

# Add-on Administrators Guide

Wyse® Winterm™ 5 series, Based on Wyse Linux

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**WYSE**  
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# 1 Introduction

Add-ons are feature-specific software components that can be installed on a Wyse thin client without touching the underlying operating system files located in flash memory.



## Caution

The procedures presented in this guide are intended for use by system administrators. Untrained persons should not attempt to use these procedures.

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## About this Guide

This guide is intended for administrators of the Wyse® Winterm™ 5 series Thin Client. It provides information and procedures to help administrators prepare for Add-on installations, obtain Add-ons, and install and remove Add-ons. It also provides Add-on ReadMe documentation.

## Organization of this Guide

This guide is organized as follows:

Chapter 2, "Before You Begin Installing Add-ons," contains the requirements and the procedures you must complete to prepare the environment for Add-on installation. It also provides information on obtaining an Add-on from Wyse.

Chapter 3, "Installing and Removing Add-ons," provides detailed procedures on installing and removing the Add-ons.

Chapter 4, "Add-on ReadMe Documentation," provides detailed information on the Wyse® Winterm™ 5 series Thin Client Add-ons available from Wyse.

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## Wyse Technical Support

To access Wyse technical resources, visit <http://www.wyse.com/serviceandsupport>. If you still have questions, you can submit your questions using the Wyse [Support Help Form](#), or call Customer Support at 1-800-800-WYSE (toll free in U.S. and Canada). Hours of operation are from 5:00 am to 5:00 pm PST, Monday through Friday.

To access international support, visit <http://www.wyse.com/global>.

### Related Online Resources Available at Wyse

Wyse® Winterm™ 5 series Thin Client features can found in the Datasheet for your specific thin client model. Datasheets are available on the Wyse Web site at: <http://www.wyse.com/products>.

The *Wyse® Winterm™ 5 series Based on Wyse Linux Administrators Guide* provides information, and detailed system command and parameter configurations, to help administrators design and manage a Wyse® Winterm™ 5 series Thin Client environment. It also explains how to use the Start menu and Connection Manager to view, use, and configure settings and applications on the thin client. It is available at: <http://www.wyse.com/manuals>.

Wyse Thin Computing Software is available on the Wyse Web site at: <http://www.wyse.com/products/software>.



# 2

## Before You Begin Installing Add-ons

This section contains the requirements and the procedures you must complete to prepare the environment for Add-on installation. It also provides information on obtaining an Add-on from Wyse.

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### Preparing for Installation

Before you begin installing an Add-on, be sure that you have addressed the following:

- Add-on procedures work only for Wyse® Winterm™ 5 series Thin Clients with firmware version 6.0 and later.
- Ensure that your thin client will have at least 200 kB of available disk space *after* an Add-on is installed. To determine the available disk space on a thin client, refer to "Determining the Amount of Available Disk Space." In general, an Add-on requires disk space equal to 1.7 times the size of the Add-on package.
- If there is insufficient available disk space, you may choose to remove existing Add-ons (including those that may have been installed by the factory or bundled with a firmware upgrade) to make room for others (available from Wyse Technology) to be installed.

### Determining the Amount of Available Disk Space

The amount of available disk space is shown in the Add-ons dialog box.

To determine the amount of available disk space:

1. Log on to the thin client.
2. Open the Control Panel.

To open the Control Panel from the Start menu, click **Start | Control Panel**.

To open the Control Panel from the Connection Manager, click **Control Panel**.

3. Double-click the **Add-ons** icon to open the Add-ons dialog box and view the available disk space.

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### Obtaining an Add-on Package from Wyse

For availability, pricing, and ordering information in the United States and Canada, call 1-800-GET-WYSE (1-800-438-9973) or visit us at <http://www.wyse.com>. In all other countries, contact your Wyse sales representative.

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# 3

## Installing and Removing Add-ons

This section provides detailed procedures on installing and removing the Add-ons.

By default, Add-on files should be stored in the `wlx/addons` directory on the FTP server. The Add-ons dialog box allows you to add or remove Add-ons locally at the thin client. It also shows you the Available Disk Space on the thin client, and the list of current Add-ons (including Add-on information) installed on the thin client.



### Note

Ensure that your thin client will have at least 200 kB of available disk space *after* an Add-on is installed. If there is insufficient available disk space, you may choose to remove existing Add-ons (including those that may have been installed by the factory or bundled with an upgrade) to make room for others to be installed.

To identify an Add-on, use the ID of the Add-on, followed by the vendor version number, followed by the Wyse build number (in some cases a vendor version number will not exist). For example, the Add-on `ICA-8.0.1-1.12.pak` would identify Citrix ICA, Citrix version 8.0.1, Wyse build 1.12. When identifying an Add-on, be sure to check the Wyse Web site for the latest Add-on ID and details.



### Note

Upgrading an Add-on can be done manually or by configuring the thin client for automatic upgrades (For more information on thin client configuration, refer to the *Wyse® Winterm™ 5 series, Based on Wyse Linux: Administrators Guide*).

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## Installing Add-ons Automatically

Add-ons can be installed automatically by placing Add-ons into the `wyse/wlx/Addons` directory under the root directory of the FTP server (by default the root directory for the FTP server is `C:\Inetpub\Ftproot\` for Windows and `/var/ftp` for Linux or Unix) so that the Add-ons are automatically installed into the thin client during system boot-up. Any Add-on that is already installed in the thin client is ignored.

## Installing Add-ons Using FTP Pull

FTP Pull is a procedure performed locally at the thin client using the Add-ons dialog box.

To install an Add-on:

1. Log on to the thin client as a user with high privilege (statement privilege=high in <username>.ini, wnos.ini, or wlx.ini).

2. Open the Control Panel.

To open the Control Panel from the Start menu, click **Start | Control Panel**.

To open the Control Panel from the Connection Manager, click **Control Panel**.

3. Double-click the **Add-ons** icon in the Control Panel to open the Add-ons dialog box.

**Figure 1** Add-ons dialog box



4. Click **Add** to open the Add-ons Add dialog box.

Figure 2 Add-ons Add dialog box

5. Select an Add-on source (either **Obtain FTP from DHCP server** or **Use the following FTP address**).

If you select **Use the following FTP address**, enter the Server Name, Directory, User name, and Password (for the location of the files) in the appropriate text boxes.

 **Note**

There are several ways in which the thin client obtains the information about the location of the wlx directory. The directory is always on an FTP server. If the thin client is configured with a static IP address, the location comes from the Server tab information of the Network Control Panel. If DHCP is used, the information about the server and root path can come from DHCP options 161 and 162. If provided by DHCP, the value of these options overrides any local configuration. If not provided by DHCP, the values configured through the Network Control Panel are used. Otherwise, an FTP username, password, file server, and root path can be in a `wlx.ini` or be specified in the server applet, and the FTP fetch will be re-directed. Finally, file server and root path values can be overridden by reading `fileserver=` and `rootpath=` statements in a `wlx.ini` file. The thin client starts an FTP session on the file server by initiating a connection to the server and logging in using the FTP user name and password. These actions dictate the root of the directory tree visible using FTP. The thin client then takes the current root path information, concatenates `/wlx`, and uses this as the base directory for accessing all other files. The `wlx.ini` is found in this directory. User `.ini` files are found by adding `/ini` to that base directory, and so on.

**Windows DHCP Server Tip** - Open the DHCP service configuration,

right-click the DHCP server, and select the *Set predefined* option to open the Predefined Options and Values dialog box. Add a new server option item as name=`wyse-ts-home`, data type=`String`, Code=`161`. Then refresh the system configuration to synchronize the server options with the scope options. Be sure to use a String type for the data type item, not an IP address type (**Linux DHCP Server Tip** - Be sure to use a text type).

6. Click the Add-on name command button (v) to generate the Add-on name list, and select the Add-on you want to add from the list (or you can type the name of the Add-on in the Add-on name text box - be sure to type the whole filename, including the `.pak` at the end of the filename).
7. Click **Add**.

**Caution**

Do not interrupt the installation process.

8. After the Add-on is successfully installed, click **Close** to exit the Add-ons dialog box.

---

## Removing an Add-on

To remove an Add-on:

1. Log on to the thin client using a high privilege.
2. Open the Control Panel.

To open the Control Panel from the Start menu, click **Start | Control Panel**.

To open the Control Panel from the Connection Manager, click **Control Panel**.
3. Double-click the **Add-ons** icon to open the Add-ons dialog box.
4. Select an Add-on from the list of currently installed Add-ons in the Add-ons dialog box.
5. Click **Remove**, and then click **OK** to confirm the removal of the Add-on.

**Caution**

Do not interrupt the removal process.

6. After the Add-on is successfully removed, click **Close** to exit the Add-ons dialog box.



# 4

## Add-on ReadMe Documentation

This section provides detailed information on the Wyse® Winterm™ 5 series Thin Client Add-ons available from Wyse.

---

### Overview

Before you install an Add-on, be sure that you have addressed all pre-installation issues discussed in "Before You Begin Installing Add-ons."

Add-ons are shown in the following list (for detailed Add-on information, click the name of the Add-on):

- "Acrobat"
- "Auth-Domain"
- "Auth-LDAP"
- "Basic Crypto"
- "ELO Touch Screen (Serial and USB)"
- "Firefox"
- "Flash"
- "Ghostsript"
- "Go-Global"
- "HAgent"
- "Independent Computing Architecture (ICA)"
- "Java"
- "Linux Printing (LPR Print)"
- "MPlayer"
- "PCSC (USB Smart Card)"
- "PPP"
- "PPTP"
- "Remote Desktop Protocol (RDP)"
- "REXEC"
- "Screen Saver"
- "Screenshot"
- "Secure Shell (SSH)"
- "Secure Shell Server (SSHD)"
- "Simple Network Management Protocol (SNMP)"
- "SMB Print"
- "Sun Secure Global Desktop"
- "Terminal Emulation Client (TEC)"

- "ThinPrint"
- "True Type"
- "True Type Fonts"
- "TWDRV"
- "Upgrade"
- "VNC (Remote Shadow)"
- "VNC Viewer"
- "VPN"
- "Web Fonts"
- "Wireless"
- "XDMCP (X Display Manager Control Protocol)"

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## Acrobat

Wyse Acrobat allows a user to view PDF files (using Firefox) that conform to Adobe Portable Document Format specifications.

**Note**

For additional information on Adobe PDF, visit the Adobe Web site at: <http://www.adobe.com/products/acrobat/adobepdf.html>.

Wyse Acrobat includes the following notable features:

- Launch Wyse PDF Viewer directly through Firefox - Users can launch the Wyse PDF Viewer from a Firefox page that has a reference to a PDF document (user clicks the PDF link and selects Open from the current location).
- Toggle between windows - Users can toggle between a PDF Viewer window and other open windows on the desktop.
- Robust navigation ability - Users can navigate within the PDF document using mouse, keyboard, and page navigation.
- Robust viewing ability - Users can change the zoom level (magnification) for the document (25%, 50%, 100%, Page Width, or Full Page) for better viewing experience.

**Requirements and Recommendations**

Wyse Acrobat requires that the Wyse Firefox Add-on (see "Firefox") be installed first.

---

## Auth-Domain

Wyse AUTH\_DOMAIN is an Add-on for PAM authentication. It is based on the third-party software named PAM\_SMB. PAM\_SMB is a PAM module/daemon which allows authentication of UNIX users using a Windows NT server. The Wyse AUTH\_DOMAIN Add-on is designed to provide PAM\_SMB authentication for the Wyse thin client login system.

The following PAM configuration content should be written in the Global configuration file `wlx.ini/wnos.ini`, and not included in the personal user configuration file `user.ini` (it is used to notify PAM to use AUTH\_DOMAIN authentication for the login system):

```
AUTH= glogin \
auth [ default=ignore ]          /lib/security/pam_setpw.so \
auth [ success=2 default=ignore ] /lib/security/pam_guest.so \
auth [ success=1 new_authtok_reqd=1 default=ignore ] /lib/security/inifile.so try_first_pass \
auth [ success=ok new_authtok_reqd=ok default=die ] /lib/security/pam_smb_auth.so
use_first_pass nlocal \
auth [ default=ok ]             /lib/security/pam_putregistry.so save_ini=/tmp/user.ini
```

The following AUTH\_DOMAIN configuration content should be written in the Global configuration file `wlx.ini/wnos.ini` within a single line, and not included in the personal user configuration file `user.ini`:

```
AUTH_SMB.conf= domain=<NT Server Domain> server=<NT Server Address> backupserver
=<Backup NT Server Address>
```



### Note

If the parameter `backupserver` is missing, `<backup NT server address>` will be set to the same value as `<NT server address>` by default. Except for this case, any other missing parameters in the AUTH\_DOMAIN configuration will lead to an error.

If you want to use PNAgent, the SMB authorization domain and PNAgent domain must be the same domain.

### Requirements and Recommendations

Wyse AUTH\_DOMAIN requirements and recommendations include the following:

- Thin client network connectivity.
- Windows NT server which can provide NT account authentication.

---

## Auth-LDAP

Wyse AUTH\_LDAP is an Add-on for PAM authentication. It is based on the third-party software named PAM\_LDAP. PAM\_LDAP is a PAM module which allows authentication of UNIX users using an LDAP server. The AUTH\_LDAP Add-on is designed to provide PAM\_LDAP authentication for the login system.

**Note**

LDAP authorization does not accept a blank password and does not support PNAgent.

The following PAM configuration content should be written in the Global configuration file `wlx.ini/wnos.ini`, and not included in the personal user configuration file `user.ini` (it is used to notify PAM to use AUTH\_LDAP authentication for the login system):

```
AUTH= glogin \
auth [ default=ignore ]           /lib/security/pam_setpw.so \
auth [ success=2 default=ignore ] /lib/security/pam_guest.so \
auth [ success=1 new_authtok_reqd=1 default=ignore ] /lib/security/inifile.so try_first_pass \
auth [ success=ok new_authtok_reqd=ok default=die ] /lib/security/pam_ldap.so use_first_pass \
auth [ default=ok ]              /lib/security/pam_putregistry.so save_ini=/tmp/user.ini
```

The following AUTH\_DOMAIN configuration content should be written in the Global configuration file `wlx.ini/wnos.ini` within a single line, and not included in the personal user configuration file `user.ini` :

```
LDAP.conf= SERVER=<LDAP Server Address> DCBASE=<LDAP Domain Controller Name>
```

**Note**

Any missing parameters in the AUTH\_LDAP configuration will lead to an error.

**Requirements and Recommendations**

Wyse AUTH\_LDAP requirements and recommendations include the following:

- Thin client network connectivity.
- LDAP server which can provide LDAP account authentication.

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## Basic Crypto

Wyse Basic Crypto allows users to establish a connection with basic cryptography.

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## ELO Touch Screen (Serial and USB)

Wyse ELO Touch Screen allows users to make a selection by touching the monitor screen, rather than typing on a keyboard or pointing with a mouse. After a touch screen is attached through a standard Serial or USB port, you can configure and calibrate the touch screen by using the Touch Screen icon in the Control Panel.

Wyse ELO Touch Screen supports CarrollTouch Infrared (all 4000 series controllers) and all ELO Touch Serial models including the following devices:

- ELO LCD Desktop 15 inch Touchmonitor (XGA TFT color display)
- ELO Entuitive 15 inch Touchmonitor with AccuTouch Five-Wire Technology (ET1525C-7UWD-1)
- ELO Entuitive 15 inch Touchmonitor with IntelliTouch Surface Wave Technology (ETC1525C-8UWD-1)

### Requirements and Recommendations

Wyse ELO Touch Screen requirements and recommendations include the following:

- At least one available thin client Serial or USB port.
- ELO Touch Screen monitor.

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## Firefox

Wyse Firefox Web browser is a highly compatible, feature-rich browser.



### Note

During start-up, the browser may take about 50 seconds for the initial window to appear after the progress bar disappears.

Wyse Firefox includes the following features:

- Pop-up window blocking support
- Tabbed browsing
- Search function built into the toolbar



### Note

For additional information about Mozilla Firefox features and support visit the Mozilla Web site at: <http://www.mozilla.org>.

---

## Flash

Wyse Flash allows users to play Macromedia flash content within the FireFox Web browser.

### Requirements and Recommendations

Wyse Flash requires that the Wyse Firefox Add-on (see "Firefox") be installed first.

## Ghostscript

Wyse Ghostscript allows users to print PostScript files to non-PostScript printers (LPR can otherwise only print PostScript files to native PostScript printers). It also adds a PostScript rendering capability, and PDF conversion, to the LPR function.

### Requirements and Recommendations

Wyse Ghostscript requirements and recommendations include the following:

- LPR Print Add-on (see "Linux Printing (LPR Print)").
- Supported printer.



#### Note

Ensure that the LPR Print Add-on is installed *before* installing Ghostscript.

---

## Go-Global

Wyse Go-Global provides users with GO-Global clients and plug-ins to the Linux environment. GO-Global, the product family of GraphOn Corporation, is a server-based computing solution of application publishing, deployment and management.

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## HAgent

Wyse Device Manager Agent (HAgent) allows users to implement the Wyse Web Agent. The Wyse Device Manager Agent interfaces with the Wyse Device Manager system to enable pull communications. The thin client periodically checks-in with Wyse Device Manager software and, during this check-in time, discovers a device and its basic information. For information on installing Wyse Device Manager software and configuring the server environment, refer to the Wyse Device Manager software documentation.



#### Note

Ordering information for Wyse Device Manager software is available on the Wyse Web site at: <http://www.wyse.com/products/software/rapport/>.

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## Independent Computing Architecture (ICA)

Citrix® Independent Computing Architecture (ICA)® allows users to connect remotely to servers running Citrix MetaFrame. ICA Client offers quick, secure access to applications, content, and entire desktops published on servers running MetaFrame. ICA separates the user interface from the application while keeping the logic on the server. By doing this, only screen updates, mouse clicks and keystrokes traverse the connection media.

Wyse thin clients provide support of ICA technology through the ICA Add-on. This release supports the Citrix Linux client. Administrators can create, edit, launch and delete an ICA connection in different ways depending on the desktop settings.

Citrix® Independent Computing Architecture (ICA)® protocol includes the following features:

- Program Neighborhood (PN) Agent Interface
- Content Publishing

- Browser Acceleration
- Auto Client Reconnect
- Roaming User Reconnect
- Parameter Passing
- SSL (including DNS resolution)
- TLS
- Time Zone Support
- Virtual Channel SDK
- Client Device Mapping (Printers, COM ports, Audio, Drives, clipboard)
- Basic Functionality (1280x1024 resolution, memory and persistent cache, international keyboard support, TCP/HTTP Browsing, Disconnect/Reconnect, NDS Credential support, up to 128-bit encryption)
- 8-bit, 16-bit, or 24-bit graphics are supported if they are also supported on the server

This release of ICA for Wyse thin clients supports the Web interface for Citrix MetaFrame Server ICA plug-in. For example, if you visit a Web site with embedded ICA functionality, the Wyse Mozilla Firefox browser will automatically start ICA.

---

## Java

Wyse Java allows users to run the Firefox Web browser with Java support for Java applets embedded in Web pages.



### Note

For information about Java features and support visit the Java Web site at: <http://java.sun.com>.

### Requirements and Recommendations

Wyse Java requirements and recommendations include the following:

- 128 MB flash.
- Wyse Firefox Add-on (see "Firefox") must be installed first.

---

## Linux Printing (LPR Print)

Wyse Linux Printing (LPR Print) allows users to perform basic printing functionality.

**Note**

Printing PostScript files to a non-PostScript printer requires the Ghostscript Add-on (see "Ghostscript").

This release of Wyse Linux Printing (LPR Print) supports many common printers with automatic configurations for ICA, RDP, and ThinPrint connections.

**Note**

When selecting printer drivers for local, ICA, and RDP connections, select the **local** driver for local, the **non-local** driver for RDP, and either the **local** or **non-local** driver for ICA.

### Requirements and Recommendations

Wyse Linux Printing (LPR Print) requirements and recommendations include the following:

- At least one available thin client Parallel port, USB port, or Serial port for local printing.
- Ghostscript Add-on must be installed for local printing with non-post script printers (see "Ghostscript").
- At least one supported printer available to the thin client, either locally or on the network (use your printer information to correctly configure the `.ini` files).

**Note**

Despite correct configuration, there are cases in which a supported printer cannot print the test print page. In such a case, you can safely ignore this problem and successfully print from your thin client.

---

## MPlayer

Wyse MPlayer allows users to play multimedia content within the Firefox Web browser.

Wyse MPlayer supports the following types of media:

- WMV
- QuickTime
- DivX
- AVI
- MPEG
- MPEG2
- FLI
- MP3
- MP4

### Requirements and Recommendations

Wyse MPlayer requires that the Wyse Firefox Add-on (see "Firefox") be installed first.

## PCSC (USB Smart Card)

Wyse PCSC (USB Smart Card) is a utility that allows users to implement Smart Card technology. With Wyse PCSC, thin client users can choose their Smart Card security policies and implementation. Wyse PCSC supports the Smart Card software installed on the server. All proprietary level communication is handled completely on the Terminal Server (only the lower level USB Smart Card commands are sent to the thin client and ultimately to the Smart Card reader).

Wyse PCSC support includes the following features:

- Privilege control - An administrator can create a Smart Card according Microsoft documentation to allow a user of the Smart Card specific login privileges on a server.
- ICA and RDP support - An ICA or RDP user can connect to a server by inserting the Smart Card into a Smart Card reader attached to a thin client USB port.
- Secure user login to servers - Depending on the server configuration, the user must successfully complete an Enter PIN dialog box or some other means of authentication to login to a server. If the wrong PIN is entered 3 consecutive times (default), the card is locked.
- Connection control - An administrator can configure whether or not to disconnect a user from the server if a user removes the Smart Card during an active session.
- Complete file package - All the files needed to use Wyse PCSC are provided, including registry files (setting.reg and factory.reg), Smart Card reader drivers, and Stack files.

Wyse PCSC supports several Smart Card vendors and models (see Table 1). The software that you purchase to use with the USB Smart Card compliant readers will determine the type of actual Smart Cards that comply with your hardware. As long as the software you purchase uses USB Smart Card standards, Wyse PCSC is supported.



### Note

In cases where reinserting the smart card does not bring up the PIN prompt a second time, wait about 5 seconds for the PIN prompt to reappear.

**Table 1 Supported Smart Card Vendors and Models**

Vendor	Model	Description	Web Link
SCM Microsystems	SCR331	SC Reader USB	<a href="http://www.scmmicro.com">http://www.scmmicro.com</a>
Active Card	ActivIdentity USB Reader v.2.0	SC Reader USB	<a href="http://www.activcard.com">http://www.activcard.com</a>
OmniKey	Cardman 3121 USB	SC Reader USB	<a href="http://www.omnikey.com">http://www.omnikey.com</a>

### Requirements and Recommendations

Wyse PCSC requirements and recommendations include the following:

- Wyse ICA Add-on (see "Independent Computing Architecture (ICA)") or RDP Add-on (see "Remote Desktop Protocol (RDP)") must be installed first.
- For ICA connection support to a MetaFrame XP FR2 server, you must be running Wyse ICA version 6.3 or later.

- For RDP connection support to a Windows 2003 Server, you must be running Wyse RDP version 5.1.
- A supported Smart Card reader must be attached to a thin client USB port.
- Only one active Terminal Server session at a time can access the Smart Card reader. The first Terminal Server session retains access until the session is disconnected. Subsequent Terminal Server sessions do not disturb the first Terminal Server session while the first is connected. Subsequent Terminal Server sessions must be reconnected if Smart Card reader access is desired and the first session has already been closed.
- Having multiple Smart Card readers on the same thin client is not supported.

---

## PPP

Wyse Point-to-Point Protocol (PPP) allows high-privilege users to define, edit and establish a PPP connection. An Internet Service Provider (ISP) must be available to provide access to the Internet. Any of the standard means of connecting to the ISP through a modem can be used, such as a dial-up modem, cable modem, and ACM USB modem.

---

## PPTP

Wyse Linux VPN Point-to-Point Tunneling Protocol (PPTP) allows users to connect to remote VPN servers. After connecting to the remote host by PPTP connection, the thin client can communicate with the host through this channel.

If the Wyse PPP and Wyse VPN Add-ons are also installed, the PPTP becomes a network protocol that enables the secure transfer of data between a remote client (in this case the thin client) and an enterprise server environment by creating a Virtual Private Network (VPN) across TCP/IP-based data networks such as the Internet. It provides a password-protected path through the enterprise firewall to the enterprise server environment in which the network and session services required by thin clients reside.

An Internet Service Provider (ISP) must be available to provide access to the Internet (use a DSL modem to connect to the ISP).

### Requirements and Recommendations

Wyse Linux VPN Point-to-Point Tunneling Protocol (PPTP) requirements and recommendations include the following:

- Wyse PPP Add-on is required to establish PPTP VPN connections (see "PPP").
- Wyse VPN is required to establish PPTP VPN connections (see "VPN").

---

## Remote Desktop Protocol (RDP)

Wyse Remote Desktop Protocol (RDP) allows users to connect remotely to a desktop computer running Microsoft Windows NT®, Windows 2000 or 2003, or Windows XP Professional, or a server running Microsoft® Windows NT® Server 4.0, Terminal Server Edition.

RDP allows the thin client to execute Windows applications within a Windows graphical user interface (GUI) environment, even though they are actually being executed on the server. Administrators can create, edit, launch and delete an RDP connection in different ways depending on the desktop settings.

Wyse RDP includes the following features:

- Supports RDP version 5.0.
- Smart Card support.
- Variable bandwidth allocation through client-side bitmap caching and optional compression for low-bandwidth connections, significantly improving performance over low-bandwidth connections.
- Multichannel-capable protocol that permits separate virtual channels for carrying presentation data, Serial-device communication (keyboard and mouse), licensing information, and heavily encrypted data.
- Network Load Balancing (NLB), available in Windows 2000 Advanced Server and Datacenter Server.
- 8-bit, 15-bit, 16-bit, or 24-bit graphics are supported if they are also supported on the server.
- Clipboard sharing, also known as clipboard redirection. The local clipboard becomes a part of the clipboard viewer chain in the remote session, allowing the user to copy and paste between applications running in both the remote session and on the local client.
- Local-printer redirection so server applications can print locally to the client device.
- Local-audio playback so server applications can direct audio to the client device or play at the terminal server.
- Local-port redirection so server applications can use parallel and COM ports of the client device.
- Local drive redirection so server applications can use the USB storage attached to the client device.
- File redirection filter that permits exposing only specific directories.

### Requirements and Recommendations

Wyse Remote Desktop Protocol (RDP) requires that the Wyse Basic Crypto Add-on (see "Basic Crypto") be installed first.

## REXEC

Wyse REXEC allows the execution of a command on a remote host. The host must be running the rexecd daemon or rexec service.



### Note

As Wyse REXEC is a non-secure protocol, use SSH for additional security. To open an X-window application, be sure you have selected the *Remote command will open a window on this client* option and the *Export \$display* option.

---

## Screen Saver

Wyse Screen Saver allows thin clients to display a screen saver after a specified period of keyboard and mouse inactivity.

If enabled, a user can select the time of inactivity (in minutes) before the selected screen saver will turn on. Screen Saver selections include **None**, **Turn off the monitor**, **Blank the monitor**, **Fade plot**, or **Space**. A user can also enable password protection to lock the thin client so that a password is needed to resume using the thin client after the screen saver is enabled (supported for **Blank the monitor**, **Fade plot**, or **Space** only).

---

## Screenshot

Wyse Screenshot is an easy-to-use screen capture program that allows users to capture a snapshot of a screen and upload picture files to a file server.

---

## Secure Shell (SSH)

Wyse Secure Shell (SSH) allows users to log-in to a remote machine over a network and to execute commands on a remote machine. It provides strong authentication and secure communications over non-secure channels. Users can configure multiple secure shell sessions (based on available memory). Additionally, ssh provides secure forwarding of X11 connections and arbitrary TCP/IP ports.

### Requirements and Recommendations

Wyse Secure Shell (SSH) requires that the Wyse Basic Crypto Add-on (see "Basic Crypto") be installed first.

---

## Secure Shell Server (SSHD)

Wyse Secure Shell Server (SSHD) allows users to log-in to a thin client over a network. It provides strong authentication and secure communications over non-secure channels.

### Requirements and Recommendations

Wyse Secure Shell Server (SSHD) requires that the Wyse Basic Crypto Add-on (see "Basic Crypto") be installed first.

---

## Simple Network Management Protocol (SNMP)

Wyse Simple Network Management Protocol (SNMP) Add-on is an SNMP Extension Agent providing remote management software using SNMP commands to manage the thin clients.

The Wyse SNMP Extension Agent supports the Wyse private Management Information Base (MIB) for Wyse thin client products. With the Add-on installed, a generic SNMP manager can query the thin client on various information including Build Number, Memory Size, and Flash Size.

Details of MIB support are described in the `WBT5MIB.txt` file released with the SNMP Add-on. To obtain the `WBT5MIB.txt`, contact Wyse technical support.

---

## SMB Print

Wyse SMB Print allows users to add and use a printer which is accessed using the SMB protocol (for example, to use a Windows shared printer).

### Requirements and Recommendations

Wyse SMB Print requires that the Wyse Linux Printing (LPR) Add-on (see "Linux Printing (LPR Print)") be installed first.

---

## Sun Secure Global Desktop

The Wyse Add-on for Sun Secure Global Desktop (SGD) provides users with secure access to server-based applications. After the SGD connection is made, access to the remote services are available. For example, applications on the host that are accessible to users can be used through this connection.



### Note

The three types of SGD connections include, Windows, Unix, and Browser embedded. The ping before connect option is not supported.

---

## Terminal Emulation Client (TEC)

Wyse Terminal Emulation Client (TEC) is used by the Wyse thin client for running legacy character-based applications on remote computers. The administrator can set up a wide variety of connections that a user can open. The host computers are accessed through the TCP/IP network or Serial port.

Wyse TEC supports the following emulations.

**Table 2 Supported Emulations**

Supported Emulations		
3179-2	3487-HC	VT100
3180-2	5250-Printer	VT101
3196-A1	5251-11	VT102
3278-2	5291-1	VT220-7
3278-3	5292-2	VT220-8
3278-4	ADDS-VP-A2	VT320-7
3278-5	AIXTerm	VT420-7
3278-2-E	AT 386	VT420-8
3278-3-E	BBS Ansi	VT510-7
3278-4-E	DG210	VT510-8
3278-5-E	DG211	VT520-7
3279-2-E	DG212	VT520-8
3279-3-E	DG410	VT525-7
3279-4-E	DG411	VT525-8
3279-5-E	DG412	WY50
3270-Printer	IBM 3151	WY50+
3477-FC	Linux	WY60
3477-FG	SCO Ansi	WY370
3486-BA	Tandem-6530	
3487-HA	VT52	

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## ThinPrint

Wyse ThinPrint TCP/IP transmits print jobs from servers in Microsoft Terminal Services and Citrix MetaFrame environments in an efficient manner to the thin client.

**Note**

Virtual Channel is not supported in this release.

For additional information on ThinPrint, and for information on configuring ThinPrint Server Engine software, visit the ThinPrint Web site at: <http://www.thinprint.com>.

**Note**

Wyse ThinPrint supports local printers and LPD printers.

Wyse ThinPrint includes the following features:

- Driver support to enable ThinPrint printing - Session users communicate with the Terminal Server over the Citrix protocol ICA or the Microsoft protocol RDP. With ThinPrint .print they are able to print over TCP/IP in every case. The print jobs are sent outside the thin client session directly to the client or network printer (separation of the data stream). This improves print performance since available bandwidth can be better used. Moreover, each user can use all the printers in the network which are reachable over TCP/IP - regardless of the type of client that is used (printing over TCP/IP to clients in masked networks, however, is not supported).
- Improved performance - The ThinPrint client receives print data from the server, decompresses it, and sends it to the print device.
- ThinPrint AutoConnect - Automatically creates client printer objects on the Terminal Server when the session is opened.
- Efficiency within firewalls - Provides more efficiency for devices within firewalls.

### Requirements and Recommendations

Wyse ThinPrint requirements and recommendations include the following:

- Wyse Linux Printing (LPR) Add-on is required for remote printing (see "Linux Printing (LPR Print)").
- ThinPrint .print Server Engine software (build 5.5 or later) must be installed on the server.

**Note**

Installing the Ghostscript Add-on will make additional printers available in the printer list (see "Ghostscript").

---

## True Type

Wyse True Type supports True Type fonts (including libfreetype.a).

## True Type Fonts

Wyse True Type Fonts include the following:

- bitstream vera sans
  - bitstream vera sans mono
  - bitstream vera serif
  - luxi mono
  - luxi serif
  - luxi sans
- 

## TWDRV

Wyse 3M Touch Screen (TWDRV) allows users to make a selection by touching the monitor screen, rather than typing on a keyboard or pointing with a mouse. After a touch screen is attached to the thin client through a standard Serial or USB port, you can configure and calibrate the touch screen by using the Touch Screen icon in the Control Panel.

Wyse 3M Touch Screen supports the following devices:

- All 3M Touch Serial models
- All 3M Touch USB models

### Requirements and Recommendations

Wyse 3M Touch Screen requirements and recommendations include the following:

- At least one available thin client Serial or USB port.
  - 3M Touch Screen monitor.
- 

## Upgrade

Wyse Upgrade allows users with Wyse Linux versions earlier than v6.2 to install Wyse Linux v6.3 Add-ons using FTP pull. If you are running a version of Wyse Linux that is earlier than v6.2, you must install the Upgrade Add-on before using the procedures in "Installing Add-ons Using FTP Pull."

---

## VNC (Remote Shadow)

Wyse VNC (Remote Shadow) allows the remote system running the VNC Viewer to shadow a thin client and remotely interact with the user interface of the thin client.

### Requirements and Recommendations

Wyse VNC requirements and recommendations include the following:

- To shadow a thin client, the VNC Viewer must be installed on the remote server and the VNC Add-on must be installed on the thin client.
- VNC is compatible with the VNC viewer included in Wyse Device Manager software. For best performance however, it is recommended that you use VNC viewers that implement the latest VNC protocols.

---

## VNC Viewer

Wyse VNC Viewer provides users with a VNC viewer connection capability. It allows a thin client to be operated/monitored (shadowed) from a remote machine on which VNC Viewer is installed. VNC Viewer is intended primarily for support and troubleshooting purposes.

### Requirements and Recommendations

To shadow a thin client, the VNC Viewer must be installed on the remote server and the VNC (Remote Shadow) Add-on must be installed on the thin client (see "VNC (Remote Shadow)").

---

## VPN

Wyse Virtual Private Network (VPN) allows high-privilege users to define and edit VPN connections provided at least one VPN configuration Add-on (such as PPTP) is also installed.

### Requirements and Recommendations

Wyse PPTP is required to establish PPTP VPN connections (see "PPTP").

---

## Web Fonts

Wyse Web Fonts include the following:

- Aerial
- Aerial Mono
- Tymes (Times New Roman)
- Veranda

---

## Wireless

Wyse Wireless allows users to utilize an existing wireless network.

Supported authenticated key management protocols include:

- **NONE** - plaintext mode
- **WEP** - static WEP keys mode
- **IEEE 802.1X** - IEEE 802.1X using EAP authentication and (optionally) dynamically generated WEP keys
- **WPA-Personal (PSK)** - WPA pre-shared key
- **WPA-Enterprise (EAP)** - WPA using EAP authentication
- **WPA2-Personal (PSK)** - WPA2 pre-shared key
- **WPA2-Enterprise (EAP)** - WPA2 using EAP authentication

Supported pair-wise (unicast) ciphers for WPA include:

- **CCMP** - AES in Counter mode with CBC-MAC [RFC 3610, IEEE 802.11i/D7.0]
- **TKIP** - Temporal Key Integrity Protocol [IEEE 802.11i/D7.0]



### Note

One of these ciphers is required when WPA-Personal (PSK) or WPA2-Personal (PSK) is used.

Supported peripherals include:

- Cisco Aironet AIR-CB21AG, 802.11a/b/g, CardBus
- DLink AirPlus DWL-AG650, 802.11a/b/g, CardBus

**Note**

PCMCIA adapters are only be supported on the Model VX0, Product V50 thin client.

**Requirements and Recommendations**

Wyse Wireless requires that the Wyse Basic Crypto Add-on (see "Basic Crypto") be installed first.

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## XDMCP (X Display Manager Control Protocol)

Wyse XDMCP (X Display Manager Control Protocol) is a network protocol. It provides users with a mechanism for an X-Terminal. The X-Terminal will only run the X-Server and it will allow applications running on remote machines to be displayed on it. From the XDMCP Settings option users can configure the thin client XDMCP settings (a connection style of **Query** - selects only the one host you specify in Host. **Chooser** - selects all the hosts you specify in Host, or **Broadcast** - send BroadcastQuery packets to the network and the first responding display manager will be chosen; and a connection program of either **Xnest** or **Xserver**).

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