

# Dell Wyse ThinOS 9.1.4234, 9.1.5067 and 9.1.6108

## Migration Guide



## 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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# Introduction

This guide contains instructions to migrate from ThinOS 8.6 and 9.1 to ThinOS 9.1.4234 or later versions using Wyse Management Suite 3.3.1 or later versions.

The overall migration process includes the following tasks:

1. Review the before upgrade instructions—see [Prerequisites before you migrate from ThinOS 8.6 or upgrade to ThinOS 9.x](#).
2. Register the thin client to the Wyse Management Suite server using any of the following methods:
  - Automate the Wyse Management Suite server and Group Registration Token discovery using the DHCP or DNS records—see [Register ThinOS devices by using DHCP option tags](#) and [Configuring devices by using DNS SRV record](#).
  - Manually configure the Wyse Management Suite server and Group Registration Token information using the ThinOS 8.6 user interface—see [Register ThinOS devices using Wyse Device Agent](#).
3. Optionally, add a ThinOS 8.6-based device to a policy group in Wyse Management Suite to retain the INI file configurations—see [Relationship between INI and Wyse Management Suite group based configurations](#).
4. Download the ThinOS 9.1.4234 or later versions firmware from the [www.dell.com/support](http://www.dell.com/support) site—see [Download the ThinOS firmware, BIOS, and application packages](#).
5. Before upgrading to ThinOS 9.1.4234 or later versions, upgrade ThinOS 8.6 and ThinOS 9.0 BIOS to the latest version according to platforms. See the table below to find the ThinOS 8.6 and ThinOS 9.0 BIOS versions:

**Table 1. BIOS details**

Platform name	ThinOS 8.6 latest BIOS version	ThinOS 9.0 latest BIOS version	ThinOS 9.1 latest BIOS version
Wyse 3040 Thin Client	1.2.5	1.2.5	1.2.5
Wyse 5070 Economy Thin Client	1.10.2	1.7.1	1.15.1
Wyse 5070 Standard Thin Client	1.10.2	1.7.1	1.15.1
Wyse 5070 Extended Thin Client	1.10.2	1.7.1	1.15.1
Wyse 5470 All-in-One Thin Client	1.7.1	1.5.2	1.13.0
Wyse 5470 Mobile Thin Client	1.7.2	1.4.0	1.12.0

**Table 2. BIOS details**

Platform name	ThinOS 8.6 latest BIOS version	ThinOS 9.0 latest BIOS version	ThinOS 9.1 latest BIOS version
OptiPlex 3000 Thin Client	NA	NA	1.0.2

6. Upgrade the ThinOS 8.6 firmware to ThinOS 9.1.4234 or later versions—see [Upgrade ThinOS 8.6 to ThinOS 9.1.4234 or later versions](#).
7. Configure the ThinOS 9.1-based device using Wyse Management Suite version 3.3.1 or later versions—see [Configuring a ThinOS 9.1 client using Wyse Management Suite](#).

**NOTE:** Once the system is upgraded to ThinOS 9.1.4234 or later versions, if the BIOS password is set as default or if the password field is empty, the **Secure Boot** is enabled automatically. This setting takes effect after the next reboot. If the BIOS password is not set as default, you must enable **Secure Boot** through Wyse Management Suite or admin policy tool.

## Supported platforms

- Wyse 3040 Thin Client
- Wyse 5070 Thin Client
- Wyse 5470 Thin Client
- Wyse 5470 All-in-One Thin Client
- OptiPlex 3000 Thin Client

 **NOTE:** OptiPlex 3000 Thin Client does not support ThinOS versions 9.1.4234 and 9.1.5067.

## Supported Wyse Management Suite versions

The following are the supported Wyse Management Suite versions:

- Wyse Management Suite 3.3.1 Standard and Pro
- Wyse Management Suite 3.5 Standard and Pro
- Wyse Management Suite 3.6 Standard and Pro

Wyse Management Suite default communications are handled over port 443 and MQTT communications over port 1883. WMS and MQTT server values must be defined in the ThinOS user interface or provided by DHCP or DNS services.

 **NOTE:** For information about the Wyse Management Suite Standard download and Pro trial, go to [www.dell.com/wyse/wms/trial](http://www.dell.com/wyse/wms/trial). For information about Wyse Management Suite manuals, go to the *Wyse Management Suite* product page at [www.dell.com/support](http://www.dell.com/support).

## Prerequisites before you migrate from ThinOS 8.6 or upgrade to ThinOS 9.x

- If you are using ThinOS 8.6, you must upgrade to ThinOS 8.6\_807 and apply the latest BIOS updates before upgrading to ThinOS 9.1.4234 or later versions.
- If you are using earlier versions of ThinOS 9.x, you must upgrade to ThinOS 9.1.3129 before upgrading to ThinOS 9.1.4234 or later versions.
- You must back up your device settings before you start the upgrade process to ThinOS 9.x. Once upgraded to ThinOS 9.1.4234 or later versions, you can downgrade to ThinOS 8.6 only by using the Merlin image.
- Before migrating from ThinOS 8.x to ThinOS 9.x or upgrading from ThinOS 9.x to later versions, ensure that your system is powered on and the sleep mode is disabled on the system. If the system has entered the sleep mode, you must send the Wake-On-LAN command through Wyse Management Suite before using any real-time commands. To use the Wake-On-LAN command, ensure that the Wake-On-LAN option is enabled in BIOS.
- Ensure that you upgrade the BIOS version on Wyse 5070 Thin Clients to 1.3.1 or later, before upgrading to ThinOS 9.1.4234 or later versions. If you upgrade to ThinOS 9.1.4234 or later versions with an earlier BIOS version and then upgrade the BIOS version to 1.3.1 or later, the thin client may fail to boot.

## Important notes

- All device settings are erased after you upgrade from ThinOS 8.6 to 9.1.4234 or later versions except the following settings:
  - Wyse Management Suite group token and server settings
  - Static DNS
  - Certificates
  - IEEE802.1x wired authentication settings
  - Wireless connections
    - The WEP/Sharekey security type is changed to Open as they are not supported in ThinOS 9.1.4234 or later versions.
  - Proxy settings
- If you are an English-language user, do not modify any language settings in Wyse Management Suite. The default language is English after you upgrade from ThinOS 8.6.

- If you are a multilanguage user, ThinOS supports nine languages—English, German, French, Italian, Spanish, Japanese, Chinese Traditional, Chinese Simplified, and Korean. Users of all regions must use the English language firmware image. There is no separate firmware image for Japanese language. The firmware image includes the font and language packages for all the nine languages. You do not need a separate font and language package. You must set the region language in Wyse Management Suite before upgrade from ThinOS 8.6. After the device upgrade process is complete and checked in to the Wyse Management Suite server, the user interface language is changed to the language that you have configured in Wyse Management Suite. You can change the language from either Wyse Management Suite or ThinOS interface.
- You cannot boot into ThinOS 9.1.4234 or later versions when you perform the following operations:
  - Disable the onboard Network Interface Card (NIC), Trusted Platform Module (TPM), or Platform Trust Technology (PTT).
  - Clear TPM or PTT.
  - Reset BIOS to factory default settings.
- If the thin client is registered in Wyse Management Suite group 1 and you set Wyse Management Suite group 2 token in group 1 policy, the group 2 token is applied on UI but the thin client remains in group 1. You must reboot the thin client to change the thin client to Wyse Management Suite group 2.

**i** **NOTE:** Dell Technologies recommends that you set a new ThinOS application package or ThinOS firmware package in group 1, so that thin client installs the package and automatically reboot and changes to group 2.

**i** **NOTE:** If you are using ThinOS 9.1.1131 or any previous version, you must set Wyse Management Suite group token and server in group 2 policy, or the connection from the client to Wyse Management Suite is lost.

- ThinOS 9.1.4234 or later versions does not apply operating system firmware application package and BIOS firmware in the child select group.
- When you set a new firmware or an application package in Wyse Management Suite group 2 and then change the device from group 1 to group 2 before upgrading, the following two notifications are displayed:
  - **WMS server or group is changed. System is going to reboot to load full configuration. Press cancel in 60 seconds to prevent reboot.**
  - **A new firmware or application is available, do you want to upgrade now or defer to the next reboot? The changes will automatically be applied in 120 seconds.**

For ThinOS 9.1.5067 and earlier versions, if you do not select an option, the thin client reboots after 60 s. After reboot the new application or firmware is installed and the thin client reboots again.

For ThinOS 9.1.6108 and later versions, it prompts the new firmware or application available notification first. If you do not select an option, then the thin client installs the new application or firmware and reboots your thin client. If you select **Next Reboot**, the thin client prompts the WMS server or group change notification.

- If the **Live Update** option is disabled, the thin client cannot download and install a firmware or package until the next reboot. However, the firmware or packages are downloaded in the following scenarios even when the **Live Update** option is disabled:
  - When you register the thin client to Wyse Management Suite manually.
  - When you power on the thin client from a power off state.
  - When you change the Wyse Management Suite group.
- When a new firmware or an application notification is displayed on your thin client, clicking **Next Reboot** will:
  - Display a notification if you have changed the Wyse Management Suite group and if the files are downloaded from the new group.
  - Not display any notification from ThinOS 9.1.6108, if the new firmware or application is downloaded in the same group.
  - Install the firmware or package after a reboot.
- The upgrade may fail if the event log fails to install. In such an event, you may reboot the device and upgrade again.

# Wyse Management Suite Environment Automation using DHCP and DNS

ThinOS automated deployment features can be used to create environments where units can be attached to your network. It also helps in receiving the required configurations and software updates that are defined by your management software or file servers. Wyse Management Suite automated deployment of ThinOS thin client devices is achieved by configuring the following environmental information:

**NOTE:** DHCP and DNS SRV configurations for Wyse Management Suite can only work after you reset your device to factory default settings.

**Table 3. DHCP and DNS configuration for Wyse Management Suite**

Environment	Definition	DHCP User-Defined Option	DNS Resource Record
Wyse Management Suite Server	Specifies the Wyse Management Suite server.	Option 165 (String)	_ WMS_MGMT (SRV)
Wyse Management Suite Server	Specifies the secure Wyse Management Suite server.	Option 201 (String) <b>NOTE:</b> Supported from ThinOS 9.1.6108, do not set this value if your current version is earlier than 9.1.6108.	_WMS_MGMTV2 <b>NOTE:</b> Supported from ThinOS 9.1.5067, do not set this value if your current version is earlier than 9.1.5067.
Wyse Management Suite MQTT Server (optional)	Specifies the MQTT server.	Option 166 (String)	_ WMS_MQTT (SRV)
Wyse Management Suite CA Validation	Specifies whether the CA validation is required when you import certificates into your Wyse Management Suite server.	Option 167 (String)	_ WMS_CAVALIDATION (Text)
Wyse Management Suite Group Token	Specifies a unique key that is used by Wyse Management Suite to associate the ThinOS client to the desired Device Group Policy. From Wyse Management Suite 3.5, the group tokens are case sensitive. The DHCP and DNS values also have to be configured with case sensitive values.	Option 199 (String)	_ WMS_GROUPTOKEN (Text)
Wyse Management Suite Group Token	Specifies a secure unique key that is used by Wyse Management Suite to associate the ThinOS client to the desired Device Group Policy.	Option 202 (String) <b>NOTE:</b> Supported from ThinOS 9.1.6108, do not set this value if your current version is earlier than 9.1.6108.	_WMS_GROUPTOKENV2 <b>NOTE:</b> Supported from ThinOS 9.1.5067, do not set this value if your current version is earlier than 9.1.5067.

Dell Technologies recommends that you do not define more than one type of management or configuration delivery method. Ensure that all Wyse Device Manager (WDM) and file server configurations that are provided by DHCP or DNS are disabled when defining ThinOS Wyse Management Suite automation values.

**NOTE:** If the Group Token parameter is not specified, the device is moved to the unmanaged group or quarantine group. This is applicable for on-premises Wyse Management Suite.

**NOTE:** If you set both WMS server and secure WMS server, secure WMS server takes priority. If you set both unique group token key and secure unique group token key, secure unique group token key takes priority.

## Register ThinOS devices by using DHCP option tags

### About this task

You can register the devices by using the following DHCP option tags:

**Table 4. Registering device by using DHCP option tags**

Option Tag	Description
Name—WMS Data Type—String Code—165 Description—WMS Server FQDN	This tag points to the Wyse Management Suite server URL. For example, <code>wmserver.acme.com</code> , where <code>wmserver.acme.com</code> is fully qualified domain name of the server where Wyse Management Suite is installed. <b>NOTE:</b> HTTPS:// is not required in the Wyse Management Suite URL.
Name—WMS Data Type—String Code—201 Description— Secure WMS Server	This tag points to the secure Wyse Management Suite server.
Name—MQTT Data Type—String Code—166 Description—MQTT Server	This tag directs the device to the Wyse Management Suite Push Notification server (PNS). For a private cloud installation, the device gets directed to the MQTT service on the Wyse Management Suite server. For example, <code>wmservername.domain.com:1883</code> . WDA automatically fetches the MQTT details when devices check in for the first time. <b>NOTE:</b> MQTT is optional for Wyse Management Suite 2.0 and later versions.
Name—CA Validation Data Type—String Code—167 Description—Certificate Authority Validation	You can enable or disable CA validation option if you are registering your devices with Wyse Management Suite on private cloud. Enter <b>True</b> , if you have imported the SSL certificates from a well-known authority for https communication between the client and the Wyse Management Suite server. Enter <b>False</b> , if you have not imported the SSL certificates from a well-known authority for https communication between the client and the Wyse Management Suite server. <b>NOTE:</b> CA Validation is optional for the latest version of Wyse Management Suite 2.0 and later versions. However, it is recommended to configure this option tag.
Name—Group Registration Key Data Type—String Code—199 Description—Group Registration Key	The tag directs the device to fetch the Group Registration Key for Wyse Management Suite. For example, in <code>SCDA-DTos91SalesGroup</code> , for the second part of the Group Registration Key, you must use 8-31 characters, with at least 1 upper, 1 lower, 1 number, 1 special character. However, special characters such as <code>\</code> (backslash), <code>"</code> (double quotes), <code>'</code> (single quote) are not allowed. The Group Registration Key is case sensitive. <b>NOTE:</b> Group Token is optional for Wyse Management Suite 2.0 and later versions on private cloud. However, there is a known issue that if you do not provide the group token, the device is not moved to unmanaged group. Therefore, It is recommended to configure the Group Token key.
Name— Group Token Data Type—String	The tag directs the device to fetch the secure Group Registration Key for Wyse Management Suite.

**Table 4. Registering device by using DHCP option tags (continued)**

Option Tag	Description
Code—202 Description— Secure Group Token	

## Configuring devices by using DNS SRV record

This section describes WMS Server, MQTT, Group Token, and CA Validation User-Defined Options defined using a DNS service.

**Table 5. Configuring devices by using DNS SRV record**

Option tag	Description
WMS server (_WMS_MGMT, Type SRV)	This record points to the Wyse Management Suite server URL. For example, wmsserver.acme.com, where wmsserver.acme.com is the qualified domain name of the server. <b>i</b> <b>NOTE:</b> There is a known issue that https:// is required in the Wyse Management Suite server URL. If you do not use https://, the device cannot automatically check in to Wyse Management Suite.
WMS server (_WMS_MGMTV2, Type Text)	This record points to secure Wyse Management Suite server.
(Optional) WMS MQTT Server	This record directs the device to the Wyse Management Suite Push Notification server (PNS). For a private cloud installation, the device gets directed to the MQTT service on the Wyse Management Suite server. For example, wmsservername.domain.com:1883. <b>i</b> <b>NOTE:</b> MQTT is optional for Wyse Management Suite 2.0 and later versions.
WMS Group Token (_WMS_GROUPTOKEN, Type Text)	This record is required to register the ThinOS device with Wyse Management Suite on public or private cloud. <b>i</b> <b>NOTE:</b> Group Token is case sensitive. However, it is optional for Wyse Management Suite 2.0 and later versions on private cloud.
WMS Group Token (_WMS_GROUPTOKENV2, Type Text)	This record points to secure Group Registration Key for Wyse Management Suite.
WMS CA Validation (_WMS_CAVALIDATION, Type Text)	You can enable or disable CA validation option if you are registering your devices with Wyse Management Suite on private cloud. By default, the CA validation is enabled in the public cloud. You can also disable the CA validation in the public cloud. Enter <b>True</b> , if you have imported the SSL certificates from a well-known authority for https communication between the client and the Wyse Management Suite server. Enter <b>False</b> , if you have not imported the SSL certificates from a well-known authority for https communication between the client and the Wyse Management Suite server. <b>i</b> <b>NOTE:</b> CA Validation is optional for Wyse Management Suite 2.0 and later versions.

# Register ThinOS devices using Wyse Device Agent

If you do not use DHCP or DNS as described in the previous section, you can configure the WDA agent from within the ThinOS GUI. This has to be configured on every thin client.

## Steps

1. From the desktop menu of the thin client, go to **System Setup > Central Configuration**. The **Central Configuration** window is displayed.
  - NOTE:** Privilege must be set to **High** or Admin Mode must be activated to gain access to the ThinOS Central Configuration menu.
2. Based on your current ThinOS version, do either of the following:
  - a. If you are using the ThinOS 8.6 version, go to **WDA > WMS** tab, and enter the **Group Registration Key** as configured by your administrator for the wanted group.
  - b. If you are using the ThinOS 9.x version, go to **WMS** tab, and enter the **Group Registration Key** as configured by your administrator for the wanted group.
3. Select the **Enable WMS Advanced Settings** check box.
4. In the **WMS server** field, enter the Wyse Management Server URL in the format `https://server.domain`. This value represents the Wyse Management Suite server from which ThinOS clients are managed and the client configurations are obtained over SSL.
5. In the **Group Registration Key** field, enter the group registration key as configured by your Wyse Management Suite administrator for your group. To verify the setup, click **Validate Key**.
 

If the key is not validated, verify the group key and Wyse Management Suite server URL which you have provided. Ensure that ports mentioned are not blocked by the network. The default ports are 443 and 1883.

  - NOTE:** If the Group Token parameter is not specified, the device is moved to the unmanaged group or quarantine group.
  - NOTE:** If you publish **WDA settings** or **WMS settings** policies on the Wyse Management Suite server, ensure that you specify the Group prefix, Group token field, and enable the Show Advanced Configuration option for providing the Wyse Management Suite server details. If not specified, the Wyse Management Suite Group Registration Key is cleared and the Wyse Management Suite server is changed to the default URL—`https://us1.wysemagementsuite.com` on the client side. If you publish the **WDA settings** using ThinOS 9.1.2101 or later versions, then this note is not applicable.
6. Enable or disable CA validation based on your license type. For public cloud, select the **Enable CA Validation** check box. For private cloud, select the **Enable CA Validation** check box if you have imported certificates from a well-known certificate authority into your Wyse Management Suite server.
 

To enable the CA validation option in the private cloud, you must install the same self-signed certificate on the ThinOS device. If you have not installed the self-signed certificate in the ThinOS device, do not select the **Enable CA Validation** check box. You can install the certificate to the device by using Wyse Management Suite after registration, and then enable the CA validation option.
7. Validate the newly added devices enrollment in Wyse Management Suite, to become manageable. You can enable the **Enrollment Validation** option to allow administrators to control the manual and auto registration of thin clients to a group. When the **Enrollment Validation** option is enabled, the manual or autodiscovered devices are in the Enrollment Validation Pending state on the **Devices** page. The tenant can select a single device or multiple devices on the **Devices** page and validate the enrollment. The devices are moved to the intended group after they are validated. For more information about how to validate the devices, see the *Wyse Management Suite 2.0 Administrator's guide* at [www.dell.com/support](http://www.dell.com/support).
8. Click **OK**. The device checks in to the Wyse Management Suite and the policy settings are applied.

# Add a ThinOS 8.6 device to a group in Wyse Management Suite

This section is recommended for ThinOS 8.6 users transitioning from file server configuration and imaging to Wyse Management Suite. ThinOS 9.1.4234 does not support FTP and WDM. The file storage and device management features are replaced by Wyse Management Suite.

## About this task

Adding a ThinOS 8.6 device to a group in Wyse Management Suite allows you to maintain your current INI file based configuration and file server imaging while placing their ThinOS 8.6 clients under Wyse Management Suite. The process can be accomplished as follows:

## Steps

1. On the Wyse Management Suite console, go to **Groups & Configs**, create a device policy group for each file server or Wyse Device Management dynamic device policy (DDC) group. Ensure that you define a unique group token value for group.
2. For each Wyse Management Suite device policy group, select **Edit Policies** and select **ThinOS** to define policies for the ThinOS 8.6 client group. If prompted for the Wyse Management Suite configuration mode, select **Advanced Configuration**.
3. From the Wyse Management Suite **Advanced Device Configuration** option, select **Central Configuration** and define the file server or path, user account, and password values for your current ThinOS 8.6 file server. Click **Save & Publish** and repeat the same step for each file server or Wyse Device Management DDC group. Ensure that the protocol is defined as part of your file server or path entry, or ThinOS 8.6 assumes the protocol as FTP.
4. Replace all environmentally or locally defined client file server and Wyse Device Management information with Wyse Management Suite, MQTT Server and Group Token information. For information about how to configure Wyse Management Suite using DHCP Options, DNS Records, or manually from the ThinOS client configuration menu, see the following sections:
  - Wyse Management Suite Environment Automation (DHCP or DNS)—see [Register ThinOS devices by using legacy DHCP option tags](#) and [Configuring devices by using legacy DNS SRV record](#).
  - Wyse Management Suite Manual Configuration (ThinOS UI)—see [Register ThinOS devices using Wyse Device Agent](#).
5. Restart the thin client.

The thin client performs the following tasks automatically after reboot:

- Discovers a Wyse Management Suite server and completes check-in based on the Group Token information. This process includes receiving file server configuration information from the Wyse Management Suite group that is assigned to the ThinOS 8.6 client.
- Checks the file server, retrieve, and apply configuration data from the wnos.ini (and supporting files), and completes any required image updates from the images on the file server.

# Add ThinOS 8.6 to ThinOS 9.1 conversion image to the Wyse Management Suite repository

## Steps

1. Log in to Wyse Management Suite using your tenant credentials.
2. In the **Apps & Data** tab, under **OS Image Repository**, click **ThinOS**.
3. Click **Add Firmware file**.  
The **Add File** screen is displayed.
4. To select a file, click **Browse** and go to the location where your file is located.
5. Enter the description for your file.
6. Select the check box if you want to override an existing file.
7. Click **Upload**.

 **NOTE:** The uploaded firmware can be used only to upgrade ThinOS 8.6 to ThinOS 9.1.4234 or later versions. The file is added to the repository when you select the check box but it is not assigned to any of the groups or devices. To deploy firmware to a device or a group of devices, go to the respective device or group configuration page.

# Download the ThinOS firmware, BIOS, and application packages

This section describes the steps to download the ThinOS firmware from Dell support site.

## Steps

1. Go to the [www.dell.com/support](http://www.dell.com/support) site.
2. Locate the required ThinOS Image entry and click the download icon.

**Table 6. ThinOS 9.1.4234 image**

Scenario	ThinOS image title
Upgrade your ThinOS 8.6_807 to 9.1.4234	ThinOS 8.6 to ThinOS 9.1.4234 Base Image file for Dell Wyse 5070, 5470 and 5470 All-in-One Thin Clients.
	ThinOS 8.6 to ThinOS 9.1.4234 Base Image file for Dell Wyse 5070, 5470 and 5470 All-in-One Thin Clients with PCoIP.
	ThinOS 8.6 to ThinOS 9.1.4234 Base Image file for Dell Wyse 3040 Thin Clients.
	ThinOS 8.6 to ThinOS 9.1.4234 Base Image file for Dell Wyse 3040 Thin Clients with PCoIP.
Upgrade your ThinOS 9.1.3129 to 9.1.4234	ThinOS 9.1.3129 to ThinOS 9.1.4234 Image file for Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.

**Table 7. ThinOS 9.1.5067 image**

Scenario	ThinOS image title
Upgrade your ThinOS 8.6_807 to 9.1.5067	8.6_807 to ThinOS 9.1.5067 Base Image file for Dell Wyse 5070, 5470 and 5470 All-in-One Thin Clients.
	8.6_807 to ThinOS 9.1.5067 Base Image file for Dell Wyse 5070, 5470 and 5470 All-in-One Thin Clients with PCoIP.
	8.6_807 to ThinOS 9.1.5067 Base Image file for Dell Wyse 3040 Thin Clients.
	8.6_807 to ThinOS 9.1.5067 Base Image file for Dell Wyse 3040 Thin Clients with PCoIP.
Upgrade your ThinOS 9.1.3129 or 9.1.4234 to 9.1.5067	9.1.3129 or later versions to ThinOS 9.1.5067 Image file for Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.

**Table 8. ThinOS 9.1.6108 image**

Scenario	ThinOS image title
Upgrade your ThinOS 8.6_807 to 9.1.6108	8.6_807 to ThinOS 9.1.6108 Base Image file for Dell Wyse 5070, 5470 and 5470 All-in-One Thin Clients.
	8.6_807 to ThinOS 9.1.6108 Base Image file for Dell Wyse 5070, 5470 and 5470 All-in-One Thin Clients with PCoIP.
	8.6_807 to ThinOS 9.1.6108 Base Image file for Dell Wyse 3040 Thin Clients.
	8.6_807 to ThinOS 9.1.6108 Base Image file for Dell Wyse 3040 Thin Clients with PCoIP.

**Table 8. ThinOS 9.1.6108 image (continued)**

Scenario	ThinOS image title
Upgrade your ThinOS 9.1.3129 or later versions to 9.1.6108	9.1.3129 or later versions to ThinOS 9.1.6108 Image file for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.

- If you want to use ThinOS packages, locate a package and click the download icon.

**Table 9. ThinOS packages**

ThinOS packages	ThinOS image title
Citrix Workspace app	ThinOS 9.1.<version> Citrix package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
VMware Horizon	ThinOS 9.1.<version> VMware Horizon package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Teradici PCoIP	ThinOS 9.1.<version> Teradici PCoIP package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Microsoft AVD	ThinOS 9.1.<version> Microsoft AVD package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Imprivata PIE	ThinOS 9.1.<version> Imprivata package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Zoom Horizon	ThinOS 9.1.<version> Zoom Horizon package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Zoom Citrix	ThinOS 9.1.<version> Zoom Citrix package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Jabra	ThinOS 9.1.<version> Jabra headsets package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
EPOS Connect	ThinOS 9.1.<version> EPOS Connect package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Cisco WebEx VDI	ThinOS 9.1.<version> Cisco Webex VDI package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Cisco WebEx Meetings	ThinOS 9.1.<version> Cisco Webex Meetings package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Cisco Jabber	ThinOS 9.1.<version> Cisco Jabber package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
HID Fingerprint Reader	ThinOS 9.1.<version> HID Fingerprint Reader package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.
Identity Automation QwickAccess	ThinOS 9.1.<version> Identity Automation QwickAccess package <version> for OptiPlex 3000 Thin Client, Dell Wyse 3040, 5070, 5470, and 5470 All-in-One Thin Clients.

- Extract the downloaded package. The image filename depends on your hardware model. For example, A10Q\_wnos or X10\_wnos.

**NOTE:** After you upgrade to the latest version of ThinOS, you can only downgrade to ThinOS 9.1.3129 or later versions using Wyse Management Suite. If you want to downgrade to any previous version, you must use the USB Imaging Tool with Merlin images posted on the [www.dell.com/support](http://www.dell.com/support) site. After the system is upgraded to ThinOS 9.1.4234 or later versions, if the BIOS password is set as default or if the password field is empty, the **Secure Boot** is enabled automatically. If you want to downgrade to ThinOS 8.6, disable the secure boot option in the BIOS. If you want to downgrade to ThinOS 9.0, you must clear TPM or PTT in the BIOS.

**NOTE:** For a given ThinOS release, you can install only the supported packages mentioned in the corresponding ThinOS Release Notes available at [www.dell.com/support](http://www.dell.com/support).

5. If you want to install the latest BIOS package, locate the package entry—ThinOS 9.1.<version> BIOS package <version>—for your thin client model and click the download icon.

For information about BIOS installation, see [BIOS Installation](#).

## File naming convention

ThinOS application packages, ThinOS firmware, and BIOS packages support the following characters in their file names:

- Uppercase letter
- Lowercase letter
- Numeric character
- Special characters—period (.), hyphen-minus (-), and underscores (\_)

If you use other characters in file names, the package installation fails.

# Upgrading ThinOS firmware

ThinOS 9.1 conversion from ThinOS 8.6 is a two-step process. You must first upgrade your existing ThinOS 8.6 thin client using a ThinOS policy for ThinOS 8.6. After the upgrade is complete, use a ThinOS 9.x policy to manage your ThinOS 9.1-based thin clients.

## Upgrade ThinOS 8.6 to ThinOS 9.1.4234 or later versions

### Prerequisites

- Upgrade the thin client to ThinOS 8.6\_807 with the latest available BIOS version. For the latest BIOS version, see [Introduction](#). For more information about how to upgrade BIOS on your ThinOS 8.6 client, see the *Dell Wyse ThinOS Version 8.6 Administrator's Guide* at [www.dell.com/support](http://www.dell.com/support).
- The ThinOS conversion image must be added to the ThinOS firmware repository. For more information, see [Add ThinOS 8.6 to ThinOS 9.1 conversion image to the Wyse Management Suite repository](#).
- Create a group in Wyse Management Suite with a group token.
- The thin client must be registered to Wyse Management Suite.

### Steps

1. Go to the **Groups & Configs** page, and select a group.
2. From the **Edit Policies** drop-down menu, click **ThinOS**. The **Select ThinOS Configuration Mode** window is displayed.
3. Select **Advanced Configuration Mode**.
4. Go to **Firmware Upgrade**, and click **Configure this item**.
5. Clear the **Disable Live Upgrade** if you want to upgrade immediately and clear the **Verify Signature** check box as well.
6. From the **Platform Type** drop-down list, select the platform.
7. From the **Firmware to auto-deploy** drop-down list, select the firmware added to the repository.
8. Click **Save & Publish**.

The firmware is deployed to the thin client. The conversion process takes around 10 minutes, and the thin client restarts automatically. After the upgrade is complete, the device is automatically registered to Wyse Management Suite.

**NOTE:** The download of the ThinOS 9.1 image from Wyse Management Suite (both private and public cloud) to the thin client takes around nine minutes depending on the network bandwidth or cloud server performance. The device reboots after the ThinOS image has been downloaded. After the upgrade is complete, the device is automatically registered to Wyse Management Suite.

**NOTE:** If a black screen is displayed after the upgrade, you must perform a hard reboot.

## Upgrade ThinOS 9.x to later versions

### Prerequisites

**NOTE:** ThinOS 9.1.4097 is the first version for OptiPlex 3000 Thin Clients. ThinOS 9.1.4097 cannot be upgraded to any other versions prior to ThinOS 9.1.6108.

- The thin client must be registered to Wyse Management Suite.
- Create a group in Wyse Management Suite with a group token.
- If you want to upgrade to ThinOS 9.1.4234 or later versions, ensure that you are running ThinOS 9.1.3129 or later versions on your thin client.

## Steps

1. Go to the **Groups & Configs** page, and select a group.
2. From the **Edit Policies** drop-down menu, click **ThinOS 9.x**.  
The **Configuration Control | ThinOS** window is displayed.
3. In the left pane, click **Standard**.
4. From the **Standard** menu, expand **Firmware**, and click **OS Firmware Updates**.  
**NOTE:** If you cannot locate the operating system firmware option under the Standard tab, use the Advanced tab.
5. Click **Browse** and select the ThinOS firmware to upload.  
**NOTE:** For OptiPlex 3000 Thin Client with ThinOS 9.1.4097, use ThinOS 9.1.6108 or later firmware versions.
6. From the **Select the ThinOS Firmware to deploy** drop-down menu, select the uploaded firmware.
7. Click **Save & Publish**.  
The thin client downloads the firmware and restarts. The firmware version is upgraded.  
**NOTE:** If a black screen is displayed after the upgrade, you must perform a hard reboot.  
**NOTE:** Installation can fail even though the image download is complete. This issue is observed when the package settings are changed in the device group before the device is checked in to Wyse Management Suite from shut down state. You can reboot the thin client and the upgrade will be successful with a good internet connectivity.

## Upload and push ThinOS application packages

ThinOS application packages must be installed on the thin client system to use the respective applications.

### Prerequisites

- Create a group in Wyse Management Suite with a group token.
- Register the thin client to Wyse Management Suite.

## Steps

1. Go to the **Groups & Configs** page, and select a group.
2. From the **Edit Policies** drop-down menu, click **ThinOS 9.x**.  
The **Configuration Control | ThinOS** window is displayed.
3. In the left pane, click **Standard**.
4. From the **Standard** menu, expand **Firmware**, and click **Application Package Updates**.  
**NOTE:** If you cannot locate the Application Package option under the Standard tab, use the Advanced tab.
5. Click **Browse** and select the application package to upload.
6. From the **Select ThinOS Package(s) to deploy** drop-down menu, select the package.  
**NOTE:** For a given ThinOS release, you can install only the supported packages mentioned in the corresponding ThinOS Release Notes available at [www.dell.com/support](http://www.dell.com/support).
7. Click **Save & Publish**.

# Configuring a ThinOS 9.1 client using Wyse Management Suite

It is recommended to optimize centralized configuration server groups for better performance and manageability by maximizing the number of unique customer device configuration groups. A minimal number of Wyse Management Suite groups and settings should be used to maximize the unique customer device configurations groups. This is applicable to both multitenant and on-premises scenarios.

When you change the group in Wyse Management Suite, the ThinOS 9.x-based thin client displays a message prompting you to restart the thin client immediately or postpone it to the next reboot for applying latest configurations.

When you deploy a new firmware or package using Wyse Management Suite, the thin client displays a message prompting you to start the installation immediately or postpone it to the next reboot.

## Configuration comparison between ThinOS 8.6 and ThinOS 9.1

The following is an overview of the major device configuration changes between ThinOS 8.6 and ThinOS 9.1 that simplifies the configuration process:

**Table 10. Configuration comparisons between ThinOS 8.6 and ThinOS 9.1**

ThinOS 8.6	ThinOS 9.1
ThinOS 8.6 requires INI files with complex parameter syntax to configure devices.	ThinOS 9.1 configuration is completely menu driven.
ThinOS 8.6 user interface is a subset of all possible client configurations and is primarily designed for piloting devices.	ThinOS 9.1 administrative user interface supports all client commands.
ThinOS 8.6 user interface menu configurations differed from Wyse Management Suite ThinOS menu-based profile configurations.	ThinOS 9.1 shares a common administrative user interface with the Wyse Management Suite ThinOS 9.x profile. Hence all client configurations are identical when run from either interface.

## ThinOS configuration grouping overview

During the deployment process, you must evaluate various needs of your users to determine all the client configurations that are mandatory to meet the requirements. Few configurations such as monitor resolution or VNC password applies to the device, while others such as broker configurations may only apply to specific users of the device.

Redundant configurations may result in performance issues and makes it difficult to manage environmental changes since each device configuration requires to be updated. This issue can be resolved by grouping configurations.

ThinOS configuration grouping determines the parameters inheritance. The child group inherits the settings from its parent group. The following table lists the common device configuration criteria that must be considered when creating groups:

**Table 11. ThinOS configuration grouping overview**

Group Types	Configurations
Global device configurations	Privilege Settings including Admin Mode Security Policy Settings Remote Control Settings (VNC)

**Table 11. ThinOS configuration grouping overview (continued)**

Group Types	Configurations
	Management Settings All other global configurations
Device configurations for a group of clients	Group-based Broker Configurations Group-based Printer Settings Group-based Time Zone Settings
Device configurations for a single device	Client-based Terminal Name Client-based Location Client-based Location and Custom 1, 2, 3
Device configurations dynamically selected	ThinOS 8.6 Select Group with device configurations
Device configurations for an AD user group	ThinOS 8.6 SignOn=NTLM (AD.INI) with user configurations
User configurations for a single user	ThinOS 8.6 SignOn=Yes or NTLM with user configurations

## ThinOS system variables

ThinOS uses system variables or part of a system variable when defining command values. System variables are often used to define unique values for fields such as terminal name or default user. For example, if the client has an IP address 123.123.123.022, ACC&Right(\$FIP,3) results in a value of ACC022. Using system variables makes it easier to manage groups of devices that require a unique terminal name or default user.

The following are the ThinOS system variables:

**Table 12. ThinOS system variables**

Variable	Description
\$IP	IP address
\$IPOCT4	The fourth octet of the IP Address, for example: if the IP address is 10.151.120.15, then the value is 15.
\$MAC	Mac address
\$CMAC	Mac address with colon.
\$UMAC	Mac address with uppercase letters is used.
\$DHCP (extra_dhcp_option)	Extra DHCP options for Windows CE unit, including 169, 140, 141, 166, 167. For example, set a string test169 for option tag 169 in DHCP server, and set TerminalName=\$DHCP(169) in wnos.ini. Check terminal name in GUI, and the terminal name will be test169. 166 and 167 is default for CCM MQTT Server and CCM CA validation in ThinOS. You must remap the options from GUI or INI if you want to use \$DHCP(166) or \$DHCP(167).
\$DN	Sign on domain name
\$TN	Terminal name
\$UN	Sign on username
\$SUBNET	For subnet notation, the format is {network_address}_{network_mask_bits}. For example, if the IP address is 10.151.120.15, the network mask is 255.255.255.0, and 10.151.120.0_24 is used.
\$FIP	IP address is used in fixed format with 3 digits between separators. For example, 010.020.030.040.ini. Using it in conjunction with the left or right modifier helps to

**Table 12. ThinOS system variables (continued)**

Variable	Description
	define policy for subnet. For example, include=&Left(\$FIP,11).ini is specified to include file 010.020.030.ini for subnet 010.020.030.xxx.
\$SN	Serial number or Service tag
\$VN	Version number
Right(\$xx, i) or and Left(\$xx, i)	Specifies that the variable is to be read from left or right. The \$xx is any of above parameters and the parameter i specifies the digits for the offset of right or left.
\$PF	Use the thin client's platform name—This is the first part of image name xxxxx_wnos, for example, if the image name is A10Q_wnos, the platform name is A10Q, which refers to 3040. Other values include: <ul style="list-style-type: none"> <li>• A10Q—3040 ThinOS</li> <li>• PA10Q—3040 ThinOS + PCoIP</li> <li>• X10—5070, 5470AIO, 5470MTC ThinOS</li> <li>• PX10—5070, 5470AIO, 5470MTC ThinOS + PCoIP</li> </ul>
\$PW	Use the Sign-on password.
\$WPDN	PEAP/MSCHAPv2 domain used (802.1x dependent).
\$WPPW	PEAP/MSCHAPv2 password used (802.1x dependent).
\$WPUN	PEAP/MSCHAPv2 username used (802.1x dependent).
&Right(\$xx, i) or &Left(\$xx, i)	Specifies whether the variable is read from left or right. The \$xx refers to any of the above System Variables. The option “i” specifies left or right offset digits. For example, the parameter TerminalName=CLT-\$SN\$RIGHT\$07. If the Serial Number (or Service Tag number) of the thin client is MA00256, the terminal name of the thin client is assigned as below: <ul style="list-style-type: none"> <li>• First four characters—CLT-</li> <li>• The rest—The last right-most seven digits of the thin client serial number. The resulting terminal name is displayed as CLT-MA00256.</li> </ul>

## Relationship between INI and Wyse Management Suite group based configurations

This section describes the relationship between INI file parameter–based configurations, and Wyse Management Suite group based configurations. Both INI files and Wyse Management Suite configuration processes have similar functionality. However, the implementation differs. Understanding this concept should greatly reduce the number of redundant configurations and help migrating devices from a file server with INI files to Wyse Management Suite.

**Table 13. Relationship between INI and Wyse Management Suite group-based configurations**

Configuration	ThinOS 8.6 with INI	ThinOS 9.1 with Wyse Management Suite
<b>Global configurations applied at boot to all clients</b> —When using Wyse Management Suite, client configuration policies that applies to all devices should be defined using a Wyse Management Suite Device Policy Parent Group. This is similar to wnos.ini configurations when using a file Server.	Global Configuration File (wnos.ini)	Groups and Config Device Policy Parent Group
<b>Configurations applied at boot to a group of clients</b> —When using Wyse Management Suite, client configuration policies that apply to a group of device should be defined using Wyse Management Suite Device Policy Child Groups. This is similar to an INCLUDE file statement with part of a system variable	Include parameter (wnos\INC)	Groups and Config Device Policy Child Groups

**Table 13. Relationship between INI and Wyse Management Suite group-based configurations (continued)**

Configuration	ThinOS 8.6 with INI	ThinOS 9.1 with Wyse Management Suite
<p>that enables more than one client device to obtain the defined configurations. The advantage of Wyse Management Suite is that it enables multiple Child Group levels, hence allowing nesting of configurations.</p>		
<p><b>Configurations applied at boot to a single client device</b>                      —When using Wyse Management Suite, client configuration policies that apply to a specific device can be completed using Wyse Management Suite Device Exceptions. This is similar to an INCLUDE file statement using a full system variable that allows only the selected client to obtain the defined configurations.</p> <p><b>NOTE:</b> Device exceptions must be used when required and should be kept to a minimal number of configurations. Excessive use of Device Exceptions or Device Exception configurations can affect performance and manageability.</p>	<p>Include parameter (WNOS\INC)</p>	<p>Devices                      Device Exception</p>
<p><b>Device configurations dynamically selected from the ThinOS Login menu</b>—The Select Group feature in ThinOS enables you to dynamically select and load configurations and is often used to access multiple virtual environments. In Wyse Management Suite 2.0, this feature is supported only on ThinOS 9 devices.</p> <p>The <b>Select Group</b> feature can be enabled under Wyse Management Suite <b>PRO Groups &amp; Configs Device Policy Group</b> when creating a <b>Parent Group</b>. Select Group feature is not supported by Wyse Management Suite Device Policy Child Groups.</p> <p><b>NOTE:</b> The Select Group feature is not available when using Wyse Management Suite Standard. A Wyse Management Suite Pro license is required to enable this feature.</p>	<p>SelectGroup parameter (WNOS\INI\GROUPS)</p>	<p>Groups and Configs                      Device Policy Parent Group with Select Group Enabled</p>
<p><b>User configurations applied at Login based on Active Directory Domain</b>—When using Wyse Management Suite, ThinOS configurations for a group of users can be defined by use of the Wyse Management Suite User Policy Group. This feature is similar to AD.INI functionality used by ThinOS 8.6 that dynamically applies configurations to ThinOS at SignOn (NTLM) based on the Active Directory Group Name.</p> <p><b>NOTE:</b> ThinOS 9.1 Login type (under <b>Login Experience &gt; Login Settings</b> and go to <b>Login Type</b>) must be set to Authenticate to domain controller at the Default Device Policy Group level for Active Directory Domain based configuration to function. If you are using the Active Directory group policy, the login type must be configured in the child group level of the device policies.</p>	<p>SignOn=NTLM, (WNOS\INI\AD.INI)</p>	<p>Groups and Configs                      User Policy Group</p>
<p><b>User configurations applied at Login based on Username</b>—When using Wyse Management Suite, ThinOS configurations for a single user is defined by use of Wyse Management Suite User Exceptions. It is similar to Username.INI functionality used by ThinOS 8.6 that dynamically applies configurations to ThinOS at Login (NTLM or Yes) based on username.</p> <p><b>NOTE:</b> User Exceptions should only be used when required and should be kept to a minimal number of configurations. Excessive use of User Exceptions or User Exception configurations can affect performance and manageability.</p>	<p>SignOn=Yes or NTLM (WNOS\INI\username.ini)</p>	<p>Users                      User Exceptions</p>

Wyse Management Suite can define device and user configurations for ThinOS and during boot ThinOS receives a device configuration payload from Wyse Management Suite. Additionally, a user configuration payload is received at Login.

For example, consider a scenario with device policies configured as shown in the following screenshot:

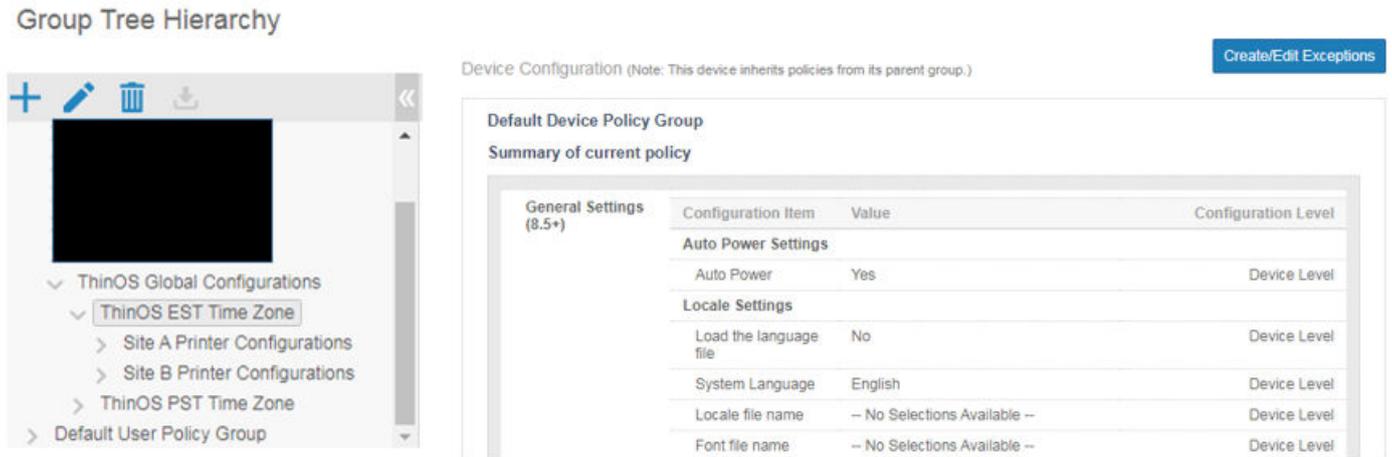


Figure 1. Device policy

In this scenario, a client that is assigned to Site B Printer Configurations receives a device payload based on the following:

- ThinOS global configurations
- ThinOS EST time zone configurations
- Site B printer configurations
- Device exception configurations

Similarly, at Login, Wyse Management Suite applies user policies based on the Active Directory Group Name or User Exception Policies based on username information.

For more information on how to configure active directory group settings and user exceptions, see the Wyse Management Suite Administrators Guide at [www.dell.com/support](http://www.dell.com/support).

# BIOS Installation

## Upgrade BIOS

### Prerequisites

- Download the BIOS file from [www.dell.com/support](http://www.dell.com/support) to your device.
- If you are upgrading BIOS using Wyse Management Suite, register the thin client to Wyse Management Suite.

### About this task

- i** **NOTE:** On thin clients that run ThinOS versions earlier than ThinOS 9.1.6018, you must upgrade the OS image first, and then upgrade the BIOS after the OS image is successfully upgraded. Do not upgrade the BIOS and the OS image together. If you upgrade the BIOS and the OS image together, the BIOS upgrade is ignored, and you cannot upgrade the BIOS to the ignored version anymore. You must upgrade the BIOS to another version.

### Steps

1. Open the Admin Policy Tool on the thin client or go to the ThinOS 9.x policy settings on Wyse Management Suite.
2. On the **Configuration Control | ThinOS** window, click the **Advanced** tab.
3. Expand **Firmware** and click **BIOS Firmware Updates**.
4. Click **Browse** and select the BIOS file to upload.
5. From the **Select the ThinOS BIOS to deploy** drop-down list, select the BIOS file that you have uploaded.
6. Click **Save & Publish**.

The thin client restarts. BIOS is upgraded on your device.

- i** **NOTE:** For more information about the latest BIOS version, see the latest Dell Wyse ThinOS Operating System Release Notes at [www.dell.com/support](http://www.dell.com/support).

- i** **NOTE:** Ensure that you connect the power adapter to the Wyse 5470 Thin Client before updating the BIOS. If you do not connect the power adapter, the BIOS update fails. In this event, you must connect an external power source and reboot the device twice to install BIOS.

## Edit BIOS settings

### Prerequisites

- If you are using Wyse Management Suite, ensure that you have registered the thin client and synchronize the BIOS admin password. The WDA stores the current BIOS password to unlock the BIOS and apply the required changes. For more information about using the **Sync BIOS Admin Password** option, see the *Dell Wyse Management Suite v2.1 Administrator's Guide* at [www.dell.com/support](http://www.dell.com/support).
- i** **NOTE:** From ThinOS 9.1.6108, if you have not synced the BIOS password in WMS server, you can input the current BIOS password in BIOS policy to publish BIOS settings. If you have synced the BIOS password in WMS server, the **Current BIOS Admin password** option in BIOS policy is ignored. WMS server uses the synced BIOS password to publish BIOS settings.
- If you are using the Admin Policy Tool, ensure that you enter the current BIOS admin password in the **Advanced > BIOS** section.

### Steps

1. Open the Admin Policy Tool on the thin client or go to the ThinOS 9.x policy settings on Wyse Management Suite.
2. In the **Configuration Control | ThinOS** window, click the **Advanced** tab.

3. Expand **BIOS** and select your preferred platform.
4. In the **System Configuration** section, modify the USB ports and audio settings.
5. In the **Security** section, modify the administrator-related configurations.
6. In the **Power Management** section, modify the power-saving options.
7. In the **POST Behavior** section, enable or disable the MAC Address Pass-Through feature. This option is applicable only to the Wyse 5470 Thin Client.
8. Click **Save & Publish**.
  -  **NOTE:** If the BIOS does not have a password and if you are setting a new password, and then the password is applied after the first reboot. Other setting changes are applied after the second reboot.
  -  **NOTE:** If you change the BIOS password using a select group, it requires a reboot to take effect.
  -  **NOTE:** If you enable **Set Admin Password**, set new BIOS password and then reboot the thin client, the new BIOS password is synced to WMS server automatically.
  -  **NOTE:** If you first enable **Set Admin Password**, set the new BIOS password, and then disable **Set Admin Password**, the BIOS password is cleared to empty.
  -  **NOTE:** On ThinOS clients, the **Current BIOS Admin Password** option is always blank, and the **Set Admin Password** option is always disabled. These options do not have any impact on the functionality.

## Downgrade to previous versions of ThinOS

You can only downgrade to ThinOS 9.1.3129 or later versions using Wyse Management Suite. If you want to downgrade to any version prior to ThinOS 9.1.3129, you must use Merlin images posted on the [www.dell.com/support](http://www.dell.com/support) site.

- NOTE:** If you want to downgrade to ThinOS 9.0, you must clear TPM or PTT in the BIOS and then use the USB imaging tool and Merlin images to downgrade.
- NOTE:** You cannot downgrade to ThinOS 8.6\_606 or previous versions, if you are running the systems with SSD devices.
- NOTE:** You must install the application packages after you downgrade from ThinOS 9.1.4234 or later versions to ThinOS 8.6 using Merlin Image.

# Delete ThinOS application packages

You can use the ThinOS local UI or the Wyse Management Suite to delete one or more ThinOS packages.

## About this task

This section describes steps to delete ThinOS packages using the ThinOS local UI.

## Steps

1. Log in to the ThinOS client.
2. From the system menu, go to **System Tools > Packages**.  
All the installed ThinOS packages are listed.
3. Select a package that you want to delete and click **Delete**.

 **NOTE:** To delete all the packages, click Delete all.

4. Click **OK** to save your settings.

For information about how to delete packages using Wyse Management Suite, see the latest *Dell Wyse Management Suite Administrator's Guide* at [www.dell.com/support](http://www.dell.com/support).

## Resources and support

### Accessing documents using the product search

1. Go to [www.dell.com/support](http://www.dell.com/support).
2. In the **Enter a Service Tag, Serial Number, Service Request, Model, or Keyword** search box, type the product name. For example, **Wyse 3040 thin client** or **Wyse ThinOS**.

A list of matching products is displayed.

3. Select your product.
4. Click **Documentation**.

### Accessing documents using product selector

You can also access documents by selecting your product.

1. Go to [www.dell.com/support](http://www.dell.com/support).
2. Click **Browse all products**.
3. Click **Thin Clients**.
4. Click the desired category, either **Wyse Hardware** or **Wyse Software**.
5. Click the desired product.
6. Click **Documentation**.

# Contacting Dell

## Prerequisites

 **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.

## About this task

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:

## Steps

1. Go to [www.dell.com/support](http://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.