

Getting Started with WES7

A Technote by Wyse Sales Engineering

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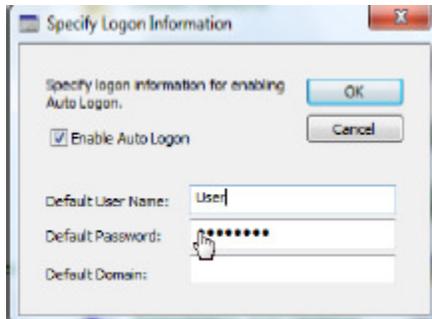
Windows Embedded Standard 7 Intro

WES7 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. We also include an Ericom emulation package in the base image for connection to mainframes, AS400s and other legacy systems. Internet Explorer is available for local browser use and other browsers could be installed as needed. The real benefit to using WES7 is the rich Windows 7 driver and application compatibility where more compact OS options do not meet the need. Please note, due to Microsoft license agreement terms, the Office suites cannot be installed on this OS. Office viewers can be installed but full office components cannot. 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.

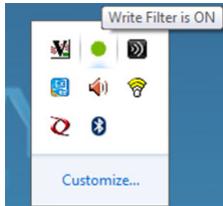
Auto Log On

When first powered on, a WES7 thin client is configured to auto-log-on as a local “User” account. The User account is locked down with local policy. The “User” account has limited access to the desktop, no access to the Control Panel and cannot disable the write filter. This behavior can be configured, logged in as Administrator, using the **WinLog** Control Panel applet. Note, ensure you have disabled the write filter prior to any changes or they will be lost at reboot.



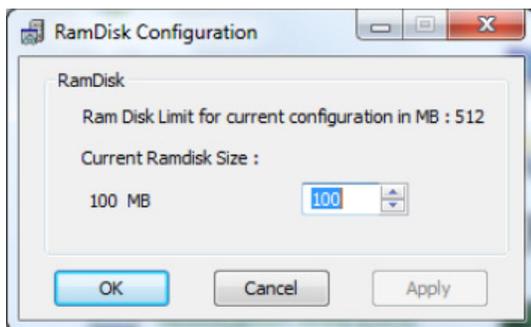
The Write Filter

Windows embedded 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. It is important to ensure the write filter is enabled during user operation 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

WES7 uses a RAM disk to save the flash constant writes. The RAM disk can be configured via the **RAMDisk Control Panel** applet. The default size is 100MB. 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 100MB 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 plugging in a USB flash drive, changing the **System\Environment Variables...** from the RAMDisk drive letter to the flash drive. Don't forget to change this back once the application is installed.

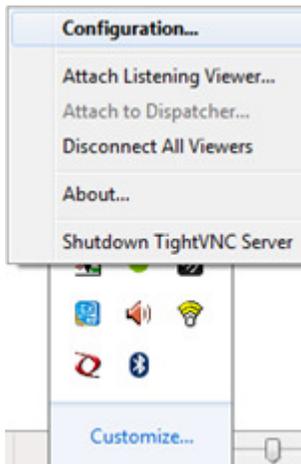


VNC Server Service

Dell Wyse WES7 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 Win32 supported 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:

1. 3290 and all models introduced after 2014 - **DELL**
2. All other models = **Wyse**

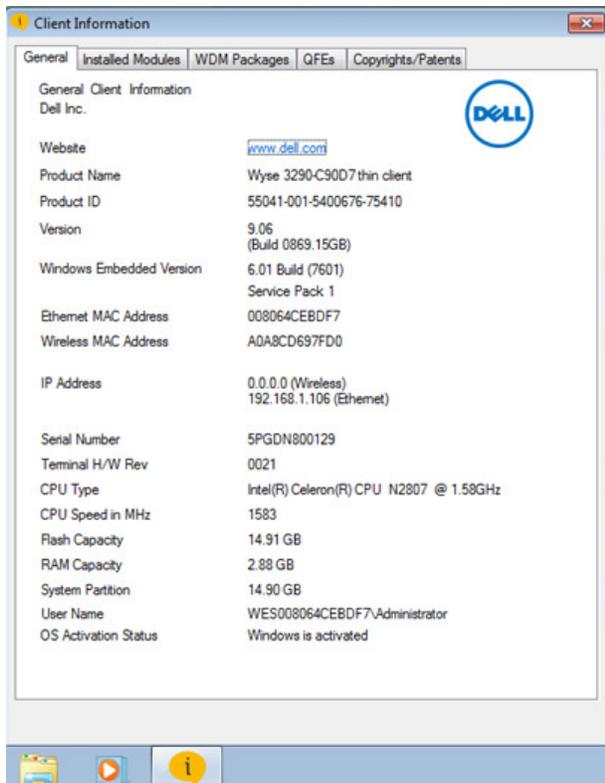
This can be changed and other configuration settings altered in the **Configuration...** dialog accessible by right click on the VNC icon under the **Show Hidden Icons** arrow in the system tray (ensure the write filter has been disabled to permanently change this):



Client Information

You can view a System Summary using the Client Information shortcut pinned to the taskbar or also available from the Start\All Programs menu. This summary includes:

1. General - product info, build version, network info & hardware info.
2. Installed Modules - all add-ons installed & version info
3. WDM Packages - history of deployed packages from WDM
4. QFEs - Quick Fix Engineering/Microsoft patches currently installed
5. Copyrights/Patents - self explanatory



QFE/Patch Distribution

Windows updates are tested and published by Dell for Dell Wyse WES7 thin clients. As a compact version of Windows 7, not all windows updates released for Windows 7 apply to WES7. 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, by Wyse Device Manager (WDM) or you can also use SCCM to patch these devices.

Antivirus info

WES7 is running a windows kernel and could be subject to some of the same vulnerabilities and malware as a full Windows 7 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). If possible, Antivirus should not be installed on a WES7 client as it will consume valuable flash storage, active RAM and requires unique configuration to ensure the particular AV program you are using does not cripple 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 practice/suggested configurations for 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 www.wyse.com web page.

Configuring your WES7 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 as **User** and hold down the left Shift key
 - a. Note - If using a USB keyboard, you may need to wait to press shift until the screen shows **Please Wait**. This is due to Windows 7 delaying the USB driver load on logoff. Once you click **Log off**, the screen will blink, show the text logging off and then go blank. Once the screen shows **Please Wait**, hold down the left Shift key until presented with the user account selection screen
2. Two accounts should be presented for logon, Administrator and User. The passwords for both are case sensitive as follows:
 - a. 3290 and all models introduced after 2014 - **DellCCCvdi**
 - b. All other models - **Wyse#123**
3. Log in as Administrator

Disable the Write Filter

1. Double click on the **FBWF Disable** icon on the desktop



- a. The system will restart with the write filter disabled

Configure your Thin Client

1. Log off as **User** and hold down the left Shift key
 - a. You may be able to prevent auto logon as the system is starting up if you time pressing left shift after the screen flashes black when the **Please Wait** screen is presented
2. Remove any unwanted connection broker software from Programs & Features
3. Remove the WCM Client unless you plan to use WCM or WDM Profile Manager
 - a. If you do plan to use this component, check the Wyse downloads page linked above to ensure you have the latest client software
4. Set the appropriate **Date & Time** configuration
5. Adjust **Power Options** as desired
6. Add any needed certificates to the Trusted Root Certification Authority for local computer
7. Ensure your connection broker client is current by checking the downloads link above or your connection broker vendor's web site
8. Adjust VNC Server settings as desired
9. Install all needed print drivers
10. Install any other required device drivers and connect devices at least once to verify they are working
11. Install/configure any other software needed
12. Modify desktop shortcuts as desired in C:\Users\public\desktop
 - b. Note, this is a hidden directory by default
13. Log off as **Administrator**
14. Allow auto log on to log in as **User** (aka - no action required)
15. Configure your browser settings
16. Configure your connection broker client
17. Install printer(s) & set as default
 - a. Only necessary if you are using a local printer, will need to print from a local app or wish to use the Citrix Universal Print driver
18. Set wallpaper/personalization settings as desired
19. Log off as **User** holding down the left shift key to be prompted with account selection
20. Log in as **Administrator**
21. Double click the **Enable FBWF** icon to enable the write filter



- c. The system will restart with the write filter enabled

Validate all settings

Allow the client to start up and auto log on 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

Follow instructions in the **Prepping a WES7 Image for Deployment.pdf** file which you can download from the following location:

https://support.wyse.com/OA_HTML/csksxvm.jsp?nSetId=47153&nUsePub=NO&jttst0=6_23871,23871,-1,0,&jtfm0=&etfm1=&jfn=ZG6910EF219ABEE8671997F9992F2B8C11133A1B0139DB03D30D6A8E15ED2835F21ACB490F82CDE9AEE625C7E643051CA8F6&oas=bonPcTt--eEqKZ8Mu6rBMA..

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 - download the latest software & Users Guide from:
 - a. <https://appservices.wyse.com/pages/serviceandsupport/support/dlOraFW.asp?which=102&model=USB%20Firmware%20Tool%28Wyse%20Imaging%20Tool%29>
2. Wyse Device Manager - download the latest software & documentation from:
 - a. <https://appservices.wyse.com/pages/serviceandsupport/support/dlOraFW.asp?which=89&model=Wyse%20Device%20Manager%28Software%20Downloads%29>