Notes, Cautions, and Warnings

⚠️ NOTE: A NOTE indicates important information that helps to make better use of the product.

⚠️ CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

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

What is DeTOS?

DevonIT® Terminal Operating System (DeTOS™) is an embedded Thin Client Operating System designed to be simple, secure, and centrally manageable. DeTOS can be used to access hosted desktops using Microsoft® Remote Desktop Services®, VMware® Horizon View™, Citrix® XenAppView® or XenDesktop®, web-based applications, and more.

DeTOS Features

- **Simple**- Configuring a session out of the box is quick and painless using the DeTOS intuitive web based control panel. The same control panel can be used either locally from the thin client or remotely from the management software.

- **Modern**- DeTOS can connect to hosted desktops using the industry’s best protocols including Citric ICA® Client, Citrix XenDesktop, RDP or Windows® Terminal Services, and VMware Horizon View Client. DeTOS also includes a built-in browser that allows accessing web-based applications or kiosk usage.

- **Centrally Managed**- DeTOS-based thin clients can be centrally managed using the DevonIT® Thin Client Management Console™, or Echo™.
  - The Management Console is shipped as a virtual appliance, so it is easy to set up.
  - Echo can automatically discover and inventory the thin clients on the network.
  - Echo has the concept of a default profile. Using a default profile, additional thin clients are automatically configured when plugged into the network.
  - Individual profiles for different users, including specific Connections, Thin Client Settings, and Passwords.
Echo supports updates to the thin client’s embedded OS. Updates can be scheduled to happen outside of production hours, for example over the weekend.

DeTOS Installation

No installation is required for customers who have purchased DeTOS-based thin clients from DevonIT. The thin client already contains a factory installed DeTOS operating system. A USB re-flash utility is available if reinstalling the operating system is necessary at any point in the future.

First Boot Wizard

The first time the thin client boots up, the first boot wizard will need to be used for the initial setup process. This wizard can help to configure a variety of settings in order to better operate the thin client. Users are advised to become familiar with the material in this guide as well as the Echo Administration Guide to best implement the first boot wizard.
Getting Started

To get started, the following actions are necessary:

✔ Check that the thin client is connected to the network.

✔ If a management server has been set up in the network, check that the thin client was able to contact the management server and is in managed mode.

✔ Create a desktop shortcut to allow thin client users to get connected to a remote server. (See Chapter 5, “Connections,” for more information.)

To check the network connection status, click the Start button and then select Control Panel.
Along the bottom of the **Control Panel** is a row of status messages. These messages include the DeTOS build number, the terminal's current IP address, and a Thin Client Management Connection Indicator.

DeTOS default factory setting is DHCP. If there is a DHCP server on the network, the status bar should show the leased IP address. If the thin client is going to use a fixed IP address please refer to this guide's network section. A message of no IP address will appear if network connectivity is lost or was never established in the first place. This may be related to a loose or faulty network cable. It may also be an indication of DHCP issues. If troubleshooting a network issue is necessary, please refer to the network diagnostic section below.

Along with the IP address, the **Control Panel** status section also shows whether the thin client is in managed or unmanaged (stand alone) mode. By default, DeTOS-based thin clients try to locate a management server. If a management server is found, the terminal switches to managed mode, where it “pulls” its configuration from the management server. If not, it will stay in standalone/unmanaged mode and use its local configuration.

The **Control Panel** status area also shows the OS build. This is a string based on the DeTOS version and the build date.

**Management Server Splash Screen**

If the thin client cannot make contact with a Management Server during boot-up, then a splash screen will appear just prior to the desktop loading. This screen contains the DevonIT logo and displays a message saying, “Attempting to connect to Management Server.” The splash screen will be displayed until successful contact is made with a management server, the cancel button is pressed, or the specified timeout (30 seconds by default) is reached.

The **Management** section, found under the **Control Panel**, allows configuration of the behavior of this splash screen. Configuration options include:

- Setting the thin client to **Managed** or **Unmanaged** modes
- Specifying a different management server address
- Adjusting the timeout value
- Enabling or disabling the splash screen **Cancel** button

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Management Server Indicator

Once the DeTOS Desktop displays, the Agent running on the thin client will continue to periodically contact a Management Server on the local area network. By default, DeTOS will attempt to locate ws-broker, unless a different Management server has been entered. When successful, the Management Server Indicator box found along the bottom of the Control Panel will read Managed. Otherwise, the icon will change to a red circle and the status will say Unmanaged. In this case, verify that the management server is online and accessible on the LAN. Also be sure to check the DNS server to verify that an entry exists and points to the IP address of the management server.

Control Panel

The Control Panel is the local tool for configuring Connection and System settings on the thin client.

✔️ Connection Settings- The thin client has the ability to connect to remote servers utilizing several types of protocols. The RDP® client uses the RDP protocol and allows connections to Windows® Terminal Servers. The Citrix ICA client is used to establish connections to Citrix Presentation and XenAppView servers. The VMware Horizon View client allows you to connect to a VMware Horizon View server, which in turn, provides the end-user with their own virtual desktop session. Lastly, a Firefox® web browser connection may be created to surf the web. This can be used for several purposes:

✔️ Connect to a web applications; e.g., a webmail server.
✔️ Connect to a connection broker web interface; e.g., Citrix XenDesktop.
✔️ Use the thin client as a Kiosk (select the Enable Kiosk Mode button under the Kiosk Mode panel)

✔️ System Settings- These are the display, locale, sound, keyboard, mouse, desktop appearance, printer, and date/time configurations for the thin client. Also under the System section is the ability to set an administrative password for the control panel and to allow a snapshot of the current desktop configuration to be stored.
Network Tools

The toolbar along the top of the Control Panel window contains a button named Network Tools. Clicking this button will open a separate, smaller window that provides the current network status and useful diagnostic programs.

Interface Status

Click the Interface Status tab along the top of the Network Tools window to view the IP address that is currently assigned to this thin client. The MAC Address for this machine is also reported on this screen.

Diagnostics

If there is difficulty connecting to servers on certain segments of the LAN, then the ping command is available to verify that specific servers and/or gateways on the subnet are being reached. To use ping:

1. Select the Diagnostics tab from the Network Tools window.
2. In the Host Address field, type in the IP address or website to test against and then press the Ping button.
3. If there is an error in the delivery to the destination, the ping command displays an error message. Otherwise, replies will continuously display for each packet successfully sent and received.
4. Press the Stop button to terminate the ping loop.
Agent System Information

**Management** - This displays the current status and information of the Management server to which the thin client is connected.

- **Management Status** - States if the thin client is currently being associated with a Management server.
- **Management Server** - The current address of the Management server in use.
- **Change Management Server** - Change to a different the Management server.
- **UUID** - Displays the current UUID of the thin client.

**Network Information** - This displays information about the current network connection.

- **IP Address** - The current IP address assigned to the thin client.
- **MAC Address** - Displays the current MAC address assigned to the thin client.
- **Hostname** - The name that has been assigned to the thin client.
- **Network Tools** - Run a diagnostics test with the network connection and to check on the current status of the network connection.

**System Information** - This displays information about the operating system and the thin client.

- **Operating System** - The name of the image or operating system that is in use.
- **Processor** - Displays the processor that the thin client is using.
- **Memory** - The total internal memory of the thin client.
- **DOM Size** - Displays the total storage capacity size of the thin client.
- **Hardware Model** - The name of the thin client device in use.
Local Storage

Persistence, within the scope of thin client computing, refers to the continuing existence of connections and settings after a terminal has been rebooted.

Upon completion of the first boot wizard, a snapshot of the thin client may be taken and saved in a data partition for basic settings. All of the connections, settings, and network settings assigned during the first boot wizard will be saved once this snapshot is taken and they will persist and carry over after a reboot.

After this point, only changes made to Network Settings and Management servers will automatically persist if changed through the Control Panel. In order for alterations to connections or settings to persist after this point, either the changes will have to be applied through the Management console or the Take Snapshot option, located in the Local Storage settings section of the Control Panel, must be used after making any changes.

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System Settings

Appearance Settings

This section describes the display options available for a single monitor attached to a terminal.

1. Open the **DeTOS Control Panel** from the **Start** menu.
2. Click the **Appearance** settings on the left-hand side of the **Control Panel**, under the **System** settings.

- **Sort Desktop Icons Alphabetically** - This option will sort all icons on the desktop based on the names that have been assigned to them on creation.

- **Sort Desktop Icons By Connection Type** - This option will sort all icons on the desktop based on their connection.
Display Settings

This section describes the display options available for a single monitor attached to a terminal.

1. Open the DeTOS Control Panel from the Start menu.
2. Click the Display settings on the left-hand side of the Control Panel, under the System settings.

- **Screen Resolution** - Select the desired resolution from the dropdown list. *Auto-detect* may be selected to allow DeTOS to automatically choose the best resolution for the attached monitor.

- **Color Depth** - All supported color depths for the monitor will be listed in this dropdown box.

- **Enable Screen Blanking** - Checking this box will reveal two timeout values for screen blanking and suspend time.

Once finished, press the **Apply** button for the changes to take effect. All display changes will take effect immediately.
Dual Monitors

This section describes how to set up and configure dual monitors for terminals that support them:

1. While the unit is turned off, attach both monitors to the thin client.
2. Turn on the thin client.
3. Open the DeTOS Control Panel from the Start menu.
4. Click the Display settings on the left-hand side of the Control Panel, under the System settings.
5. Under the Configuration tab, the settings for Color Depth and Screen Blanking options will be available. These settings apply to both monitors regardless of screen positions or visual connections used.
6. To adjust specific properties for each monitor, click the Monitors button along the top of the Control Panel. The names of the two monitors attached to the thin client will be presented. The exact names will vary depending on how they are detected on that particular thin client.

7. Click one of the monitor names from the list. This will open a configuration screen that contains Screen Resolution and Position properties for that specific monitor.
Screen Resolution- Select the desired resolution from the dropdown list. Auto-detect may be selected to allow DeTOS to automatically choose the best resolution for the attached monitor.

Position

- **Left of** or **Right of** - If the monitors are positioned in a side-by-side arrangement, then this will specify one of the monitors as placed to the Left of or Right of the opposite monitor.
- **Above** or **Below** - If the monitors are positioned in a top and bottom arrangement, then this will specify one of the monitors as placed Above or Below the opposite monitor.
- **Clone** - Choosing the Clone option will cause the display to be duplicated on both monitors. (Also known as “Mirrored.”)

**NOTE:** Clone is the default behavior for dual monitors when powered on for the first time.

Offset- When selecting the offset option, two additional fields for X and Y coordinates will be present. For example: 50x50 will cause the display to be positioned 50 pixels left of and 50 pixels higher than its normal centered state.

**NOTE:** The X plane is Horizontal. The Y plane is Vertical.

Primary display- Enabling this option will assign the currently selected monitor to be the primary display for extended dual monitor setups.

When finished, press the Apply button. Changes to the display will take effect immediately.
Input/Time

This section allows configuration of the locale, keyboard, mouse, and time settings for the thin client.

1. Open the DeTOS Control Panel from the Start menu.
2. Select the Input/Time settings on the left-hand side of the Control Panel under the System settings.

- **Locale** - English is the default locale setting. Switching to a new locale will immediately adjust the system locale and translate the user interface of the local DeTOS desktop to the selected language.

- **Keyboard** - US is the default keyboard input setting. Switching to a new keyboard input will alter the keyboard mapping immediately after selecting Apply.

- **Left-Handed Mouse** - Select this checkbox to invert the right and left mouse buttons for a left-handed mouse.

- **Timezone** - The time zone options are organized geographically by region first and then by city. Select the appropriate time zone location.

- **Timeserver** - Defining a timeserver allows the terminal to query an NTP service in order to keep its date and time in sync. By default, this is enabled and set to the National Institute of Standards and Technology’s timeserver.

Press the Apply button for the changes to take effect.
Local Storage Settings

The Local Storage section of the Control Panel allows the user to choose one of two options pertaining to persistence.

1. Open the DeTOS Control Panel from the Start menu.
2. Click the Local Storage settings icon on the left-hand side of the Control Panel under the System settings.

- **Clear Local Storage** - Press this button to clear out all configurations currently stored. Reboot the thin client after this option has been selected to clear out all locally stored configurations. This is a factory reset and will result in starting the first boot wizard again.

  **NOTE:** Clearing Local Storage will not remove any software packages that have been installed. Software packages will need to be removed separately.

- **Take Snapshot** - Press this button to capture the thin client's current connections and settings configuration. Rebooting the terminal will allow the terminal to restore to the state it was in when the snapshot was taken.
Management

Management Server Configuration

During boot up, if the thin client cannot make contact with a Management Server, then a splash screen will appear just prior to the DeTOS desktop loading. This screen contains a message saying, “Attempting to connect to Management Server.” The splash screen will be displayed until successful contact is made with a management server, the cancel button is pressed, or the specified timeout (30 seconds by default) is reached. The Management Server Configuration screen allows configuration of the behavior of this splash screen, along with other management server options.

1. Open the DeTOS Control Panel from the Start menu.
2. Click the Management settings on the left-hand side of the Control Panel under the System settings.

- **Managed/Unmanaged** - By default, the thin client is set to Managed mode and will attempt to make contact with a management server. There is the option of severing all communications with a management server by selecting the Unmanaged radio button.
- **Server Address** - While in managed mode, the thin client will maintain contact with a management server named ws-broker. Use this field to specify a different hostname or IP address for the management server.
Splash Screen – Timeout- Use this field to adjust the number of seconds the splash screen appears on the screen before it times-out and loads the DeTOS Desktop. Enter a value of 0 to bypass the screen altogether.

Splash Screen – Allow Cancel- A Cancel button is provided on the splash screen that allows the user to abort the timeout delay. Uncheck this box to hide the cancel button and force the user to wait the required amount of time.

NOTE: The purpose of the splash screen feature is to gracefully handle network latency that may occur during the thin client’s first contact with a management server during boot up. This feature becomes vital in the case where there may be a management server applying connections to the thin client that are configured to Autostart on boot up.

Agent Password

A System Password can be set to restrict access to the Control Panel.

To set the Password:

1. Open the DeTOS Control Panel from the Start menu.
2. Click the Management settings on the left-hand side of the Control Panel under the System settings.
3. Select the plus [+] to open the Agent Password section of this screen.
4. Enter a password in the password field and re-enter it in the confirmation field to set the new password.
5. Press the Apply button to save the password.

NOTE: Once a system password is set, the user will be prompted for the password when they attempt to open the Control Panel. If the Cancel button is pressed or a user incorrectly types the password, then the Control Panel will open in a read-only mode. A small padlock icon will also appear along the bottom of the Control Panel window, indicating that edits are not allowed. Keep this password safe!
Security Restrictions

This will allow screenshots to be taken within DeTOS.

To allow screenshots:

1. Open the **DeTOS Control Panel** from the **Start** menu.
2. Click the **Management** settings on the left-hand side of the **Control Panel** under the **System** settings.
3. Select the plus [+ ] to open the **Security Restrictions** section of this screen.
4. Click on the **Allow Screenshots (Print Screen)** checkbox to enable this feature.
5. Press the **Apply** button to save the changes.
6. Screenshots can be taken using the Print Screen button on the keyboard.
Network

By default, the thin client attempts to contact a DHCP server on the network during boot up. If there is a DHCP server, then the thin client will acquire an IP address automatically and no further network configuration is required. However, there are additional options available.

Thin clients capable of connecting to wireless networks will still default to a wired connection, if one is available and an Ethernet cable is plugged in. To establish a wireless network connection, an Ethernet cable cannot be attached to the thin client. To change the network for the connection:

1. Open the DeTOS Control Panel from the Start menu.
2. Select the Network settings on the left-hand side of the Control Panel under the System settings.
3. Select the desired connection from the Networks dropdown menu in the Networks section. Remember that for wireless network connections, the Ethernet cable cannot be plugged in to the thin client.
4. If a wireless network is selected, a Wireless Network section will appear beneath the Networks section.
5. To further configure a wireless connection, select the authentication method used on the network from the **Authentication** dropdown menu. Depending on the authentication method selected, additional information may need to be entered into the fields that appear.

6. When all the required fields have been filled, click **Apply**.

7. The **Allow User Selection of Wireless Networks** option may be enabled after a wireless connection has been correctly configured in the Control Panel. With this option selected, the **Network** tray icon will allow established access points to be chosen from outside of the Control Panel.

8. To connect using the tray icon, right click on the **Network** tray icon in the lower left corner of the desktop. Select from the list of available networks. If a password or security key is required, a **Password** field will appear. When finished, click **OK** to connect.

To set a Static IP address on a DeTOS thin client:

1. Open the **DeTOS Control Panel** from the **Start** menu.
2. Select the **Network** settings on the left-hand side of the **Control Panel** under **System**.
3. Expand the **IP Configuration** section of the **Network Settings** menu.
4. Deselect the **Use DHCP** checkbox.
5. Type in appropriate values for in the address fields if needed and then press **Apply**. I may take a few moments to reconfigure to the Static IP.

6. To make any changes to the Host Name, or to add or edit the DNS servers, edit the **Hostname** field in the **Networks** area found near the top of the window. Press **Apply** when finished to save.

7. Changes to the Network settings may take a few moments, depending on the network speed. This is normal and the thin client will not need to be rebooted for the changes to take effect.
Printer Settings

DeTOS supports redirected printing to a locally attached USB printer or Parallel printers, if the thin client has Parallel support. Once the Printer Settings are properly configured and applied, redirected printing will be enabled for all connections created on the thin client that support the feature.

1. Open the DeTOS Control Panel from the Start menu.
2. Click the Printer settings on the left-hand side of the Control Panel, under System.
3. Click on the Add button to add a new printer. This will allow the printer to be named. Do not include spaces in this printer name.
4. Enter the following values for Printer Settings:

   - **Printer**- This menu will display multiple printers, if there is more than one printer plugged into the thin client. Select the printer that will be configured with these settings. If only one printer is available, that will display instead.
   - **Printer URI**- This field will self-populate with information provided by the printer. If a printer is connected while this menu is open but is not displaying, click on Find Printers to make it show up in this dropdown menu.

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- **Printer Driver**: This field will fill itself out once a printer has been selected and **Apply** has been clicked.

- **Manufacturer**: This drop-down menu will contain a list of support printer manufacturers, making it easier to locate the drivers needed.

- **Model**: Select the model of the printer from the list, based on the selected printer manufacturer.

- **Find Printers**: Clicking on this button will allow DeTOS to populate fields based on the printer that is currently plugged in.

- **Comment**: This allows a comment regarding the printer to be entered.

- **Location**: A comment regarding the location of the printer can be entered, if necessary.

  Additionally, there are **Printer Options** that can be set as well:

  - **Default Printer**: The current printer will be set as the default printer.

  - **Copies**: This will have the printer print multiple copies of a document, if desired.

5. Press the **Apply** button to save. The printer changes will take place immediately. No reboot is required.

6. Launch any of the local connections to begin utilizing these printer settings.
Sounds
This section allows adjustments to be made to the master volume level for the thin client.

1. Open the DeTOS Control Panel from the Start menu.
2. Click the Sound settings on the left-hand side of the Control Panel under System.

3. Left-click and drag the bar left or right to decrease or increase the volume.
4. Press the Apply button to save. Changes will take place automatically.
USB Permissions

This section allows USB external devices to be enabled or disabled for use on the thin client.

1. Open the DeTOS Control Panel from the Start menu.
2. Click the USB Permission settings on the left-hand side of the Control Panel under System.
3. Click on a check mark to allow or restrict the level of access that a USB device may have within the operating system. By default, all options are given full permission.

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<td>✔ Human Interface Devices</td>
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<td>✔ Image Devices</td>
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<td>✔ Smartcard Reader</td>
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<td>✔ Audio Devices</td>
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<td>✔ Video Devices</td>
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<td>✔ Audio/Video Devices</td>
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<tr>
<td>✔ Wireless Controllers</td>
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<tr>
<td>✔ Other Devices</td>
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</table>

⚠️ CAUTION: Understanding what each USB option associates itself with will ensure that these settings are implemented correctly. Disabling Human interface Devices, for example, will disable USB keyboards and mice. This situation is ideal for hardware that supports PS/2 input devices.

4. Press the Apply button to save. Changes will take place automatically.
Export Config

In rare instances where support is needed, users may be asked to provide the thin client’s current configuration to the support team. The thin client’s current configuration file can be exported by following these steps:

1. Plug a USB flash drive into the thin client.
2. Click the button found along the top of the Control Panel named Export Config.
3. The process only takes a few seconds. Once it is finished a message will display, saying the export is finished and the flash drive can be removed.

![Control Panel]

4. A Config.tar file will now exist on the flash drive. This file contains important diagnostic information that can be handled by a Support Analyst and will help troubleshoot and solve issues that may be experienced.
ELO Touch Screen Support

Upon connecting an ELO Touch Screen to the thin client, a calibration screen will be presented on first boot to ensure the unit functions properly.

There are two ways to calibrate the ELO Touch Screen device when attached to the thin client.

Calibration – Option 1

Upon first boot of the operating system, a calibration screen with a countdown timer in the middle will display if an ELO device is detected.

1. Use a finger or a stylus to tap the center of the red cross that displays. Try to get as close as possible to the small circle in the center of the red cross.

2. Another calibration spot will appear. Repeat the process for the calibration spots that appear on the screen.

   **NOTE:** If the calibration is inaccurate, the calibration tool will ask to re-try the process until a more accurate reading is achieved. To cancel the dialog at any time, either wait out the calibration time given or press any key.

3. Once the Touch Screen is calibrated, the desktop will display as normal.
Calibration – Option 2
The second method of calibrating the hardware can be found in the DeTOS desktop, where a **Calibrate Touchscreen** icon is available.

Follow the steps from **Option 1** to calibrate the touch screen.

NOTE: There is currently no way to configure the calibration of an individual device and push that setting via the Management Console software. Re-imaging or updating the thin client will require the device to be re-calibrated. If at any time the calibration seems inaccurate, a mouse can be plugged in and an attempt to re-calibrate the device can be performed.

Manage Packages
In the upper toolbar of the Control Panel is a button that says **Manage Packages** which opens the Package Manager. This tool can be used to enable or disable individual update packages that may be made available, as well as customization packages provided by DevonIT. These packages will be in a squashfs file type.

There are two methods of locating the files to be added to the list of available packages. They can be added locally using the **Add File** button, or they can be added from a remote location by clicking the **Add URL** button.

To add an update package locally:

1. Click on the **Add File** button in the DeTOS Package Manager.
2. Navigate to the location of the update package on the system or on a USB key and select **Open**. The USB key will typically be found within the `/media/` folder.

The package selected will now appear in the Package Manager menu. In order to add a package that is not locally stored:

1. Click on the **Add URL** button in the Package Manager.
2. Enter the complete URL for the location of the update package, using an FTP, HTTP, or HTTPS protocol.
3. If necessary, enter the **Username** and **Password** needed to access the location where the file is held.
4. Click **Ok** after all the information needed has been entered.

The package will now appear in the Package Manager menu.
Newly added update packages will default to the **Enabled** status. In the Package Manager, clicking the checkbox next to a file in the table under the **Enabled** column will toggle it between being enabled or disabled. Any changes to this status require a reboot before they will take effect.

In order to completely remove a package:

1. Select the file you wish to remove from the table.
2. Click the **Remove** button.
3. A prompt will appear to ensure that this is the action that will be taken. Click **Confirm** to continue, or **Abort** to back out of the process.

Once **Confirm** has been clicked, the package will be deleted. For this change to become permanent, the terminal will need to be rebooted.
Adding New Connections

1. Open the DeTOS Control Panel from the Start menu.
2. Click on the connection that will be created; it is listed under the Connections bar, on the left-hand side of the Control Panel.
3. The main window will split into two separate frames. The top frame will list all existing connections for this particular type or protocol. To add a new connection, click the Add button.
4. A prompt will appear, requesting for a name to be given to this connection. Enter a name for this connection and press the OK button to continue.
5. The bottom frame will display configuration fields that are specific to the connection type being created. Some connections may only have a couple of fields required for configuration and be listed on a single form. Connections that have several configuration options associated with them will have their settings grouped and sorted under separate sections, called form panels. These panels can be opened and closed by clicking the plus [+] and minus [-] buttons found along the top, right-hand side of each panel box.
6. Once the connection has been completely setup, click the Apply button along the bottom of the frame. An icon for the new session will be created on the DeTOS Desktop. The end user can double-click this icon to launch the connection.

   **NOTE:** Certain devices may not support all connections listed.

7. As connections are created in the Control Panel, icons for those sessions will appear on the desktop. Double-click the icon to launch that session.
AnyConnect VPN
The following section describes the basic steps for establishing an AnyConnect VPN connection.

![AnyConnect VPN Client](image)

**The General Section**
- **Host**- Type in the appropriate server location of the VPN host.
- **Username**- This is the default username that will be used to gain VPN access.
- **Group**- The group name that the username belongs to.
Citrix ICA

The Citrix Receiver™ client allows a connection to Citrix XenAppView Servers (formerly known as Presentation Server™). This Citrix client also contains the necessary plug-in used for connecting to XenDesktop via the thin client's local web browser.

The Connection Section

The first section displayed for a Citrix ICA session is Connection. This form panel will already be expanded.

- **Server Location**: Type in the IP address or hostname of the server.
- **Protocol**: Select the appropriate protocol needed to connect to the server. There may be multiple methods available for connecting to the server:
  - **Server**: To connect to the desktop of the server, click the radio button called Server.
  - **Published Application**: To directly connect to a published application on the server, select the radio button called Published Application.
  - **Browse for Name**: Mark the checkbox called Browse for Name, then click the Browse button. This will contact the server and populate the list. Click the down arrow on the Name menu and select the server name or published application.
The Options Section

- **Window Size** - Select the type of window the session will display in.
  - **Fullscreen** - The session will take up the entire display.
  - **Fixed Size** - A fixed window size may be selected, such as 640x480, 800x600, and 1024x768.
  - **Percentage Based** - A size may be selected that is based on the percentage of available desktop display, such as 25%, 50%, and 75%.
  - **Seamless** - When using the Published Application feature, selecting Seamless mode will launch applications directly on the desktop, without using the Citrix Window.

- **Windows Colors** - Color depth options are **16 colors**, **256 colors**, **16-bit**, and **24-bit**.

- **Sound Quality** - Adjust the sound from **Low**, **Medium**, or **High Quality**.

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Citrix SLR (Speed Screen Latency Reduction) Options-
Enabling the following two options are usually only needed when high latency is occurring or poor bandwidth conditions exist.

- **Mouse Click Feedback** - The mouse cursor will change to an hourglass as soon as a user performs a mouse click on an event and will wait for a response from the server before it changes back.

- **Local Text Echo** - This option allows a user to see the character they type into their session on the screen, without this key press hitting the actual server at that time.

**Encryption** - Select the appropriate level of encryption to be used when connecting to this Citrix Server.

**Autostart** - Enable this checkbox to automatically launch this session each time the thin client completes its boot procedure.

**Auto Restart** - Select **Yes** or **Prompt** to automatically restart the connection.

- **Yes** - Once the session is terminated, the session will automatically restart. There is no way for the end-user to stop it from occurring every time it closes.

- **Prompt** - Once the session is terminated, the user will receive a YES/NO prompt asking them if they wish to reconnect to the session.

**Use data compression** - In an environment where system and client resources are not a concern, data compression can be used to decrease the amount of data that must be sent across the network.

**Use disk cache for bitmaps** - Allows graphical objects to be stored in the local disk cache on the client device.
The Firewall Settings Section

- **Use alternative address for firewall connection** - Mark this checkbox if the session needs to connect to the Citrix server's external IP address. The external address for the server is specified as the alternate address.

- **Proxy Settings** - If the Citrix environment uses a proxy server, an appropriate type will need to be selected from the **Proxy Type** field. Enter the address of the proxy server and port number in the **Proxy Address** and **Proxy Port** fields, respectively.

The User Logon Section

- **User Name** - Specify the name of a user account to log on as. This is an optional field.

- **Domain** - Specify the domain to log on to. This is an optional field.

The Application Section

- **Application** - Specifies the path of the application on the Citrix server to be automatically launched when the connection is made. This is an optional field.

- **Working Directory** - Specifies the working directory used for the application.
Firefox Web Browser

The following section describes the steps for configuring the local Firefox web browser.

The General Section

- **Start URL** - Specifies the initial web page to appear when the browser is first launched.
- **Autostart** - Enable this checkbox to automatically launch this session after the thin client completes its boot procedure.
- **Auto Restart** - Select **Yes** or **Prompt** to automatically restart the connection.
  - **Yes** - Once the session is terminated, the session will automatically restart. There is no way for the user to stop it from occurring.
  - **Prompt** - Once the session is terminated, the user will receive a YES/NO prompt asking them if they wish to reconnect to the session.

Click the **Apply** button to save the connection. Double-click the Firefox icon on the desktop to launch the browser session. A browser plug-in for Flash Player has been pre-installed.
The Proxy Settings Section

- **Auto-detect proxy settings for this network** - This option will allow Firefox to automatically detect the proxy settings for your network.

- **Use system proxy settings** - This option allows the proxy settings configured for the system to be used.

- **Manual proxy configuration** - Choose this option to specify which proxy server to use, if more than one is available. Complete these fields listed.

- **Automatic proxy configuration** - If there is a proxy configuration (.pac) file available, use this field to specify the URL address to the .pac file.

The Kiosk Mode Section

The Firefox web browser includes a Kiosk Mode. When this option is activated, certain options within the web browser can be hidden from use, and the ability to exit can be disabled.

- **Show Menu Bar** - With this box checked, the Menu bar will appear. This option can be enabled or disabled regardless of Kiosk Mode status.

- **Enable Kiosk Mode** - This checkbox must be enabled to even view the other three options below:
  
  - **Show Navbar in Kiosk** - With this box checked, the user has access to the Address bar to change websites, and access to the Back, Forward, Stop, and Refresh buttons in the Toolbar.
  
  - **Autohide Navbar in Kiosk** - Check this box to allow the Navbar to automatically hide itself when it is not in use.

  - **Allow Quit** - This will allow easy access to any exit options available.

**NOTE:** To use Kiosk Mode correctly, make sure there is a Starting URL in the requested field. Launching Firefox in Kiosk Mode will automatically launch a Full Screen, inescapable Firefox session for end-users with Internet-ONLY access. The only way to leave the browser is to shut down the thin client.
No Machines

The following section describes the steps for configuring a No Machine connection.

The General Section

- **Server Address** - Enter the IP Address of the server.
- **Credentials** - Enter the User Name and Password for the session.
- **Server Port** - This is the port number needed to connect properly to the session.
- **Link Speed** - Choose a connection speed. This setting is optional.
- **Session** - Select the desired session from the following choices:
  - **Unix** - Launch an X11 desktop such as KDE, Gnome, XDM, or CDE. A Custom desktop may be selected to launch a specific single application in a window.
  - **Shadow** - Attach to and shadow an already running X11 session to see the display or desktop share.
  - **Windows** - Run an RDP session on a Windows Terminal Server.
  - **VNC** - Run a VNC® session on a particular VNC server.
Depending on the session that has been selected, another drop box may or may not appear requesting additional information. If a Unix session is being launched, confirmation for Desktop to connect to is required. If a Windows session is to be used, the IP address and the Domain name need to be provided. If a VNC session is being used, the VNC IP Address and Display Screen will need to be provided. If connecting to a Shadow No Machine connection, no other information is required.

The Advanced Section

- **Resolution** - This dropdown allows you to choose from a Fullscreen mode or several fixed sizes.
- **Enable SSL Encryption** - By default, this box will be checked. Un-checking this box will disable SSL Encryption.
- **Disable ZLIB Stream Connection** - Checking this box disables ZLIB stream compression. This removes the overhead associated with compression VPN network traffic, lowering server processor usage.
- **Disable Direct Draw** - This option is available for the No Machine client for Windows. This disables the use of the DirectDraw engine in favor of the GDI engine. This can resolve later conflicts with other Windows applications that may use DirectDraw. This also results in a much better performance when using Windows Vista.
RDP

The General Section

The first section displayed for an RDP® session, is named General. This form panel will already be expanded.

- **Server Name** - Enter the hostname or IP address of the server.
- **Port** - Enter the port number used in this connection.
- **User Name** - Specifies the name of a user account to log in as. This is optional.
- **Domain** - Specifies the domain to log on to.

The Display Section

- **Operate in full screen mode** - The RDP® session will take up the entire display and will not allow minimizing.
- **Operate in maximized window mode** - This option will display the session in a window. This window will allow minimizing and maximizing.
- **Use specified screen size** - The session will launch in a fixed sized window, specified by the dimensions chosen in the dropdown list below. This window can only be minimized, the fixed size is the maximum size allowed.
- **Color depth for this connection** - Select the desired color depth for this session.
The Local Resources Section

Sound Redirection Options- By default, sound from the server will redirect to the local thin client. If no sound is to be sent to the local device, then select either the Do not play sound or Leave sound on the remote thin client radio buttons.

Enable Microphone Redirection- Enabling this option will allow a microphone to be used within the session, if the desktop supports audio input.

Enable Multimedia Redirection- This option allows multimedia devices to be used within the session.

Enable Clipboard Redirection- This option will allow items on the local desktop's clipboard to be carried over to this desktop session.

Enable Printer Redirection- Mark this checkbox to redirect printing to a printer attached the local terminal. The name of the printer will need to be provided.

Enable Client Drive Mapping- Allows the user plug USB Flash Drives locally into the terminal and access the contents of the drive via the RDP® session.

Enable Com Port Mapping- Redirects serial devices on the thin client to the server.

Enable Smartcard Support- Specifies whether redirection of Smart Cards is permitted during server authentication.

NOTE: To correctly set up Printing, make sure the printer's name matches what has been assigned in the Control Panel. This can be found in the Printer section, under System Settings.
The Start a Program Section

- **Program path and filename** - Specifies the path of the application on the server to be automatically launched when the connection is made. This will launch the application in a window within the local desktop.

- **Working Directory** - Specifies the working directory used for the application.

The RD Gateway Section

- **RD Gateway Usage** - Select whether RD Gateway will be used for this session, if it is available. The options available are **Do not use**, **Always use**, **Only if direct connection cannot be made**, or **Use default settings**.

- **RD Gateway Host** - Enter the hostname for the RD Gateway server. Users may choose to **Reuse RD Gateway Credentials** if they wish to reuse their RD Gateway credentials to log in to the server as well.

- **RD Gateway Credential Source** - This option selects the method in which the RD Gateway server will be accessed. Users may **Ask for permissions (NTLM)**, **Use smart card**, or **Select later** if they can not or do not want to specify.

- **RD Gateway Profile Method** - Specifies the working directory used for the application. Users may choose to **Use default profile method** or **Use explicit settings**.
The RemoteApp Section

- Users may select from a Normal Session for a standard connection or a RemoteApp Session to enable the RemoteApp services.

- Disable RemoteApp Support Checking - This option may be enabled if

- Credentials
  - Application Name - The executable name of the application to be used.
  - Application - The location of the application. Drive redirection may need to be enabled in order for local files to open properly.
  - Command Line - Parameters to launch the application with. This is optional.

- Expand Commandline - If parameters have been entered in the Command Line field, then this option may be enabled so that any environment variables can be expanded to include the values of the remote desktop. Optionally, disabling this option will only expand the values of the local desktop.

- Expand Working Directory - Enabling this option will expand any environment variables in RemoteApp’s shell working directory to the remote desktop. Leaving this option disabled will only expand the values of the local desktop.
The Performance Section

- **Connection Speed** - Specifies the RDP® Experience. As connection options in this dropdown box are changed, associated behaviors in the checkboxes below will be selected or deselected accordingly.

- **Enable bitmap caching** - This option will allow common .bmp-based images from the session desktop to be stored on the local hard drive. Selecting this option may improve connection performance.

- **Disable cursor from blinking** - Indicates that cursor blinking should be disabled during the session.

- **Enable window manager’s key bindings** - By default RDP® attempts to grab all keyboard input when it is in focus.

- **Attach to the console of the server** - The session will connect to the console of the server (requires Windows® Server 2003 or newer).

- **Enable RemoteFX** - Toggles whether or not the connection will use the RemoteFX® feature.

The Options Section

- **Enable compression of the RDP DataStream** - In an environment where system and client resources are not capable, data compression can be used to decrease the amount of data that must be sent across the network.

- **Autostart** - Enable this checkbox to automatically launch this session after the thin client completes its boot procedure.

- **Auto Restart** - Select Yes or Prompt to automatically restart the connection.
  
  - **Yes** - Once the session is terminated, the session will automatically restart. There is no way for the user to stop it from occurring.
  
  - **Prompt** - When the session is terminated; the user will receive a YES/NO prompt asking them if they wish to reconnect to the session.
VMware Horizon View

The VMware Horizon View client allows you to connect to a VMware server, which in turn, provides the end-user with their own virtual desktop session. The following section describes the basic steps for configuring the View Client.

![VMware Horizon View Connection](image)

- **Server Address**- Enter the Hostname or IP address of the VMware Horizon View Broker.
- **Credentials**- Specify the User Name and Password of the default user account.
- **Domain**- Specifies the domain to log on to.
- **Desktop Name**- The name of the desktop can be entered if a connection should always be made to the same desktop. If the field remains empty, then the user may be prompted to select an available desktop upon connecting to the server.
- **Protocol**- Choose whether to connect to the server using the RDP or PCOIP protocol.
Enable background on startup- Selecting this option will cause the client to expand to full screen and lock the desktop layout to a single monitor, full screen display.

Desktop Layout- Choose the desktop option that best suits the display setup. If Enable background on startup is selected, this will lock to a single monitor, full screen display.

Autostart- Enable this checkbox to automatically launch this session after the thin client completes its boot procedure.

Auto Restart- Select Yes or Prompt to automatically restart the connection.

Yes- Once the session is terminated, the session will automatically restart. There is no way for the user to stop it from occurring.

Prompt- Once the session is terminated, the user will receive a YES/NO prompt asking them if they wish to reconnect to the session.

Troubleshooting Tips for VMware Horizon View Connection

If the session is set to full screen but the display covers only a fraction of the entire screen, then the allocated RAM for the virtual desktop may need to be set a little higher.

If certain features like foreign key maps, CD-ROM, USB stick, or printer redirection are not passing through to the virtual desktop session, check if the VM is at the correct version. The latest agent software executables can be downloaded at VMware’s website at: http://www.vmware.com/downloads.

If USB flash drives are to be used within the session, it is best to use sticks formatted in FAT or NTFS. Long delays sometimes occur when using flash drives formatted in FAT32. Other USB troubleshooting tips can be found at the following VMware site: http://kb.vmware.com/kb/1026991.
X11 Connection

The X11 client allows a connection to an X11 server, which provides the user with their own virtual desktop session. The following section describes the basic steps for configuring the X11 connection.

- **Session Type**: Choose from the single SSH App type or the XDMCP connection.
- **Server Address**: Specify which IP address is the X11 server.
- **Credentials**: Specify the User Name and Password of the default user account. This option is not available for XDMCP sessions.
- **Application**: This is the file path needed to launch a single application. This is only available when choosing the SSH App session type.
- **Resolution**: Choose the resolution for your connection, ranging from full screen to various fixed resolutions.
- **Autostart**: Enable this checkbox to automatically launch this session after the thin client completes its boot procedure.
- **Auto Restart**: Select Yes or Prompt to automatically restart the connection.
  - **Yes**: Once the session is terminated, the session will automatically restart. There is no way for the user to stop it from occurring.
  - **Prompt**: Once the session is terminated, the user will receive a YES/NO prompt asking them if they wish to reconnect to the session.
XenAppView

The following section describes the basic steps for configuring the XenAppView connection.

**Server Address** - Enter the URL of the Citrix XenApp server.

**Autostart** - Enable this checkbox to automatically launch this session after the thin client completes its boot procedure.

**Auto Restart** - Select **Yes** or **Prompt** to automatically restart the connection.

- **Yes** - Once the session is terminated, the session will automatically restart. There is no way for the user to stop it from occurring.

- **Prompt** - Once the session is terminated, the user will receive a **YES/NO** prompt asking them if they wish to reconnect to the session.
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