Dell Wyse 5030 PCoIP Zero Client

User Guide

Regulatory Model: PxN
Regulatory Type: PxN001
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Rev. A01

Notes, cautions, and warnings

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

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

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

Contents

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Welcome to Dell Wyse 5030 PCoIP zero client

The Dell Wyse 5030 PCoIP zero client delivers workstation-level performance. It is compact, strong, and flexible. Its dedicated hardware PCoIP engine delivers the highest level of display performance available for advanced applications, including CAD, 3D solids modeling, video editing, and so on.

It offers the full benefits of an efficient and secure centralized computing environment, like multiple display support, multimedia playback, HD audio, and four USB peripheral ports.

2

Chassis overview

The desktop chassis of the Dell Wyse 5050 AIO PCoIP zero clients is designed to decrease a cluttered desk space. It offers an easy-to-deploy and highly secure configuration, and a cost-effective cloud-based networking computing.

Chassis—Front view and rear view

Front view

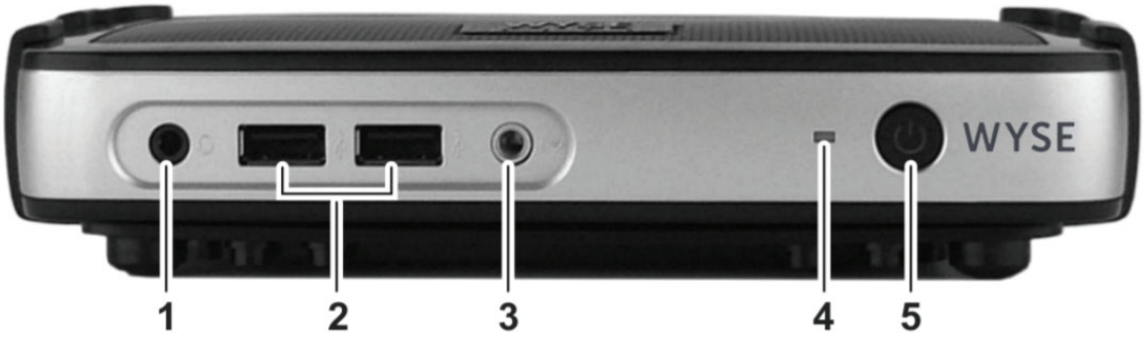

Figure 1. Front view

Rear view

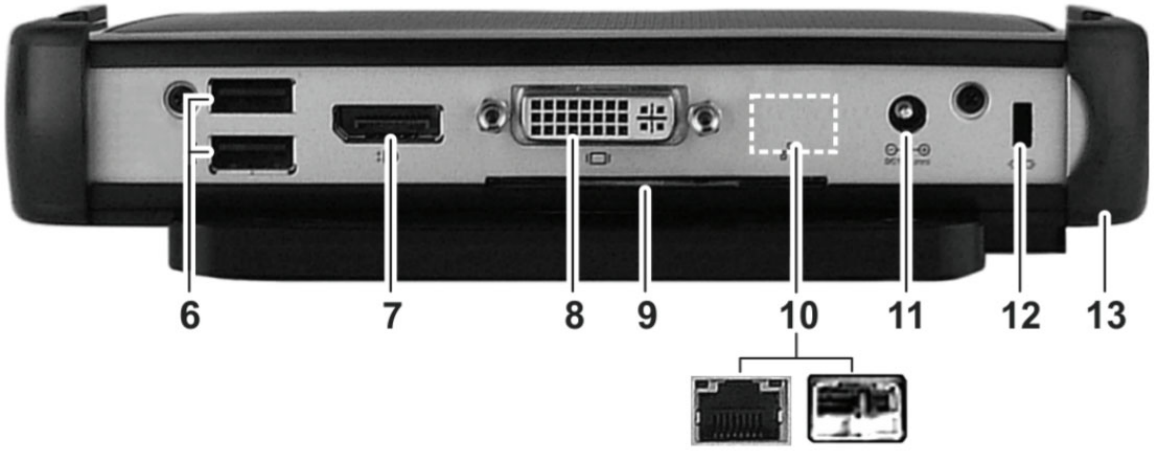

Figure 2. Rear view

1. Headphone/microphone jack
2. USB 2.0 port—2x
3. Line out/Speaker out
4. Status LED

5. Multifunction power button/LED
6. USB 2.0 port—2x
7. Display Port connector
8. DVI-I port—1x DVI-D/1x VGA
9. Product Information tab
10. Network port, 10/100/1000 Base-T, or SFP/Mini-GBIC slot
11. +12 V DC Power adapter input
12. Lock receptacle
13. Horizontal stand/VESA mount

Product information tab

On the rear view of the zero client you can pull the product information tab from the slot to see the serial number, service tag, part number, and so on.

Figure 3. Product information tab

3

Hardware installation

Dell Wyse 5030 PCoIP zero client hardware installation

For more information about hardware installation, see the **Dell Wyse 5030 PCoIP Zero Client Quick Start Guide** at Dell Support

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Removing and installing components

NOTE: The images in this document may differ from your computer depending on the configuration you ordered.

Safety Precautions

CAUTION:

Follow the safety precautions described in the following sections when you perform an installation or a disassembly/reassembly procedure.

- Turn off the system and all attached peripherals.
- Disconnect the system and all attached peripherals from AC power.
- Disconnect all network cables, telephone or telecommunications lines from the system.
- Use a wrist grounding strap and mat when working inside any computer system to avoid electrostatic discharge (ESD) damage.
- After removing a system component, carefully place the removed component on an anti-static mat.
- Wear shoes with non-conductive rubber soles to help reduce the risk of being shocked or seriously injured in an electrical accident.

Standby Power

Dell products with standby power must be completely unplugged before the chassis is opened. Systems that incorporate standby power are essentially powered while turned off. The internal power enables the system to be remotely turned on (wake on LAN), suspended into a sleep mode, and have other advanced power management features.

After you unplug a system and before you remove components, wait approximately 30 to 45 seconds to allow the charge to drain from the circuits. Remove the battery from portable computers.

Bonding

Bonding is a method for connecting two or more grounding conductors to the same electrical potential. This is done through the use of a Field Service ESD kit. When connecting a bonding wire, always ensure that it is connected to bare metal and never to a painted or non-metal surface. The wrist strap should be secure and in full contact with your skin, and be sure to always remove all jewelry such as watches, bracelets, or rings.

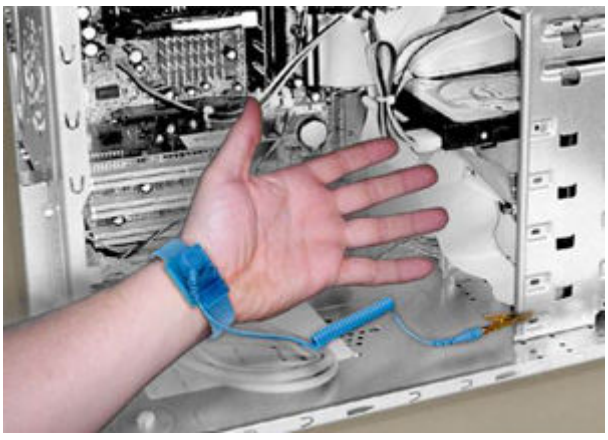


Figure 4. Bonding

Electrostatic Discharge Protection

ESD is a major concern when you handle electronic components, especially sensitive components such as expansion cards, processors, memory DIMMs, and system boards. Very slight charges can damage circuits in ways that may not be obvious, such

as intermittent problems or a shortened product life span. As the industry pushes for lower power requirements and increased density, ESD protection is an increasing concern.

Due to the increased density of semiconductors used in recent Dell products, the sensitivity to static damage is now higher than in earlier Dell products. For this reason, some previously approved methods of handling parts are no longer applicable.

There are two recognized types of ESD damage: catastrophic and intermittent failures.

- **Catastrophic** —The damage causes an immediate and complete loss of device functionality. An example of catastrophic failure is a memory DIMM that has received a static shock and immediately generates a "No POST/No Video" symptom with a beep code emitted for missing or nonfunctional memory.

  NOTE: Catastrophic failures represent approximately 20 percent of ESD-related failures.

- **Intermittent** —The DIMM receives a static shock, but the tracing is merely weakened and does not immediately produce outward symptoms related to the damage. The weakened trace may take weeks or months to melt, and in the meantime may cause degradation of memory integrity, intermittent memory errors, etc.

  NOTE: Intermittent failures represent approximately 80 percent of ESD-related failures. The high rate of intermittent failures means that most of the time when damage occurs, it is not immediately recognizable.

The more difficult type of damage to recognize and troubleshoot is the intermittent (also called latent or “walking wounded”) failure. The following image shows an example of intermittent damage to a memory DIMM trace. Although the damage is done, the symptoms may not become an issue or may not cause permanent failure symptoms for some time after the damage occurs.

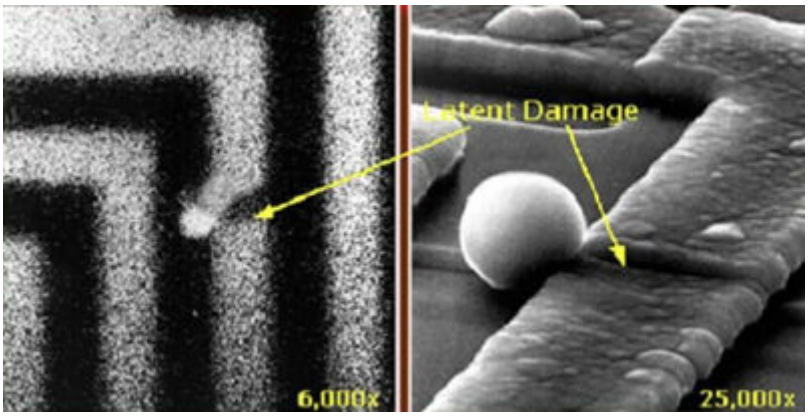


Figure 5. Intermittent

Do the following to prevent ESD damage:

- Use a wired ESD wrist strap that is properly grounded.

  The use of wireless anti-static straps is no longer allowed; they do not provide adequate protection.

  Touching the chassis before handling the parts does not ensure adequate ESD protection on parts with increased sensitivity to ESD damage.

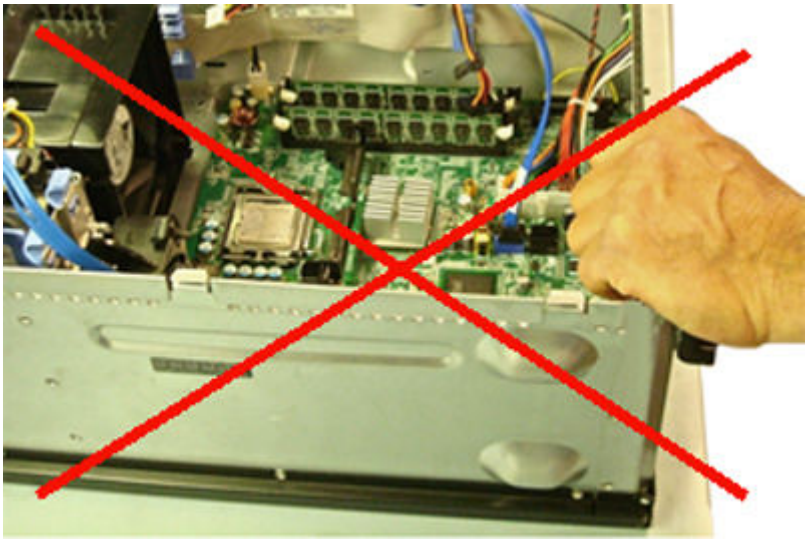


Figure 6. Chassis Bare Metal grounding (unacceptable)

- Handle all static-sensitive components in a static-safe area. If possible, use anti-static floor pads and workbench pads.
- When handling static-sensitive components, grasp them by the sides, not by the top. Avoid touching pins and circuit boards.
- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the anti-static packing material until you are ready to install the component. Before unwrapping the anti-static packaging, be sure to discharge static electricity from your body.
- Before transporting a static-sensitive component, place it in an anti-static container or packaging.

The ESD field service kit

The unmonitored Field Service kit is the most commonly used. Each Field Service kit includes three main components: anti-static mat, wrist strap, and bonding wire.

Figure 7. ESD field service kit

Table 1. Wrist straps

Wrist strap and bonding wire	Wireless ESD Strap (unacceptable)
 Figure 9. Wrist strap and bonding wire	 Figure 10. Wireless ESD strap (unacceptable)

ESD Wrist Strap Tester

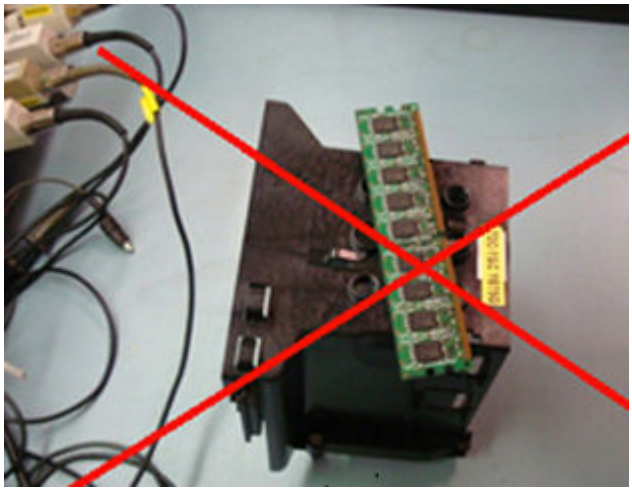
The wires inside of an ESD strap are prone to damage over time. When using an unmonitored kit, it is best practice to regularly test the strap prior to each service call, and at a minimum, test once per week. A wrist strap tester is the best method for doing this test. If you do not have your own wrist strap tester, check with your regional office to find out if they have one. To perform the test, plug the wrist-strap's bonding-wire into the tester while it is strapped to your wrist and push the button to test. A green LED is lit if the test is successful; a red LED is lit and an alarm sounds if the test fails.

Figure 11. ESD wrist strap tester

Insulator elements

It is critical to keep ESD sensitive devices, such as plastic heat sink casings, away from internal parts that are insulators and often highly charged.

Table 2. Placement of Insulator Elements

Unacceptable	Acceptable
 Figure 12. Unacceptable — DIMM lying on an insulator part (plastic heat sink shroud)	 Figure 13. Acceptable — DIMM separated from the insulator part

Consider the working environment

Before deploying the ESD Field Service kit, assess the situation at the customer location. For example, deploying the kit for a server environment is different than for a desktop or portable environment. Servers are typically installed in a rack within a data center; desktops or portables are typically placed on office desks or cubicles.

Always look for a large open flat work area that is free of clutter and large enough to deploy the ESD kit with additional space to accommodate the type of system that is being repaired. The workspace should also be free of insulators that can cause an ESD event. On the work area, insulators such as Styrofoam and other plastics should always be moved at least 12 inches or 30 centimeters away from sensitive parts before physically handling any hardware components.

ESD packaging

All ESD-sensitive devices must be shipped and received in static-safe packaging. Metal, static-shielded bags are preferred. However, you should always return the damaged part using the same ESD bag and packaging that the new part arrived in. The ESD bag should be folded over and taped shut and all the same foam packing material should be used in the original box that the new part arrived in.

ESD-sensitive devices should be removed from packaging only at an ESD-protected work surface, and parts should never be placed on top of the ESD bag because only the inside of the bag is shielded. Always place parts in your hand, on the ESD mat, in the system, or inside an anti-static bag.

Figure 14. ESD packaging

Transporting sensitive components

When transporting ESD-sensitive components such as replacement parts or parts to be returned to Dell, it is critical to place these parts in anti-static bags for safe transport.

ESD protection summary

It is strongly suggested that all field service engineers use the traditional wired ESD grounding wrist strap and protective anti-static mat at all times when servicing Dell products. In addition, it is critical that engineers keep sensitive parts separate from all insulator parts while performing service and that they use anti-static bags for transporting sensitive components.

Lifting equipment

NOTE: Do not lift greater than 50 pounds. Always obtain assistance from another person or persons, or use a mechanical lifting device.

Adhere to the following guidelines when lifting equipment:

1. Get a firm balanced footing. Keep your feet apart for a stable base, and point your toes out.
2. Bend your knees. Do not bend at the waist.
3. Tighten stomach muscles. Abdominal muscles support your spine when you lift, offsetting the force of the load.
4. Lift with your legs, not your back.
5. Keep the load close. The closer it is to your spine, the less force it exerts on your back.
6. Keep your back upright, whether lifting or setting down the load. Do not add the weight of your body to the load. Avoid twisting your body and back.
7. Follow the same techniques in reverse to set the load down.

Before working on your thin client

You must perform the below steps before you work on the thin client.

1. Save and close all open files and exit all open applications.
2. Click **Start** > **Power** > **Shut down** to shut down your thin client.

   NOTE: For shut down instructions, see documentation of the respective operating system.

3. Disconnect your thin client and all the attached devices from their electrical outlets.
4. Disconnect all the cables such as telephone cables and network cables from your thin client.
5. Disconnect all attached devices and peripherals, such as keyboard, mouse, and monitor, from your thin client.

After working on your thin client

After you complete any replacement procedure, ensure that you connect any external devices, cards, and cables before turning on your computer.

CAUTION: To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

1. Replace the battery.
2. Replace the base cover.
3. Connect any external devices, such as a port replicator or media base, and replace any cards, such as an ExpressCard.
4. Connect any telephone or network cables to your computer.

   CAUTION: To connect a network cable, first plug the cable into the network device and then plug it into the computer.

5. Connect your computer and all attached devices to their electrical outlets.
6. Turn on your computer.

Recommended tools

Following are the required tools:

- Phillips head screwdrivers: #0, #1, and #2
- Plastic scribe

Removing and installing components

This section provides detailed information on how to remove or install the components from your zero client.

Pre-requisites

1. Ensure that the proper tools are available.
2. Ensure that the client is turned off and disconnected from the power source.

To remove the components from your zero client, complete the following task:

1. Remove the M2.5x4 screws that secure the chassis cover to the client.

Figure 15. Rear view

2. Pry the chassis cover from the edge.

   NOTE: Use a plastic scribe to pry the chassis cover from an edge.

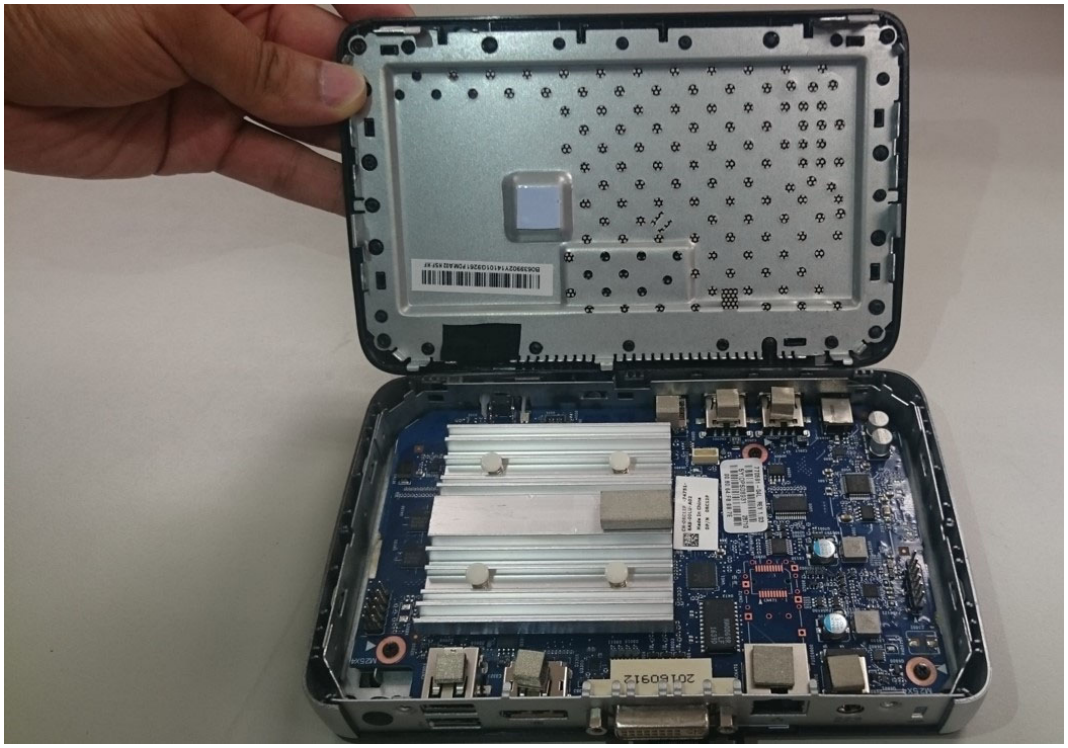


Figure 16. Chassis cover

3. Lift the chassis cover away from the client.
4. Remove the M2.5x4 screws that secure the system board to the client.

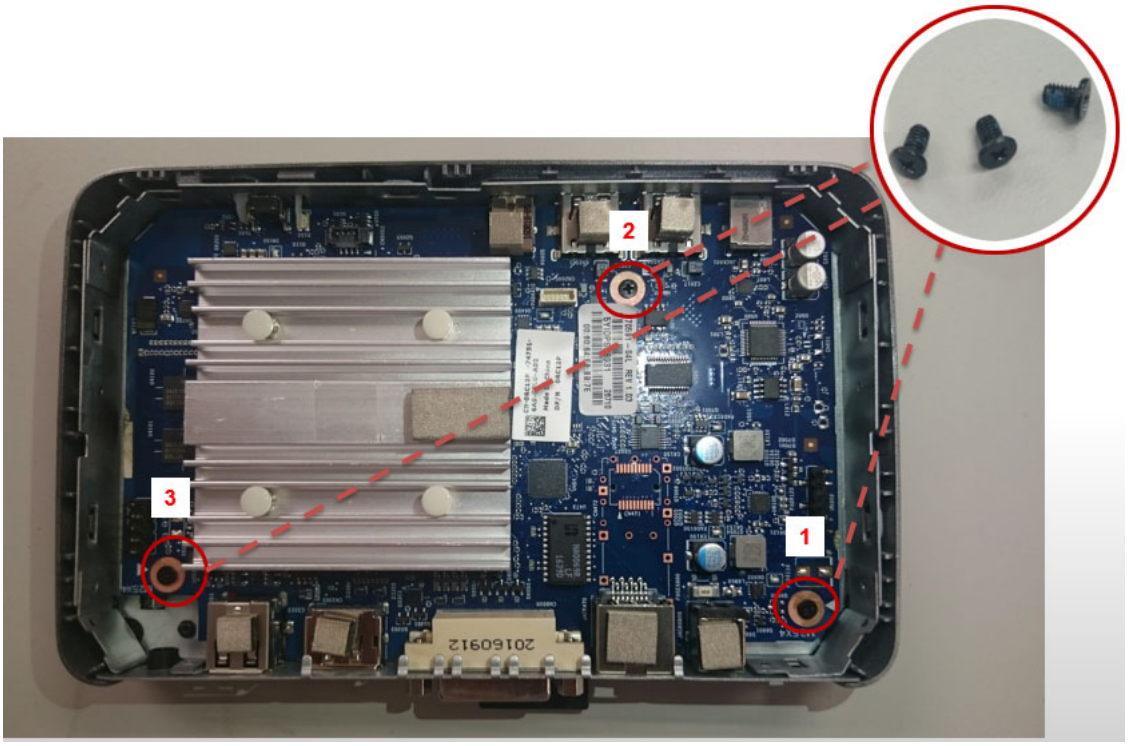


Figure 17. System board

5. Lift the system board away from the client.
6. Press the three snap fits on the back of the system board to release the thermal module.

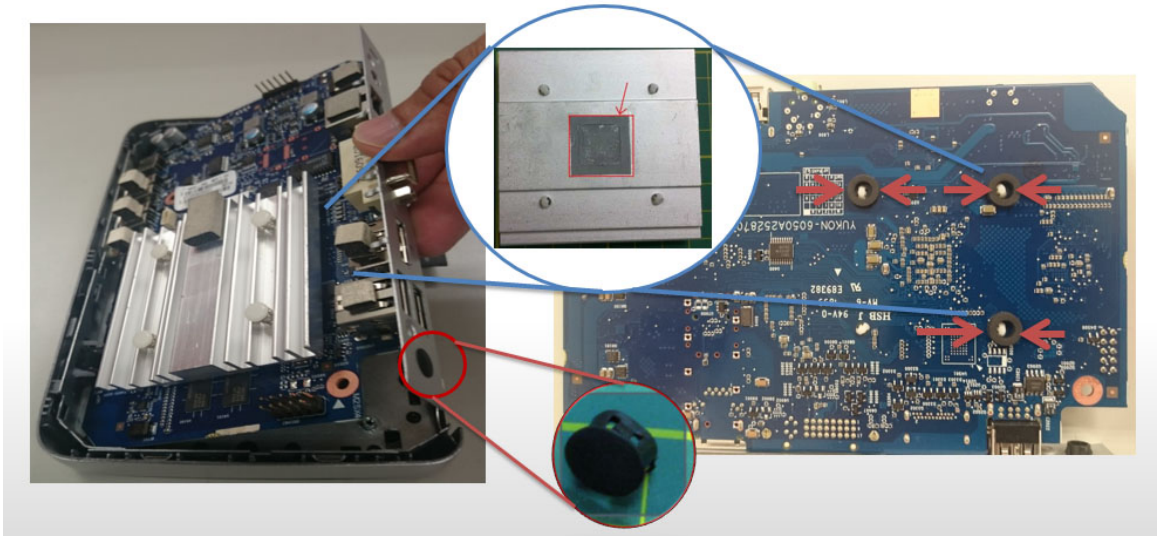


Figure 18. Thermal module

7. Lift the thermal module away from the client.

Installing the components

To install the components of your zero client, follow the disassembly steps in reverse order.

Download operating system images

1. Go to Dell.com/support.
2. Click **Product Support**, enter the Service Tag of your thin client, and then click **Submit**.

   NOTE: If you do not have the Service Tag, use the auto detect feature or manually browse for your thin client model.

3. In the left pane, click **Drivers and Downloads**.
4. From the **Operating system** drop-down list, select the appropriate operating system.
5. Scroll down the page and select the operating system image to install.
6. Click **Download** to download the operating system image.

Critical callouts

Whole unit replacement—WUR

The reimaging procedure for Teradici based Wyse products, such as Dell Wyse 5030 PCoIP zero clients. A Cheetah programmer is required to perform the reimaging procedure. Carry-In-Service (CIS) centers do not support piece parts replacement and re-imaging, instead issue a Whole Unit Replacement (WUR).

5

Initial environment setup

Dell Wyse 5030 zero client uses PC-over- IP (PCoIP) protocol environment. The zero client connects to a host server which is PCoIP capable.

Before setting up and using the zero client, you should install PCoIP. This guide helps you to set up the zero client and establish a remote connection to your host server using PCoIP technology.

NOTE: PCoIP technology is designed to deliver a user desktop from a centralized host server across standard IP networks. The PCoIP technology supports full DisplayPort or DVI-D quad monitor video, complete USB 2.0 compatibility, and full-duplex high-definition audio.

6

Setting up the zero client

Read the Safety Guidelines before setting up and operating the product. Make sure the All-in-One zero client is turned off and disconnected from the AC power.

To set up the zero client, do the following:

1. Connect the keyboard, mouse, and Ethernet network.

   The remaining connections of the peripheral devices are connected to other ports.
2. Connect the power cable to the zero client power input port before connecting to a 100-240 V AC, 50 to 60 Hz electrical outlet.
3. Press the **Power Button** and the power button turns green.
4. Wait for the monitor to display the On Screen Display (OSD).

   Zero client LED indicators include:
   - **Off**—AC power is off.
   - **Amber**—AC power is on, and zero client power is off.
   - **Green**—Zero client power is on.
   - **Blinking green**—Host server is in low-power state.

   NOTE: If the monitor does not show the OSD, check the connections and make sure the All-in-One zero client is turned on.

7

Establishing a PCoIP connection

To establsih a PCoIP connection, do the following:

1. Turn on the zero client and wait until the **Connect command** button on the zero client user screen is active.
2. Click **Connect**.

   NOTE: If the Connect command button on the zero client user screen is inactive or if the zero client cannot discover host servers on the network, check the network connection and make sure the Ethernet switch or router is turned on.

   The following message is displayed:

   Discovering hosts, please wait ...

   After the process of host discovery is complete, a list of available hosts on the network is displayed.
3. Select the preferred host, and click **OK**.

8

Video resolution

How to set custom resolution for PCoIP zero clients

PCoIP zero clients enables you to set a custom resolution on the client, which is saved even when the thin client is turned off. This lets you set a resolution that is different from the attached display's native resolution. The following are the steps to set the display resolution:

1. Connect to the **On-Screen Display (OSD)**.
2. Select **Options**, and then select **User Settings**.
3. Click **Display Topology**, and then enable display configuration.
4. Select the display resolution from the list of supported resolution values.

NOTE:

- Zero clients with firmware 3.0 to 3.1.x inherit the native resolution of the attached monitor.
- In the View environments, this capability requires a connection to a VMware View 4.5 or newer virtual desktop. Also, make sure the VMware View has enough video RAM set to support high resolutions.

Display connectors with PCoIP enabled device

The following information describes various display connectors, ports, and how they are used with a focus on achieving resolution of 2560x1600:

Depending on the PCoIP device, you can have multiple display connectors that have different uses, such as:

1. **DVI-A—analog video only**—This DVI-A is used for analog displays using a **DVI-VGA** adapter cable.
2. **DVI-I—integrated digital and analog video**—This DVI-I is used for digital displays with DVI cables or analog displays with a DVI-VGA adapter cable.
3. **DVI-D—digital video only**—This can be used for digital displays with DVI cables.
4. **Display Port (DP)**—This DVI-D can be used for DisplayPort displays with a DisplayPort cable or DVI displays if a DP-DVI adapter cable is used.

   Individual Display Port links support dual-link data rates when operating in Display Port mode supporting resolutions of 2560x1600. They can also provide single-link data rates when operating in **DisplayPort++/DVI** mode.

5. **Mini DisplayPort (mDP)**—This Mini DisplayPort can be used for the Mini Display Port displays with a mDP cable, or a mDP-DP cable or DVI displays if a mDP-DVI adapter cable is used.

   Mini DisplayPort links supports dual-link data rates and 2560x1600 resolutions.

6. **Single-link DVI—SL-DVI**—The DVI specification allows a maximum pixel clock of 165 MHz to be used on a single-link DVI video signal. The highest 60Hz-refresh VESA resolution supported by single-link connections is 1920x1200.

7. **Dual-link DVI—DL-DVI**—Dual-link DVI doubles the number of data pairs, which allows resolutions requiring an effective pixel clock of up to 330 Hz to be supported. The highest 60 Hz refresh VESA resolution supported by dual-link DVI connections is 2560x1600.

   NOTE: These dual-link connectors can support either single-link data rates or dual-link data rates.

   NOTE:

   - PCoIP zero clients only supply single-link data rates through each DVI connector.
   - Dual-link connectors are provided to allow all the digital DVI cable types.
   - Single-link DVI cables can be plugged into dual-link DVI connectors and passes single link data rates, if the analog pin compatibility is maintained.
   - Dual-link DVI cables require dual-link DVI connectors and can not be plugged into single-link DVI connectors. Analog pin compatibility is also required.

- To achieve 2560x1600 @ 60 Hz resolutions on a dual-link DVI capable monitor through a PCoIP zero client, you must use an adapter cable to combine two single-link DVI data outputs into a single dual-link DVI connection.

Monitor resolutions and refresh rates supported in PCoIP zero clients and host cards

In general, PCoIP zero clients and the Remote Workstation cards should work with standard display resolutions supported by **Video Electronics Standards Association (VESA)**.

The following are the list of tested monitor resolutions supported —display timing, all at 60 Hz display refresh rate:

1. Single-link rate—
   - 640 x 480
   - 800 x 600
   - 848 x 480
   - 1024 x 768
   - 1280 x 720
   - 1280 x 768
   - 1280 x 800
   - 1280 x 960
   - 1280 x 1024
   - 1360 x 768
   - 1366 x 768
   - 1400 x 1050
   - 1440 x 900
   - 1600 x 900
   - 1600 x 1200
   - 1680 x 1050
   - 1920 x 1080
   - 1920 x 1200
2. Dual-link rate—
   - 1792 x 1344
   - 1856 x 1392
   - 1856 x 1392

9

Safety guidelines

Improper connection, or mounting of the product could result in component failure or undesired interference. Follow the below guidelines before setting up and operating your device.

- **Setup**—
  - Do not connect to AC power until all other connections—including the power adapter are made. Connecting or disconnecting components, or equipment on the back panel when the device is receiving AC power can cause power surges, and damage the device.
  - Do not force a connector into its socket. If any undue resistance is encountered, ensure that the connector is correctly oriented to the receptacle.
- **Venting and care**—
  - Mount the device only as shown or in accordance with the instructions provided with Dell approved mounting accessory kits. Improper orientation could restrict the airflow of heat from the device and damage it.
  - Allow sufficient space around the device for ventilation, do not place the device in any enclosure that restricts airflow around the device, and do not place any objects on the device or block the vent outlets. For environmental operating specifications, see System specifications.
- **Power sources**—
  - When turning off the device, make sure to perform a complete shutdown—through the power button. Do not disconnect the AC power cord, DC power cord, or shut off power at a circuit breaker—including power strips, to turn off the device.
  - Surge protectors for electrical devices are recommended in areas of lightning. However, when lightning is occurring, your equipment should be properly shut down and unplugged from AC power until the storm has passed.

10

System specifications

This section provides the configuration details of Dell Wyse 5030 zero client.

Table 3. System specifications

Features	Description
Processor	Teradici TERA2321 PCoIP Core logic speed—600 MHz
Memory	**DRAM controller** • Memory banks—One, 32–bit • DRAM technology—DDR3 SD RAM, 1.5 V • Configuration—Single, Solder down, Cannot be installed by an user. • Capacity—512 MB • DRAM Data path—32–bit DDR3L unbuffered 1066 MT/s.
Power	Worldwide autosensing 100–240 VAC, 50/60 Hz power supply, the multifunction power button LED
Power consumption	Less than 9 watts
Security	Built-in Kensington security slot—cable sold separately
Certifications—based on US ratings	VMware Ready, PCoIP connected
I/O peripheral support	DisplayPort 1.1, DVI-I port, 1 VGA adapter, four external USB 2.0 ports (2 front, and 2 back)
Networking	10/100/1000 Base-T Gigabit Ethernet Optional Fiber SFP Module Ready—Mutually exclusive with RJ45
Display	• Panel display— 1920 x 1080 x 124 @ 60 Hz • DVI digital—Up to 1920 x 1080 x 24 @ 60 Hz • VGA analog—Up to 1920 x 1080 x 24 @ 60 Hz • Contrast ratio—> 2000:1 • View Angle–160° / 160° (CR≥10)
Flash	SPI flash ROM only
Audio	Composite Audio 1/8-inch mini jack Output: 1/8-inch mini jack, full 16-bit stereo, 48 KHz sample rate
Dimensions—Height x Width x Depth	29 mm x 177 mm x 116 mm—1.14 in x 6.97 in x 4.57 in Weight 0.48 kg—1.06 lb
Mountings	Horizontal feet Optional mount - Vertical feet
Temperature range	Horizontal position 10° to 40° C—50° to 104° F Vertical position, power button up 10° to 40° C—50° to 104° F Storage -10° to 60° C—14° to 140° F
Humidity	Condensing 20% to 80% Noncondensing 10% to 95%
Keyboard and mouse	Enhanced USB keyboard with Windows keys—104 keys

Table 3. System specifications (continued)

Features	Description
	USB optical mouse are also available and sold separately—availability varies by region
Warranty	Three-year limited hardware warranty
Support and deployment	Complete services portfolio including Deployment Services, ProSupport, and Accidental Damage service.

11

Support

Service offerings

This section describes the service offerings available for Dell Wyse 5050 AIO PCoIP zero client.

ABU service offerings

Table 4. ABU service offerings

Region	Country
ABU — North America	United States and Canada