Getting Started with Win10 IoT

A Technote by Dell Wyse Sales Engineering

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Windows 10 IoT Intro

Win10 IoT General Info and Recommendations

Think of this device, like other thin clients, as a launch point for brokered connections. That broker could be Citrix XenApp, Citrix XenDesktop, Dell Wyse vWorkspace, Microsoft RDSH, Microsoft RDVH, VMware Horizon View or other virtualization products which have a supported win32 client. Internet Explorer is available for local browser use and other browsers could be installed as needed. The real benefit to using Win10 IoT is the rich Windows 10 driver and application compatibility where more compact OS options do not meet the need. As a best practice, limit the number of applications installed locally as this will consume valuable flash storage, complicate your build/configuration/patching footprint and increase your maintenance time & effort. As a general rule, if you require more than 2-3 locally installed apps running on the thin client, you may be better off considering a traditional PC.

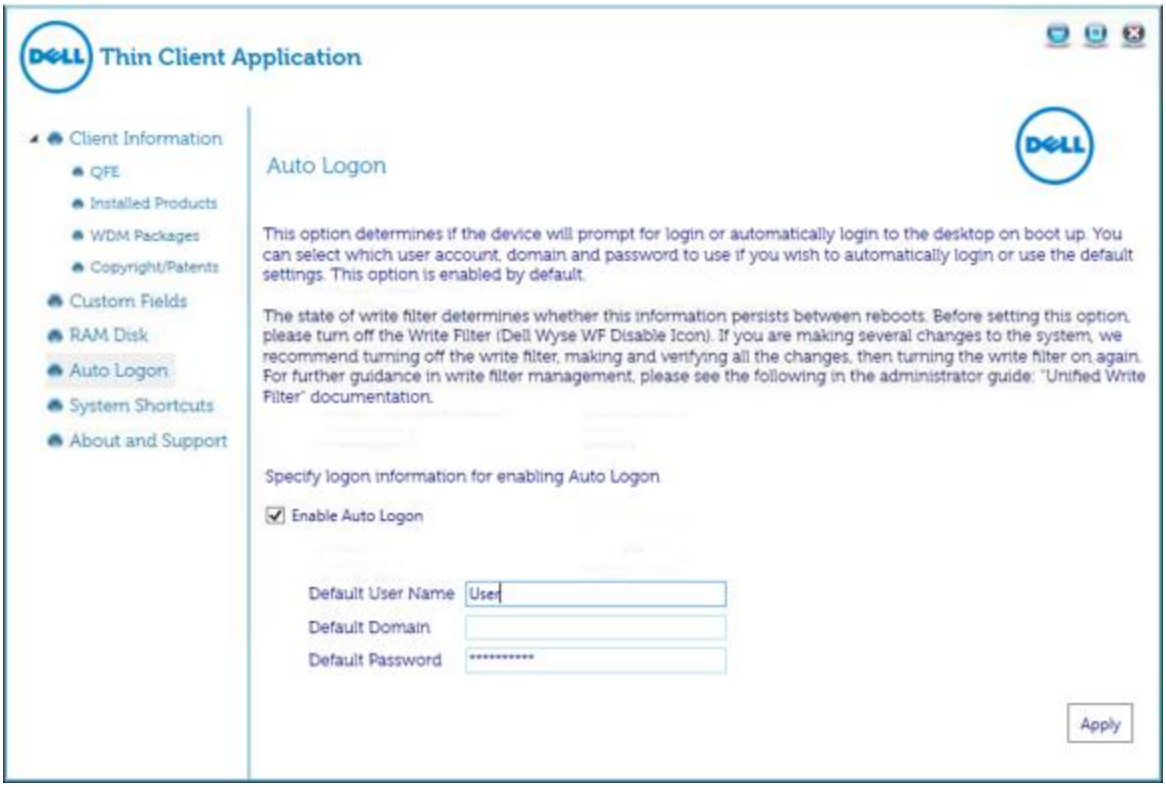
What is included / what is not

- Included: Citrix Receiver 4.3, RDP Client, Internet Explorer 11, TightVNC Server, WCM 1.3.4.1, WDM HAgent 6.3.5.4, Citrix HDX RDME 1.8, Lync Vdi 2013, Microsoft Silverlight 5.1
- Not Included: VMware Horizon Client, Dell Wyse vWorkspace Connector, Emulation Software, SCCM Agent

At the time the initial factory image was sealed, a VMware Horizon Client and Dell Wyse vWorkspace Connector were not fully supported and were not included. Both vendors have since released upgraded client software that is fully supported on Windows 10 and these clients can be installed.

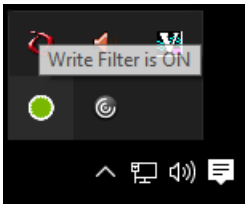
Auto Log On

When first powered on, a Win10 iOT thin client is configured to Auto Logon as a local “User” account. The User account is locked down with local policy. The “User” account has limited access to the desktop, Settings and cannot disable the write filter. This behavior can be configured, logged in as Administrator, using the **Dell Thin Client Application** program. Note, ensure you have disabled the write filter prior to any changes or they will be lost at reboot.



The Write Filter

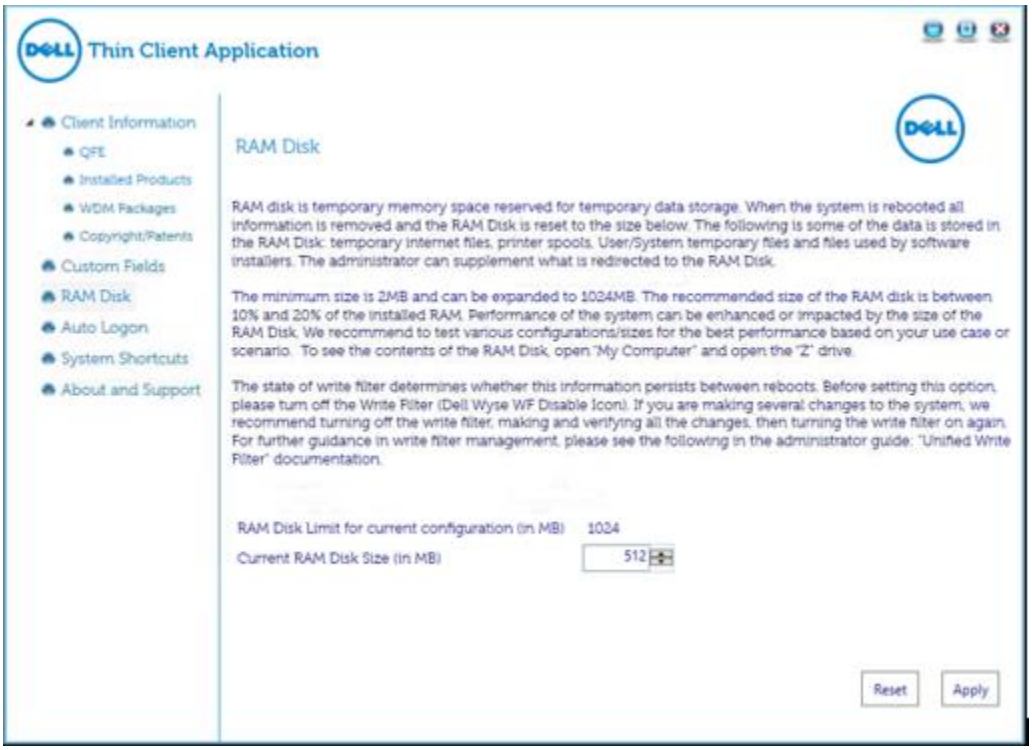
Win10 IoT devices are equipped with a write filter. This redirects most writes during operation to a temporary location that is discarded at reboot or shutdown. The intent is to have the thin clients operate in a read only mode preserving the administrator's desired configuration. This also reduces writes to the intentionally low cost flash based non-volatile storage. If you operate a Win10 IoT device with the write filter disabled for extended periods of time, you may burn out the flash storage. It is important to ensure the write filter is enabled during user operation for this reason as well as to prevent undesired changes in configuration. It should only be disabled by an administrator while performing initial configuration or making a change to the intended configuration, then enabled once those changes are completed. A quick way to determine the current state of the write filter is to view the system tray icon. You will need to expand the Show Hidden Icons system tray arrow to see this.



RAM Disk

Win10 IoT uses a RAM disk to save the flash constant writes. The RAM disk can be configured via the **Dell Thin Client Application**. The default size is 512MB. You can increase this value if needed but note that this will reduce the amount of useable memory for applications. One common issue this presents is when an application installer has to write to TMP or TEMP and needs more than 512MB of space, you may receive an "Out of disk space" error or "invalid win32" errors. A quick and easy way to work around

this is by creating a c:\temp folder, changing the **System\Environment Variables…** from the RAM Disk drive letter to c:\temp. Don't forget to change this back once the application is installed.

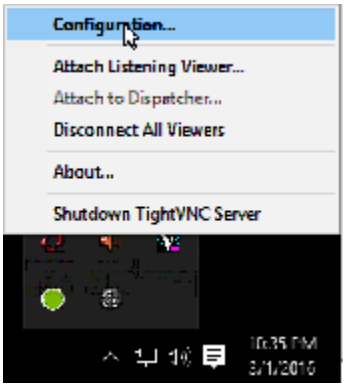


VNC Server Service

Dell Wyse Win10 IoT terminals include a TightVNC Server Service in the factory image. This can be accessed by most VNC clients allowing administrators to remote control the device. Other Windows compatible remote control programs can be used as well but will need to be installed by an administrator with the write filter disabled. The case sensitive default password for the VNC connection is:

- **DELL**

This can be changed and other configuration settings altered in the **Configuration…** dialog accessible by right click on the VNC icon under the **Show Hidden Icons** arrow in the system tray (ensure the write filter has been disabled to permanently change this):



Client Information

You can view a System Summary using **Dell Thin Client Application**. This summary includes:

1. Client Information - product info, build version, network info & hardware info.
    a. QFE – Quick Fix Engineering/Microsoft patches currently installed
    b. Installed Products - all add-ons installed & version info
    c. WDM Packages – history of deployed packages from WDM
    d. Copyrights/Patents – self explanatory
2. Custom Fields
    a. This section of the app replaces the Custom Fields control panel applet in previous embedded devices
3. RAM Disk – covered above
4. Auto Logon – covered above
5. System Shortcuts – Quick access hyperlinks to commonly navigated locations
6. About and Support – App version and future support bundle collection component

QFE/Patch Distribution

Windows updates are tested and published by Dell for Dell Wyse Win10 IoT thin clients. As a compact version of Windows 10, not all windows updates released for Windows 10 apply to Win10 IoT. As a general rule, Dell publishes these quarterly but will expedite a release for any identified critical vulnerability. You can sign up to be notified when new patches are release on the Wyse **Support\Downloads** page:

https://appservices.wyse.com/pages/serviceandsupport/support/downloads.asp

You can download the patches by selecting your product from the appropriate product downloads dropdown, click search to be taken to the appropriate content page and then scroll down to the bottom of the page and select **To download Security Patch click here**.

Many customers choose to update a single base terminal, capture the patched image and deploy that out to other terminals. Patches can be installed interactively with the write filter disabled or by Wyse Device Manager (WDM).

Antivirus Info

Win10 IoT is running a windows kernel and could be subject to some of the same vulnerabilities and malware as a full Windows 10 client. The write filter will help ensure any changes made by malicious software are not committed at reboot or shutdown (assuming the write filter is enabled). Many Antivirus applications can consume valuable flash storage, active RAM and require unique configurations to ensure they do not negatively impact performance on your device. If you need to run Antivirus in your environment, please check the Wyse **Support\Documentation\Reference Manuals** section of the www.wyse.com page or your AV vendors support site for KB articles with best practices/suggested configurations for running AV on Windows Embedded.

Domain Membership

We'd recommend not joining these devices to the domain. Domain membership is typically not required to pre-configure connection brokers, emulators or the web browser. If you have a requirement in your environment to join these devices to your domain, please see the Wyse KB 21541 which can be searched from the **Support\Documentation\Reference Manuals** section of the http://www.wyse.com/kb web page.

SCCM Support

At the present time, any support for use of SCCM with Dell Wyse Win10 IoT thin clients will need to come from Microsoft. Initial attempts to provide prescriptive guidance on use of SCCM for client imaging and other management functions were unsuccessful. We are continuing to work with Microsoft and may provide additional information in the future.

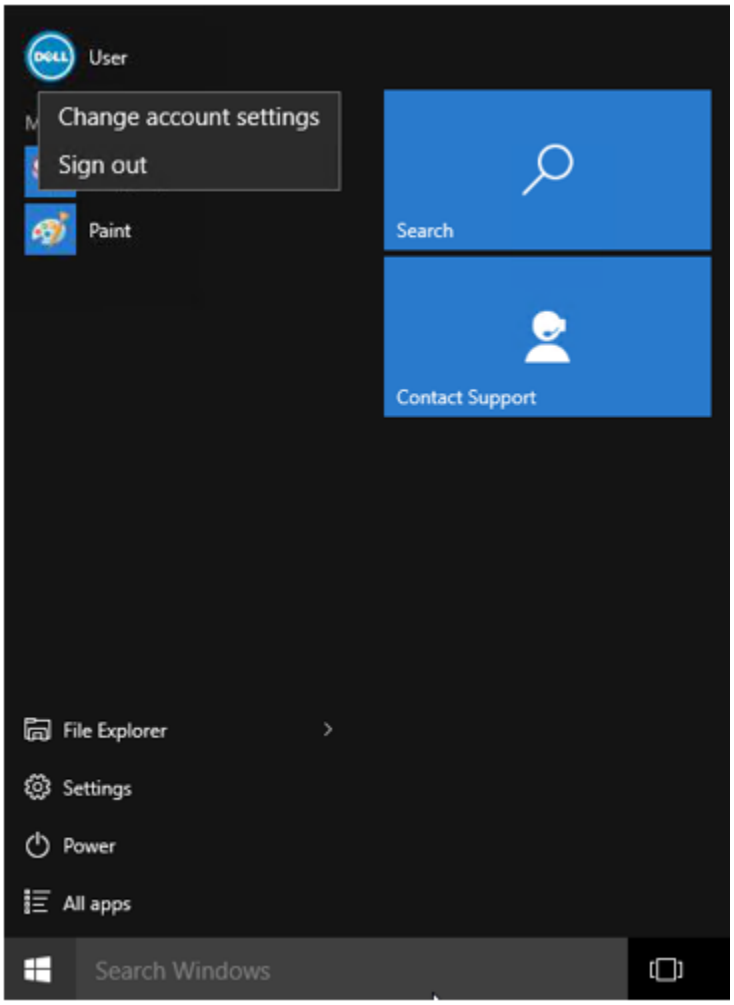
Configuring your Win10 IoT Thin Client

Check to be Sure you have the Latest Factory Image

1. You can check available image downloads from the Active Product Downloads dropdown of the Support\Downloads link on www.wyse.com
2. If a newer image is available, download a copy and go to the image capture & download section in this doc for instructions to update your device before proceeding

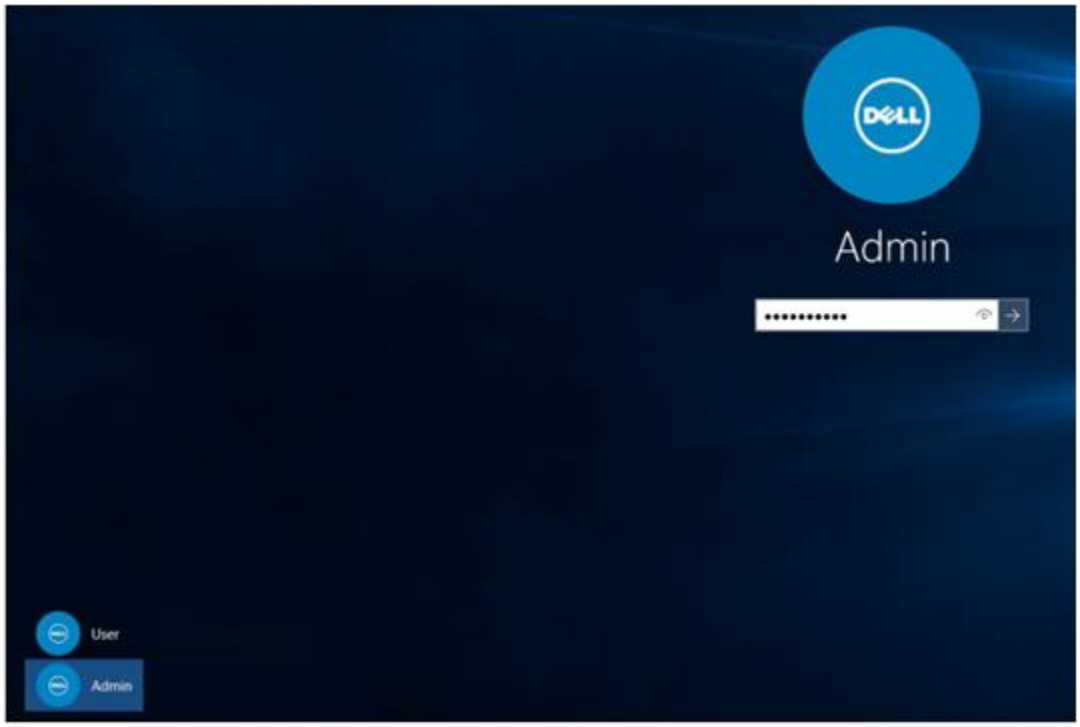
Log on as Administrator

1. Log off by clicking the Start button, click on **User** and choose **Sign out**



2. Click the mouse or press any key to bypass the date/time default screen:

3. Select the local **Admin** account to log in, the pw is **DellCCCvdi**



Disable the Write Filter

1. Double click on the **Dell Wyse WF Disable** icon on the desktop

   a. The device will restart and re-login as User
   b. You can always tell the current state of the write filter by viewing the System Tray icon:

   Red = off, Green = on.

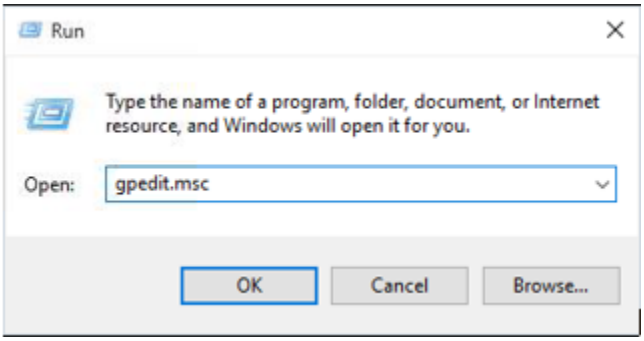
Log in again as Admin and open the Dell Thin Client Application

1. Log off again and log in as Admin, open the Dell Thin Client Application:

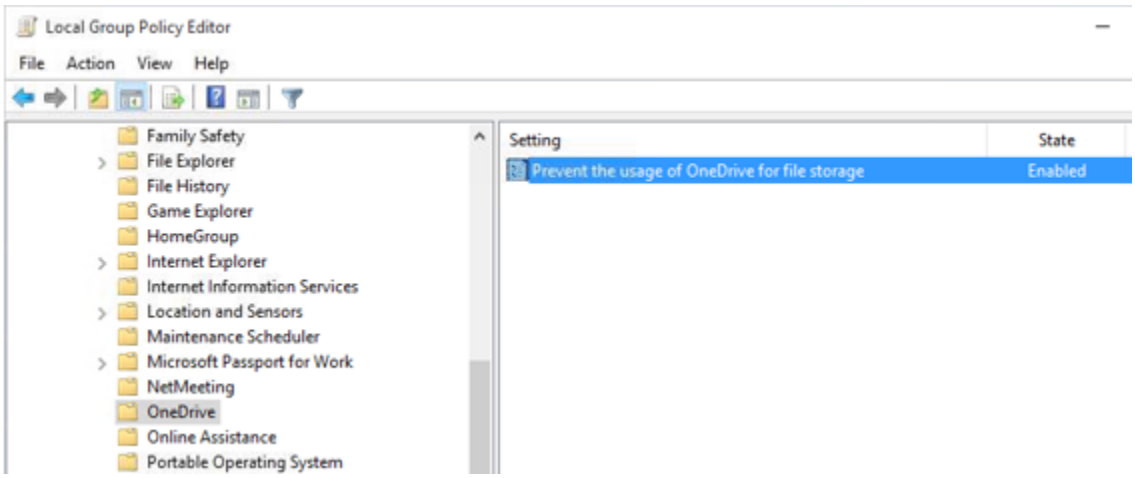
2. Change the Auto Logon settings to use the Admin account while you create your initial configuration (password is the same as the User account so you don't have to modify that) & click **Apply**

Disable OneDrive

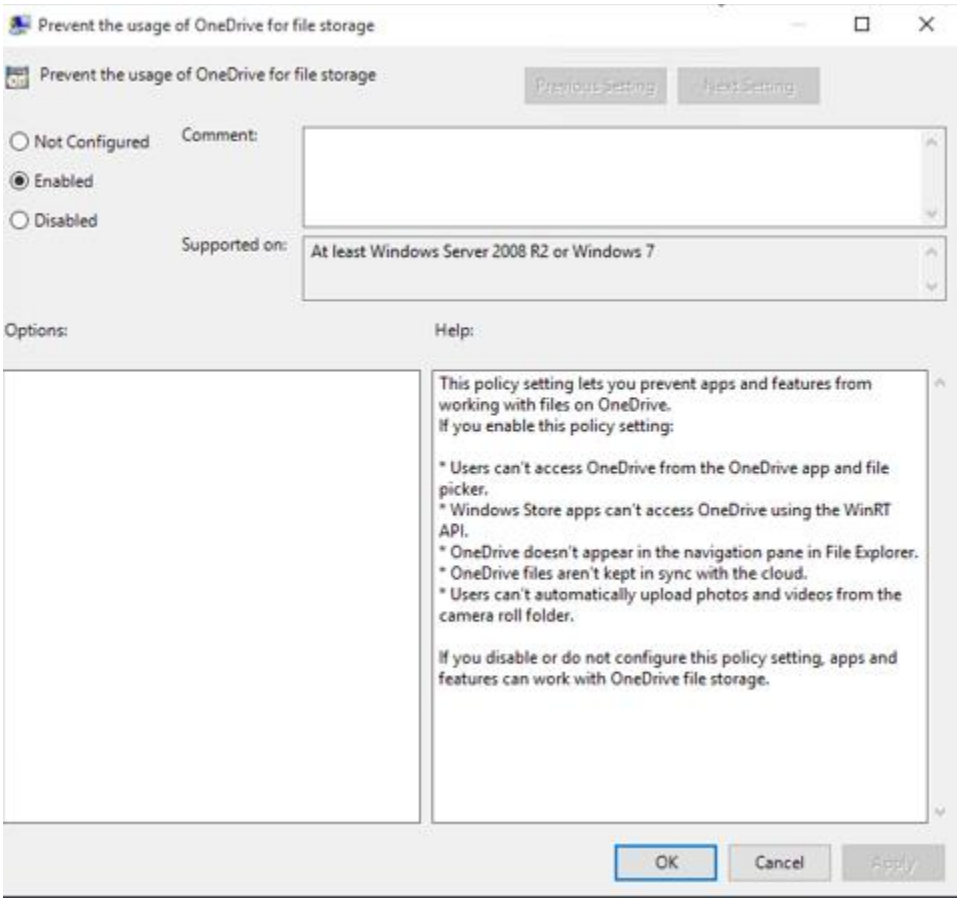
1. There is a “known issue” with a OneDrive pop-up in the initial Win10 IoT manufacturing image. You can disable OneDrive altogether with local group policy.



2. Expand Computer Configuration\Administrative Templates\Windows Components and select the OneDrive folder:

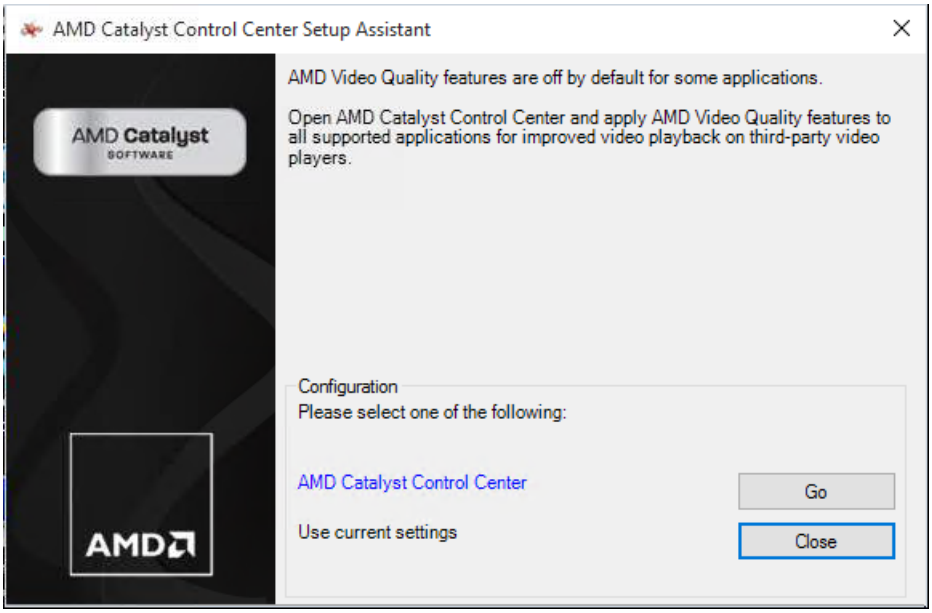


3. Select the **Enabled** radio button to disable OneDrive:

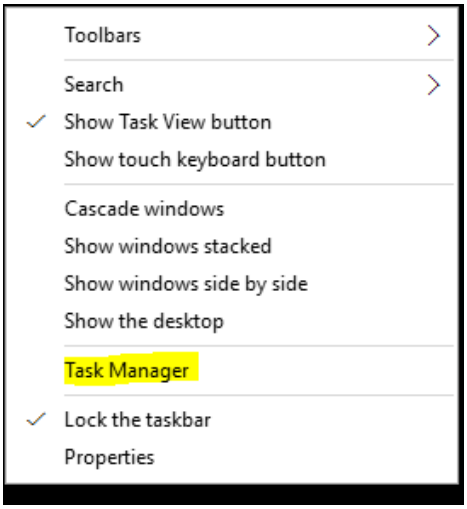


Disable the AMD Catalyst Control Center Setup Assistant

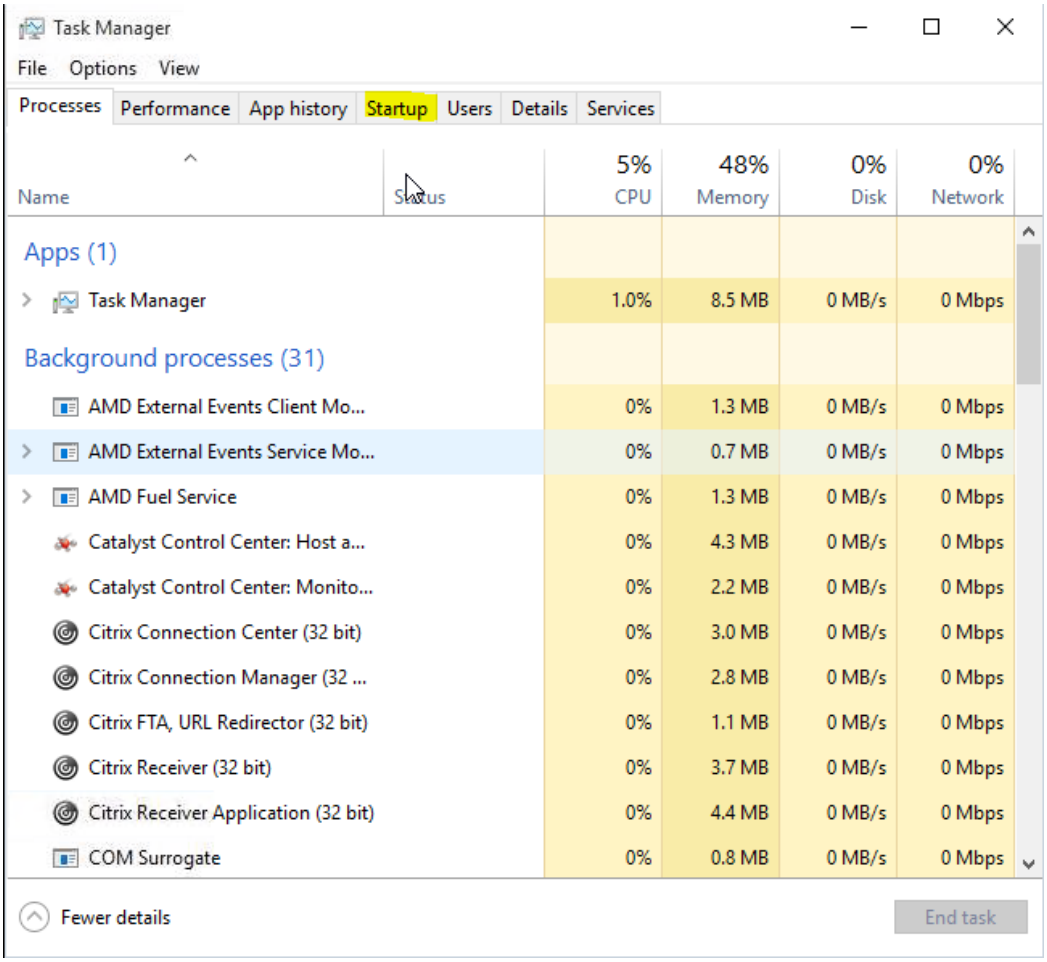
1. This is the second “noticeable” pop-up you will see after running for some time on the factory image:



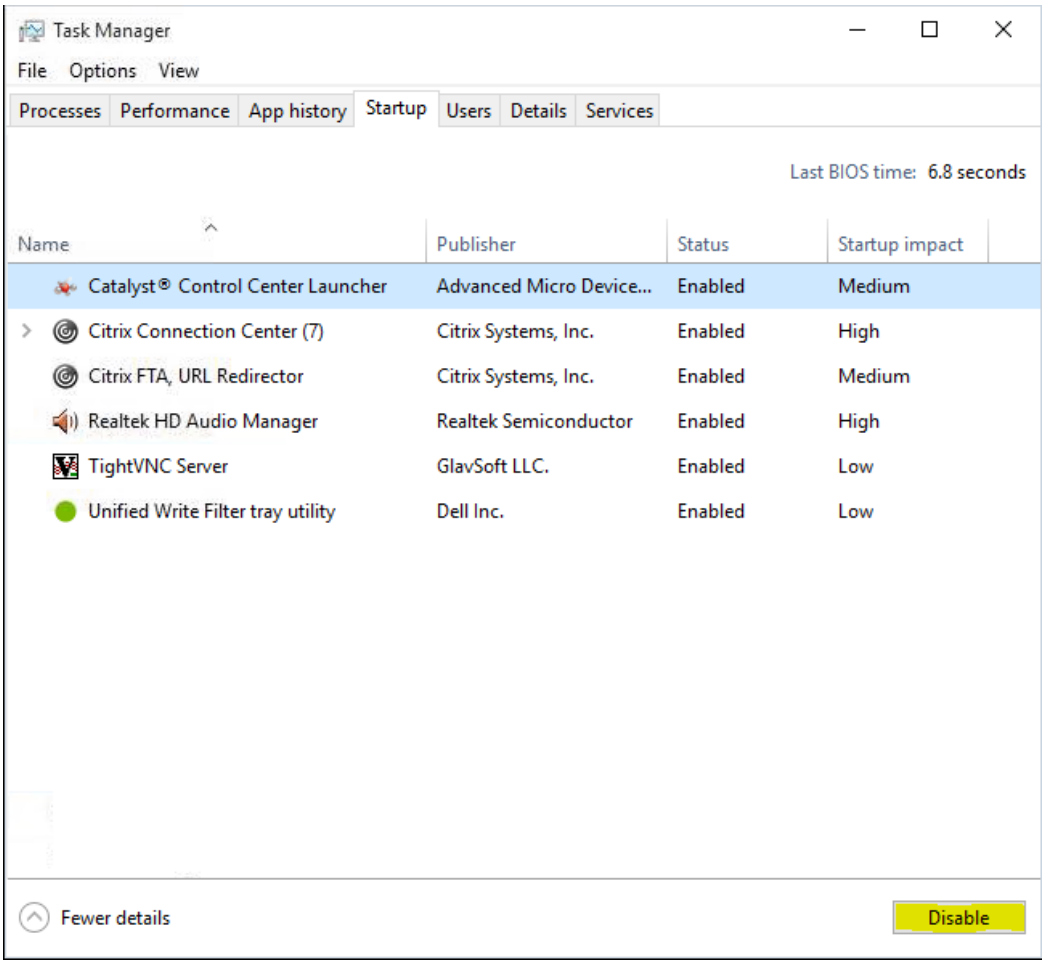
2. While logged in as **Admin**, right click on the task bar and select Task Manager:



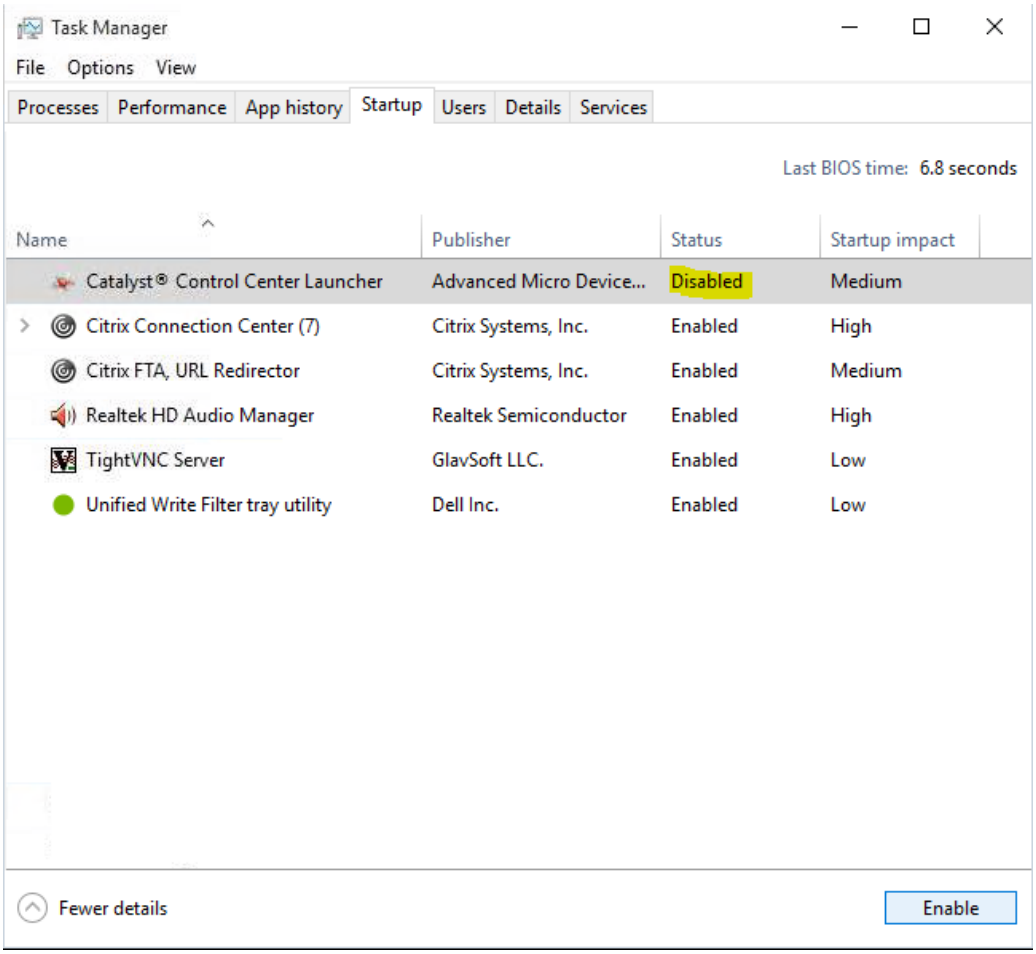
3. Click on the **Startup** tab to view programs configured to run at Startup:



4. Highlight the **Catalyst Control Center Launcher** and click **Disable**:



5. Note the change in status:

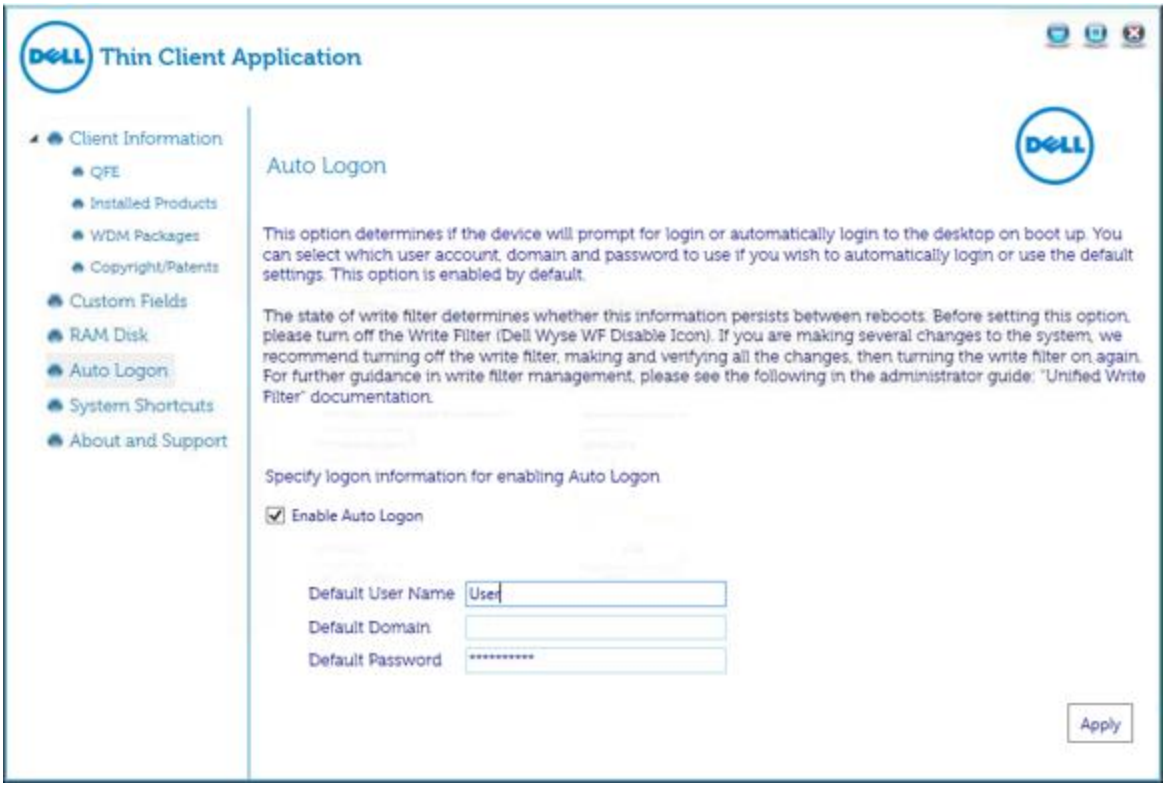


6. Close task manager.

Make any other needed changes to the base image while the write filter is disabled

Restore Standard Operating Settings

1. Open the Dell Thin Client Application program and change the Auto Logon user back to **User** – click the **Apply** button:



2. Re-enable the write filter:

   a. The terminal will automatically reboot.

Validate all settings

Allow the client to start up and Auto Logon as User. Ensure all settings are functioning as needed. If any changes are required, you will need to log in as Administrator and disable the write filter again.

Prep for Imaging

You should always re-seal a device image if you plan to use it to deploy to other devices. Dell Wyse has provided a WIE10_CustomPrep4man.ps1 script in c:\windows\setup for this purpose. This should be run with the write filter disabled. The final step of the script is a device power down.

*** Note, at present, existing profiles can become corrupt following completion of the Sysprep process. New profiles are not affected. Dell Wyse has an open ticket with Microsoft on this item and hopes to have it corrected soon.

Capture your Configured Image

You have two options for capturing and deploying your configured client image to additional devices of the same model & configuration:

1. USB Firmware Tool – a unique version (2.0.10.0) must be used for Win10 at present:
    a. USB Imaging Tool 2.0.10.0
    b. See the following document for instructions as there are some oddities in this build
2. Wyse Device Manager – download the latest software & documentation from:
    a. http://downloads.dell.com/wyse/wdm/
        i. Download 5.5 & then the 5.5.1 update, install in the same order