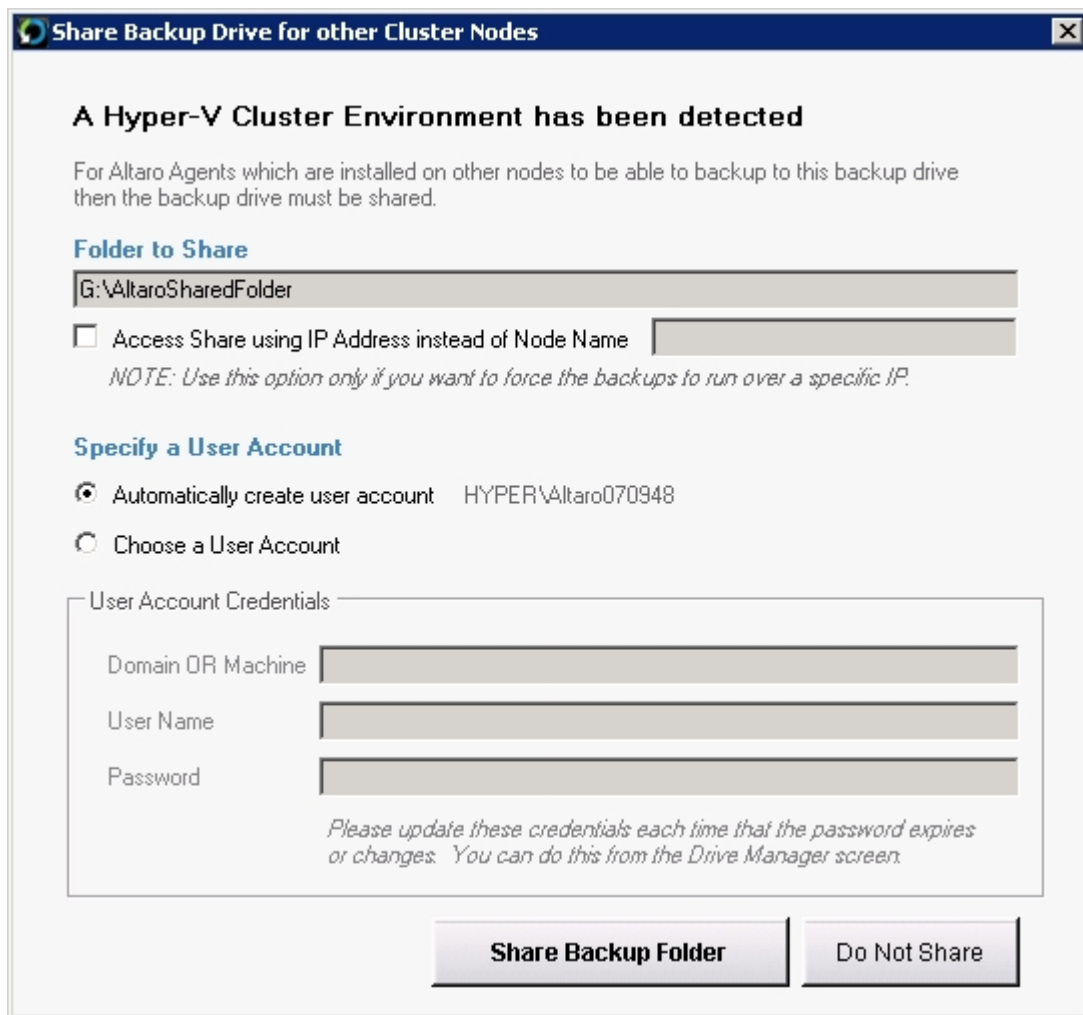
If your primary drive is a network location, the network path credentials are securely communicated to the other cluster nodes so that they can authenticate to and access the backup location.

If on the other hand, your primary drive or drives are locally attached drives such as USB drives etc., then the backup folder on those drives are automatically shared using Windows file sharing, so that the other cluster nodes will have access to the backup location.

When this setup is detected, an extra configuration window is shown after selecting the drive from the [Drive Selector window](#).

.....
backup location, and this folder is shared using standard Windows File Sharing.

You will be prompted with the following window:



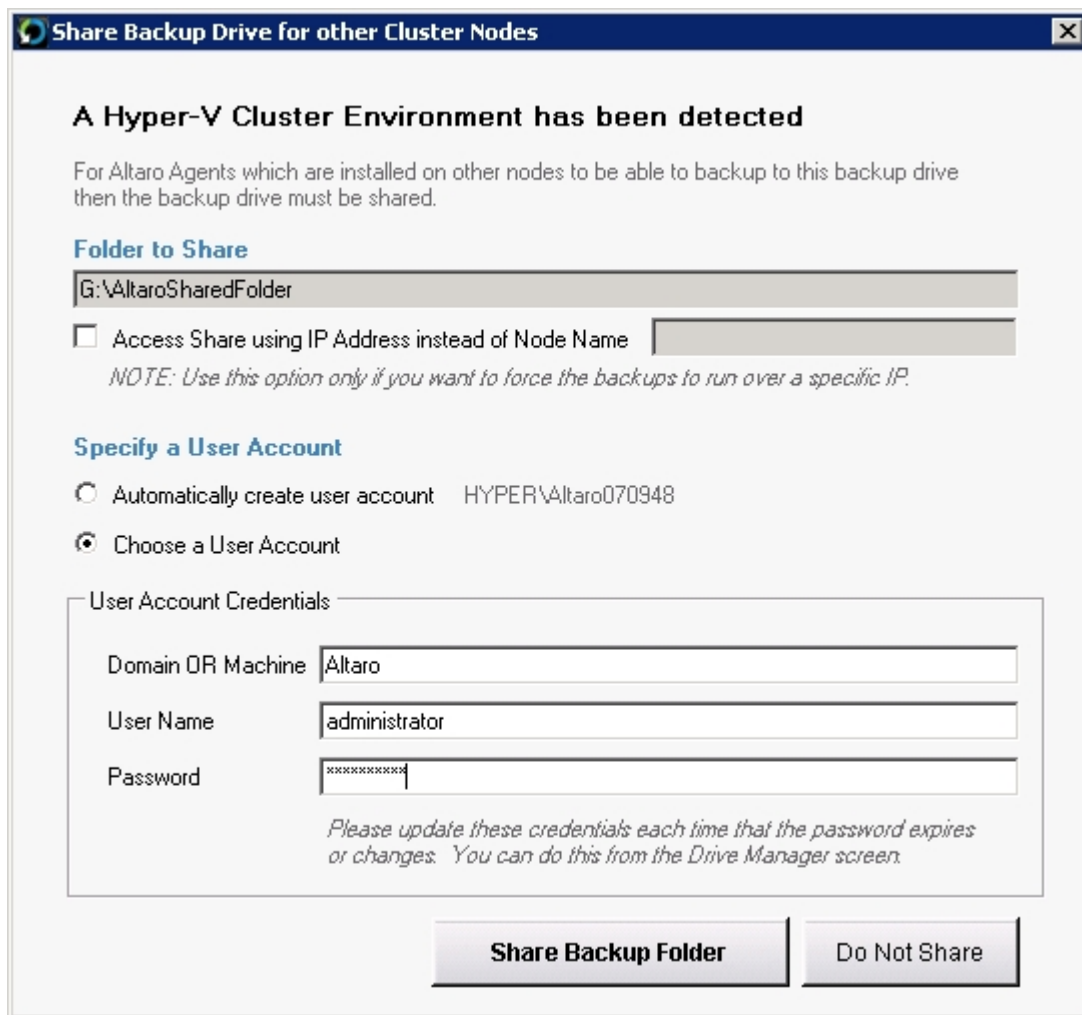
At the bottom, This refers to the Active Directory Domain User that will have access (both Share access and NTFS security permissions) to the newly created share.

As shown in the image above, you can simply leave it in the hands of Altaro Hyper-V Backup to create a special Active Directory Domain User for this purpose (Altaro070948 in the example above).

The created share will be accessible only by this user, and the randomly generated credentials will be securely communicated to the other Hyper-V nodes when backup is required on another node.

The newly created share will only be accessible by the newly created user.

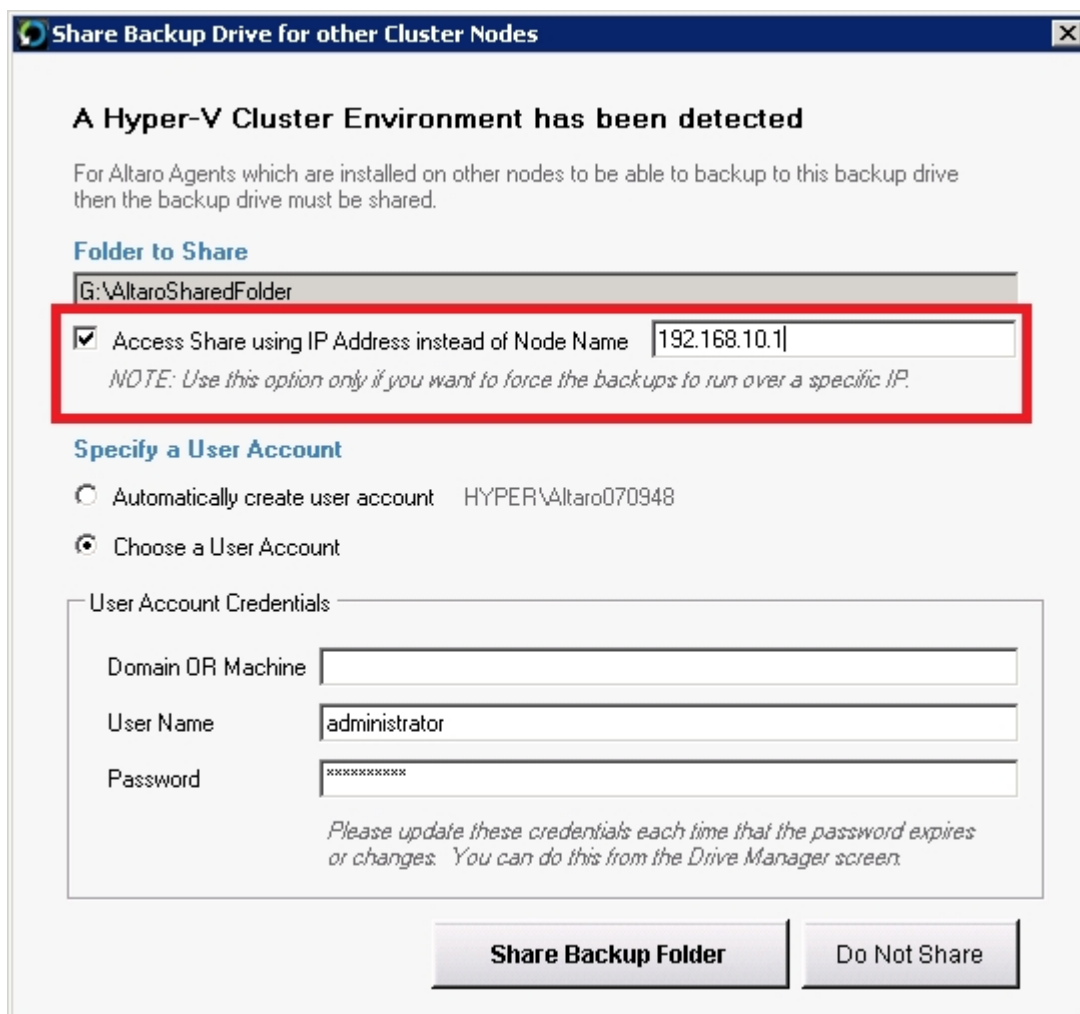
If you prefer to specify an already existing user, button and specify the credentials as shown in the image below:



.....:

With Hyper-V cluster setups, the cluster nodes may be connected to a Gigabit or faster network, typically fibre channel, on which the Cluster Shared Volumes are set up. This is usually independent of the standard domain network (the management network), which may not reach the same speeds.

What this means is that a remote cluster node may reach the shared backup drive using one of two networks, one possibly being much faster than the other. If you would like to specify which IP the remote cluster node should use in order to access the locally connected backup drive, you may select the checkbox shown in the image below and specify the required IP.



If you do not specify this setting, the IP address of the current node (on which the backup drive is shared) will be resolved using the node name on the remote cluster node.

Managing Backup Space

- ♥ [Limiting the age of older versions \(Automatic Version Maintenance\)](#)
- ♥ [Manually deleting older versions \(Manual Version Maintenance\)](#)
- ♥ [Delete Backups of VMs that have been removed from your Backup Plan](#)

Limiting the age / size of Older Versions (Automatic Maintenance)

During each backup Altaro Hyper-V Backup stores the **latest version** of all files as a complete mirror copy. In fact, the backup destination may be accessed simply through Windows explorer and the latest backup may be browsed manually.

Whenever a file changes (or is deleted) from the source data, the older version (or deleted file) is then moved to the "old versions" repository. Over time this "old versions" repository will continue to grow as files keep on changing and more versions are stored. Altaro's **ReverseDelta** technology compresses older files to reflect only changes between one version and another, while still leaving the latest version as a full copy. This ensures that minimal space is required for the "old versions" repository. (See the section about [ReverseDelta](#) in this manual).

As shown in the image below, the Restore Console shows the backup history allowing you to choose which version to restore:

SQL Server

Restore the version which was backed up on:

Restore to original location (this will overwrite the current guest VM)

Restore as clone to a different location (this will restore the backed up guest VM as a new VM)

Altaro Hyper-V Backup gives you the possibility of restoring a Hyper-V Guest VM to the exact state it was at the specified timestamp.

Each version contributes to the size of the total backup set on the backup drive. This increase in size is dependent on the nature of the changes that occurred between that backup and the previous one. The way Altaro Hyper-V Backup controls the increase in size is by referencing unchanged files across snapshots to the same data on the disk, and also by making use of delta technology in order to store only the changes within a file from one backup to the next.

Old versions may be deleted from the backup set, with the limitation that versions **can only be deleted contiguously starting from the oldest available version**.

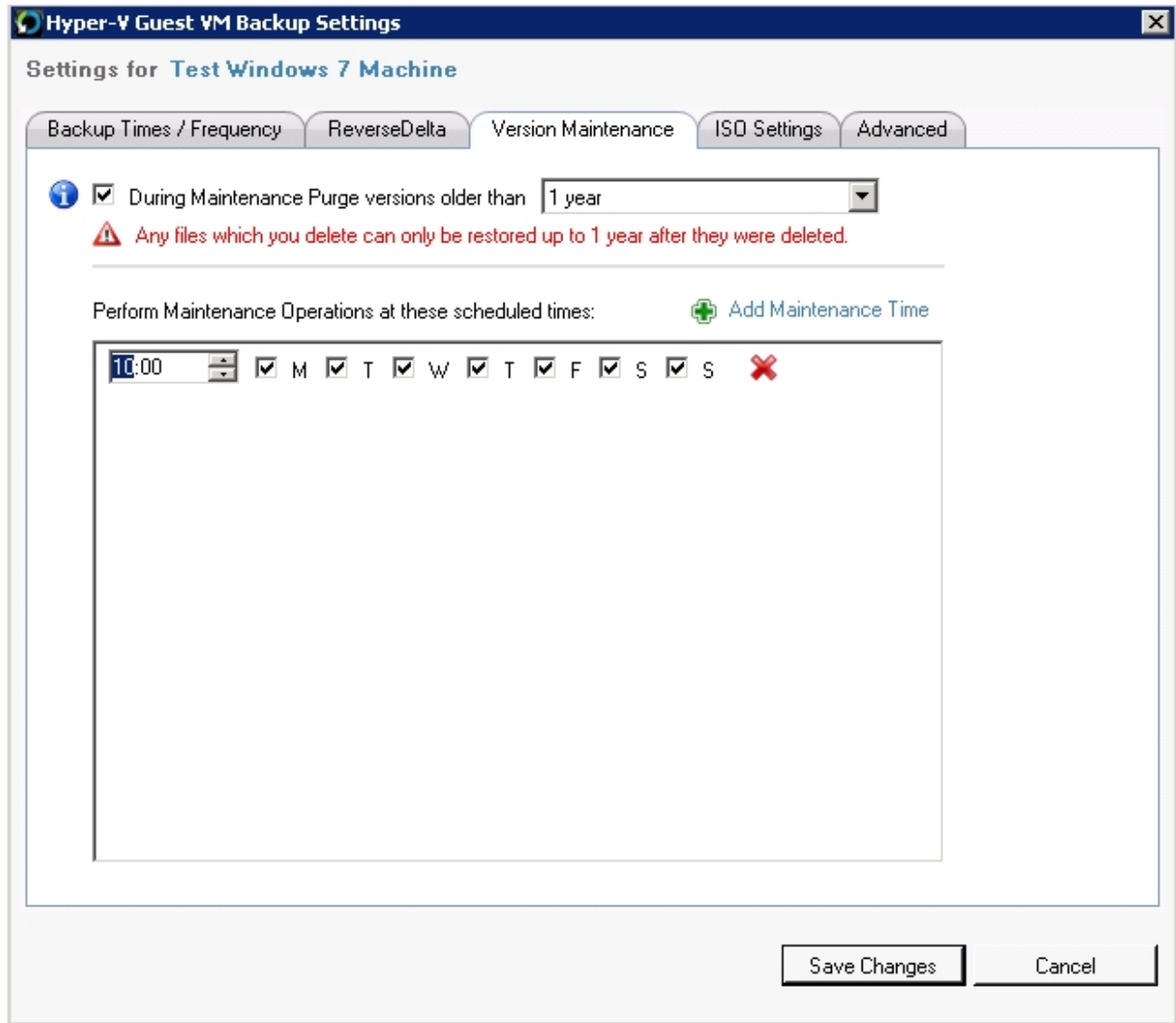
Some users may want to perform periodic maintenance their "old versions" repository to ensure that it does not exceed a certain size limit or contain old and obsolete versions. There is one ways to limit the backup size in Altaro Hyper-V Backup:

- Limit the **age** of the oldest file versions that are stored on the backup drive.

This can be taken care of automatically by setting a Maintenance Schedule. You can learn on how to do this by reading this [section](#).

The Version Maintenance tab shows a checkbox and also a schedule manager below it. The checkbox enabled or disables maintaining your versions by age.

For maintenance to work in the background you need to specify scheduled Maintenance Times. Click on the "Add Maintenance Time" at the bottom of the window and specify any number of times per day you want the maintenance to be performed. Each specified time may be scheduled to run on any number of days of the week as shown in the image below, for example a 17:00 maintenance schedule from Monday to Friday following and a 12:00 schedule on weekends:



You may click on the red “X” next to any scheduled time entry to remove that entry. Please remember to click “Save” at the bottom of the window each time you make changes to the Advanced Settings.

Maintenance by Age:

Select the checkbox “During Maintenance Purge versions older than...” and choose a time span from the dropdown list.

As an example, let's assume today's date is the 15th January 2010 and I set my age limit to 2 months. This would mean that any backups older than the 15th November 2009 will be deleted from the backup drive. This does not happen immediately, but will be done by a maintenance routine within Altaro Hyper-V Backup according to the maintenance schedule you specify (see above).

The latest version of each file will never be deleted even if the size limit remains exceeded after all the older versions are deleted. The latest backup must perfectly mirror the source data, and deleting any files from the latest backup would of course result in an incomplete backup. It is up to the user to select a backup destination that can hold at least one version of each VM.

Common Questions:

Will maintenance ever delete all versions of a backed up file?

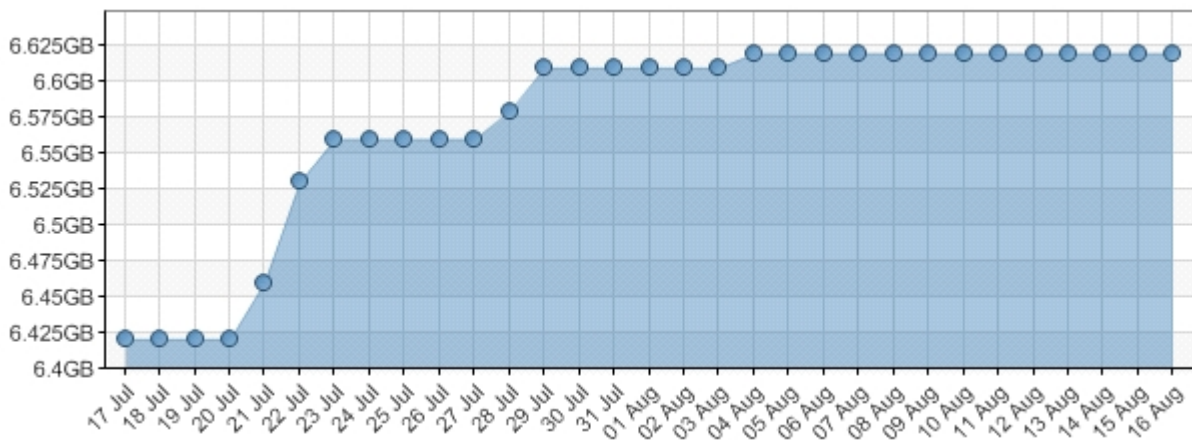
The maintenance operations will never delete all versions of a file, unless a file had been deleted from your Server for a period longer than the maintenance period set. Therefore using the same example, you have chosen to delete all versions older than two months and a particular file was deleted from your Server say three months ago.

Since that file was not present at any of the points in time displayed on the timeline then the file can no longer be restored by Altaro Hyper-V Backup from the Restore Console.

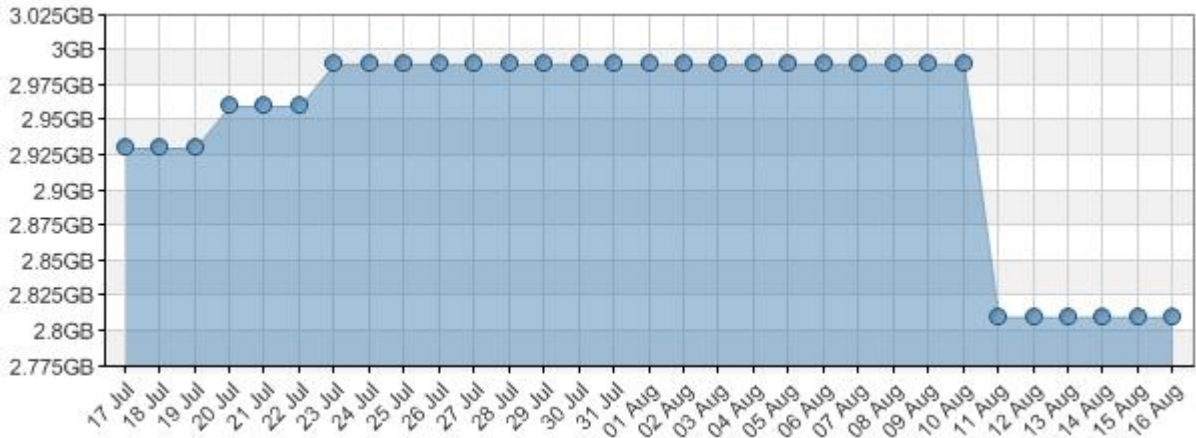
What is the end result of maintenance being activated?

The result of all of the above is that, assuming that the changes to your data are more or less similar between one backup and another, this will result in the backup size levelling off as shown in the image below.

This is because as one backup is added to the stack on the timeline, an older one is deleted, **so your backup window is always the same age or size**, moving forwards one day at a time. This levelling off is of course only seen when the oldest backup hits the limit set by the maintenance schedule.



Please note that if you have no Maintenance Schedule for quite a while, and then set the cut-off point to a point in time that is considerably "younger" than your oldest backup, you will see a dip in the size as shown in the graph below, as several backups in the timeline are purged simultaneously. You should then start seeing some levelling off in size thereafter.



Remember that the levelling off assumes that daily changes are fairly similar. If you add substantial amounts of data then you will still see an increase in the size of the graph. With regards to the renaming of folders, deleting of files etc. the files will remain in the backup history until they are flushed out by the maintenance schedule.

How do I find the right setting for my Maintenance Schedule?

Sometimes, trial and error is required to find the right balance between available disk space and age of versions to keep. Here at Altaro, we recommend that if drive space on your backup drive becomes an issue, start with a high setting, which is just below the age of your oldest backup. For example, if you have versions going back 3 months set the setting at 2 months. Next wait until your backup size is maintained and you see a dip in size in the graph.

If after a few days you realize that drive space is still an issue, set the Maintenance Schedule to a shorter time-window, and keep going until you achieve the desired balance.

Manually deleting older versions in the backup set (Manual Maintenance)

The **Altaro Hyper-V Backup Drive space manager** is a simple utility that can be used to clear out old versions from your backup drive. This utility will free up disk space and will also be presented to the user in the case that their backup drive is full or will soon be full.

To access the utility:

1. Open the Altaro Backup Hyper-V Management Console. (Instructions [here](#))
2. Click on the Reports Tab on the left hand side of the screen.
3. Choose the "Backup History" report.
4. Click on "Delete old backups..." from the top right of the report.

VM Name	Time	Result	Summary
BUILDER - WIN XP 32 Bit	Today at 03:30	Success	Backed up a total of 1.32 GB for 5 changes. (Duration: 1h)
LIVE!! - HABANA	Today at 01:30	Success	Backed up a total of 793.7 MB for 4 changes. (Duration: 1h)
LIVE!! - SQL Server 2008 on Win 7 64Bit	Yesterday at 21:30	Success	Backed up a total of 2.5 GB for 1 change. (Duration: 1h)
BUILDER - WIN XP 32 Bit	Yesterday at 03:30	Success	Backed up a total of 2.91 GB for 5 changes. (Duration: 1h)
LIVE!! - HABANA	Yesterday at 01:30	Success	Backed up a total of 761.94 MB for 4 changes. (Duration: 1h)
LIVE!! - SQL Server 2008 on Win 7 64Bit	03 August 2011 at 21:30	Success	Backed up a total of 2.5 GB for 1 change. (Duration: 1h)
BUILDER - WIN XP 32 Bit	03 August 2011 at 03:30	Success	Backed up a total of 2.91 GB for 5 changes. (Duration: 1h)
LIVE!! - HABANA	03 August 2011 at 01:30	Success	Backed up a total of 712.94 MB for 4 changes. (Duration: 1h)
LIVE!! - SQL Server 2008 on Win 7 64Bit	02 August 2011 at 21:30	Success	Backed up a total of 1.61 GB for 1 change. (Duration: 1h)
BUILDER - WIN XP 32 Bit	02 August 2011 at 03:30	Success	Backed up a total of 2.49 GB for 5 changes. (Duration: 1h)
LIVE!! - HABANA	02 August 2011 at 01:30	Success	Backed up a total of 712.94 MB for 4 changes. (Duration: 1h)
LIVE!! - SQL Server 2008 on Win 7 64Bit	01 August 2011 at 21:30	Success	Backed up a total of 1.63 GB for 1 change. (Duration: 1h)
BUILDER - WIN XP 32 Bit	01 August 2011 at 03:30	Success	Backed up a total of 1.48 GB for 5 changes. (Duration: 1h)
LIVE!! - HABANA	01 August 2011 at 01:30	Success	Backed up a total of 753.19 MB for 4 changes. (Duration: 1h)
LIVE!! - SQL Server 2008 on Win 7 64Bit	31 July 2011 at 21:30	Success	Backed up a total of 1.71 GB for 1 change. (Duration: 1h)
BUILDER - WIN XP 32 Bit	31 July 2011 at 03:30	Success	Backed up a total of 1.37 GB for 5 changes. (Duration: 1h)
LIVE!! - HABANA	31 July 2011 at 01:30	Success	Backed up a total of 687.44 MB for 4 changes. (Duration: 1h)
LIVE!! - SQL Server 2008 on Win 7 64Bit	30 July 2011 at 21:30	Success	Backed up a total of 1.54 GB for 1 change. (Duration: 1h)
BUILDER - WIN XP 32 Bit	30 July 2011 at 03:30	Success	Backed up a total of 4.22 GB for 5 changes. (Duration: 1h)
LIVE!! - HABANA	30 July 2011 at 01:30	Success	Backed up a total of 760.69 MB for 4 changes. (Duration: 1h)
LIVE!! - SQL Server 2008 on Win 7 64Bit	29 July 2011 at 21:30	Success	Backed up a total of 1.62 GB for 1 change. (Duration: 1h)
BUILDER - WIN XP 32 Bit	29 July 2011 at 03:30	Success	Backed up a total of 1.4 GB for 5 changes. (Duration: 1h)
LIVE!! - HABANA	29 July 2011 at 01:30	Success	Backed up a total of 745.94 MB for 4 changes. (Duration: 1h)
LIVE!! - SQL Server 2008 on Win 7 64Bit	28 July 2011 at 21:30	Success	Backed up a total of 2.86 GB for 1 change. (Duration: 1h)

You will now be presented with the following screen:

Delete old backup versions

You can delete old backup versions to free up space on your backup drive.

Delete versions older than 10 June 2011 from Web Server 2

Delete versions older than 10 June 2011 from Web Server 1

Delete versions older than from Test Windows 7 Machine

Delete versions older than from SQL Server

Delete versions older than from Exchange Server

Delete old versions Cancel

To delete old versions:

1. Choose the checkboxes to indicate on which VMs you would like to perform version maintenance.
2. From the drop down lists select a "delete if older than" date, which may be independent for each VM. Versions which were created at a time which is older than the selected date will be marked for deletion.

3. Click on "Delete Old Versions".
4. You will now be presented with a progress bar which will indicate when the selected old versions have been deleted.

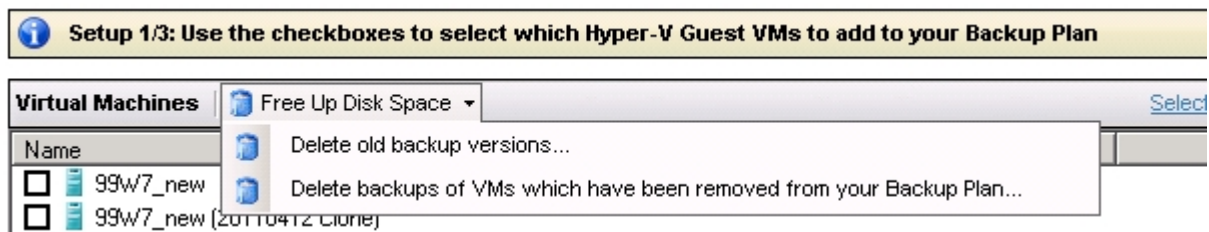
Please keep in mind that the graphs show the maximum size that existed on any one particular day, so the change in size may not be visible immediately on the dashboard.

Delete Backups of VMs that have been removed from your Backup Plan

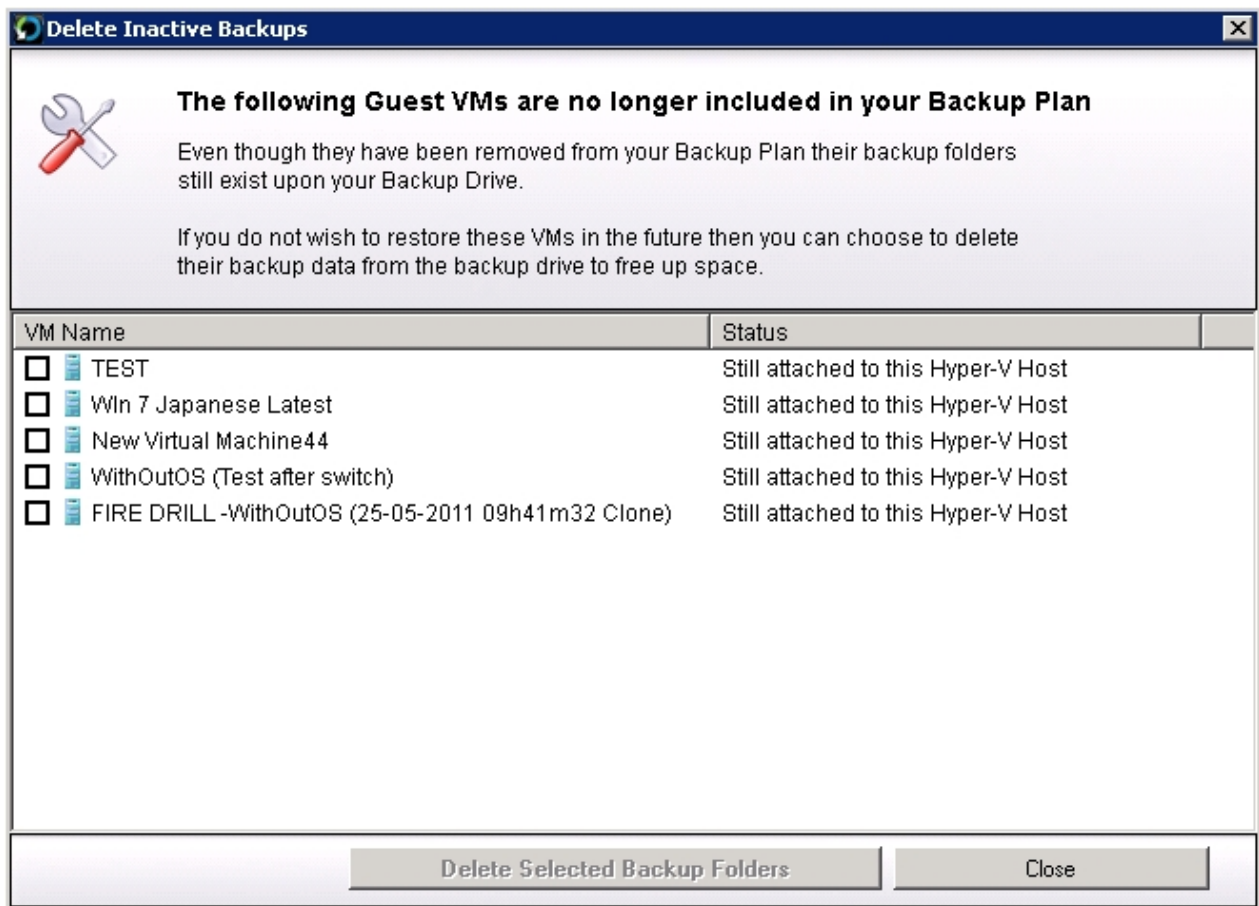
When you remove a VM from your Backup Plan (using the VM Browser as explained [here](#)) the backup folder containing that VMs backup files is not deleted. This is intentional to allow users to reselect the VM and restore previous versions at a later date. There may be cases where the user is no longer interested in keeping the old backup folders and would like to free up space on the backup drive.

This utility will facilitate deletion of old backup folder. Please note that once a backup folder is deleted then you will not be able to restore that VM until it is backed up again.

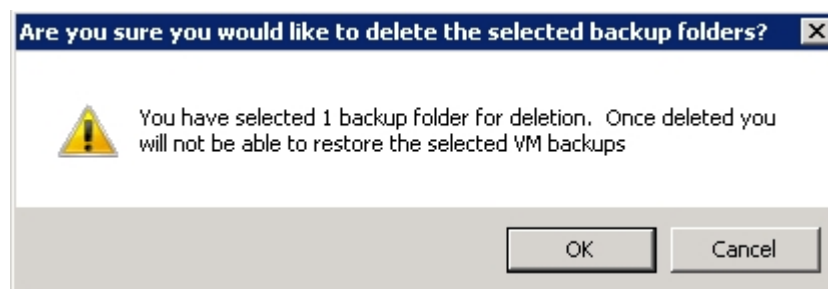
1. You can access this feature from the [VM Browser](#) and the [Backup History Report](#) as shown in the next screenshot.



2. Once launched the utility will list all VMs for which a backup folder exists on the backup drive, but the VM is no longer being backed up.



3. You may use the check boxes to select one or more backup folders to delete. Once the selections are made then you can simply click on "Delete Selected Backup Folders". You will be prompted for confirmation before the deletion starts.



4. Once deletion is complete you will be notified and the list of VM Backups pending deletion will be updated.

