

ABS Enterprise®

Virtualization Guide – SPX – Hyper V

October 2019

Windows 10 / 2016 appliances



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This guide is intended to provide instructions on how to create virtualized instances in Hyper-V of machines backed up by StorageCraft on an ABS appliance.

Machines can be virtualized for testing as well as for Production Failover purposes. Instructions for both options are provided in this guide during the steps outlined.

It is highly recommended that you test-boot protected machines upon initial backup, but also on a monthly or bi-monthly basis to verify this functionality.

Please contact ABS directly if you have any questions or problems in testing or virtualizing any protected machines. ABS can be reached by phone on (978) 548-4070 or via email at Support@absbackup.com

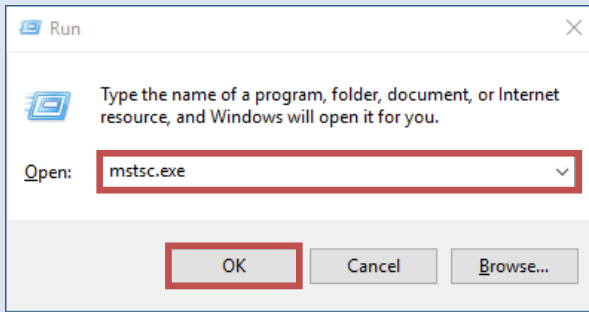
ABS standard support hours are Mon -Fri 8a – 6p Eastern time. Emergency support is available 7X24X365 via the number above.

Virtualization Process

1. Access the Appliance

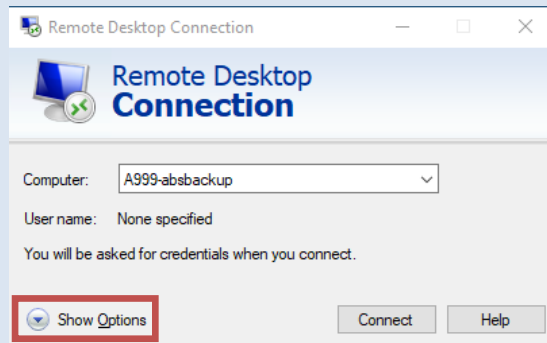
i The following steps must be performed on a computer that is connected to the **same network** as the ABS Appliance (You can also log on to the console of the appliance if you are on-site.)

- Right-Click on **Start**
- Click **Run**
- In the run box, type **mstsc.exe**, click **OK**



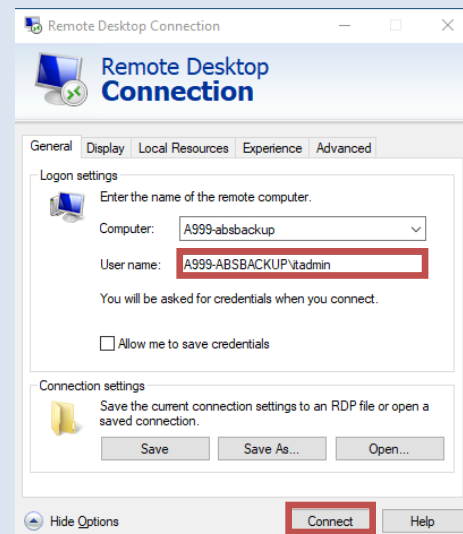
i You can also access Remote Desktop by going to:
Start>All Programs>Accessories>Remote Desktop Connection

- In the **Computer** section, type in the name of the ABS Appliance or the static IP you assigned to the appliance and click **Show Options**



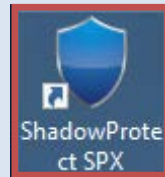
i If you do not know the name of the ABS Appliance, refer to your **Activation Letter**

- Use the following username to log in:
axxx-absbackup\itadmin
(replace "xxx" with the appliance number)
- Use the password provided in the **Activation Letter**
- Click **Connect**

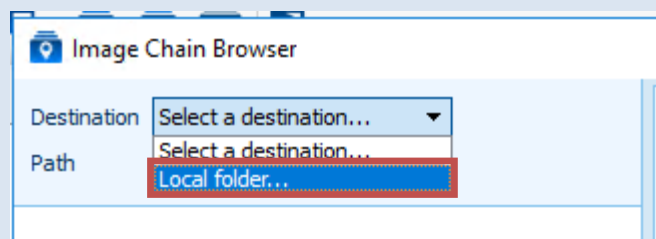
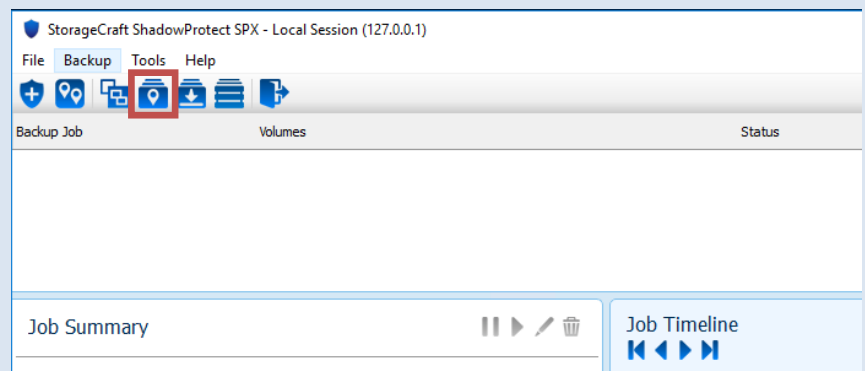
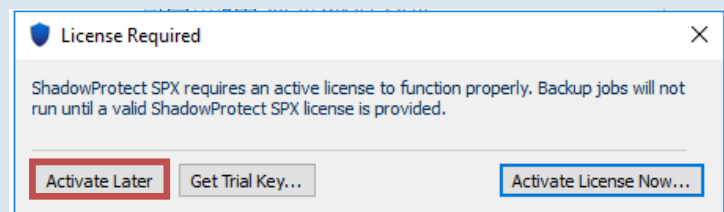
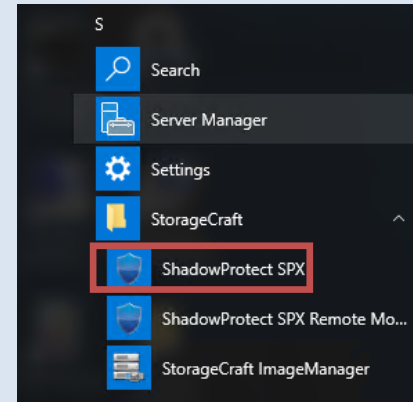


2. Create the Virtual Machine

- a. Launch ShadowProtect SPX from the desktop or Start Menu (do not use the Remote Monitor for this)
- b. Click **Activate Later** at the license prompt (backups do not run on the appliance so no license is needed)
- c. Click the Image Chain Browser button in the SPX console
- d. Use the dropdown at Destination to select **Local folder**



or



e. Click on the Browse button to location the backup image chains on the appliance

f. Locate the Dropbox folder (usually on D) and double-click to expand it.

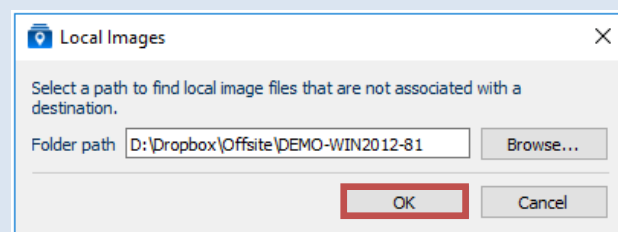
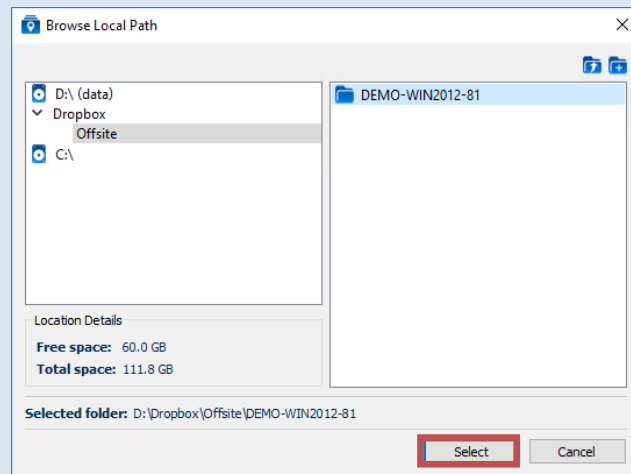
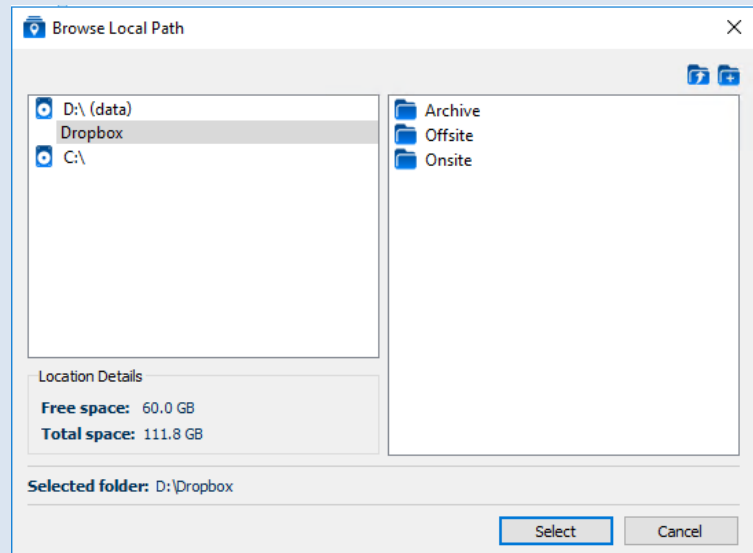
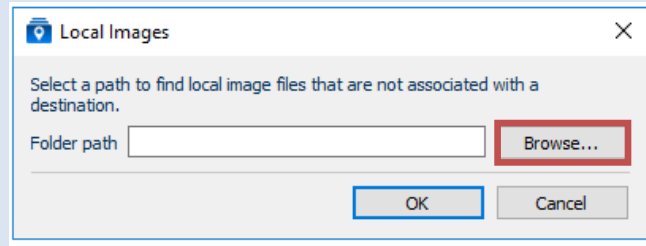
i You will find an **offsite** and an **onsite** folder under **dropbox**

The **offsite** folder is used for storing snapshots that are being replicated to the **ABS Cloud**

The **onsite** folder is used for storing snapshots locally on the appliance (not replicated to the **ABS Cloud**)

g. Locate and open the folder of the machine you want to virtualize and click **Select**

h. The folder will be shown next to Folder path. Click **OK**



i. The image chains will be shown at left. Click the Boot volume (usually C) to enumerate the image chain at right

j. The image chain for the volume selected will appear at right showing the available points in time for virtualization


i The naming scheme for consolidated images follows this format:

Volume name-Base number-Incremental number

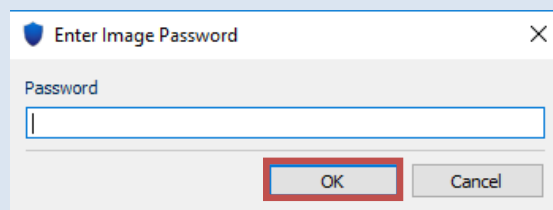
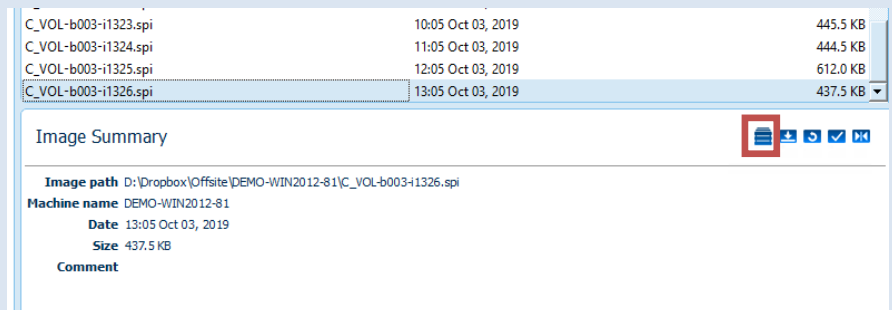
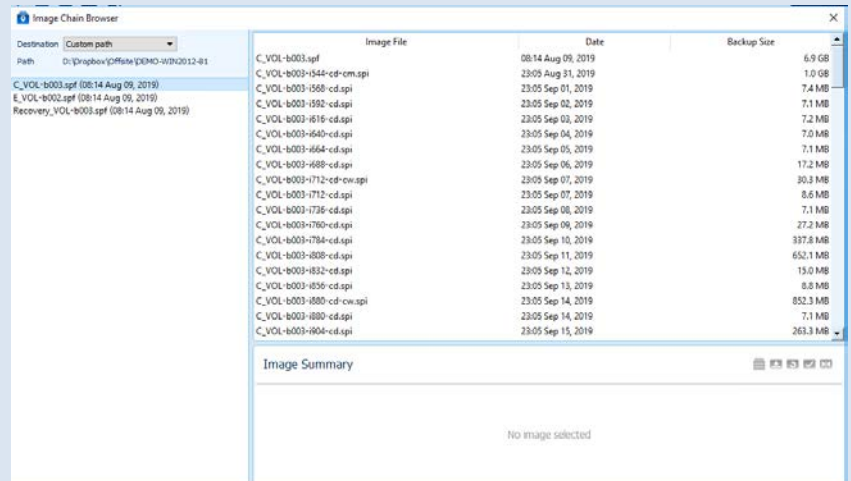
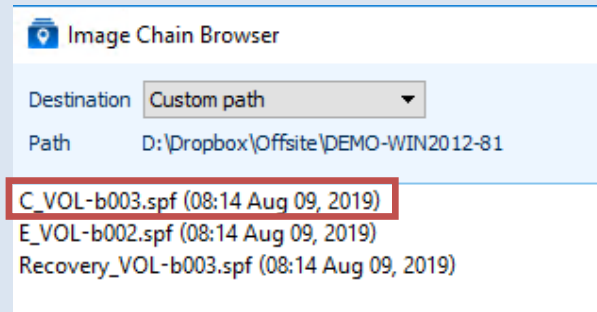
CD = Consolidated Daily

CW = Consolidated Weekly

CM = Consolidated Monthly

k. Once you select a point in time to virtualize, information about it will show at bottom. Click the VirtualBoot icon 

l. Enter the Encryption password (see your Activation letter) at the prompt and click **OK**



m. Verify the volumes, point(s) in time for virtualization and click **Next**

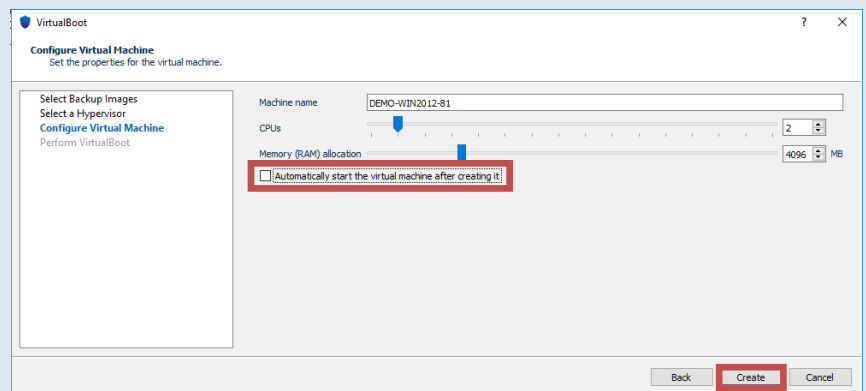
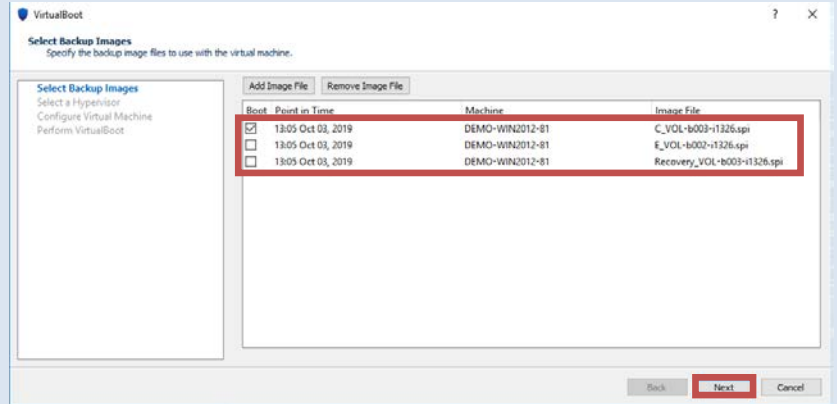
i If the machine you are virtualizing has more than one volume, you will see all of the volumes in the list. You may use the Remove/Add Image File buttons if you need to build a VM with volumes from multiple points in time. Ensure that the correct boot volume is selected. (You should select and use the Remove button for System, System Reserved and Recovery partitions as they are generally not needed for virtualizations)

n. You will see Hyper-V selected as the Hypervisor and click **Next**

! If you do not see Hyper-V as the hypervisor and/or the Ready message is not shown: Contact ABS Support on (978) 548-4070, 2 or at Support@absbackup.com

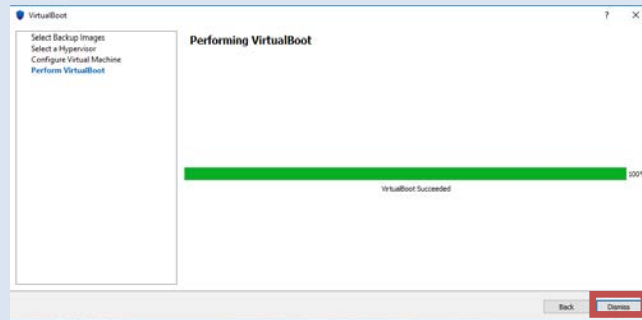
o. Enter the name of the computer and assign CPU cores and RAM to the VM. **Uncheck** the "Automatically start the virtual machine..." box and click **Create** and the virtual boot process will begin

i For Quick Virtualization Testing; leave the Auto Start button checked and click **Create**. Dismiss the message as on the page following and the machine will boot in Hyper-V without a network connection.

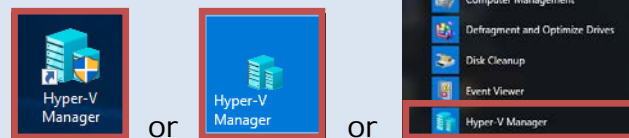


3. Edit VM Settings

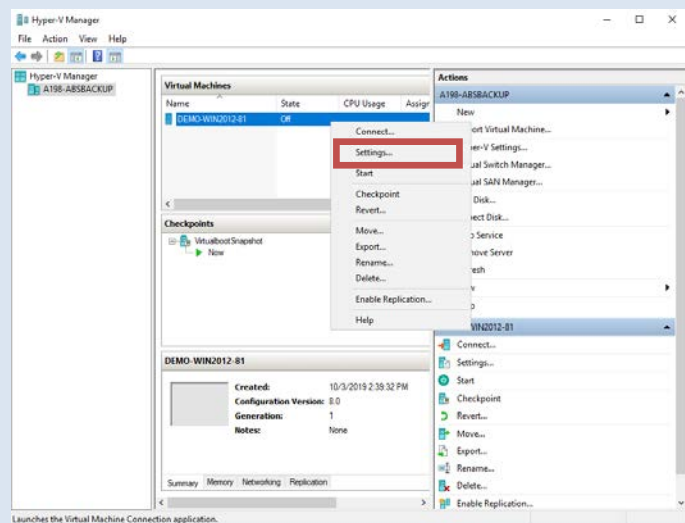
- Once the VirtualBoot succeeds, you may **Dismiss** the VirtualBoot window



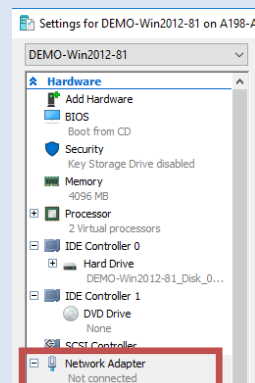
- Launch **Hyper-V Manager** from the Desktop or the Start Menu



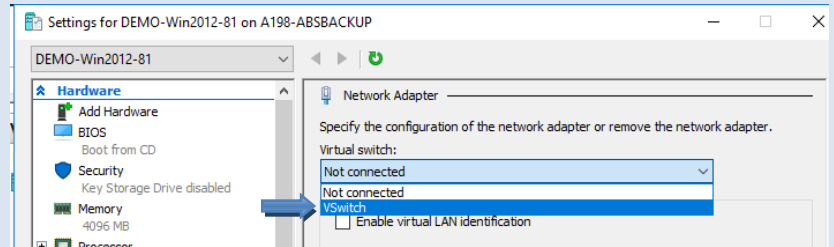
- Right-Click on the Virtual Machine that was created and click **Settings**



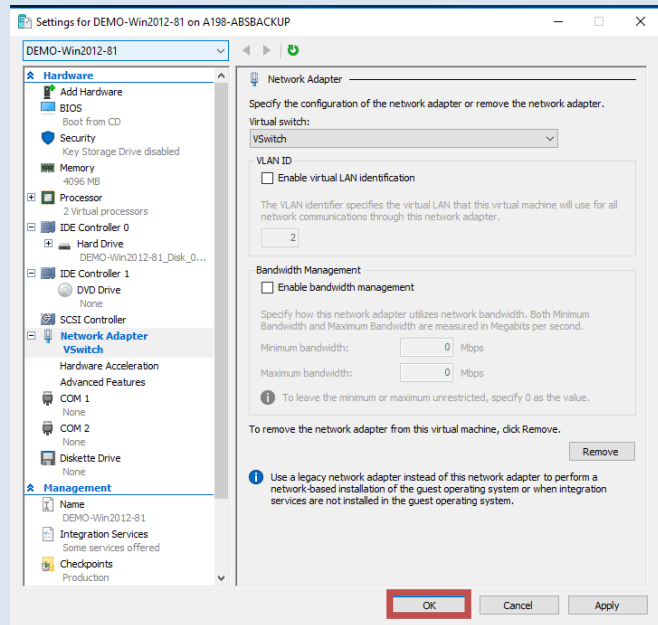
- Click on **Network Adapter**



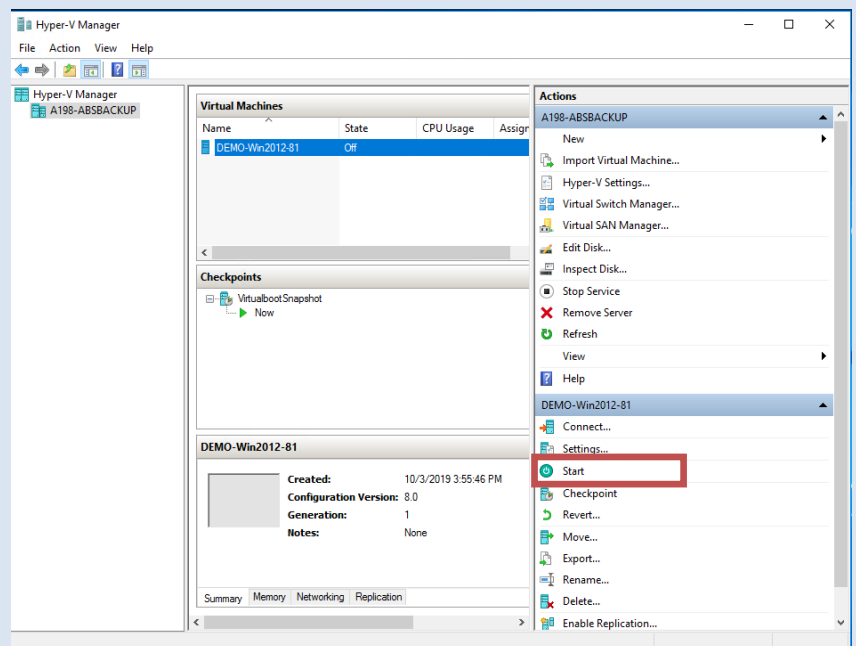
- e. Click the Virtual Switch dropdown at right and select **VSwitch**



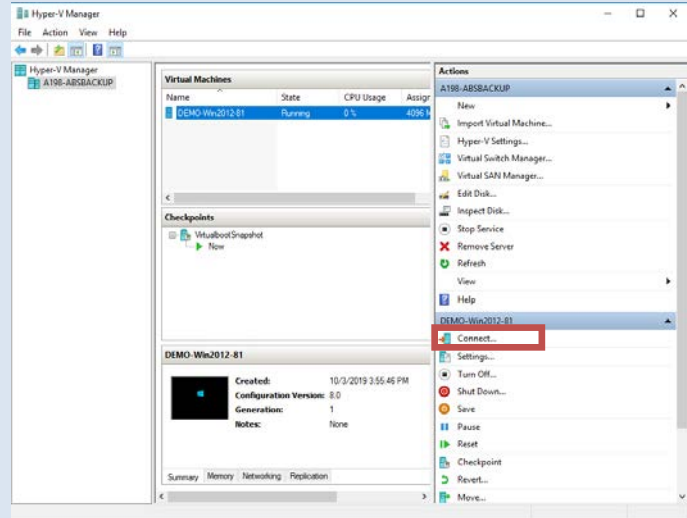
- f. Click **OK**



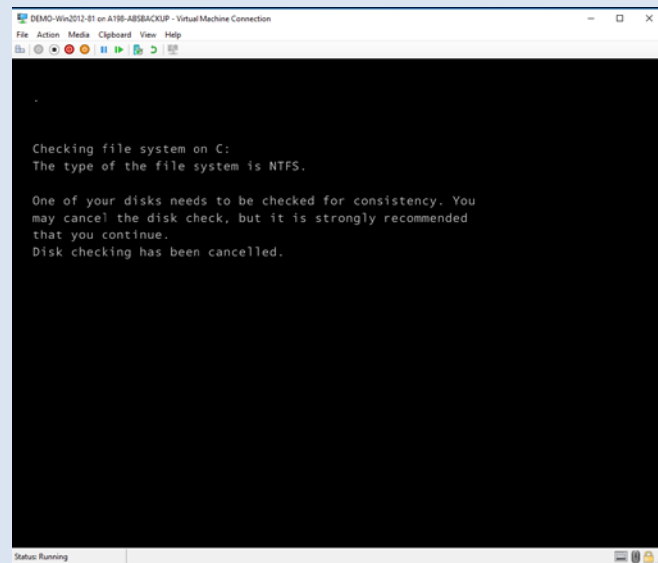
- g. Select the virtual machine you created and click **Start** to start the virtual machine



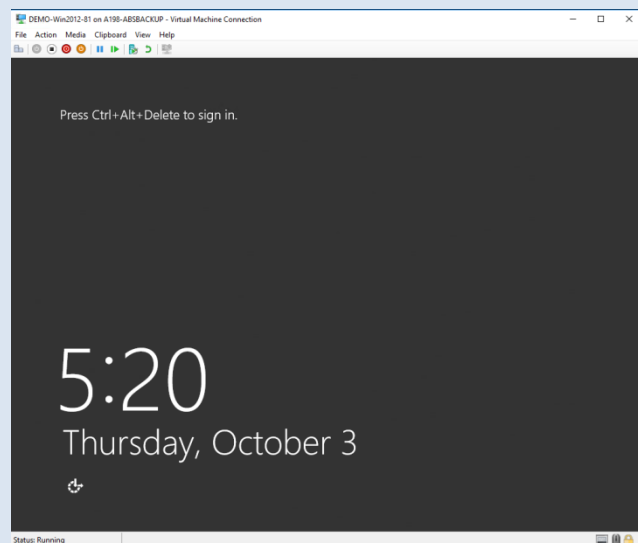
- h. Click on **Connect** or double-click on the machine under Virtual Machines





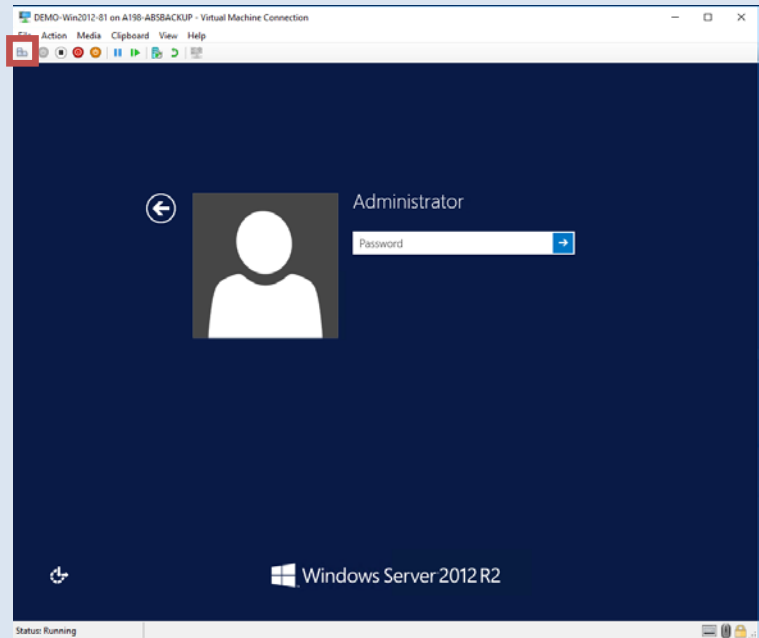
- i. You may be prompted to run a CHKDSK; you can press a key to cancel the CHKDSK unless you have any concerns about disk integrity, in which case you should let the CHKDSK process complete. [Cancel the CHKDSK when performing Quick Tests]



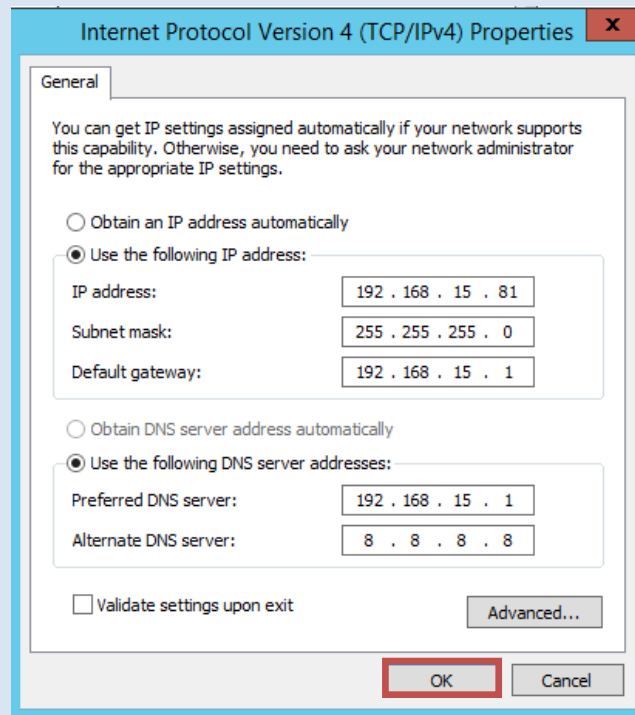
- j. The boot process will continue. Be patient as this can take a few minutes. You will see the usual logon screen upon completion



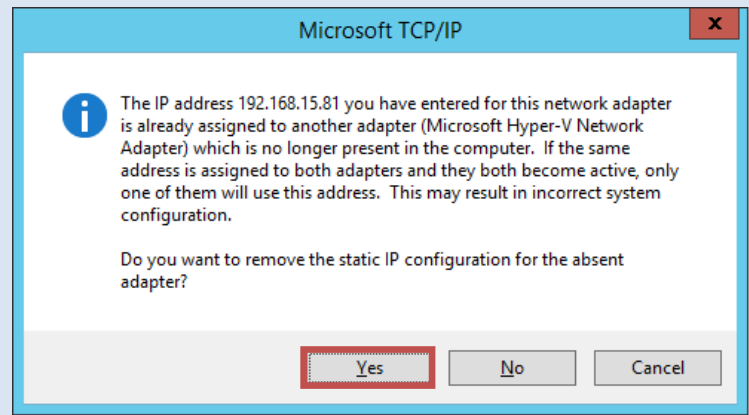
- k. Use the Ctrl-Alt-Del icon  to log on. [For quick testing, you may access the machine to ensure drives and files are present. Just turn off the machine in Hyper-V  when done. See [Cleaning up the Virtual Machine](#) on pg 21]



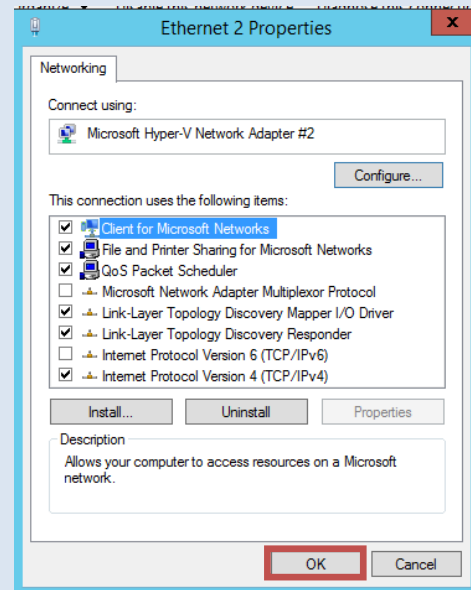
- l. Go to Network Settings, Adapter Settings and Set the correct IP address for this computer and click **OK**



m. Once the IP is assigned, you will get the message at right saying the IP is already assigned etc. Click **Yes**



n. Click **OK** to complete the networks setting changes



o. Basic virtual machine configuration is now complete. [If you are virtualizing a previously physical machine; see the next section for additional/optional steps to increase performance of the virtualized instance.]


! Once the VM is booted, be sure to launch ShadowProtect on the appliance and un-pause the backups to retain any work the users perform on the VM.

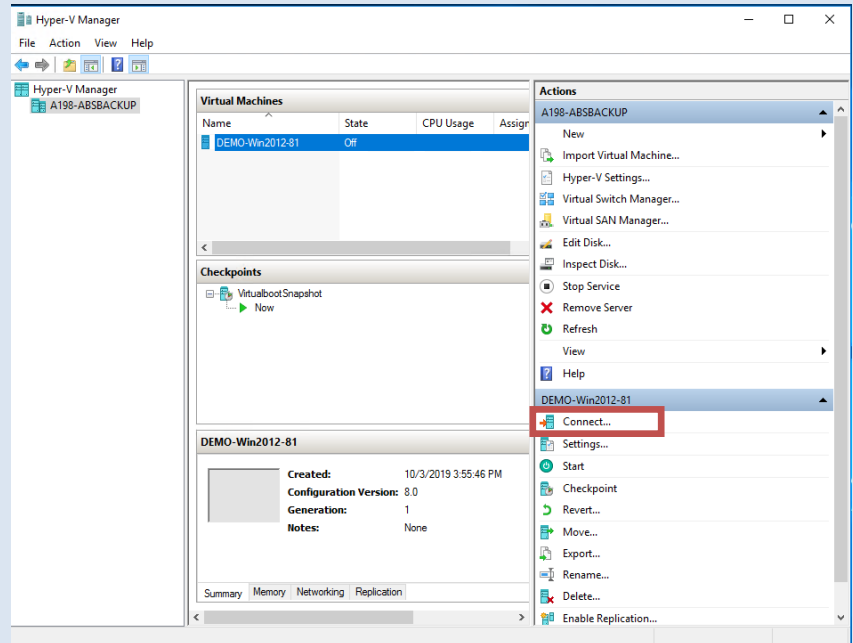



Advanced Configuration of (Previously Physical) Virtual Machine

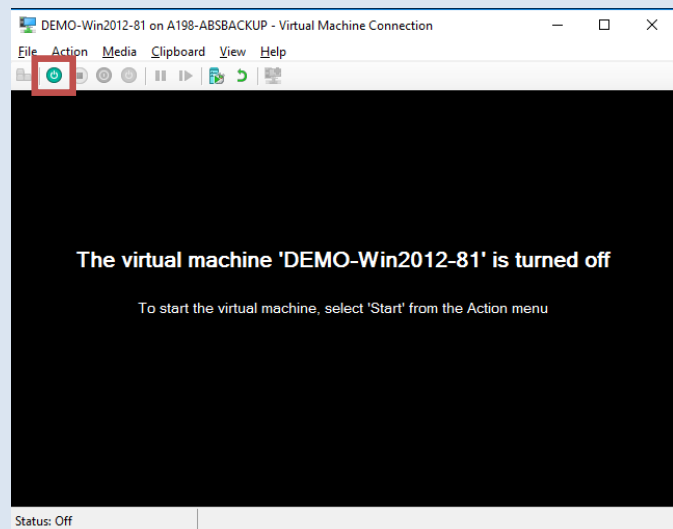
1. Safe Mode

Once the VM is built, you can use the instructions below to reduce system overhead and improve performance.

- a. Select the virtual machine you created and click **Connect**. [If the VM is already running, click on the reset icon  in the VM window and click Reset to restart the VM and go to c. below]




- b. Click the **Start** icon  to start the VM.

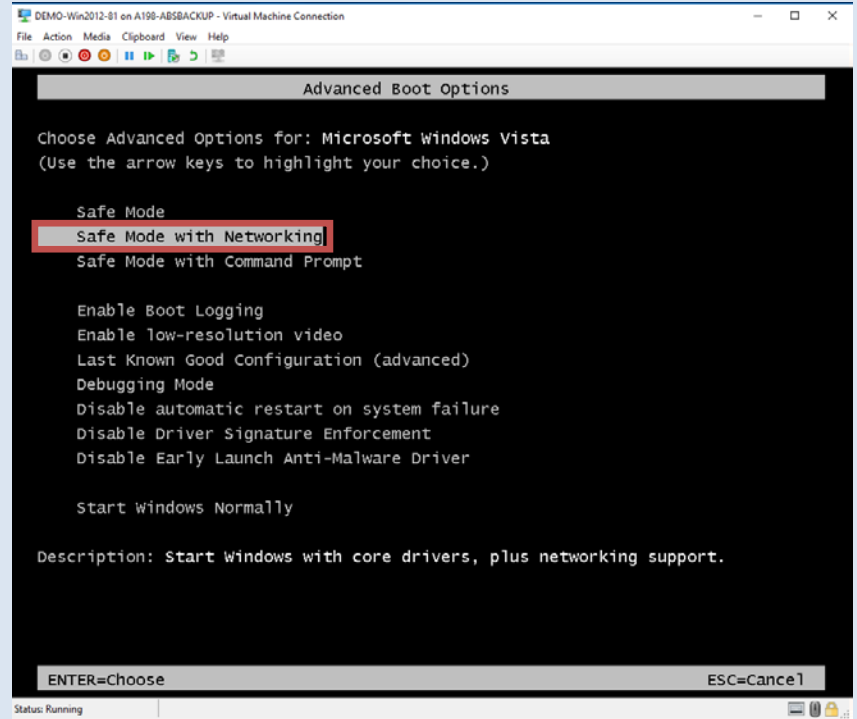


- c. Click inside the Virtual Machine window and keep pressing **F8** until the **Advanced Boot Options** comes up

- d. Select **Safe Mode with Networking** using the arrow keys
- e. Hit **Enter**

i The VM will now begin booting, this might take a few minutes

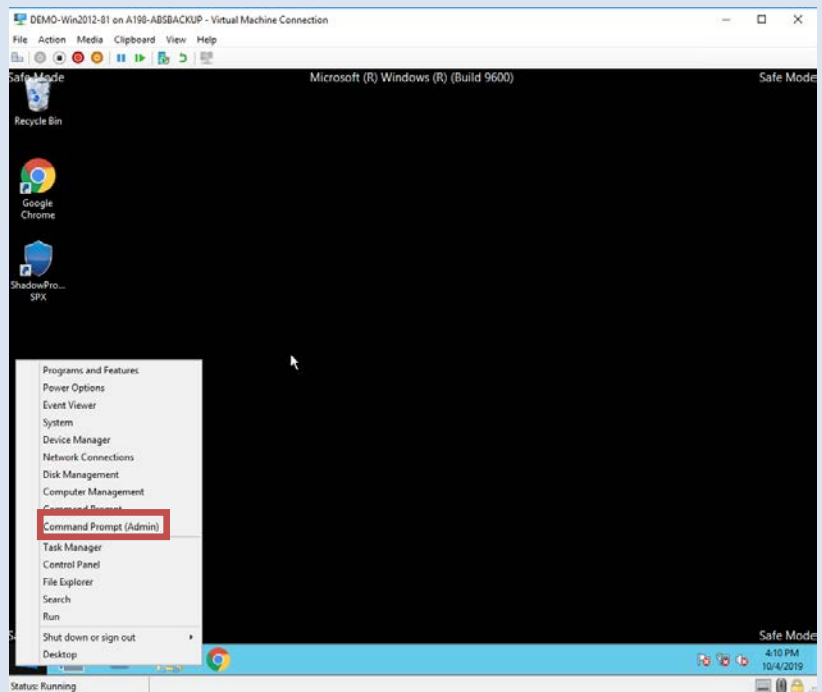
- f. The machine may prompt for a CHKDSK; cancel or run as desired.
- g. Log in to the machine using normal credentials. [Use the Ctrl-Alt-Del icon  to log on]



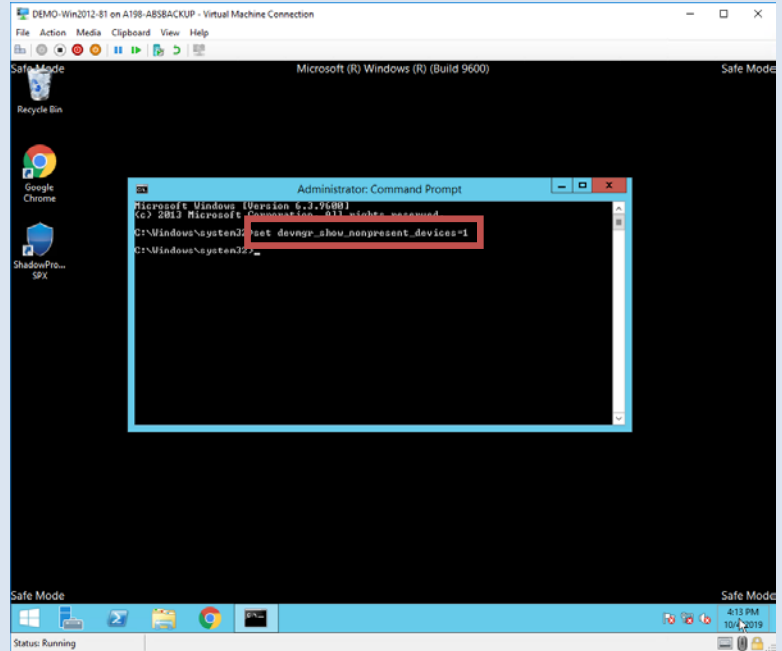
2. Phantom Network Adapter

If you have virtualized a physical machine, you may find it helpful to remove the physical network adapter from the VM. The following steps will show you how to do that.

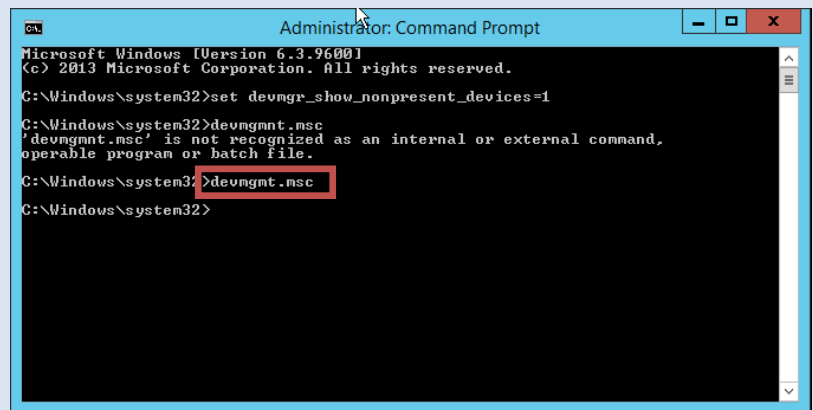
- a. Open an elevated CMD prompt



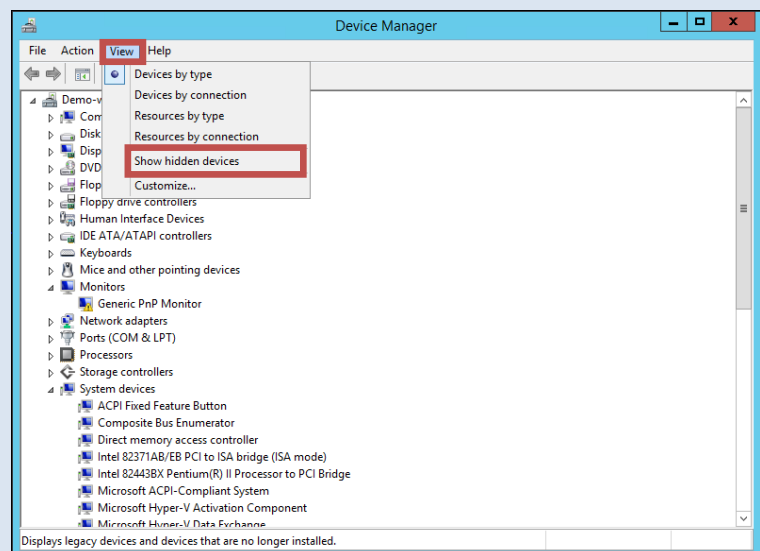
- b. Type in the following command:
set devmgr_show_nonpresent_devices=1
- c. Hit **Enter**



- d. Type in **devmgmt.msc**
- e. Hit **Enter**

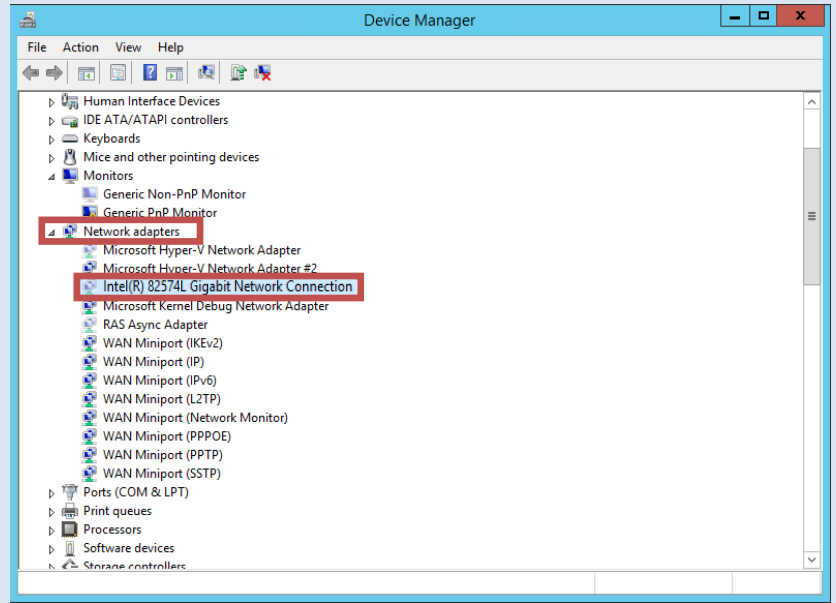


- f. In **Device Manager**, click **View**
- g. Click **Show hidden devices**



- h. Expand **Network adapters**
- i. Find any **Grayed Out** network adapters related to the physical machine
- j. Right click those adapters and select **Uninstall**
- k. Click **OK** at the prompt

i If the physical machine had more than one adapter, each is removed separately.

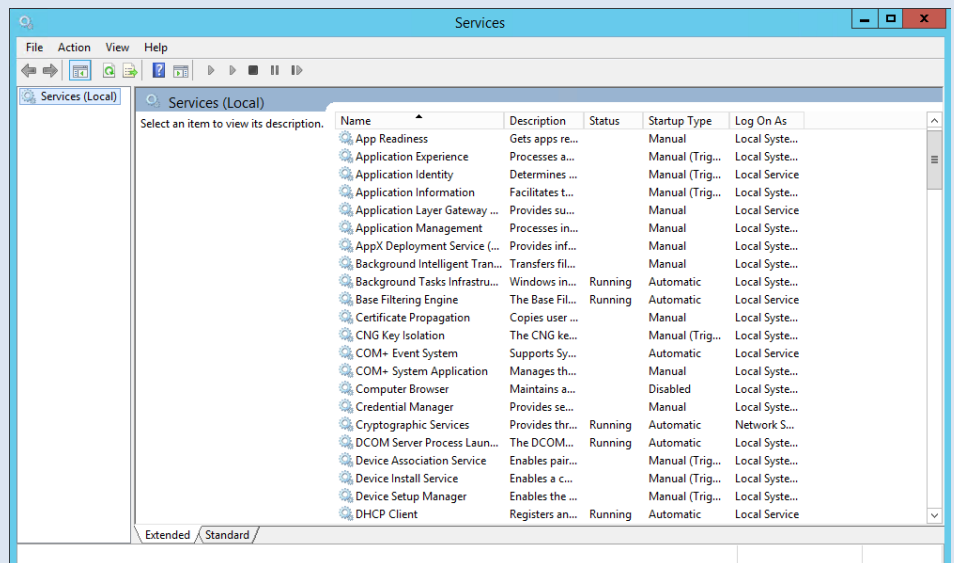


3. Proprietary Services

Some manufacturer's proprietary services might cause slow performance or failure to boot in normal mode.

- a. While in **Safe Mode**
- b. Open **Services.msc**
- c. Locate any manufacturer's services

Change the Startup type to **Disabled** for these services then click **Apply** and **OK**

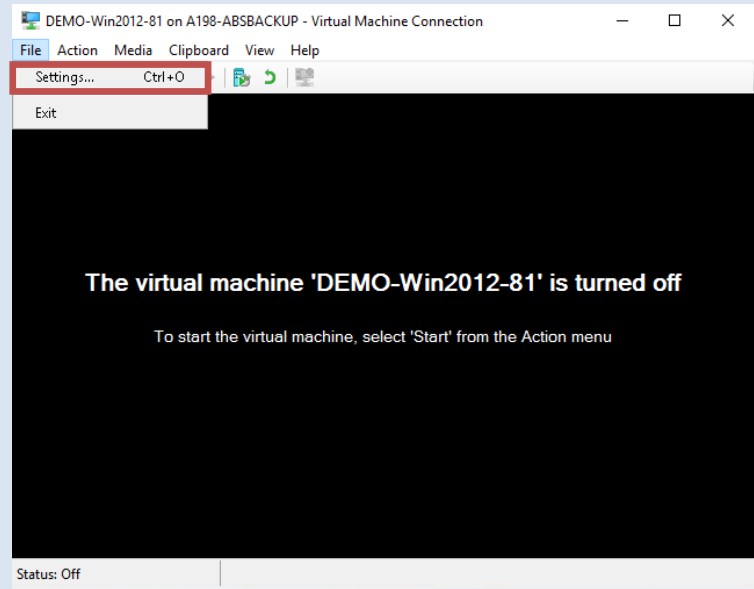


Virtual Machine Troubleshooting

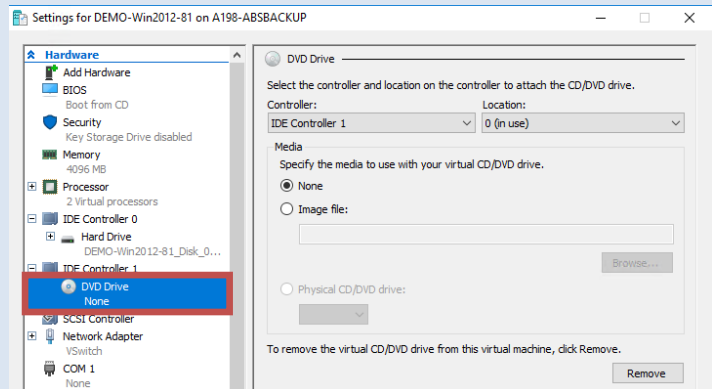
1. Hardware Independent Restore

In extreme cases, a StorageCraft HIR utility needs to be run on the operating system volume to resolve some boot issues.

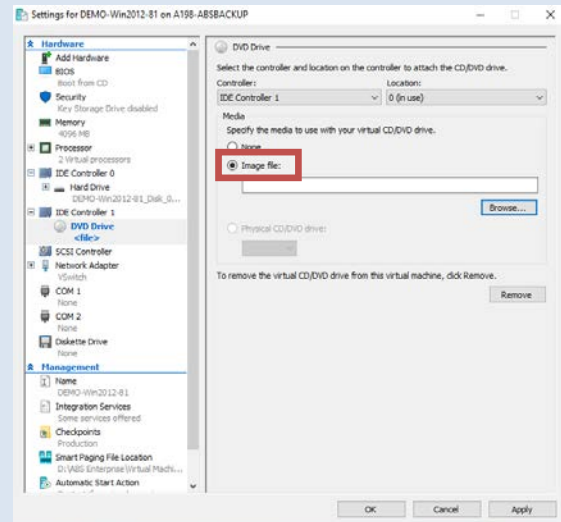
- With the VM off, Click on **File**, then **Settings**



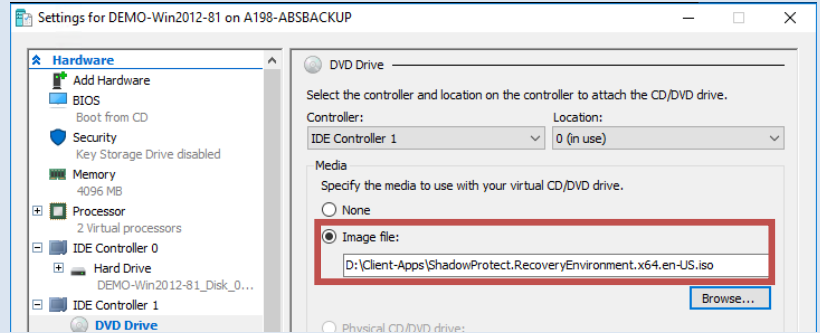
- Under IDE drive, select the **DVD Drive**



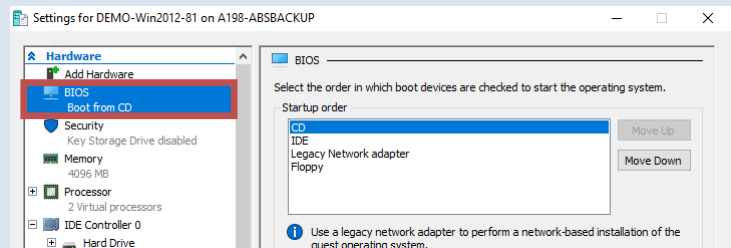
- Click on **Image file**



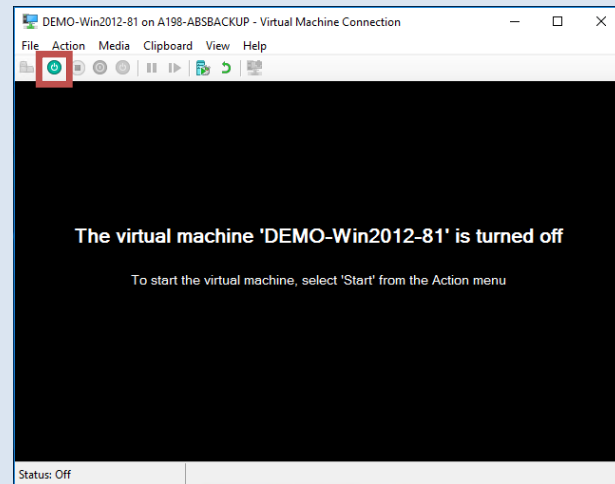
d. Use the **Browse** button to go to D:\Client-Apps on the appliance, and select the appropriate ISO (32 or 64 bit)



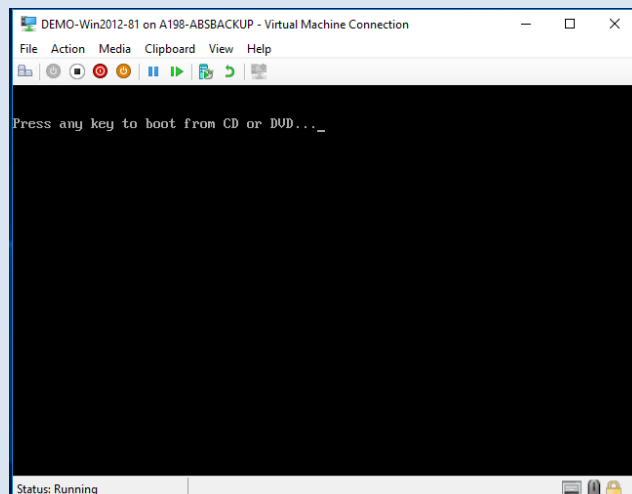
e. Be sure that **Boot from CD** is Selected under BIOS (Select BIOS, and the CD and use the Move Up button if needed to put it first on the list)




f. Click **Apply** and/or **OK** then use the **Start** button to start the VM

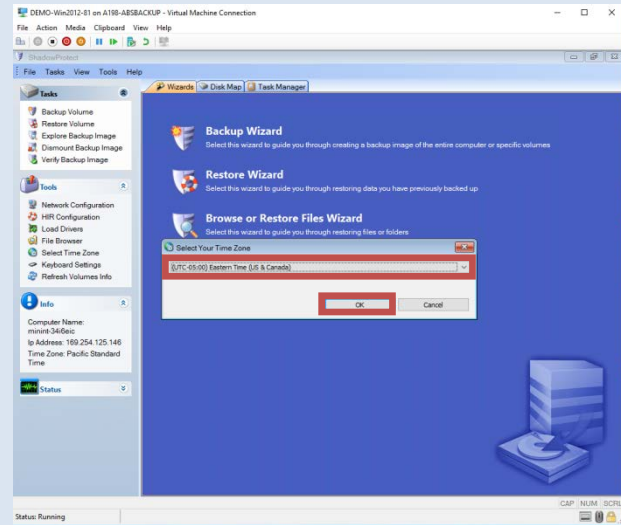


g. Click in the VM window and press a key to boot from the CD image

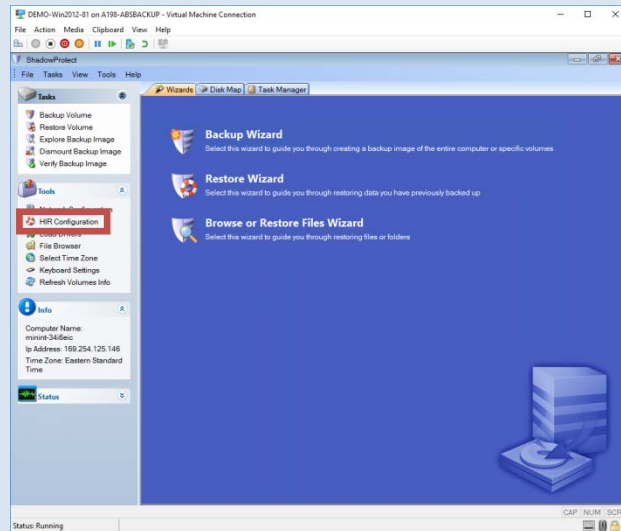


- h. The VM will boot via Win CE to the Recovery Environment. Be sure to select the correct **Time Zone** and click **OK**

 It is critical to select the proper time zone to ensure a successful HIR process

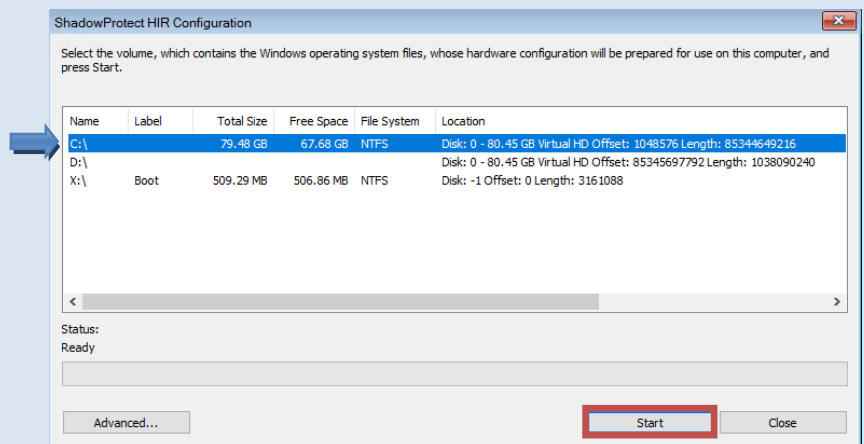


- i. Click **HIR Configuration**



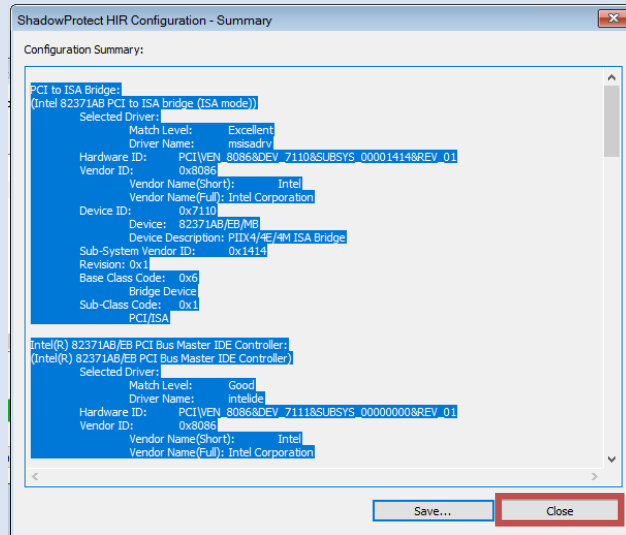
- j. Select the volume which contains the operating system files

- k. Click **Start**

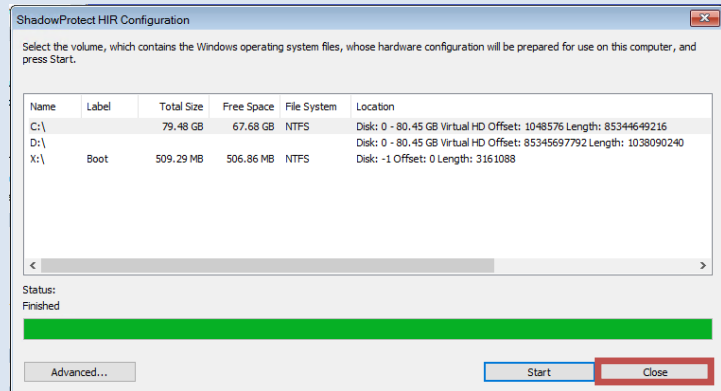


l. A summary window will pop up when the process is complete

m. Click **Close**



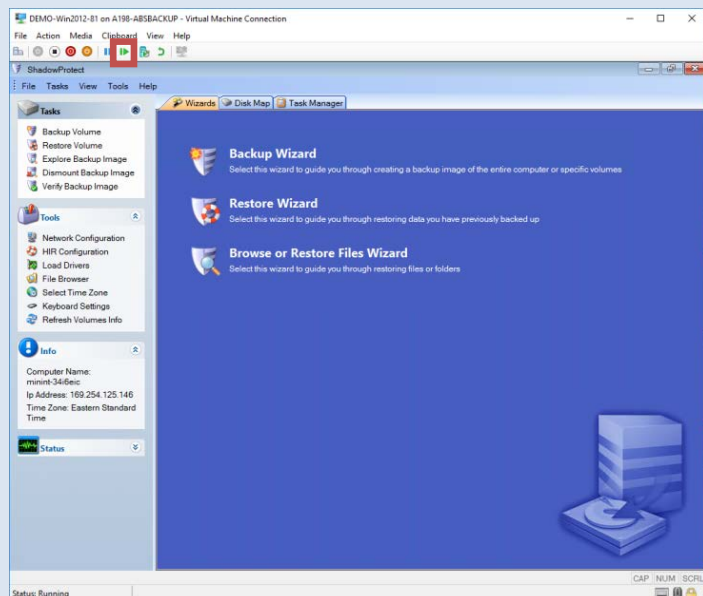
n. Click **Close**



o. Click the **Reset** button to start the VM (Click the **Reset** button when prompted)


Allow the system to reboot into normal mode and see if the issue is resolved.


! Contact ABS (978) 548-4070 or via email at: Support@absbackup.com if you continue to have trouble booting the VM




Shutdown and Cleanup of Virtual Machine

1. Shutdown

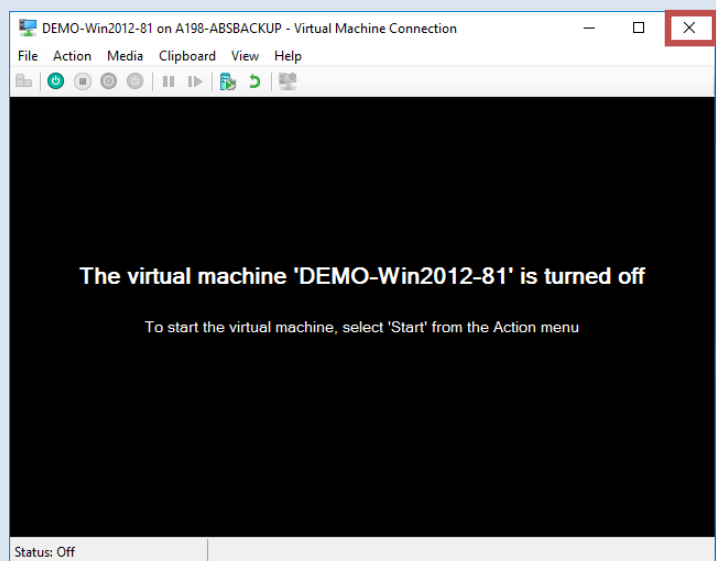
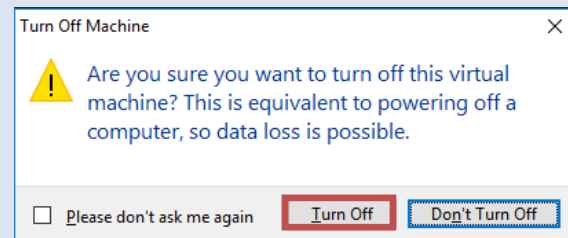
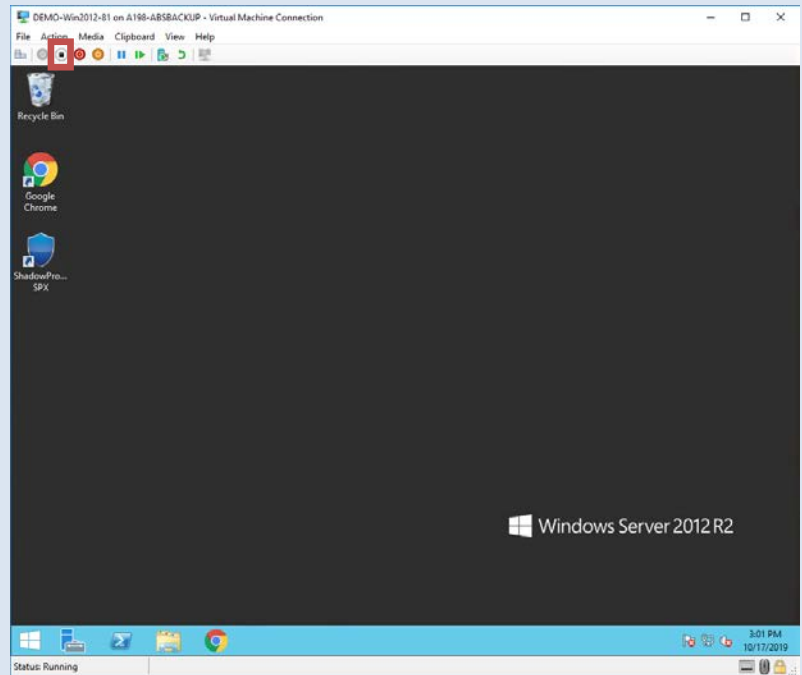
 Perform these steps on the Virtual Machine after it is no longer needed.

 Ensure all users are logged off, and that you have run an incremental backup to capture the last of their work.

a. Click the **Turn Off**  button to shutdown the VM

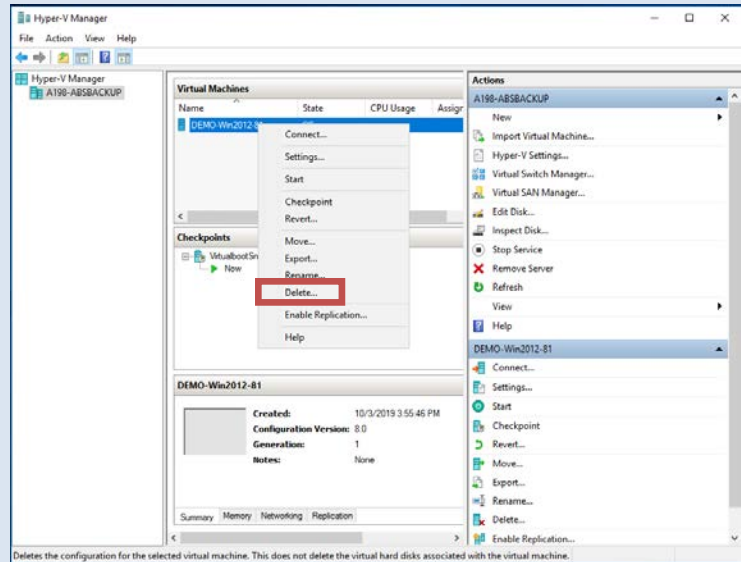
b. Click **Turn Off** in the confirmation box

c. Close the VM window

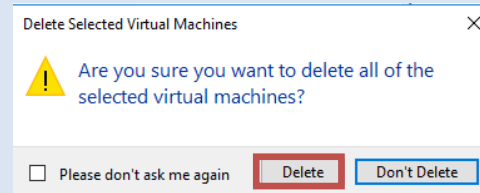


2. Cleanup

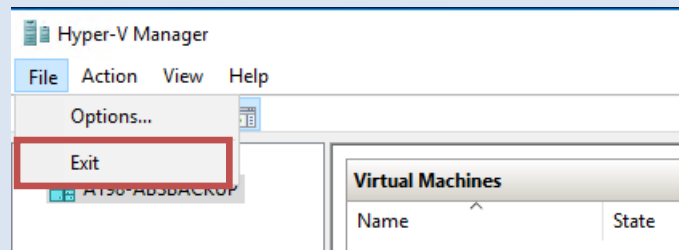
- a. Right click the Virtual Machine in Hyper-V manager and click **Delete**



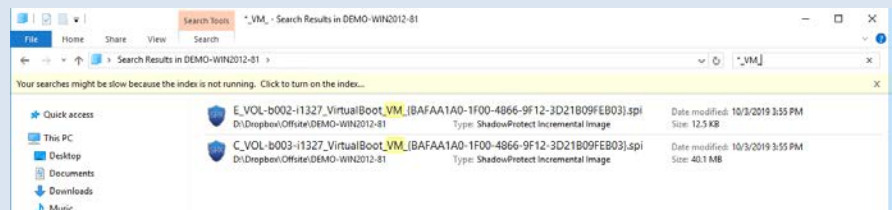
- b. Click **Delete** in the confirmation box



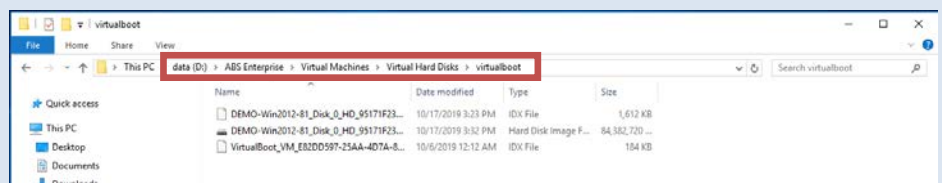
- c. Exit Hyper-V manager




- d. Do a search for *_VM_ files in the backup folder as shown. These files can be deleted



- e. You should also delete the files under \\Virtual Machines\Virtual Hard Disks\virtualboot



 Cleanup of the VM is now complete.