

Dell Hybrid Client

Version 2.0 Release Notes



Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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Dell Hybrid Client 2.0

Dell Hybrid Client is a desktop solution that follows the Software-as-a-Service (SaaS) model of software delivery. It provides a hybrid operating environment that enables you to access virtual, cloud, or local applications and resources seamlessly. It encompasses the cloud and storage aggregation for maintaining security and simplicity.

Dell Hybrid Client 2.0 can be deployed on two Ubuntu Dell base operating systems, Ubuntu 20.04 and Ubuntu 22.04. It has a minimum memory (RAM) of 8 GB and disk storage of 64 GB or higher.

NOTE: DHC 2.0 can also be deployed on Ubuntu 20.04 machines with 32 GB disk storage. The user must clear local files from Dell file explorer.

NOTE: The user must re-configure the settings in Dell Hybrid Client 2.x WMS Config Policies from Dell Hybrid Client 1.x. WMS Config Policies, before and after upgrading from DHC 1.6 and DHC 1.8 to DHC 2.0.

Dell Hybrid Client 2.0 release supports the below features.

- Ubuntu 22.04 Support for OptiPlex 3000 TC
- Quick Start Wizard (OOBE)
- UC Optimization (Cisco Webex and Jabber)
- Log Level
- Keyboard Layout on Login Screen
- Nordic Languages
- Bloomberg keyboard support
- SCEP Enhancement (\$SN)
- Config UI Alignment
- Dell Client Agent Enhancements
- Bundle and Add-On Naming

For existing Dell Hybrid Client Feature Support, see Dell Hybrid Client 2.0 Administrator Guide at dell.com/support.

Version

Dell Hybrid Client version 2.0.189

Ubuntu 20.04 LTS 64-bit

Ubuntu 22.04 LTS 64-bit

Wyse Management Suite Pro version 4.0 Build 526

Wyse Management Suite Configuration UI package 1.9.532

NOTE: Use Wyse Management Suite to upgrade your Dell Hybrid Client firmware to the latest version. For detailed information about the upgrade process, see the instructions mentioned on the Drivers and Downloads page of the Dell Hybrid Client product page at www.dell.com/support.

Release date

December 2022

Supported Platforms

Table 1. Supported Platforms (DHC Pre-Installed)

Platform	Processor	RAM	eMMC/SSD/HDD
OptiPlex 3000 Thin Client	11 th Generation Pentium and Celeron	8 GB and above	64 GB and above for Ubuntu 20.04, 32 GB eMMC (supported for Ubuntu 20.04)
OptiPlex 5400 AIO	12th Gen Intel Core i3/i5/i7	8 GB and above	128 GB and above
Latitude 3330	11th Generation Intel Core i3/i5/i7	8 GB and above	128 GB and above
Precision 3260	12th Gen Intel Core i3/i5/i7	8 GB and above	128 GB and above

NOTE: Wyse 5070, 5070 Extended, OptiPlex 3090, OptiPlex 7090, and Latitude 3320 support 2.0 by bundle upgrade. Dell Hybrid Client is not pre-installed from factory for these platforms.

Supported VDI Clients and Local Applications

Table 2. Common Local Applications and VDI Client Versions for 20.04

Description	Version
Dell RDP	8.1.08
Citrix Workspace App	22.12
VMware Horizon Client	2209
Zoom Client	5.12.9
VLC Media Player	3.0.9.2
Teradici PCoIP Client	22.07
Azure Virtual Desktop	2.0-03

Table 3. Local Applications and VDI Client Versions for 22.04

Description	Version
Dell RDP	8.1.08
Citrix Workspace App	22.12
VMware Horizon Client	2209
Zoom Client	5.12.9
VLC Media Player	3.0.16

Supported Browsers

Table 4. Browser Versions

Browser	Version
Firefox	107.0(64 bit)
Chrome	108.0.5359.71(64-bit)

Optional Packages

Table 5. Optional Packages 20.04

Packages	Comments
DHC2.0-customconnection_00-04_20.04.tar.gz	To create a custom connection from WMS
DHC2.0-RDS-sshserver_8.2p1-4-03_20.04.tar.gz	To access SSH for the device
DHC2.0-RDS-vncserver_0.9.16-3-03_20.04.tar.gz	To support VNC Remote access
DHC2.0-LP-fulllanguage_00-03_20.04.tar.gz	Package installs supported multi-lingual languages
DHC2.0-VDI-citrixclient_22.12.0.12-18_20.04.tar.gz	Package installs Citrix client
DHC2.0-VDI-vmwareclient_2209-8.7.0-05_20.04.tar.gz	Package installs VMware client
DHC2.0-VDI-imprivata_7.8.1.641901-08_20.04.tar.gz	Package installs Imprivata client
DHC2.0-VDI-teradici_22.07-06_20.04.tar.gz	Package installs Teradici client
DHC2.0-VDI-rdpclient_8.1.08-22_20.04.tar.gz	Package installs Remote desktop protocol
DHC2.0-VDI-multimediaextension_00-03_20.04.tar.gz	Package installs Multimedia Extension plugin
DHC2.0-VDI-wvd_2.0-03_20.04.tar.gz	Package installs Azure Virtual Desktop
DHC2.0-OS-smartcardloginenabler_00-02_20.04.tar.gz	Package to Enable Device Smartcard login
DHC2.0-OS-kernelpack_00-01_20.04.tar.gz	Package to install Kernel Pack
DHC2.0-OS-securitypack_00-01_20.04.tar.gz	Package to install Service Pack

Table 6. Optional Packages 22.04

Packages	Comments
DHC2.0-customconnection_00-03_22.04.tar.gz	To create a custom connection from WMS
DHC2.0-RDS-sshserver_8.2p1-4-03_22.04.tar.gz	To access SSH for the device
DHC2.0-RDS-vncserver_0.9.16-3-03_22.04.tar.gz	To support VNC Remote access
DHC2.0-LP-fulllanguage_00-03_22.04.tar.gz	Package installs supported multi-lingual languages
DHC2.0-VDI-citrixclient_22.12.0.12-18_22.04.tar.gz	Package installs Citrix client
DHC2.0-VDI-vmwareclient_2209-8.7.0-05_22.04.tar.gz	Package installs VMware client
DHC2.0-VDI-rdpclient_8.1.08-22_22.04.tar.gz	Package installs Remote desktop protocol
DHC2.0-VDI-multimediaextension_00-03_22.04.tar.gz	Package installs Multimedia Extension plugin

Table 7. Common Packages for Ubuntu 20.04/22.04

Packages	Comments
DHC2.0-VDI-jabberoffload_14.1.2-03_all.tar.gz	Package installs Cisco Jabber plugins
DHC2.0-VDI-webexoffload_42.10.0-03_all.tar.gz	Package installs Cisco Webex plugins
DHC2.0-VDI-zoomcitrix_5.12.6-06_all.tar.gz	Package installs Citrix zoom plugins
DHC2.0-VDI-zoomvmware_5.12.6-06_all.tar.gz	Package installs VMware zoom plugins

Supported Languages

- English (US)
- French (France)
- German

- Italian
- Spanish Latin (America)
- Korean
- Japanese
- Chinese Simplified
- Chinese Traditional
- Russian
- Portuguese (Brazil)
- Hebrew
- Danish
- Finnish
- Norwegian
- Swedish

Software and Package Information

Table 8. Dell Hybrid Client Bundle 20.04 Package

File Name	DellHybridClient_2.0_189_U20.04.tar.gz
Size (bytes)	906,120,685
MD5	3C6CBE2671F29F377DD7149E1E6E5C3F
Checksum32	CD64F128

Table 9. Dell Hybrid Client Bundle 22.04 Package

File Name	DellHybridClient_2.0_189_U22.04.tar.gz
Size (bytes)	926,843,658
MD5	BC137C16B45018F6FE478B96001221C5
Checksum32	FA1E915C

Table 10. Dell Hybrid Client Citrix Client Package 20.04

File Name	DHC2.0-VDI-citrixclient_22.12.0.12-19_20.04.tar.gz
Size (bytes)	164,445,551
MD5	635CC3C4AEF58A4BC8345171E0D0C51C
Checksum32	2ED5A787

Table 11. Dell Hybrid Client Citrix Client Package 22.04

File Name	DHC2.0-VDI-citrixclient_22.12.0.12-19_22.04.tar.gz
Size (bytes)	164,327,017
MD5	A50FD58C365F70D293EC74CF211B03EC
Checksum32	FC55FD15

Table 12. Dell Hybrid Client Custom Connections Package 20.04

File Name	DHC2.0-customconnection_00-04_20.04.tar.gz
Size (bytes)	293,672
MD5	731AD071C890DC809DE0DA42E805564D
Checksum32	DC9EE435

Table 13. Dell Hybrid Client Custom Connections Package 22.04

File Name	DHC2.0-customconnection_00-03_22.04.tar.gz
Size (bytes)	182,577
MD5	ABC6107D6A11265CD4B1F05656A4894F
Checksum32	0B1717D8

Table 14. Dell Hybrid Client Smartcard Login Enabler Package 20.04

File Name	DHC2.0-OS-smartcardloginenabler_00-02_20.04.tar.gz
Size (bytes)	14,084,317
MD5	D7A9086986AB2B01E0B041E0B42BE200
Checksum32	CC87F363

Table 15. Dell Hybrid Client Azure Virtual Desktop 20.04

File Name	DHC2.0-VDI-wvd_2.0-03_20.04.tar.gz
Size (bytes)	308,313,131
MD5	55FE2380EC543D6C93DBAEF11ED4378C
Checksum32	C085482A

Table 16. Dell Hybrid Client Multimedia Extension VDI Package 20.04

File Name	DHC2.0-VDI-multimediaextension_00-03_20.04.tar.gz
Size (bytes)	80,276,926
MD5	E4CB540DD8CB1476B58A3ADC60B2A493
Checksum32	390973B6

Table 17. Dell Hybrid Client Multimedia Extension VDI Package 22.04

File Name	DHC2.0-VDI-multimediaextension_00-03_22.04.tar.gz
Size (bytes)	235,853,646
MD5	C4BCC143BD7CFFFD23D9CB894F8ACFB4
Checksum32	724C4B3F

Table 18. Dell Hybrid Client RDP Package 20.04

File Name	DHC2.0-VDI-rdpclient_8.1.08-22_20.04.tar.gz
Size (bytes)	1,478,883
MD5	2C9F3688C1D0DF5FF8F7E4D70AB97C00
Checksum32	E6D6B5E2

Table 19. Dell Hybrid Client RDP Package 22.04

File Name	DHC2.0-VDI-rdpclient_8.1.08-22_22.04.tar.gz
Size (bytes)	1,434,811
MD5	09A04901E52E96B8A725FEDA52EFCD57
Checksum32	AEC0483F

Table 20. Dell Hybrid Client SSH Server Package 20.04

File Name	DHC2.0-RDS-sshserver_8.2p1-4-03_20.04.tar.gz
Size (bytes)	1,650,189
MD5	127F65AD3A5067838541B5986557D22A
Checksum32	F4ABDCBA

Table 21. Dell Hybrid Client SSH Server Package 22.04

File Name	DHC2.0-RDS-sshserver_8.2p1-4-03_22.04.tar.gz
Size (bytes)	1,572,324
MD5	B3A24A2B07EFA1A32C8FE500201B9548
Checksum32	BF4EDE24

Table 22. Dell Hybrid Client VNC Server Package 20.04

File Name	DHC2.0-RDS-vncserver_0.9.16-3-03_20.04.tar.gz
Size (bytes)	3,440,729
MD5	C1324CE1665E3F1CF9BDDE516D4F787A
Checksum32	90D4A71C

Table 23. Dell Hybrid Client VNC Server Package 22.04

File Name	DHC2.0-RDS-vncserver_0.9.16-3-03_22.04.tar.gz
Size (bytes)	3,327,506
MD5	F608C690255FB41FCDEC6E8B5416A4FD
Checksum32	30B33641

Table 24. Dell Hybrid Client Zoom Citrix Package

File Name	DHC2.0-VDI-zoomcitrix_5.12.6-06_all.tar.gz
Size (bytes)	54,142,853
MD5	6602A7DB2DD36D017BBDE5AD93EBE62C
Checksum32	EFA5E857

Table 25. Dell Hybrid Client Zoom VMware Package

File Name	DHC2.0-VDI-zoomvmware_5.12.6-06_all.tar.gz
Size (bytes)	54,135,198
MD5	10A295FB34CE8F58A0C39D7F002D95F0
Checksum32	0B5CD91A

Table 26. Dell Hybrid Client Cisco Webex Package

File Name	DHC2.0-VDI-webexoffload_42.10.0-03_all.tar.gz
Size (bytes)	60,232,795
MD5	7D146AA0E4CC580DFC3B423A8AE8824C
Checksum32	DEBB7A69

Table 27. Dell Hybrid Client Cisco Jabber Package

File Name	DHC2.0-VDI-jabberoffload_14.1.2-03_all.tar.gz
Size (bytes)	52,867,384
MD5	B82D21B1A85C1810CF2FC839B4E7FEEF
Checksum32	52,867,384

Table 28. Dell Hybrid Client Full Language Package 20.04

File Name	DHC2.0-LP-fulllanguage_00-03_20.04.tar.gz
Size (bytes)	389,330,563
MD5	228A97F98EAB534CE231198F1BBE0C7F
Checksum32	C07D8E20

Table 29. Dell Hybrid Client Full Language Package 22.04

File Name	DHC2.0-LP-fulllanguage_00-03_22.04.tar.gz
Size (bytes)	428,236,226
MD5	9C0DC93854A2EF164A2D5DB30A7383F8
Checksum32	D561D234

Table 30. Dell Hybrid Client Imprivata Package 20.04

File Name	DHC2.0-VDI-imprivata_7.8.1.641901-08_20.04.tar.gz
Size (bytes)	54,600,727
MD5	6F4BDCE8C0AE9C5F50A1521C0EA61C3D
Checksum32	9F769F93

Table 31. Dell Hybrid Client Teradici Package 20.04

File Name	DHC2.0-VDI-teradici_22.07-06_20.04.tar.gz
Size (bytes)	115,799,258
MD5	F08A8C4D5DF172D2899A1B4B733E246D
Checksum32	4A7D7630

Table 32. Dell Hybrid Client VMWare Client Package 20.04

File Name	DHC2.0-VDI-vmwareclient_2209-8.7.0-05_20.04.tar.gz
Size (bytes)	219,093,922
MD5	B65133C00EA2C55B1C85642D2472BFE2
Checksum32	E779D21B

Table 33. Dell Hybrid Client VMWare Client Package 22.04

File Name	DHC2.0-VDI-vmwareclient_2209-8.7.0-05_22.04.tar.gz
Size (bytes)	218,550,777
MD5	6D4A2395E35AEC70B75F2534E318E6D5
Checksum32	B8EB7D95

Table 34. Dell Hybrid Client Security Package 20.04

File Name	DHC2.0-OS-securitypack_00-01_20.04.tar.gz
Size (bytes)	189,142,085
MD5	83AC39D4805C7EB45F37318A13D43471
Checksum32	672E97EF

Table 35. Dell Hybrid Client Kernel Package 20.04

File Name	DHC2.0-OS-kernelpack_00-01_20.04.tar.gz
Size (bytes)	82,598,418
MD5	CE5D42CDAAE4763417817986A7400719
Checksum32	A5688866

Table 36. Dell Hybrid Client ISO Package for 5400 AIO 20.04

File Name	DellHybridClient_2.0_189_U20.04_5400.iso
Size (bytes)	4,965,203,968
MD5	E19604DF23A9DF0761638562FB01DA82
Checksum32	12549E49

Table 37. Dell Hybrid Client ISO Package for Latitude 3330 20.04

File Name	DellHybridClient_2.0_189_U20.04_L3330.iso
Size (bytes)	4,929,126,400
MD5	363FB97B4DEC331F316513BE1138064D
Checksum32	C4EF4E1A

Table 38. Dell Hybrid Client ISO Package for 3000_TC 20.04

File Name	DellHybridClient_2.0_189_U20.04_3000_TC.iso
Size (bytes)	4,513,234,944
MD5	B96CB65D7370B5AB79D1462490A11EB6
Checksum32	743EC61D

Table 39. Dell Hybrid Client ISO Package for 3260 20.04

File Name	DellHybridClient_2.0_189_U20.04_3260.iso
Size (bytes)	5,510,420,480
MD5	ADD7A2191F5714003F5A463446C94E30
Checksum32	86E8DB08

New and Enhanced Features of Dell Hybrid Client 2.0

Bloomberg Keyboard Support for VDI

The Bloomberg Keyboard is a standard personal computer keyboard that has been designed to use with the Bloomberg Professional® service.

The Bloomberg keyboard supports Citrix, VMware, and Teradici VDIs with Dell Hybrid Client 2.0.

Bundle and Add-On Naming

Dell Hybrid Client supports the software versions Ubuntu 20.04 and Ubuntu 22.04. For bundle and add-on naming, a common nomenclature is introduced for helping the WMS administrator. It enables the user to identify the add-on for the corresponding operating system.

For 20.04

Base bundle name is **DellHybridClient_2.0_xxx_U20.04.tar.gz**

2.0 represents the release version.

U20.04 represents the operating system Ubuntu 20.04.

For 22.04

Base bundle name is **DellHybridClient_2.0_xxx_U22.04.tar.gz**

2.0 represents the release version.

U22.04 represents the operating system Ubuntu 22.04.

Similarly, the add-on names are generated as below:

DHC<dhc_v>-<parent_name/NULL>-<child_name>_<major_v/00>-<minor_v>_<ubuntu_v/all>

- **dhc_v** is the DHC release version, and the version is 2.0.
- **Parent_name** is a related module of add-on.

Example: LP = Language Pack, VDI = Virtual Desktop Infrastructure

- **Child_name** is an add-on name.
- **Major and minor** version is an add-on version.
- **Ubuntu_v** is an Ubuntu version for which the add-on is released (all indicated are supported for the 20.04 and 22.04 versions).

Config UI Alignment

Wyse Management Suite administrator has become more flexible now with the alignment of Config UI of DHC 2.x with ThinOS 9.x.

The mentioned changes are made on **Dell Hybrid Client 2.x**.

- Specific configurations that are supported for DHC v1.6/v1.5/v1.1 are removed.
- **Grub Password** is renamed to **System Password**.
- **Advance Local User Account Properties** is renamed to **Local User Account Properties**.
- **Broker settings (1.8)** is renamed to **Broker Settings**.
- **Session settings (1.8)** is renamed to **Session Settings**.

Dell Client Agent UI Enhancements

Dell Client Agent (DCA) has improved the server URL validation which is now able to detect an invalid IP address.

- Added **Notification server status** in the registration section, to check the MQTT status.
- Added **Event logs** under the support section.
- **Event logs** enables live debugging for DCA.

Keyboard Layout on Login Screen

Administrator can configure the keyboard layout of a login screen using Wyse Management Suite.

Only selected keyboard layout lists are displayed in the Dell Hybrid Client login screen.

- Default keyboard layout that is selected in Wyse Management Suite is set as the default layout in the login screen.
 - Default layout and the additional layouts that are selected, are listed in the dropdown options in the login screen keyboard extension.
 - A DHC user can switch to any listed keyboard layout by directly clicking the menu list of the login screen keyboard.
- NOTE:** User must install the full language package from Wyse Management Suite for the keyboard layouts, Chinese, Korean, and Japanese. User must configure the system with a respective language for a particular layout.
- NOTE:** DHC login screen and DHC desktop are applicable if the user selects a keyboard layout from the Wyse Management Suite. DHC desktop (after the user logs in) is applicable only when the user selects a keyboard layout from **Device Settings**.

Log Level

Wyse Management Suite administrator can configure the log level for which DHC generates the log files. The default setting being basic.

Table 40. Log Level Configuration

Log Level Configuration	Severity of Logs
Basic	Warning, Error, and Critical Logs are generated in the DHC log files.
Medium	Info, Warning, Error, and Critical Logs are generated in the DHC log files.
High	All types of logs, Debug, Info, Warning, Error, and Critical Logs are generated in the DHC log files.

Quick Start Wizard (OOBE)

A **Setup Wizard** application runs the first time when you start a device with Dell Hybrid Client. The device starts the **Setup Wizard** application before you enter the DHC desktop. The **Setup Wizard** application helps to perform tasks, such as setting up the network connectivity and helps with the Wyse Management server registration.

Table 41. Quick Start Wizard

QuickStart Wizard Screens	Description
Language	User can configure the Setup Wizard language and keyboard layout using Language Setting screen.
Network	User can configure Ethernet/WiFi using the Advanced Network Settings screen and connect to network using the Network Setting Screen .
Wyse Management Suite	User's WMS Registration page is used to register with WMS by providing the URL, group prefix, and token .
Setup Completion page	The Thank You screen displays after completing all the configurations.

- If Auto Discovery (DHCP\DNS) is configured and the EULA is accepted in WMS, in this scenario the user gets the EULA and it automatically accepts, the wizard window is not enabled.
- If Auto Discovery (DHCP\DNS) is configured and the EULA not accepted in WMS, in this scenario the user gets the EULA and the user does not get **Setup Wizard** window.
- Auto Discovery (DHCP\DNS) is not configured, or Auto Discovery is failed, in this scenario EULA screen appears and once the user accepts the EULA, the **Setup Wizard** window appears.
- The **Setup Wizard** window will display after user login, only when the **Factory Reset** command is sent from WMS.

SCEP Enhancement (\$SN)

Administrator can create the SCEP certificate with " \$SN " and " \$sn ".

\$SN/\$sn: It creates the SCEP certificate with a device serial number(service tag).

These special characters can be used in 802 configurations and also as a SCEP certificate name.

Supported Nordic Languages

Dell Hybrid Client 2.0 now supports four Nordic languages (Danish, Finnish, Norwegian, and Swedish).

If user wants to select languages from DHC **Device Settings**, they must install the full language packages through **App Policy** from Wyse Management Suite. User can now select their preferred language from Wyse Management Suite or **Device Settings**.

Ubuntu 22.04 Support

Dell Hybrid Client 2.0 supports the software version Ubuntu 22.04 only for OptiPlex 3000 Thin Client. Only ISO upgrade is supported for DHC running on Ubuntu 20.04 OptiPlex 3000 Thin Clients.

All the existing features, including the newly added features for DHC-2.0 which support the 20.04 version, are migrated to the 22.04 version.

Imprivata and AVD Cloud are not supported for the Ubuntu 22.04 version.

UC Optimization

- 2.0 release supports the UC optimization for the applications WebEx (Teams and Meeting) and Jabber.
- UC optimization packages release as optional add-ons with the Dell Hybrid Client 2.0.
- It enables customers for a stable full-featured calling and meeting experience for the VDI users.
- It supports VMware and Citrix VDIs.

Limitations and Behaviors

- In the 22.04 version, the **Add to Desktop** option from the **Show All Apps** has been removed in the base operating system. It is the same for Dell Hybrid Client.
- In the 22.04 version, if the user pins apps or shortcuts to the **Favorite** bar, the apps or shortcuts get removed from the **Show All Apps**. If the user unpins the apps, they are restored to the **Show All Apps**.
- Performing reset or reset policy in WMS Bios Settings, does not reset the Bios Settings in Client.
- If the Bios password is set, then the Bios configuration that is pushed from WMS does not take effect without adding the current Bios password.
- Imprivata connection does not launch if the DNS and domain certificate are not added.
- In PIW (connection mode), the user cannot use applications that are required to close Imprivata. The user also cannot restart client to use other applications.
- Fingerprint authentication is not supported for Imprivata.
- Only Citrix and VMware are supported for Imprivata.
- After launching and closing Imprivata applications in the PIE mode, it is required to manually restart the program to get the authentication screen back.
- Imprivata Smart Card does not work if the user is logged out from connection mode.
- The Imprivata setting, Bootstrap server as IP, is not supported.
- In Imprivata, the user must remove configuration settings from WMS and restart it manually, in order to come to DHC from the PIE mode.
- Imprivata Disable Agent certificate check is not supported.
- User must **Repush Open Box Config** from WMS (Dell Hybrid Client 2.x) to **Bundle Upgrade** in the **Open Box** mode.
- The Language pack must be repushed if a client has upgraded to the 2.0 version to apply Nordic languages.
- Smart card device login does not support for Ubuntu 22.04.

- The **DHC2.0-OS-smartcardloginenabler** add-on must be installed on Ubuntu 20.04 to enable the smart card device login.
- Multi monitor and hot keys are not supported for AVD.
- Only alphanumeric characters and selected special characters, #, is allowed in the log password value. Other special characters like- ?, !, @, \$, %, ^, &, * - are not supported in the password value.
- ISO upgrade from WMS for Dell Hybrid Client 1.x to Dell Hybrid Client 2.x is not supported for 32 GB devices.
- ISO upgrade from WMS support the device conversion from DHC-20.04 to 22.04.
- In Latitude 3330, for a guest user, when the device prompts for password, the user must hit enter.
- Base operating system from 20.04 to 22.04 upgrade using **Apt Update** is not recommended in DHC.
- Ubuntu 22.04 screen recorder is not supported for multiple tabs or actions.
- BIOS update from WMS is not supported for Ubuntu 22.04.
- If the AVD session is kept idle for more than one hour, the user is required to remove connection and add it in AVD client.

Peripheral Matrix

Table 42. Peripheral Matrix OptiPlex 3000

Product Category (Module)	Product Description	OptiPlex 3000 Status
Audio	Jabra Evolve 65 MS Stereo - Headset - 6599-823-309	√
	Dell Mobile Adapter Speakerphone - MH3021P - Apollo - MH3021P	√
	Dell Premier Wireless ANC Headset - Blazer - WL7022	√
	Dell Pro Wireless Headset - Daybreak - WL5022	√
	Dell Slim Conferencing Soundbar - Lizzo - SB522A	√
	Dell Speakerphone - Mozart - SP3022	√
	Plantronics Savi W440M-400 Series convertible wireless headset - DECT 6.0 - 203947-01 - 203947-01	√
	Plantronics Voyager Focus UC B825-M headset for Microsoft Lync - 202652-02 - 202652-02	√
	Dell Pro Stereo Headset - Presto - WH1022	√
Video	Dell Pro Webcam - Falcon - WB5023	√
	Dell Ultrasharp Webcam - Acadia Webcam - WB7022	√
Cables/Dongles/Adapters	Dell USB-C Mobile Adapter - DA310 - Slayer 3 MLK - DA310	√
External Data Storage	Apricorn 1TB Aegis Padlock 256-bit AES Encrypted Hard Drive	√
	Western Digital My Passport Ultra 1TB, Black - WDBYNN0010BBK-WESN	√
Input Devices	Dell Multi-Device Wireless Keyboard and Mouse Combo - KM7120W - Felix	√
	Dell Multi-Device Wireless Mouse - MS5320W - Comet	√

Table 42. Peripheral Matrix OptiPlex 3000 (continued)

Product Category (Module)	Product Description	OptiPlex 3000 Status
	Dell Optical Mouse - MS116_BLACK - MS116 - Sapphire	√
	Dell Optical Mouse - MS116_GREY - MS116 - Sapphire	√
	Dell Optical Mouse - MS116_WHITE - MS116 - Sapphire	√
	Dell KB813 Smartcard Keyboard - KB813 - Cardinal	√
	Dell Mobile Pro Wireless Mice - MS5120W_Black - Splinter	√
	Dell Multimedia Keyboard - KB216_BLACK - KB216 - Rusty	√
	Dell Multimedia Keyboard - KB216_Grey - KB216 - Rusty	√
	Dell Multimedia Keyboard - KB216_WHITE - KB216 - KB216 - Rusty	√
	Dell Wired Mouse with Fingerprint Reader - MS819 - Ultramarine	√
	Newman 100 KM-101 Keyboard/Mouse Combo - Dell China SKU A8818726	Not Available
	Dell Mouse MS700	√
Input Devices (Keyboards)	Dell Wireless Keyboard and Mouse - Auburn MLK - KM3322W	√
Monitors	Dell Collaboration 34 USB-C Hub Monitor - C3422WE	√
	Dell Ultrasharp 34 Curved USB-C HUB Monitor - U3421WE	√
	Dell 20 Monitor E2020H	√
	Dell 19 Monitor E1920H	√
	Dell 24 Monitor E2420H	√
	Dell 24 Monitor E2420HS	√
	Dell 27 Monitor E2720H	√
	Dell 27 Monitor E2720HS	√
	Dell 23 Monitor - P2319H	√
	Dell Ultrasharp 32 4K USB-C Monitor - U3219Q	√
	Dell 24 Touch Monitor - P2418HT	√
	Dell 22 Monitor - E2223HN	√
	Dell 27 4K USB-C Monitor - P2721Q	√
	Dell 32 USB-C Monitor - P3221D	√
	Dell 34 Curved USB-C Monitor - P3421W	√

Table 42. Peripheral Matrix OptiPlex 3000 (continued)

Product Category (Module)	Product Description	OptiPlex 3000 Status
	Dell Collaboration 32 Monitor - U3223QZ	√
	Dell Ultrasharp 24 Hub Monitor U2421E	√
	Dell ultrasharp 27 4K USB-C HUB Monitor - U2723QE	√
	Dell ultra-Sharp 30 USB-C HUB Monitor - U3023E	√
	Dell ultrasharp 38 Curved USB-C HUB Monitor - U3821DW	√
	Dell 17 Monitor - E1715S	√
	Dell 19 Monitor - P1917S	√
	Dell 24 USB-C Monitor - P2421DC	√
	Dell ultra-Sharp 27 4K USB-C Monitor - U2720Q	√
	Dell 21 Monitor - E2221HN	√
	Dell 24 Monitor - E2421HN	√

Table 43. Peripheral Matrix OptiPlex 5400 AIO

Product Category (Module)	Product Description	OptiPlex 5400(AIO) Status
Audio Devices	Dell Pro Stereo Headset - UC150 - Skype for Business	√
	Dell Pro Stereo Headset - Skype for Business - UC350	√
	Dell Professional Sound Bar (AE515M)	N/A
	Dell USB Sound Bar (AC511M)	N/A
	Jabra PRO 935 USB MS Lync Headset - 935-15-503-185	√
	Dell 2.0 Speaker System - AE215	√
	Dell Wired 2.1 Speaker System - AE415	√
	Jabra Evolve 65 MS Stereo - Headset	√
	Jabra Engage 65 Stereo Headset	√
	Plantronics Savi W440M-400 Series convertible wireless headset - DECT 6.0	√
	Plantronics Voyager Focus UC B825-M headset for Microsoft Lync	√
Input Devices	Dell Laser Scroll USB 6-Buttons Silver and Black Mouse - Naruto	√
	Dell Laser Wired Mouse - MS3220 - Morty	√
	Dell Mobile Pro Wireless Mice - MS5120W - Splinter	N/A
	Dell Mobile Wireless Mouse - MS3320W - Dawson	N/A

Table 43. Peripheral Matrix OptiPlex 5400 AIO (continued)

Product Category (Module)	Product Description	OptiPlex 5400(AIO) Status
	Dell Multi-Device Wireless Keyboard and Mouse Combo - KM7120W	N/A
	Dell Multi-Device Wireless Mouse - MS5320W - Comet	N/A
	Dell USB Wired Keyboard - KB216	√
	Dell USB Wired Optical Mouse - MS116	√
	Dell Premier Wireless Mouse - WM527	√
	Dell Wireless Keyboard and Mouse - KM636	√
	Dell Wireless Mouse - WM326	√
	Seal Shield Silver Seal Waterproof-Keyboard-USB-US-waterproof-white	N/A
	SEAL SHIELD MEDICAL GRADE OPTICAL (Mouse)	N/A
	Man & Machine Its Cool Flat - Keyboard - USB - UK layout - white	N/A
	Man & Machine C Mouse - Mouse - right and left-handed - optical - 2 buttons - wired - USB - white	N/A
	Dell Wireless Mouse - WM126_BLACK - Rosewood	N/A
Adapters / Cables	Dell Adapter - DisplayPort to DVI (Single Link) - DANARBC084 - DANARBC084	N/A
	Dell Adapter - DisplayPort to HDMI 2.0 (4K) - DANAUBC087 - DANAUBC087	√
	Dell Adapter - DisplayPort to VGA - DANBNBC084 - DANBNBC084	N/A
	C2G - USB 2.0 A (Male) to DB9 (Serial) (Male) Adapter	√
	Dell Adapter - USB-C to DisplayPort - DBQANBC067 - DBQANBC067	N/A
	Dell Adapter - USB-C to Dual USB-A with Power Pass-Through - DBQ2BJBC070 - Combo Adapter	N/A
	Dell Adapter - USB-C to HDMI/DP - DBQAUANBC070	N/A
	Dell Adapter - USB-C to HDMI - DBQAUBC064 - DBQAUBC064	N/A
	Dell Adapter - USB-C to VGA - DBQBNBC064 - DBQBNBC064	N/A
	Trendnet USB to Serial Converter RS-232	N/A
	Dell Adapter - HDMI to DVI - DAUARBN004 - DAUARBN004	N/A
	Dell Adapter - HDMI to VGA - DAUBNBC084 - DAUBNBC084	N/A

Table 43. Peripheral Matrix OptiPlex 5400 AIO (continued)

Product Category (Module)	Product Description	OptiPlex 5400(AIO) Status
	Dell USB-C Mobile Adapter - DA300 - Slayer 3 - DA300	N/A
	Dell USB to Ethernet adapter	N/A
	Trendnet® USB to Serial Converter RS-232 - 2.25 ft	N/A
	StarTech.com 1 Port USB to RS232 DB9 Serial Adapter Cable - Serial adapter - USB 2.0 - RS-232	√
Display/Monitors	Dell 19 Monitor E1916H	√
	Dell 19 Monitor E1916H	√
	Dell 20 Monitor E2016H	√
	Dell 20 Monitor E2016Hv (China only)	N/A
	Dell 20 Monitor E2020H	√
	Dell 22 Monitor E2216H	√
	Dell 22 Monitor E2216Hv (China only)	N/A
	Dell 22 Monitor E2218HN	√
	Dell 22 Monitor E2220H	√
	Dell 23 Monitor E2318H	√
	Dell 23 Monitor E2318HN	N/A
	Dell 24 Monitor E2417H	√
	Dell 24 Monitor E2420H	√
	Dell 24 Monitor E2420HS	√
	Dell 27 Monitor E2720H	√
	Dell 27 Monitor E2720HS	√
	Dell 20 Monitor P2016	N/A
	Dell 19 Monitor P1917S	N/A
	Dell 20 Monitor P2017H	N/A
	Dell 20 Monitor P2018H	N/A
	Dell 22 Monitor P2217	N/A
	Dell 22 Monitor P2217H	N/A
	Dell 22 Monitor P2219H	N/A
	Dell 22 Monitor P2219HC	N/A
	Dell 22 Monitor P2317H	N/A
	Dell 23 Monitor P2319H	N/A
	Dell 24 Monitor P2415Q	√
	Dell 24 Monitor P2417H	N/A
	Dell 24 Monitor P2418D	N/A
	Dell 24 Monitor P2418HT	√
	Dell 24 Monitor P2418HZ	N/A

Table 43. Peripheral Matrix OptiPlex 5400 AIO (continued)

Product Category (Module)	Product Description	OptiPlex 5400(AIO) Status
	Dell 24 Monitor P2419H	√
	Dell 24 Monitor P2419HC	N/A
	Dell 24 Monitor P2421D	N/A
	Dell 24 Monitor P2421DC	N/A
	Dell 27 Monitor P2719H	√
	Dell 27 Monitor P2719HC	N/A
	Dell 27 Monitor P2720D	N/A
	Dell 27 Monitor P2720DC	N/A
	Dell 34 Monitor P3418HW	√
	Dell 43 Monitor P4317Q	√
	Dell 24 Monitor MR2416	N/A
	Dell Ultra-Sharp 24 Monitor U2415	√
	Dell Ultra-Sharp 24 Monitor U2419H	√
	Dell Ultra-Sharp 24 Monitor U2419HC	N/A
	Dell Ultra-Sharp 25 Monitor U2518D	√
	Dell Ultra-Sharp 25 Monitor U2520D	√
	Dell Ultra-Sharp 27 Monitor U2718Q (4K)	√
	Dell Ultra-Sharp 27 Monitor U2719D	√
	Dell Ultra-Sharp 27 Monitor U2719DC	N/A
	Dell Ultra-Sharp 27 Monitor U2720Q	√
	Dell Ultra-Sharp 27 Monitor U2721DE	√
	Dell Ultra-Sharp 24 Monitor U2421HE	x
	Dell Ultra-Sharp 43 Monitor U4320Q	√
Networking	Add On 1000 Base-T SFP transceiver (RJ-45)	N/A
Dongle	USB-C Mobile Adapter with DP/HDMI/VGA/Gigabit Ethernet/USB-C/USB-A	N/A
Docking Station	Dell Dock - WD19-C (code name Salomon)	N/A
	Dell Business Dock - WD15 - Imperial Express	N/A
	Dell Thunderbolt Dock - WD19TB	N/A
Storage	Dell Portable SSD, USB-C 250GB (Edison)	N/A
	Dell External Tray Load ODD (Agate) (DVD Writer)	N/A
Smart Card and Readers	Dell Smartcard Keyboard - KB813	√
	Dell keyboard KB813t	√
	Sun microsystem SCR 3311	N/A
	Cherry Smart Terminal SMART Card Reader - ST-1044U	N/A

Table 43. Peripheral Matrix OptiPlex 5400 AIO (continued)

Product Category (Module)	Product Description	OptiPlex 5400(AIO) Status
	Cherry Smart Terminal ST-1144 SMART Card Reader - USB 2.0	√
	CHERRY KC 1000 SC - Keyboard - with Smart Card reader - USB - English - US - black - TAA Compliant - JK-A0104EU-	N/A
	CARD_ID Prime MD 3840 B w/o OTP	x
	Card_IDPrimeMD840B_white_PVC	√
	YubiKey Neo 5.0	√
Printers	Dell Color Multifunction Printer - E525w	N/A
	Dell Color Printer- C2660dn	N/A
	Dell Multifunction Printer - E515dn	N/A

Printer Matrix

Table 44. Printer Matrix

Printing Type	Printer Type	USB	LPD	SMB	URI
Local	Firefox	√	√	√	√
	Chrome	√	√	√	√
	Libre Office	√	√	√	√
	File Explorer	√	√	√	√
WMS	Printer push from WMS	N/A	√	√	√
VDI Sessions	RDP	x	x	x	x
	VMWare RDP	x	x	x	x
	VMWare PCOIP	√	x	x	x
	VMWare Blast	√	x	x	x
	CITRIX	x	x	x	x
	CITRIX Apps	x	x	x	x
	Teradici	x	x	x	x
	AVD	x	x	x	x
	Imprivata CITRIX	x	x	x	x
	Imprivata VMWare RDP	x	x	x	x
	Imprivata VMWare PCOIP	√	x	x	x
	Imprivata VMWare Blast	√	x	x	x

Display Matrix

Table 45. Display Matrix

Hardware	Monitors	VDI Sessions				
		RDP	VMWare RDP	VMWare PCoIP	VMWare Blast	Citrix
OptiPlex 3000 Thin Client	2-4K Monitors: DP1:P2721Q(DP-cable) DP2:P2721Q(DP-cable)	X	X	✓	✓	✓
OptiPlex 3000 Thin Client	3-4K Monitors: DP1:P2721Q(DP-cable) DP2:U2723QE(DP-cable) DP4:P2721Q(C-Type)	X	X	✓	✓	✓
5070 Extd.	6-2K Monitors: DP1:P2217(DP-cable) DP2:P2217(DP-cable) DP3:P2722H(DP-cable) AMD DP4:P2417H(DP to mDP cable) AMD DP5:P2417H (DP to mDP cable) DP6:P2722H(DP-cable)	X	X	X	✓	✓
5070 Extd.	2-4K Monitors: DP1:P2721Q(DP-cable) DP2:P2721Q(DP-cable) 2-2K Monitors: DP3:P2217(DP-cable) DP6:P2217(DP-cable)	X	X	✓	✓	✓
5070 Extd.	2-4K Monitors: DP1:P2721Q(DP-cable) DP2:P2721Q(DP-cable) 3-2K Monitors: DP3:P2217(DP-cable) DP6:P2217(DP-cable) AMD DP5:P2417H (DP to mDP cable)	X	X	X	✓	✓
5070 Extd.	1-4K Monitors: DP1:P2723QE(DP-cable)	X	X	X	✓	✓

Table 45. Display Matrix (continued)

Hardware	Monitors	VDI Sessions				
		RDP	VMWare RDP	VMWare PCoIP	VMWare Blast	Citrix
	5-2K Monitors: DP2:P2217(DP-cable) DP3:P2217(DP-cable) DP6:P2722H(DP-cable) AMD DP4:P2417H (DP to mDP cable) AMD DP5:P2417H (DP to mDP cable)					
L3330	4K Monitor: DP: U2718Q 4K & 4K Monitors: HDMI : U3821DW DP :U2718Q HD & 4K Monitors: HDMI :U3821DW DP :U2318H HD Monitor: DP to VGA: U2318H HD & HD Monitors: HDMI :E2218HN DP :E2318H	X	X	X	✓	✓

Tested Broker Connections

VDI and Server Environment Details

The tables below consists of various server and desktop information for different protocols testing.

VMWare

Table 46. VMWare

VDI Version	Desktop	RDS Server	
	WIN10 ENT	WIN 2016/2019/WIN2022	Apps WIN 2016/2019/WIN2022
VMware Horizon 8 2209	✓	✓	✓

Citrix Virtual Applications and Desktops

Table 47. Citrix Virtual Applications and Desktops

VDI Version	Desktop	Server	Apps
	WIN10/11 ENT	WIN 2016/2K19/WIN2k22	WIN 2016/2K19/WIN2k22
Citrix Virtual Desktops 7 22.12	✓	✓	✓

Microsoft RDP

Table 48. Microsoft RDP

VDI Version	Desktop	Server Operating System		
	WIN 10/11 ENT	WIN 2016	WIN 2K19	WIN 2K22
Microsoft RDP	✓	✓	✓	✓

Fixed Issues

Table 49. Fixed Issues

Issue ID	Title
DHC-59	CIPS-29503 - DHC 1.8 Chrome settings is not available(additional arguments).
DHC-57	CIPS-29360 - Extract logs do not work with characters in the password set via WMS.
DHC-55	DHC cannot read Horizon desktop pools with spaces in the name while using Imprivata PIE DHC 1.8 Opti 3K TC

Known Issues

Table 50. Known Issues

Issue ID	Title
HC-13158	If there are multi monitors, Display Crop and Mirror Mode is observed when a single display mode is pushed through WMS, enabling the monitor settings in Gnome through WMS.
HC-13119	Keyboard layout for all languages does not reflect in RDP Broker connections.
HC-13114	Reset to Default in Display Personalization tab is highlighted without making any changes.
HC-12974	RDP connection icons are not the same in the Favorites bar and displays the Applications window after a configuration push from WMS for RDP and VMware connections, combined.
HC-12945	Intermittently Bad Drawable Error appears while launching the Citrix applications.
HC-12873	Remove All option is not available on the notification panel if the user switches to any other tab through the same panel.

Table 50. Known Issues (continued)

Issue ID	Title
HC-12870	Delete Shortcut appears if the user presses the Delete key without selecting any desktop shortcuts present in the desktop.
HC-12864	Desktop icons do not rearrange properly after configuring from On Desktop (All) to On Desktop (Applications only/Desktops only) for Citrix and VMware connections.
HC-12830	EULA display is disabled on the other monitor when the user removes the primary monitor cable in a multiple monitor scenario.
HC-12771	If the user adds Network Drive or SCEP certificate in Device settings, the Discard Changes button is not enabled until the user enters all the values in the page.
HC-12671	In version 22.04, the warning pop-up UI is inaccurate.
HC-12659	Logs are not separated properly for Basic and Medium .
HC-12282	Wallpaper color is different if the wallpaper mode is set as NONE from Device Settings and WMS.
HC-12211	If the user connects to the Guest wireless network, the Guest Sign In page URL redirection does not occur.
HC-11648	An extra icon on desktop screen appears when a Citrix Application and Desktop is launched.
HC-6210	If the system language is changed from WMS, the Base Operating System pop up do not appear to change the folder names for the guest user.

Table 51. Third-party Issues

Jira ID	Title	Workaround	Subsystem
HC-12839	The Move operation of System Information cannot be terminated once the Move function is enabled.	Not applicable	Ubuntu
HC-12760	Chinese and Korean language keyboard layouts are disabled on the Login screen.	Not applicable	Ubuntu
HC-12414	For Imprivata, the Citrix server connection is disabled when the user configures Citrix Storefront URL in the Imprivata server. PNAgent or Storefront web URL is functional.	Not applicable	Imprivata
HC-12072	For Imprivata, other applications are disabled after the user launches Imprivata in connection mode.	Restart or log off. Log in again to enable the other Applications.	Imprivata
HC-11846	For Imprivata, connections are disabled to fit to screen after the user selects resolutions as Default Imprivata . The Exit buttons of Imprivata connection do not appear.	Change any other resolution than Default .	Imprivata
HC-11843	For Imprivata, the fingerprint icon appears on the Imprivata Authentication screen after the user disconnects the fingerprint biometric device from client. It is	Close and relaunch Imprivata.	Imprivata

Table 51. Third-party Issues (continued)

Jira ID	Title	Workaround	Subsystem
	removed only after relaunching the Imprivata connection.		
HC-10851	For smart card keyboard, the functionality of smart card keyboard is broken.	Use USB smart card.	Ubuntu
HC-9961	The login option is disabled for the domain users after configuring 802.1x (PEAP) machine mode.	This issue is only with machine mode and there are alternative mechanisms like the PEAP user mode. For secured reasons, user mode is recommended.	Ubuntu
HC-9941	For VMware, the resolutions (1024*768) and (1280*720) are disabled in portrait mode for VMware VDI.	Use other resolutions.	Ubuntu
HC-9753	For 802.1x, sometime a manual network restart is required to change the IP address after connecting to the 802.1x network.	Log off from client and login again.	Ubuntu
HC-9723	For ATS issue, system languages are not applicable in the Zoom application.	Users can select the language from Zoom Setting menu.	Zoom
HC-9679	For observation, the Full Language Package is not working for Teradici.	Not applicable	Teradici
HC-9607	For keyboard, the keyboard functionality [Scroll Lock, FN + Pause Break, Calc key] are disabled.	Not applicable	Citrix
HC-9386	For Bios, the UEFI Network Stack options are not same in the WMS Bios page and Client Bios page. The default values of both sides are different.	Not applicable	BIOS or DCM issue
HC-9147	For DHC Troy's video, the webcam name is displayed twice under the video device settings for the C3422WE monitor.	Not applicable	Ubuntu issue or monitor
HC-9145	For DHC Troy's audio, the jump in values is observed with the in-built speaker's uplink cable, which is connected with the C3422WE monitor.	Not applicable	Ubuntu issue or monitor
HC-9143	For DHC Troy's audio, volume control changes are disabled in VDI for C3422WE.	Use UI volume control from the operating system, like 8043.	Ubuntu
HC-8853	For display settings in span mode, the Display Settings window appears in the secondary screen in span mode.	Not applicable	Electron issue
HC-8250	The session disconnects if the user launches the Teradici connection after enabling Turn Off Hot Keys from WMS and press the keys alt+f4 .	Not applicable	Teradici

Table 51. Third-party Issues (continued)

Jira ID	Title	Workaround	Subsystem
HC-8043	Volume control, mute, call connect and disconnect control buttons are disabled in Citrix VDI.	Use UI volume control from the operating system.	Citrix
HC-8032	VMware session USB redirection is disabled for domain users.	USB can be mapped as a workaround.	VMware
HC-6290	Account Selection and Smartcard Certificate Selection window fonts appears bluer in the Citrix workspace app.	Not applicable	Citrix
HC-6253	Citrix FTA does not function when the file name is in multibyte characters (Japanese, Korean, and Chinese) with the system language set to English.	Not applicable	Citrix
HC-6222	For C2422HE, C2722DE_POPup Camera in a Zoom video call, the video does not work when the pop-up camera is disconnected and reconnected.	Disconnect and reconnect to the meeting session.	Ubuntu
HC-6133	For keyboard MK550, the multimedia and function keys are disabled.	Not applicable	Ubuntu
HC-5231	For WMS_CITRIX and VMware printers, the printer redirection is disabled for Citrix and VMware applications.	User can configure the network printer as a workaround.	Citrix and VMware


Installation Prerequisites

For installation prerequisites and installation procedure, see Imaging Instructions section in the Administrator Guide at <https://www.dell.com/support/home>.

Resources and support

1. Go to www.dell.com/support.
2. In the **Enter a Service Tag, Serial Number, Service Request, Model, or Keyword** search box, type the product name or the product model. For example, **Dell Hybrid Client**.
A list of matching products is displayed.
3. Click your product from the list.
4. Click **DOCUMENTATION**.

Contacting Dell

 **NOTE:** If you do not have an active internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell sales, technical support, or customer service issues:

1. Go to www.dell.com/support.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.