

Troubleshooting Imaging

These pages provide various troubleshooting guides for FileWave IVS

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Authentication Credentials Error

What

When deploying a Windows image and the IVS errors with a message:

```
"IVS request for URL: https:<your.IVS.IP.address:20044/imagingwindows/boot/get_image_info/ failed with code: 403
Authentication credentials were not provided."
```

This will prevent the deployment of Windows images. FileWave will need to re-establish the secure connection between your IVS and server services.

```
using handling of the above exception, another exception occurred:

Traceback (most recent call last):
  File "/filewave/bootup.py", line 823, in <module>
    succeeded = main()
  File "/filewave/bootup.py", line 786, in main
    imageDef = accessURL(imageInfoURL, secretKey)
  File "/filewave/bootup.py", line 127, in accessURL
    raise ImagingError("IVS request for URL: %s failed with code: %d and content: %s" %
filewave.helpers.ImagingError: IVS request for URL: https://20444/imaging/windows/boot/get_image_info/3f93af933a0a93a3043d5943a33/ failed with code: 403 and content: b'{"detail":"Authentication credentials were not provided"}'
ERROR! 2023-01-20 10:15:52,811 (helpers): An error has been detected with error message:
When exception has been caught, you should be able to see stack trace
```

When/Why

This error comes up when the IVS loses its shared key, which causes the IVS to fail and connect with your FileWave services. The connection between FileWave's IVS and server does have encryption and can be established again. To fix you may follow the steps below. In some cases, you will want to check and verify the shared key. Remember the last 4 of the shared key and once you have re-generated, be sure the last 4 have changed.

How

1. Navigate to FileWave Central (native admin)
2. Open the Imaging tab
3. Highlight and double-click on your IVS
4. Check the box to "Generate new key on Save"
5. Press OK to save
6. Click on the Monitor button still with the Imaging tab preferences
7. Click on Verify to have the IVS check-in

After performing these steps, please try again to deploy your image. Be sure the image association is set to True before PXE booting the machine.

How to re-enroll an IVS

What

You may need to remove and re-enroll the IVS to troubleshoot. Instead of straightforward deleting and enrolling the IVS again, you will need to remove the client and admin IVS configurations, before removing. Once these configurations have been deleted you then may remove the IVS from FileWave Admin Central.

When/Why

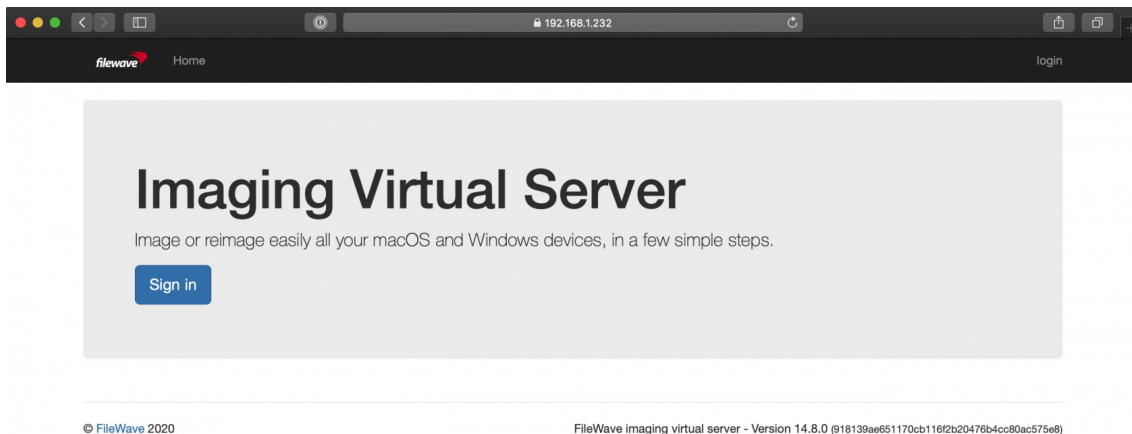
When the IVS loses connection or stops imaging, troubleshooting may require to remove and re-enroll the IVS.

How

1. Remove IVS Client configuration
 1. log into your IVS by ssh into the server and execute the commands below:

```
$ sudo killall fwclld
$ rm -rf /etc/xdg/FileWave/Client.conf
```

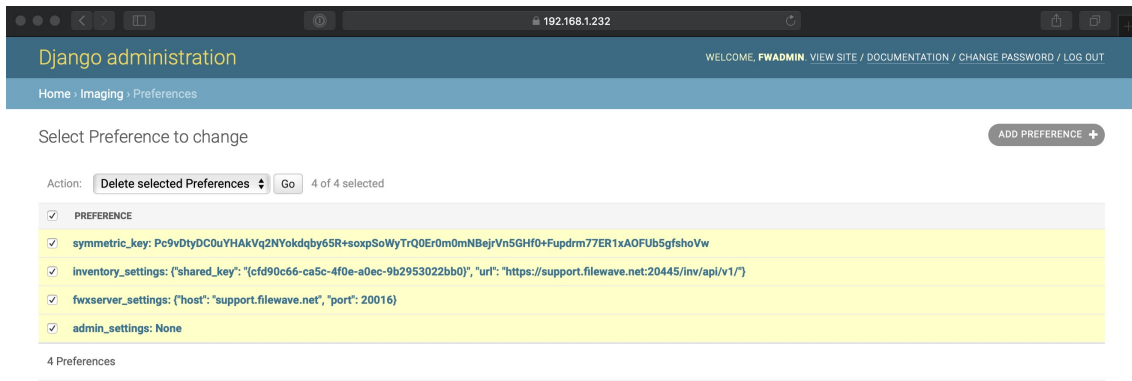
2. Remove IVS Admin configuration
 1. Open a web browser and navigate to your IVS admin address, i.e. <https://<IVS.IP.address>:20444>



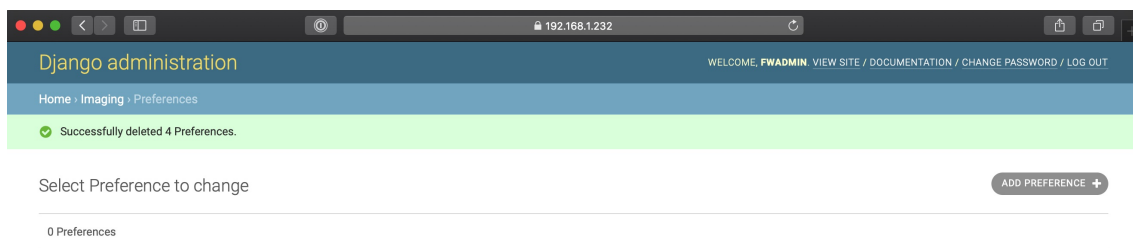
2. Click 'Sign in' and enter the username and password

```
username: fwadmin
password: filewave
```

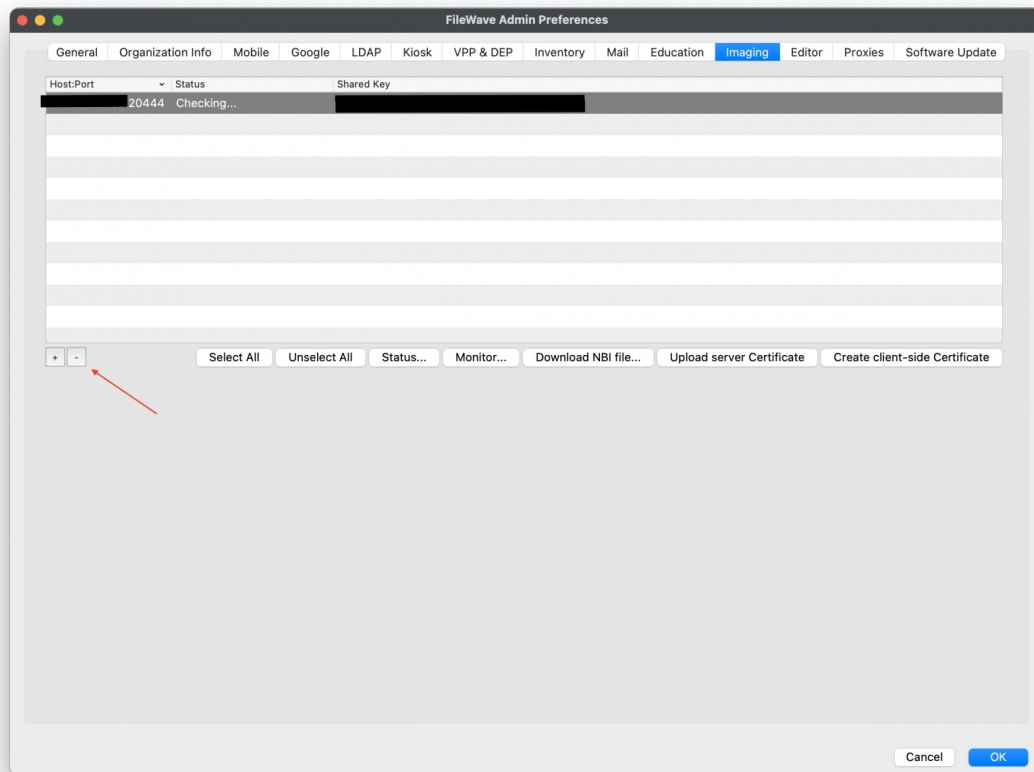
3. Once logged in, click Admin at the top, Preferences > Check the box to the left of Preference to check all boxes > Click the drop-down to the right of Action and select "Delete selected Preferences".



4. Click on 'Go' and confirm by clicking 'Yes' to remove. After completed the steps, you should see 0 Preferences.



3. Remove IVS from FileWave Admin Central
 1. Open FileWave Admin Central and navigate to Preferences > Imaging tab > click your IVS to highlight it > Click the minus sign to the bottom left and then hit OK to close preferences. Re-open Preferences > Imaging tab and make sure your IVS hasn't reappeared.



4. Restart the IVS. SSH into your IVS and run the command to reboot:

```
$ sudo shutdown -r now
```

5. Once the IVS has restarted, you may begin the enrollment process normally; [Setting up the IVS \(Imaging Virtual Server\)](#)

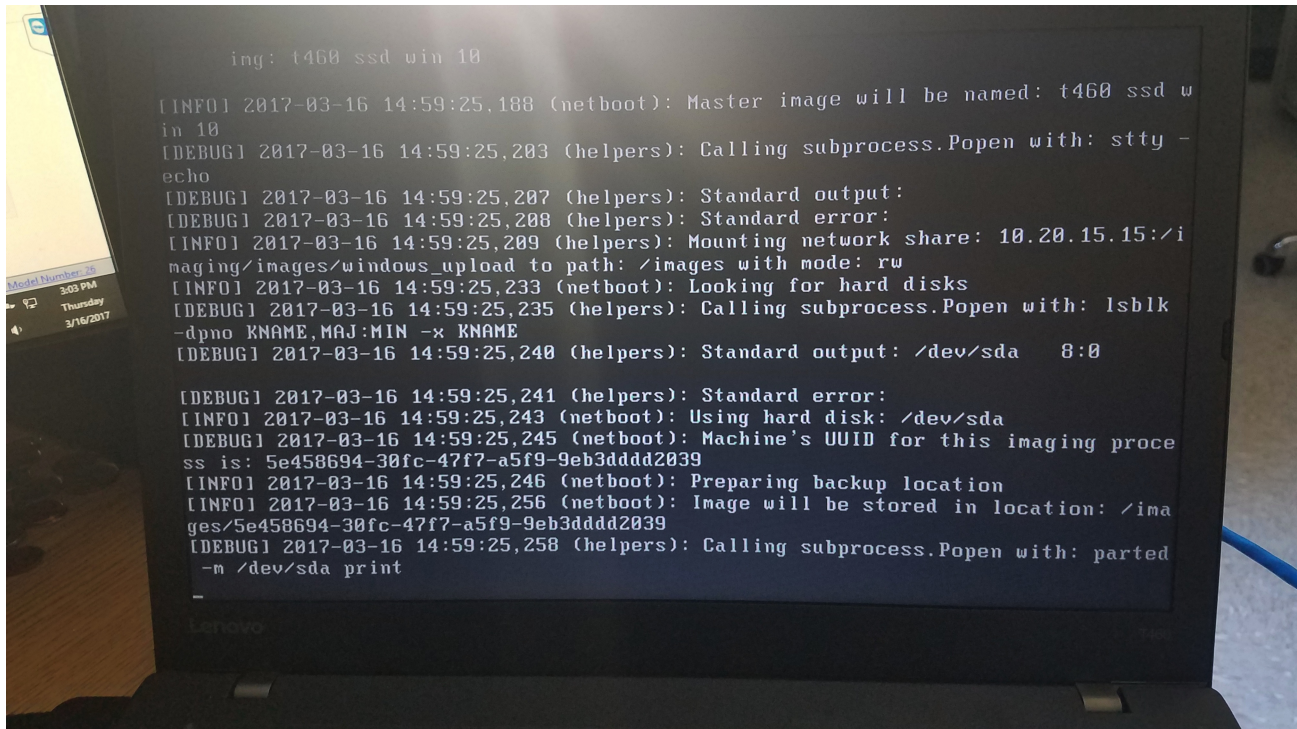
Related Content

[Setting up the IVS \(Imaging Virtual Server\)](#)

Image creation or deployment hangs on "calling subprocess.Popen"

Problem

When trying to create a Master image, or deploy a freshly captured image on a Windows device, the entire process will stall at the message "Calling subprocess.Popen with: parted -m /dev/sda print".



Solution

The cause of this issue is a bad partition on the machine that results in an imaging creation or deployment stall. In order to resolve this issue, you will need to modify a file on the Imaging Virtual Server (IVS) and use a prompt on the device you are wanting to capture the image from / deploy to.

The following steps will allow you to clear the error from the device.

1. Make a note of the partition that seems to be stuck. From the screen shot it is "/dev/sda". Your drive may have a different name.
2. Once you know the drive name, go ahead and turn off the machine that is stuck capturing the image.
3. Connect to your IVS and run the below command.

```
touch /etc/fw_master_debug
```

4. PXE boot the machine giving the error again.
5. The machine will go to a prompt where you are able to type the below command. For the example, "/dev/sda", but yours may be different.

```
sgdisk --zap /dev/sda
```

6. Shutdown the machine you are capturing the image from / deploying to.
7. Run the below command on your IVS to delete the file you created.

```
rm -rf /etc/fw_master_debug
```

8. PXE boot the machine again to capture the image and it will no longer hang at the step.

Imaging Issue After Upgrading FileWave and Using Self-Signed SSL Certificate

What

You are experiencing difficulties imaging machines after upgrading your FileWave Server, IVS, and Clients while using a [Self-Signed SSL Certificate](#).

When/Why

This step is necessary when using a Self-Signed SSL Certificate. Ensure to include this additional step in your IVS upgrade process if you are not using a Root Trusted SSL Certificate.

How

1. Access the IVS via SSH or locally:
 - Connect to the IVS via SSH or access it locally.
2. Edit the dnsmasq.lua file:
 - Use your preferred command-line editor (e.g., vi) to edit the dnsmasq.lua file.
 - `vi /imaging/scripts/bin/dnsmasq.lua`
3. Navigate to line 128:
 - Use the arrow keys or appropriate commands to navigate to line 128.

```
117 -- Calls the inventory to check if association is disabled
118 function get_mapped_image(mac_address)
119     local client_id = get_client_id(mac_address)
120     if not client_id then
121         return nil
122     end
123     local http_req = require "http.request"
124     local http_util = require "http.util"
125     local uri = http_util.encodeURI(string.format("%simaging/enabled_windows_mappings?client_ids=[%s]", get_inventory_url(), client_id))
126     local req = http_req.new_from_uri(uri)
127     req.headers:upsert("content-type", "application/json")
128     req.headers:upsert("Authorization", get_inventory_key())
129     req.tls = false
130     local headers, stream = req:go()
131     if headers == nil then
132         log("Error connecting to Filewave Server: " .. stream)
133         return nil
134     end
135     local body, err = stream:get_body_as_string()
136     if body ~= "" and err == nil then
137         return get_image_uuid(client_id)
138     else
139         log("Error in response from Filewave Server: " .. err)
140         return nil
141     end
142 end
```

4. Switch to insert mode:
 - Press 'i' to switch to insert mode in vi.
5. Add the following line:
 - `req.tls = false`
6. Save and exit vi:
 - Press the Esc key to exit insert mode.
 - Type `!wq` and press Enter to save and exit vi.
7. Verify functionality:
 - You should now be able to image machines successfully.

Related Content

- [Self-signed SSL Certificates](#)
- [Network Imaging / IVS](#)

Importing FileWave Virtual Appliance - Hyper-V

FileWave's Hyper-V VMs are usually built using the latest version of Hyper-V, typically the same one that comes with the newest version of Windows Server. When importing the FileWave Server, IVS, or on older Windows OS'es, the Hyper-V Manager console may not be able to detect the VM due to changes in the formatting of the VM XML definition file. This doesn't mean you can't add them to Hyper-V though.

Instead of importing the Hyper-V VM, add a new VM and point it to the existing VHD for the FileWave Server, Booster or IVS. Then specify the following hardware configuration to replace the missing info that was lost by discarding the VM XML definition file.

FileWave Server/Booster - 4 CPUs, 8 GB RAM

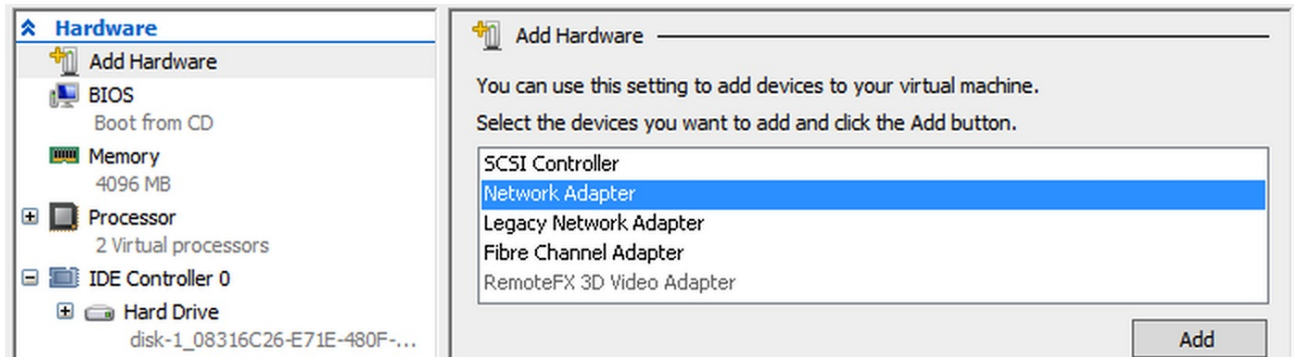
IVS - 4 CPUs, 4 GB RAM

Step-by-step guide

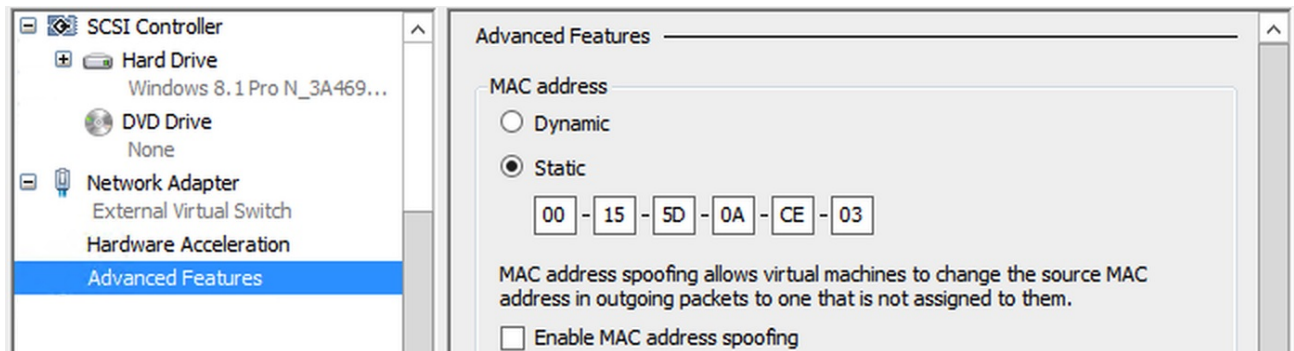
Follow these steps for the FileWave server component you wish to add to Hyper-V

1. Copy the .vhdx file for the desired FileWave server component to the same folder where the VHDs for all your other VMs reside. Rename it as desired so you know which server component it's for, e.g. IVS.vhdx.
2. Go to Action > New > Virtual Machine.
3. Select "Generation 1" for the firmware type.
4. Assign either 8192 (FileWave Server/Booster) or 4096 (IVS & Engage Server) for Startup memory and check "Use Dynamic Memory" for this virtual machine.
5. Connect the NIC to an external virtual switch where the server can pick up an IP address on your LAN.
6. Pick "Use an existing virtual hard disk" and browse to the .vhdx file for your VM.

Note that the IVS has two virtual NICs although only one of them will pick up an IP address. There's already one present by default so you'll have to edit the settings for the VM and add a second one by picking Add Hardware at the top of the Hardware section on the left-hand pane. Choose Network Adapter on the right and click the Add button. Connect this second adapter to your virtual switch and click the Apply button.



All FileWave server components should have a static IP rather than a dynamic one. You can either assign them a static IP outside of your DHCP pool or set a client reservation for them so they get the same IP address from the DHCP pool every time. For client reservations, you'll need to configure the virtual NICs with static MAC addresses since the MAC address is needed to set the client reservation. In the Advanced Features section for each virtual NIC change the MAC address to Static.



For the IVS you'll need to log in locally and run ifconfig to determine the MAC address for the virtual NIC that is pulling an IP address (usually eth1), as opposed to the other adapter that doesn't get an IP address.

```
[root@imaging-appliance ~]# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0C:29:BD:11:E6
          inet6 addr: fe80::20c:29ff:febd:11e6/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:38 errors:0 dropped:0 overruns:0 frame:0
          TX packets:8 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:3444 (3.3 KiB)  TX bytes:648 (648.0 b)

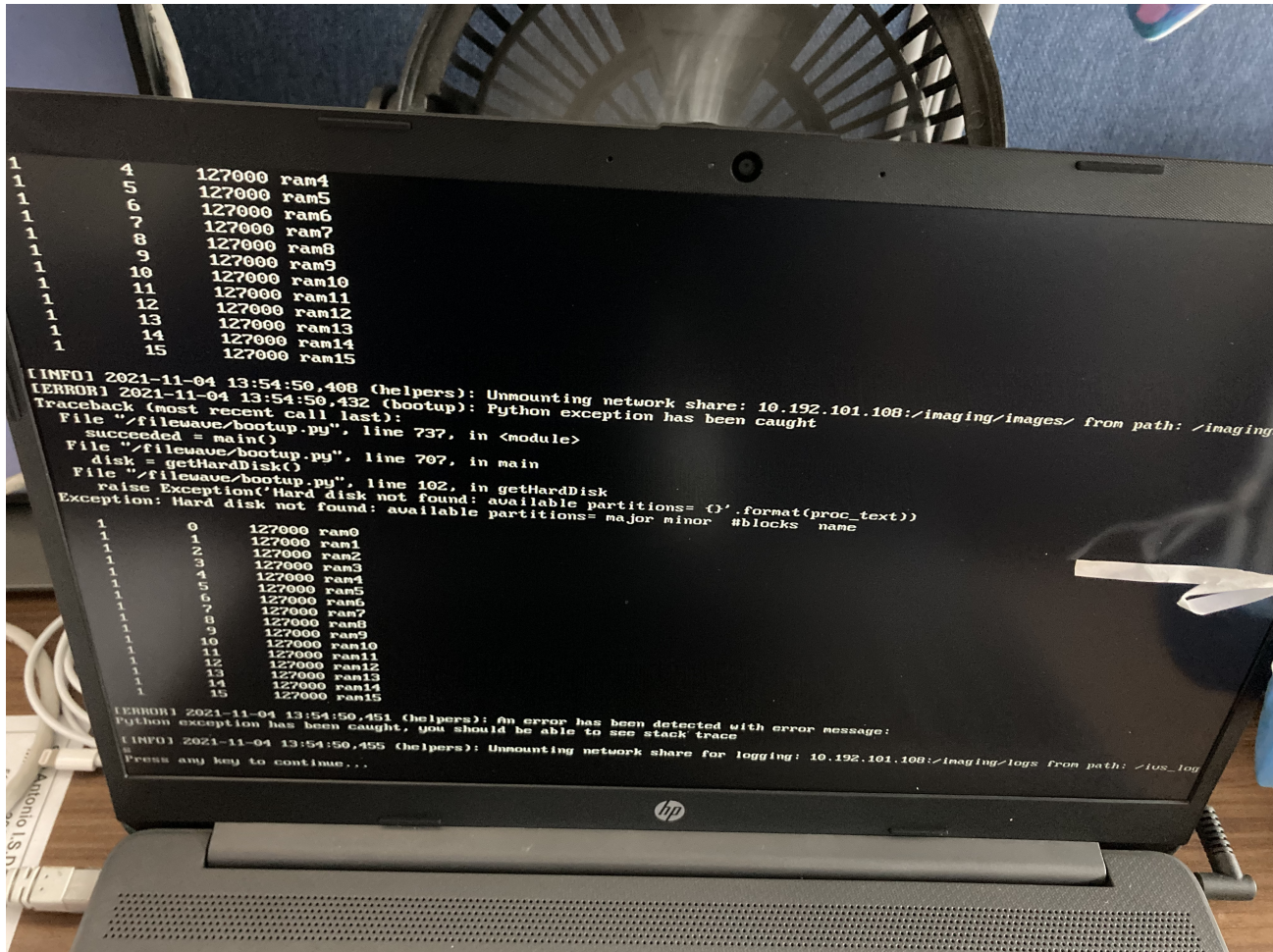
eth1      Link encap:Ethernet  HWaddr 00:0C:29:BD:11:F0
          inet addr:10.10.10.137  Bcast:10.10.10.255  Mask:255.255.255.0
          inet6 addr: fe80::20c:29ff:febd:11f0/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:12 errors:0 dropped:0 overruns:0 frame:0
          TX packets:33 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1320 (1.2 KiB)  TX bytes:2702 (2.6 KiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:64 errors:0 dropped:0 overruns:0 frame:0
          TX packets:64 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:4821 (4.7 KiB)  TX bytes:4821 (4.7 KiB)
```

RAM listing 0-15 Error

What

Machines using the latest M.2 drives may run into an error listing RAM failures when deploying an image.



When/Why

New machines with M.2 drives may have been set up with a pre-configuration of RAID within the machine's BIOS. You will want to log into your machine's BIOS and change the RAM configuration from RAID to AHCI.

How

Depending on the manufacturer/brand of BIOS, be sure to review the options and verify the method of logging into the BIOS. Once logged in, perform the following steps:

1. Search the BIOS for the settings/options labeled "SATA"
2. Change the SATA settings/options from RAID to AHCI
3. Confirm the changes and save
4. Exit BIOS and restart the machine
5. Prepare PXE boot to image deployment

After these "SATA" settings/options have been changed and saved, please try again to deploy your image. Be sure the image association is set to True before PXE booting the machine.

Third Party Vendors

Each Brand/Manufacturer has their own options to enter BIOS. Below are a few examples to search for:

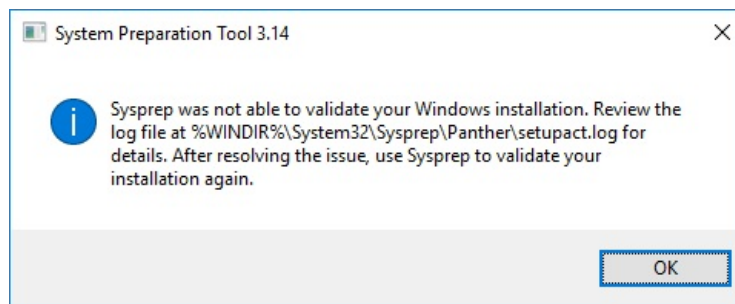
- [HP BIOS](#)
- [Dell BIOS](#)
- [ASUS BIOS](#)
- [Lenovo BIOS](#)

Sysprep not able to validate Windows installation

Sysprep is mandatory for FileWave Windows disk imaging. Possible consequences of not sysprepping are outlined by [Microsoft here](#). It accomplishes the following goals to prepare your reference system for capturing the master image.

1. Removes computer-specific info from a Windows installation by doing the following items below - You may find that some Windows functionality no longer works correctly when computer specific info is duplicated between multiple PCs.
 - Generates a new computer SID
 - Sets a new computer name
 - Clears out event logs
 - Runs mini setup to deal with hardware differences
2. Performs a full Windows shutdown when the "/shutdown" switch is specified, which is required on Windows 8 and 10 - Starting with Windows 8, Microsoft added a fast startup feature that helps your PC start up faster after shutdown, even faster than hibernate. Windows does this by saving an image of the Windows kernel and loaded drivers to C:\hiberfil.sys upon shutdown so when you start your PC again, Windows simply loads the C:\hiberfil.sys file into memory to load Windows instead of starting from scratch. When it does this, Windows leaves the main partition hosting Windows in a state that prevents FileWave from properly capturing it. When you sysprep with the "/shutdown" parameter, it performs a full shutdown without generating a hiberfil.sys file and leaves the partition hosting Windows in a state that allows FileWave to capture it.

Sysprep can occasionally fail with a validation error due to a provisioned Microsoft Store Appx app being updated automatically by Windows 10.



Sysprep has an additional provider in Windows 8 and 10 to clean Microsoft Store Appx packages and generalize the image. This provider will fail if an all-user package is updated for one of the users on this reference computer, which Windows will do automatically if it is connected to the internet long enough. To minimize the chances of this happening on the reference system, keep it disconnected from the internet as much as possible.

The error message you'll see in %WINDIR%\System32\Sysprep\Panther\setupact.log, and more importantly in setuperr.log, when sysprep fails under these circumstances is that "an app was installed for a user, but not provisioned for all users".

```
<Date> <Time>, Error SYSPRP Package <PackageFullName> was installed for a user, but not provisioned for all users.
This package will not function properly in the sysprep image.
<Date> <Time>, Error SYSPRP Failed to remove apps for the current user: 0x80073cf2.
<Date> <Time>, Error SYSPRP Exit code of RemoveAllApps thread was 0x3cf2.
<Date> <Time>, Error [0x0f0082] SYSPRP ActionPlatform::LaunchModule: Failure occurred while executing
'SysprepGeneralize' from C:\Windows\System32\AppxSysprep.dll; dwRet = 0x3cf2
<Date> <Time>, Error SYSPRP ActionPlatform::ExecuteAction: Error in executing action; dwRet = 0x3cf2
<Date> <Time>, Error SYSPRP ActionPlatform::ExecuteActionList: Error in execute actions; dwRet = 0x3cf2
<Date> <Time>, Error SYSPRP SysprepSession::Execute: Error in executing actions from
C:\Windows\System32\Sysprep\ActionFiles\Generalize.xml; dwRet = 0x3cf2
<Date> <Time>, Error SYSPRP RunPlatformActions:Failed while executing SysprepSession actions; dwRet = 0x3cf2
<Date> <Time>, Error [0x0f0070] SYSPRP RunExternalDLLs:An error occurred while running registry sysprep DLLs,
halting sysprep execution. dwRet = 0x3cf2
<Date> <Time>, Error [0x0f00a8] SYSPRP WinMain:Hit failure while processing sysprep generalize internal providers;
hr = 0x80073cf2
```

Follow the steps below to remove the offending apps causing sysprep to fail before sysprepping again.

1. Check %WINDIR%\System32\Sysprep\Panther\setuperr.log for errors like the ones above and note the "<PackageFullName>" of the app, e.g. "9E2F88E3.Twitter_5.4.1.0_x86_wgeqdkkx372wm".
2. Launch a PowerShell session with admin privileges and run the following command to remove the Microsoft Store Appx in question, where "<PackageName>" is "Twitter" in this example.

```
Remove-AppxPackage *<PackageName>*
```

3. If sysprep continues to fail because of the same app, it means the app is installed for another user on the system. Log into this other user account and repeat step 2 to remove the app for that user.

4. Sysprep again.
5. Repeat steps 1-4 until sysprep is successful.