

BeneVision

Central Monitoring System


Service Manual

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For this manual, the issued Date is May2019 (Version:6.0).

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WARNING

- **Federal Law (USA) restricts this device to sale by or on the order of a physician or other practitioner licensed by U.S. state law to use or order the use of this device.**
-
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NOTE

- **This manual describes all features and options. The equipment may not have all of them. Contact Mindray service department for any questions.**
-

Manufacturer's Responsibility

Contents of this manual are subject to changes without prior notice.

All information contained in this manual is believed to be correct. Mindray shall not be liable for errors contained herein nor for incidental or consequential damages in connection with the furnishing, performance, or use of this manual.

Mindray is responsible for safety, reliability and performance of this product only in the condition that:

- All installation operations, expansions, changes, modifications and repairs of this product are conducted by Mindray authorized personnel; and
- The electrical installation of the relevant room complies with the applicable national and local requirements; and
- This product is operated under strict observance of this manual.

Return Policy

In the event that it becomes necessary to return a unit to Mindray, follow the instructions below.

1. Obtain a return authorization.

Contact the Mindray Service Department and obtain a Mindray Customer Service Authorization Number. The Mindray Customer Service Authorization Number must appear on the outside of the shipping container.

Return shipments will not be accepted if the Mindray Customer Service Authorization Number is not clearly visible. Please provide the model number, serial number, and a brief description of the reason for return.

2. Freight policy

The customer is responsible for freight charges when this product is shipped to Mindray for service (including any relevant customs fees or other freight related charges).

3. Return address

Please send the part(s) or equipment to the address offered by Customer Service Department.

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Preface

Manual Purpose

This manual provides detailed information about the installation, maintenance, cleaning, and troubleshooting of the BeneVision Central Monitoring System to support effective troubleshooting. It is not intended to be a comprehensive, in-depth explanation of the product architecture or technical implementation. Use of the manual is necessary for proper equipment maintenance and will help to eliminate equipment damage and personal injury.

This manual is based on the maximum configuration; therefore, some contents may not apply to your monitor. If you have any question, please contact our Customer Service Department.

Intended Audience

This manual is geared for clinical professionals who are expected to have a working knowledge of medical procedures, practices and terminology as required for monitoring of critically ill patients.

Contact your local Mindray Service Organization for information on product courses which address service and support for this product.

It is recommended that the user should change the passwords for user maintenance once they take ownership of the equipment.

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1 Safety

1.1 Safety Information

DANGER

- Indicates an imminent hazard situation that, if not avoided, will result in death or serious injury.
-

WARNING

- Indicates a potential hazard situation or unsafe practice that, if not avoided, could result in death or serious injury.
-

CAUTION

- Indicates a potential hazard or unsafe practice that, if not avoided, could result in minor personal injury or product/property damage.
-

NOTE

- Provides application tips or other useful information to ensure that you get the most from your product.
-

1.1.1 Dangers

There are no dangers that refer to the product in general. Specific "Danger" statements may be given in the respective sections of this operation manual

1.1.2 Warnings

WARNING

- The device is intended for use only by clinical professionals or under their guidance. It must only be used by persons who have received adequate training in its use. Anyone unauthorized or untrained must not perform any operation on it.
 - The CMS is a clinical information device. Except for using such components as the mouse and keyboard to perform normal operations, do not touch or disassemble any other component, especially the power component; otherwise, it may result in personnel injury.
 - Do not connect this system to outlets with the same circuit breakers and fuses that control current to devices such as life-support systems. If this system malfunctions and generates an overcurrent, or when there is an instantaneous current at power ON, the circuit breakers and fuses of the building's supply circuit may be tripped.
 - Failure on the part of the responsible hospital or institution employing the use of the CMS to implement a satisfactory maintenance schedule may cause undue equipment failure and possible health hazard.
 - Be sure to keep the packaging materials from children's reach. Disposal of the packaging materials shall comply with your local requirements.
 - If any value displayed on the screen of the CMS is abnormal or questionable, first determine the patient's vital signs by alternative means and then verify that the CMS or monitor is working correctly.
 - The physiological waveforms, parameters and alarms displayed on the CMS are transmitted from the monitor through the network. If there is a network failure, the data loss or delay may occur. Pay close attention to the patients during a network failure.
-

1.1.3 Cautions

CAUTION

- Hospitals without stable power source should use an Uninterruptible Power Supply (UPS) to power the CMS. When there is a power failure, the system should be shut down by following the specified shutdown procedure before the UPS is turned off. If the system has a sudden power failure, system failure may occur and consequently the system will not work correctly next time or even have a serious result.
 - The host of the CMS should be installed with the original Microsoft Windows's system and standard upgrade program, such as the service package. Illegal software may lead to abnormal or incorrect system operating.
 - Restart the CMS every three months. Long time operation of the system may lead to a failure of the operating system. Protect the device from damage caused by drop, impact, strong vibration or other mechanical force during servicing.
-

1.1.4 Notes

NOTE

- Refer to the Operator's manual for more information.
-

1.2 Equipment Symbols

See *BeneVision Central Monitoring System Operator's Manual* for information about the symbols used on this product and its packaging.

FOR YOUR NOTES

2 Introduction

2.1 Overview

The BeneVision Central Monitoring System (hereinafter called CMS), including CentralStation, WorkStation and ViewStation, is intended for professional physicians or paramedics to conduct centralized monitoring over patients monitored by Mindray individual monitors and/or telemetry systems in hospitals or medical institutions.

The central monitoring system comprises powerful system software and high-performance computer. It constructs a central network by connecting monitors and/or telemetry. By collecting, processing, analysing and outputting the information coming from monitors and/or telemetry, the central monitoring system can achieve centralized monitoring over multiple patients so as to greatly promote the efficiency and quality of the monitoring work.

2.2 Intellectual Property Protection

The BeneVision Central Monitoring System uses a license for intellectual property protection. You must use the license before starting the system. Otherwise, the system cannot start.

NOTE

-
- **When reinstalling the system software, try not to remove the old database so as to keep the old monitoring data.**
 - **If your license is lost, please contact Mindray service personnel.**
-

2.3 Versions

The CMS system software, dongle and service manual versions correspond to each other as below.

CMS System Software	Dongle driver	Service Manual
03.01.00	04.0.16.2	1.0
03.01.00 or 03.02.00	04.0.16.2	2.0
03.03.00	04.0.16.5	3.0
03.04.00	04.0.16.5	4.0
04.00.00	04.0.16.5	5.0

3 System Installation

3.1 Pre-installation Preparations

3.1.1 Environmental Requirements

The CMS should be installed in an environment where the system can be easily viewed, operated and maintained.

The environment where the CMS is installed should be reasonably free from noises, vibration, dust, and corrosive, flammable and explosive substances.

If the CMS is installed in a cabinet, sufficient space in front and behind should be left for convenient operation, maintenance and repair. Moreover, to maintain good ventilation, the CMS should be at least 2 inches (5cm) away from around the cabinet.

When the CMS is moved from one place to another, condensation may occur as a result of temperature or humidity difference. In this case, never start the system before the condensation disappears.

3.1.2 Power Requirements

Each component of the CMS must be powered by the specified power source.

To protect the hospital personnel from electric shock, the CMS (including the host and displays) and its recorder must have their casings properly grounded. The host of the CMS is provided with a 3-wire power cable, which must be plugged into a properly grounded 3-wire receptacle. If a 3-wire, grounded receptacle is not available, consult the hospital electrician.

WARNING

- **Make sure that the operating environment and power source of the CMS meet the specific requirements; otherwise, unexpected consequences, e.g. damage to the equipment, may result.**
 - **Appropriate power supply must be selected according to the setup of the system power voltage; otherwise, serious damage may be caused to the system.**
 - **Never use a 3-wire to 2-wire adapter with any unit of the CMS.**
 - **The CMS host cannot be installed with any other software besides the Windows system, necessary drivers, and drivers/software listed in this manual. Otherwise, normal operation of CMS may be affected and unexpected consequences may result.**
-

NOTE

- When the CMS software runs as normal service, it supports Windows® 7 and Windows® 10 operating systems.
- When the CMS software runs as application, it supports Windows Server 2016 operating system.
- Before performing the operations described below, make sure that the main unit is not installed with any application software except the accompanying software of Windows.

3.1.3 Power and Heat Requirements

The following table lists the power and heat requirements.

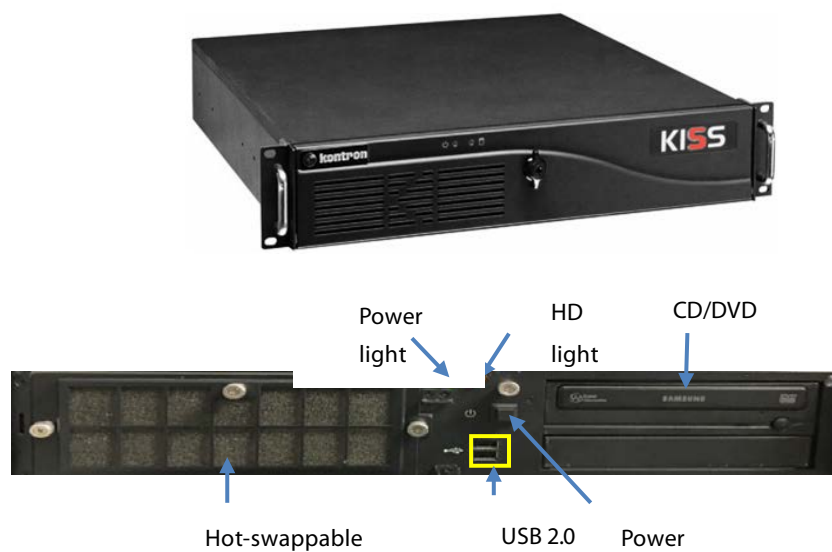
QTY	Host	Item	Watt/per	Watt/Total	Max BTU
1	Kontron KISS 2U	CS	400	400	1364
1	HPE DL360 Gen10	CS	1000	1000	3413
1	HP EliteDesk 800 G4SFF	CS	250	250	853
1	HP ProDesk 600 G4 Desklop Mini	CS	65	65	222
4	ELO 1929LM	LED	28	112	381.92
4	HP E220T	LED	35	140	477.4
4	HP E230T	LED	57	228	194.51
1	HP 1920S-48G-POE	Switch	481	481	1641.4
1	HP 1920S-48G	Switch	32.2	32.2	105.98
1	Cisco Air-ct2504-5-k9	AP	12.95	12.95	44.1595
4	ATEN CE750	KVM	7.2	28.8	98.208
1	Tripp Lite - SMART 1500 RM2U	UPS	1350	1350	4603.5
1	Tripp Lite - SMART 3000 RM 2U	UPS	2250	2250	7672.5
1	Tripp Lite - SU3000RTXL3U	UPS	2400	2400	8184
Total				9634.95	32274.5

3.2 CMS Host

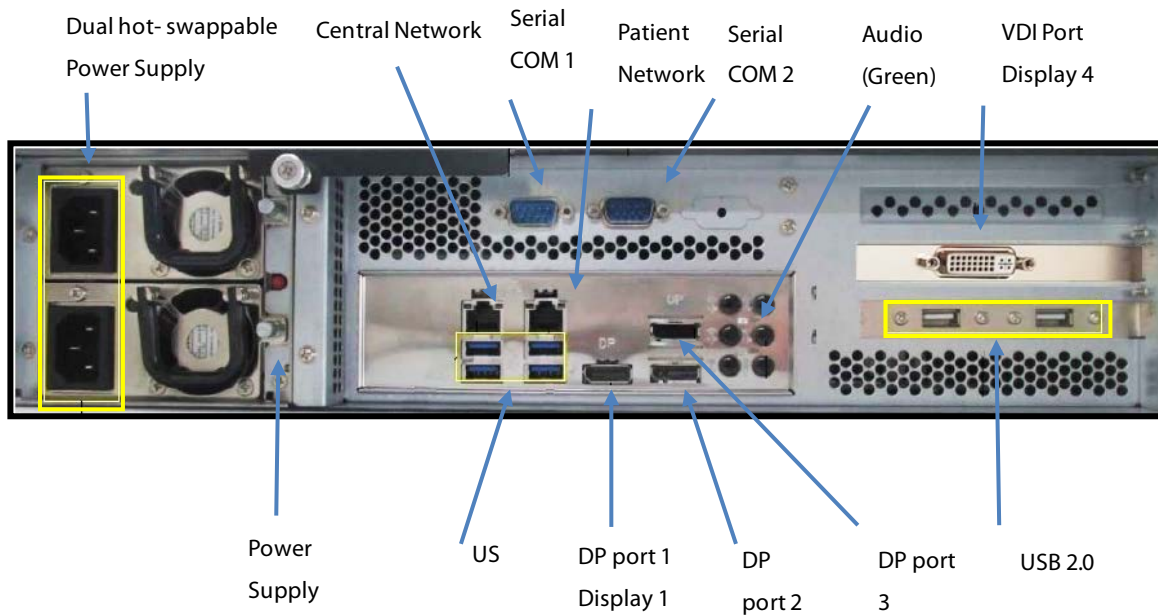
Kontron KISS 2U, HPE DL360 Gen9, HP800G1, HP EliteDesk 800G2 , HP EliteDesk 800G3 SFF and HP EliteDesk 800G4 SFF are compatible with the BeneVision CMS software (version 03.XX or later).

3.2.1 Kontron KISS 2U (023-001020-00)

Connectors-Front Panel



Connectors-Rear Panel

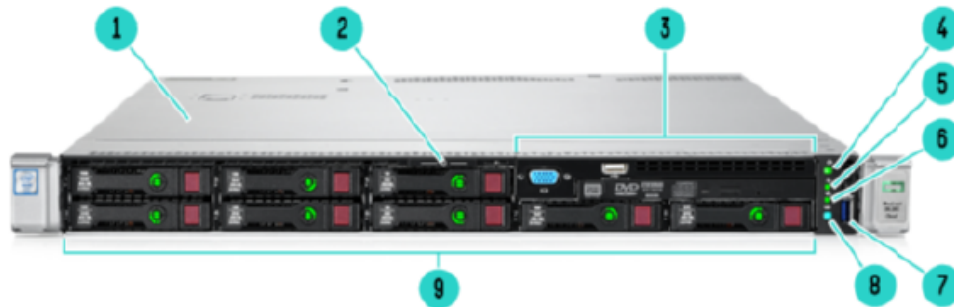


Description of the Connectors

- COM 1: Used for multiple purposes, Programming Transmitters and Recorder.
- COM 2: Designated for Paging.
- USB 3.0: Used for multiple purposes, Touchscreen, Mouse/Keyboard.
- USB 2.0: Used for multiple purposes, Touchscreen, Mouse/Keyboard.
- Central network: Assigned to the Central Monitoring (Central Monitoring) Network.
- Patient network: Assigned to the Bedside (Patient) Monitoring Network.

3.2.2 HPE DL360 Gen9 (023-001671-00)/HPE DL360 Gen10(023-001839-00)

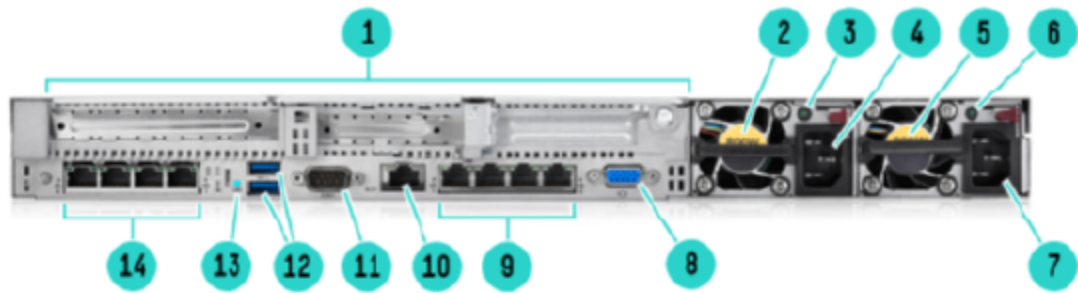
Connectors-Rear Panel



Front View

1. Access Panel
2. Serial Label| Pull Tab
3. HPE Universal Media Bay
NOTE: Shown w/VGA, USB 2.0 and DVD-ROM or DVD-RW option. Alternative options 2 SFF HDDs or VGA and USB 2.0.
4. Power On/Standby button and system power LED button
5. Health LED
6. NIC Status LED
7. USB 3.0 Connector
8. Unit Identification Button & LED
9. SAS/SATA/SSD Drive Bays

Connectors-Rear Panel



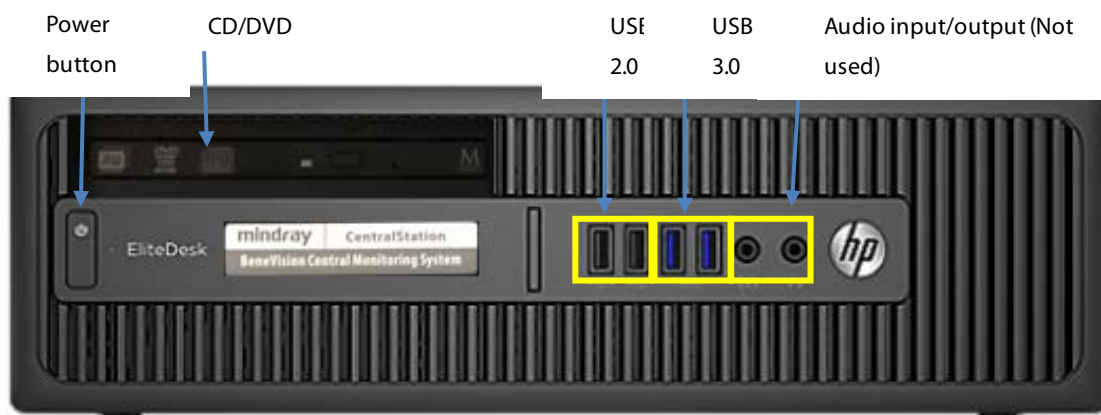
Rear view

Overview

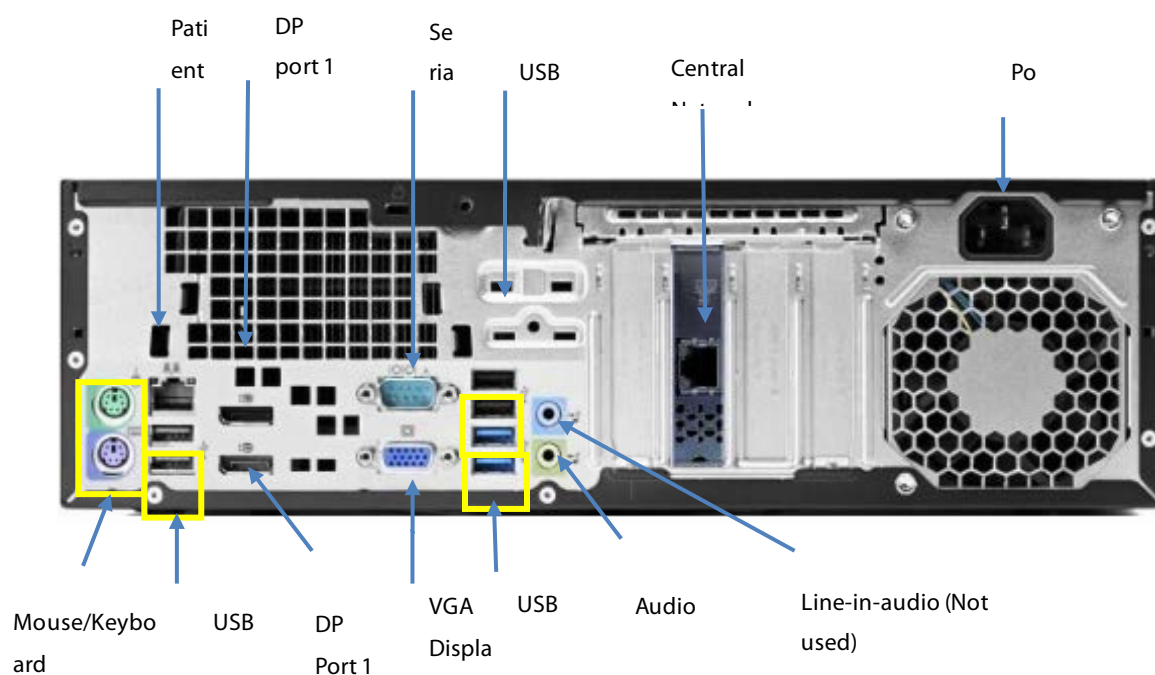
1. PCIe 3.0 Slots 1-3
NOTE: Slot 1 and 2 Riser Ships Standard, only certified with standard riser
2. HPE Flexible Slot Power Supply Bay 2
3. Power Supply 2 Status LED
4. Power Supply 2 C13 Connection
5. HPE Flexible Slot Power Supply Bay 1
6. Power Supply 1 Status LED
7. Power Supply 1 C13 Connection
8. Video Connector
9. Embedded 4x1GbE Network Adapter
10. Dedicated iLO 4 connector
11. Serial Port Connector (Optional)
12. USB 3.0 Connectors (2)
13. Unit Identification LED
14. FlexibleLOM bay (Optional)
NOTE: Shown: 4x1Gbe.

3.2.3 HP EliteDesk 800 G1 SFF (023-000969-00)

Connectors-Front Panel



Connectors-Rear Panel



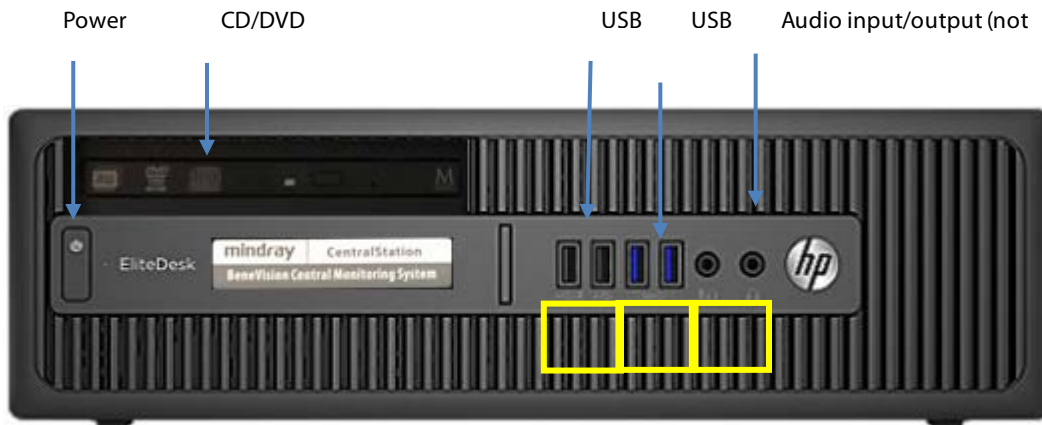
Please be noted that a USB to RS-232 adapter (PN 023-000739-00) and a RS-232 cable (PN 300A-10-f08997) are required to connect a paging to 800G1 computer.

Description of the Connectors

- COM 1: Used for multiple purposes, *Programming Transmitters* and *Recorder*.
- COM 2: Designated for *Paging* (Using USB to Serial adapter).
- USB 3.0: Used for multiple purposes, *Paging*, *Display 4*, *Touchscreen*, and *Mouse/Keyboard*.
- USB 2.0: Used for multiple purposes, *Paging*, *Touchscreen*, *Display 4*, and *Mouse/Keyboard*.
- Central network: Assigned to the Central Monitoring (Central Monitoring) Network.
- Patient network: Assigned to the Bedside (Patient) Monitoring Network.

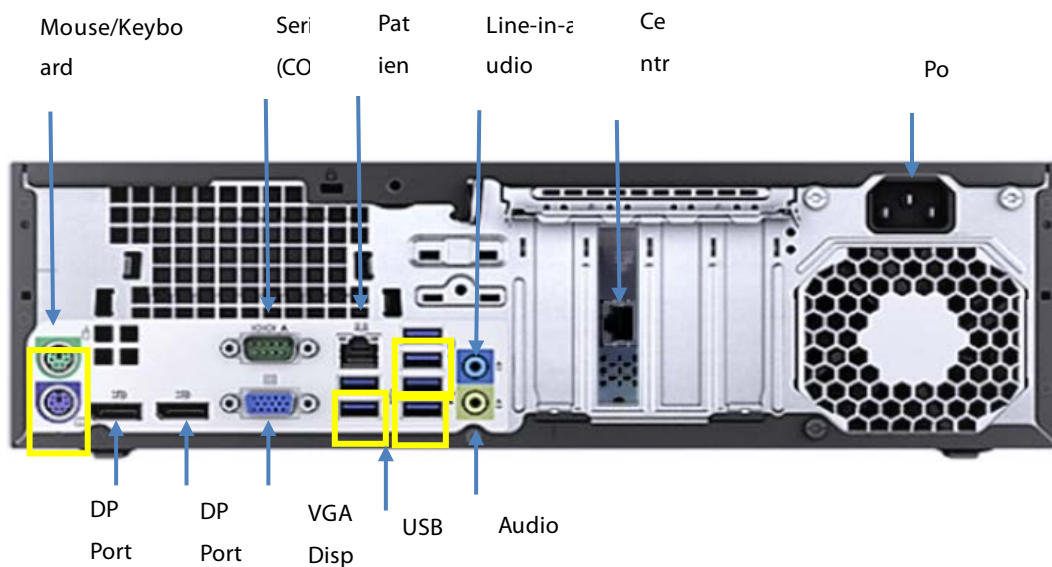
3.2.4 HP EliteDesk 800 G2 SFF (023-001325-00)

Connectors-Front Panel



Please be noted that a USB to RS-232 adapter (PN 023-000739-00) and a RS-232 cable (PN 300A-10-f08997) are required to connect a paging to 800G2 computer.

Connectors-Rear Panel



Description of the connectors:

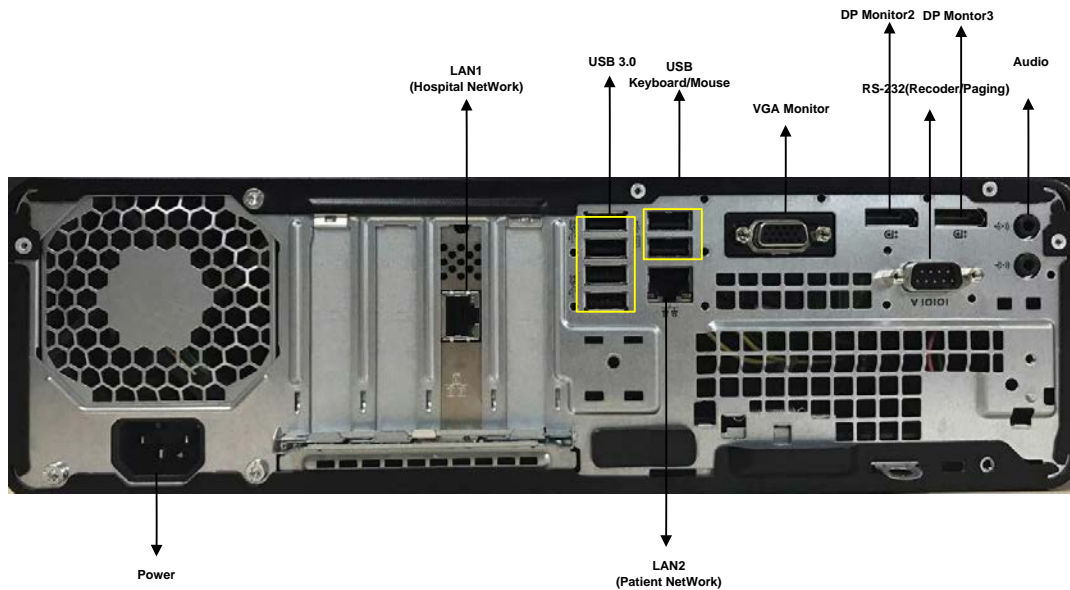
- COM 1: Used for multiple purposes, *Programming Transmitters and Recorder*.
- COM 2: Designated for *Paging* (Using USB to Serial adapter).
- USB 3.0 : Used for multiple purposes, *Paging, Display 4, Touchscreen, and Mouse/Keyboard*.
- USB 2.0 : Used for multiple purposes, *Paging, Touchscreen, Display 4, and Mouse/Keyboard*.
- Central network : Assigned to the Central Monitoring (Central Monitoring) Network.
- Patient network : Assigned to the Bedside (Patient) Monitoring Network.

3.2.5 HP EliteDesk 800 G3 SFF (023-001544-00) /HP EliteDesk 800G4 SEF(023-001777-00)Connectors-Front Panel



Please be noted that a USB to RS-232 adapter (PN 023-000739-00) and a RS-232 cable (PN 300A-10-f08997) are required to connect a paging to 800G3/800G4 computer.

Connectors-Rear Panel

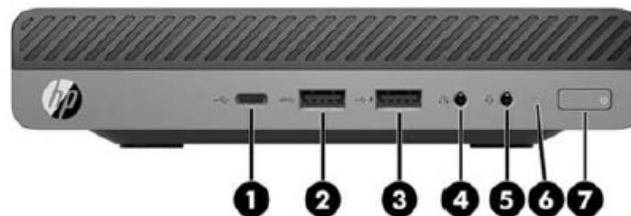


Description of the connectors:

- COM 1: Used for multiple purposes, *Programming Transmitters* and *Recorder*.
- COM 2: Designated for *Paging* (Using USB to Serial adapter).
- USB 3.0 : Used for multiple purposes, *Paging*, *Display 4*, *Touchscreen*, and *Mouse/Keyboard*.
- Central network : Assigned to the Central Monitoring (Central Monitoring) Network.
- Patient network : Assigned to the Bedside (Patient) Monitoring Network.

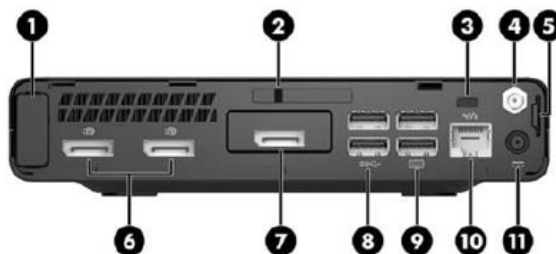
3.2.6 HP ProDesk 600 G3 Desktop Mini (023-001581-00)/HP ProDesk 600 G4 Desktop Mini (023-001779-00)

Connectors-Front Panel



- | | |
|--|---|
| 1. USB Type-C™ charging port | 5. Universal Audio Jack with CTIA headset support |
| 2. USB 3.1 Gen 1 port (5 Gbit/s data speed) | 6. Hard drive activity light |
| 3. USB 3.1 Gen 1 charging port (5 Gbit/s data speed) | 7. Dual-state power button |
| 4. Headphone connector | ? ? |

Connectors-Rear Panel



- | | |
|--|---|
| 1. Antenna cover | 7. Choice of port (DisplayPort™ 1.2, HDMI, VGA, Serial or USB-C™) (USB-C™ option has alt mode DisplayPort™ 1.2 or 15W output) |
| 2. Cover lock switch | 8. (2) USB 3.1 Gen 1 (5 Gbit/s data speed) (black) |
| 3. Cable lock slot | 9. (2) USB 3.1 Gen 1 (5 Gbit/s data speed) (black), allows for wake from S4/S5 with keyboard/mouse when connected and enabled in BIOS |
| 4. External antenna connector | 10. RJ-45 Network connector |
| 5. Padlock loop | 11. Power connector |
| 6. (2) Dual-Mode DisplayPort™ 1.2 (DP++) | |

3.2.7 Configuring Paging COM Port Settings

To configure Paging COM port settings, follow this procedure:

1. Open the ConfigDir folder in the directory where the CMS software is installed: C:\Program Files\Mindray CMS\CS_MultiBackend\ConfigDir.
2. Open the configuration file named as Paging.ini.
3. Configure the following settings:
 - ◆ Comport=2; // COM Port
 - ◆ baudrate=9600; // Bits per second
 - ◆ databit=8; //Data bits
 - ◆ stopbit=1; //Spot bits
 - ◆ parity=N; //Parity

NOTE

-
- **The paging system needs to be physically attached to the master CentralStation.**
-

3.3 Display Installation

From this section on, the following sections in this chapter describe how to set up all the devices (such as displays, printer, and recorder) that are going to be used with this system and how to connect them to the Central Station.

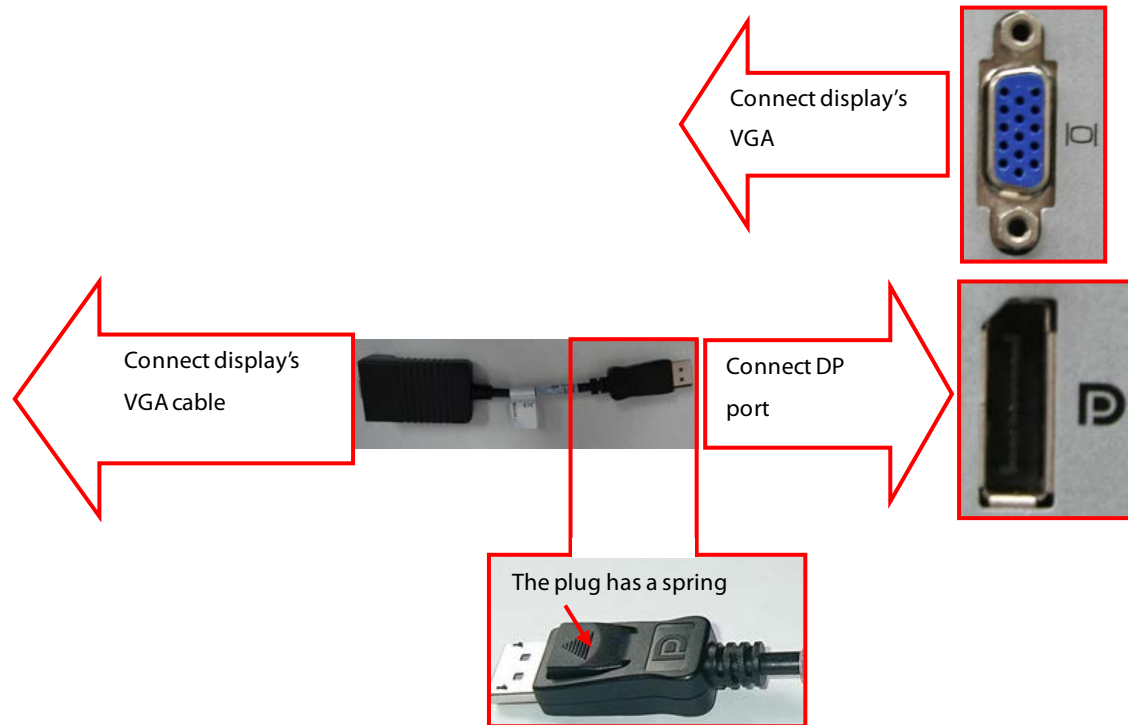
NOTE

-
- **If KVM extenders connected to the system, please refer to Chapter 6 *Connection Diagrams for Host, Remote Display, and KVM*.**
-

3.3.1 Implementing Double Screen Display by DP-to-VGA Adapter

The double screen display in the CMS can be achieved by DP-to-VGA adapter:

1. Shut down the computer first.
2. Then connect two screens by DP-to-VGA adapter:



NOTE

- When unplugging the DP-to-VGA adapter, press the spring button on the DP plug and then unplug it downward. Failure to do so may damage the DP plug. The label beside DP port is



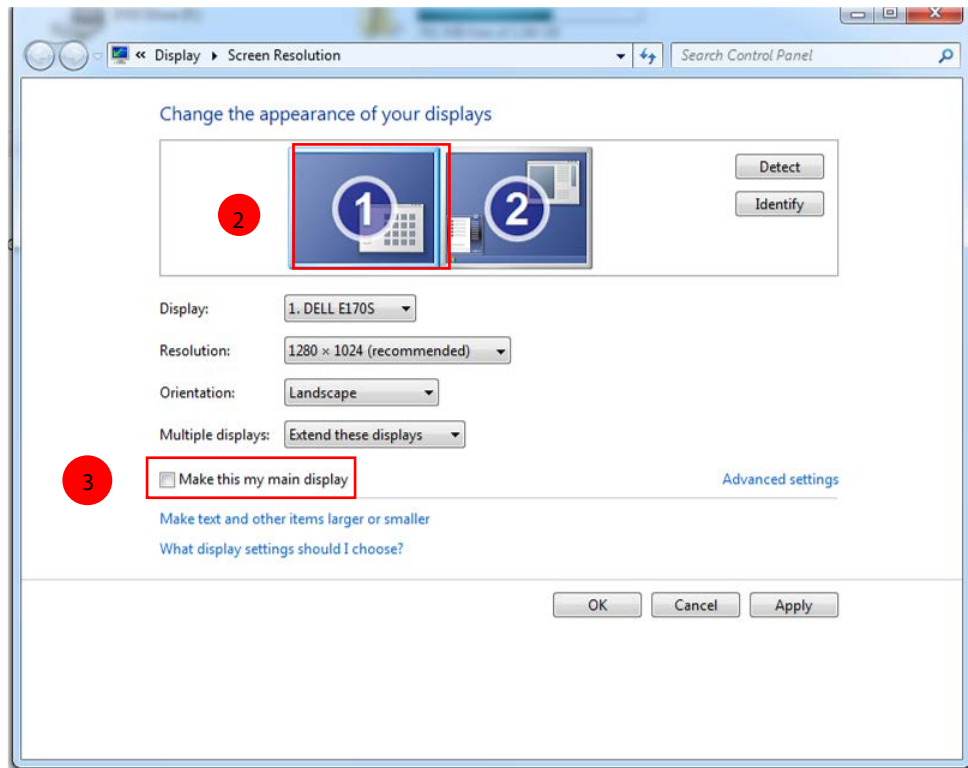
3.3.2 Configuring Main Display (Windows 7)

NOTE

- **Windows settings will affect CMS settings.**
- **For 19-inch or above display with 4:3 or 5:4 aspect ratio, set its resolution to 1280×1024.**
- **For 21-inch or above widescreen display with 16:9 aspect ratio, set its resolution to 1920×1080.**
- **Use the display in the left most side or in the upper left corner as the main display.**

To make the desired screen as main display, follow this procedure:

1. Right click the mouse on the desktop, and then select **Screen Resolution** from the pop-up menu to display the window, as shown in the following figure.

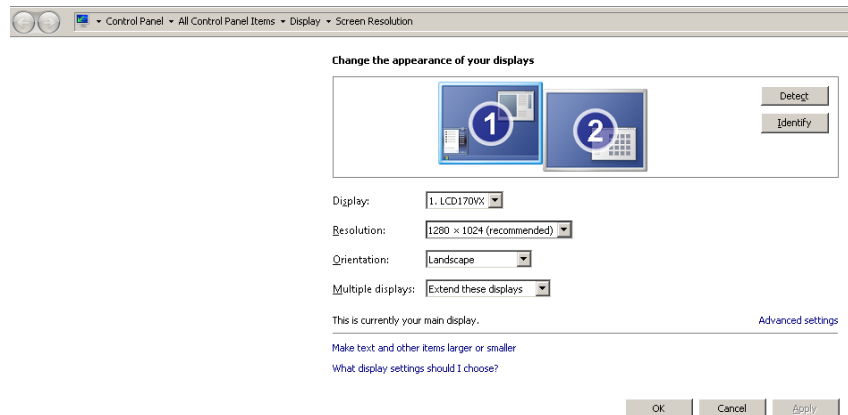


2. In the screens displaying list box, select the desired screen.
3. Select the Make this my main display option.
4. Click the **OK** button to save the setting and close the window.

3.3.3 Aligning the Double Screens (Windows 7)

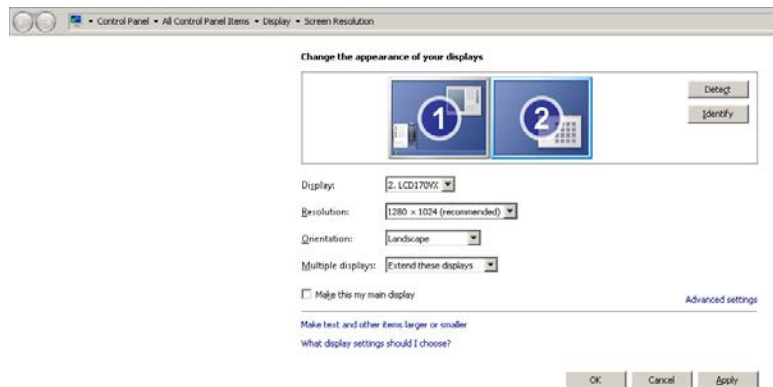
When the alignment between the screens is ragged, you can align the screens at the same horizontal line or at the same vertical line. You can refer the steps below to adjust the multi-screens alignment.

1. Right click the mouse on the desktop, and then select **Screen Resolution** from the pop-up menu to display the window, as shown in the following figure.



2. Click the screen signed with number 1 to select it, and then drag the screen down until the screen signed with number 1 aligns with the screen signed with number 2.

◆ Align double screens at the same horizontal line :



3. Click the **OK** button to save the setting and close the window.

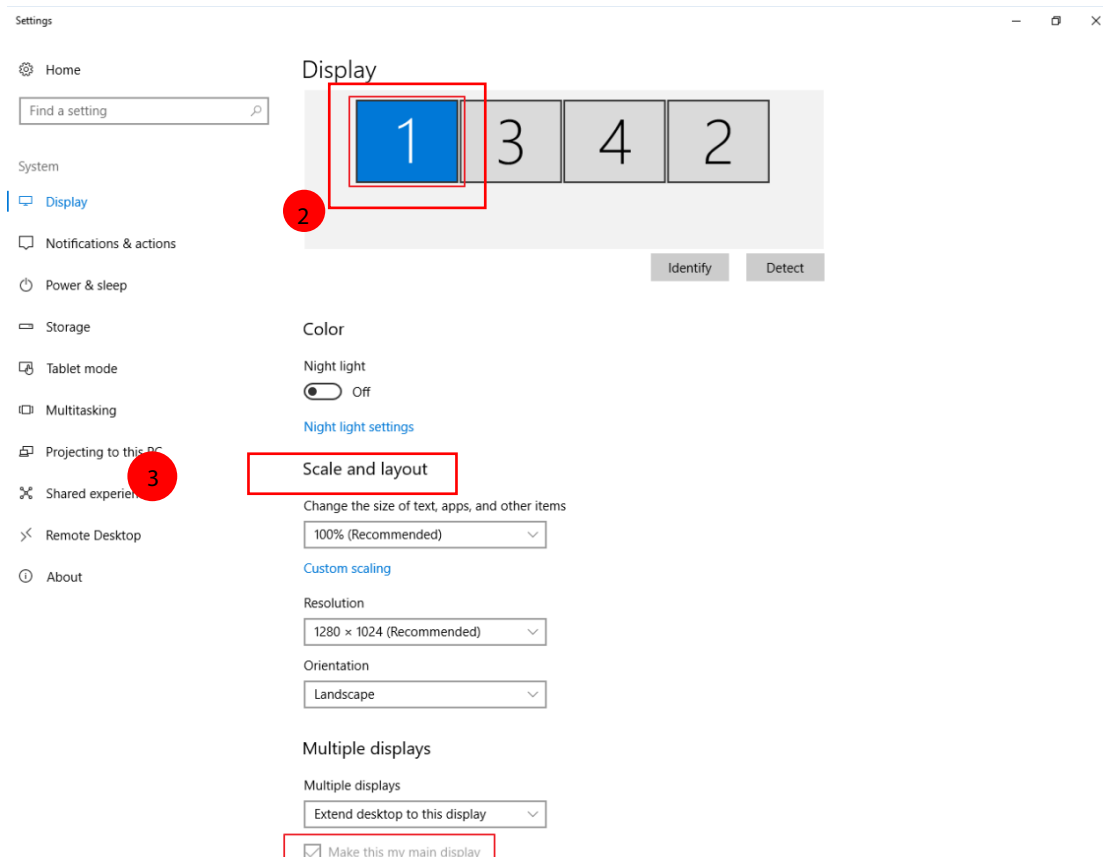
3.3.4 Configuring Main Display (Windows 10)

NOTE

- **Windows settings will affect CMS settings.**
- **For 19-inch or above display with 4:3 or 5:4 aspect ratio, set its resolution to 1280×1024.**
- **For 21-inch or above widescreen display with 16:9 aspect ratio, set its resolution to 1920×1080.**
- **Use the display in the left most side or in the upper left corner as the main display.**

To make the desired screen as main display, follow this procedure:

1. Right click the mouse on the desktop, and then select **Display settings** from the pop-up menu to display the window, as shown in the following figure.



2. In the screens displaying list box, select the desired screen.
3. Select the Make this my main display option.
4. Click the **OK** button to save the setting and close the window.

3.3.5 Aligning the Four Screens (Windows 10)

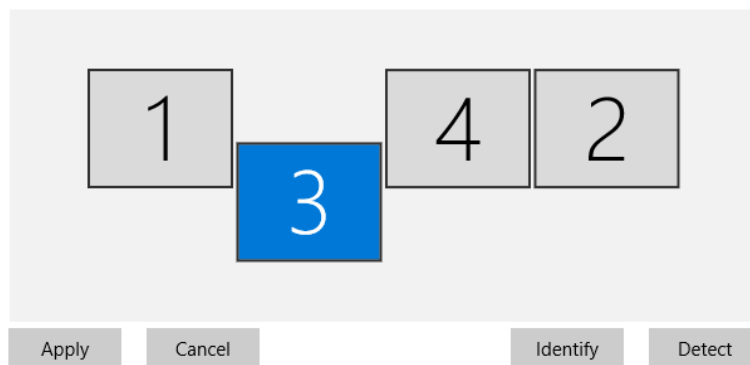
When the alignment between the screens is ragged, you can align the screens at the same horizontal line or at the same vertical line. You can refer the steps below to adjust the multi-screens alignment.

1. Right click the mouse on the desktop, and then select **Display settings** from the pop-up menu to display the window, as shown in the following figure.

Display

Select and rearrange displays

Select a display below to change its settings. Some settings are applied to all displays.



Have a question?

[Get help](#)

Make Windows better

[Give us feedback](#)

Color

Night light

☐ Off

[Night light settings](#)

Scale and layout

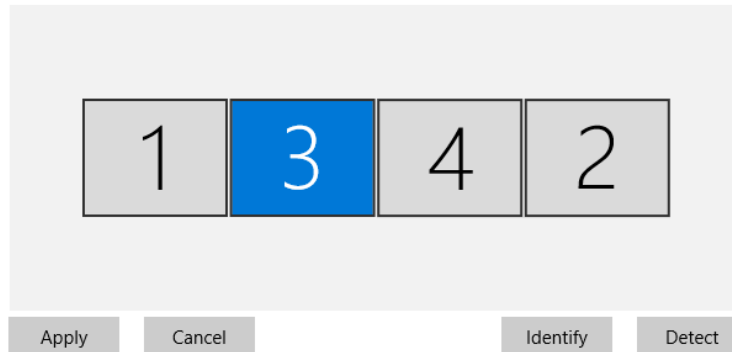
Change the size of text, apps, and other items

2. Click the screen signed with number 3 to select it, and then drag the screen down until the screen signed with number 1 aligns with the screen signed with number 3.
 - ◆ Align Four screens at the same horizontal line :

Display

Select and rearrange displays

Select a display below to change its settings. Some settings are applied to all displays.



Have a question?

[Get help](#)

Make Windows better

[Give us feedback](#)

Color

Night light



[Night light settings](#)

Scale and layout

Change the size of text, apps, and other items

100% (Recommended) ▼

[Custom scaling](#)

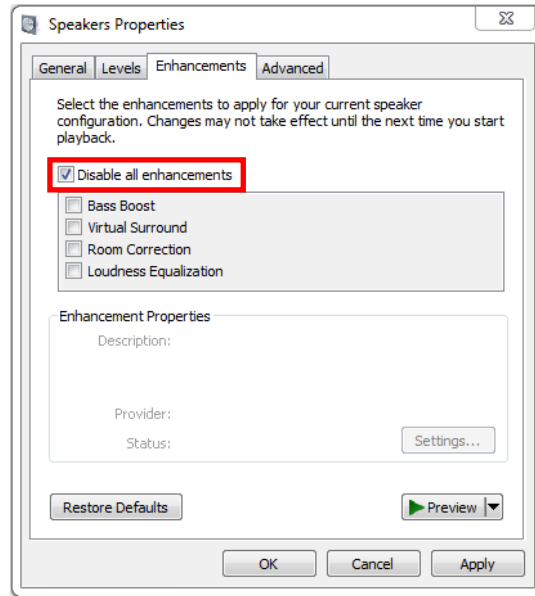
Resolution

1280 × 1024 (Recommended) ▼

3. Click the **OK** button to save the setting and close the window.

3.3.6 Disabling Audio Enhancement (Windows 7)

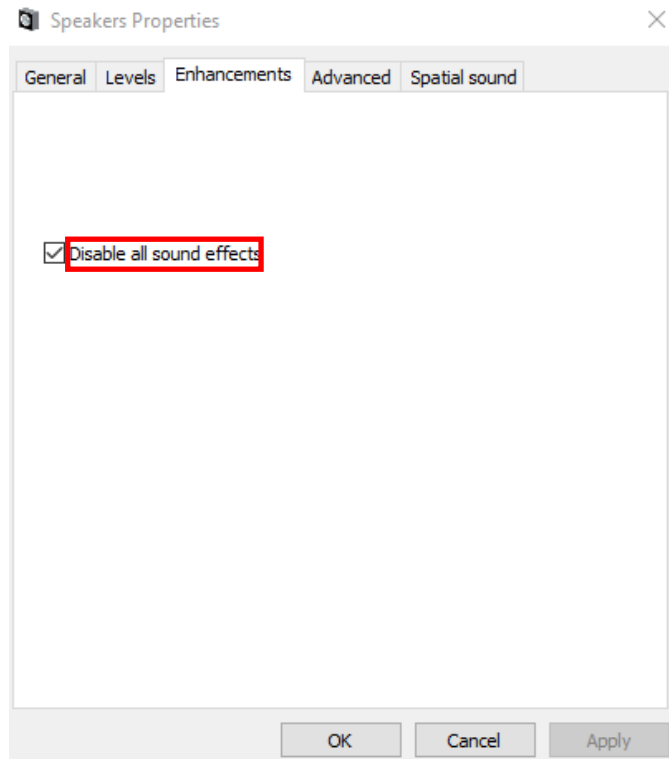
1. Open the Control Panel, and then select **Hardware and Sound**.
2. Select **Sound**. The **Sound** window will display.
3. In the **Playback** tab, select the operating system speaker and then right click the mouse.
4. In the pop-up menu, select **Properties**.
5. In the pop-up **Speaker Properties** window, select the **Enhancements** tab.
6. Select **Disable all enhancements**, shown as below.



7. Click **OK**.

3.3.7 Disabling Audio Enhancement (Windows 10)

3. Open **Control Panel**, and then select **Sound**.
4. In the **Playback** tab, select the operating system speaker and then right click the mouse.
5. In the pop-up menu, select **Properties**.
6. In the pop-up **Speaker Properties** window, select the **Enhancements** tab.
7. Select **Disable all effects**, shown as below.



7. Click **OK**.

3.3.8 Disabling Hot Keys

To avoid the misoperation, you can disable hot keys. There are two ways to disable the hot keys.

3.3.8.1 Disabling All Hot Keys

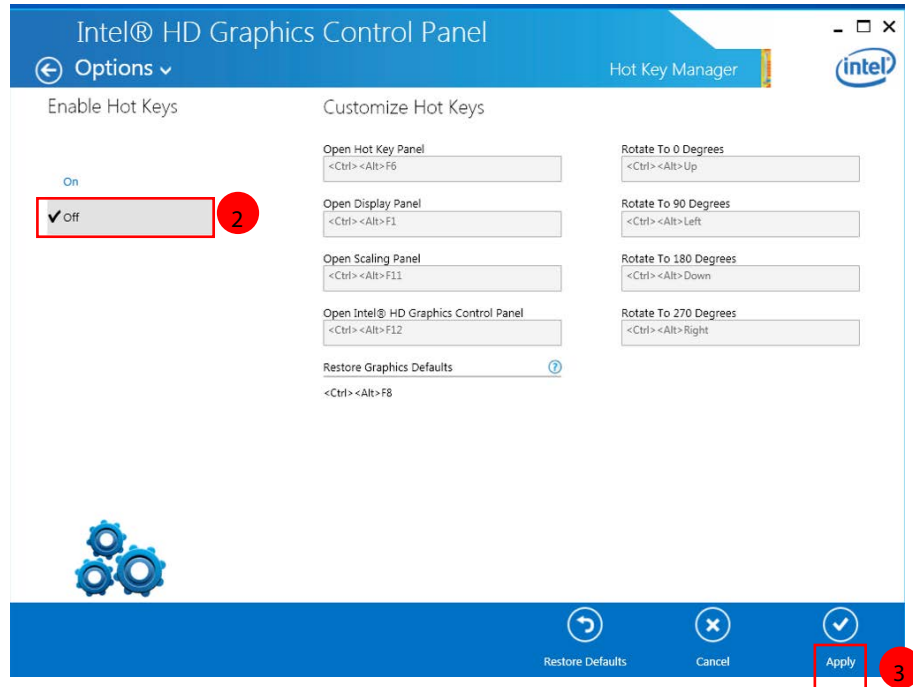
Follow this procedure to disable all hot keys.

1. Right click on the **Desktop**.
2. Select Graphics Options.
3. Select **Hot Keys**.
4. Select **Disable**.

3.3.8.2 Disabling Desired Hot Keys

Follow this procedure to disable desired hot keys:

1. Right click on the **Desktop**.
2. Select Graphics Properties.
3. Enter the **Intel® HD Graphics Control Panel** window, and then click the **Options** button to display the **Hot Key Manager** window, as shown in the following figure.



3. In the **Enable Hot Keys** field, select the **Off** option.
4. Select the **Apply** option to apply the setting. The message "The new settings have been applied. Do you want to keep these settings?" displays.
5. Select the **Yes** button to apply the setting.
6. Click the **X** icon to close the window.

3.3.9 Configuring System Windows Region and Language (Windows 7)

If the language used by the current operating system is the same language the user wants to display on the CMS, it is unnecessary to set the region and language for the operating system. In this case, skip this step.

If the language of the operating system is English but the user requires a non-English interface for the CMS, it is necessary to set the region and language of the operating system.

To set the region and language, follow this procedure:

1. Enter the Windows desktop and select **Start** → **Control Panel** → **Clock, Language, and Region** to enter the Clock, Language, and Region window.
2. Select the **Region and Language** option to display the **Region and Language** window.
3. Select the **Format** tab, and then select the desired language (locale) from the **Format** drop-down list.
4. Select the **Location** tab, and then select the desired language (locale) from the **Current location** drop-down list.
5. Select the **Administrative** tab, and then click the **Change system locale...** button to display the **Region and Language Settings** window.
6. Select the desired language (locale) from the **Current system locale** drop-down list.
7. Restart the computer to apply the setting.

3.3.10 Configuring System Windows Region and Language (Windows 10/Windows server 2016)

If the language used by the current operating system is the same language the user wants to display on the CMS, it is unnecessary to set the region and language for the operating system. In this case, skip this step.

If the language of the operating system is English but the user requires a non-English interface for the CMS, it is necessary to set the region and language of the operating system.

To set the region and language, follow this procedure:

1. Enter the Windows desktop and select **Control Panel** → **Region** to enter the **Region** window.
2. Select the **Formats** tab, and then select the desired language (locale) from the **Format** drop-down list.
3. Select the **Location** tab, and then select the desired language (locale) from the **Home location** drop-down list.
4. Select the **Administrative** tab, and then click the **Change system locale...** button to display the **Region Settings** window.
5. Select the desired language (locale) from the **Current system locale** drop-down list.
6. Restart the computer to apply the setting.

3.3.11 Configuring Windows System Operating Time




1. Enter the Windows desktop and select **Control Panel** → **Date and Time** to display the **Date and Time** window.
The current tab displays the **Date and Time** tab.
2. Click the **Change time zone...** button to display the **Time Zone Settings** window.
3. Select the Automatically adjust clock for Daylight Saving Time option.
4. Click the **Internet Time** tab.
5. Click the **Change settings...** button to display the **Internet Time Settings** window.
6. Unselect the Synchronize with an Internet time server option.
7. Restart the computer to apply the setting.

3.3.12 USB Dongle Compatibility

The upgraded BeneVision CMS software is compatible with the BeneVision dongle. However, some newly added functions may be disabled.

3.3.13 Installing the Micro Dog Driver

1. Click and open the folder titled "USB Dog Driver". Open the subfolders and double click on the "MicroDogInstdrv" application. The application installs the driver for the license dongle.

Icon	File Name	Date Modified	Type	Size
	MicroDog Driver Installer 4.0.16.5 ReadM...	11/30/2015 8:37 AM	PDF File	1
	MicroDogInstdrv.exe	11/23/2015 10:02 ...	Application	1
	RCMicroDogSetup.dll	11/23/2015 10:07 ...	Application extens...	2,5

2. When the Micro Dog Driver installation window opens, select **USB Dog Driver** under Driver Installation. Finally click the **Install Driver** button on the lower left hand side of the window.
3. When installation is complete, look for the message in red "The driver has been installed successfully". Click **Exit** to exit from installation of the Micro Dog Driver.



3.3.14 Installing/Updating OS Patches(Windows 7)

You need to install the OS patches after installing the Operating System or when you find that the operating system needs to be updated.

To install or update OS patches:

1. Insert the BeneVision CMS OS Patches CD (PN: 115-034050-00) into your computer and copy the "WIN7 English hotfix" folder to the desktop.
2. Open the "WIN7 English hotfix" folder on the desktop and run the "install all.bat" file.
The OS patches will be installed automatically. Upon completion of installation, the installation window will be closed automatically.
3. Delete the "WIN7 English hotfix" folder from the desktop.
4. Eject the BeneVision CMS OS Patches CD and keep it properly.

NOTE

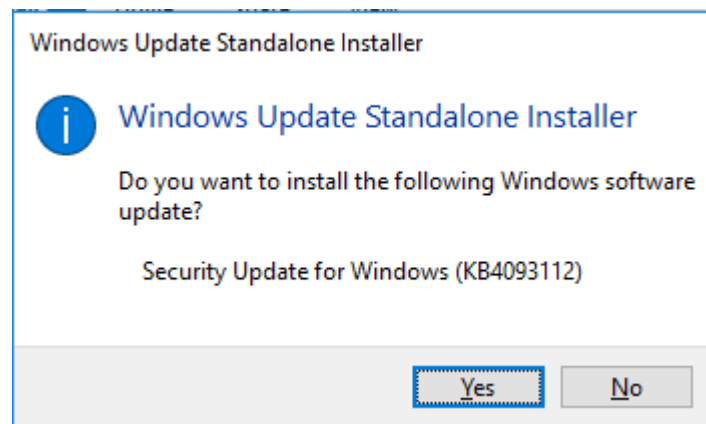
- Do not shut down your computer until the installation window is closed.

3.3.15 Installing/Updating OS Patches (Windows 10/Windows Server 2016)

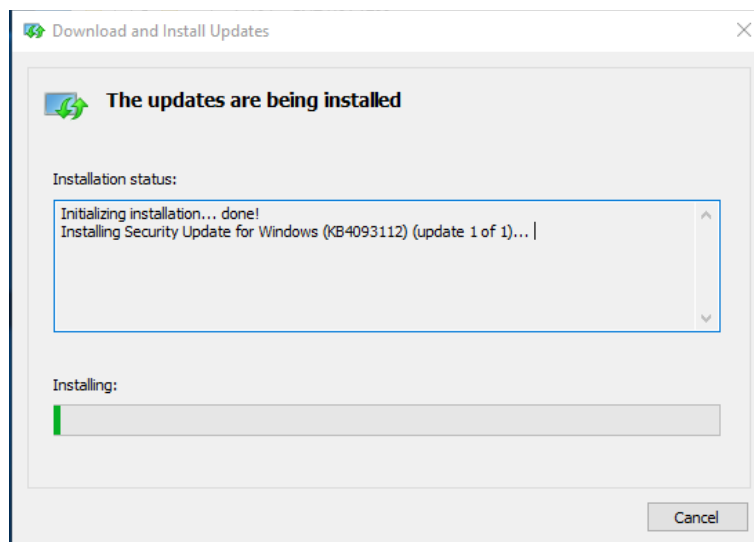
You need to install the OS patches after installing the Operating System or when you find that the operating system needs to be updated.

To install or update OS patches:

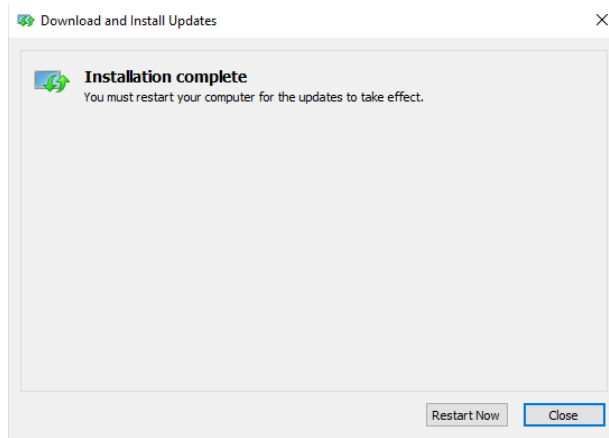
1. Insert the BeneVision USB stick into your computer.
2. Copy the OS patches (PN: 110-006072-00 or 110-006073-00) into your computer and copy the "WIN10 hotfix" or "WIN2016 hotfix" folder to the desktop.
3. Run the "windows10-kbxxxxxxx-x64.msu" or "windows 2016-kbxxxxxxx-x64.msu"
4. In the pop-up Windows Update Standalone Installer dialog, select **Yes**.



The OS patches will be installed automatically.



5. Upon completion of installation, select **Restart Now**.



NOTE

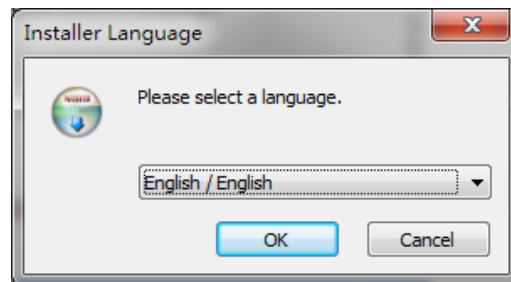
- Do not shut down your computer until the installation window is closed.

3.3.16 Installing the CMS System Software (Running As Application)

NOTE

- The software version of the License and USB dongle must match the version of CMS.
- Connect the network cable. The independent network adapter needs to connect to network. Refer to 3.4 IP Address Setup and Network Connection.
- for additional information of independent network adapter.

1. In the CMS software CD, double click "Setup.exe" under the "Setup" directory to enter the following window.



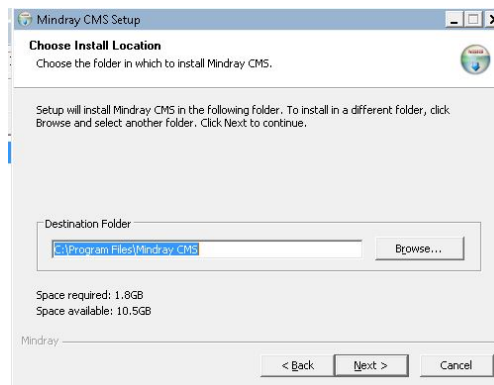
NOTE

- The language selected as shown in the figure above is the one for display on the screen during the process of installation but not the default one when the CMS is operating. The language used when the CMS is operating is to be set up in the following steps.
- Set OS language to English before installing CMS system software in English or other language operating system. Change to the desired OS language after the installation.

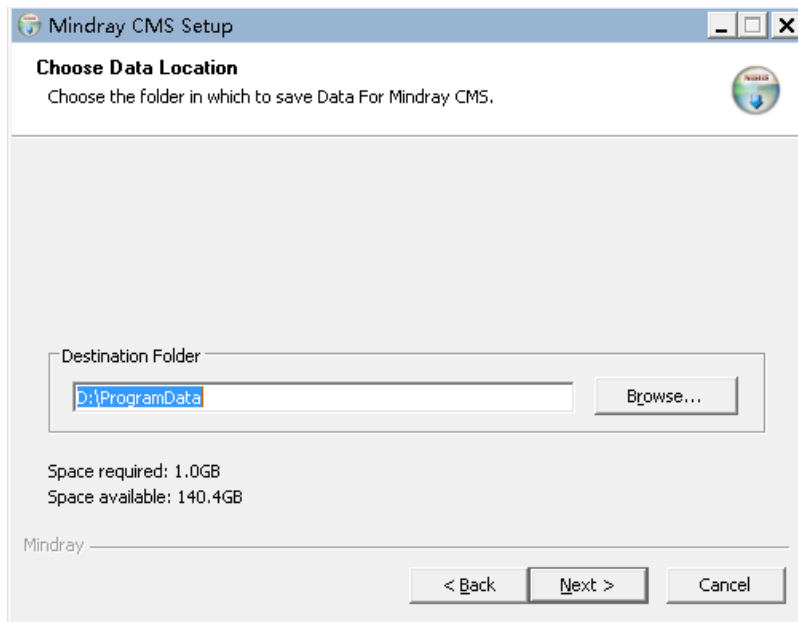
2. When the welcome screen displays, click **Next**.



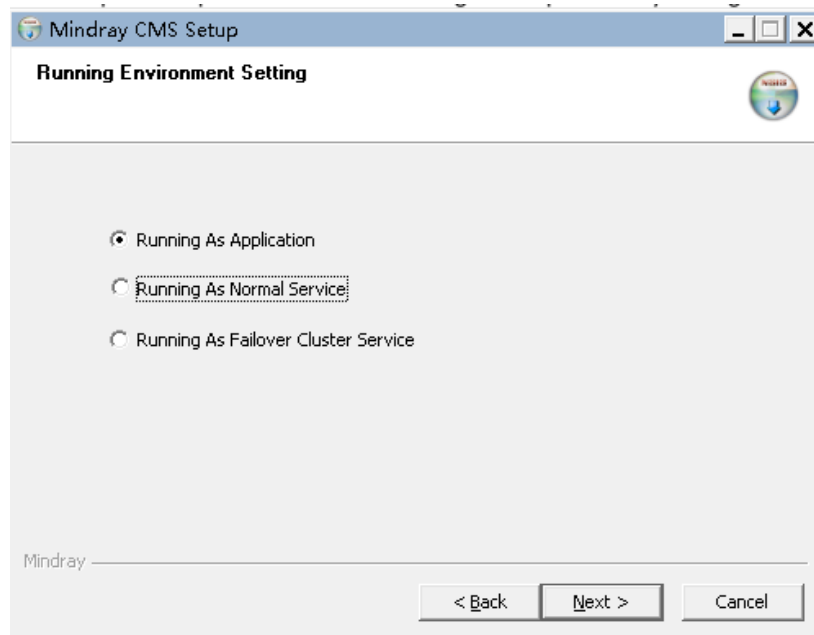
3. Choose **Install Location**, and then click **Next**.



4. Choose **Data Location** and then click **Next**.



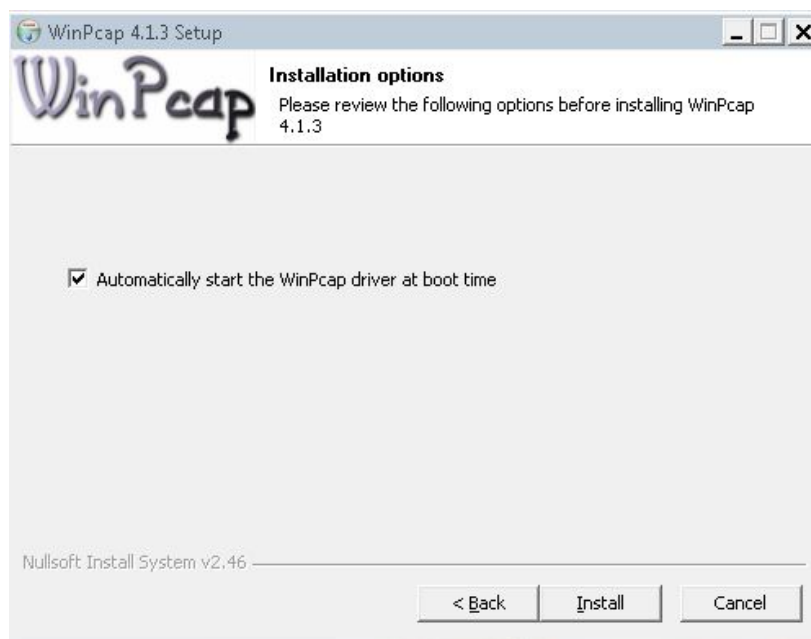
5. In the Running Environment Setting screen, select Running As Application.



6. When the welcome screen displays, click **Next**.



7. Select Automatically start the winpcap driver at boot time, and then click Next.

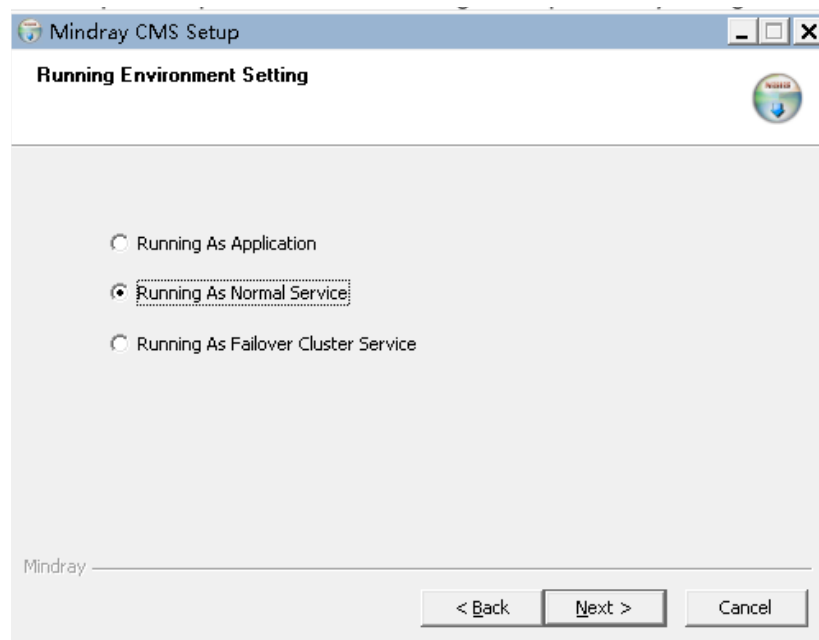


8. Select **Finish**, and then restart the computer. The CMS will run automatically.

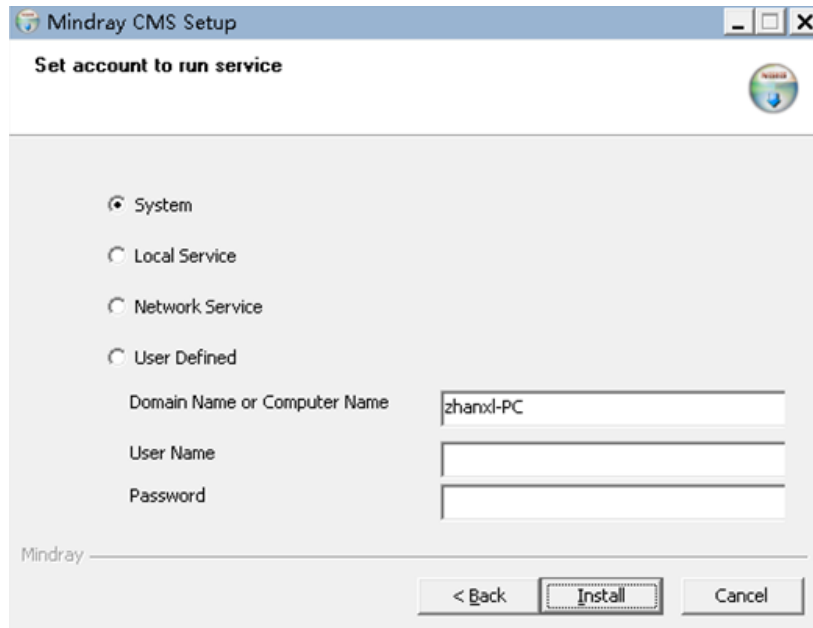


3.3.17 Installing the CMS System Software (Running As Normal Service)

1. Enter the Running Environment Setting screen. For how to enter this screen, see section **3.3.16 Installing the CMS System Software (Running As Application)**.
2. In the Running Environment Setting screen, select Running As Normal Service or Running As Failover Cluster Service. The following procedures take Running As Normal Service as an example.




3. Select **Next**.
4. Select the proper privileges for services. The following figure serves as an example only.

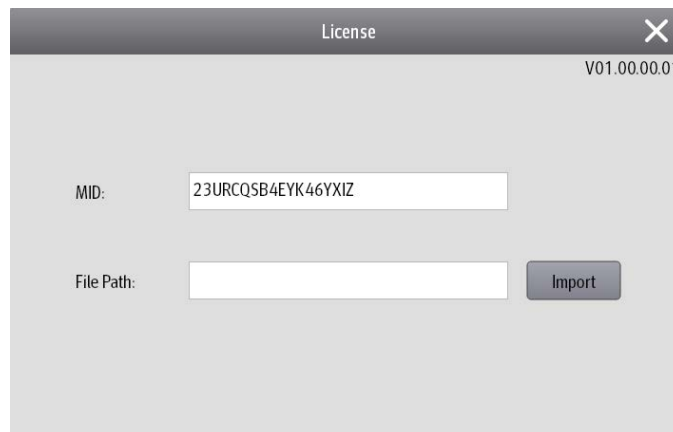


The descending order of privileges is System, Local Service, Network Service, and User Defined.

If **User Defined** is selected, the system will automatically create a system user depending on the user name and password entered.

5. Import a license.

A valid license dongle or a license file is required for starting a service. If a license file is available, click the  icon (license tool PN: 110-005825-00). The **License** dialog is displayed. In this dialog, select **Import** and then select the path where the license file is located.

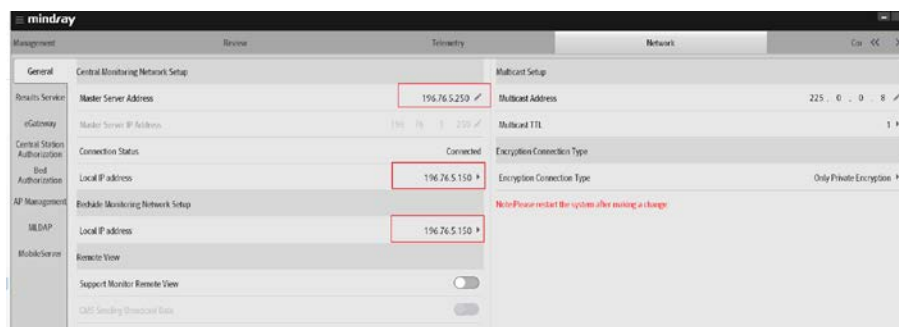


6. After importing the license successfully, restart the system.

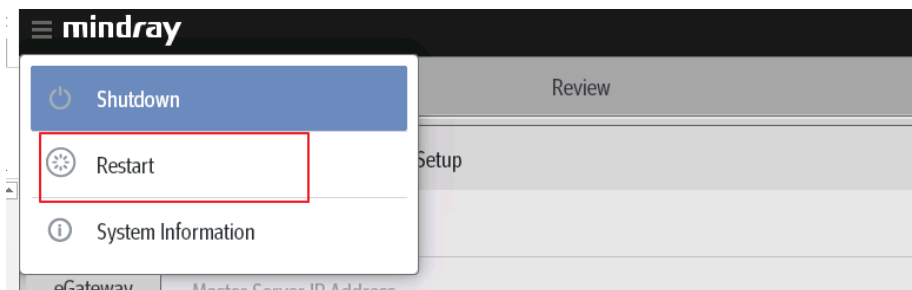
3.3.17.1 Configuring the Network Tab



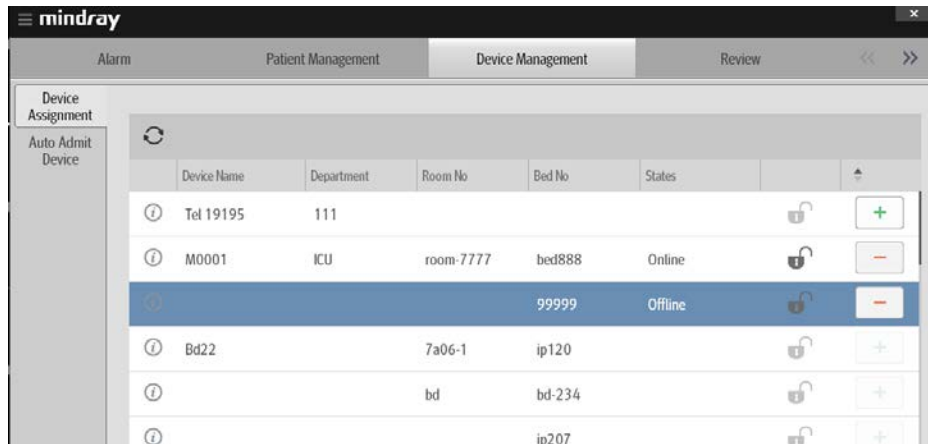
1. Click the desktop shortcut. The configuration tool screen is displayed.
2. Enter the login password. The default password is 888888.
3. Select the **Network** tab and the nconfigure network items. The items marked in red rectangle must be configured. IP addresses in the figure below are for reference only.



4. Restart the CMS.



5. Admit monitoring devices as below: Select the **Device Management** tab. Select the "+" button besides the desired monitoring device.



6. Configure other items if needed.

NOTE

- Upon completion of successful network setup, you can access the configuration tool screen via the WorkStation connected to the CentralStation. At the WorkStation, select the system menu area in the upper left corner of the screen- select System Setup-select the Network tab-select the Central Station Connection tab-select the desired CentralStation-select the Setup button.

3.3.18 Database Update (Optional)

3.3.18.1 Preparation before Updating CentralStation Database

After the CMS is installed, the database needs to be updated.

NOTE

- The MYSQL database in the CMS (Version 02.XX) can be imported into the newly installed CMS (Version 03.XX)..
- The CentralStation (Version 02.XX and lower) is named as the old CentralStation throughout this manual.
- The CentralStation (Version 03.XX and above is named as the new CentralStation throughout this manual.

Database and configurations of the new CentralStation are not compatible with that of the old CentralStation. Therefore, we provide a special conversion tool to convert the configurations and patient data of old CentralStation into the format which can be recognized by the new CentralStation.

If the database of the old CentralStation is small, for example, less than 100G, or patient history data is not required any more, only configurations need to be converted. The conversion process can be completed in Disk D directly. Otherwise, a mobile hard disk drive (500GB or above) is required.

To convert database and configurations, follow this procedure:

1. Uninstall the old CMS software.
2. Install the database conversion tool.
3. If the database to be converted is large, prepare a mobile hard disk drive and change the data storage path to the path where the hard disk drive is located. If the database to be converted is small, skip this step.
4. Run the database conversion tool to convert patient history data and configurations.
5. Uninstall MySQL application and back up data.
6. Copy the entire DB directory in the mobile hard disk drive to Disk D and delete the database path change configuration file. The configuration file after conversion will be copied to the path of configuration file.
7. Install the new CMS software and check that all the configurations are correct.

3.3.18.2 Judging Disk Space and Preparing A Mobile Hard Disk Drive

Double disk space is required for database conversion. If the database of the old CMS has occupied more than 100G of Disk D, usually an extra mobile hard disk drive should be available for storing data that is converted. The remaining disk space of the mobile hard disk should be at least greater than the occupied space of current Disk D.

Please create the CMSConfig.ini file in the root directory of Disk C and add contents to the file as shown in the following command.

```
[DataServer]
StorePath=N:\\
```

NOTE

- **The command above is an example only. In the command above, N represents the actual disk of the mobile hard disk drive.**

Under these conditions:

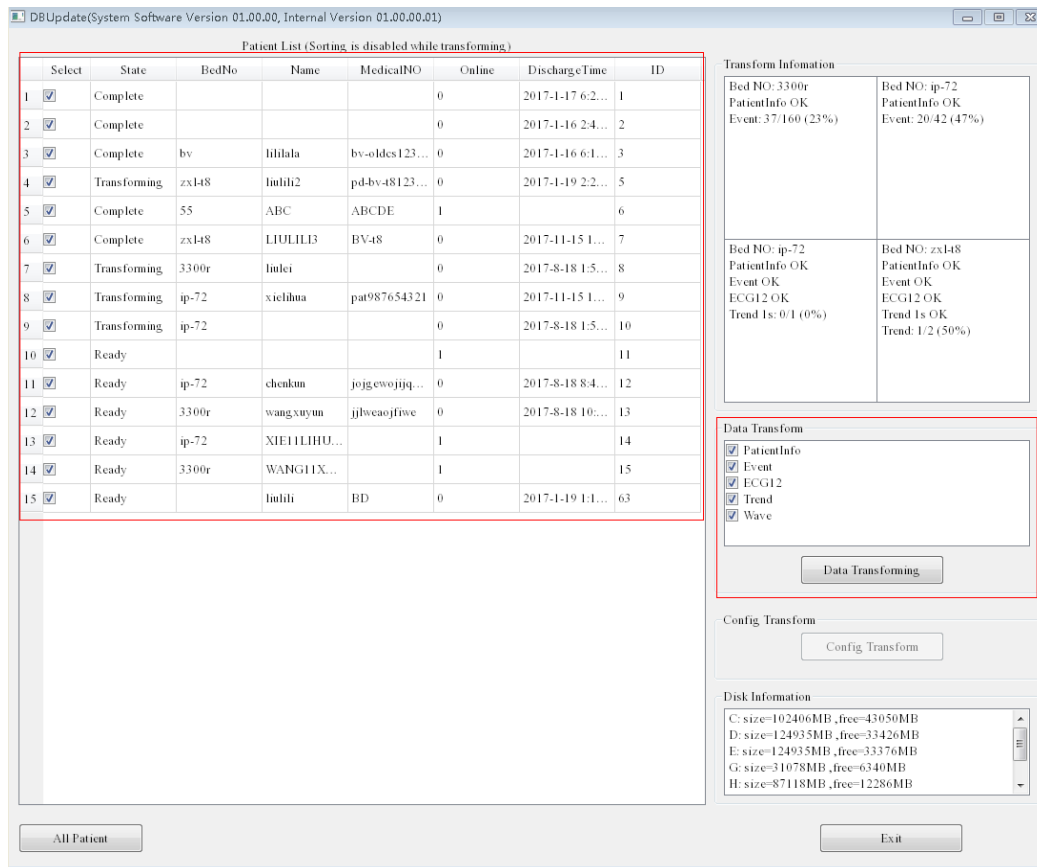
- The occupied space of Disk D is small.
- Although the occupied space of Disk D exceeds 100GB, customers do not need to convert all the patient history data. They only need to convert data of a few patient.

A mobile hard disk drive is not required and the CMSConfig.ini file does not need to be edited either.

3.3.18.3 Running Conversion Application

Run the database conversion tool (PN: 110-005553-00) installation application and complete installation as prompted.

After running the database conversion tool, the following screen is displayed.



The menu items in the figure above are described below:

1. Items under **Patient List**:

- ◆ In the **Select** column: select the discharged patient whose data needs to be converted. The conversion speed improves when a fewer patients are selected.
- ◆ In the **State** column: **Ready** indicates that conversion is not started. **Transforming** indicates that data conversion is in progress. **Complete** indicates that data conversion is completed.
- ◆ In the **ID** column: database ID is displayed and is for reference only.
- ◆ In the **BedNo** column: the bed number corresponding to patients being monitored is displayed.
- ◆ In the **Name** column: patient name is displayed.
- ◆ In the **MedicalNo** column: patient ID is displayed.
- ◆ In the **Online** column: 1 indicates that the patient is not discharged yet. 0 indicates that the patient is discharged.
- ◆ In the **Discharged Time** column: patient discharge time is displayed.

2. Patient information being converted and the progress of data conversion are displayed under **Transform Information**.
3. Selecting **Config Transform** starts converting configurations such as network setup and telemetry setup.
4. In the **Data Transform** box, select the data to be converted. If you select **Wave**, it may take several hours to complete conversion.
5. Selecting **Data Transform** starts converting patient history data.

After opening the database and configuration conversion tool, follow this procedure:

1. Select the data of patients to be converted against the patient info under **Patient List**.
2. In the **Data Transform** box, select the data to be converted.
3. Select **Config Transform** to convert configurations
4. Select **Data Transform** to convert patient history data. Depending on the number of patients and the data size, this step may take a relatively long time. You can see the conversion progress in the **Transform Information** box.

3.3.19 Confirming Configurations and Data

Upon completion of conversion, close the conversion application. Uninstall the database conversion tool and delete the C:\CMSConfig.ini file. Then install the new version of CMS software. After completion of installation, add contents to D:\ProgramData\Mindray\CMS\CMSConfig.ini by running the following commands.

```
[DataServer]
StorePath=N:\\
```

NOTE

- **The command above is an example only. In the command above, N represents the actual disk of the mobile hard disk drive.**

1. Copy configuration files after conversion to the storage path (D:\ProgramData\Mindray\CMS\) where configuration files of the new CMS software are located.
2. Replace the existing configuration files. The path of configuration files after conversion is DBUpdate software installation directory\ConfigServer\Release. The files are named as "current.cfg" and "current_backup.cfg".
3. Start the new CMS software and verify that all the configuration items are converted properly, especially telemetry-related configurations such as alarm limits, alarm on/off, and alarm priority and CMS alarm-related settings.
4. Access the discharged patients screen to check that all the patient history data are converted properly. If all the pieces of information are correct, select **Next**. Otherwise, re-convert.

3.3.20 Operations after Conversion

If both configurations and data have been converted and are verified to be correct, select **Exit to Windows** from the **Factory Maintenance** menu of the CMS. Then delete the C:\CMSConfig.ini" file and edit the D:\ProgramData\Mindray\CMS\CMSConfig.ini file by running the following command.

```
[DataServer]
StorePath=N:\\
```

Follow this procedure:

1. Open Control Panel – select Programs- select Uninstall – select Mindray CMS DataBase.
2. Delete the MySQLData file folder under the root directory of Disk D. Please be noted that it cannot be just moved into the recycle bin. It should be deleted completely. To ensure data security, you can back up MySQLData to a mobile hard disk drive and then delete the MySQLData file folder.
3. Copy the entire DB directory in the mobile hard disk drive to Disk D.
4. Restart the CMS.

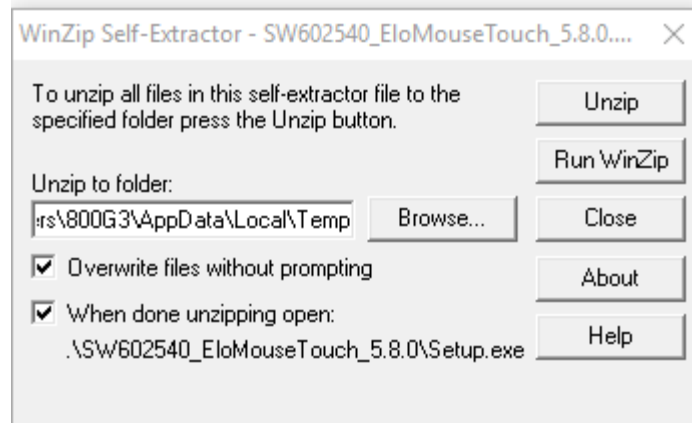
3.3.21 Touchscreen Driver Installation (Optional)

3.3.21.1 Installing Elo Touchscreen Drivers (Via Serial)

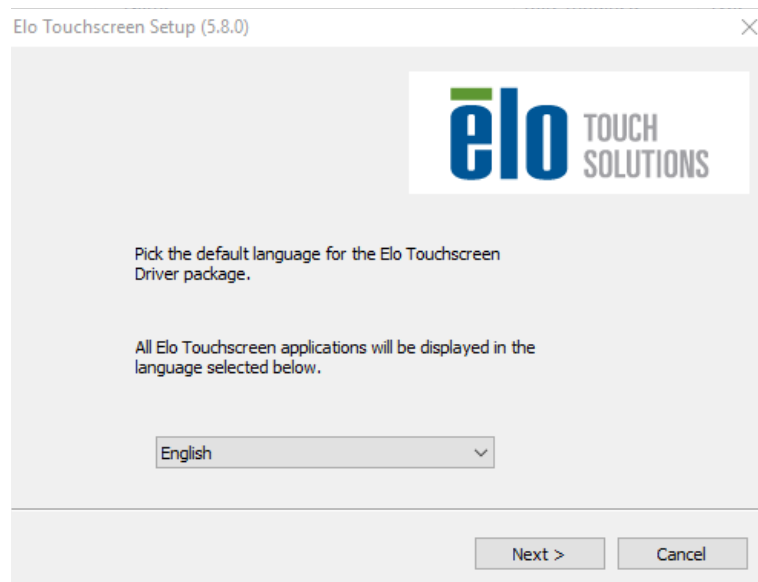
NOTE

-
- All video/touchscreen cables need to be connected to the CMS before continuing to next step.
 - Serial touchscreen drivers are only installed using the ATEN CE750 and using the USB to Serial adapters (023-000739-00).
-

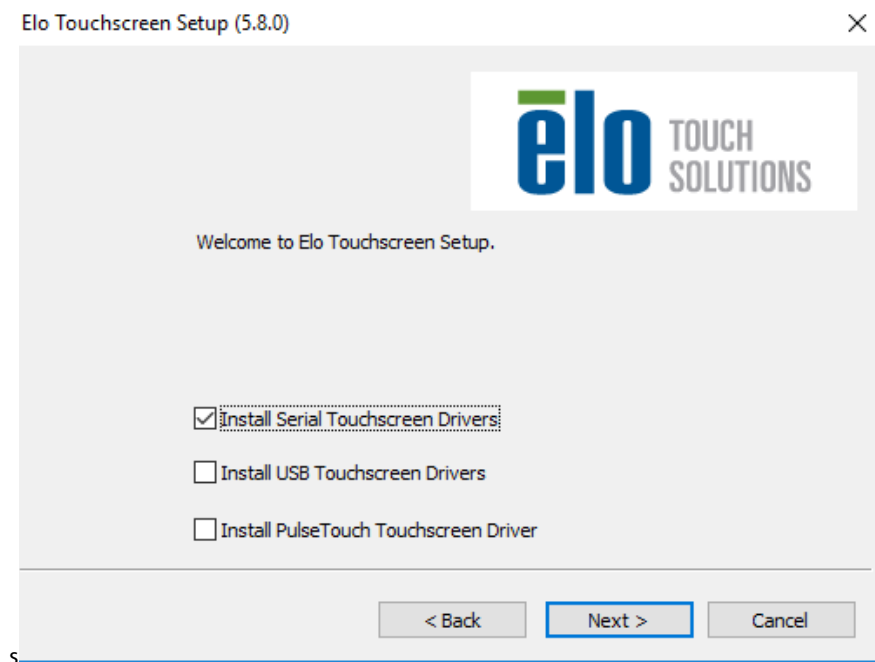
1. Run the file "SW602540_EloMouseTouch_5.8.0".
2. Select **Unzip**.



3. Select the desired language, and then click **Next >**.



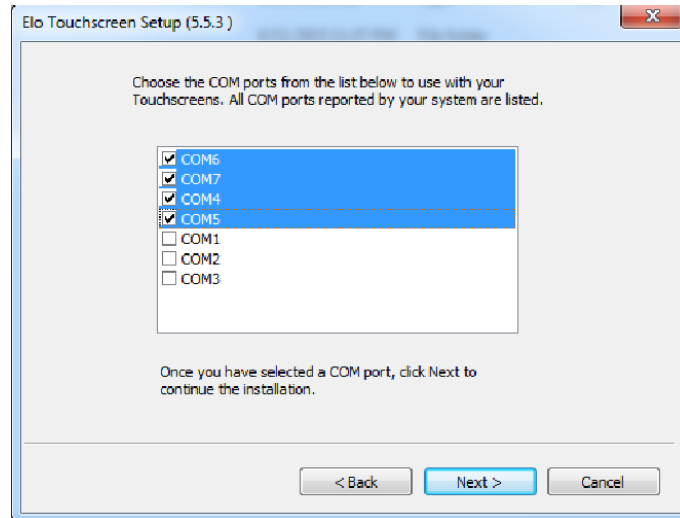
4. Select the desired option. The following figure and steps take installing serial touchscreen drivers as an example.



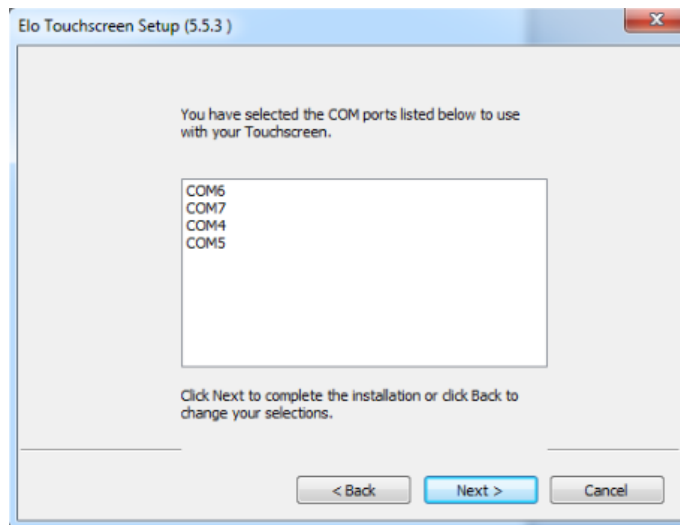
5. In the **License Agreement** screen, select **Yes**.
6. Select **Auto-detect Elo Touchscreens**, and then click **Next>**.
7. Select the proper COM ports, shown in the following screen, and then click **Next>**.

NOTE

-
- **The COM3 is not intended for touchscreen connection for the Kontron KISS 2U and HP 800G1/800G2/800G3/800G4 computers.**
 - **By default, the COM1 port is for recorder connection and programming telemetry devices, and the COM2 port for paging system. Never configure touchscreen devices to COM1, COM2, and COM3.**
-



7. The COM ports list displays, shown in the following screen. Click **Next>**.



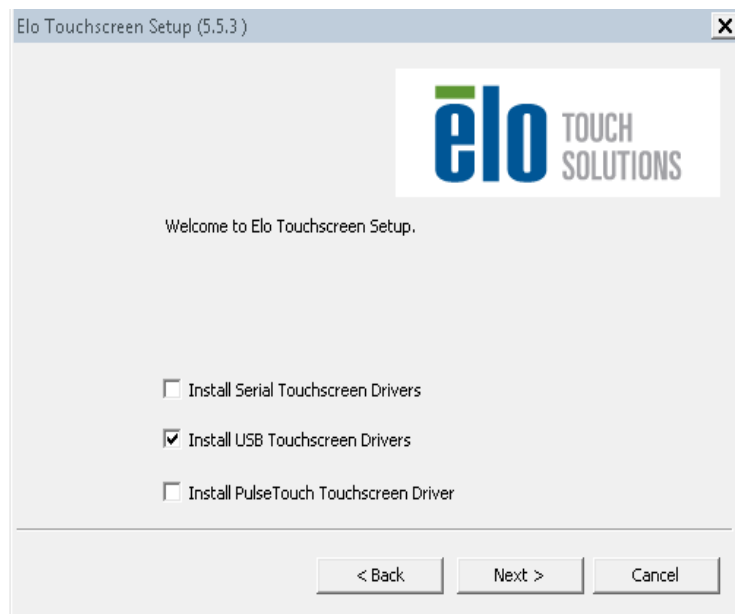
8. Select Calibrate Elo Touchscreen monitors, and then click Finish.
9. Calibrate the touchscreen according to the screen prompts.

3.3.21.2 Installing EloTouchscreen Driver via USB Port

NOTE

-
- All video/touchscreen cables need to be connected to the CMS before continuing to next step.
-

1. Insert the Elo touchscreen driver CD and run the file "Setup.exe".
2. Select the desired language, and then click **Next >**.
3. Select the desired option. The following figure and steps take installing USB touchscreen drivers as an example.



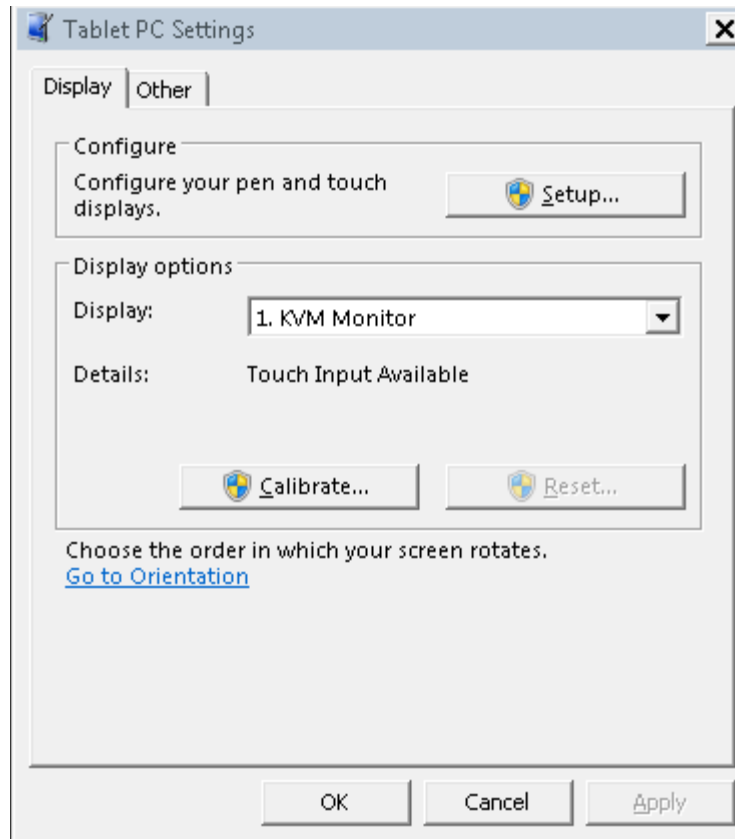
4. In the **License Agreement** screen, select **Yes**.
5. Select Calibrate Elo Touchscreen monitors, and then click Finish.
6. Calibrate the touchscreen according to the screen prompts.

3.3.21.3 Installing HP Touchscreen Driver via USB Port

No USB touchscreen driver is needed. Touchscreen can function directly after system is installed.

To calibrate the touchscreen, follow this procedure:

1. Enter the Windows desktop and select **Start** → **Control Panel** → **Tablet PC settings** to enter the **Tablet PC settings** window.
2. Select **Setup**.
3. Calibrate the touchscreen according to the screen prompts.



NOTE

- Touchscreen via usb port of the CMS host.

3.3.22 Disabling Display Menus (Optional)

3.3.22.1 Locking Display and Power Buttons on Elo Display

To lock the display buttons :press and hold the Up arrow & Menu button simulatenously for 10 seconds.

To lock the power button:press and hold the Up arrow &power button for 10 seconds.

3.3.22.2 Locking Display and Power Buttons on HP Display

To lock the display buttons :press and hold the Menu button for 10 seconds.

To lock the power button:press and hold the power button for 10 seconds.

3.4 IP Address Setup and Network Connection

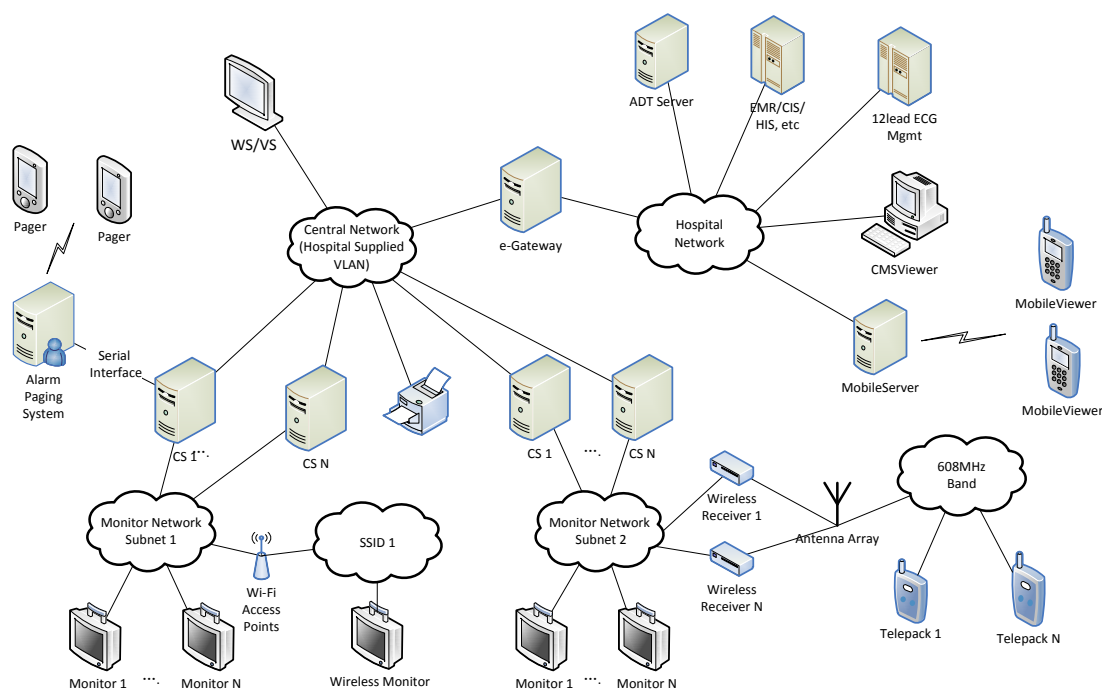
The PC will be equipped with two network adapters to isolate the monitor LAN and the external network to ensure network bandwidth and data safety for the monitors.

NOTE

- If two network adapters are used, be sure to identify which is for monitor network and which is for external network connecting multiple CMS or other information systems. Correctly set IP address for each network adapter.
- If two network adapters are used, connect them to corresponding networks as desired.
- Do not connect both network adapters to the same network segment, e.g., do not connect them to the monitor network at same time.

3.4.1 Network Connection Using Multiple Network Adapters

The figure below shows the network connection using multiple network adapters.



As shown in the figure, the two network adapters are respectively connected to the monitor LAN and the external network. A printer can be connected to any monitor network. Connecting a printer to Monitor Network Subnet 2 is for illustration only.

- Each Wired Subnet should meet the following network requirements:
 - ◆ 96 Broadcast devices per subnet
 - ◆ 400 Multicast devices per subnet
 - ◆ Broadcast and Multicast devices cannot co-exist in the same Patient Monitoring subnet.
 - ◆ One TMS receiver is equivalent to 1 Broadcast device and can co-exist in the same subnet as Multicast devices.
 - ◆ Up to 96 Broadcast and Multicast devices can co-exist in the Central Monitoring subnet.
 - ◆ Up to 400 devices can co-exist in the same subnet as Broadcast or Multicast devices

Communication Mode	Device
Broadcast Only	DPM 3/4/5/6/7, Passport V, TMS-6016
Multicast or Broadcast	Passport 8/12, Passport 8/12, Accutorr 7, T1, DPM6+, DPM7+, TMS-6016
ELAN	Passport 2, Spectrum, Spectrum OR, V-Series, Telepack-608

- Wireless Network Requirements:

A separate antenna array can support at most 188 TD60 and TEL-100/200

3.4.1.1 Supported Monitoring Device

Bedside Monitors

Passport 12m/17m	Passport 8/12	Accutorr 7
T1	DPM 3/4/5/6/7	V 12/21
Spectrum	Spectrum OR	Passport 2
Passport V		
BeneVision N12/N17/N19/N22/N1		

Telemetry

TMS-6016 (Tel-100/200)	TMS60 (TD 60)	Telepack-608
TM80 (2.4GHz/5.0GHz)		

3.4.2 Patient Network


Patient network is required for:

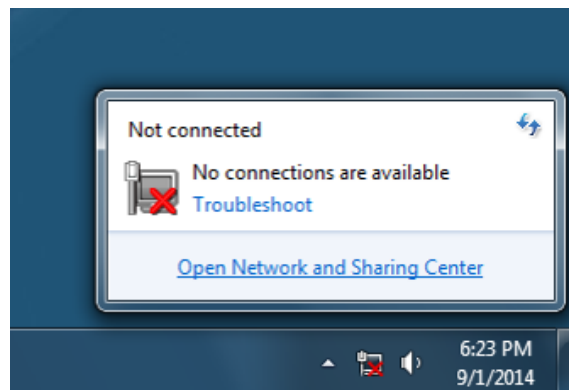
- Patient monitors
- Receiver cabinets
- Printers

NOTE

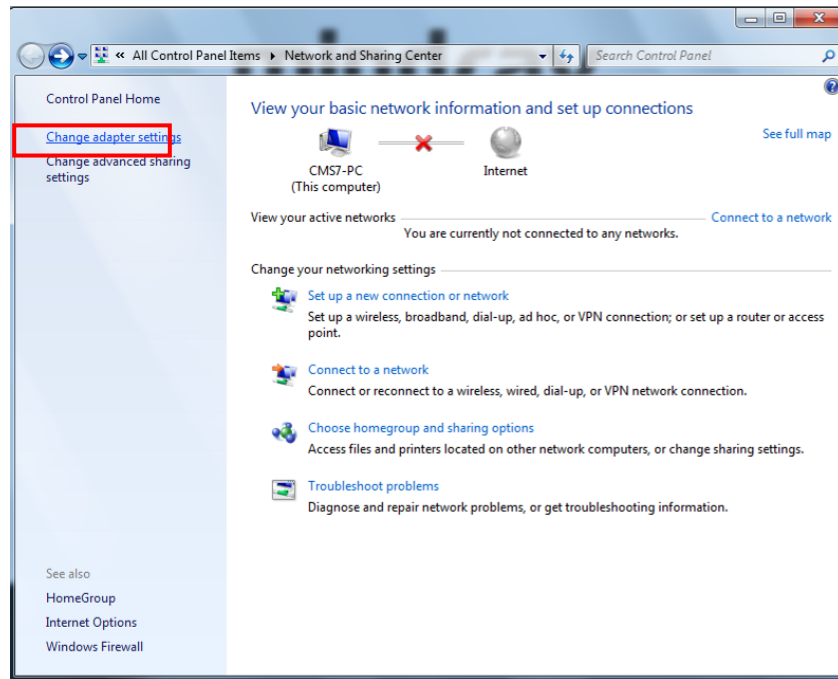
- If two network adapters are used, the one (hereinafter called integrated network adapter) integrated on the PC main board is normally connected to the monitor network and the one (hereinafter called independent network adapter) installed in the PCI slot is connected to the external network.
- The default network adapter is the integrated network adapter, which is used for the patient network using CMS+ protocol only.
- For CMS+ protocol, use IP address scheme 172.16.0.X and subnet mask 255.255.0.0.
- Every IP Address on each individual network has to be unique. Duplicate IP Addresses will cause network connection failures.
- The hospitals can set their own desired DHCP or IP addresses. However, the CMS IP address must not be changed.

To set the IP addresses of the integrated network adapter:

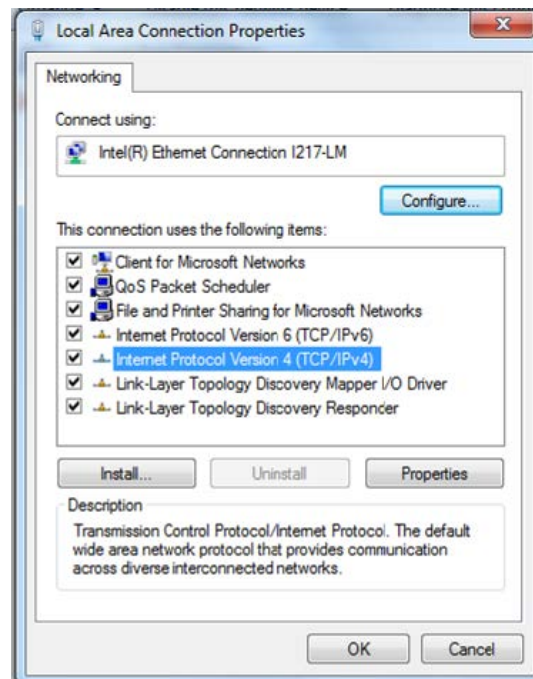
1. Select the  icon at the bottom of the screen to enter the following screen. Then click **Open Network and Sharing Center**.



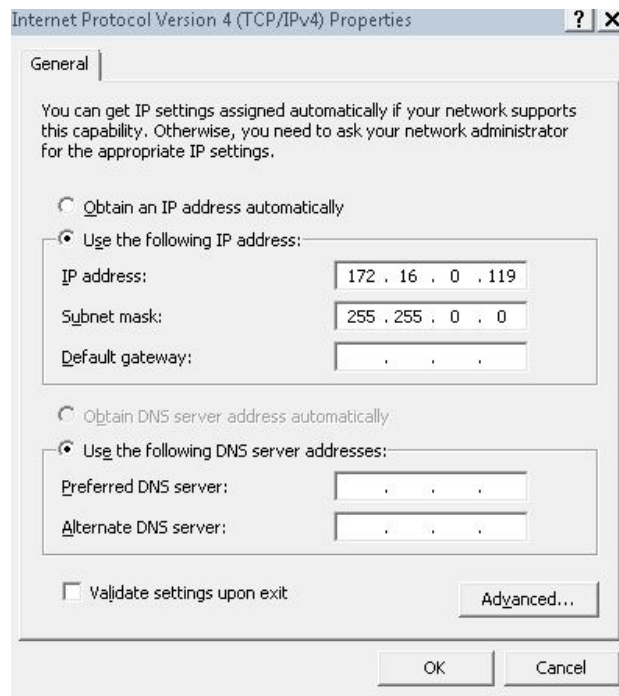
2. In the pop-up screen, select **Change adapter settings**.



3. After accessing the Network Connection screen, right click **Local Area Connection**.
4. In the Local Area Connection Properties screen, double click Internet Protocol version 4 (TCP/IPv4) and then select Properties.



5. In the **Internet Protocol Version 4 (TCP/IPv4) Properties** screen, enter the patient network IP address 172.16.0.X and the subnet mask of 255.255.0.0. Then click **OK**. The following figure is for reference only.



9. Click **OK** to finish setting IP address.

3.4.3 Central Network

The independent network adapter is used to connect the external network. Its IP address should be configured according to actual use.

Central network is required for:

- WorkStation/ViewStation Communication
- CMS Viewer
- Remote View
- Mobile Viewer
- eGateway

IP Address Setup

To implement Remote View function between CMS, each CMS needs to be equipped with at least two network adapters, one of which is for internal communication within the current CMS and the other for inter-communication between the CMS. The typical configuration is shown below:

Current CMS A		Target CMS B		Target CMS C	
Network adapter A1	Network adapter A2	Network adapter B1	Network adapter B2	Network adapter C1	Network adapter C2
172.16.0.X1	192.168.0.X2	172.16.0.Y1	192.168.0.Y2	172.16.0.Z1	192.168.0.Z2

As shown in the table above, network adapter A1, B1 and C1 are used for the communication between the CMS and the monitors. Their IP addresses are in the same network segment with the IP addresses of respective monitors. Network adapter A2, B2 and C2 are used for the inter-communication between the CMS. Their IP addresses belong to the same network segment and X2, Y2 and Z2 shall be different.

See Steps 1 to 5 in **3.4.2 Patient Network** to configure the IP address and the subnet mask for Local Area Connection 2. Please be noted that the IP address of Local Area Connection 2 should be set to 192.168.0.X and the subnet mask should be set to 255.255.0.0.

NOTE

-
- If a CMS needs to implement the Remote View function between CMS, other CMS has to connect to the central network. Please refer to CMS operator's manual for details.
-

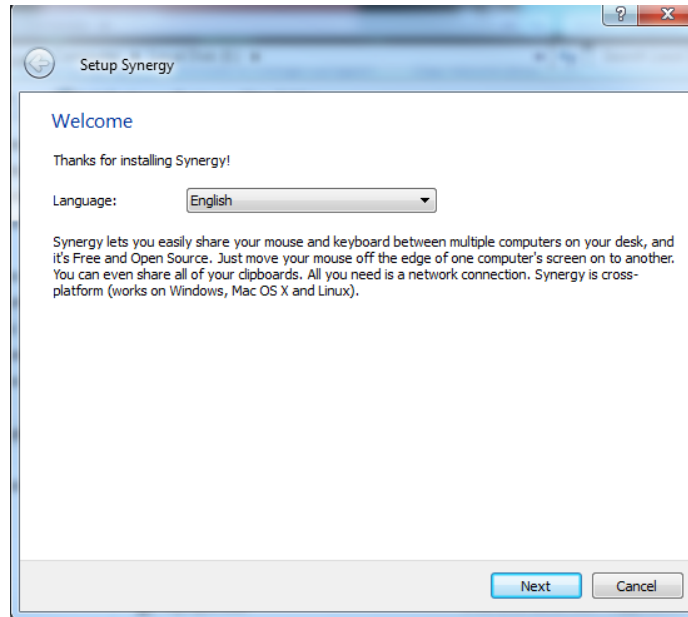
3.5 Synergy Software Installation (Optional)

Synergy is a software application for sharing a keyboard and mouse between multiple computers.

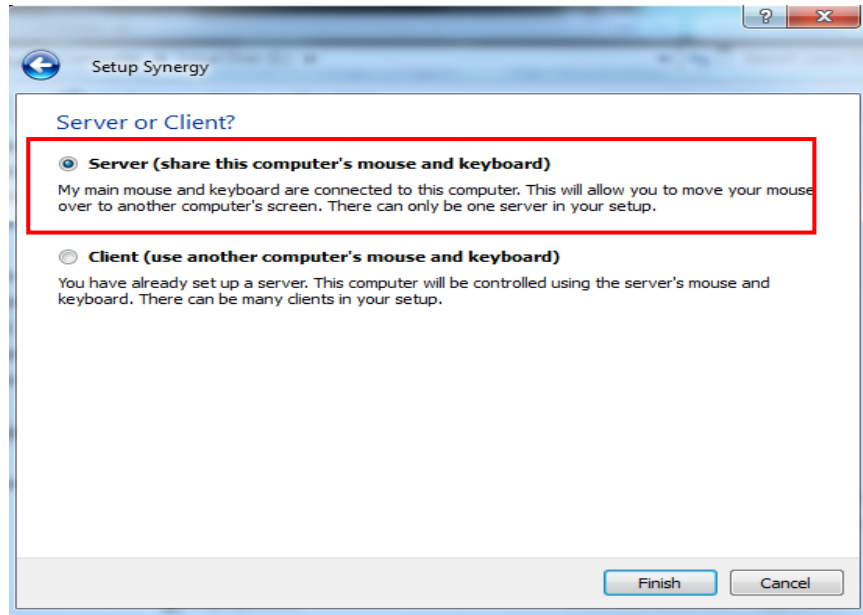
The installation process includes server and client installation.

3.5.1.1 Installing and Configuring a Server

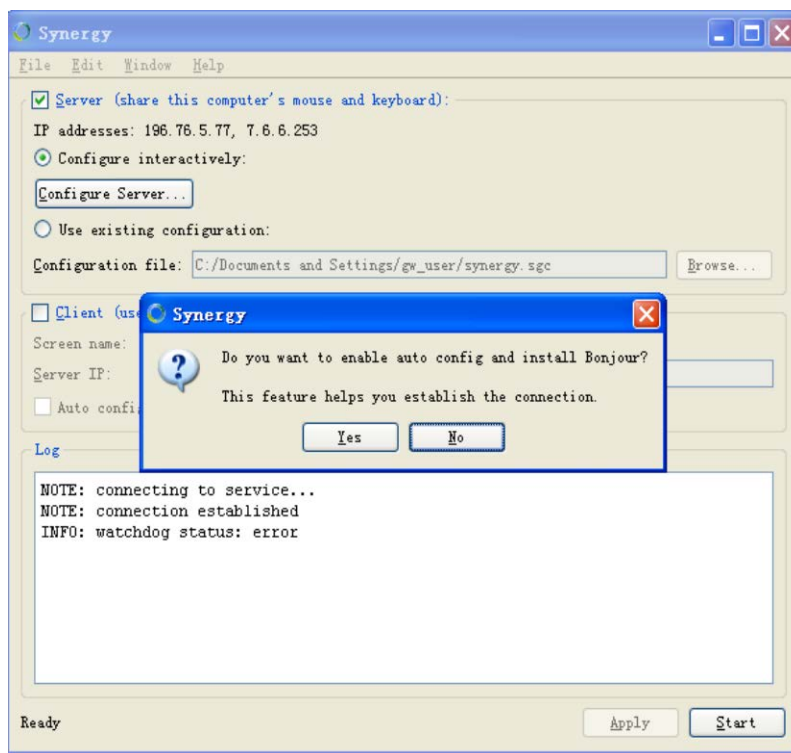
1. Insert the BeneVision CMS Tool SW CD (P/N 115-047955-00) into the computer CD drive, and find the Synergy software application (P/N 110-003997-00) in the CD.
2. Run "synergy1.6.3.exe".
3. In the welcome screen, click **Next**.
4. In the End-User License Agreement screen, select **I accept the terms in the License Agreement** and then click **Next**.
5. Always click **Next** until the installation is complete. The Synergy application automatically starts after the installation is complete.
6. In the following screen, select the proper language and then click **Next**.



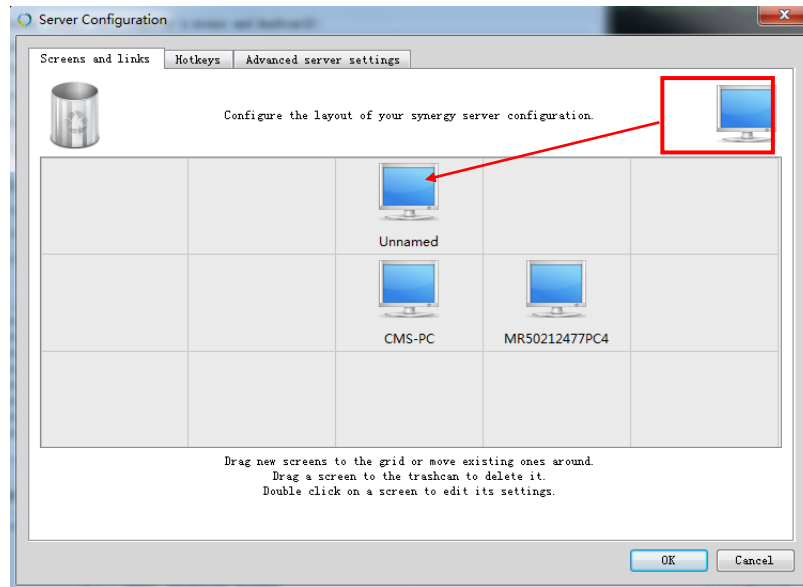
7. Select Server (share this computer's mouse and keyboard), and then click Finish.



8. In the following screen, when the window prompting “Do you want to enable auto config and install Bonjour? This feature helps you establish the connection” is displayed, select **No**.
9. Select **Configure Server...**. By default, server (share this computer's mouse and keyboard) and Configure interactively are selected.



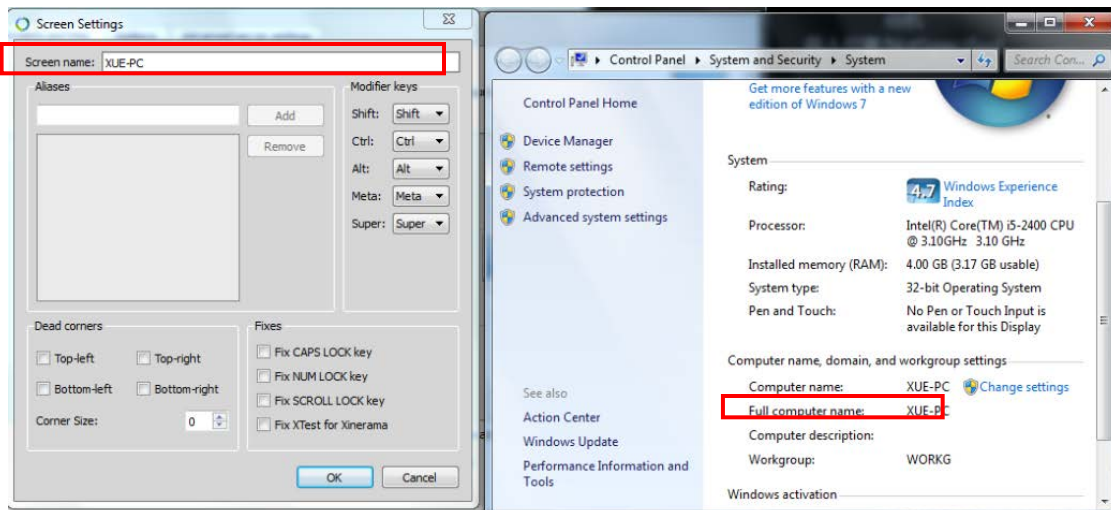
10. In the **Screens and links** tab of Server Configuration, drag the computer icon on the upper right corner of screen to a proper position in the grid. Then an unnamed icon appears in the grid, as shown below.



NOTE

- The actual computers should be placed in accordance with the position in the grid.

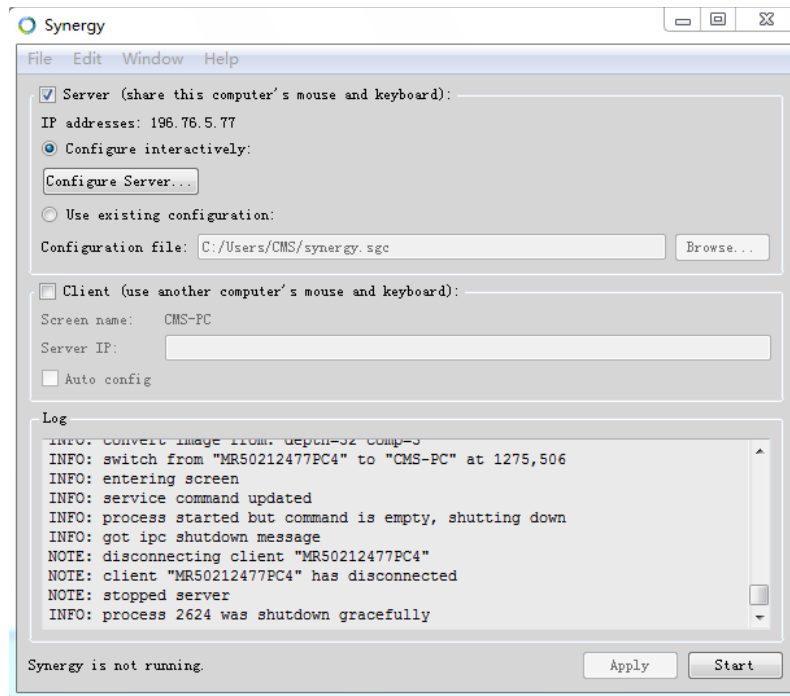
11. Double click the computer icon, the **Screen Settings** screen displays. Enter the computer name in the field of **Screen name** according to the client computer name, and then click **OK**.



NOTE

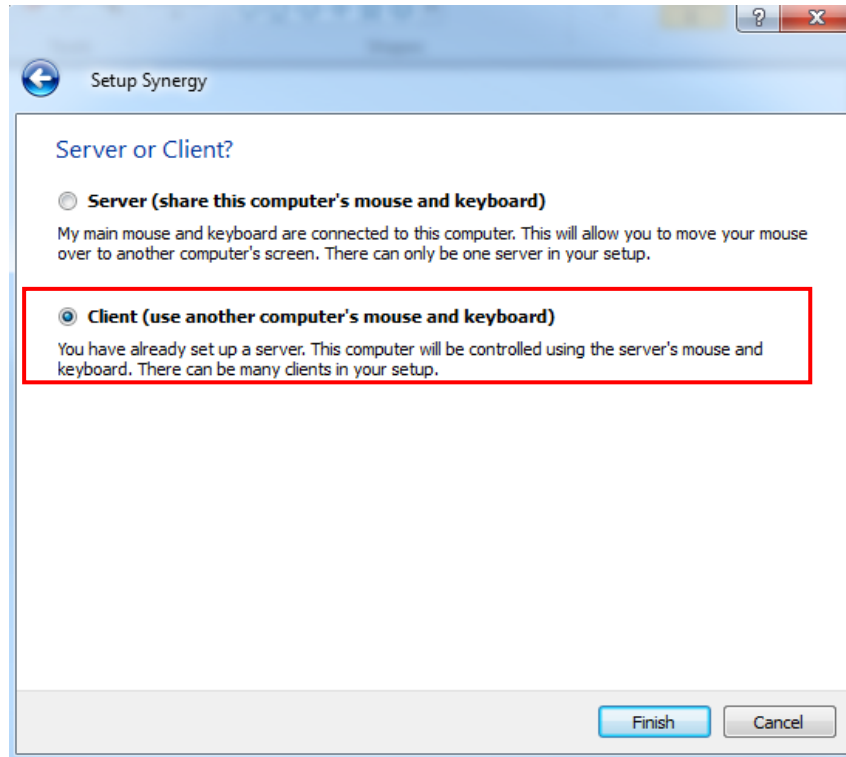
- Each computer needs to have a unique name.

12. In the following screen, click **Start**.

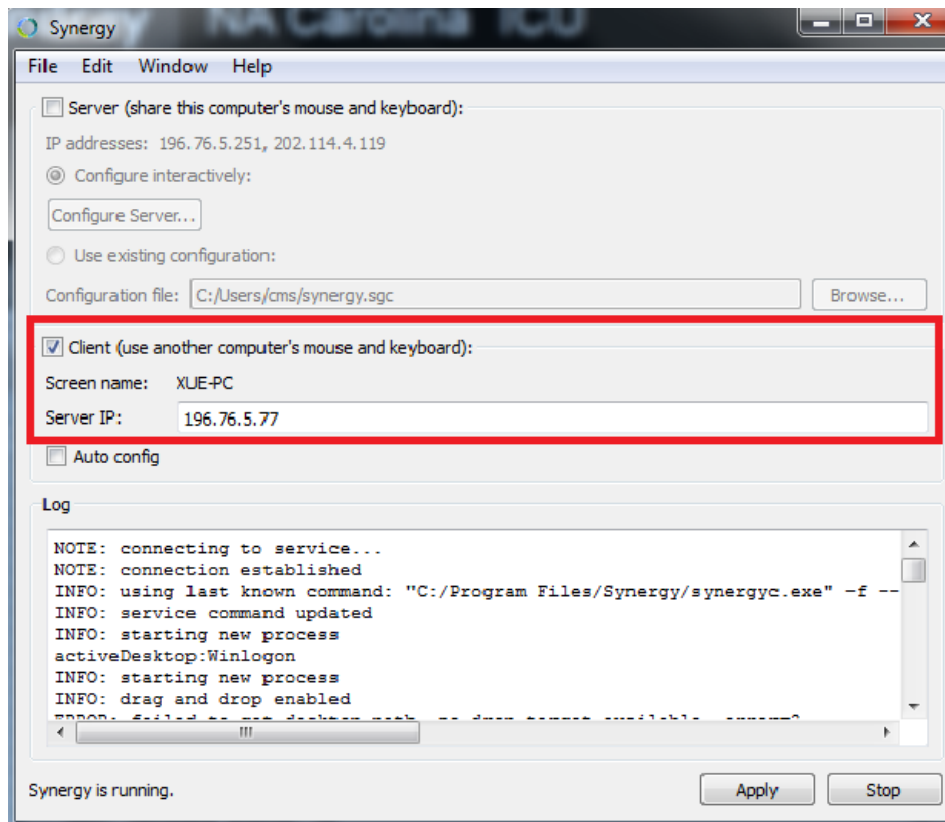


3.5.1.2 Installing a Client

1. Follow Steps 1 to 6 in the section **3.5.1.1 Installing and Configuring a Server**.
2. Select Client (share this computer's mouse and keyboard), and then click Finish.



3. In the following screen, when the window prompting "Do you want to enable auto config and install Bonjour? This feature helps you establish the connection" is displayed, select **No**.
4. Select **Configure Server**.....By default, Client (use another computer's mouse and keyboard) is selected.
5. Enter the server IP.
6. Click **Apply**.



3.6 Installing Printers

3.6.1 Supported Printers

The CMS supports the following printers:

- HP LaserJet M401n
- HP LaserJet M602
- HP LaserJet M605n
- HP LaserJet M608

3.6.2 Printer Installation Procedures

The installation of HP LaserJet M602 is used as an example.

NOTE

- **Connect a printer to the network before performing the following operations.**

Verifying the Printer IP:

1. Load the printer with paper and connect with the computer (Set the printer IP address to 172.16.0.X).
2. Power on the printer. The printer IP address information will be shown on the screen of the control panel as below:



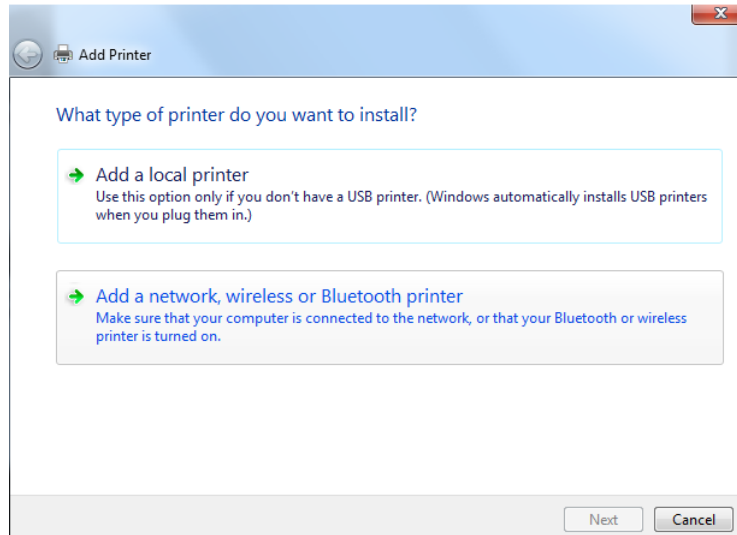
3. Verify this IP address is in the same network segment as the patient network. If not, add a new computer TCP/IP address so that it is in the same network segment with the printer IP address.

Adding TCP/IP

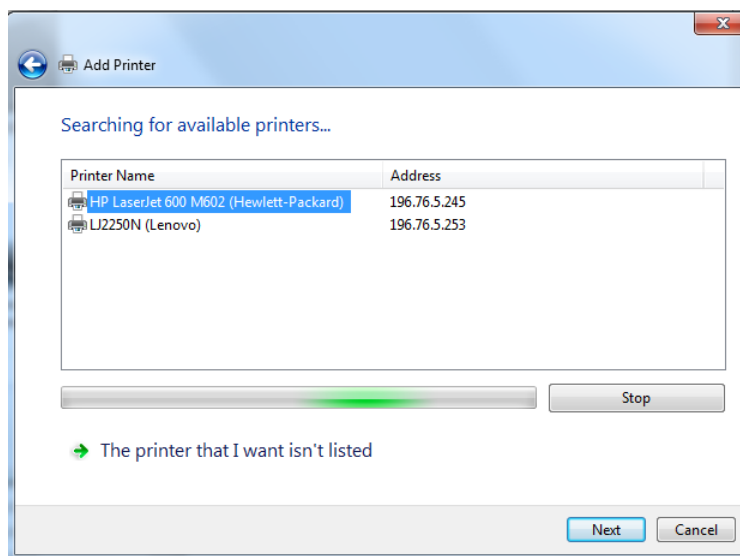
For how to add TCP/IP, refer to section **3.4.2 Patient Network**.

Installing the network printer

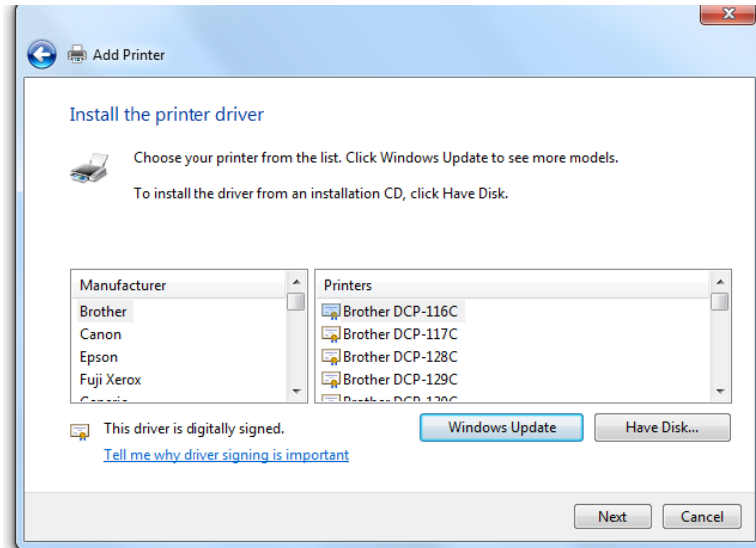
1. Insert the printer driver CD into the CD-ROM.
2. Open Control Panel.
3. Select Devices and Printers.
4. Right click on anywhere on the **Devices and Printers** page and then select **Add a Printer**.
5. Select Add a network, wireless or Bluetooth printer and then click Next.



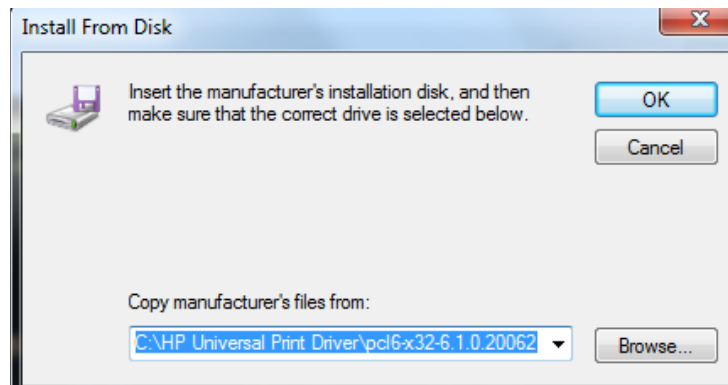
6. Select the desired printer, and then click **Next**.



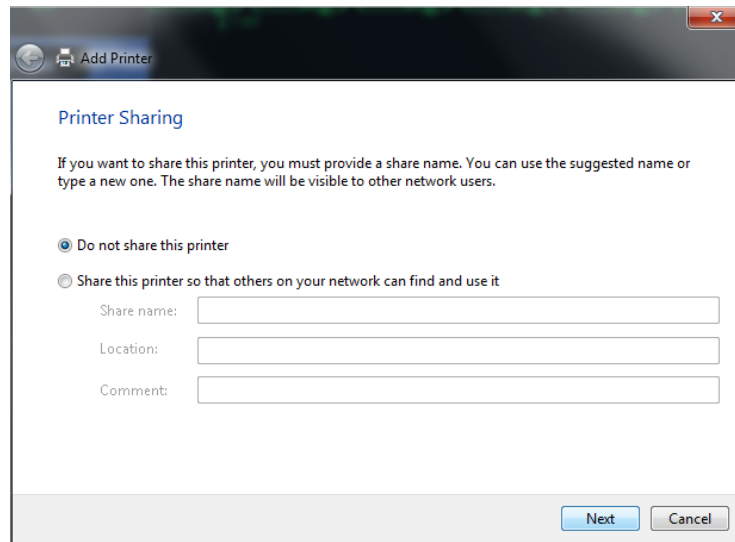
7. Click **Have Disk...** to select the printer driver which is located in the CD ROM. The following figure is for reference only.



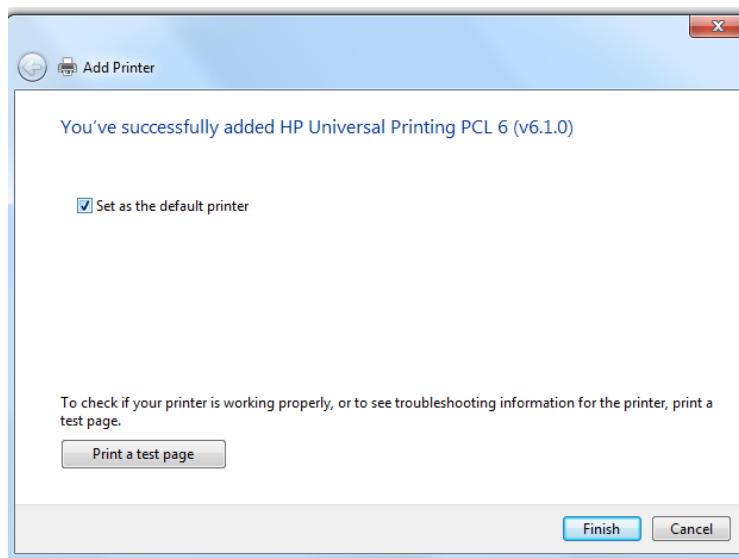
8. Click **Browse** to browse to the folder where the CD drive is stored. The following figure is for reference only.



9. Click **Next**. The printer driver will be installed automatically.



10. Upon completion of installation, click **Finish**.



If you need to add a second network printer, repeat the steps above.

Configuring the network printer IP on a new printer

When multiple central stations use one printer, if a printer goes bad, you do not need to bring the central stations down to install the new drivers. You only need to set the IP address on the new printer.

Follow this procedure to set the IP address of a network printer:

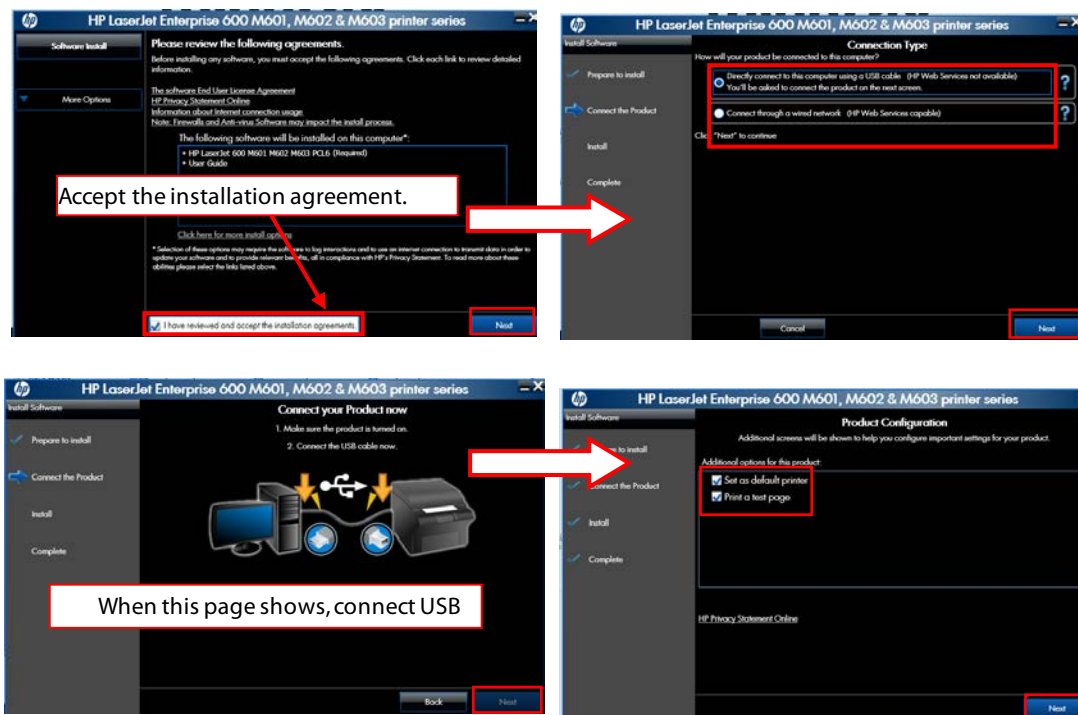
1. Open Control Panel.
2. Select Devices and Printers.
3. Right click on the desired printer.
4. Select Printer Properties.
5. In the **Printer Properties** screen, select **Ports** and then select **Configure Port....**
6. Change **Printer Name or IP Address** to the IP address of the printer being used. For example, 172.16.0.X.
7. Click **OK**.

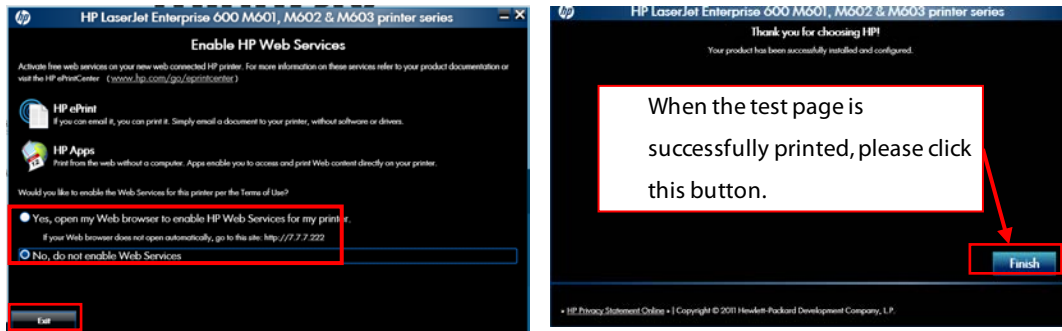
Installing the USB printer

NOTE

- Make sure that the USB cable of the printer is not connected with computer.

1. Right click the mouse to open CD driver, and then double click "setup.exe" file in the root directory.
2. Install the driver by following the indications shown below in the order of from left to right and from top to bottom:





3. After test page is printed, close all the pop-up windows and access “Printers and Faxes” again.
4. Select **HP LaserJet 600 M601 M602 M603 PCL6** printer and re-name it as “M602_usb” to complete installation of printer’s USB driver.

NOTE

- When installing a printer, select to install network driver or USB driver based on the actual requirement. Connect the printer to the CMS network if network printing is needed.

3.6.3 Tasks after Printer Installation

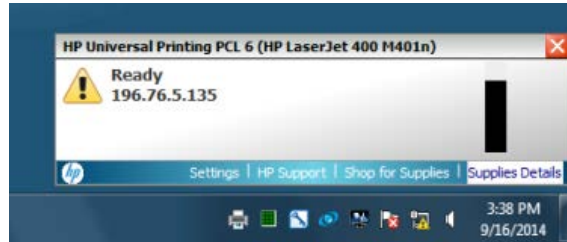
To improve the print effect, follow the steps as below:

1. Enter the Windows desktop and select Start → Control Panel → Hardware and Sound → Devices and Printers.
2. In the **Printers and Faxes** field of the **Devices and Printers** window, select the desired printer and right click the printer.
3. Select the **Printer properties** option from the pop-up menu to display the printer properties window.
4. Select the **Advanced** tab.
5. Unselect the Enable advanced printing features option.
6. Click the **OK** button to apply the setting and close the printer properties window.

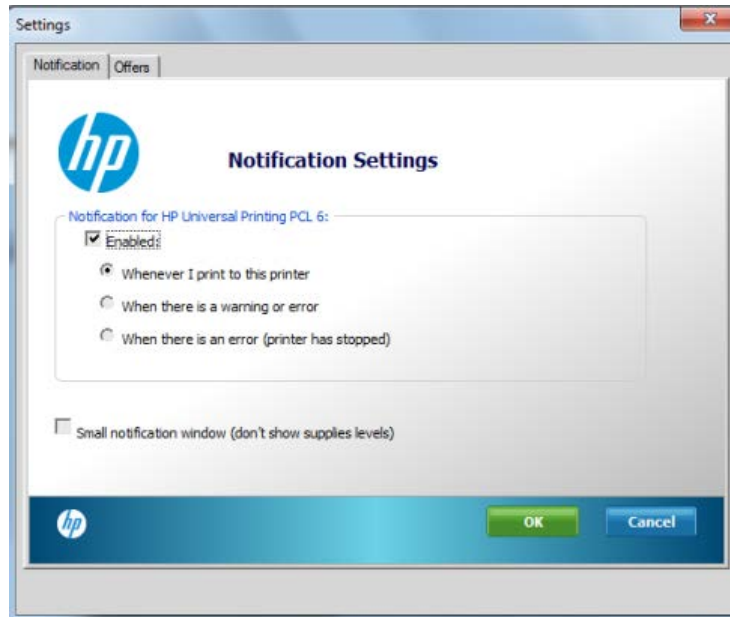
To block the pop-up functional window when running the CMS, follow the steps as below:

1. After install the printer, implement a printing task.

A prompt window displays at the bottom-right of the desktop, as shown in the following figure.



2. Select the **Settings** option to display the **Settings** window, as shown in the following figure.



3. Select the **Notification** tab, and unselect the **Enabled:** check box.
4. Select the **Offers** tab, and unselect the Allow special device information and offers to be displayed check box.
5. Click the **OK** button to apply the settings and close the **Settings** window.

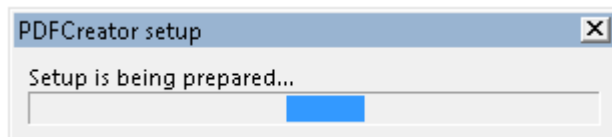
3.7 Installing PDF Creator

When reports need to be output in PDF format, you need to install PDF Creator on the CMS host.

3.7.1 PDF Creator Installation Procedures

To install the PDF Creator, follow this procedure:

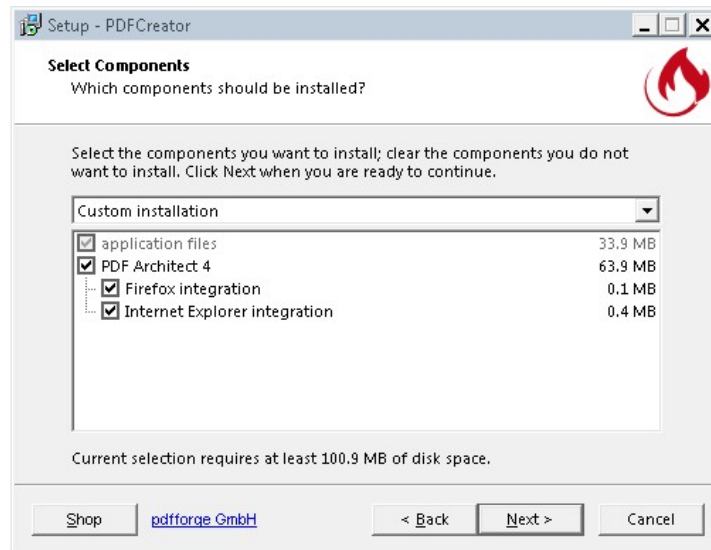
1. Double click PDF Creator.exe in the customer-provided PDF Creator package (which can be downloaded from <http://www.pdfforge.org> or purchased). The following steps take installing PDF Creator 2_4_1-Setup as an example.
2. Select the setup language and then click **OK**. Wait for the completion of PDFCreator installation preparation.



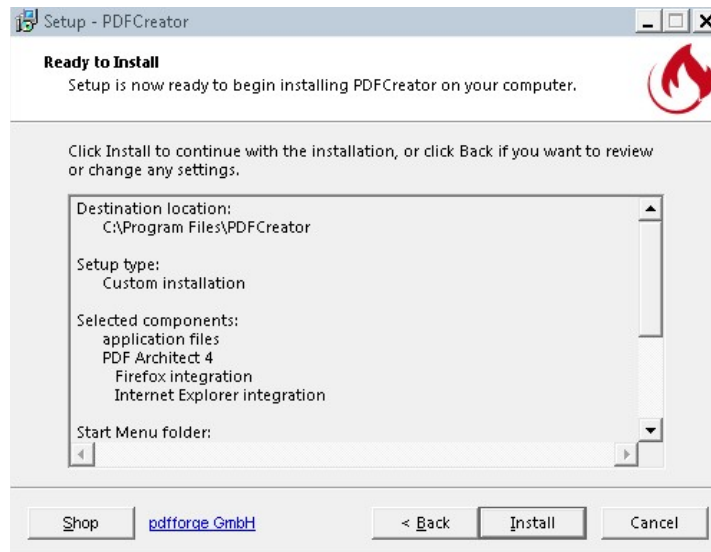
3. Upon completion of installation preparation, click **Next** on the Welcome screen of PDF Creator Setup Wizard.



4. In the **Select Components** screen, use the default settings and then click **Next**.



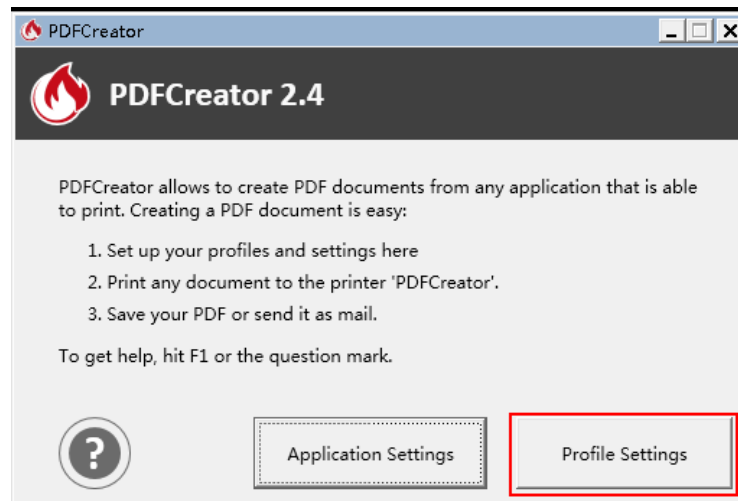
5. On the **Ready to Install** screen, click **Install**.



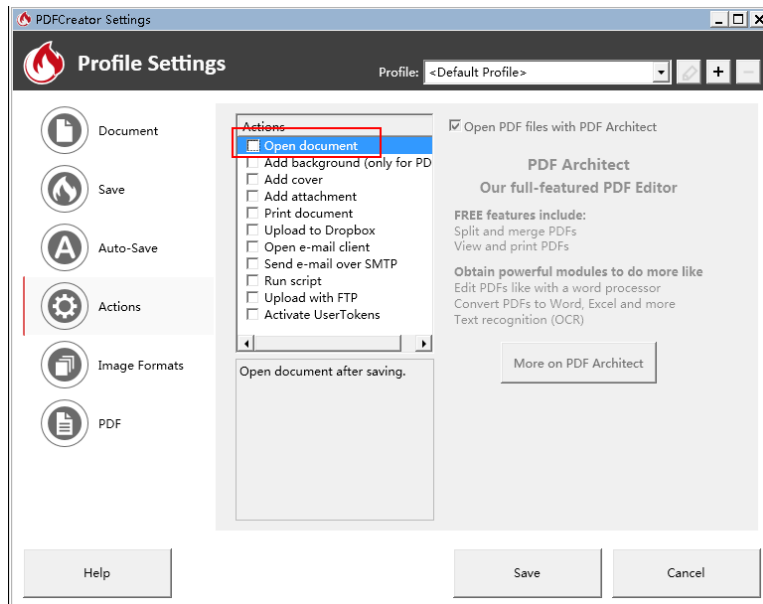
6. Upon completion of installation, click **Finish**.



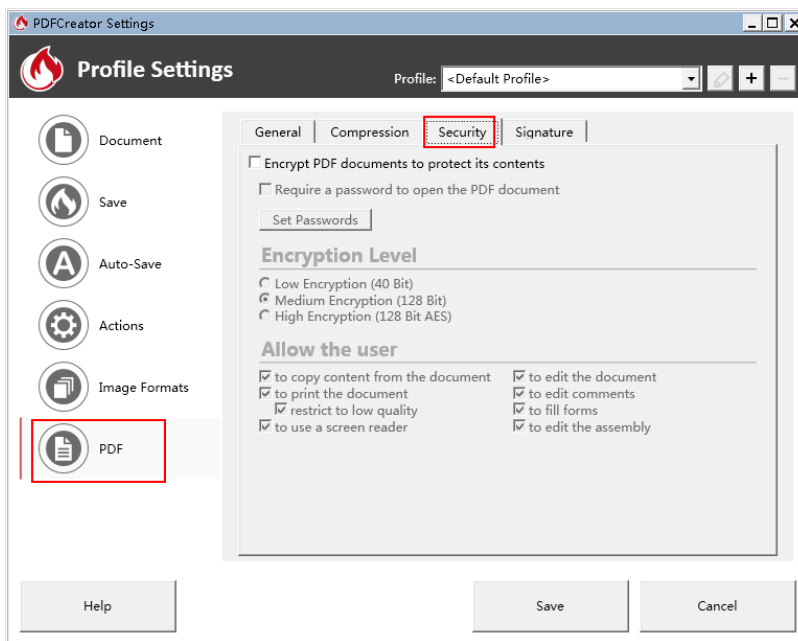
7. Configure pdfcteater.
- Open the PDF Creator and then select **Profile Settings** to make the desired configuration changes.



- Select Actions and Uncheck Open document.



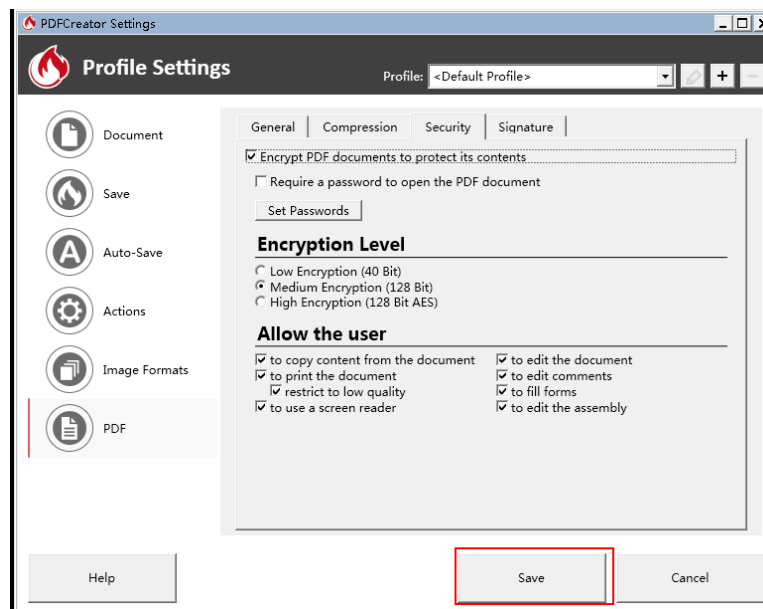
- c. Select **PDF** to configure the PDF file properties.
- d. Select **Security**.



- e. Select **Encrypt PDF documents**, set the **Encryption level** to **Medium**, and only allow the user to print or view the exported PDF.



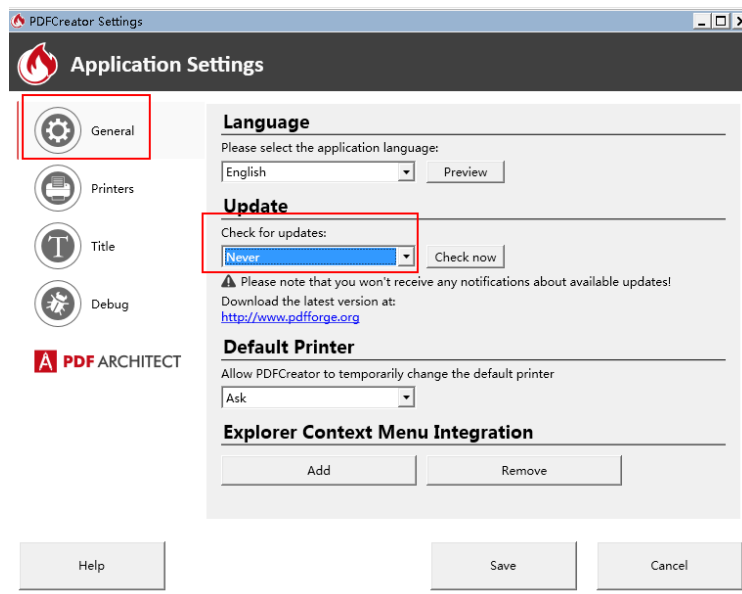
f. Save the profile changes.



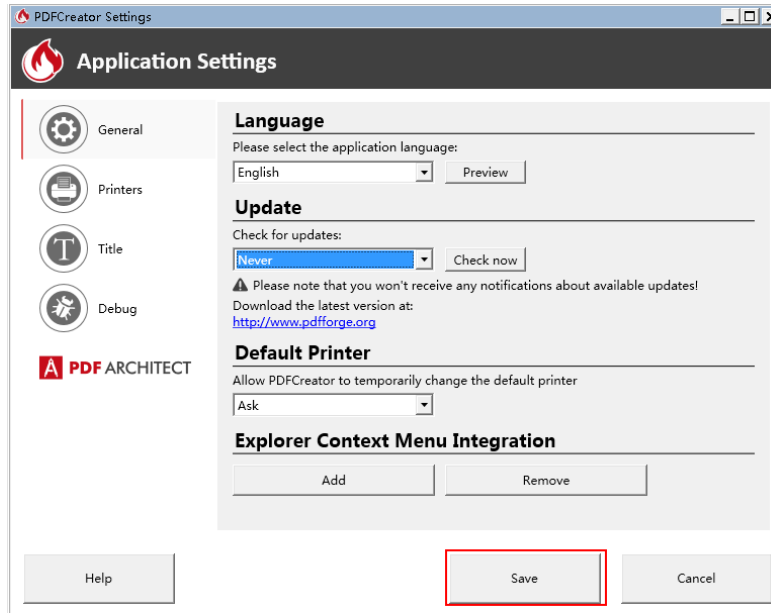
g. Select Applications Settings.



h. Under Update, set **Check for updates** to **Never**.

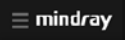



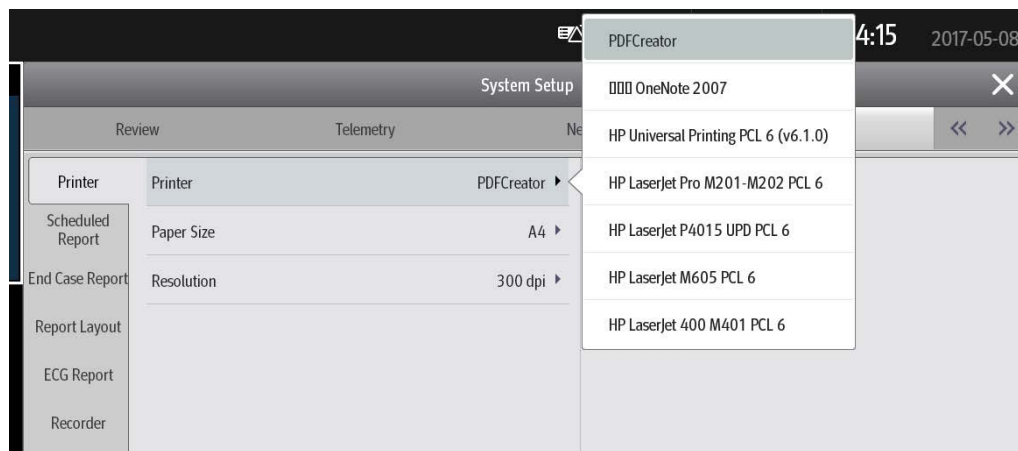
i. Save the application settings changes.



3.7.2 Verifying Installation of PDFCreator at the CMS

To verify installation of PDFCreator at the CMS, follow this procedure:

1. Select the system menu area  in the upper left corner of the CMS screen.
2. Select  **System Setup** to access the **System Setup** menu.
3. Select the **Print** tab → enter the required password → select the **OK** button → select the **Printer** tab.
4. Verify that **PDFCreator** is displayed in the drop-down list for **Printer**.



3.7.3 Printing PDF Reports

You can print PDF reports manually or set the printer to print PDF reports automatically. For details on printing PDF reports, see *BeneVision Central Monitoring System Operator's Manual (PN 046-010879-00)*.

3.7.4 Saving PDF Reports Manually or Automatically

You can save PDF reports manually or automatically.

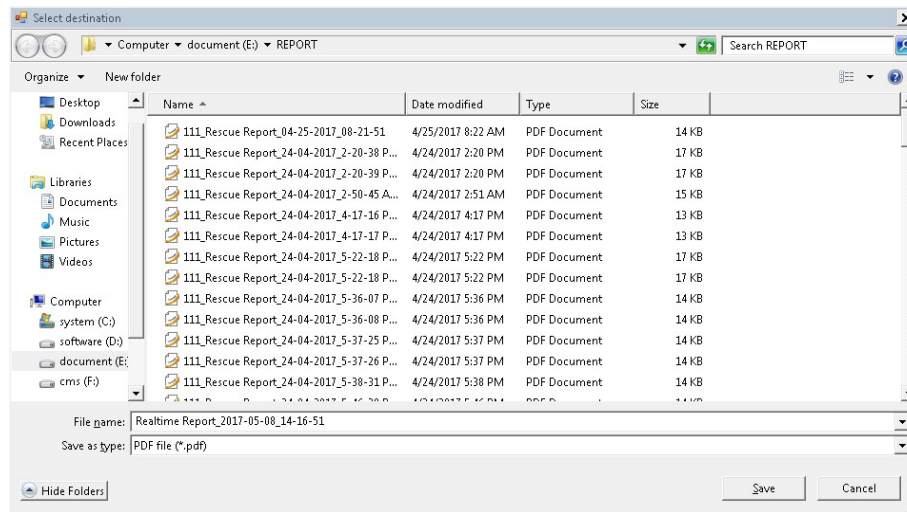
3.7.4.1 Saving PDF Reports Manually

To save PDF reports manually, follow this procedure:

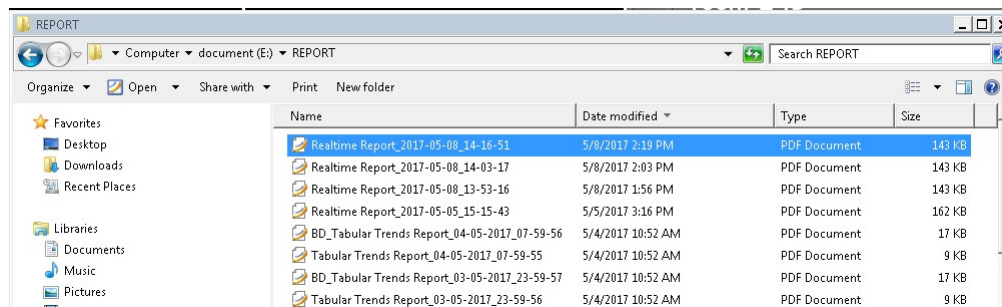
1. Select the **Save** button .



2. Select the desired file save path. Suppose the PDF file save path is E:\REPORT.



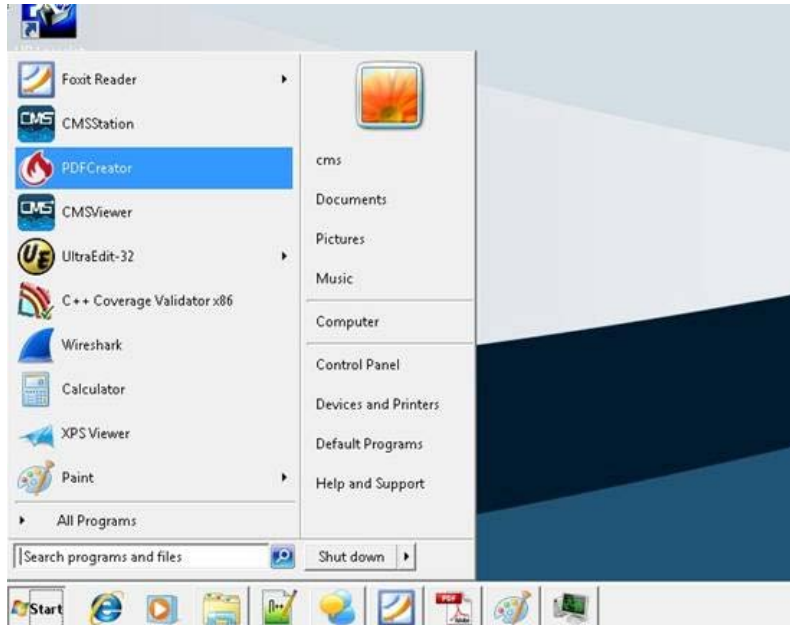
3. Access E:\REPORT, and then you can view the PDF report output.



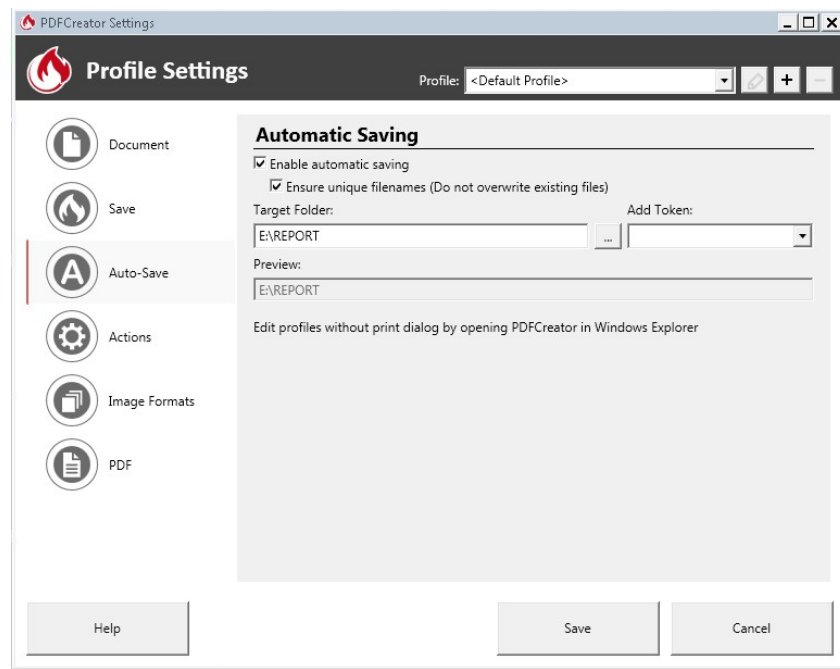
3.7.4.2 Saving PDF Reports Automatically

To save PDF reports automatically, follow this procedure:

1. Upon completion of PDFCreator installation, from the Windows **Start** menu, select **PDFCreator**→select **Profile Settings**.



2. In the **Profile Settings** window, select the **Auto-Save** section. Check **Enable automatic saving** and then select the desired **Target Folder**. Suppose the target folder is E:\REPORT.



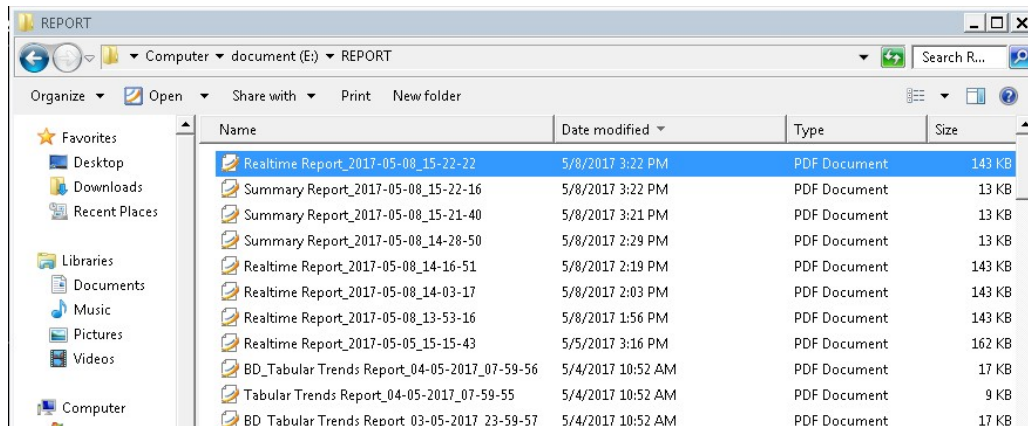
3. Go back to the ViewBed screen and then select the **Print** quick key. This step takes printing a real-time report as an example.

The prompt “Printing...” is displayed at the CMS. Wait for the prompt of “Printing Completed”. Upon completion of printing, the PDF report will be saved in the target folder automatically.

NOTE

- If you need to print other reports such as EEG report, select corresponding print button. For how to select the print button, see BeneVision Central Monitoring System Operator’s Manual (PN 046-010876-00).

4. Access the target folder (in this example:E:\REPORT), and then you can view the PDF report output.

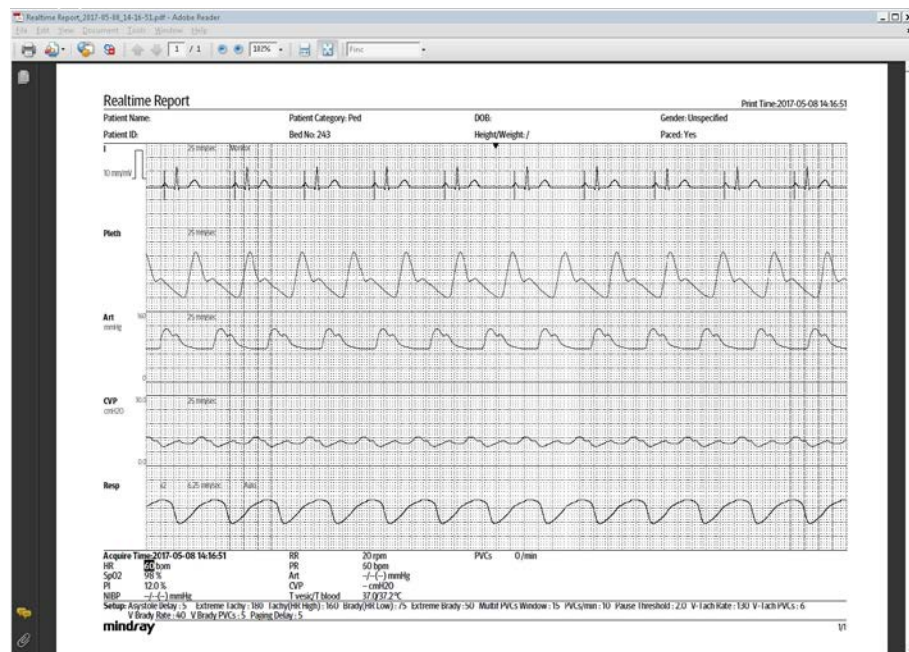


3.7.5 Viewing PDF Reports

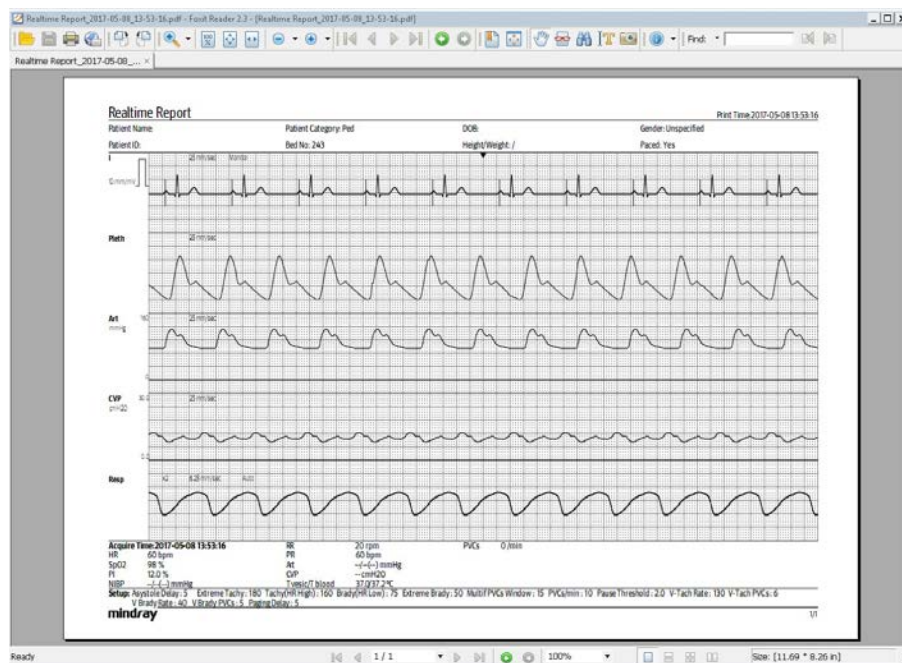
You need to install a PDF reading application such as PDF Reader, Adobe Acrobat, or Foxit to view PDF reports.

To view PDF reports, open the PDF report in the target folder using the desired PDF reading application.

- The PDF report opened via an Adobe application is as shown below.



- The PDF report opened via Foxit is as shown below.



3.8 Installing a Recorder

No recorder driver is needed. Recording can function directly after system software is installed.

NOTE



- Connect a recorder to COM1 port of the CMS host.

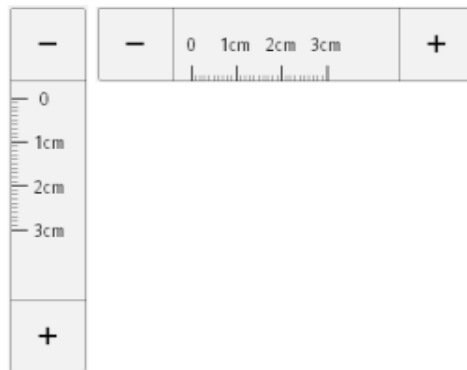
3.9 CMS System Software Installation

For how to install the CMS system software (running as normal service, see **3.3.17 Installing the CMS System Software (Running As Normal Service)**).

3.9.1 Configuring CMS Display Size

To set the screen size, follow this procedure:

1. Select the system menu area  in the upper left corner of the CMS screen.
2. Select  **System Setup** to access the **System Setup** menu.
3. Select the **Display** tab, enter the required password, and then select **OK**.
4. Select the **Screen** tab.
5. Select **Screen Size** and then select the desired option. If your screen size is not available, select **Others** and select the + or - button on the rulers to adjust the screen size.



6. Click **OK**.
7. Restart the CMS system to make the changes take effect.

3.9.2 Setting the Display Layout of CMS Screen

When the CentralStation, the WorkStation, or the ViewStation is equipped with four displays, the "**Display Layout**" option is available in the "**Screen**" tab and allows you to change the cursor moving mode. The display layout selected should be consistent with the appearance of your displays.

To change the display layout, follow this procedure:

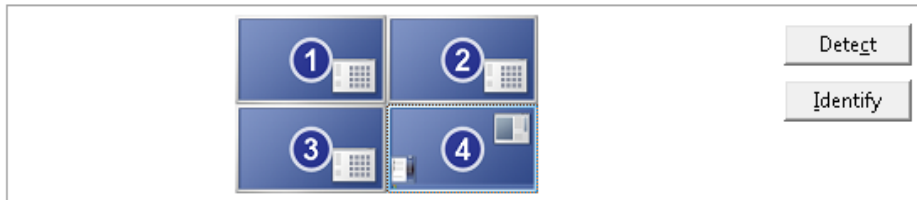
1. Right click the mouse on the desktop, and then select **Screen Resolution** from the pop-up menu to display the window.
2. Adjust the layout of your displays either **1x4** or **2x2**.
 - ◆ **1X4**: Four displays are arranged in a line. You can move the cursor from the current display to its neighboring displays.

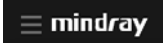

Change the appearance of your displays



- ◆ **2x2** : When two displays are stacked on the other two displays. You can move the cursor from current display to its neighboring displays.

Change the appearance of your displays





3. Select the system menu area  in the upper left corner of the CMS screen.
4. Select  **System Setup** to access the **System Setup** menu.
5. Select the **Display** tab, enter the required password, and then select **OK**.
6. Select the **Screen** tab.
7. Set **Display Layout**: either **1x4** or **2x2**. This option should be consistent with the layout of your displays.
8. Restart the CMS system.

NOTE

- **The display setting changes will take effect after the CMS restarts.**

3.10 Setting AP Management

1. From the CMS system, select the system menu area  in the upper left corner of the screen.
2. Select  **System Setup** → **Network** → enter the password.
3. Select the **AP Management** tab.
4. Click **Import AP Information** to import a file(format:*.txt)

System Setup

Review

Telemetry

Network

Print

General

Results Service

eGateway

Central Station Authorization

Central Station Connection

Bed Authorization

AP Management

Import AP Information

AP Name	Mac address	Location	Detail
AP-CMS1	f84f573b5d10	HY9-7a1	7a1
AP-CMS2	882593BA4F16	aaaa7a2	7a2
AP-CMS3	000B6C41E50C	HY9-7a3	7a3

NOTE

- The imported text file must be saved in the UTF-8 format.
- The text file that contains the AP information must be in this format: AP Name, Mac address, Location, Detail. AP Name, Mac address, Location, and Detail are customizable. For example, AP-CMS1,F84F573B5D10,HY9-7a1,7a1. Each field is separated by a comma and there is no spacing between each field.

3.11 Connecting a CentralStation to WorkStation/ViewStation




This section describes how to connect a CentralStation to WorkStation or ViewStation.

Before connecting a Central Station to WorkStation/ViewStation, you need to configure IP addresses in the CentralStation and WorkStation/ViewStation respectively.


NOTE

- **One of the CentralStations needs to be configured as the master server.**

3.11.1 CMS Network IP Configuration

1. Select the system menu area  in the upper left corner of the CMS screen.
2. Select  **System Setup** → **Network** → enter the password.
3. Select the **General** tab.
4. From the **Central Monitoring Network Setup** section (i.e. central network", enter 192.168.0.X into the text input box on the right of **Master Server IP Address**. This is the IP address of the CentralStation that is going to be the master.
5. Click the  button on the right of the text input box for **Local IP address** and select 192.168.0.X.



System Setup		
Telemetry	Network	Print Configuration << >>
General	Central Monitoring Network Setup	
Results Service	Master Server IP Address	192 . 168 . 0 . 20
eGateway	Local IP address	192 . 168 . 0 . 20 ▶
Central Station Authorization	Bedside Monitoring Network Setup	
Central Station Connection	Local IP address	172.16.0.20 ▶
Bed Authorization	Remote View	
AP Management	Support Monitor Remote View	<input type="checkbox"/>
	CMS Sending Broadcast Data	<input type="checkbox"/>
	Multicast Setup	
	Multicast Address	225 . 0 . 0 . 8
	Multicast TTL	1 ▶
	Note: Please restart the system after making a change.	

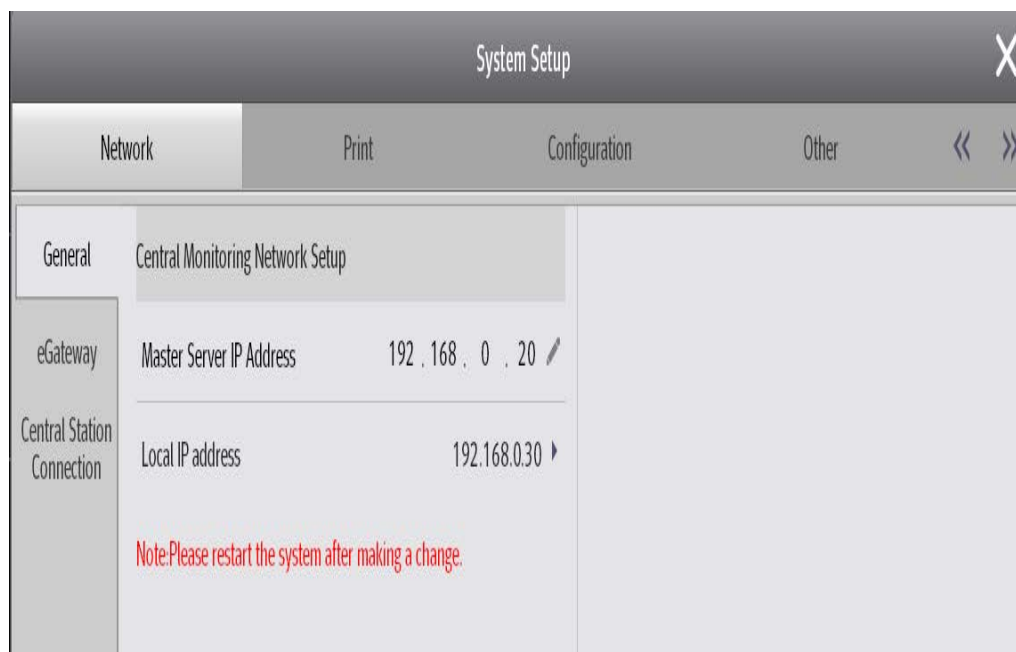
- From the **Bedside Monitoring Network Setup** section (i.e. patient network), click the  button on the right of the text input box for **Local IP address** and select. 172.16.0.X.
- Click **X** in the upper right corner to accept the changes.
- Restart the system.


NOTE

- If the **CentralStation** that is being set up is the master, enter its own IP address in the « **Master Server IP Address** » field. See the figure above for reference.
- The **CentralStation** needs to be restarted for changes to take effect.

3.11.2 Configuring WorkStation/ViewStation Network IP Addresses

- From the WorkStation/ViewStation, select the system menu area  in the upper left corner of the screen.
- Select  **System Setup** → **Network Setup** → enter the password.





- From the **Central Monitoring Network Setup** section (i.e. central network”, enter 192.168.0.X into the text input box on the right of **Master Server IP Address**. This is the IP address of the CentralStation that is the master.
- Click the  button on the right of the text input box for **Local IP address** and select 192.168.0.X.

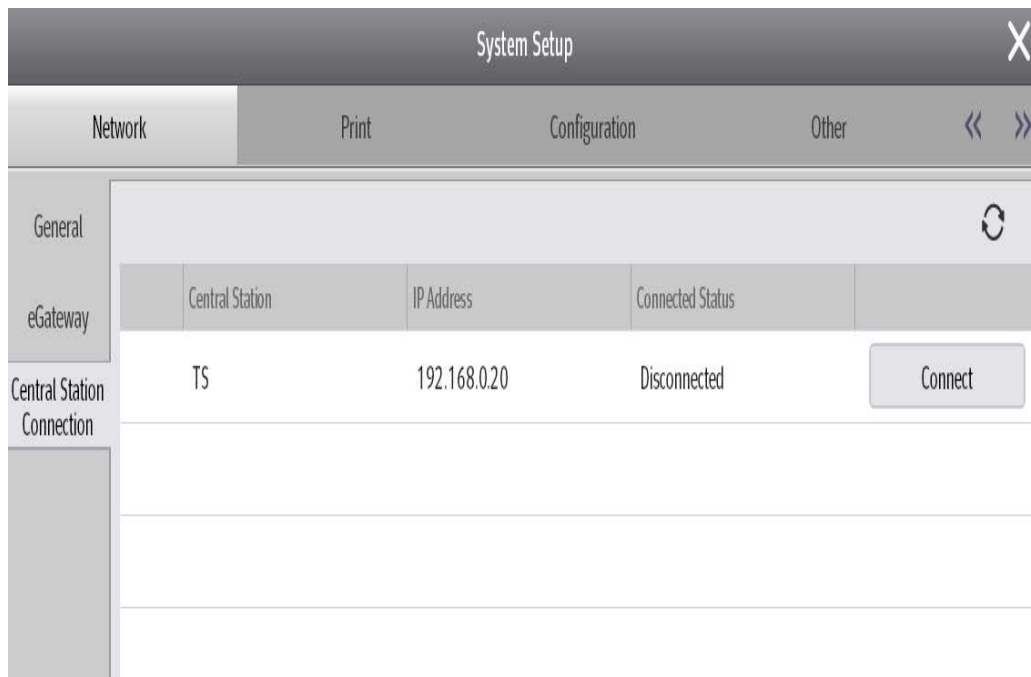
5. Click **X** in the upper right corner to accept the changes.
6. Restart the system.

NOTE

- **The WorkStation/ViewStation needs to be restarted for changes to take effect.**

3.11.3 Connecting a CentralStation to WorkStation/ViewStation

1. At the WorkStation/ViewStation, select the system menu area  in the upper left corner of the screen.
2. Select  **System Setup** → **Network Setup** → enter the password.
3. Select the **Central Station Connection** tab. The following figure is for reference only.



4. Select the name of the central station you want to connect.
5. Click **Connect** and then click **X** in the upper right corner to close the **System Setup** window.

NOTE

-
- For how to admit patients on the WorkStation/ViewStation, refer to section 4.3 Assigning Monitoring Devices from the Host CentralStation to the WorkStation/ViewStation of the BeneVision Central Monitoring System Operator's Manual (P/N: 046-010879-00).
 - For details on troubleshooting the issues that may occur when using the WorkStation/ViewStation, see *chapter 10 Troubleshooting*.
-

3.12 MLDAP Deployment

For details on the MLDAP deployment, refer to MLDAP Installation and User Guide (PN : 046-011462-00).

FOR YOUR NOTES

4 Telemetry Monitoring System (TMS)

The configurations about the TMS are operated at the central monitoring system (CMS), such as programming the telemetry packs, admitting the transmitter, discharging the transmitter from the CMS, refer to

- TMS-6016 Telemetry Monitoring System Service Manual (P/N 046-005121-00)
- TMS60 Telemetry Monitoring System Service Manual (P/N 046-007057-00)

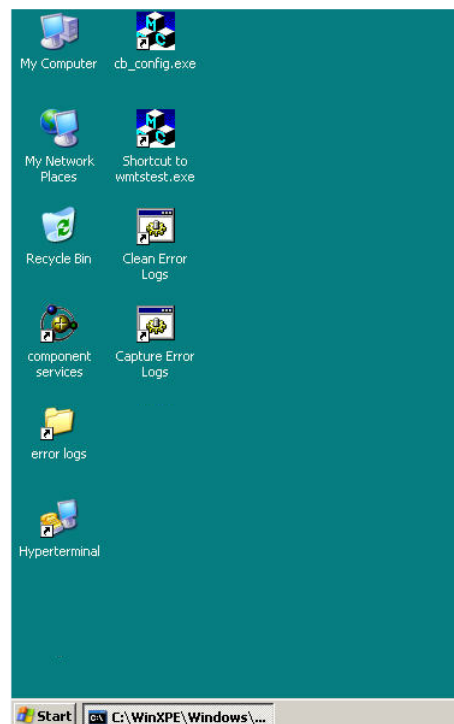
This chapter only concentrates on how to configure Panorama telemetry server to the BeneVision CMS.

NOTE

- **The Panorama telemetry server gets connected to the BeneVision patient network 172.16.0.X.**

4.1 Configuring Panorama Telemetry Server

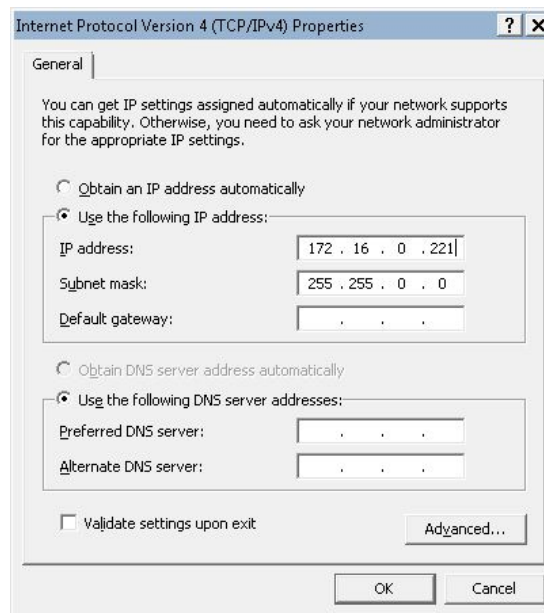
1. On the telemetry server, access the windows desktop.
2. From the windows desktop, open **Control Panel**.



3. In the Control Panel, open **Network Connections**.
4. Right click on the **ELAN Connected** and select **Properties**.



5. In the **Internet Protocol (TCP/IP) Properties** window, set the IP address to 172.16.0.X and the Subnet mask 255.255.0.0 and then click **OK**.



- On the windows desktop, double click on CB_Config.exe.

- Set the ELAN IP Address to 172.16.0.X, if not already configured.

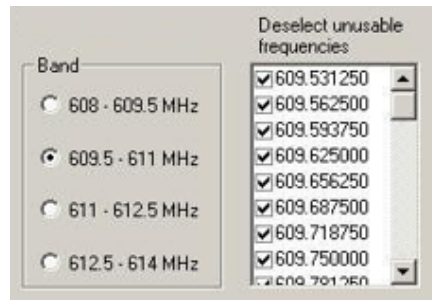
NOTE

- The WELAN IP Address does not need to be configured.
- If an emergency disk was created for the telemetry server reloaded, click “Save and Exit”. Restart the telemetry Server. If not, continue with the next step.

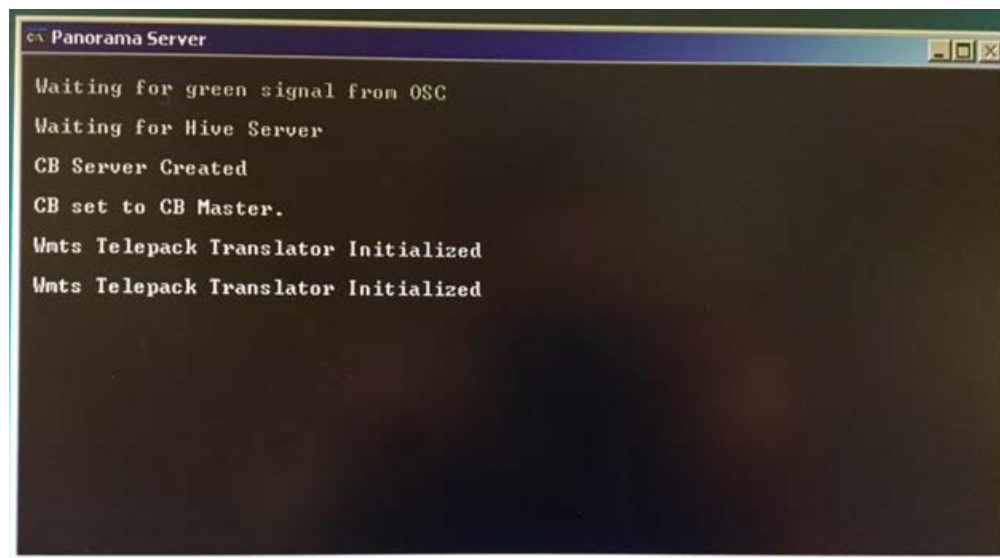
- On the 608 MHz Wmts Enable, check **Enable Wmts Devices**.

- On the 608 MHz Wmts Configuration, set **Global Tim Id** to **0**, **Tim Id** to **0**, and **Downlink RF Pair** to **TXFP_None**.

- In the **Band** field, select the appropriate band based on the site survey that was performed.





11. Click Save and Exit.
12. Restart the telemetry server.
13. If the telemetry server is communicating with the BeneVision Central Station the following screen will come up with the following messages **"Waiting for green signal from OSC, Waiting for Hive Server, CB Server Created and CB set to CB Master"**.



NOTE

- For additional telemetry server settings, please refer to the **Panorama Service Manual 0070-00-0634**.

4.2 Programming Panorama Telepack 608 to BeneVision CMS

1. Connect a programming cable to COM 1 of the Central Station.
2. Connect the programming cable to the Telepack 608.
3. Install the batteries. After installing batteries, the LA and the RA lights are going to turn **ON** and wait for them to turn **OFF**.
4. From the CMS system, select the system menu area  in the upper left corner of the screen.
5. Select  **System Setup** → enter the password → select the **Telemetry** tab → select **Program**.



6. When the following dialog box displays, click **OK**.





NOTE

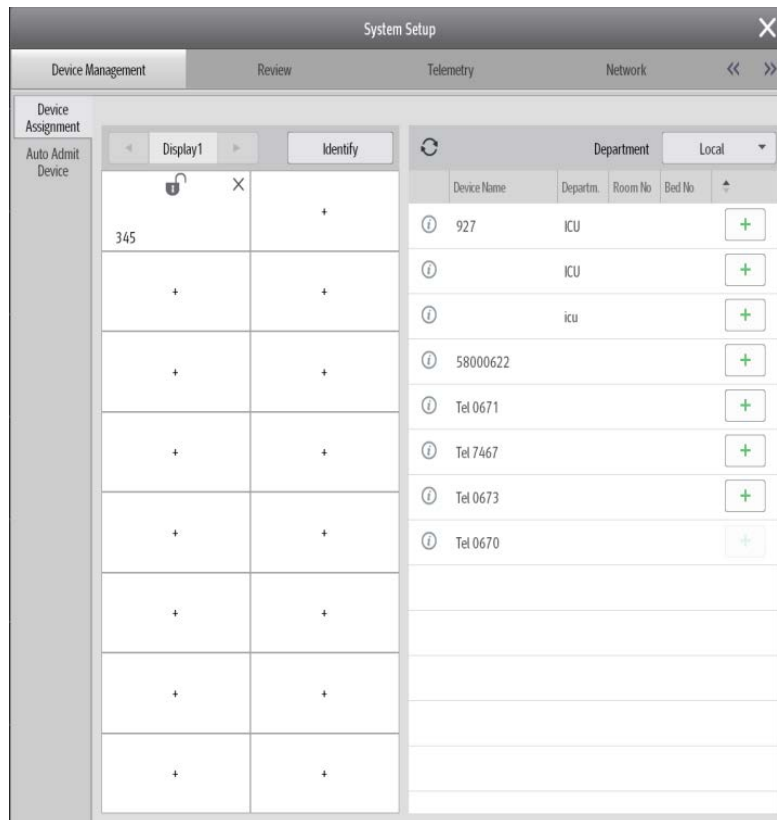
- The dialog box appears for five seconds. If you do not make a selection during the five seconds, you will get a programmed time out message.

The message “Wireless device programmed successfully” displays.



Wireless device programmed successfully.

4.3 Admitting Panorama Telepack 608 to BeneVision CMS

1. From the CMS system, select the system menu area  in the upper left corner of the screen.
2. Select  **System Setup** → enter the password → select the **Device Management** tab.
3. In the monitor list, select the desired transmitter name.
4. Click +.



4.4 Programming Replacement Panorama Telepack 608

1. Connect a programming cable to **COM 1** of the Central Station.
2. Connect the programming cable to the **defective** Telepack 608.
3. Install the batteries. After installing batteries, the **LA** and the **RA** lights are going to turn **ON** and wait for them to turn **OFF**.
4. From the CMS system, select the system menu area  in the upper left corner of the screen.
5. Select  **System Setup** → enter the password → select the **Telemetry** tab → select **Program**.
7. Click **Free Connected Channel**. The following dialog box displays.

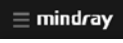

Channel Successfully freed.

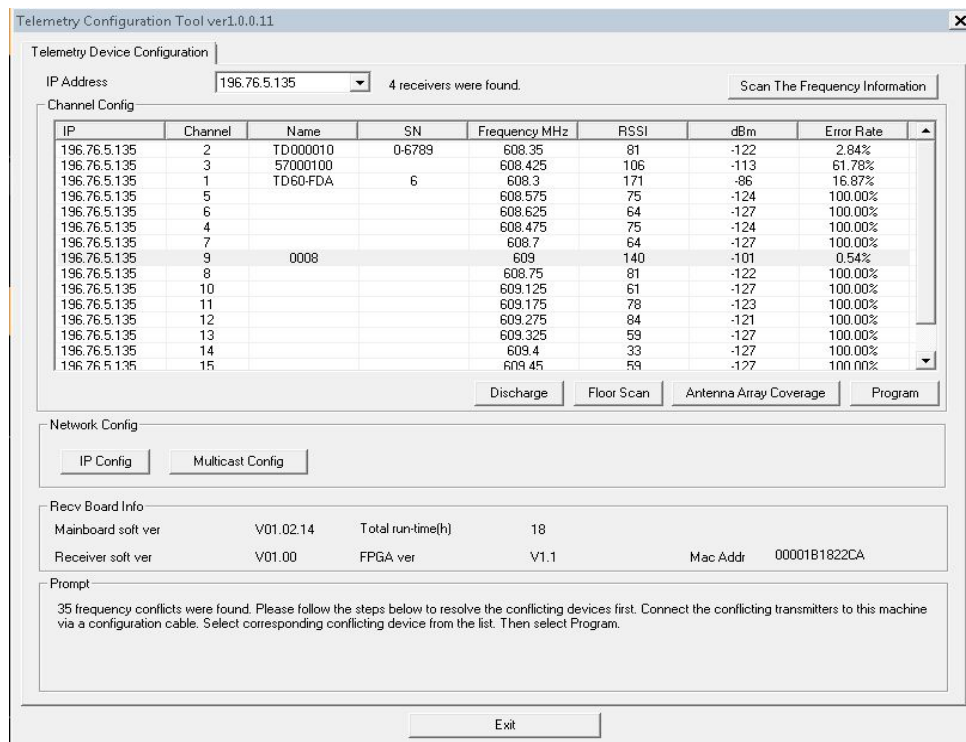
8. Connect the Programming cable to the **new** Telepack 608. Inset the batteries to the Telepack. After inserting the batteries, the **LA** and the **RA** lights are going to turn **ON** and wait for them to turn **OFF**.
9. Click **Program**. When a confirmation message appears, click **OK**. The message "Wireless device programmed successfully" displays.

NOTE

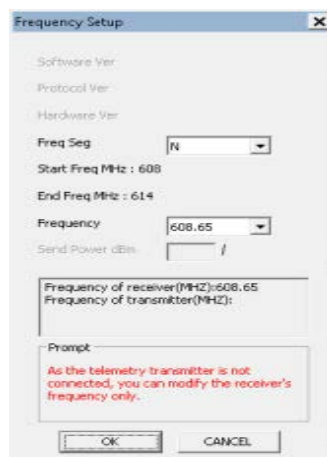
-
- For how to admit Panorama Telepack 608, refer to 4.3 *Admitting Panorama Telepack 608 to BeneVision CMS*.
-

4.5 Programming Tel-100/200 and TD 60 Transmitters

1. Connect a programming cable to COM 1 of the CentralStation
2. Connect the programming cable to the SpO₂ connector of the **Telepack**.
3. From the CMS system,select the system menu area  in the upper left corner of the screen.
4. Select  **System Setup** →**Factory Maintenance** →enter the password →select the **Frequency Setup** tab, and then click the **Frequency Setup** button.



5. Click the Scan the Frequency Information button.
6. Select a channel, and then click **Program**. The following figure serves as an example.



7. Program the frequency according to the screen prompts.

NOTE

-
- **The programmed frequency will take effect after the telemetry transmitter is restarted.**
-

FOR YOUR NOTES

5 Installing and Configuring the Master Server

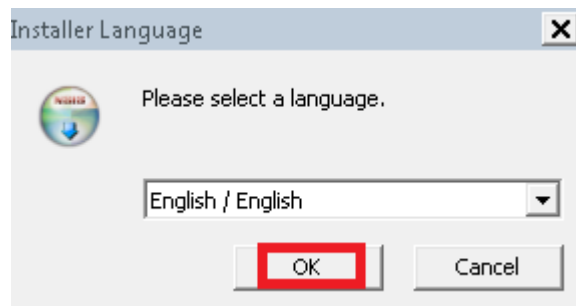
5.1 Configuring the Master Server

Configure the master server in either of the following ways:

- The master server defaults to be integrated into the CentralStation. It does not need to be installed separately. Customers or engineers can log in to and configure the master server by selecting **"System Setup" → "Network" → "Master Server"**.
- Use the master server UI client (PN: 110-006554-00) to log in to the master server and then configure the master server.

5.1.1 Installing the Master Server UI Client

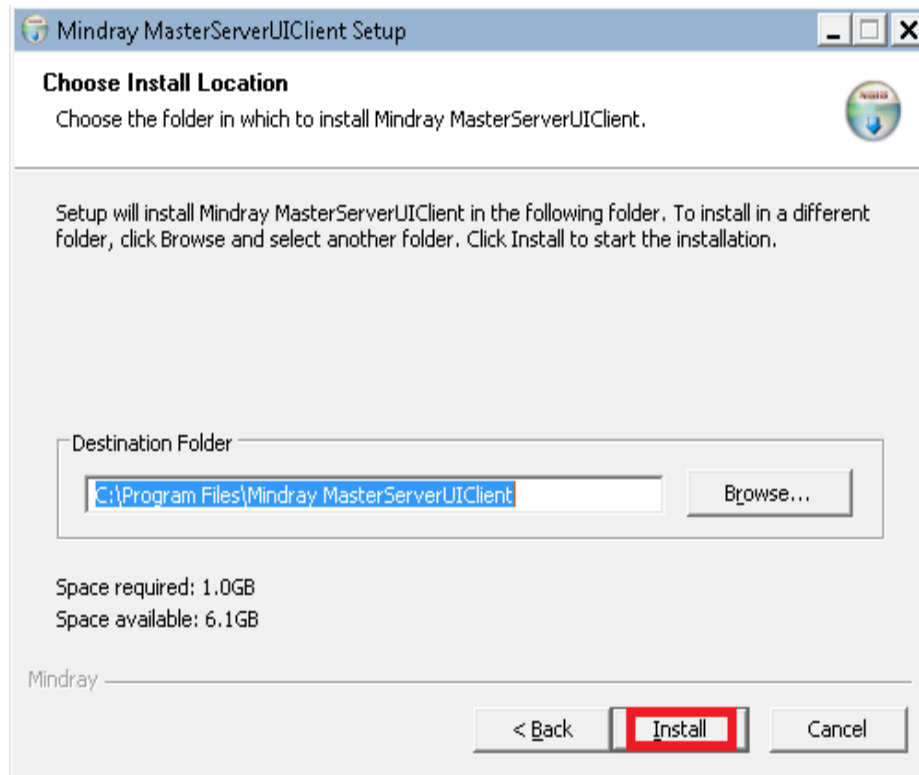
1. Double click on "MasterServerUIClientSetup.exe". The **"Installer Language"** dialog is displayed. Select the desired language and then select **"OK"** to proceed to the software installation screen.



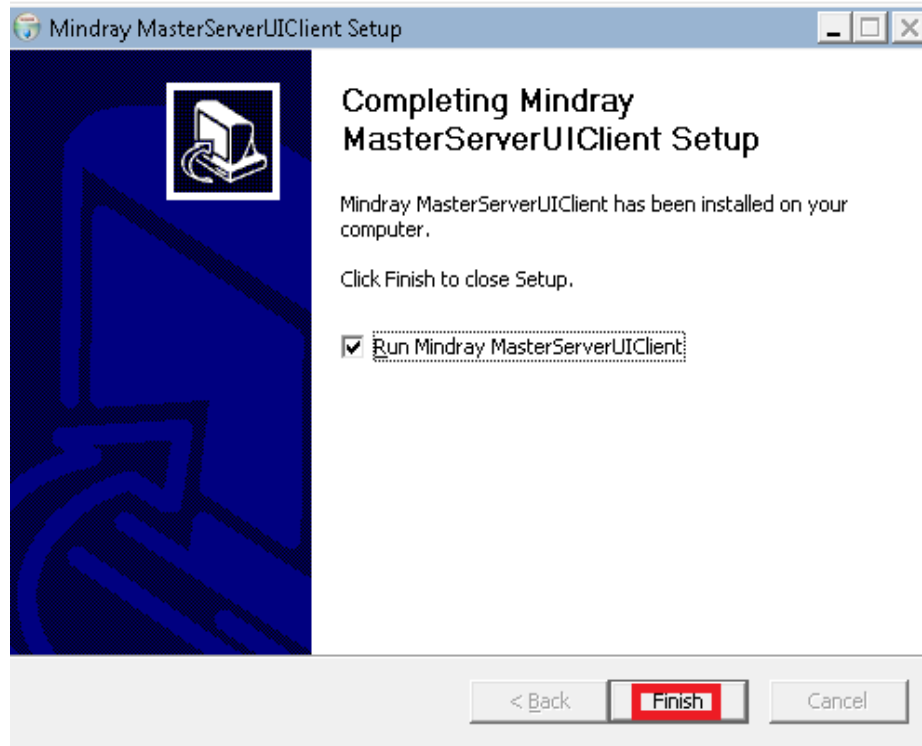
NOTE

- The installer language selected is the one displayed throughout the whole installation process. It is not the default language when MasterServerUIClient is running.
- If you wish to install MasterServerUIClient on English operating systems or operating systems of other languages, set the language of the operating system to English prior to installation. Upon completion of installation, set the language of operating systems to the desired language.

2. Select the desired install location, and then click **"Install"**.



3. Install **"Finish"**.



5.1.2 Logging In to Master Server

1. Open the master server setup client and then enter the server IP. Skip this step if you configure the master server via the CentraStation.
2. Enter the user name and password. During first installation, you need to log in to the master server as administrator and initialize configurations.

User Name	administrator
Password	Mindray99!

3. Click "**Login**".

A screenshot of a 'Master Server Setup' dialog box. The dialog has a title bar with the text 'Master Server Setup' and a close button (X). Inside, there are four fields: 'User Name' with the value 'Administrator', 'Password' (empty), 'Server Address' with the value '10.2.49.101', and a 'Login' button. The 'Login' button is highlighted with a red rectangle. To the right of the 'Login' button is a gear icon for settings. The 'User Name' field is highlighted with a green rectangle.

Master Server Setup

User Name Administrator

Password

Server Address 10.2.49.101

Login

NOTE

-
- Server Address in the above figure is the address of the master server.
-

5.2 Device Management

The device management screen displays all the devices connected to the master server. These devices include patient monitors, eGateway, CentralStation.

5.2.1 Display Devices on the Device Management Screen

Click **"Device Management"**. All the devices connected to the master server are automatically displayed.

	Product Type	Electronic SN	Name	Department	Room No	
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	Monitor		M0001	ccu		...
<input type="checkbox"/>	Monitor		PM8000	GW		...
<input type="checkbox"/>	BeneVision N22/19	JL-77000843		icu	0705	...
<input type="checkbox"/>	N12		n series	icu	room	...
<input type="checkbox"/>	BeneVision N12			Icu		...

5.2.2 Deleting Devices on the Device Management Screen

Select devices in **"Offline"** state and then click **"Delete"** to delete these devices.

	IP Address	Mac address	Connection Status	Central Station IP Address	
<input checked="" type="checkbox"/>	10.2.49.249	F8:A9:63:51:D1:83	Offline		...
<input type="checkbox"/>	10.2.49.101	64:31:50:3E:83:0B	Online		...
<input type="checkbox"/>	10.2.48.65	80:C1:6E:F5:B4:1C	Offline		...
<input type="checkbox"/>	10.2.49.110	00:0F:14:11:51:FD	Online	10.2.49.101	...
<input type="checkbox"/>	10.2.49.249	AA:0A:02:31:F9:01	Offline	10.2.49.249	...
<input type="checkbox"/>	10.2.49.122	00:0B:AB:D2:93:7A/00:17:23:E4:F0:70	Offline		...
<input type="checkbox"/>	10.2.49.195	9E:65:A9:94:63:F8	Offline	10.2.49.101	...
<input type="checkbox"/>	10.2.49.69	A6:3C:77:D8:1F:5C	Standby	10.2.49.105	...

NOTE

- **Devices in Online or Standby state cannot be deleted.**

5.2.3 Exporting Logs on the Device Management Screen

Select devices in “Online” state and then click “Export Log” to export logs of these devices.

	IP Address	Mac address	Connection Status	Central Station IP Address	
<input type="checkbox"/>	10.2.49.249	F8:A9:63:51:D1:83	Offline		...
<input type="checkbox"/>	10.2.49.101	64:31:50:3E:83:0B	Online		...
<input type="checkbox"/>	10.2.48.65	80:C1:6E:F5:B4:1C	Offline		...
<input checked="" type="checkbox"/>	10.2.49.110	00:0F:14:11:51:FD	Online	10.2.49.101	...
<input type="checkbox"/>	10.2.49.249	AA:0A:02:31:F9:01	Offline	10.2.49.249	...
<input type="checkbox"/>	10.2.49.122	00:0B:AB:D2:93:7A/00:17:23:E4:F0:70	Offline		...
<input type="checkbox"/>	10.2.49.195	9E:65:A9:94:63:F8	Offline	10.2.49.101	...
<input type="checkbox"/>	10.2.49.69	A6:3C:77:D8:1F:5C	Standby	10.2.49.105	...
<input type="checkbox"/>	Select All		Delete	Export Log	

NOTE

- You cannot export logs of devices in Offline state.
- You can export logs of Telemetry Monitors, and the CMS only.

5.2.4 Modifying Device Information on the Device Management Screen

1. Click “...”.

	Product Type	Electronic SN	Name	Department	Room No	
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	Monitor		M0001	ccu		...
<input type="checkbox"/>	Monitor		PM8000	GW		...
<input type="checkbox"/>	BeneVision N22/19	JL-77000843		icu		...
<input checked="" type="checkbox"/>	N12		n series	icu	room	...
<input type="checkbox"/>	BeneVision N12			Icu		...

Detail

Operation Log

2. Select “Detail” to view the detailed device information.

There are 9 devices found.

	Product Type	Electronic SN	Name	Department	Room No	
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	Monitor		M0001	ccu		...
<input type="checkbox"/>	Monitor		PM8000	GW		...
<input type="checkbox"/>	BeneVision N22/19	JL-77000843		icu		...
<input checked="" type="checkbox"/>	N12		n series	icu	room	...
<input type="checkbox"/>	BeneVision N12			lcu		...

Detail

Operation Log

3. Select “**Operation Log**” to view operation details for the selected device.

There are 9 devices found.

	Product Type	Electronic SN	Name	Department	Room No	
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	CS					...
<input type="checkbox"/>	Monitor		M0001	ccu		...
<input type="checkbox"/>	Monitor		PM8000	GW		...
<input type="checkbox"/>	BeneVision N22/19	JL-77000843		icu		...
<input checked="" type="checkbox"/>	N12		n series	icu	room	...
<input type="checkbox"/>	BeneVision N12			lcu		...

Detail

Operation Log

Operation Log			
Please enter search criteria.			
Time	User Name	Detail	
2018-12-17 19:47:15	Administrator	Download log information from the deviceicu room ICUBED(10.2.49.195).	
2018-12-17 19:40:36	Administrator	Download log information from the deviceicu room ICUBED(10.2.49.195).	

5.3 Configuration Management

The configuration management function is applicable for Mindray OEM N series patient monitors and OEM ePM series patient monitors only.

5.3.1 Adding Configurations on the Configuration Management Screen

You can add configurations either from a device list or a file list.

To add configurations, follow this procedure:

1. Click "Configuration Management".
2. Click "Add Configuration". Then select "Add From Device List".

The screenshot displays the Configuration Management interface. At the top, there is a table with the following columns: Department, Configuration Name, Configuration Type, Product Type, Time, and an empty column. The table contains two rows of data:

Department	Configuration Name	Configuration Type	Product Type	Time	
<input type="checkbox"/>	_neo_N12-121801	Neonate Configuratio	BeneVision N12	2018-12-18 16:49:..	Device List
<input type="checkbox"/> Icu	MachineConfig	Machine Configuratio	BeneVision N12	2018-12-18 15:02:..	Device List

Below the table, there is a modal dialog box with two options: "Add From Device List" (highlighted with a red border) and "Add from File List". At the bottom of the screen, there is a row of buttons: "Select All", "Add Configuration" (highlighted with a red border), "Synchronize Configuration", "Delete Configuration", and "Operation Log".

3. Select the desired device and then click "OK".


Select Device

Department: All

Department	Room No	Bed No	Product Type	IP Address
Icu			BeneVision N12	10.2.49.69

OK Cancel

Configuration Management

 Add Successful

OK

- Click "Add Configuration" and then select "Add from File List".



5.3.2 Synchronizing Configurations on the Configuration Management Screen

1. Select a configuration and then click **"Synchronize Configuration"**.

	Department	Configuration Name	Configuration Type	Product Type	Time	
<input checked="" type="checkbox"/>	Icu	MachineConfig	Machine Configuratio.	BeneVision N12	2018-12-18 15:02..	Device List
<input type="checkbox"/>	Icu	N12-121801	Neonate Configuratio.	BeneVision N12	2018-12-25 16:53..	Device List
<input type="checkbox"/>	icu	_neo_N12-121801	Neonate Configuratio.	BeneVision M12	2018-12-25 16:56..	Device List


☐ Select All
 Add Configuration
Synchronize Configuration
 Delete Configuration
 Operation Log

2. Select the devices whose configurations need to be synchronized and then click **"OK"**.

NOTE

- **Configurations of devices in both offline and online states can be synchronized.**
- **Suppose a device's connection state is offline. After "Synchronize Configurations" is selected, if the device's state changes to online, its configurations can be automatically synchronized.**

3. Click **"Device List"**. Upon successful synchronization, "Success" is displayed in the **"Result"** column.

Department	Configuration Name	Configuration Type	Product Type	Time	
 Icu	MachineConfig	Machine Configuratio.	BeneVision N12	2018-12-18 15:02:..	Device List

Device List

Department	Room No	Bed No	IP Address	Result	
Icu			102.49.69	Success	

5.3.3 Deleting Configurations on the Configuration Management Screen

Select one configuration file and then click **"Delete Configuration"** to delete this configuration file.

	Department	Configuration Name	Configuration Type	Product Type	Time	
<input checked="" type="checkbox"/>	Icu	MachineConfig	Machine Configuratio.	BeneVision N12	2018-12-18 15:02:..	Device List
<input type="checkbox"/>	Icu	N12-121801	Neonate Configuratio.	BeneVision N12	2018-12-25 16:53:..	Device List
<input type="checkbox"/>	Icu	_neo_N12-121801	Neonate Configuratio.	BeneVision M12	2018-12-25 16:56:..	Device List

☐ Select All
 Add Configuration
Synchronize Configuration
Delete Configuration
Operation Log

5.3.4 Displaying Operation Logs on the Device Configuration Management Screen

Click "**Operation Log**". The time, user name, and log details are displayed.

Operation Log		
Please enter search criteria.		
Time	User Name	Detail
2018-12-25 16:59:59	Administrator	Delete config(MachineConfig_MachineConfig) information.
2018-12-25 16:58:12	Administrator	Synchronization config information(MachineConfig_MachineConfig) to Icu (10.2.1.100).
2018-12-25 16:56:19	Administrator	Add config(UserConfig_icu_neo__neo_N12-121801) information.
2018-12-25 16:55:51	Administrator	Delete config(UserConfig_general_neo__neo_N12-121801) information.
2018-12-18 16:49:58	Administrator	Add config(UserConfig_general_neo__neo_N12-121801) information.
2018-12-18 15:16:16	Administrator	Delete config(MachineConfig_BD_MachineConfig) information.
2018-12-18 15:11:17	Administrator	Synchronization config information(MachineConfig_MachineConfig) to Icu (10.2.1.100).

5.4 Version Upgrade Management

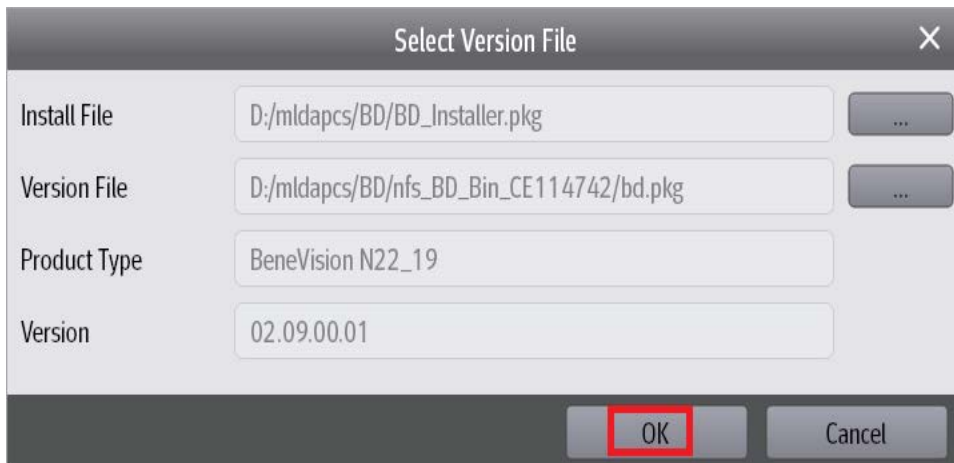
5.4.1 Adding Versions on the Version Upgrade Management Screen

1. Click "Version Upgrade Management".



Buttons: ☐ Select All, **Add Version**, Delete Version, Operation Log

2. Click "Add Version". Select an install file and version file. Then click "OK".



Dialog box titled "Select Version File" with fields for:

- Install File: D:/mldapcs/BD/BD_Installer.pkg
- Version File: D:/mldapcs/BD/nfs_BD_Bin_CE114742/bd.pkg
- Product Type: BeneVision N22_19
- Version: 02.09.00.01

Buttons: **OK**, Cancel



Version Upgrade Management

 Add Successful

OK

3. Click "Synchronize To Device".

	Product Type	Version	Time		
<input type="checkbox"/>	BeneVision N22_19	02.09.00.01	2018-12-25 17:14:17	Synchronize To Device	Device List

4. Select devices and then click **“OK”**.

Select Device

Department

All

Please enter search criteria.

	Department	Room No	Bed No	IP Address	Version
<input checked="" type="checkbox"/>	icu	0705	BD1	10.2.49.122	02.01.00.11 88290
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					

☐ Select All

NOTE

- **Before synchronizing software version to a patient monitor, you need to set the master server address (Maintenance→Network Settings →Find Device→ Master Server Address) on the bedside monitor. Then the patient monitor is displayed in the list of “Select Device”.**

5. Press the power button on a bedside monitor. Then the message “Are you sure you want to update software version to XX.XX.XX.XX?” (where XX represents a version number) is displayed. Click “**OK**” on the bedside monitor. Then the message “Downloading version file” is displayed on the screen of the bedside monitor. After downloading install packets, the monitor is automatically restarted and automatically enters upgrade mode.

5.4.2 Deleting a Version on the Version Upgrade Management Screen

Select a product type and then click **"Delete Version"**.

[illegible]

5.4.3 Viewing Operation Logs on the Version Upgrade Management Screen

Click **"Operation Log"**. The time, user name, and log details are displayed.

Operation Log		
Please enter search criteria.		
Time	User Name	Detail
2018-12-25 17:14:17	Administrator	Add version(BeneVision N22_19 02.09.00.01) information.
2018-12-25 17:12:11	Administrator	Delete version(BeneVision N22_19 02.09.00.01) information.
2018-12-18 16:30:30	Administrator	Synchronization version(BeneVision N22_19 02.09.00.01) to icu 0705 BD1(1.
2018-12-18 16:30:11	Administrator	Cancel Synchronization version(BeneVision N22_19 02.09.00.01) to icu 0705 .
2018-12-18 16:29:53	Administrator	Synchronization version(BeneVision N22_19 02.09.00.01) to icu 0705 BD1(1.
2018-12-18 14:02:50	Administrator	Synchronization version(BeneVision N22_19 02.09.00.01) to icu 0705 BD1(1.
2018-12-18 14:01:55	Administrator	Synchronization version(BeneVision N22_19 02.09.00.01) to icu 0705 BD1(1.

FOR YOUR NOTES

6 McAfee Application Control

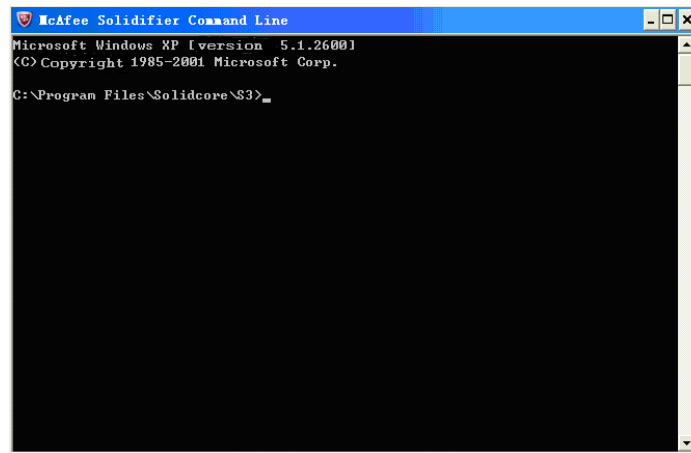
6.1 Installation

For the CMS with McAfee Application Control software (Optional), the installation of McAfee Application Control will be required.

1. Re-start the CMS host, and access the CMS screen.
2. Start **Windows Task Manager**, and then select the **Processes** tab.
3. End the "Master.exe" process, and then close the **Windows Task Manager** window to return the OS desktop.
4. Insert the McAfee Application Control Software CD (P/N 115-012226-00) into the drive, and then select
Windows 7(P/N 110-005592-00): SOLIDCOR620-498_WIN→ Setup-win2008-win7.
Windows server 2016/Windows 10(P/N 110-006093-00): setup-win-8-10-2012-amd64-7.0.1.462
5. In the "Setup-win2008-win7" folder, right click the "setup-win-7-x86-6.2.0.498.exe" .exe file to display a pop-up menu.
6. Select the **Run as administrator** option to enter the **Installation Wizard** window.
7. Click the **Next** button.
The **License Agreement** window displays.
8. Select the I accept the terms in the license agreement option, and then click the Next button.
9. In the **Customer Information** window, input the information as follows:
 - ◆ User Name: input "cmsuser".
 - ◆ Organization: input "hospital"
 - ◆ Serial Number: input the serial number listed on the Solidcore authorization label. (The Solidcore authorization label is located on the CD case of the CMS system software)
10. After input the information, click the **Next** button.
11. In the subsequent steps of the installation, the configurations are set by default.

6.2 Enabling the Solidifier

1. Once the installation is complete, double click the icon of McAfee Solidifier Command Line on the desktop. Then the following **McAfee Command Line** window displays.



2. Input "sadmin so" in the command line window, and press the "Enter" key. The computer performs solidification scan.

NOTE

-
- **The solidification scan will take more than one hour.**
-

3. After the scan is done, input "sadmin enable" in the command line window, and press the "Enter" key. At this moment, a message indicates that Solidcore will run after the computer restarts.
4. Re-start the CMS host after the above operations are finished.
5. Enter the CMS screen, and then press the group keys "Ctrl+Alt+Del" to start **Windows Task Manager**.
6. Select the **Processes** tab, and then end the "Master.exe" process.
7. Close **Windows Task Manager**, and return to the OS desktop.
8. Double click the "McAfee Solidifier Command Line" icon on the desktop to access to the **McAfee Command Line** window.
9. Input the "sadmin status" to check whether the Solidcore is in the "Enabled" state or not, as shown in the following figure.


```
McAfee Solidifier Command Line
Microsoft Windows XP [version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Program Files\Solidcore\S3>sadmin status
McAfee Solidifier:      Enabled
McAfee Solidifier on reboot:  Enabled

System Controller:      Disconnected
Local CLI access:       Recovered

[fstype]    [status]    [driver status] [volume]
* NTFS      Solidified  Attached        C:\
NTFS        Solidified  Attached        D:\
FAT32       Solidified  Attached        E:\
```

If the state is correct, it indicates that the installation is complete.

WARNING

- **Ensure that the operating environment of CMS is free from virus before the installation of Solidcore. Otherwise, the CMS may break down after the installation of Solidcore.**
-

NOTE

- **The above-mentioned installation is required only when you select to install the software of Solidcore S3 Control.**
 - **Perform the installation of Solidcore S3 Control after other software is installed.**
-

6.3 Adding or Editing Additional Applications

If applications have to be added, deleted or updated after the installation of Solidcore S3 Control, you can perform updates either via `admin bu/sadmin eu` or via `sadmin disable` and `sadmin enable`.

“`admin bu/sadmin eu`” is used when you perform authorized software updates on a protected system. “`sadmin disable/ sadmin enable`” is used when you perform software updates on unprotected system. Compared with `sadmin disable/ sadmin enable`, `admin bu/sadmin eu` can save some time when you perform updates.

Other commonly used commands of McAfee Solidifier include:

- `sadmin help`: used to view the commonly used commands;
- `sadmin status`: used to view the status of McAfee.

6.3.1 Performing Updates via sadmin bu and sadmin eu

1. Double click the icon of McAfee Solidifier Command Line on the desktop and the corresponding window will display.
2. Input "sadmin bu" in the command line, press the "Enter" key, and then restart the PC.
The Solidcore control is disabled. You can add or delete the additional applications.
3. Input "sadmin eu" in the command line, press the "Enter" key, and then restart the PC.

6.3.2 Performing Updates via sadmin disable and sadmin enable

1. Double click the icon of McAfee Solidifier Command Line on the desktop and the corresponding window will display.
2. Input "sadmin disable" in the command line, press the "Enter" key, and then restart the PC.
The Solidcore control is disabled. You can add or delete the additional applications.
3. Double click the icon of McAfee Solidifier Command Line on the desktop, and then input "sadmin so" to scan all of applications.
4. Input "sadmin enable" in the command line, press the "Enter" key, and then restart the PC.

7 Connection Diagrams for Host, Remote Display, and KVM

7.1 Overview

The CMS supports the remote display, audio, and keyboard/mouse operation with the source from local CMS.

This section describes the connection diagrams for Kontron KISS 2U host, HP 800G1/G2/800G3/800G4 , HP 600G3/600G4 DM host, ELO display and HPE220T/ HPE230T display

In the connection diagrams for Kontron KISS 2U and HP 800G1/800G2/800G3/800G4, four touch displays are used for illustration only. If you need to connect one, two, or three touch displays, you do not need to configure all of the ports for the four touch displays. Please connect the desired number of touch displays by referring to the connection diagrams below.

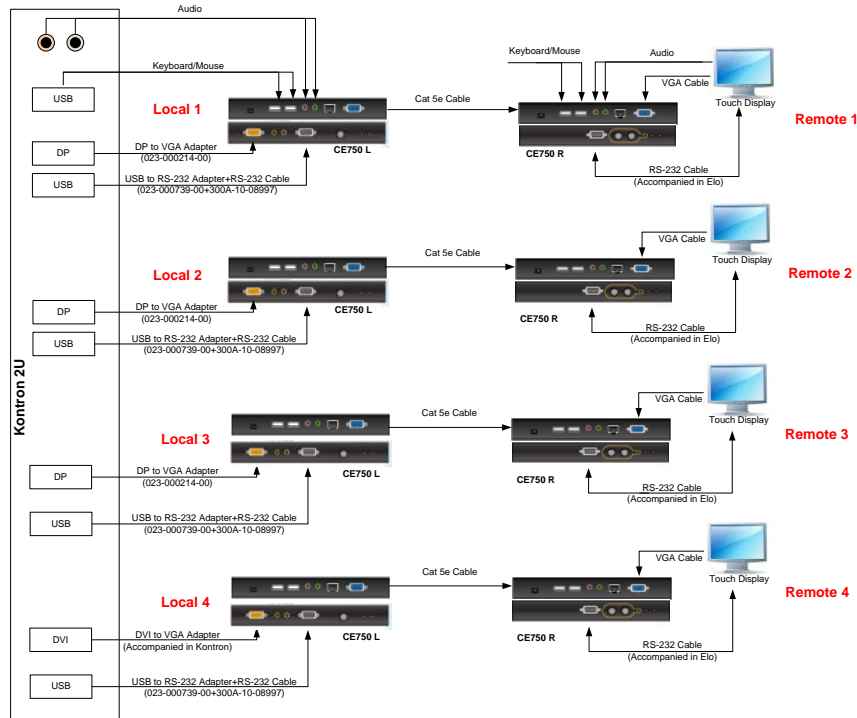
NOTE

-
- **Install the touchscreen driver only after all the connections are complete.**
-

In the connection diagrams in this section, if a USB toVGA adapter (023-000766-00) is required, you need to install the adapter driver before proceeding to specific installation procedures in each subsection..

7.2 Installing Kontron KISS 2U and ELO — CE750/CE750A KVM

Connection Diagram



As shown in this figure, a USB to RS-232 adapter (023-000739-00) is required. Before using this adapter, you need to insert the adapter CD into the CD ROM and run the "Setup.exe" program to install the adapter driver. The touch displays as shown in the figure above only refer to the ELO touch display. CE750 KVM and CE750A KVM cannot be used simultaneously.

Installation Procedures

The following installation procedures are illustrated on the Kontron KISS 2U.

Tools Required:

- KVM extender (CE750R, CE750L) 023-000773-00
- DP-to-VGA adapter 023-000214-00
- USB-to-VGA adapter 023-000766-00
- RS-232 cable 300A-10-08997
- USB-to-RS232 adapter 023-000739-00

1. Connect the Local 1 devices to CE750L.
 - a. Connect one end of the DP-to-VGA adapter to the DP1 port of Kontron KISS 2U host.
 - b. Connect the yellow end of the CE750L accompanying cable to the CE750 input port.
 - c. Connect the VGA port of the CE750L accompanying cable to the DP-to-VGA adapter.
 - d. Connect the USB port of the RS-232 adapter to the USB 3.0 port of the Kontron KISS 2U host, and the other end to CE750L.
 - e. Connect the USB port of the CE750L accompanying cable to the USB 2.0 connector of Kontron KISS 2U host.
 - f. Connect the audio port of the CE750L accompanying cable to the audio port of the Kontron KISS 2U host.
2. Connect the Remote 1 devices to CE750R.
 - a. Connect the RS-232 port of touchscreen to the RS-232 port of CE750R by the touchscreen accompanying cable.
 - b. Connect the VGA port of touchscreen with the VGA port of CE750R by the touchscreen accompanying cable.
 - c. Connect the audio port of touchscreen with the audio port of CE750R by the touchscreen accompanying cable.
 - d. Connect the keyboard and mouse to the USB port of CE750R.
3. Connect the Local 2 devices to CE750L.

Repeat the operation a-d of Step 1.
4. Connect the Remote 2 devices to CE750R.

Repeat the operation a-b of Step 2.
5. Connect the Local 3 devices to CE750L.

Repeat the operation a-d of Step 1.
6. Connect the Remote 3 devices to CE750R.

Repeat the operation a-b of Step 2.
7. Connect the Local 4 devices to CE750L.
 - a. Connect the DVI-to-VGA adapter to DVI port of Kontron KISS 2U host.
 - b. Connect the VGA port of the CE750L accompanying cable to the DVI-to-VGA adapter.
 - c. Connect one end of USB-to-RS-232 adapter to the USB 3.0 port of Kontron KISS 2U host, the other end to RS-232 cable.
 - d. Connect the RS-232 cable to CE750L.
8. Connect the Remote 4 devices to CE750R.

Repeat the operation a-b of Step 2.

9. Connect CE750L to CE750R by a network cable.
10. Install touchscreen driver. Refer to **3.3.21 Touchscreen Driver Installation (Optional)**.

CAUTION

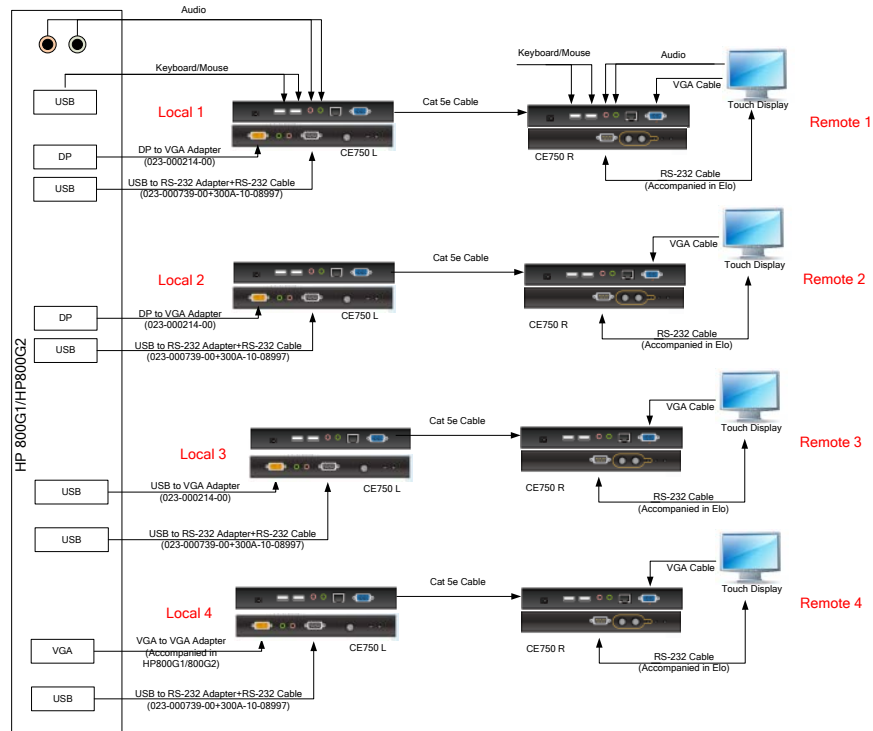
- If recorder is extended for remote operation, the serial port of CE750L must be connected to the COM1 port of Kontron KISS 2U.
 - If paging is extended for remote operation, the serial port of CE750L must be connected to the COM2 port of Kontron KISS 2U.
-

NOTE

- The CMS supports VGA video extension. The recommended equipment is ATEN KVM Extender CE750.
 - The remote display equipment is required to support a resolution of 1280×1024 pixels. The max distance that a remote display can be connected is 650 feet.
 - Please refer to the accompanying documents for the detailed operations, installation, specifications and precautions of VGA video transmission equipment.
 - The CE750 KVM extender does not support remote USB storage. To support the remote USB storage, you need install a USB extender.
-

7.3 Installing HP 800G1/800G2/800G3 and ELO — CE750/CE750A KVM

Connection Diagram



The touch displays as shown in the figure above only refer to the ELO touch display. CE750 KVM and CE750A KVM cannot be used simultaneously.

Installation Procedures

The following installation procedures are illustrated on the Kontron KISS 2U.

Tools Required:

- KVM extender (CE750R, CE750L) 023-000773-00
- DP-to-VGA adapter 023-000214-00
- USB-to-VGA adapter 023-000766-00
- RS-232 cable 300A-10-08997
- USB-to-RS232 adapter 023-000739-00

1. Connect the Local 1 devices to CE750L.
 - a. Connect one end of the DP-to-VGA adapter to the DP1 port of HP 800G1/800G2/800G3 host.
 - b. Connect the yellow end of the CE750L accompanying cable to the CE750 input port.
 - c. Connect the VGA port of the CE750L accompanying cable to the DP-to-VGA adapter.
 - d. Connect the USB port of the RS-232 adapter to the USB 3.0 port of the HP 800G1/800G2/800G3 host, and the other end to CE750L.
 - e. Connect the USB port of the CE750L accompanying cable to the USB 2.0 connector of HP 800G1/800G2/800G3 host.
 - f. Connect the audio port of the CE750L accompanying cable to the audio port of the HP 800G1/800G2/800G3 host.
2. Connect the Remote 1 devices to CE750R.
 - a. Connect the RS-232 port of touchscreen to the RS-232 port of CE750R by the touchscreen accompanying cable.
 - b. Connect the VGA port of touchscreen with the VGA port of CE750R by the touchscreen accompanying cable.
 - c. Connect the audio port of touchscreen with the audio port of CE750R by the touchscreen accompanying cable.
 - d. Connect the keyboard and mouse to the USB port of CE750R.
3. Connect the Local 2 devices to CE750L.

Repeat the operation a-d of Step 1.
4. Connect the Remote 2 devices to CE750R.

Repeat the operation a-b of Step 2.
5. Connect the Local 3 devices to CE750L.
 - a. Connect the USB-to-VGA adapter to USB port of HP 800G1/800G2/800G3 host.
 - b. Connect the VGA port of the CE750L accompanying cable to the VGA-to-VGA adapter.
 - c. Connect one end of USB-to-RS-232 adapter to the USB 3.0 port of HP 800G1/800G2/800G3 host, the other end to RS-232 cable.
 - d. Connect the RS-232 cable to CE750L.
6. Connect the Remote 3 devices to CE750R.

Repeat the operation a-b of Step 2.
7. Connect the Local 4 devices to CE750L.
 - a. Connect the VGA-to-VGA adapter to VGA port of HP 800G1/800G2/800G3 host.
 - b. Connect the VGA port of the CE750L accompanying cable to the VGA-to-VGA adapter.
 - c. Connect one end of USB-to-RS-232 adapter to the USB 3.0 port of HP 800G1/800G2/800G3 host, the other end to RS-232 cable.

- d. Connect the RS-232 cable to CE750L.
8. Connect the Remote 4 devices to CE750R.
Repeat the operation a-b of Step 2.
9. Connect CE750L to CE750R by a network cable.
10. Install touchscreen driver. Refer to **3.3.21 Touchscreen Driver Installation (Optional)**.

CAUTION

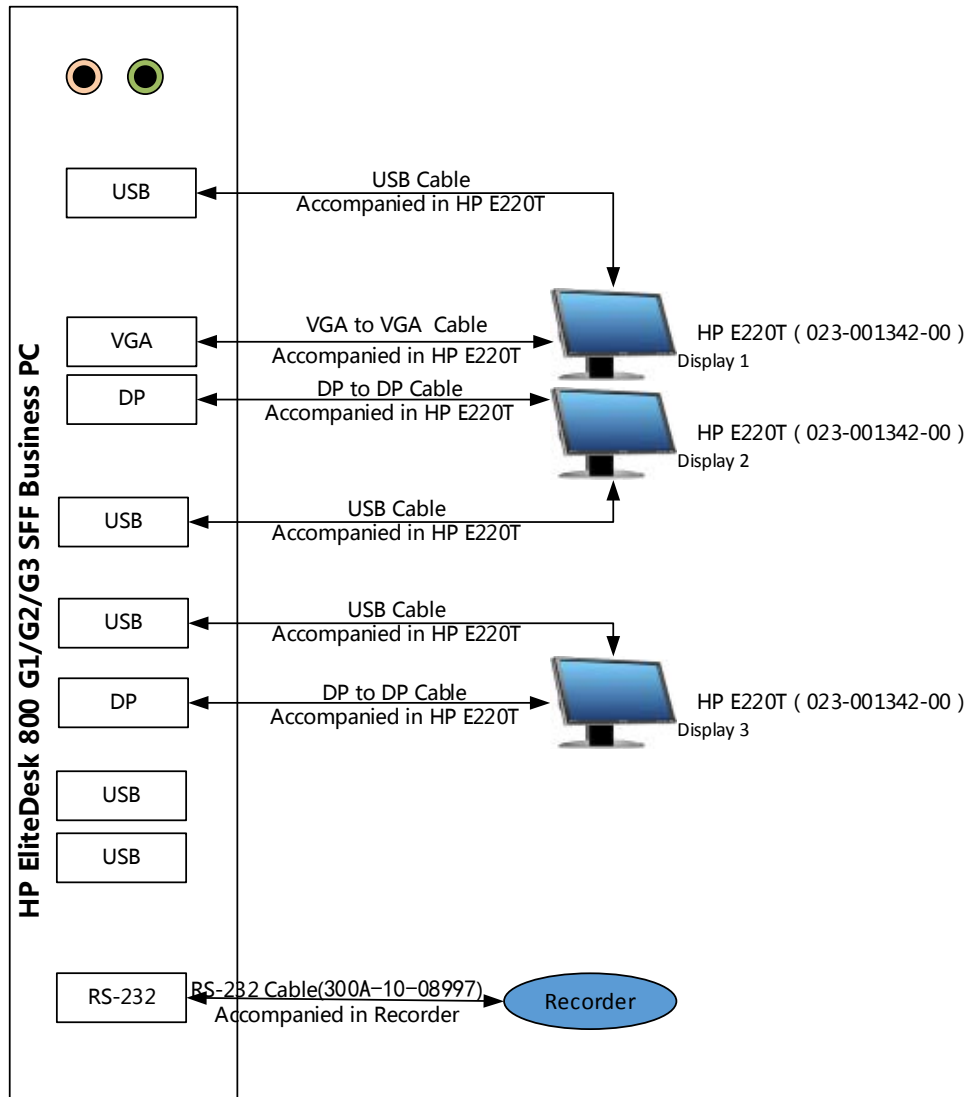
- If recorder is extended for remote operation, the serial port of CE750L must be connected to the COM1 port of HP 800G1/800G2/800G3.
 - If paging is extended for remote operation, the serial port of CE750L must be connected to the COM2 port of HP 800G1/800G2/800G3.
-

NOTE

- The CMS supports VGA video extension. The recommended equipment is ATEN KVM Extender CE750.
 - The remote display equipment is required to support a resolution of 1280×1024 pixels. The max distance that a remote display can be connected is 650 feet.
 - Please refer to the accompanying documents for the detailed operations, installation, specifications and precautions of VGA video transmission equipment.
 - The CE750 KVM extender does not support remote USB storage. To support the remote USB storage, you need install a USB extender.
-

7.4 Installing HP 800G1/800G2/800G3/800G4/HP 600G3/600G4 and HP E230T/220T

Connection Diagram (Connecting Displays to Hosts Directly via a USB Cable)

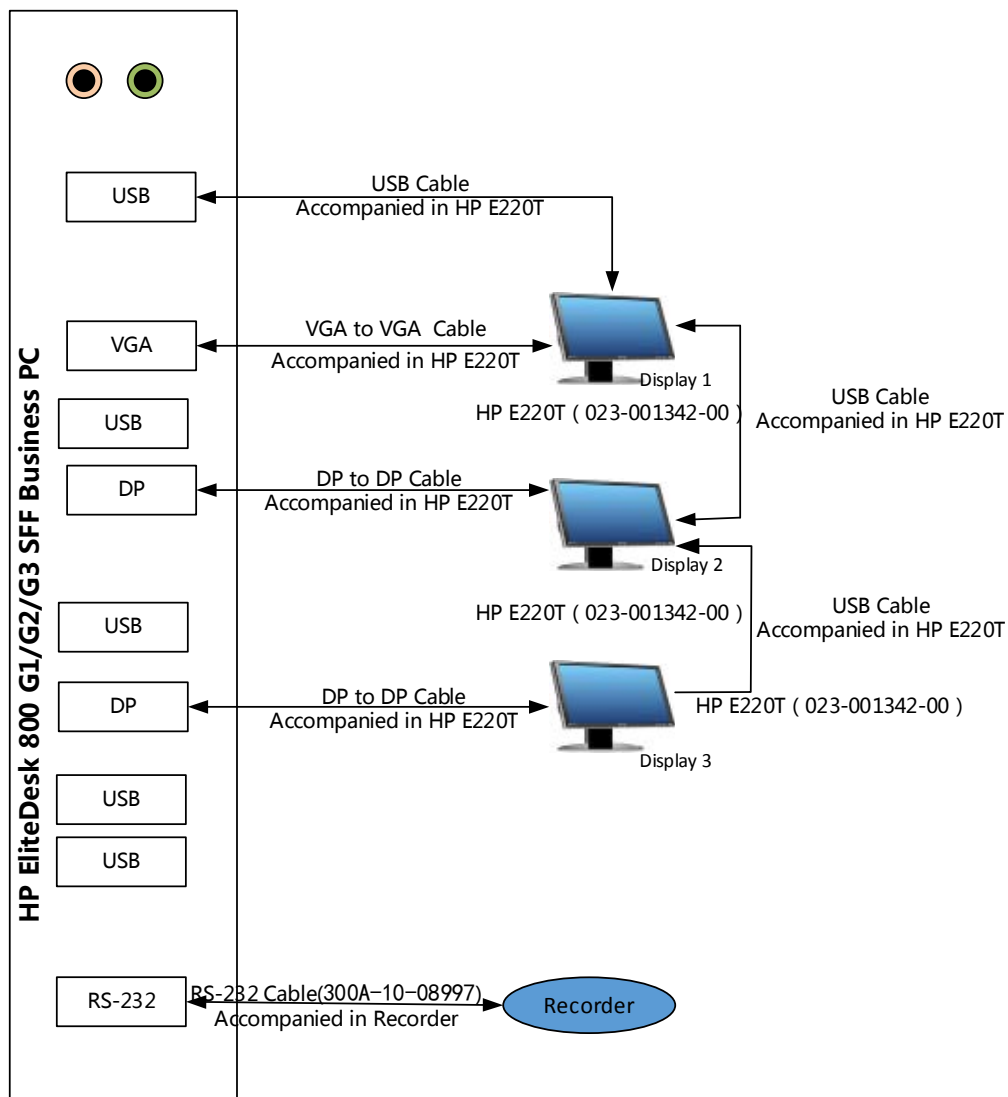


Installation Procedures

The following installation procedures are illustrated on the HP 800G1/800G2/800G3/800G4/HP 600G3/600G4

1. Connect the VGA port of Display 1 to the VGA port of the host via a VGA cable. Connect the USB port of the Display 1 to the USB port of the host via a USB cable.
2. Connect the DP port of Display 2 to the DP port of the host via a DP cable. Connect the USB port of the Display 2 to the USB port of the host via a USB cable.
3. Connect the DP port of Display 3 to the DP port of the host via a DP cable. Connect the USB port of the Display 3 to the USB port of the host via a USB cable.

Connection Diagram (Connecting Displays to Hosts in Series via a USB Cable)



Installation Procedures

The following installation procedures are illustrated on the HP 800G1/800G2/800G3/800G4/HP 600G3/600G4

1. Connect the VGA port of Display 1 to the VGA port of the host via a VGA cable. Connect the USB port of the Display 1 to the USB port of the host via a USB cable.
2. Connect the DP port of Display 2 to the DP port of the host via a DP cable. Connect the USB port of Display 2 to the USB port of Display 1 via a USB cable.
3. Connect the DP port of Display 3 to the DP port of the host via a DP cable. Connect the USB port of the Display 3 to the USB port of Display 2 via a USB cable.

8 System Recovery

8.1 Overview

The central monitoring system (CMS) is installed in the dual hard disks computer. When one of the dual hard disks fails, replace the faulty disk with a new one. The new disk recovers automatically.

When both hard disks fail, perform the following procedure:

8.2 HDD Replacement Procedure

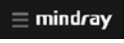

8.2.1 Tools Required

- Software:
 - ◆ 801-300B-00010-00 DPM CMS FRU HD IMAGE
 - ◆ 115-047955-00 BeneVision CMS SOFTWARE TOOLS
 - ◆ 115-047956-00 BeneVision CMS SYSTEM SOFTWARE
 - ◆ 115-012226-00 MCAFEE Application Control
 - ◆ 110-006106-00 Windows 10 Enterprise LTSB(EN)
 - ◆ 110-006201-00 BeneVision GH0 Recovery Tool(Ser Mode)
 - ◆ 110-006202-00 BeneVision GH0 Recovery Tool(App Mode)
- Hardware:
 - ◆ Screw driver with TORX T15 Bit or large flat blade screwdriver.
 - ◆ Replacement Hard Drive/s PN 0992-00-0287 Seagate 500 GB and PN 023-001203-00 Western Digital 500GB for HP 800G1/800G2/800G3/800G4 host
 - ◆ Replacement Hard Drive/s PN 023-001203-00 Western Digital 500GB for Kontron KISS 2U host


NOTE

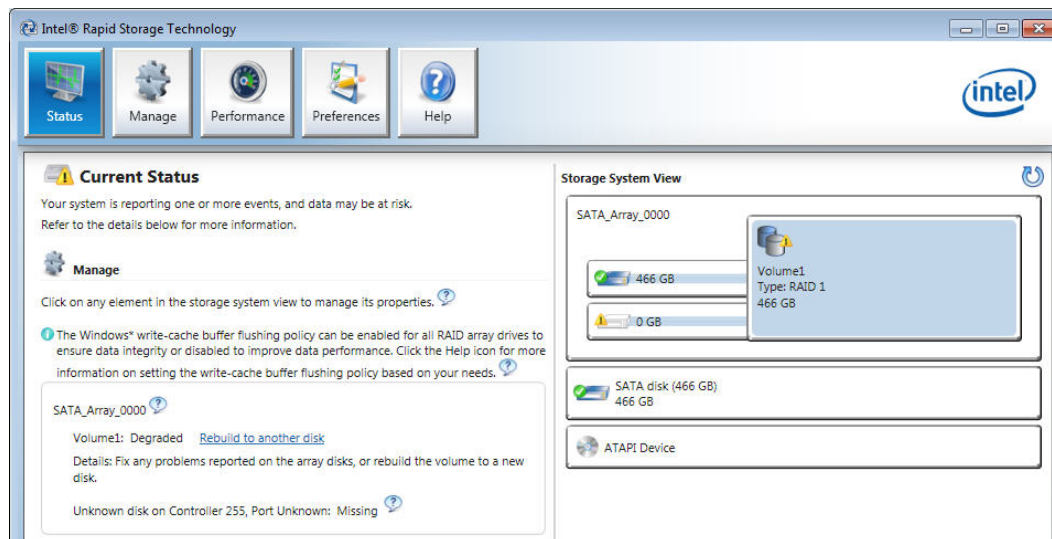
-
- **801-300B-00010-00 is not for sale. It is a Mindray service tool.**
 - **In a BeneVision CMS RAID configuration both drives must be the exact same type.**
-

8.2.2 Rebuilding a Defective Hard Drive

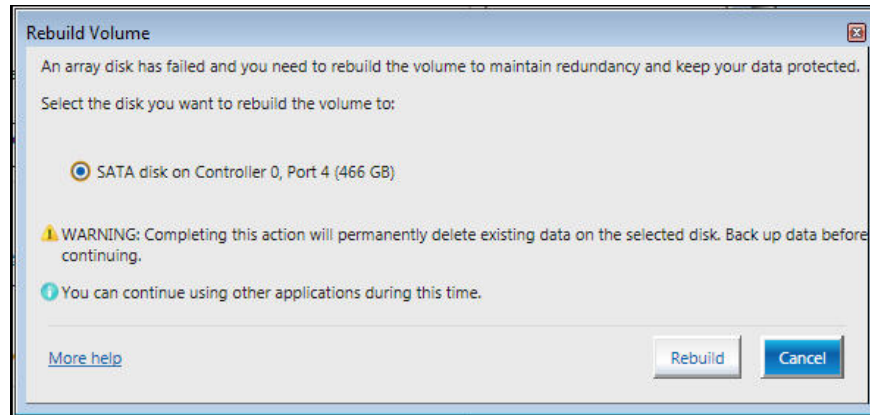
1. Turn off the computer and replace the defective hard drive.
2. Turn on the computer. Wait until the computer boots up into the CMS operations.
3. Select the system menu area  in the upper left corner of the CMS screen.
4. Select  **System Setup** → **Factory Maintenance** (enter the password).
5. Click Exit to Windows.



6. In the windows desktop double click on the hard drive  icon displayed at the bottom right of the screen. The **Intel® Rapid Storage Technology** window will open.



7. On the left side of the screen, click **Rebuild to another disk**.
8. The **Rebuild Volume** warning message will come up. Click on SATA Disk on Controller X, Port X (466 GB) option.
9. Click **Rebuild**.



The volume starts rebuilding and the page refreshes displaying the progress of the operation. At this point the Central Station can be rebooted into the CMS operations.

NOTE

-
- In a BeneVision CMS RAID configuration, both drives must be of the exact same type.
-

8.2.3 Replacing Both Hard Drives in a RAID Configured BeneVision CMS

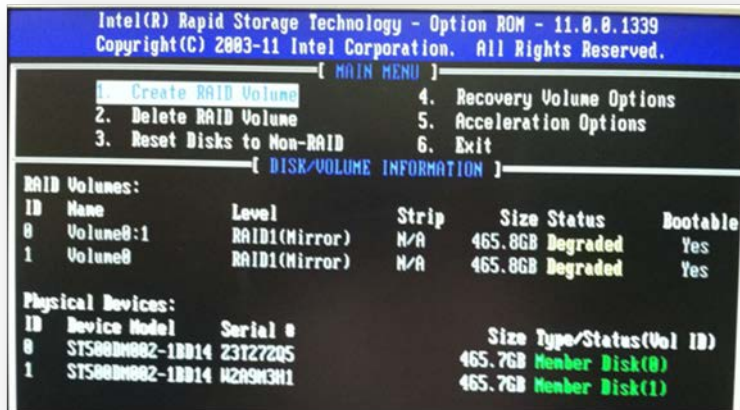
You need to complete sections **7.2.3.1 Replacing Hard Drives and Setting BIOS**, **7.2.3.3 Installing the Windows 7/10/server 2016 Operating System and Driver**, **7.2.3.4 Activating and Configuring the Windows 7 Operating System**, and **7.2.3.6 Installing the BeneVision Dongle Driver** to replace the hard drives in a RAID configured BeneVision CMS.

NOTE

-
- Drives must be of the same manufacture and size.
-

8.2.3.1 Replacing Hard Drives and Setting BIOS (Windows 7)

1. Replace both Hard Drives.
2. Turn on computer.
3. When the first screen is displayed, press ctrl-I on the keyboard to enter the **Intel Rapid Storage Technology** Main Menu screen.

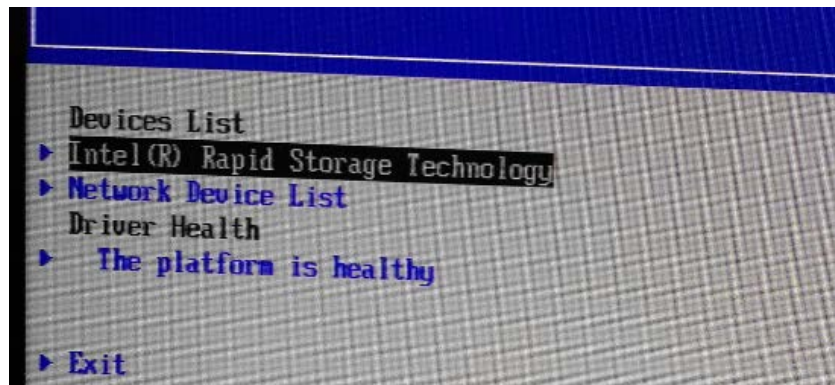


4. Select **Create RAID Volume**. (You will delete everything on the hard drives if they already have information stored on them.)
5. Accept default name, then select **RAID1 (Mirror)** for the RAID Level, and finally select **Create Volume**.

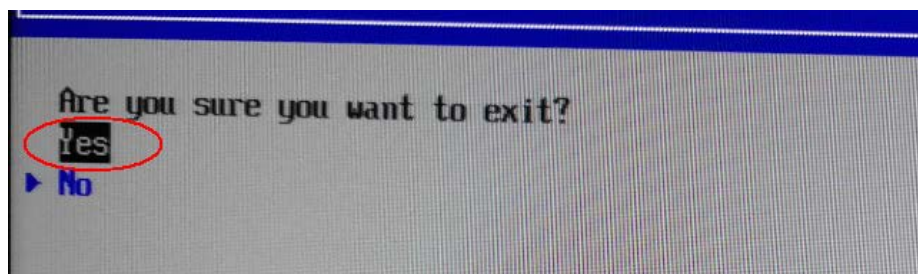
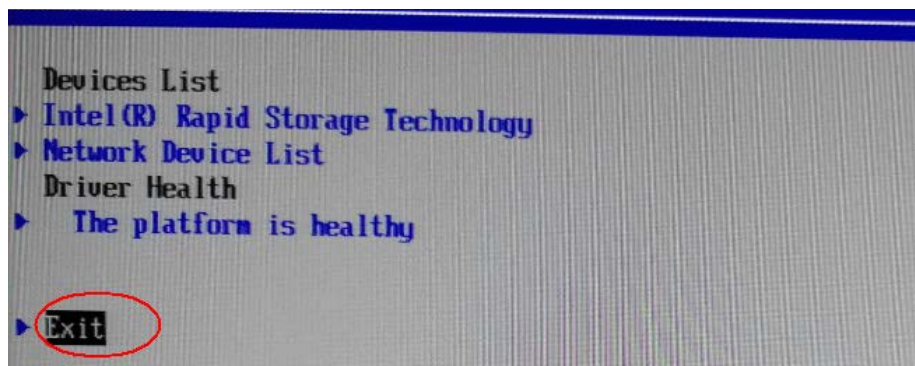
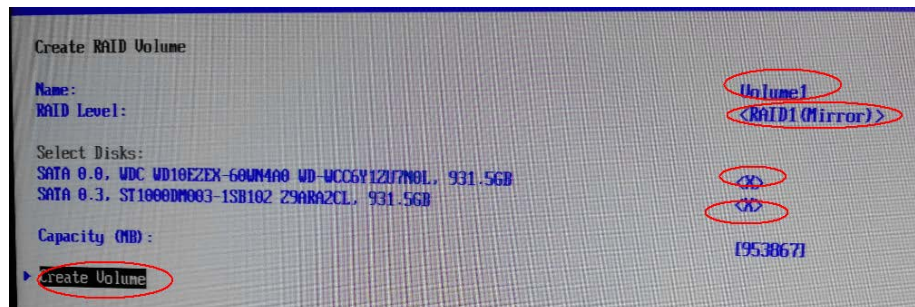
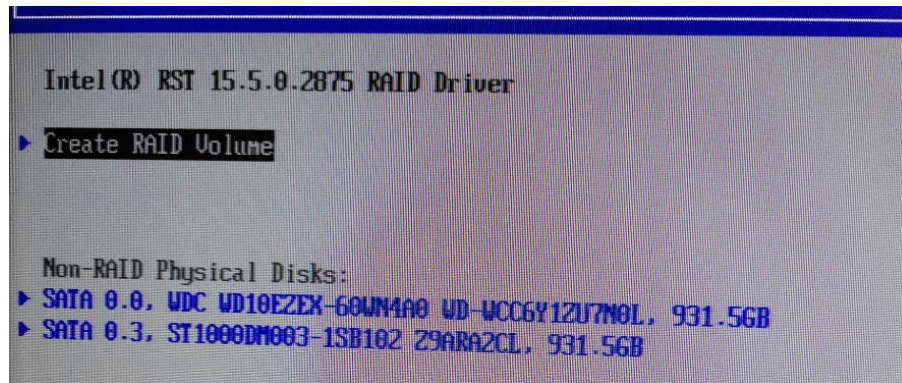
8.2.3.2 Replacing Hard Drives and Setting BIOS (Windows 10)

For 800G2/800G3/600G3/600G4

1. Replace both Hard Drives.
2. Turn on the computer.
3. When the first screen is displayed, press F3 on the key to enter the **Intel Rapid Storage Technology** screen.



4. Click Intel(R) Rapid Storage Technology.
5. Click **Create RAID Volume** and then move to **RAID**.
6. Select **RAID1(Mirror)**, and then move to **Select Disks**.
7. Select X to make two disks selected, as shown below.



8. Click **Create Volume**. When disk array is done successfully, press Esc to return back to the main page.
9. Select **Exit** to a query page.
10. Select **Yes** to exit.

For KISS 2U

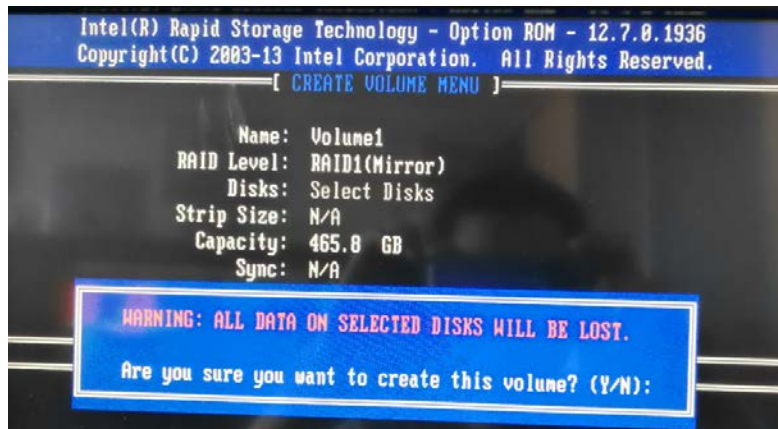
1. Replace both Hard Drives.
2. Turn on the computer.
3. When the first screen is displayed, press F2 on the keyboard to enter the Blos Main Menu screen.
4. Select **1. Create RAID Volume**. If a RAID volume already exists, select **2. Delete RAID Volume** first.



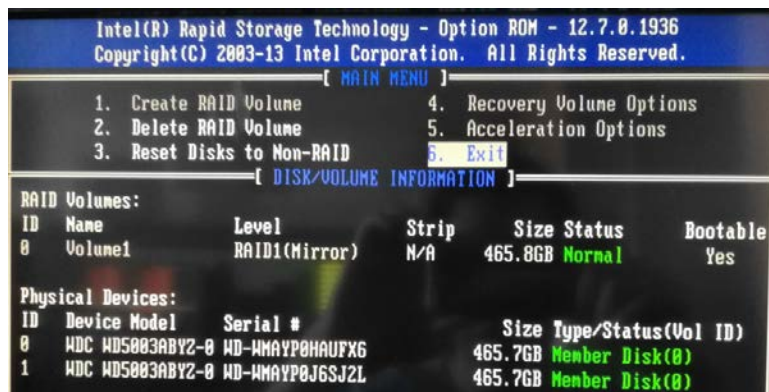
5. Select **RAID1 (Mirror)** for RAID Level. Leave other items unchanged with the default value.
6. Upon completion of setting, select **Create Volume**.



7. In the dialog that pops up, select Y.

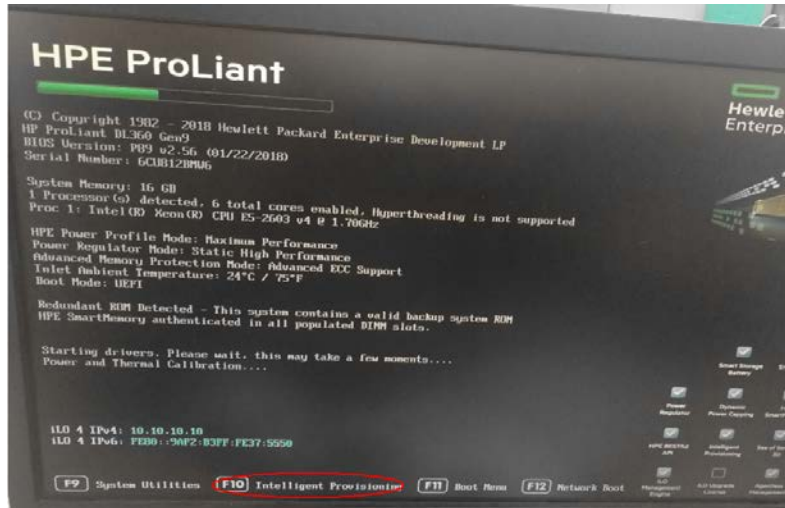


8. Upon completion of creation, select **6. Exit**.

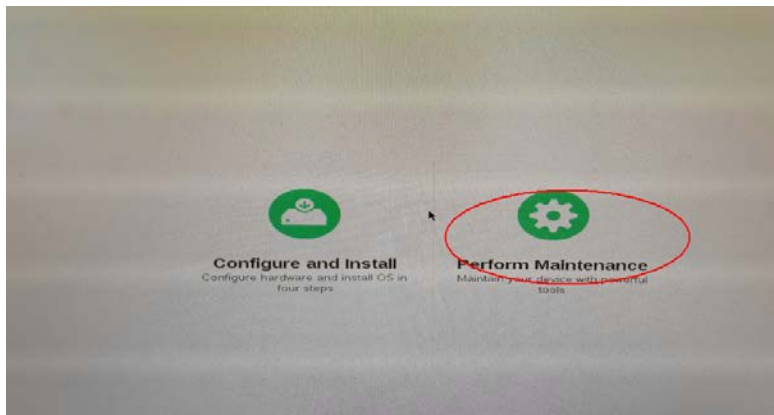


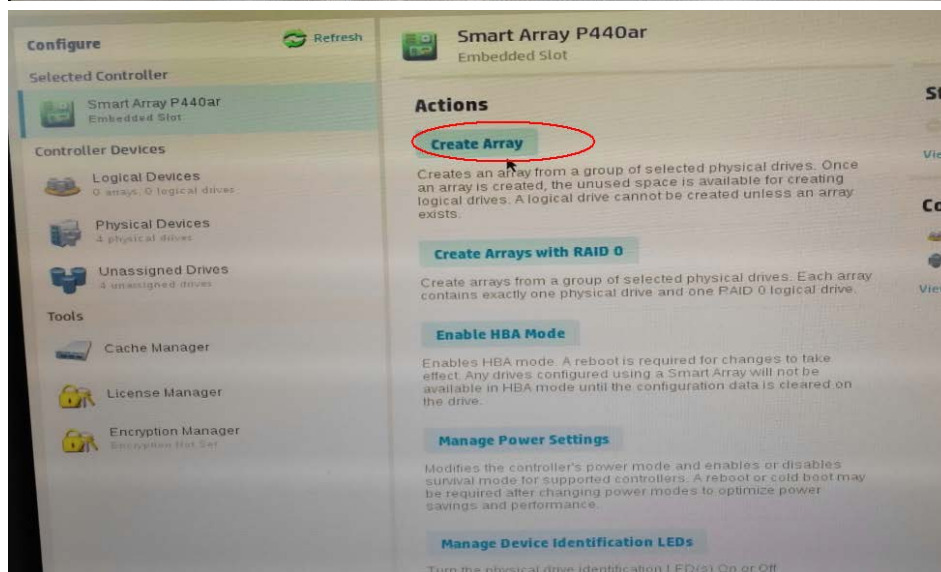
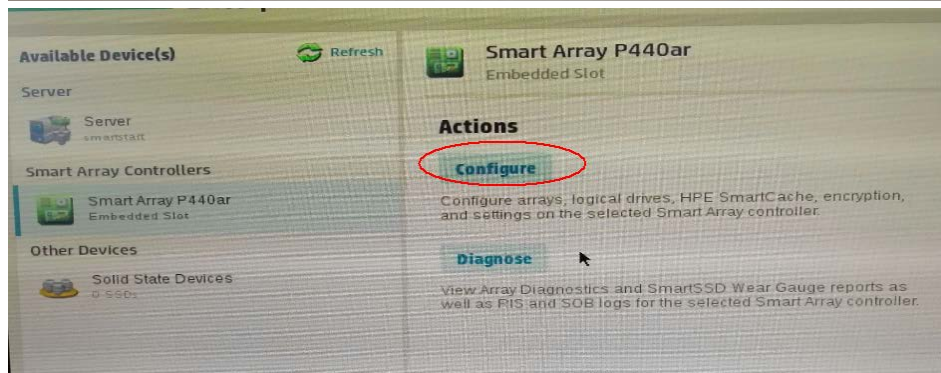
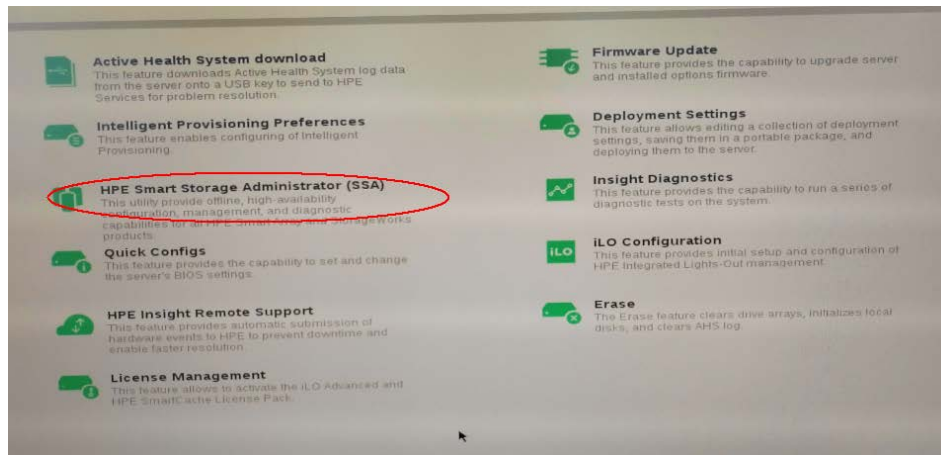
For HPE DL360 Gen9

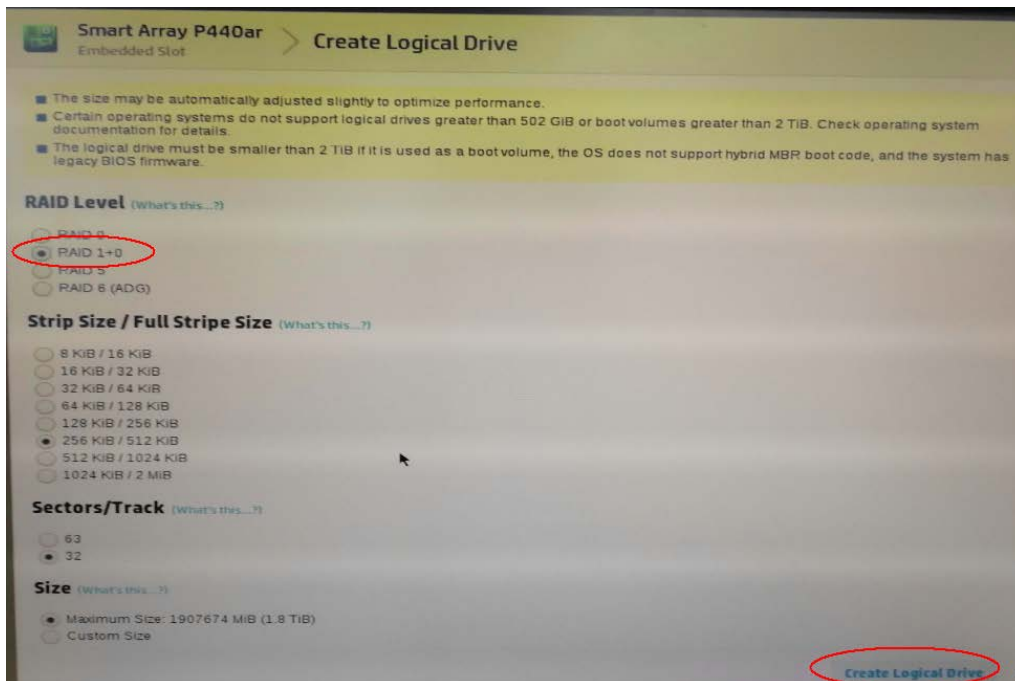
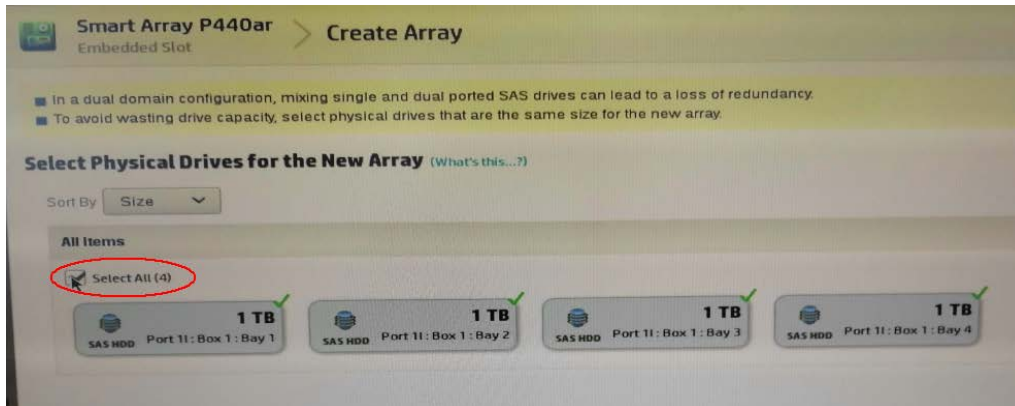
1. Replace both Hard Drives.
2. When the following screen appears, select **F10**.



3. Select **Perform Maintenance**.







Smart Array P440ar Embedded Slot > **Create Logical Drive**

■ The size may be automatically adjusted slightly to optimize performance.
 ■ Certain operating systems do not support logical drives greater than 502 GiB or boot volumes greater than 2 TiB. Check operating system documentation for details.
 ■ The logical drive must be smaller than 2 TiB if it is used as a boot volume, the OS does not support hybrid MBR boot code, and the system has legacy BIOS firmware.

RAID Level (What's this...?)

☐ RAID 0
☒ **RAID 1+0**
☐ RAID 5
☐ RAID 6 (ADG)

Strip Size / Full Stripe Size (What's this...?)

☐ 8 KiB / 16 KiB
☐ 16 KiB / 32 KiB
☐ 32 KiB / 64 KiB
☐ 64 KiB / 128 KiB
☐ 128 KiB / 256 KiB
☒ **256 KiB / 512 KiB**
☐ 512 KiB / 1024 KiB
☐ 1024 KiB / 2 MiB

Sectors/Track (What's this...?)

☐ 63
☒ **32**

Size (What's this...?)

☒ **Maximum Size: 1907674 MiB (1.8 TiB)**
☐ Custom Size

172/index.htm **Create Logical Drive** Cancel

Smart Array P440ar Embedded Slot > **Create Logical Drive**

■ Logical Drive was successfully created. Please choose one of the actions below.

Array Details

Status	OK
Used Space	3725.9 GiB (100.0%)
Total Usable Space	3.6 TiB
Acceleration Mode	Independent: Caching can be enabled or disabled for each individual logical drive.

Logical Drives

Logical Drive 1	1.02 TiB (2.00 TB)
-----------------	--------------------

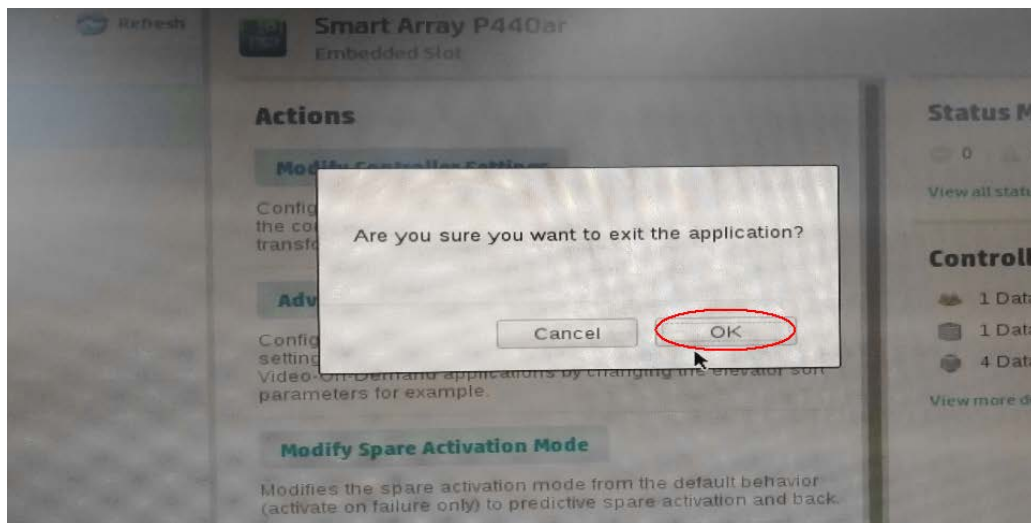
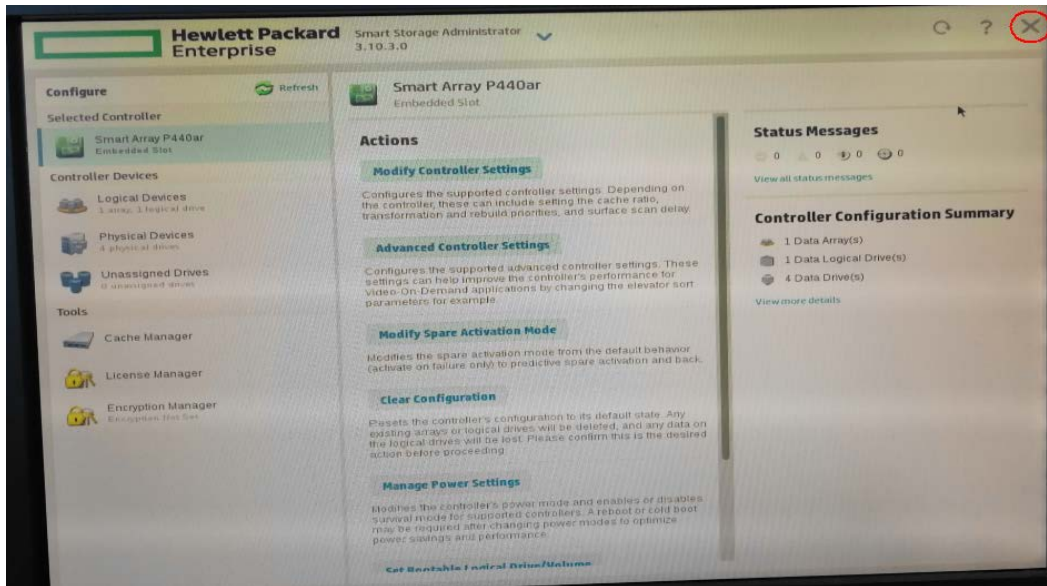
Physical Drives

1 TB SAS HDD at Port 11: Box 1: Bay 1
 1 TB SAS HDD at Port 11: Box 1: Bay 2
 1 TB SAS HDD at Port 11: Box 1: Bay 3
 1 TB SAS HDD at Port 11: Box 1: Bay 4

Device Path

Smart Array P440ar in Embedded Slot

Finish



4. Select **Create RAID Volume**. (You will delete everything on the hard drives if they already have information stored on them.)
5. Accept default name, then select **RAID1 (Mirror)** for the RAID Level, and finally select **Create Volume**.

8.2.3.3 Installing the Windows 7/10/server 2016 Operating System and Driver

You can follow one of the following two methods to install the Windows 7 operating system and driver.

- Recover the Windows 7 HDD image
- Install the Windows7 operating system CD and driver

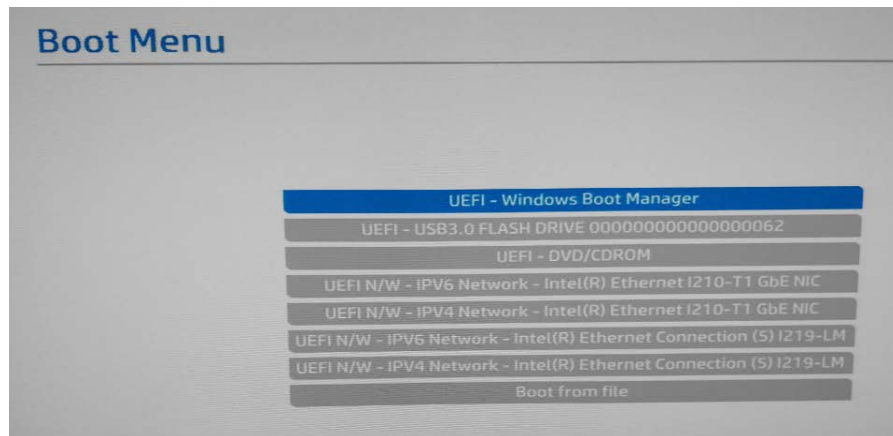
Recovering the Windows 10 HDD Image

Tools required:

- Recovery tool (PN : 110-006201-00) used to make the recovery USB stick.
- HP 800G3/HP 800G4/HP 800G2/HP 600G3/HP 600G4, KISS 2U, HPE DL360 GEN9/ HPE DL360 GEN10

Follow this procedure to recover the Windows 10 HDD image:

1. Plug the recovery USB stick into the computer.
2. Turn on the computer.
3. When the first screen is displayed, press the following button on the keyboard and then select USB disk.
 - ◆ For HP 800G3/HP 800G4/HP 800G2/HP 600G3/HP 600G4, press F9.
 - ◆ For KISS 2U, press F5.



4. When the following screen is displayed, enter 1.

```

*****BeneVision CMS Restore Tool(APP Mode)*****
*
*      1  Recovery Whole disk      *
*
*      2  Recovery Disk C          *
*
*      3  Manual Recovery          *
*
*      4  Restart                  *
*
*****U1.0*****

This tool only appliese to UEFI-guided operating systems.
Please enter the number of the selected items:
1

```

5. When the following screen is displayed, enter y.

```

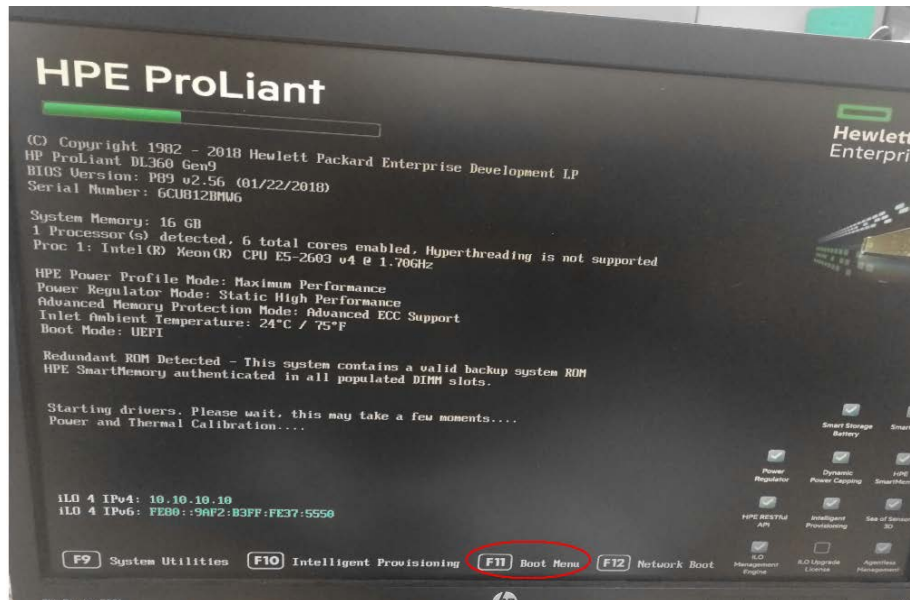
*****BeneVision CMS Restore Tool(APP Mode)*****
*
*      1  Recovery Whole disk      *
*
*      2  Recovery Disk C          *
*
*      3  Manual Recovery          *
*
*      4  Restart                  *
*
*****U1.0*****

This tool only appliese to UEFI-guided operating systems.
Please enter the number of the selected items:
1
The data of the entire disk will be lost,are you sure?(y/n):y

```

Recovering the Windows server 2016 HDD Image (HPE DL360 GEN9)

1. Plug the recovery USB stick into the computer.
2. Turn on the computer.
3. When the following screen is displayed, press F11 on the keyboard.



4. When the following screen is displayed, select the USB stick plugged.



5. When the following screen is displayed, enter 1.

```
*****BeneVision CMS Restore Tool(APP Mode)*****
*
*      1  Recovery Whole disk      *
*
*      2  Recovery Disk C          *
*
*      3  Manual Recovery          *
*
*      4  Restart                  *
*
*****U1_0*****

This tool only appliese to UEFI-guided operating systems.
Please enter the number of the selected items:
1
```

6. When the following screen is displayed, enter y.

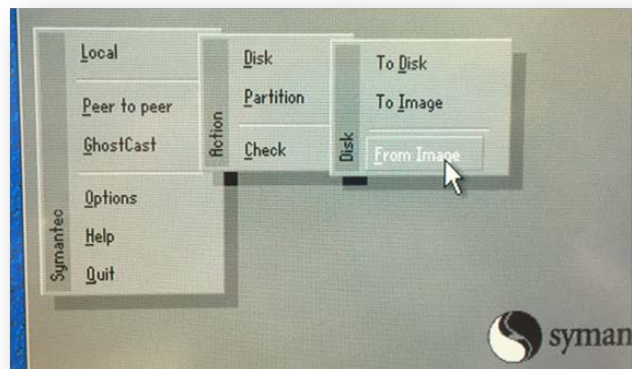
```
*****BeneVision CMS Restore Tool(APP Mode)*****
*
*      1  Recovery Whole disk      *
*
*      2  Recovery Disk C          *
*
*      3  Manual Recovery          *
*
*      4  Restart                  *
*
*****U1_0*****

This tool only appliese to UEFI-guided operating systems.
Please enter the number of the selected items:
1
The data of the entire disk will be lost,are you sure?(y/n):y
```

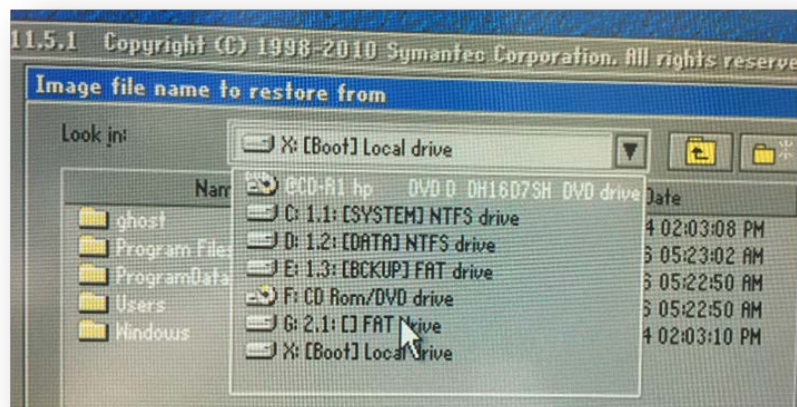
Recovering the Windows 7 HDD Image

1. Plug the USB stick containing the Windows 7 HDD image (P/N 801-300B-00010-00), into the USB port on the back of the computer.
2. Exit the Intel® Rapid Storage Technology program, the system will go through its normal boot sequence. Press "F9" (for HP800G1/800G2/800 G3/800G4) or "F5" (for Kontron KISS 2U) to access the Boot Menu. The system will ask for a password. Type in the password and press "Enter".
3. Highlight "USB Device" by pressing the up and down arrows. Press "+" to move it up to the first spot. Press **F10** to save the settings.
4. After the BeneVision CMS boots from the USB drive hit ok at the Symantec Ghost Splash Screen. This may take several minutes.
5. When the "About Symantec Ghost" prompt screen appears, click **OK** to proceed.

6. From the **Symantec Ghost** menu, select **Local** → **Disk** → **From Image**.

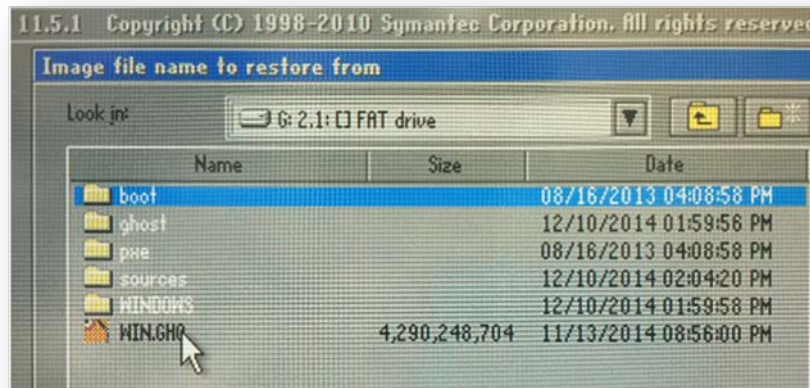


7. When the prompt opens, click on the “Look in:” dialog to select the corresponding USB drive which contains the ghost image. As an example, in the image below the files are located on the G Drive.

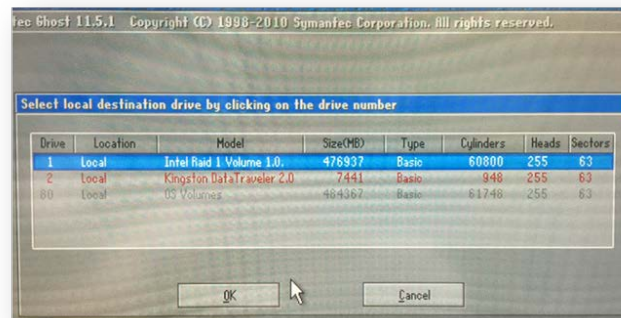


8. Select the WIN.GHO file located under the “HP 8380 RAID WIN 7” folder. For KISS and 800G1/G2, the WIN.GHO file is located under the “EN-WIN” folder of Disc E.

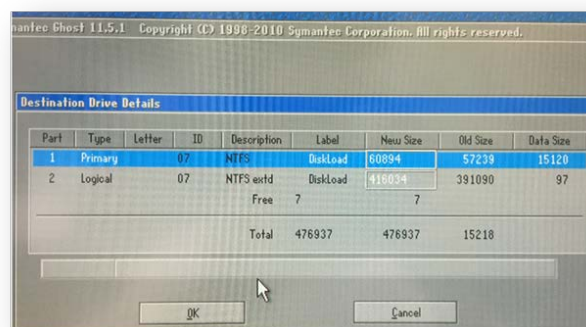
9. Click on the WIN.GHO file to select the actual ghost file.



10. When prompted, select the destination drive to install the operating system which is the "Intel Raid" volume as shown in the figure below.

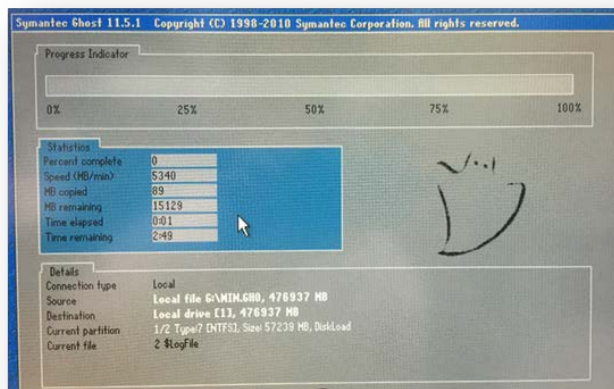


11. In the next screen, the dialog will show the destination drive details. Click **OK** to accept all default values.



12. Click **Yes** to acknowledge that the destination drive will be erased during the ghosting process.

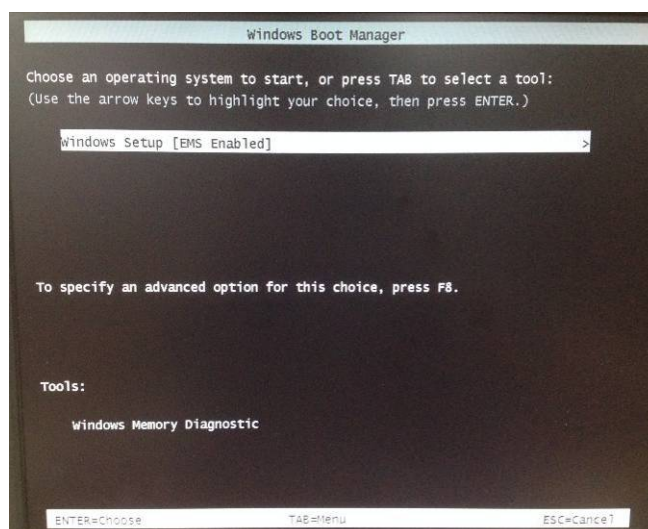
13. Allow the ghosting process to complete. While the process is underway, the dialog window will show its progress from 0% to 100% as well as an estimated time remaining to complete the task.



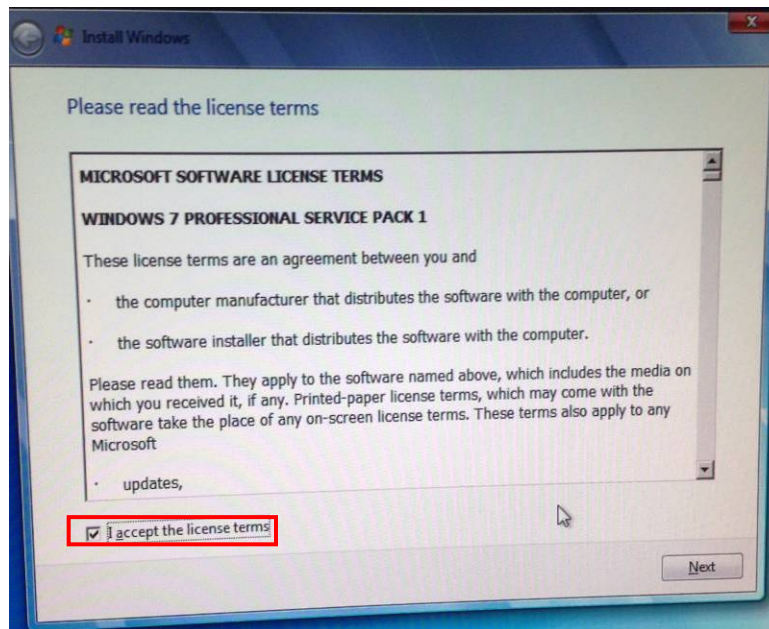
14. When the ghosting process is finished, click **Continue** to close the **Clone Complete** dialog window.
15. Select **Quit** to exit from the Norton Ghost program. If a popup dialog window asks for confirmation to quit, click **Yes**.
16. Unplug the USB stick containing the ghosting images from the back of the machine.
17. Restart the computer by holding down the power button to turn off the PC, and then turn it back on.
Once the computer has restarted allow the computer to start normally and display the Windows desktop.

Installing the Windows 7 Operating System CD

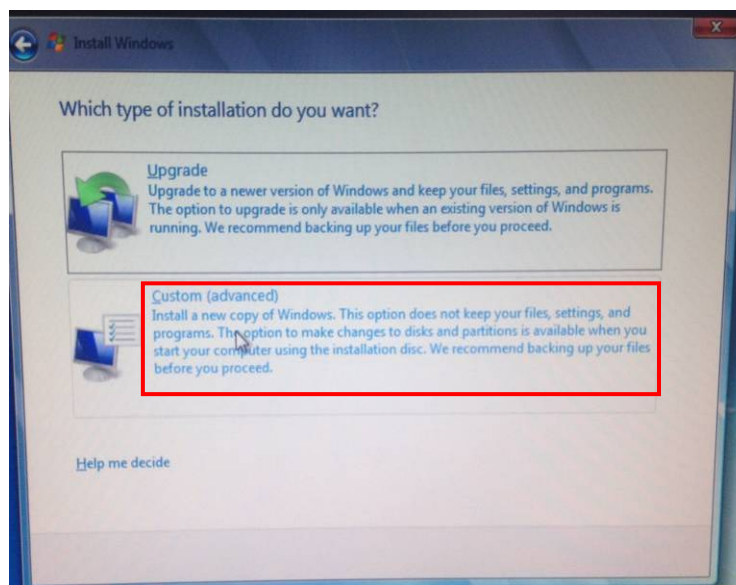
1. Insert the Windows7 OS installation CD (115-034049-00).
2. When "**Press any key to boot from CD...**" appears on the screen, press any key. The following screen is displayed.



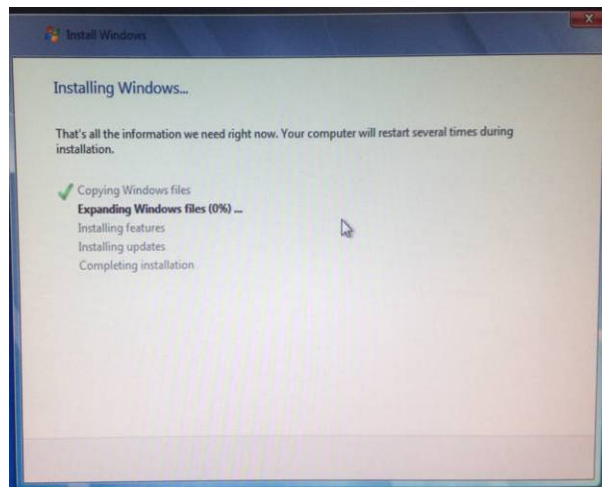
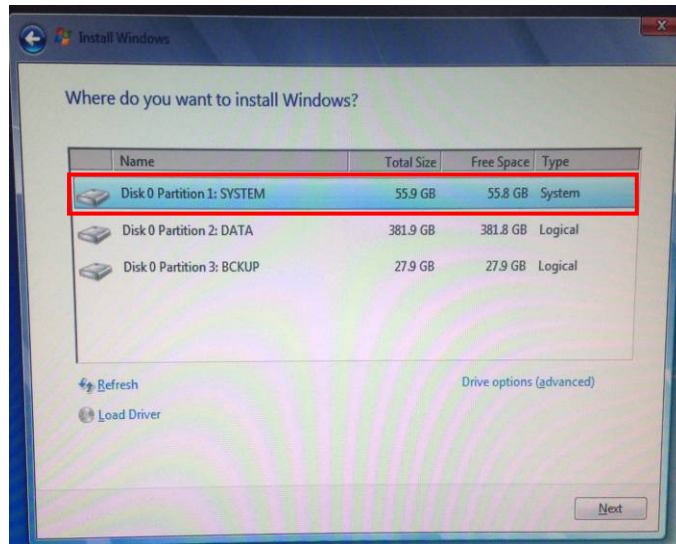
3. Press the **Enter** key.
4. When the following screen appears, select **I accept the license terms**, and click **Next**.



5. When the following screen appears, select **Custom (advanced)**.



6. When the following screen appears, select **Disk 0 Partition 1:SYSTEM**, and then click the **Next** button to start installation. Wait patiently for completion of the installation.



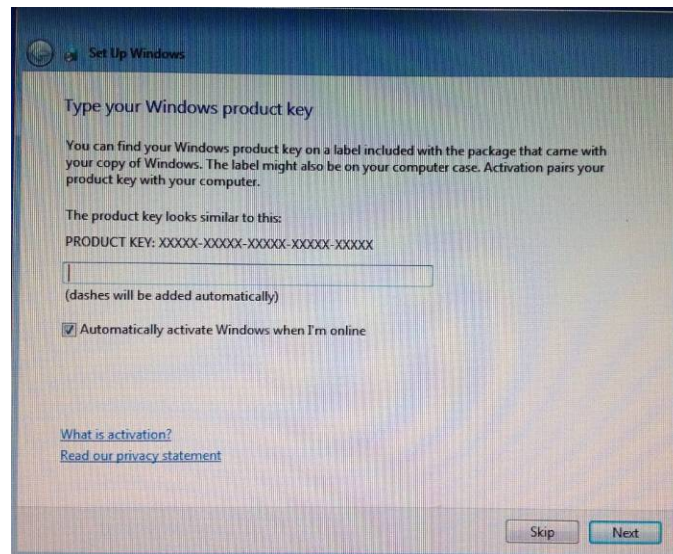
7. When the following screen appears, enter the username "**cmsuser**" and computer name "**cmsuser-PC**", and then click **Next**.



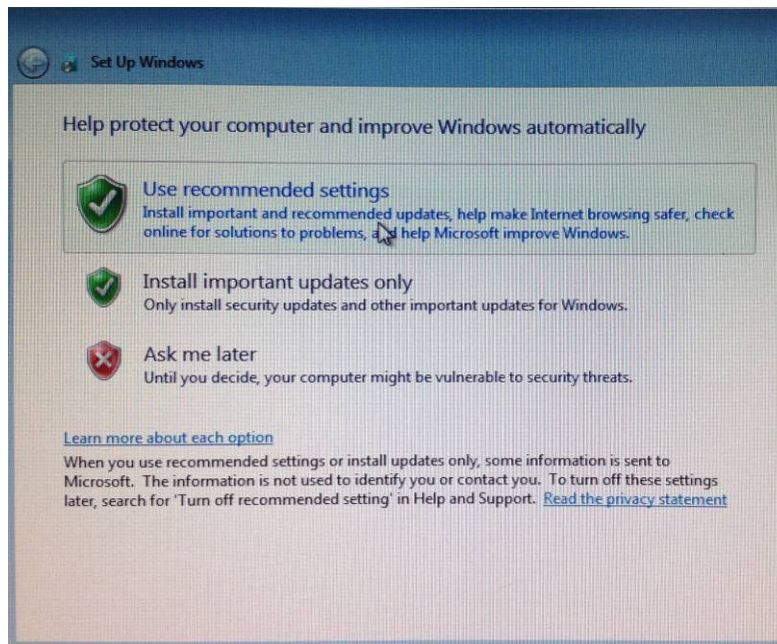
8. When the following screen appears, click **Next** and do not enter the password.



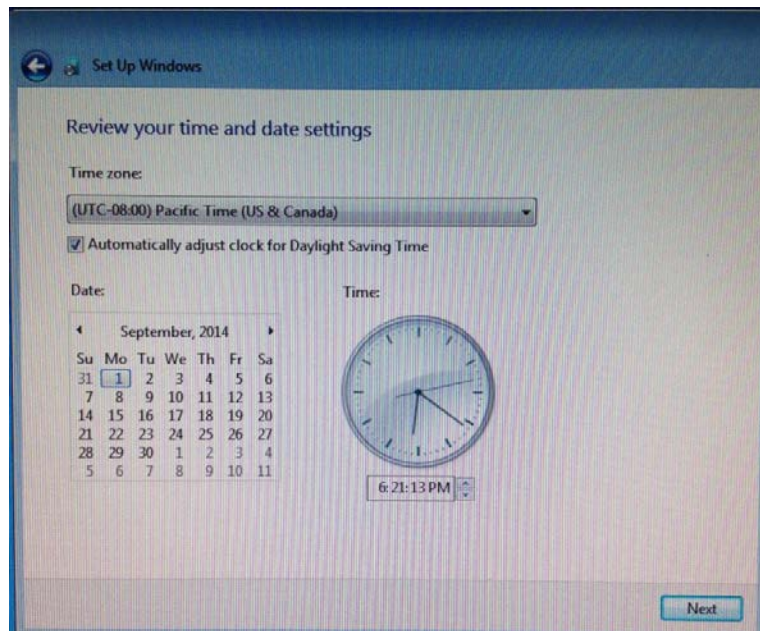
9. Enter the product key which is displayed on the Windows License label attached to the host. Then click **Next**.



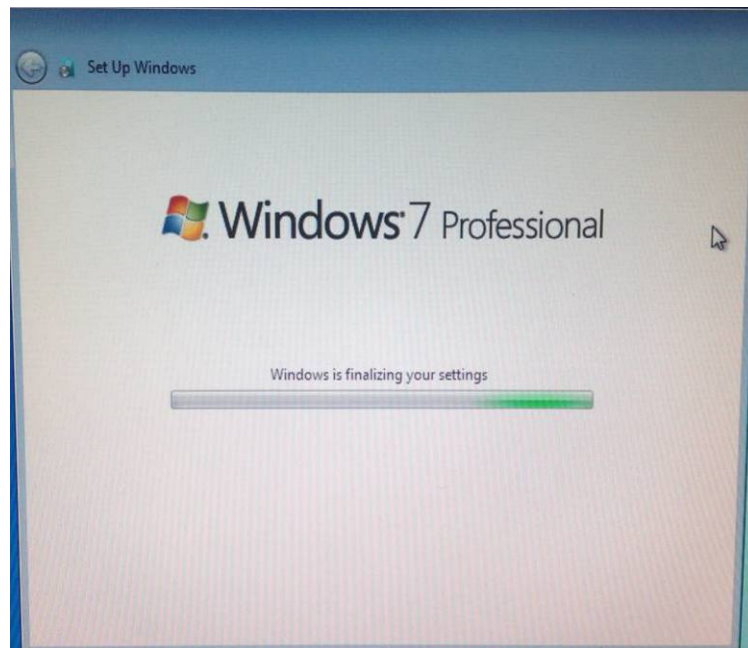
10. When the following screen appears, select **Use recommended settings**.



11. When the following screen appears, set time and time zone as shown below. Select **Automatically adjust clock for Daylight Saving Time**, and then click **Next**.



Upon completion of settings, the following screen is displayed.

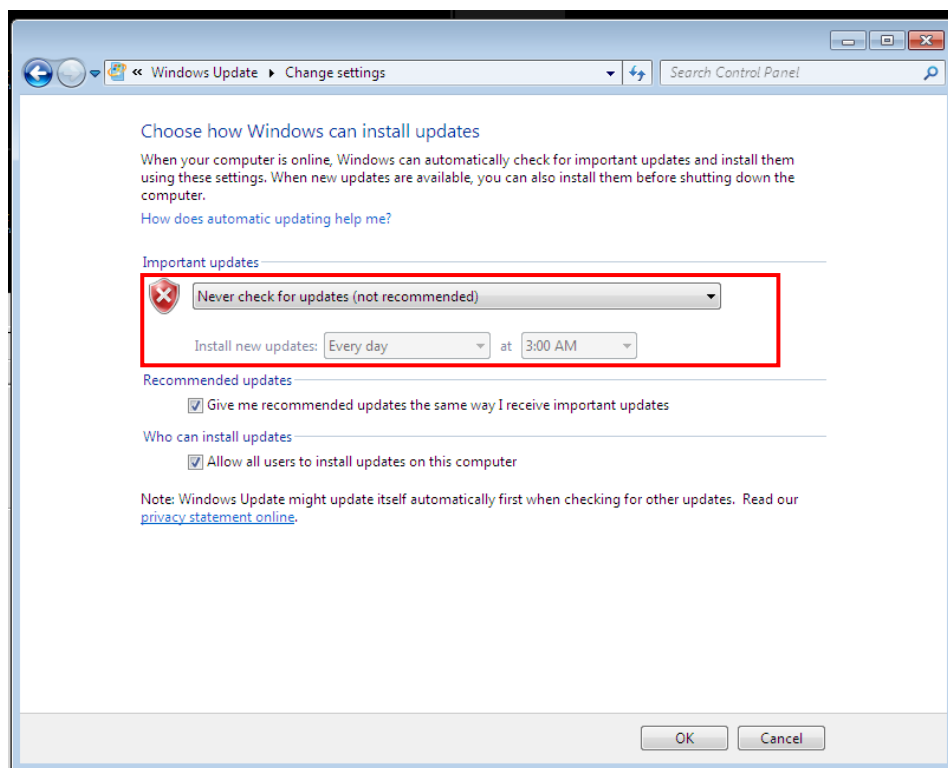


12. Remove the Windows7 OS installation CD from the CD-ROM drive and keep it properly. Then plug the Windows 7 patch CD (115-034050-00).
13. Run the "install.all.bat" file under the "WIN7 English hotfix" folder in the root directory of the patch CD to execute patch installation.

14. Upon completion of installation, restart the computer.
15. Remove the patch CD from the CD-ROM drive and keep it properly. Up to now, installation of the operating system is complete.

After installing the operating system, you need to close the automatic update function of the operation system by following the steps below.

1. Select **Start** → **Control Panel** → **System and Security** → turn automatic updating on or off.
2. When the following screen is displayed, select **Never check for updates** from the drop-down list of **Important Updates**.
3. Click **OK** to save the settings.



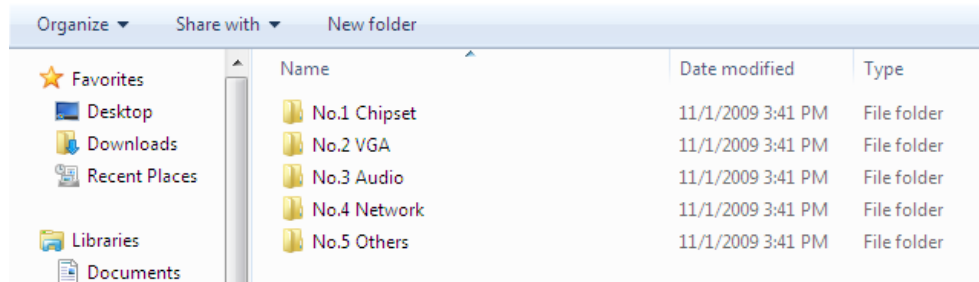
Installing the Driver

After finishing installing the Windows 7 Operating System, you need to install the driver to complete the entire installation process.

Installing the Driver for HP800G1 Host

1. Place the driver CD that comes with the computer into the CD-ROM drive, and install the driver according to the directory sequence of folder and the file sequence in the folder.
2. Always select **Agree**, **Yes** or **Next** during the installation. The computer must be restarted manually each time a driver is installed.

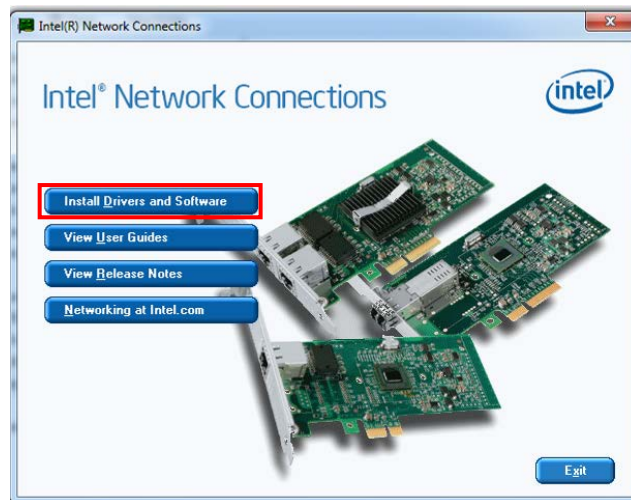
The following picture shows an example of the folder sequence: No. 1 > No. 2 > No. 3 > No. 4 > No. 5.



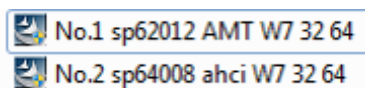
There are two driver installation files in the No.1 folder, as shown below. Install the No.1 motherboard driver and No.2 USB3.0 driver in turn. The computer must be restarted each time a driver is installed.



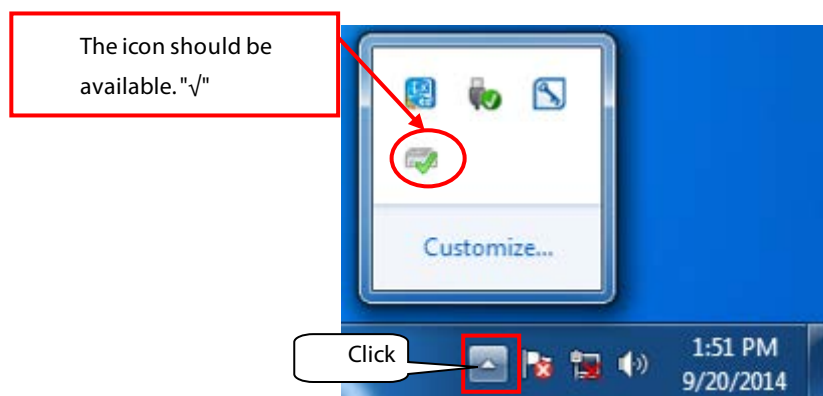
- Run the graphics card driver installation file in the No. 2 folder, and restart the computer after installation is completed.
- Run the audio driver installation file in the No. 3 folder, and restart the computer after installation is completed.
- Run the network card driver installation file in the No. 4 folder. When the following installation screen is displayed, click the **Install Drivers and Software** button, and then always click **Next** or **Install**. Restart the computer after installation is completed.



There are two driver installation files in the No.5 folder, as shown below.



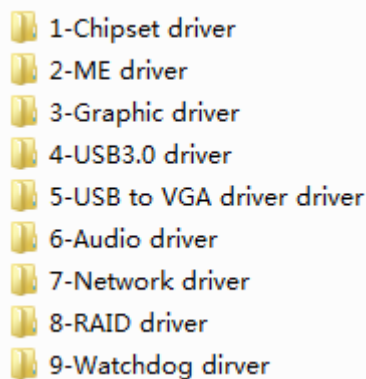
6. Install the No.1 and No.2 driver installation files. Always click **Next** or **Yes** during installation. Restart the computer after each file is installed.
7. After the computer starts completely, click the hidden icons in the lower right corner of the desktop. The icon shown below should be available. "√" indicates normal operation of the dual hard disks.





Installing the Driver for KISS 2U Host

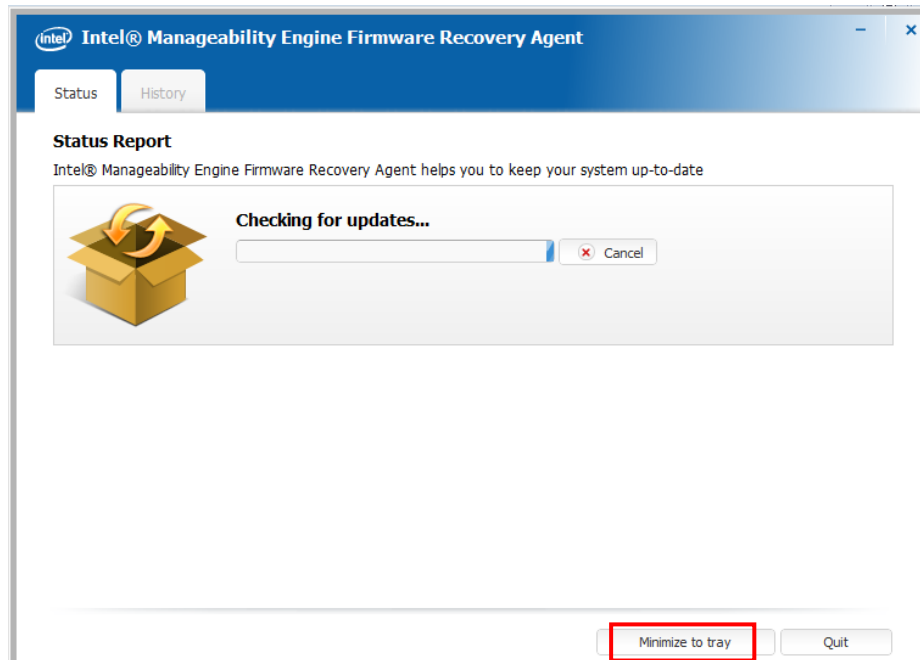
1. Place the driver CD that comes with the computer into the CD-ROM drive, and install the driver according to the directory sequence of folder and the file sequence in the folder.
2. Always select **Agree**, **Yes** or **Next** during the installation. The computer must be restarted manually each time a driver is installed.








The following picture shows an example of the folder sequence: 1 > 2 > 3 > 4 > 5 > 6 > 7 > 8 > 9.

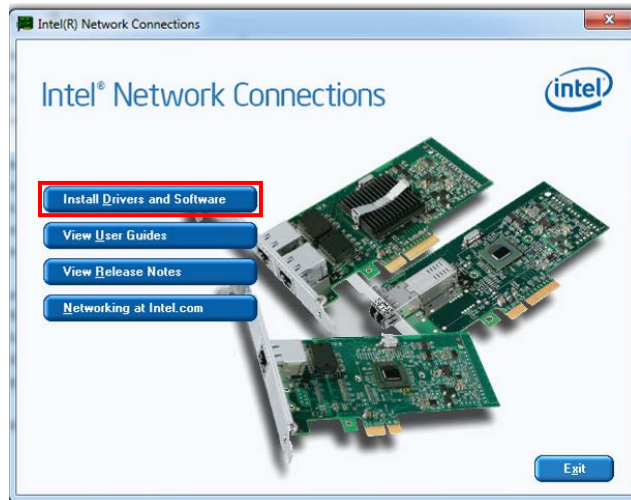




3. Run the motherboard driver  **INF_alIOS_9.4.0.1017_PV** in the 1-Chipset driver folder, and restart the computer after installation is completed.

4. Run the ME driver installation file  **MEI_alOS_5.0M_FW_9.0.2.1345_PV.exe** in the 2-ME driver folder. After installation is completed, exit through the interface below, and then restart the computer.

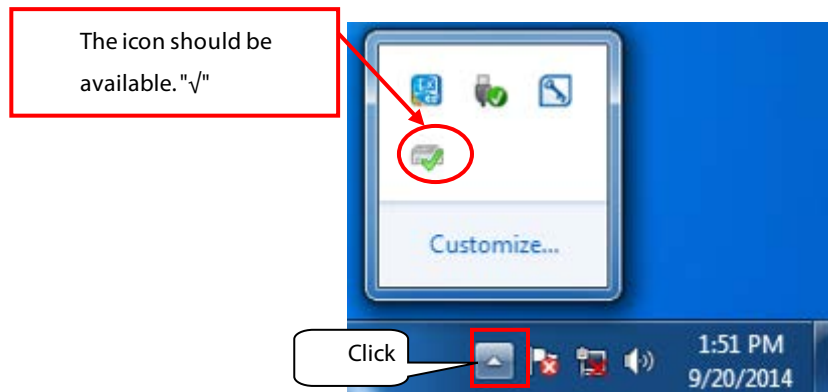


5. Run the graphics card driver installation file  **Win32_15319.exe** in the  **ktq87-graphics-win7-32b-v15319** folder under the 3-Graphics driver folder. Restart the computer after installation is completed.
6. Run the USB3.0 driver installation file  **Setup** in the 4-USB3.0 driver folder. Restart the computer after installation is completed.
7. Run the USB-to-VGA driver installation file  **Setup** in the  **WIN 7 Driver** folder under the 5-USB to VGA driver folder. Restart the computer after installation is completed.
8. Run the audio driver installation file  **SETUP** in the 6-Audio driver folder, and restart the computer after installation is completed. Since Kontron KISS 2U server is not provided a speaker, no sound will be sent out in the power-on/off process after the audio driver is installed.
9. Run the network card driver installation file  **Autorun** in the 7-Network driver folder. The installation interface is shown below. Click the **Install Drivers and Software** button, and then always select **Next** or **Install**. Restart the computer after installation is completed.



10. Run the USB3.0 driver installation file  **STOR_Win7_8_12.5.0.1066** in the 8-RAID driver folder.
Restart the computer after installation is completed.
11. Run the watchdog driver installation file  **keapisys32.msi** in the 9-Watchdog driver folder, and
restart the computer after installation is completed.

After the computer starts completely, click the hidden icons in the lower right corner of the desktop. The icon shown below should be available. "✓" indicates normal operation of the dual hard disks.

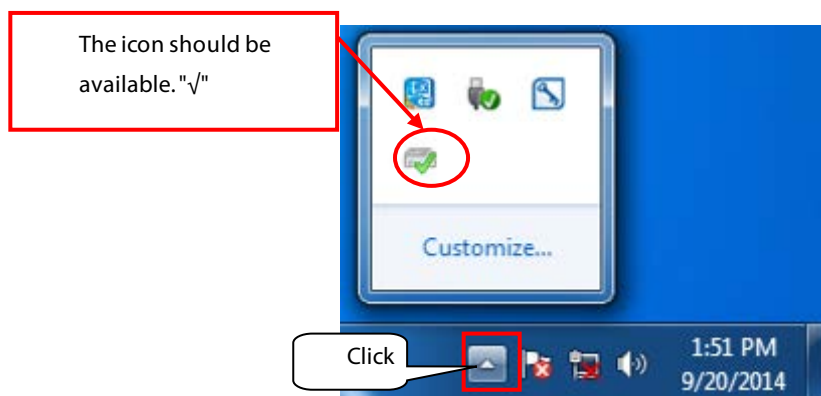


Installing the Driver for HP800 G2 Host (Windows 7 32-bit)

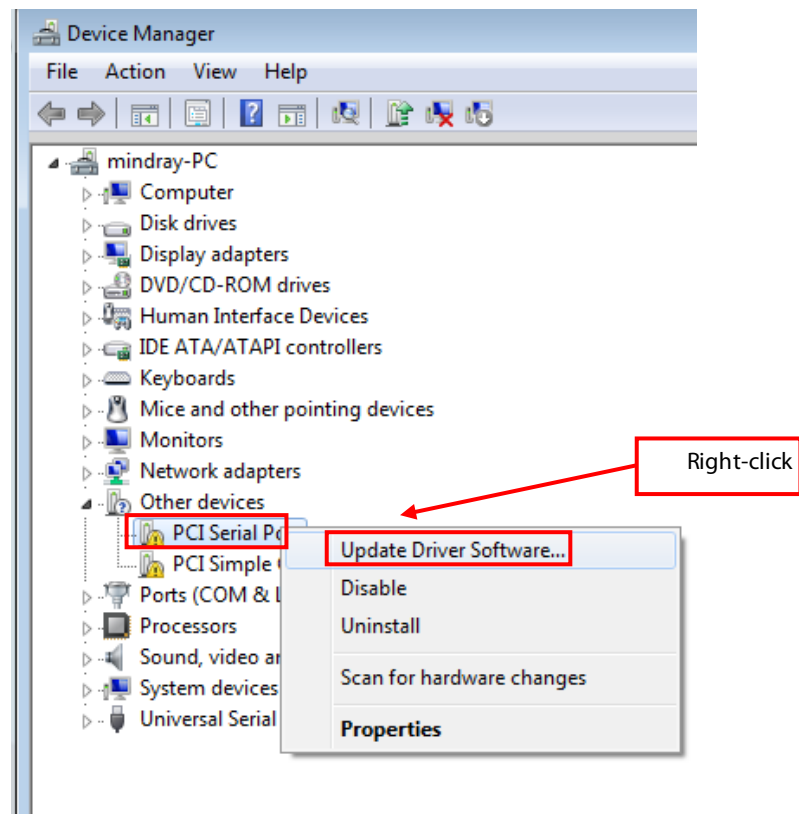
1. Place the driver CD that comes with the computer into the CD-ROM drive, and install the driver according to the directory sequence of folder and the file sequence in the folder.
2. Always select **Agree, Yes** or **Next** during the installation. The computer must be restarted manually each time a driver is installed. The following screen shows an example of the file list.

名称	修改日期	类型	大小
HP 800G2 WIN7 32	2016/9/21 16:11	文件夹	
HP 800G2 WIN7 64	2016/9/21 16:11	文件夹	
Microsoft .NET	2016/9/21 16:24	文件夹	
NO7. SP72788	2016/9/23 13:55	文件夹	
mu_net_framework_4.5_r2_x86_x64_1076098	2014/1/17 17:34	应用程序	49,182 KB
NO1. sp72786 CHIP 32 64	2015/12/23 18:02	应用程序	3,197 KB
NO2. sp71459 realtek 32 64	2015/12/24 9:38	应用程序	181,410 KB
NO3. sp74234 USB3 32 64	2015/12/23 18:02	应用程序	5,637 KB
NO6. sp72775 AHCI 32 64	2016/9/21 10:07	应用程序	13,451 KB

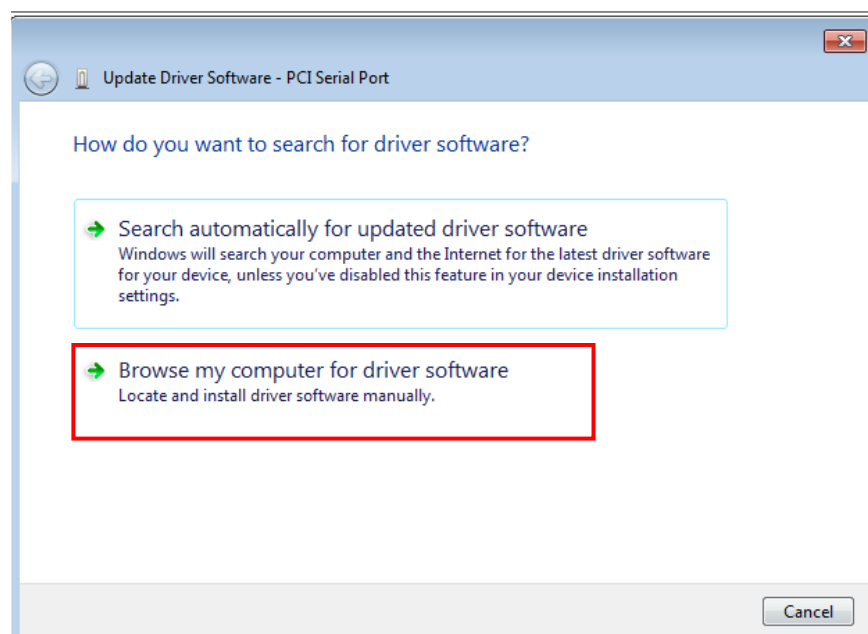
3. Run NO1. sp72786 CHIP 32 64, install the motherboard driver, and restart the computer after installation is completed.
4. Run NO2. Sp71459 realtek 32 64, install the audio driver, and restart the computer after installation is completed.
5. Run NO3. Sp74234 USB3 32 64, install the USB3.0 driver, and restart the computer after installation is completed.
6. Open the folder HP 800G2 WIN7 32, run NO4. Sp74742 NIC 32, install the network card driver, and restart the computer after installation is completed.
7. Open the folder HP 800G2 WIN7 32, run NO5. Sp74567 intel VGA 32, install the graphics card driver, and restart the computer after installation is completed.
8. Run mu_net_framework_4.5_r2_x86_x64_1076098, and restart the computer after installation is completed. Run NO6. Sp72775 AHCI 32 64 after the computer is restarted, install the dual-hard disk control driver, and restart the computer after installation is completed.
9. After the computer starts completely, click the hidden icons in the lower right corner of the desktop. The icon shown below should be available. "√" indicates normal operation of the dual hard disks.



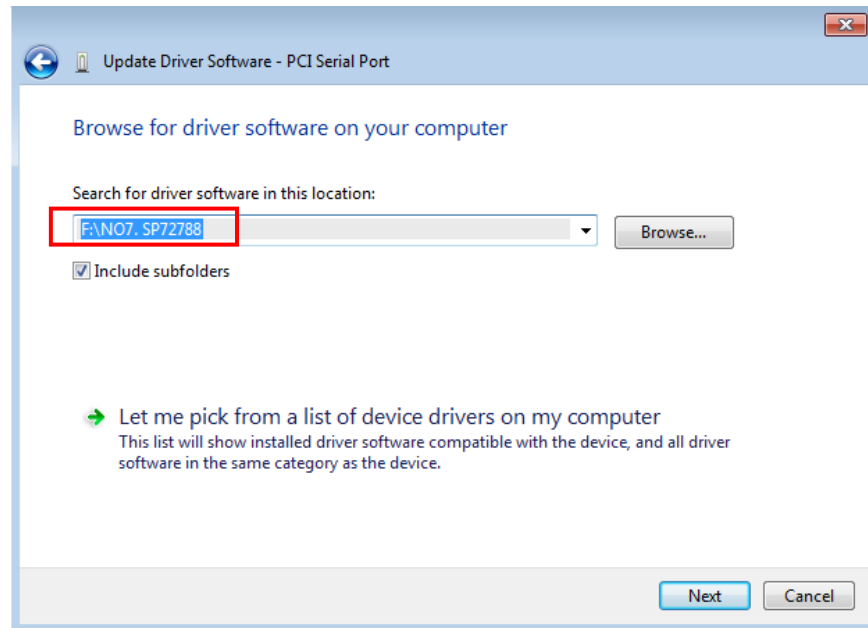
10. Open the device manager, right-click **PCI Serial Port** under **Other Devices**, and select **Update Driver Software**.



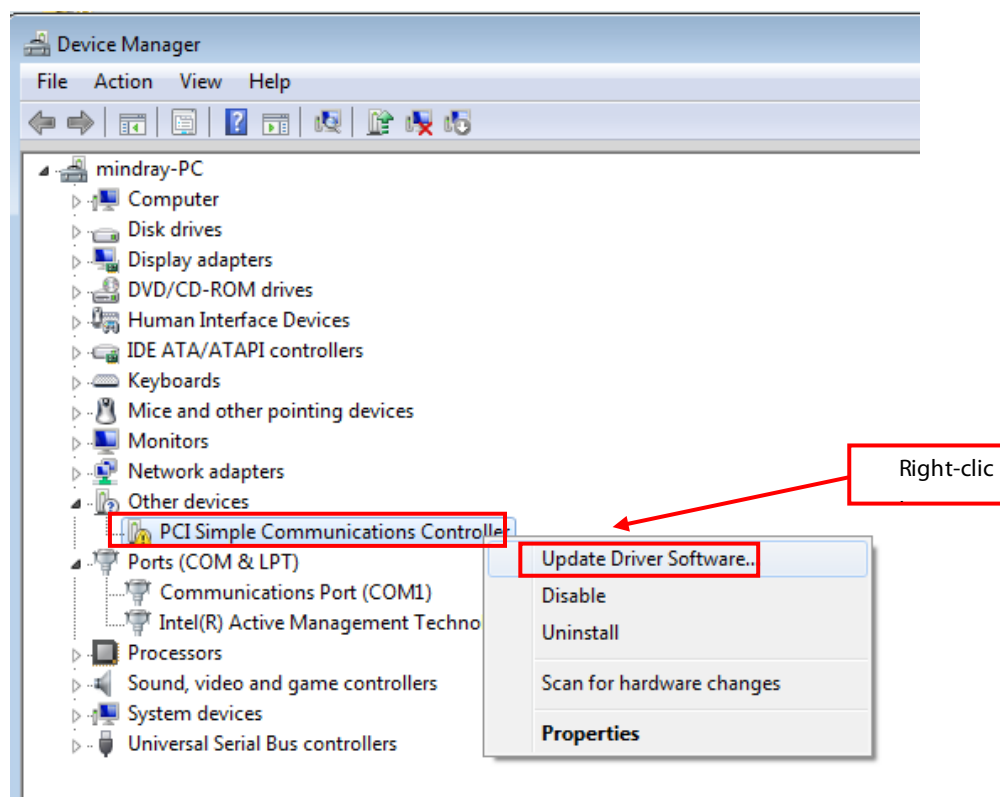
11. When the following screen is displayed, select **Browse my computer for driver software**.



12. Click **Browse** in the displayed window, select the NO7. SP72788 folder, and click **Next** to complete the driver installation.



13. Restart the computer after installation is completed.
14. Open the device manager, right-click on PCI Simple Communications Controller under Other Devices, and select **Update Driver Software**.



15. Select **Browse my computer** for driver software from the pop-up window.
16. Click **Browse** in the displayed window, select the NO7. SP72788 folder and then click **Next** to complete the driver installation.
17. Restart the computer after installation is completed.

Installing the Driver for HP800 G3 Host (Windows 7 32-bit)

1. Place the Windows 7 patch CD into the CD-ROM drive.
2. Run the "install.all.bat" file. The computer restarts when the cmd window disappears from the screen.

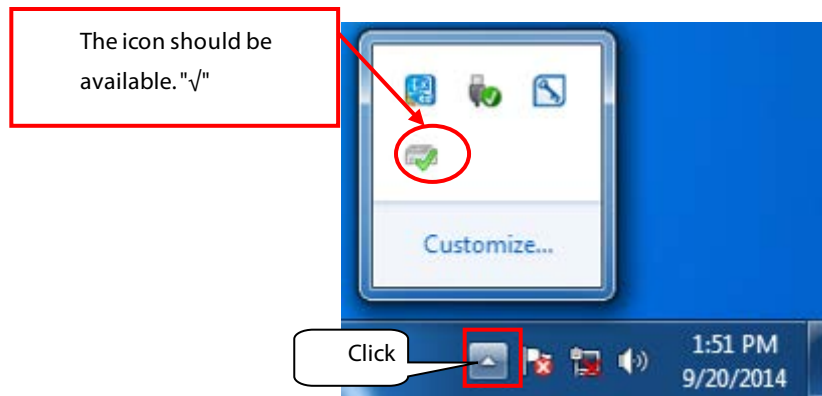
Name	Date modified	Type	Size
install all	7/8/2016 2:19 AM	Windows Batch File	1 KB
Windows6.1-KB2575077-x86	5/31/2016 2:41 AM	Microsoft Update ...	272 KB
Windows6.1-KB2614892-x86	5/31/2016 2:41 AM	Microsoft Update ...	228 KB
Windows6.1-KB2618535-x86	5/31/2016 2:41 AM	Microsoft Update ...	265 KB
Windows6.1-KB2740374-v2-x86	5/31/2016 2:41 AM	Microsoft Update ...	709 KB
Windows6.1-KB2821049-x86	5/31/2016 2:41 AM	Microsoft Update ...	682 KB
Windows6.1-KB2866695-x86	5/31/2016 2:41 AM	Microsoft Update ...	1,008 KB
Windows6.1-KB2894655-x86	5/31/2016 2:41 AM	Microsoft Update ...	1,294 KB
Windows6.1-KB2913431-x86	5/31/2016 2:41 AM	Microsoft Update ...	1,051 KB

3. Place the driver CD that comes with the computer into the CD-ROM drive, and install the driver according to the directory sequence of folder and the file sequence in the folder.
4. Always select **Agree, Yes** or **Next** during the installation. The computer must be restarted manually each time a driver is installed. The following screen shows an example of the file list.

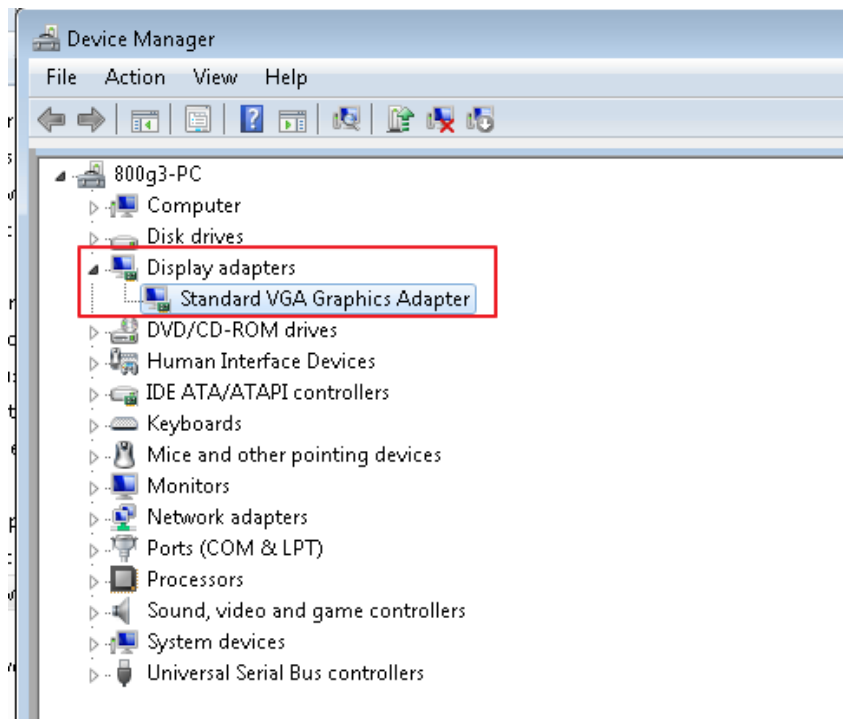
NO6.vgawin732 64SP81349	7/31/2017 8:18 PM	File folder	
NO1.net_framework_4.5_r2_x86_x64_1076098	1/17/2014 1:34 AM	Application	49,182 KB
NO2.sp78817 W10P64 W7P64 32 CHIP	5/10/2017 1:39 AM	Application	3,199 KB
NO3.sp78827 W7P32 64 CHIP USB3	5/10/2017 1:49 AM	Application	5,721 KB
NO4.sp78848 W10P64 W7P32 64 MEI--choose	5/10/2017 1:54 AM	Application	102,458 KB
NO5.sp78957 W7P32 NVIDIA GT720	5/10/2017 2:05 AM	Application	186,495 KB
NO6.sp79275 W10P64 W7P32 64 Conexant	5/10/2017 1:50 AM	Application	89,190 KB
NO7.sp78880 W7P32 64 Rapid AHCI--	5/10/2017 1:48 AM	Application	13,946 KB
NO8.sp77773 W7P32 NIC	5/10/2017 1:51 AM	Application	31,535 KB

5. Run NO2.sp78817 W10P64 W7P64 32 CHIP, install the motherboard driver, and restart the computer after installation is completed.
6. Run NO3. Sp74234 USB3 32 64, install the USB3.0 driver, and restart the computer after installation is completed.
7. Run NO5.sp78957 W7P32 NVIDIA GT720, install the Discrete graphics card driver, and restart the computer after installation is completed.
8. Run NO6.sp79275 W10P64 W7P32 64 Conexant, install the audio driver, and restart the computer after installation is completed.

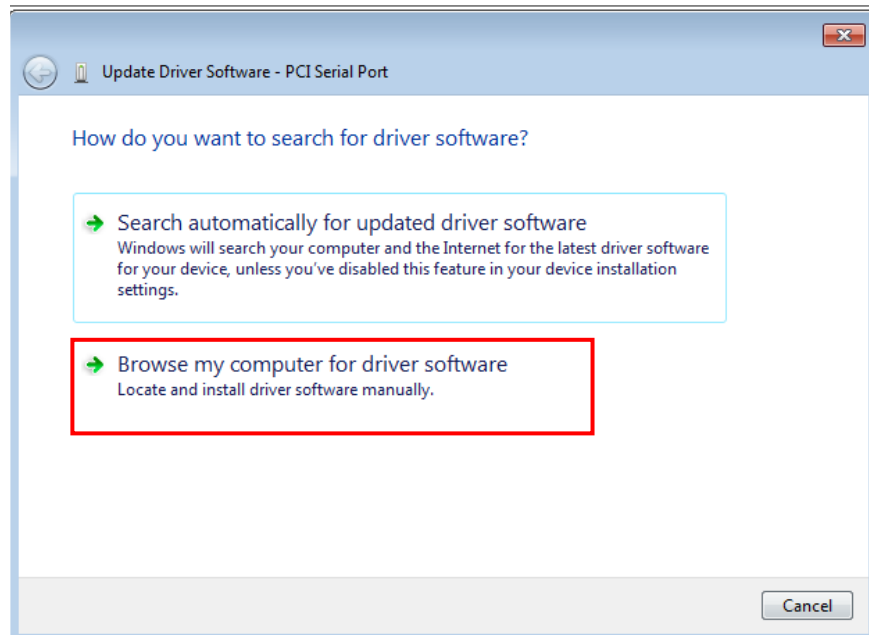
9. Run NO8.sp77773 W7P32 NIC, install the network card driver, and restart the computer after installation is completed.
10. Run NO4.sp78848 W10P64 W7P32 64 MEI--choose, install the network card driver, and restart the computer after installation is completed.
11. Run NO1.net_framework_4.5_r2_x86_x64_1076098, and restart the computer after installation is completed. Run NO7.sp78880 W7P32 64 Rapid AHCI--, install the dual-hard disk control driver, and restart the computer after installation is completed.
12. After the computer starts completely, click the hidden icons in the lower right corner of the desktop. The icon shown below should be available. "√" indicates normal operation of the dual hard disks.



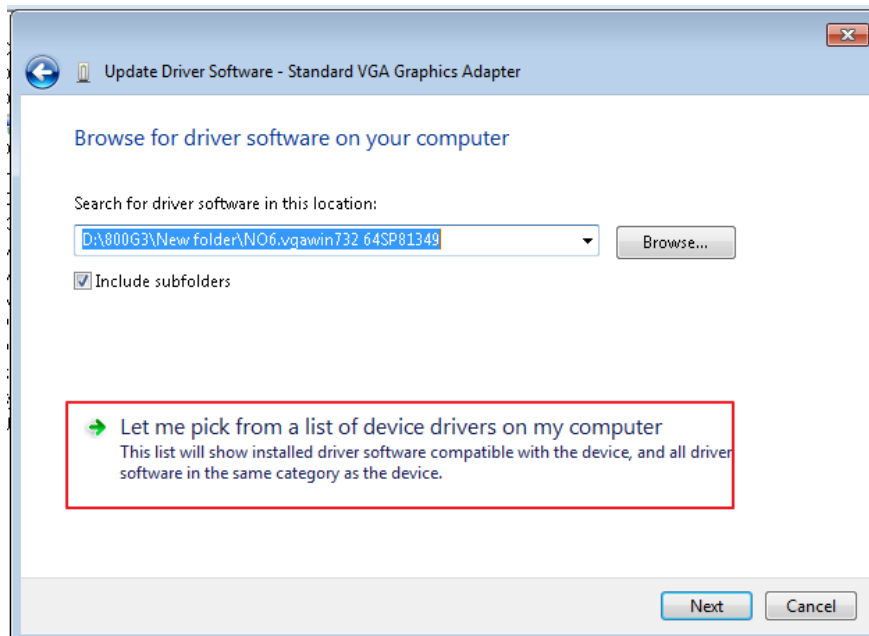
13. Open the device manager, right-click Display adapters under Standard VGA Graphics Adapter, and select Update Driver Software.

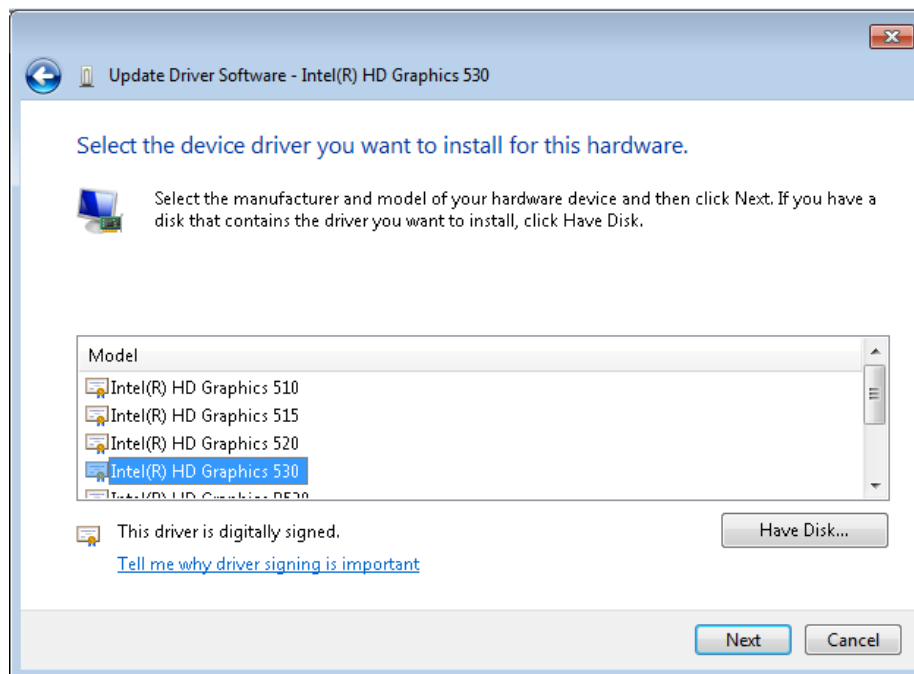
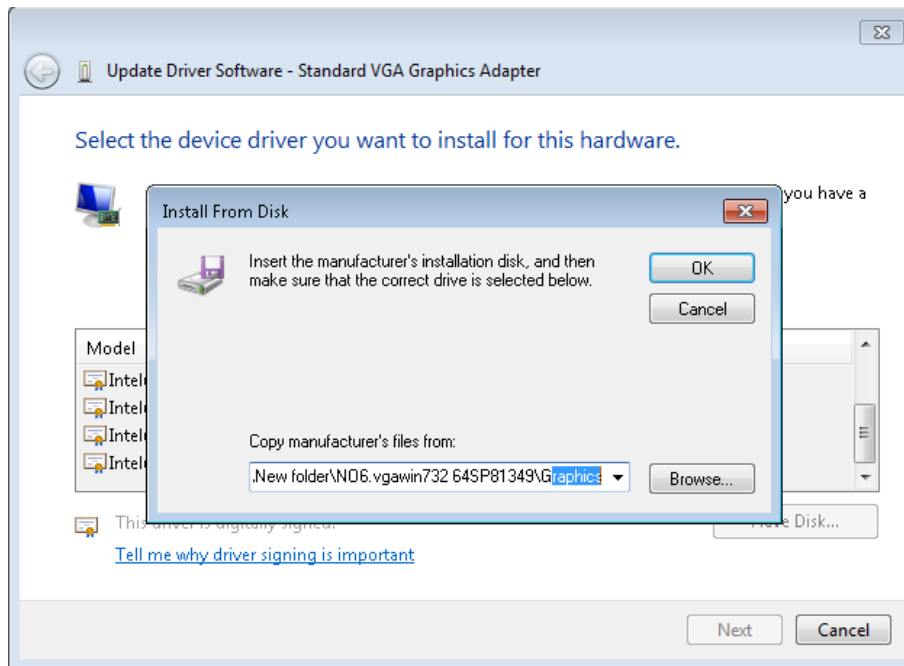


14. When the following screen is displayed, select **Browse my computer for driver software**.



15. Click **Let me pick from a list of device drivers on my computer**, select the NO6.vgawin732 64SP81349\Graphics\ki121256 file, click ok, select **Inter(R) HD Graphics 530** and click **Next** to complete the driver installation.









16. Restart the computer after installation is completed.

Installing the Driver for HP800 G4 Host (Windows 10 64-bit)

1. Place the Windows10 patch CD into the CD-ROM drive.
2. Run the "install.all.bat" file. The computer restarts when the cmd window disappears from the screen.

 install.bat	2019-1-14 17:33	Windows
 Installation guide.docx	2018-4-21 15:17	Microsc
 windows10.0-kb4132216-x64.msu	2018-7-26 9:15	Microsc
 windows10.0-kb4471321-x64.msu	2018-12-23 12:11	Microsc

- Place the driver CD that comes with the computer into the CD-ROM drive, and install the driver according to the directory sequence of folder and the file sequence in the folder.
- Always select **Agree, Yes** or **Next** during the installation. The computer must be restarted manually each time a driver is installed. The following screen shows an example of the file list.

 Audio	2018-10-10 15:35
 Chipset	2018-10-10 15:36
 Graphics	2018-10-10 15:38
 InputDevices	2018-10-10 15:41
 Network	2018-10-10 15:41
 Storage	2018-10-10 15:41

- Run Audio\Synaptics\Synaptics_TTCKB2\8.65.281.0\ install.cmd, install Audio driver, and restart the computer after installation is completed.
- Run Chipset\Intel\2018Intel_SS1TB2\1825.12.0.1144\ install.cmd, install the Chipset driver, and restart the computer after installation is completed.
- Run Chipset\Intel\IntelChip_RRFB2\10.1.17667.8082\ install.cmd, install the Chipset driver, and restart the computer after installation is completed.
- Run \Graphics\Intel\IntelGrap_TTK8B2\24.20.100.6136\ install.cmd, install the Graphics driver, and restart the computer after installation is completed.
- Run InputDevices\Prolific\ProlificU_TT2WB2\3.8.18.0\ install.cmd, install the InputDevices driver, and restart the computer after installation is completed.
- Run Network\Intel\IntelI219_TTCCB2\12.17.10.6\install.cmd, install the network card driver, and restart the computer after installation is completed.

8.2.3.4 Activating and Configuring the Windows 7 Operating System

1. Open the **Start** menu in the lower left hand corner of the Windows Operating System. Right click on the **Computer** menu and select **Properties**. In the dialog window that appears, click on the bottom of the window over the text **You must activate today. Activate Windows now**.
2. When prompted, type in the Windows Product ID from the label that is affixed to the top of the machine.



3. Use the phone system for activation. Follow the onscreen instructions for dialing the phone number and inputting the installation ID. Once the system validates the ID, type in the Confirmation ID. Follow the onscreen instructions to finish the activation process. At the conclusion of activation, exit back to the Windows desktop.
4. Install the required software and drivers by referring to sections 3.3 Display Installation to 3.8 Installing a Recorder

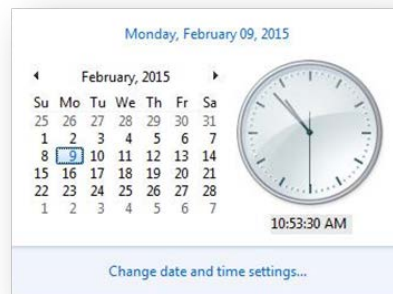
No recorder driver is needed. Recording can function directly after system software is installed.

NOTE

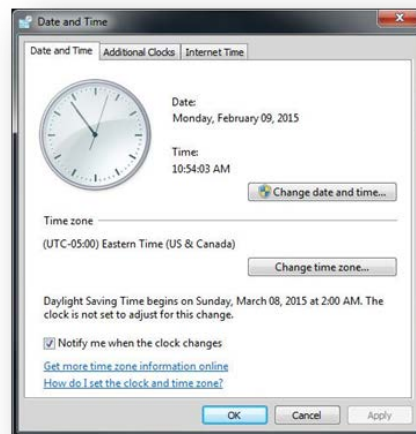
- **Connect a recorder to COM1 port of the CMS host.**

CMS System Software

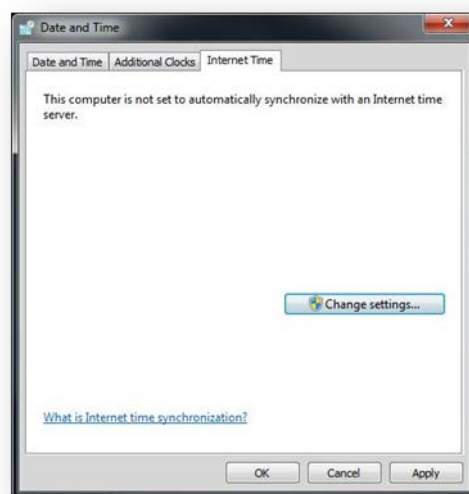
5. Click on the Date and Time in the tray at the lower right hand corner of the screen.



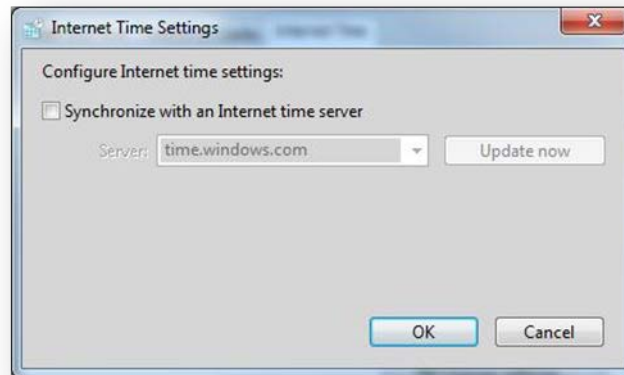
6. Click **Change Time and Date Settings....**



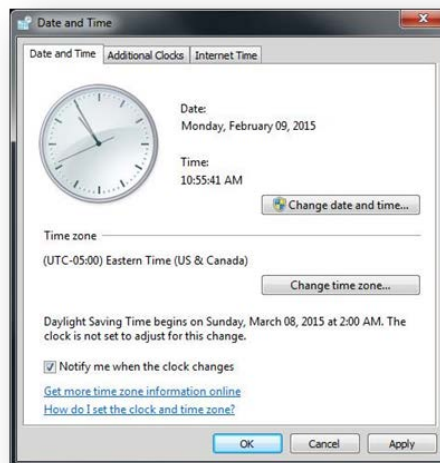
7. Select the **Internet Time** tab.



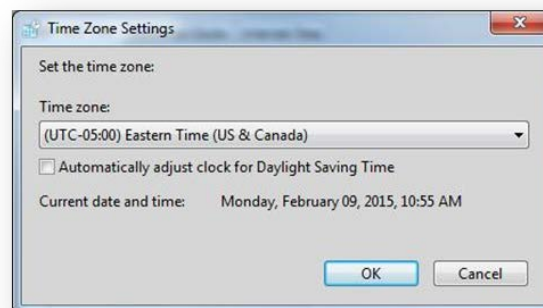
- Click **Change Settings**.



- Uncheck the **Synchronize with an Internet time server** box. Then click **OK**.



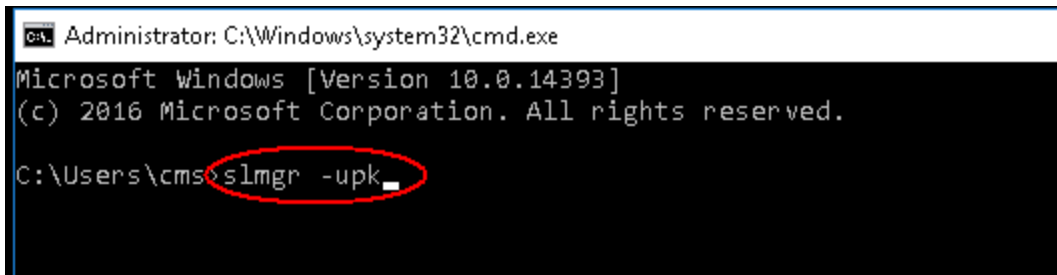
- In the **Date** and **Time** tab, select **Change time zone....**



11. Uncheck the box labeled Automatically adjust clock for Daylight Saving Time. Then click OK.
12. From the **Date and Time** menu, click **OK**.

8.2.3.5 Activating and Configuring the Windows 10/Server 2016 Operating System

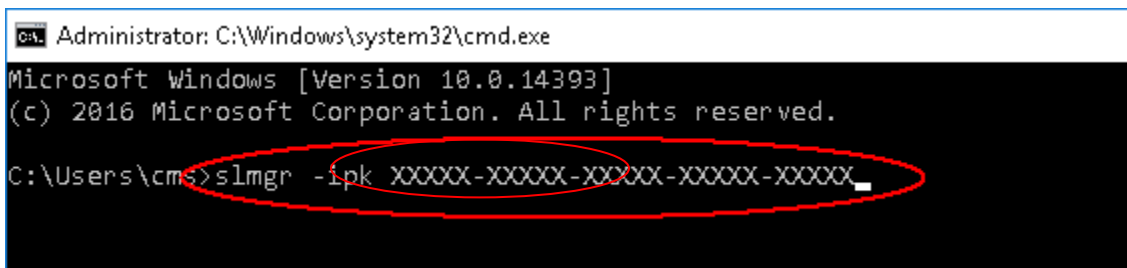
1. Press the Windows key and the R key simultaneously to open the **Run** window.
2. Enter cmd and then press the Enter key to bring up the command window.
3. Enter "slmgr -upk" and then press the Enter key to uninstall the existing key, as shown below.



```
C:\> Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\cms> slmgr -upk
```

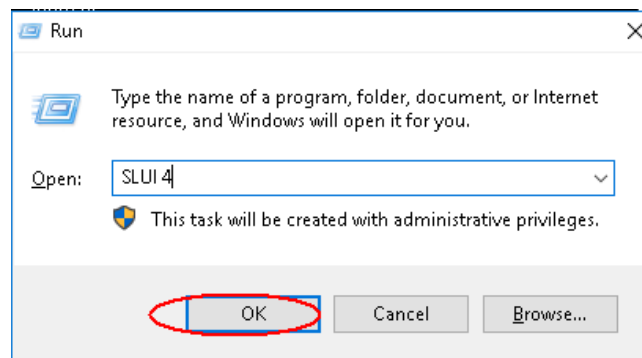
4. In the cmd command window, enter slmgr -ipk and the key on the Windows authorization label. For example, slmgr -ipk XXXXX-XXXXX-XXXXX-XXXXX-XXXXX, where X represents the key. Please note that spacing between command characters must be entered.



```
C:\> Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\cms> slmgr -ipk XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
```

5. In the following screen, press the Windows key and the R key simultaneously to open the **Run** window. SLUI 4 is entered by default. Click **OK**. Please note that there is a space between SLUI and 4, as shown below.



6. Select the country where the software to be activated is located. We take China for an example.

Select your country or region

China

Next Cancel

7. Call 800 830 1832 and then follow the voice prompts.

← Call and provide your installation ID

Call one of these numbers. The automated phone system will ask for your installation ID (IID). Some charges may be applied by local operators for toll-free numbers in certain countries or regions.

Toll free:
800 830 1832

Toll:
400 830 1832

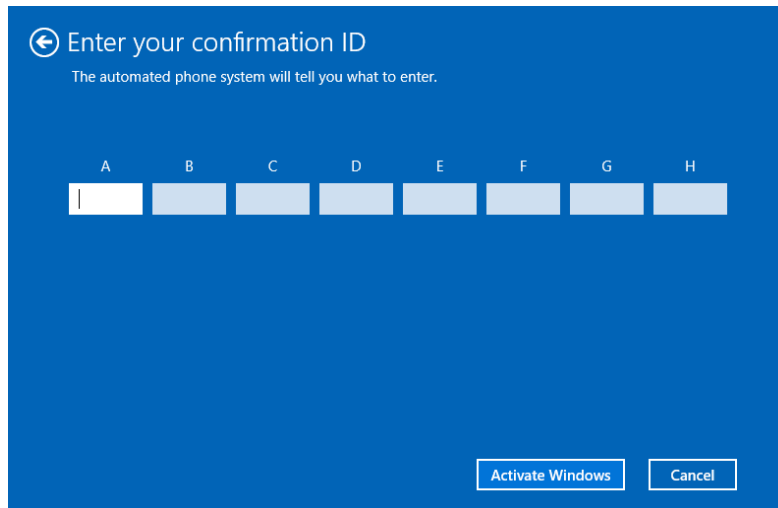
Installation ID:

1	2	3	4	5	6	7	8	9
5090895	4135010	2402125	1447836	4148852	3012446	8940683	3821524	3764482

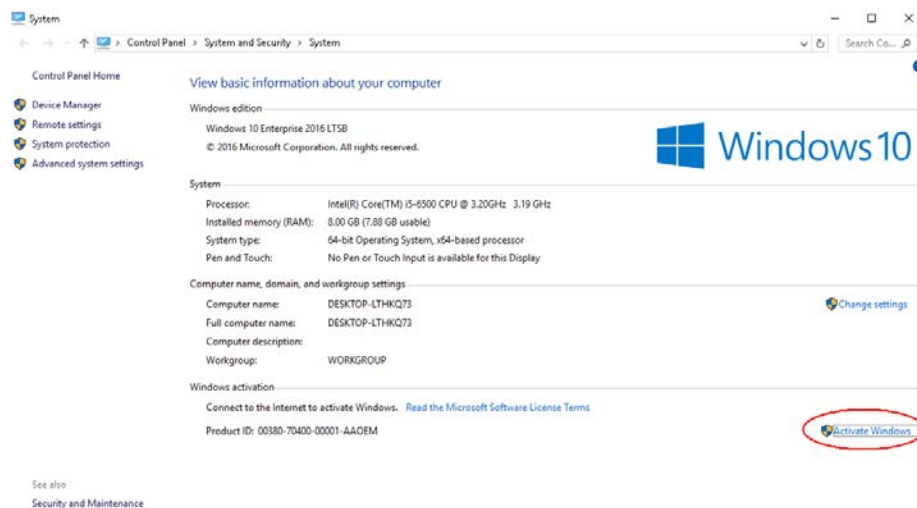
[Read our privacy statement](#)

Enter confirmation ID Cancel

8. Enter ID per voice prompt.

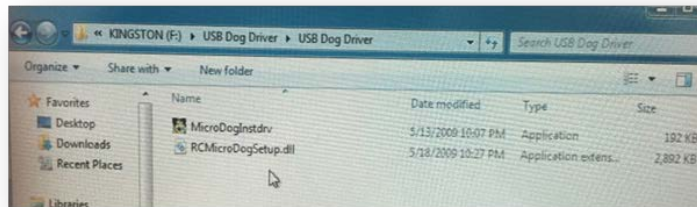


9. Right-click on This PC and then select **Properties**. Upon successful activation, **Change product key** will be displayed instead of **Activate Windows**. Please note that the description displayed varies with language settings.

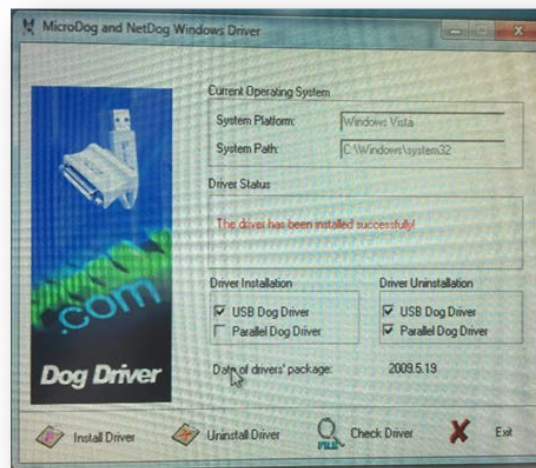


8.2.3.6 Installing the BeneVision Dongle Driver

1. Insert the BeneVision Software Tools CD (PN 115-047955-00) containing the BeneVision Dongle Driver (P/N 897-000062-00).
2. Click and open the folder titled "USB Dog Driver". Open the subfolders and double click on the "MicroDogInstdrv" application. The application installs the driver for the license dongle.



3. When the Micro Dog Driver installation window opens, select **USB Dog Driver** under Driver Installation. Finally click the **Install Driver** button on the lower left hand side of the window.
4. When installation is complete, look for the message in red "The driver has been installed successfully". Click **Exit** to exit from installation of the Micro Dog Driver.










8.2.3.7 Configuring IP Address

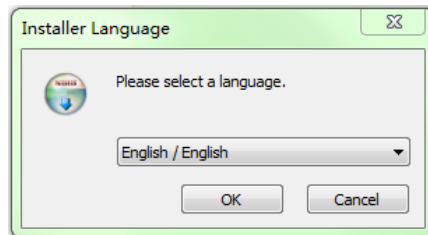
1. Connect an Ethernet cable between the LAN connection on the back of the computer and an Ethernet hub or switch.
2. From the Windows 7 desktop, click the START icon→ CONTROL PANEL→ NETWORK AND SHARING CENTER→ CHANGE ADAPTER SETTINGS.
3. Configure the "Local Area Connection 2" for static IP address with an address of 172.16.0.X for 800G1/800G2/800G3 computer or 192.168.0.X is for KISS computer. Configure the subnet mask to 255.255.0.0.
4. Configure the "Local Area Connection" for static IP address with an address of 192.168.0.X for 800G1/800G2/800G3 computer or 172.16.0.X is for KISS computer. Configure the subnet mask to 255.255.0.0.

8.2.3.8 Installing CMS Software

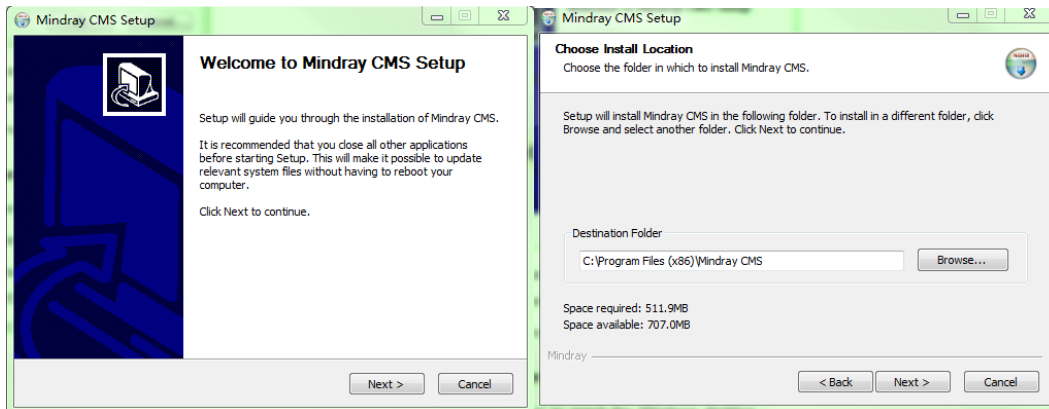
1. Insert the BENEVISION CMS Software CD. Click to select and open the "CMSSetup" folder. Double click to open the "CentralStationSetup.exe" application to begin the installation process.

 CentralStationSetup.exe	2017-1-9 19:13
 cmslognote.dll	2017-1-6 16:09
 installassistant.dll	2017-1-6 16:09
 log.dll	2017-1-6 16:09
 mfc100u.dll	2017-1-6 16:09
 msvc100.dll	2017-1-6 16:09
 msvcr100.dll	2017-1-6 16:09

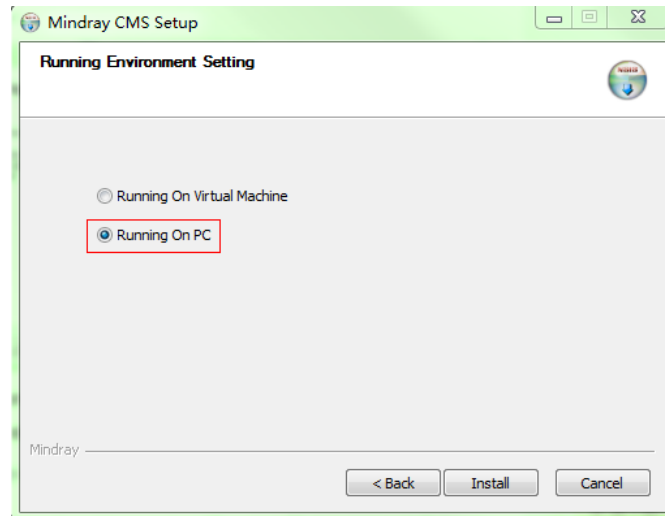
2. When prompted, select **English** as the default language.





3. Select **Next** to continue the installation.



4. Select **Running On PC**, and then select **Install**.



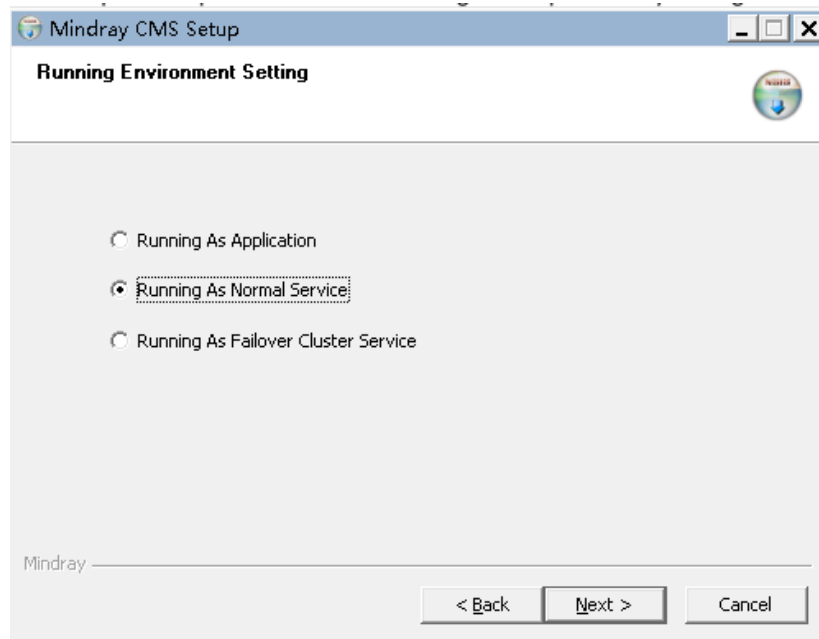
5. Select **Finish**. The CMS will start automatically.
6. From the Central Station, select  →  **System Setup** and then select **Factory Maintenance**. Enter the password 332888. Select Exit to Windows to return to the Windows desktop.
7. Install the McAfee Solidifie by referring to 5.1 Installation and 5.2 **Enabling the Solidifier**.
8. Restart Computer and restore the database using the previously backed up .bak file, or manually configure all BeneVision CMS settings and Peripheral Devices. Return system to service.

8.3 Database Update

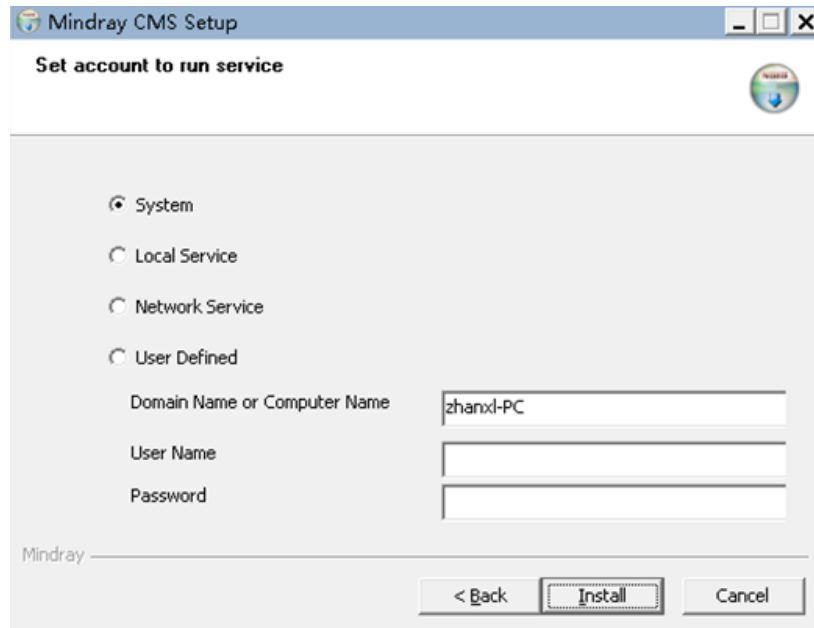
Refer to section **3.3.18**

Installing the CMS System Software (Running As Normal Service)

7. Enter the Running Environment Setting screen. For how to enter this screen, see section **3.3.16 Installing the CMS System Software (Running As Application)**.
8. In the Running Environment Setting screen, select Running As Normal Service or Running As Failover Cluster Service. The following procedures take Running As Normal Service as an example.




9. Select **Next**.
10. Select the proper privileges for services. The following figure serves as an example only.

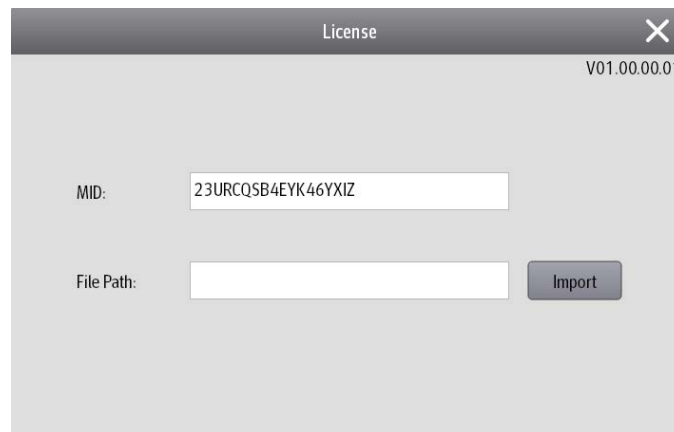


The descending order of privileges is System, Local Service, Network Service, and User Defined.

If **User Defined** is selected, the system will automatically create a system user depending on the user name and password entered.

11. Import a license.

A valid license dongle or a license file is required for starting a service. If a license file is available, click the  icon (license tool PN: 110-005825-00). The **License** dialog is displayed. In this dialog, select **Import** and then select the path where the license file is located.

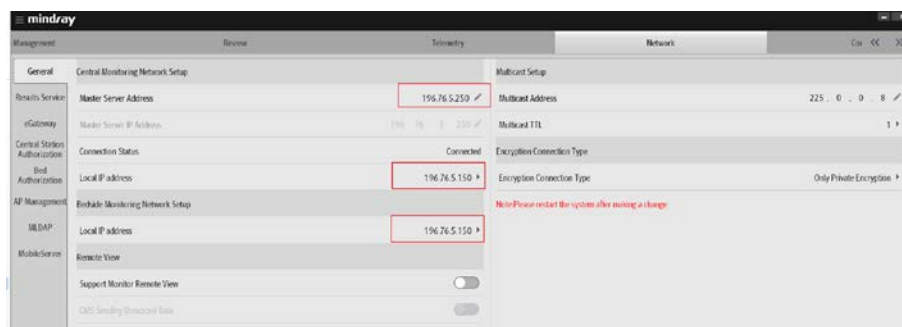


12. After importing the license successfully, restart the system.

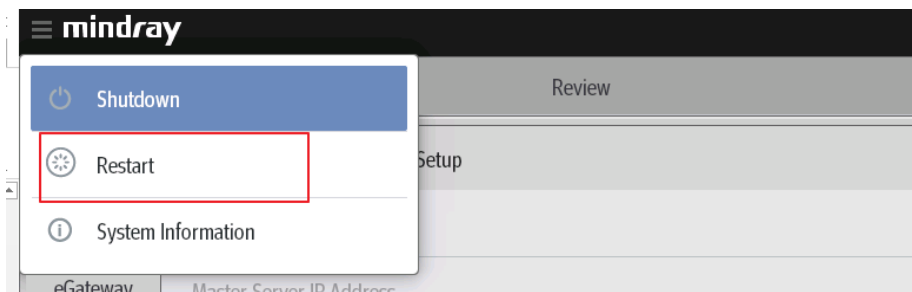
8.3.1.1 Configuring the Network Tab



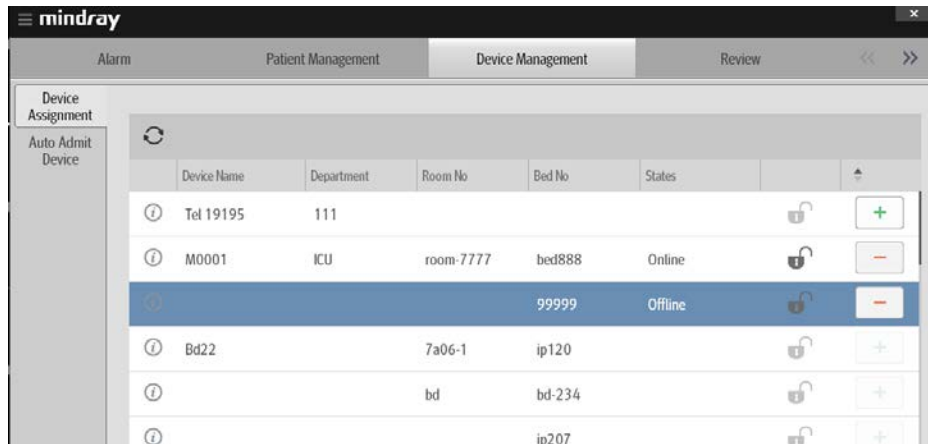
7. Click the desktop shortcut. The configuration tool screen is displayed.
8. Enter the login password. The default password is 888888.
9. Select the **Network** tab and the nconfigure network items. The items marked in red rectangle must be configured. IP addresses in the figure below are for reference only.



10. Restart the CMS.



11. Admit monitoring devices as below: Select the **Device Management** tab. Select the "+" button besides the desired monitoring device.



12. Configure other items if needed.

NOTE

- Upon completion of successful network setup, you can access the configuration tool screen via the WorkStation connected to the CentralStation. At the WorkStation, select the system menu area in the upper left corner of the screen- select System Setup-select the Network tab-select the Central Station Connection tab-select the desired CentralStation-select the Setup button.

Database Update (Optional).

8.4 Configuring Printer

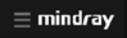

Refer to section 3.6 *Installing Printer*.

8.5 Installing Dual Displays

Refer to section 3.3.1 *Implementing Double Screen Display by DP-to-VGA Adapter* for dual displays connection and settings.

8.6 Setting the Size and Display Layout of CMS Screen

1. Access the CMS system.

2. Select the system menu area  in the upper left corner of the screen.
3. Select  **System Setup**→ **Display**→**Screen**→ **Screen Size**. Adjust the screen size of the CMS system in accordance with actual screen size. Restart PC to enable the screen size settings.

8.7 Setting Language and Time

Refer to section **3.3.9 Configuring System Windows Region and Language** for language settings.

Refer to section **3.3.11 Configuring Windows System Operating Time** for time settings.

9 Maintenance and Cleaning

9.1 Maintenance

Failure on the part of the responsible hospital or institution employing the use of the central monitoring system to implement a satisfactory maintenance schedule may cause undue equipment failure and possible health hazard.

WARNING

- **The safety checks or servicing involving any disassembly of devices should be performed by professional servicing personnel; otherwise, it may lead to undue equipment failure and possible health hazards.**
-

9.1.1 General Inspection

Whenever your system is repaired or upgraded, a thorough inspection should be performed by qualified service personnel to ensure the reliability.

Before the central monitoring system is put into use and when it is in use, follow these guidelines to inspect it:

- Inspect the equipment and its accessories for mechanical damage;
- Inspect if the environment and power supply meet the specified requirements;
- Inspect all power cords and signal lines for fraying or other damages, and if they are properly connected and insulated;
- Inspect if the sound system functions normally;
- Inspect if each function of the system is in good condition;
- In case of any damage or abnormality, do not use the central monitoring system. Contact the hospital biomedical engineers or our service personnel immediately.

9.1.2 System Performance Test

After the central monitoring system is reinstalled or quick recovery installation is performed, follow this procedure to make sure that the system functions correctly:

- Display setup
- Functional test of admitting patient
- Record and print
- Clear test data
- Shut down

9.2 Cleaning

Your equipment should be cleaned on a regular basis. If the CMS accumulates heavy dust, it should be cleaned regularly. The equipment to be cleaned includes the main unit (including power fan, cabinet fan or other fan etc.), displays, printer, recorder, keyboard and mouse. Before cleaning the equipment, consult your hospital's regulations for cleaning, disinfecting and sterilizing equipment

WARNING

- **Be sure to shut down the system and disconnect all power cords from the outlet before cleaning the equipment.**
 - **Cooling fans installed on CPU, display adapter and cabinet should be cleaned on a regular 6-months time interval. If any malfunction of cooling fan is encountered, please contact supplier for replacement as soon as possible. Dust accumulation on cooling fans can lead to failure due to high temperature.**
-

The exterior surfaces of the equipment may be cleaned with a clean and soft cloth, sponge or cotton ball, dampened with a non-erosive cleaning solution. Drying off excess cleaning solution before cleaning the equipment is recommended. Following are examples of cleaning solutions:

- Hydrogen peroxide (3%)
- Ethyl alcohol (70%)
- Host cleaning solutions
- Liquid crystal display (LCD) detergent

Follow these rules to clean the equipment; Failure to do so may cause the material to melt, distort, or may dull the finish of the case, blur lettering on the labels, or cause equipment failures.

- ALWAYS dilute the solutions according to the manufacturer's suggestions.
- ALWAYS wipe off all the cleaning solution with a dry cloth after cleaning.
- NEVER SUBMERGE the equipment into water or any cleaning solution, or POUR or SPRAY water or any cleaning solution on the equipment.
- NEVER permit fluids to run into the casing, switches, connectors, or any ventilation openings in the equipment.
- NEVER use abrasive materials and erosive or acetone –based cleaners.

WARNING

- **Disinfection or sterilization may cause damage to the equipment; therefore, when preparing to disinfect or sterilize the equipment, consult your hospital's infection controllers or professionals.**
 - **The cleaning solutions above can only be used for general cleaning. If you use them to control infections, we shall assume no responsibility for the effectiveness.**
-
-

9.3 Preventative Maintenance

9.3.1 Display Monitors

The monitor panel and housing should be cleaned by the user as required.

WARNING

- **Do not clean the monitor while it is turned on and/or plugged in.**
-
-

NOTE

- **Never use an abrasive glass cleaner containing highly concentrated ammonia and strong base chemicals since they damage the surface treatment.**
-

9.3.2 LCD Display Chassis

WARNING

- Do not clean the monitor while it is turned on and/or plugged in.
 - Do not spray any cleaner directly on a display. It could possibly leak inside the unit and cause damage.
-

Clean the chassis with a lightly moistened soft cloth.

9.3.3 Care and Cleaning of the Screen/Touchscreen

For the best performance, it is recommended that the touch screen on the BeneVision display(s) be kept clean. You can use any standard glass cleaner to clean the screen. Use a cloth or towel to apply the cleaner. Glass cleaner sprayed directly on a display could possibly leak inside a non-sealed unit and cause damage. Remove fingerprints and stains by using a liquid lens cleaner and a soft cloth.

To prevent scratches on the front panel of the display screen, observe the following precautions when cleaning:

WARNING

- DO NOT spray any liquids directly on the screen.
 - DO NOT use abrasive cleaning materials to clean a touch screen.
 - DO NOT wipe a dry screen.
 - DO NOT use alcohol or chlorinated hydrocarbon solvents.
 - Use a fine soft-hair brush to carefully brush away dust and dirt particles.
 - Use a soft cloth moistened with cleaner solution to wipe the touch screen clean.
-

9.3.4 CMS Chassis, Gateways, Telemetry Server Chassis and Wireless Transceiver

The external cleaning procedures should only be performed by a qualified electronic technician.

Cleaning

Use an anti-static vacuum to carefully remove accumulated dust, dirt, and lint from the various external surface areas. Be careful not to dislodge components, or connectors.

Visual Inspection

Perform a visual check to verify that dust, dirt, and lint has been completely removed, and all connectors are secured and all fans are operational.

9.3.5 Uninterruptible Power Supplies (UPS)

9.3.5.1 Rack Mounted UPS

The battery is designed to last for three (3) to five (5) years under normal use. The UPS performs a self-test automatically every two (2) weeks. If the test fails, the battery LED on the front panel of the UPS will be illuminated. If this occurs, replace the battery cartridge.

Refer to the UPS manufacturer's website for replacement battery cartridge specifications. Instructions for battery replacement are included with the replacement battery cartridge.

Mindray does not supply replacement battery cartridges for the UPS.

9.3.5.2 Desktop and Auxiliary UPS

Under normal conditions, the original battery in the UPS will last several years. Each UPS has a self-test function to determine the status of the internal battery.

9.3.5.3 UPS Model OmniVS800

To run a self-test, leave connected equipment on. With the UPS plugged in and ON, press and hold the button until the UPS beeps (about 2 seconds) then release it. If the batteries are weak, the "Replace Battery" LED will stay lit and the UPS will continue to beep after the test.

Refer to the UPS manufacturer's website for replacement battery specifications. Instructions for battery replacement are included with the replacement battery cartridge.

9.3.6 CMS Network Equipment Racks

Use an anti-static vacuum to carefully remove accumulated dust, dirt, and lint from the various external surface areas. Be careful not to dislodge components, or connectors.

Verify the mechanical integrity of all cables, wires, and network connections. Replace any frayed or kinked cables.

9.3.7 System Maintenance Schedule

9.3.7.1 Preventative/Periodic Maintenance

The Preventative Maintenance for the BeneVision CentralNetwork will consist of periodic cleaning, inspection and testing.

Network Components such as Ethernet switches, KVM switches and extenders, Antennas, and Wireless Access points have no preventative maintenance requirements.

Telemetry Packs do not require any preventative maintenance requirement other than cleaning. Refer to telemetry operator's manual for cleaning and testing instructions.

Use the following tables for each maintenance procedure:

Central Station and Telemetry Server and Equipment Rack.

Activity Area	Action	Technical Level	Method	Schedule
Cooling fans	Clean	BioMed/CE	Forced air	Annually
Power supply	Clean	BioMed/CE	Forced air	Annually
Fans	Clean	BioMed/CE	Forced air	Annually
Connections	Inspect	BioMed/CE	/	Annually
Cases	Inspect	BioMed/CE	/	Annually
UPS batteries	Test	BioMed/CE	Refer to section 8.3.5 Uninterruptible Power Supplies (UPS)	Annually

9.4 BIOS Settings

9.4.1 BIOS Settings for Kontron KISS 2U (023-001020-00) Central Station, ViewStation, WorkStation

MAIN

BIOS Information

BIOS Vendor	Phoenix Technologies Ltd.
Core Version	KTQ8758-MDY001
Compliance Version	UEFI 2.31; PI 0.9
BIOS Version	23

Board Information

Product Name	KTQ87/Flex
PCB ID	09

ADVANCED

Processor Configuration

-Active Processor Cores=	ALL
-Enabled XD=	Enabled
-Intel(R) Virtualization Technology=	Enabled
-Intel(R) Trusted Execution Technology=	Disabled

HDD Configuration

-SATA Device=	Enabled
-Interface Combination=	RAID

System Agent (SA) Configuration

Graphics Configuration

-Primary Display Selection=	Auto
-Internal Graphics=	Auto
-DVMT Pre-Allocated=	32MB
-DVMT Total Gfx Mem=	256MB
IGD Configuration	
-IGD – Boot Type=	VBIOS Default

South Bridge Configuration

-Port 80h Cycles=	LPC Bus
-State After G3=	State S0
-PS/2 Legacy device wake=	Wake from S3 Only
-USB/PCIe device wake=	Auto

LAN Configuration

-ETH1 Configuration (Left)=	Enabled
-Wake on LAN=	Enabled
-ETH2 Configuration(Right)=	Enabled

PCI bridge Configuration

-Cache Request Length Limit=	128 Bytes
-Cache Request Cout Limit=	4
-Cache Timer Transfer Limit=	8
-Cache Timer Lower Limit=	127
-Cache Timer Upper Limit=	448
-Read Prefetch=	Enabled
-Completion Cache Mode=	Light Caching

Hardware Health Configuration

-System Temperature Location=	Onboard
-Fan Cruise Control=	Disabled
-Watchdog Function=	0

Display Configuration

-Switch mode=	DP
---------------	----

AMT Configuration

-Intel(R) AMT=	Enabled
-Enter Intel(R) MEBx Setup=	Disabled
-Un-Configure ME=	Disabled

MEBx Configuration

-Enter Intel(R) MEBx Setup=	Disabled
-Un-Configure ME=	Disabled
-Hide Un-Configure ME Configuration=	Disabled

-MEBx Debug Message output=	Disabled
-USB Provision	Enabled

ME Configuration

-Intel(R) ME=	Enabled
-Intel(R) AT=	Enabled
Intel(R) Rapid Start Technology	
-Intel(R) Rapid Start Technology Support=	Enabled

BOOT

Boot Priority Order

1. USB HDD
2. USB CD
3. USB FDD
4. ATAPI CD
5. ATA HDD0
6. ATA HDD1
7. ATA HDD2
8. ATA HDD3
9. ATA HDD4
10. ATA HDD5
11. Other HDD
12. PCI LAN
13. Internal Shell
14. PCI SCSI
15. ATA HDD

9.4.2 BIOS Settings for RM/VM Central Station, ViewStation, WorkStation and Gateway (0998-00-0708-01, 0998-00-0709-01)

MAIN

System Overview

ID = 986LCD27
 Build Date = 02/05/08
 PCB ID = 10

ADVANCED

CPU Configuration

- | | |
|------------------------------------|-----------|
| - Execute Disable Bit = | Enabled |
| - Vanderpool Technology = | Enabled |
| - Intel (R) SpeedStep (tm) tech. = | Automatic |

IDE Configuration

With IDE CDROM

- | | |
|-----------------------------|--------------|
| - ATA/IDE Configuration = | Enhanced |
| - Configure SATA as = | IDE |
| - Configure SATA Channels = | Before PATA |
| - Primary IDE Master = | Hard Disk |
| - Primary IDE Slave = | Not Detected |
| - Secondary IDE Master = | Hard drive |
| - Secondary IDE Slave = | Not Detected |
| - Third IDE Master = | Atapi CD ROM |

With SATA CDROM

- | | |
|-------------------------|------------|
| ATA/IDE Configuration = | Compatible |
| Legacy Channels = | SATA only |

Primary IDE Slave = Atapi CD ROM

- | | |
|-----------------------------------|---------------|
| - Third IDE Slave = | Not Detected |
| - Hard Disk Write Protect = | Disabled |
| - IDE Detect Time Out (Sec) = | 35 |
| - ATA(Pi) 80Pin Cable Detection = | Host & Device |
| - Staggered Spin-up delay = | Disabled |

LAN Configuration

- | | |
|-------------------------------|---------|
| - ETH1 Configuration(Upper) = | Enabled |
| - ETH2 Configuration(Lower) = | Enabled |

FW/IEEE 1394 Configuration

- | | |
|--------------------------------|----------|
| - FW/IEEE 1394 Configuration = | Disabled |
|--------------------------------|----------|

SuperIO Configuration

- | | |
|---------------------------|----------|
| - Serial Port1 Address = | 3F8/IRQ4 |
| - Serial Port2 Address = | 2F8/IRQ3 |
| - Serial Port2 Mode = | Normal |
| - Parallel Port Address = | 378 |
| - Parallel Port Mode = | Normal |
| - Parallel Port IRQ = | IRQ7 |
| - Serial Port3 Address = | 3E8 |

- Serial Port3 IRQ = IRQ11
- Serial Port4 Address = 2E8
- Serial Port4 IRQ = IRQ10

Hardware Health Configuration

- Fan Cruise Control = Disabled
- Fan Cruise Control = Disabled
- Fan Cruise Control = Disabled
- Watchdog Function = Disabled

ACPI Configuration

- Suspend Mode = S3 (STR)
- Repost Video on S3 Resume = No
- ACPI Version Features = ACPI v1.0
- USB Device Wakeup From S3/S4 = Disabled

APM Configuration

- Power Management/APM = Enabled
- Video Power Down Mode = Suspend
- Hard Disk Power Down Mode = Suspend
- Suspend Time Out = Disabled
- PS/2 Kbd/Mouse S4/S5 Wake = Disabled
- Keyboard Wake Hotkey = Any Key
- Power Button Mode = On/Off
- Resume On Ring = Disabled
- Resume On PME# = Disabled
- Resume On RTC Alarm = Disabled

PCI Express Configuration

- Active State Power-Management = Disabled

Remote Access Configuration

- Remote Access = Disabled

USB Configuration

- Legacy USB Support = Enabled
- USB 2.0 Controller Mode = HiSpeed

PCIPNP

- Plug & Play O/S = No
- Allocate IRQ to PCI VGA = Yes

BOOT

Boot Settings Configuration

- Quick Boot = Enabled
- Quiet Boot = Disabled
- AddOn ROM Display Mode = Force BIOS
- Bootup Num-Lock = Off
- PS/2 Mouse Support = Auto
- Wait For 'F1' If Error = Enabled
- Hit 'DEL' Message Display = Enabled
- Lock Keyboard before OS boot = Disabled
- Allow F11 popup = Disabled
- Interrupt 19 Capture = Disabled
- Execute OEM extension = Disabled
- Default init boot order = 0->4->3->5->2->1
- Force boot Device = Disabled

Boot Device Priority

With IDE CDROM

- 1st Boot Device = 3M-TEAC CD-W552GB **
- 2nd Boot Device = PM-ST3160815AS **
- 3rd Boot Device = SM-ST3250410AS **

** Dependent on model number of drive installed in unit

With SATA CDROM

- 1st Boot Device PS-ATAPI iHAS5424B **
- 2nd Boot Device = PM-ST3160815AS **
- 3rd Boot Device = SM-ST3250410AS **

Security

- Boot Sector Virus Protection = Disabled

CHIPSET

North Bridge Configuration

- Boots Graphic Adapter Priority =	PEG/PCI
- Internal Graphics Mode Select =	Enabled, 8MB
- PEG Port =	Auto
- PEG Force x1 =	Disabled

Video Function Configuration

- DVMt Mode Select =	DVMt Mode
- DVMt/FIXED Memory =	128MB
- Boot Type =	CRT+CRT2
- Backlight Signal Inversion =	Disabled
- LCDVCC Voltage =	3.3V
- LVDS =	None
- SDVO =	CRT

South Bridge Configuration

- USB Functions =	8 USB Ports
- USB 2.0 Controller =	Enabled
- Audio controller =	Enabled
- Audio Jack Sensing =	Auto
- SMBUS Controller =	Enabled
- Restore on AC Power Loss =	Last State

EXIT

Halt on invalid Time/Date =	Enabled
Secure CMOS =	Enabled

FOR YOUR NOTES

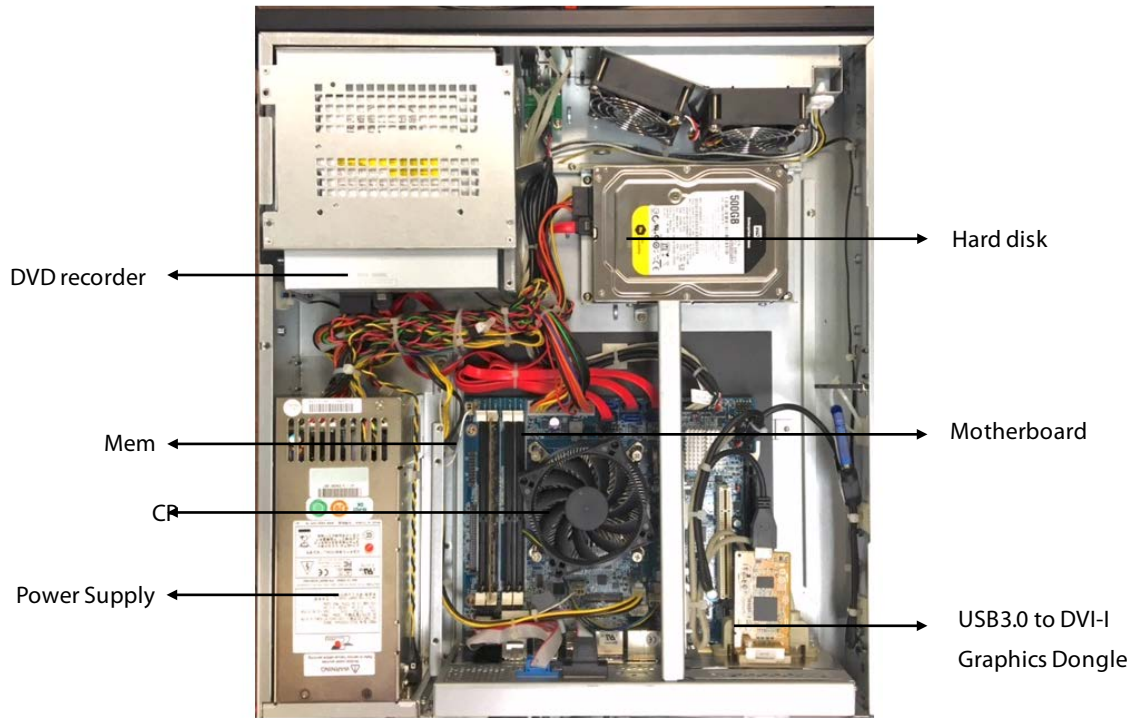
10 Parts

The parts list is shown in below table.

No.	P/N	Description
Display Components		
1		
2	115-053141-00	HP 230T 23 inch widescreen touch display
3	045-003486-00	VGA 1-4 Display Repeater Transmitter
4	045-003487-00	VGA Display Repeater Receiver
5	023-001128-00	Black 19" ELO Touch
6	023-000773-00	ATEN USB KVM Extender CE750
Service Components		
1	023-001412-00	NTP Time Server
2	023-001571-00	Serial Extender
3	137-00-0003-01	Serial Gender Changer - Male to Male
4	023-001533-00	ProDesk 600 SSD 128 GB
5	023-001670-00	ProDesk 600 ACDC
6	022-000373-00	HPE DL360G9 Power Supply(720478-B21)
7	023-001684-00	HPE DL360G9 16G Memory(805349-B21)
8	023-001685-00	HPE DL360G9 1TB HDD(846524-B21)
9	024-001037-00	HPE DL360G9 CPU Fan(792854-001)
10	023-001667-00	HP Mount for Monitors
11	023-001668-00	HP VESA Sleeve
12	023-000525-00	Black Logitech USB Keyboard/Mouse
13	023-000214-00	DP to VGA Adapter
14	300A-10-08997	RS232 Cable
15	023-000739-00	USB to Serial Converter
16	023-001667-00	HP PC Mounting Bracket
17	023-001668-00	HP Desktop Mini Security dual VESA Sleeve
18	DA8K-10-14452	Power cable
19	023-001138-00	PS/2 mouse
20	0000-10-10937	PS/2 keyboard
21	023-000525-00	USB mouse and keyboard
22	0992-00-0150-03	PS2 LONGVIEW COMPANION,830 (AMER)
23	023-001496-00	Win10 IoT Ent 2016 LTSB Value
24	115-034410-00	Windows 7 EMB x32/64x
25	023-000996-00	32G USB Stick

No.	P/N	Description
26	023-001686-00	64G USB Stick
27	115-032428-00	Dongle for CentralStation
28	115-032426-00	Dongle for WorkStation
Printers / Recorders		
1	115-032908-00	Strip Chart Recorder
2	023-001566-00	HP LaserJet Enterprise M608n
Network Hardware Components		
1	023-001379-00	Cisco POE Switch WS-C2960XR-24TS-I (24-port, L3)
2	115-047355-00	HPE OfficeConnect 1920-48G-PoE+ (370W) Switch (JG928A)
3	023-001377-00	HPE OfficeConnect 1920-24G-PoE+ (370W) Switch (JG926A)
4	023-001635-00	Aruba 2930F 24G 4SFP Switch (JL259A)
5	023-001634-00	Aruba 2930F 48G 4SFP Switch (JL260A)
6	023-001633-00	Aruba 2930F 24G PoE+ 4SFP Switch (JL261A)
7	023-001630-00	Aruba 2930F 48G PoE+ 4SFP Switch (JL262A)
8	023-001629-00	HP 1920S 48G 4SFP PPoE+ 370W Switch (JL386A)
9	023-001628-00	HP 1920S 24G 2SFP PoE+ 370W Switch (JL385A)
10	023-001627-00	HP 1920S 48G 4SFP Switch (JL382A)
11	023-001625-00	HP 1920S 24G 2SFP Switch (JL381A)
12	023-001514-00	Cisco AIR-AP2802I-A-K9
13	023-001060-00	Cisco Aironet 2602 AP
14	023-001111-00	Cisco 2504 Controller
Hardware		
1	115-051209-00	R3 CMS Host Package (2U)
2	115-050971-00	R3 CMS Host Package (Tower)
3	115-050935-00	R3 WS Host Package (Mini)
4	115-053154-00	R3 DMS Enterprise Server (1U)
Miscellaneous		
1	047-015114-00	BeneVision CMS machine labels (FDA)
2	115-012226-00	McAfee Application Control Software & Licence label
3	115-034048-00	Labeling Kit (CS/VW/WS)
4	115-034050-00	BeneVision CMS OS Patches

The following table lists the parts used for Kontron KISS 2U V2 KTQ87 (P/N: 023-001020-00).





1	023-001212-00	Motherboard, 810582-4500 (KISS 2U V2 KTQ87)
2	023-001201-00	Power supply, R1S2-5300V4V
3	023-001202-00	CPU i5-4570S 22nm FCLGA1150
4	023-001205-00	Memory, VL37B5263A-K9SD (4G)
5	023-001203-00	Harddisk 500GB SATA6Gb/s
6	023-001209-00	DVD recorder
7	023-001204-00	USB3.0 to DVI-I Graphics Dongle

11 Troubleshooting

11.1 The displaying text on the CMS screen is abnormal.

Please ensure the region and language of the operating system is the same with the language set in the CMS system.

1. To set up the region and language of the operating system, refer to section **3.3.9 Configuring System Windows Region and Language**.
2. To set up the language of the CMS, select the system menu area  in the upper left corner of the CMS screen.
3. Select  **System Setup** → enter the password → **Other** → **Language** and select the desired language.

11.2 No Waveforms Is Displayed or Stored in the Full Disclosure

Review Tab

Follow the steps below:

1. Select the ▼ button in the upper left corner of the review screen.
2. From the drop-down list, select **Full Disclosure**.
3. Select **Setup**. The **Select Waveform** menu is displayed.
3. Select the **Storage** tab.
4. Enable the desired waveforms to be stored.
5. Select the Display(Maximum: 3) tab.
6. Enable the desired waveforms to be displayed on the review page.

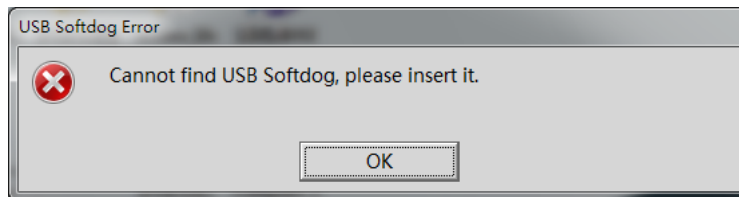
11.3 Multi-/Dual-screen changes to Single-screen during the CMS

installation

1. Check if the displays are connected to host and work functionally.
2. Check if the display mode is set correctly; please refer to section **3.3.1 Implementing Double Screen Display by DP-to-VGA Adapter**.

11.4 Remove Dongle Error

The following prompt message may appear during installation or running.



Dongle error may be caused by dongle driver not installed, dongle inserted improperly, or USB port damaged. Please check dongle driver or reinsert dongle.

11.5 CMS Unable to Connect the Bedside Monitor

This fault may be caused by network configuration, network cable plugged improperly, network cable damaged etc. Refer to the following procedures to troubleshoot this fault.

1. Check if the network cable is plugged properly.
2. Check network configuration to see if the IP address of the CMS and that of network bed number of the monitor are configured correctly.
3. Use ping command to check if the CMS can be connected to the bedside monitor. Try to ping as many monitors as possible. In the case of ping failure, the fault may lie in hardware.
4. Check if the crystal connector on the network cable or the network cable is damaged.

11.6 CentralStation Is Not Displayed in the CentralStation

Connection List at the WorkStation/ViewStation

When the desired CentralStation is not displayed in the CentralStation connection list at the WorkStation/ViewStation, do as follows:

- Verify that the Master Server IP address is configured correctly and rebooted after it was configured.
- Verify that the network connection on the back of the computer is connected to the Central network.
- -Verify that the Central Network IP address and subnet mask of the CentralStation and WorkStation/ViewStation are configured correctly.

11.7 Abnormal Database Service Handling

If database service stops by accident or runs abnormally, CMS will restart automatically.

11.8 Database update

The MYSQL database in the CMS (Version 02.XX) can be imported into the newly installed CMS (Version 03.XX).

11.9 eGateway Unable to Obtain the Exported Files from the CMS

If the CMS exported files cannot be received on the eGateway, you need change the settings on CMS and eGateway as followings.

Change the Firewall Settings on the CMS Host

1. Open "Control Panel".
2. Select **Windows Firewall**, and then "Allow a program or feature through Windows Firewall".
3. Allow "File and Printer Sharing" and "netlogon service" applications to pass through all network firewalls.

Change the SMB Authentication Level on the Gateway Host

1. Run "Gpedit.msc".
2. Select Computer Configuration→ Windows Settings→ Security Settings→ Local Policies→ Security Options.
3. Double click **Network security: LAN Manager authentication level**. The properties screen displays.
4. Set Network security: LAN Manager authentication level value to Send LM&NTLM – use NTLMv2 session if negotiated.
5. Run "Services.msc", and restart the "Server" service.

11.10 Disk Array Error

When the alarm message **Disk Array Error. Please Check!** is displayed in the system alarm area at the top of the screen, contact your service representative and replace the faulty disk with a known good one.

