

# **GFI BackUp™**

## *Back up Microsoft Hyper-V*

This Master Class paper describes how to back up Microsoft Hyper-V virtual environments using GFI Backup.

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## Introduction

Virtualization enables companies to build fully functional infrastructures that are easily recovered and maintained with minimal effort and reduced hardware costs. Through cloning and replication, IT industries can replicate and test clients' environments without breaking clients' business continuity.

## Advantages of virtualization

- » Virtualization enables the easy creation of multiple environments and the creation of snapshots that simplify state recovery in case of failure.
- » Organizations can use virtualization environments to test and monitor performance of new operating systems and software before installation on live environments.
- » Pre-configured virtual hard drives with servers and workstations enable you to quickly and easily create environments.
- » Virtual machines enable you to create sandboxes for safe Internet browsing and to test unsigned software. In case of disaster or damage, snapshots enable you to revert to a previous working state.
- » Virtual environments can be implemented on campus; students can learn and experiment in virtual lab machines. Virtual machines can be replicated easily to suit student demand.

## Microsoft Hyper-V

Microsoft Hyper-V is a virtualization technology available with Microsoft Windows 2008 Server. Hyper-V can be easily configured from the **Server Manager - Role** section; Hyper-V can be added as a role. The **Hyper-V Manager** enables you to:

- » Create and manage virtual networks and virtual machines
- » Import and export virtual machines
- » Create and revert virtual machines snapshots
- » Create and modify virtual hard drives (VHD)

## Backup and strategy

Similar to physical environments, backing up virtual environments should also be part of the **risk assessments** and **contingency planning**; loss of virtual machines can disrupt business continuity.

Some organizations use Microsoft Hyper-V import and export features to back up virtual machines and snapshots. This has the following drawbacks:

- » Exporting a virtual machine is a manual process and cannot be scheduled
- » Exporting can only be done while the virtual machine is switched off
- » Exporting multiple virtual machines simultaneously limits server resources
- » Exporting multiple machines one at a time is time-consuming and must be attended
- » Users must physically log in the server or connect via a remote desktop connection to export and import machines

Some organizations use scripting to copy/paste VHD (Virtual Hard Drives) and snapshot files to a backup location. This has the following drawbacks:

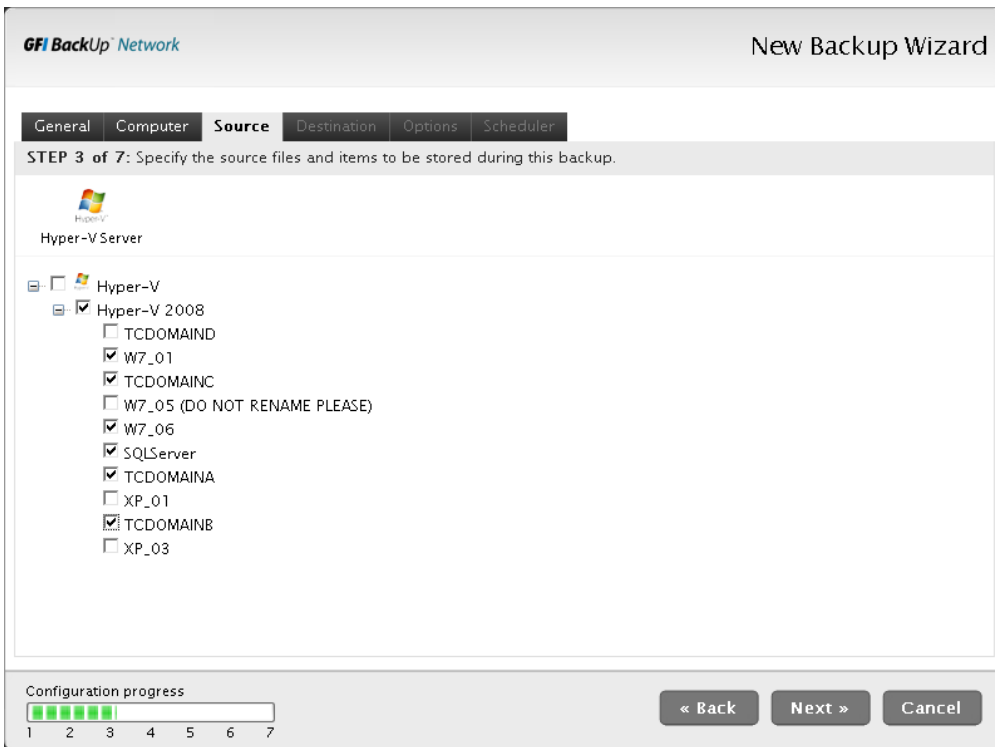
- » Copying files can be slower than other backup solutions
- » The operating system may fail to copy files because files are being used by the Hyper-V service
- » Restoring individual files is not direct

- » Users must physically log in the server or connect via a remote desktop connection to run scripts or copy files

An easy backup solution is GFI Backup. Using GFI Backup, you can back up and restore Microsoft Hyper-V from a remote machine using an Internet browser.

## GFI Backup advantages

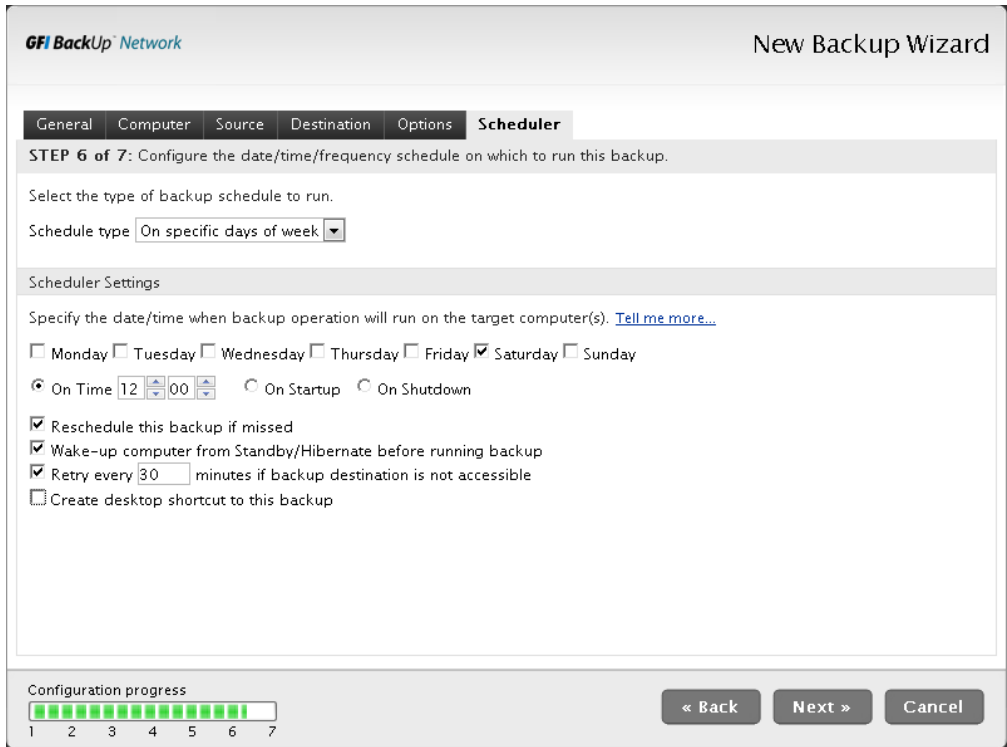
### Create Hyper-V backup tasks using an intuitive wizard



Screenshot 1 - Hyper-V backup wizard: Configure the source files

The wizard steps enable you to easily configure or modify a Microsoft Hyper-V backup task.

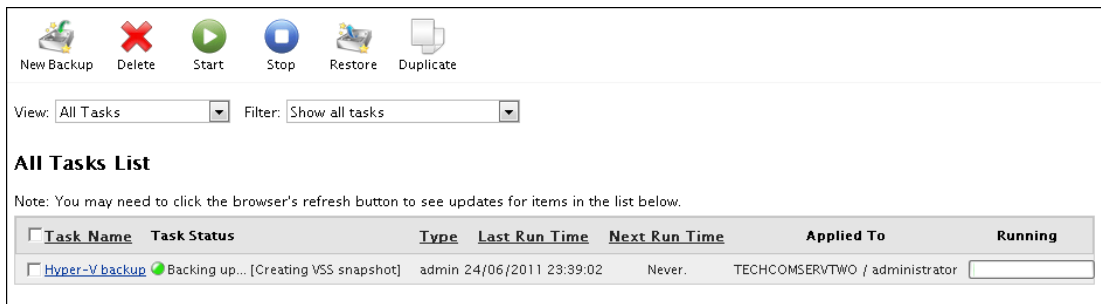
## Schedule tasks to run on specific days and time



Screenshot 2 - Hyper-V backup wizard: Configure the scheduler

Configure the backup task to run unattended on a specific day and time. The backup task can also be automatically re-scheduled if missed or retried if errors occur.

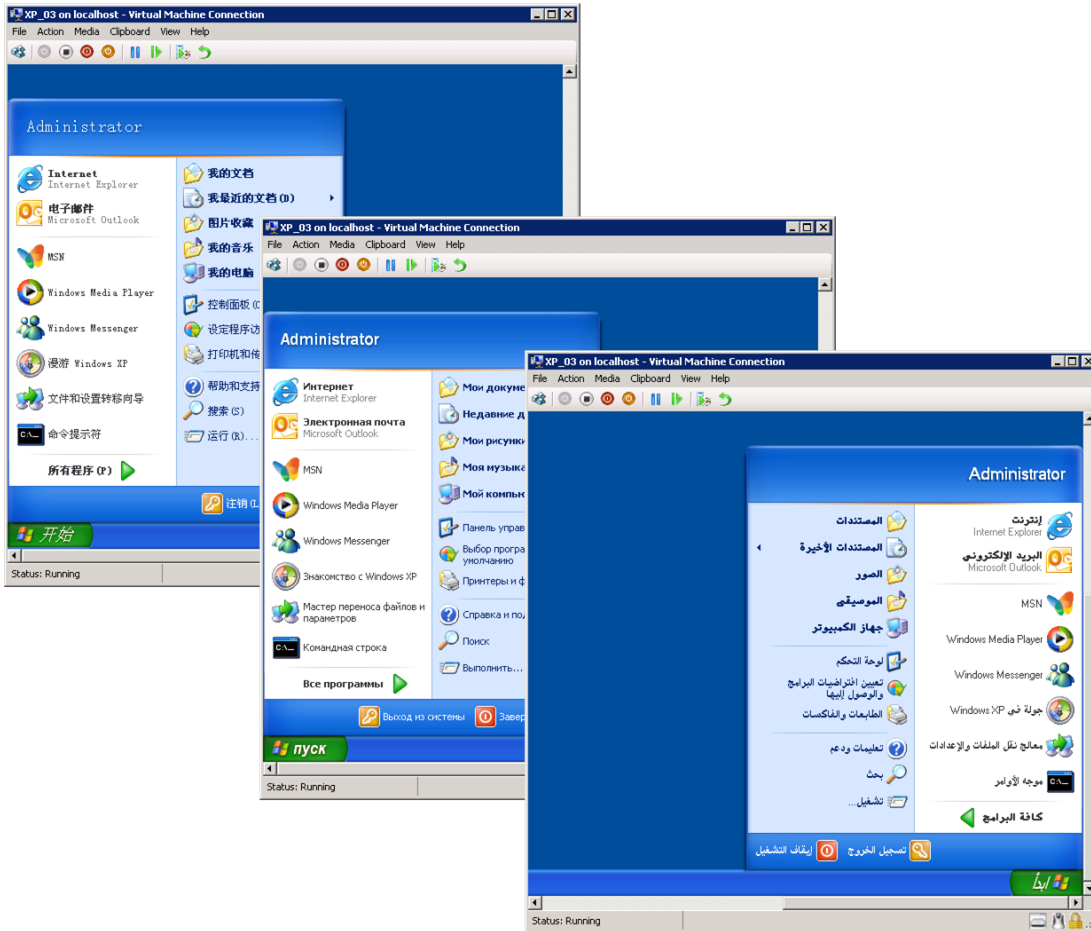
## Backup virtual machines while in use



Screenshot 3 - Monitoring a back up task

Using Microsoft Volume Shadow Copy (VSS), virtual machines can be backed up while being used; backup does not affect business continuity.

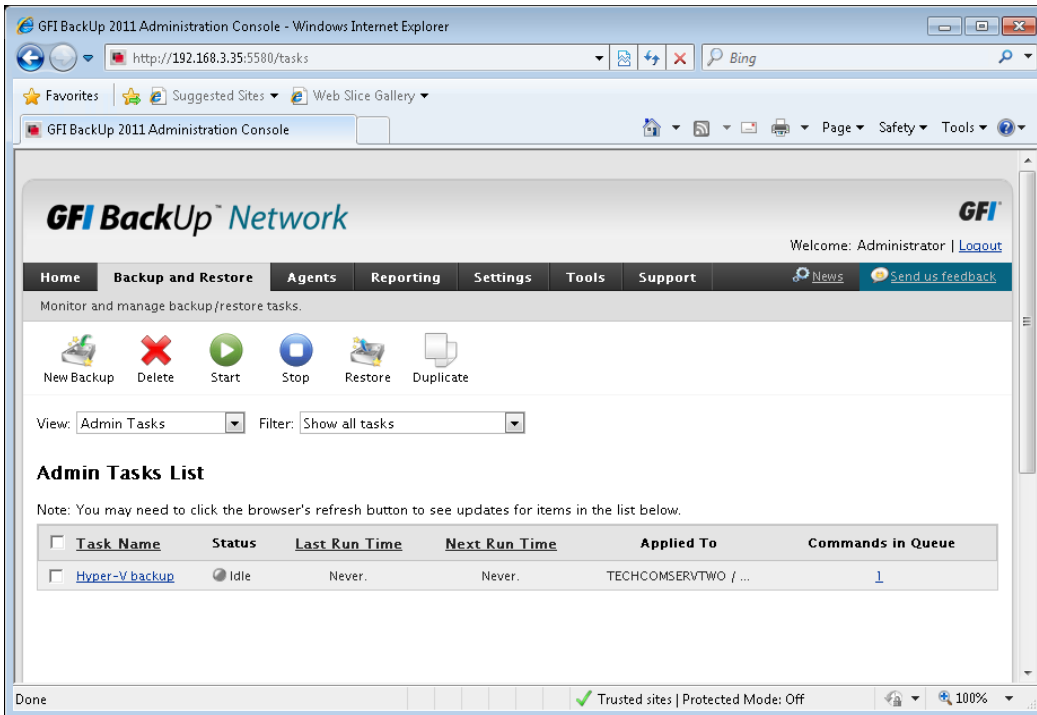
## Back up Unicode language operating systems



Screenshot 4 - Different Unicode operating systems

Any virtual machine can be backed up, including machines with Unicode language operating systems such as Arabic, Chinese and Russian.

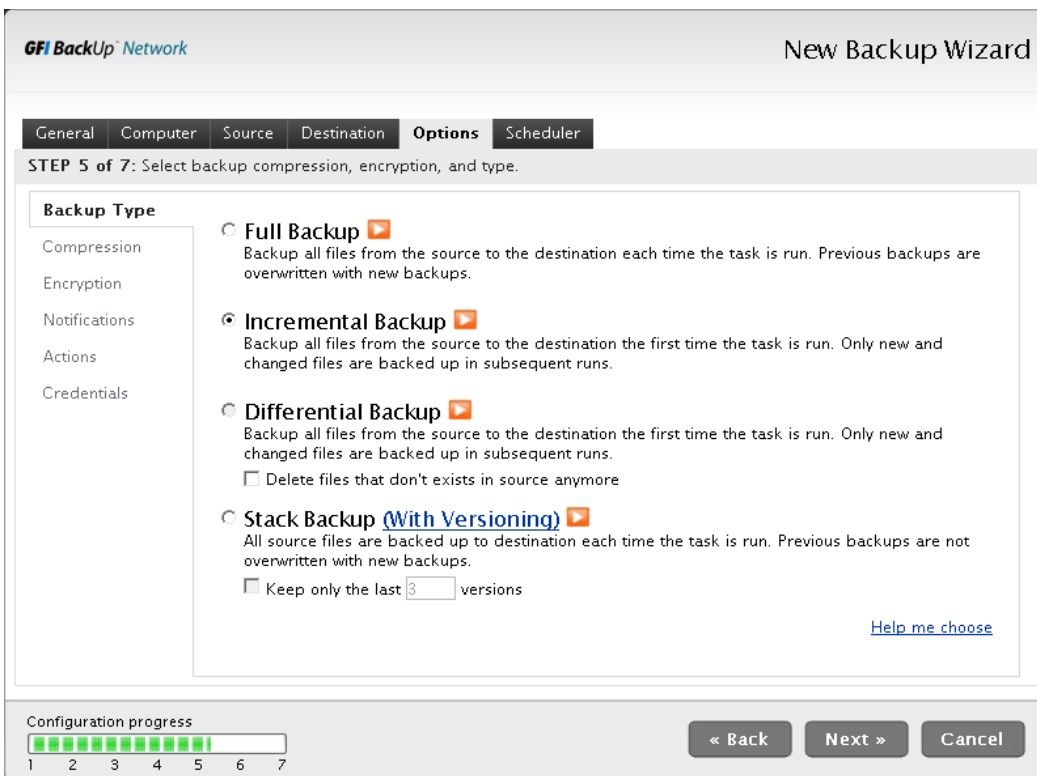
## Manage backup tasks from a remote location



Screenshot 5 - GFI Backup Administration Console: Manage backup tasks

Use an Internet browser to access the GFI Administration console and manage your Hyper-V backup tasks from any machine.

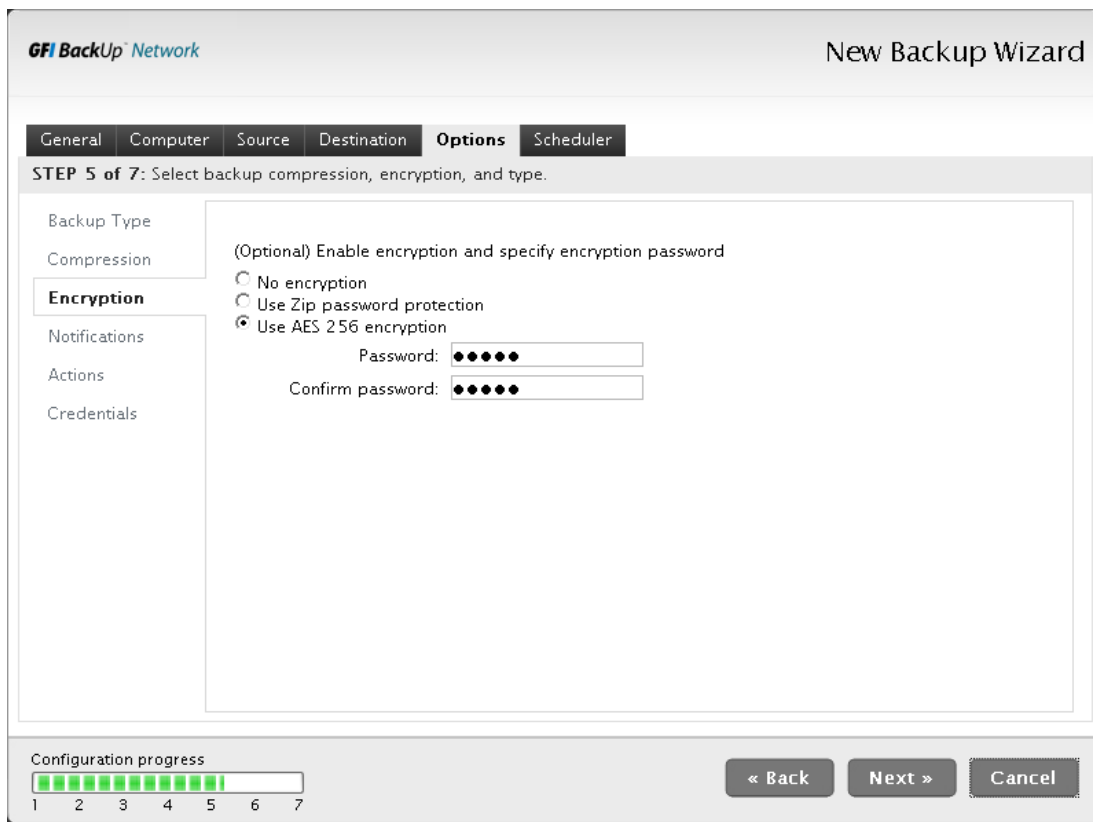
## The most common backup types are available



Screenshot 6 - Hyper-V backup wizard: Configure backup task options

The most common backup types are supported, including Full Backup, Incremental, Differential and Stack backup with versioning.

## Encrypt backup data



Screenshot 7 - Hyper-V backup wizard: Configure the backup task encryption options

Archive backup data to ZIP password (less secure but faster) or 256-bit AES encryption (more secure but slower); ensuring that data cannot be compromised maliciously.

## Perform virtual-to-physical and physical-to-virtual restores

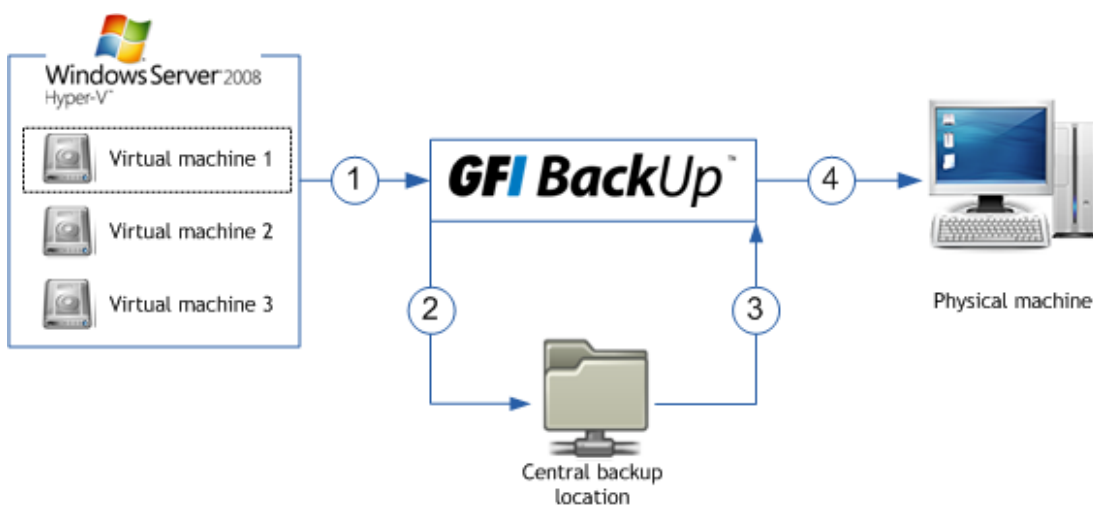
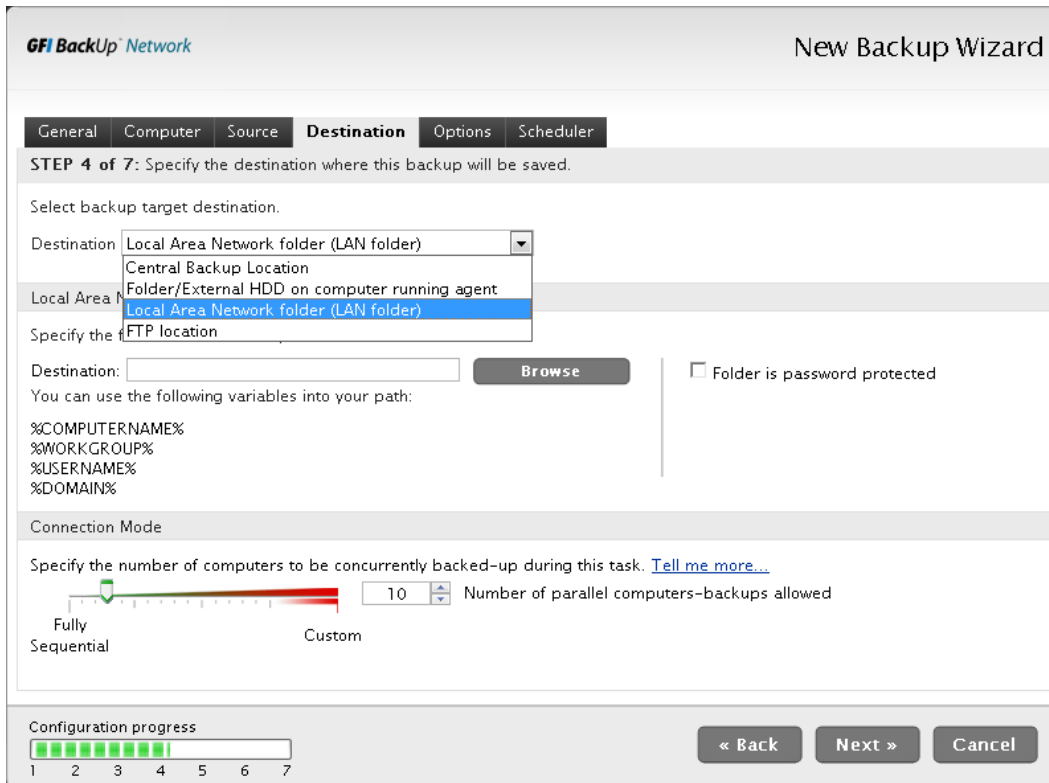


Figure 1 - Virtual-to-physical restore

Test configurations and compatibility issues on a virtual machine and when done, transfer the Hyper-V image to a physical machine.

- » Step 1 - Create an image backup of your virtual machine.
- » Step 2 - Save the image backup data to a Central Backup Location or other media.
- » Step 3 and Step 4 - Using the GFI Bootable Restore Disk; restore the image on a physical machine.

## Transfer backup data to various destinations



Screenshot 8 - Hyper-V backup wizard: Configure the backup task destination

Store backup data to various destinations; select between uploading data to an FTP location, burn data to CD/DVD, copy data to a Central Backup Location and many more...

## Transfer virtual machines to another Microsoft Hyper-V server

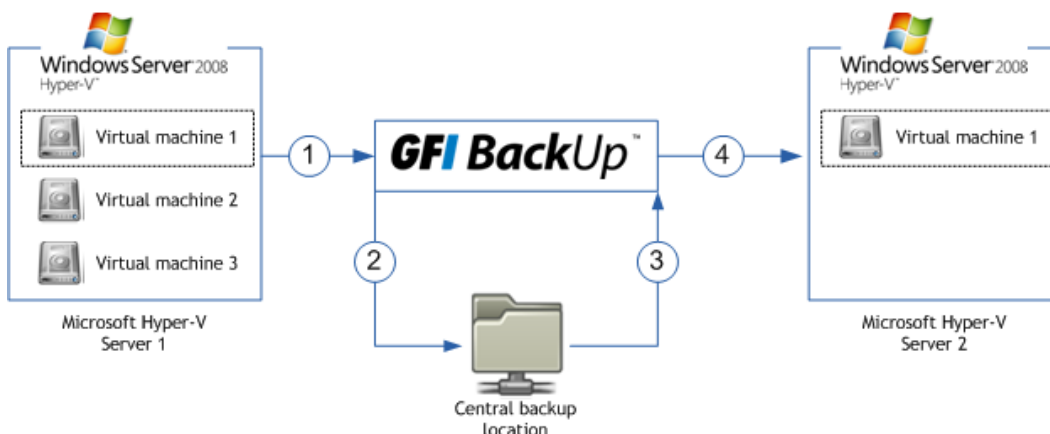


Figure 2 - Transfer virtual machines to another server

Use GFI BackUp to migrate from a Microsoft Hyper-V server to another:

- » Step 1 - Create Hyper-V backup of all machines from the source server
- » Step 2 - Save the backup data to a Central Backup Location or other media

- » Step 3 and Step 4 - Restore the backup data to the destination Microsoft Hyper-V server.

## Manage Hyper-V backups

To create a Microsoft Hyper-V backup using GFI Backup, ensure that the following pre-requisites are implemented:

- » The GFI Agent is installed on the Microsoft Hyper-V server
- » The GFI Backup Agent is licensed as **Server**

### To create a new Hyper-V backup:

1. From the GFI Backup Administration Console home page, select **New Backup**.
2. Select Backup Hyper-V Machines option.
3. In the **Welcome to the New Backup Wizard** dialog, select the backup media to use.  
Available options are:
  - » Back up to local/external HDD or LAN/FTP location
  - » Back up to CD/DVD or Tape
4. In the **General** tab, key in a backup name and optionally key in a description. Click **Next**.
5. In the **Computer** tab, select the computer hosting the virtual environment to back up and click **Next**.
6. In the **Source** tab, select the virtual machines to back up. Click **Next**.
7. In the **Destination** tab, select the location where the backup data will be saved. Select an option from the **Destination** drop-down, define a destination path and click **Next**.
8. In the **Options** tab configure the following:
  - » Backup type
  - » Compression
  - » Encryption
  - » Notification
  - » Actions
  - » Credentials
9. In the **Scheduler** tab set up the backup schedule that the new backup task will follow and click **Next**.
10. In the **Summary of backup settings** dialog, review the task set up and click **Finish**. To change any options, click **Back**, or select one of the GFI Backup tabs.

### To restore a Hyper-V backup

1. From the GFI Backup Administration Console main screen, select **Restore** option.
2. From the welcome screen click **Next**.
3. From the source type select **Restore Other Backup** and click **Next**.
4. In the **Restore Type** tab, select **Full-backup restore** to restore all virtual machines or **Item-level restore** to specify the machines to restore.
5. From the **Select Computer** list, select the user for which to restore data.
6. From the list of backups displayed, select the backup to restore.
7. Click **Next** to restore to the original location.

8. <Optional> Select **Restore to a different location**, key in the path and click **Next** to store the restore in a different location.
9. In the **Summary of backup restore** dialog, review the restore information displayed and click **Finish** to start restore operation.

## **Conclusion**

Microsoft Hyper-V enables organizations to build and test virtual environments and virtual machines. Backing up such environments should also be part of the **risk assessments** and **contingency planning**.

Various methods exist that enable organizations to back up their virtual environments. One such solution is GFI Backup; the intuitive and easy-to-use **GFI Backup Administration console** enables you to easily create, manage and restore Microsoft Hyper-V backup tasks.

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