Honeywell

Honeywell Process Solutions

PE2900III-Honeywell Server

Planning, Installation, and Service Guide

EP-DPCX10
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Honeywell

Notices and Trademarks

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About This Document

This document contains installation and service information for the Dell Power Edge 2900III Server (PE2900III-based Honeywell server). The instructions and service information contained herein address the server itself, and assumes that associated network communication equipment has been pre-installed by the Honeywell factory or has manuals dedicated to its installation and service. This server is not a standard Dell model and cannot be ordered independently from Dell.

Release Information

Document Name	Document ID	Release Number
PE2900III-Honeywell Server Planning, Installation, and Service Guide - HW20	EP-DPCX10	Release Independent

Revision Notes

Revision	Revision Date	Revision Notes
A	03/2009	Initial issue
B	8/26/2010	ECO P300098
C	08/02/2011	ECO P310057
D	05/02/2012	Updated for Experion R410

References

The following list identifies all documents that may be sources of reference for material discussed in this publication.

Document Title	Doc ID
TPS Users	
TPS System Site Planning	SW02-550 or later
TPS System Implementation Guide for Windows 2003/XP	TP08X
TPS System Planning Guide for Windows 2003/XP	TP10X

Document Title	Doc ID
TPS System Administration Guide for Windows XP/2003	TP06X
Experion PKS Users	
Experion PKS Overview	EP-DCSX32 or later
Experion PKS Software Installation and Upgrade Guide	EP-DCXX12 or later
Server and Client Planning Guide	EP-DSX132 or later
Server and Client Configuration Guide (for Experion PKS)	EP-DSXX22 or later
Experion PKS Operators Guide	EP-DSXX42 or later
FTE Users	
Fault Tolerant Ethernet Installation and Service Guide	FE05

Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	**ATTENTION:** Identifies information that requires special consideration.
	**TIP:** Identifies advice or hints for the user, often in terms of performing a task.
	**REFERENCE -EXTERNAL:** Identifies an additional source of information outside of the bookset.
	**REFERENCE - INTERNAL:** Identifies an additional source of information within the bookset.
CAUTION	Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.

Symbol	Definition
	**CAUTION**: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. **CAUTION** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	**WARNING**: Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death. **WARNING** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	**WARNING, Risk of electrical shock**: Potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible.
	**ESD HAZARD:** Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices.
	**Protective Earth (PE) terminal**: Provided for connection of the protective earth (green or green/yellow) supply system conductor.
	**Functional earth terminal**: Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national local electrical code requirements.
	**Earth Ground**: **Functional earth connection.** NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
	**Chassis Ground**: Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.

Contents

Tables

Figures

1. Planning

1.1 Overview

About the PE2900III-Honeywell server platform

Platforms sold by Honeywell are engineered for the process control mission of Experion and TPS systems to provide consistent, robust performance. Through an extensive qualification process, Honeywell defines specific peripheral devices, slot locations, and BIOS settings for best performance and reliability, sometimes even adding cooling fans for longer service. Honeywell platforms are then built to Honeywell specifications by the computer manufacturer.

Honeywell engineering has tested the PE2900III-Honeywell server with other Honeywell hardware and software and has qualified its use for specific configurations as identified in the Software Change Notice (SCN). This server is not a standard Dell model and cannot be ordered independently from Dell. The Technical Assistance Center (TAC) is trained on and fully supports Honeywell platforms. Use of any other server, including a similar Dell model, is considered a project special and its TAC support is limited according to the services policy.

This release of the server is based upon RAID-5 and dual power supply design. This server provides computer-based functionality for the Experion system and the TPS system. For TPS systems and certain Experion systems configured with Fault Tolerant Ethernet (FTE), the server has an LCNP4M card installed, which allows connection to the TotalPlant Process Network (TPN) coax through the LCN Media Access Unit (MAU). Additionally, the server connects to the Ethernet or FTE using the on board NIC interface or an optional dual NIC card.

Software requirements

The server runs on the following operating Systems.

- Windows Server 2003 SP2 for Experion R3xx and TPS 4xx releases.
- Windows Server 2008 non HyperV media,32-bit for Experion R400.x releases
- Windows Server 2008R2 64-bit for Experion R410.x releases.

The server platform runs the latest version of Application Processing Platform (APP Node) or Experion Server (ESVT, SIM, ACE, SCE, or EHG). Refer to the latest SCN for software applications that have been qualified for use on the PE2900III-based server platform.

BIOS configuration

All server platforms must have BIOS version 2.4.3 or later.

1.2 Description

Honeywell server model number

This user manual applies to the Honeywell-based server platform identified in the following table.

Model Number	Description	Part Number
MZ-PCSV21	PE2900III-Honeywell server (Tower Unit)	51154700-100
MZ-PCSV31	PE2900III-based Honeywell server (Rack Mount)	51154700-200

Figure 1-1 PE2900III-Honeywell server (MZ-PCSV21) Tower Unit

Equipment configuration

The server platform is used for TPS and Experion nodes. Server model number MZ-PCSV31 must be mounted in the 1-meter deep Honeywell cabinet (MP-C1MCB1) only. Server model number MZ-PCSV21 is a tower unit.

When mounted in a cabinet, the enclosure uses 5U of space. The mounting hardware (VersaRails etc.) is pre-assembled in the Honeywell factory.

This server cannot be mounted in the Icon Series console, Classic, or Z/EZ console; hence, this document does not include instructions for these types of installations.

Electronics module

The electronics assemblies for the server are based upon the single quad-core Intel Xeon® Stepped E5440 processor. The standard DDR2 memory for this platform is 1GB, 667 MHz ECC (2– 512 MB DDR2 Single Ranked Fully Buffered DIMMs), optionally expandable to 2 GB, 3 GB, or 4 GB. There are no cache memory options.

The peripheral electronics assemblies are based on the Peripheral Component Interconnect (PCI), PCI Extended (PCI-X) and PCI Express (PCI-E) bus and support USB 2.0.

Storage and media devices

The standard mass storage for this platform has 5 – 73GB 3.5” 15K RPM SAS hard drives, where drive numbers 0, 1, 2 and 3 are in a RAID-5 configuration and drive number 4 is a hot-spare.

Standard media devices in the server are the SATA DVD Combo drive and 3.5 inch floppy drive.

All mass storage devices are connected via SATA or PCIe (bus type) interfaces. The floppy drive and SATA DVD Combo drive are connected via the floppy disk connector and the SATA connector on the motherboard respectively. The RAID-5 SAS controller card is located near the card cage.

Standard features

The following is a list of the common features of this platform:

- Dell motherboard with Single Quad-Core Intel Xeon® Stepped E5440 processor, 2.83 GHz, 1333 MHz FSB, and 2X 6 MB or greater L2 Cache
- Two Integrated NIC (10/100/1000 MB per/sec Broadcom)
- PERC6/I (Firmware Version 6.1.1-0047, A08),RAID-5 Controller

- Expansion slots: six total - two 64-bit/133-MHz PCI-X slots (3.3V); one PCI-E x8 slot, and three PCI-E x4 slots
- Front Port: two USB 2.0, one ID push button with blue/amber LED, one Video, one System Power on/off button
- Rear Ports: one Serial, four USB 2.0, two RJ45, one Video, and one ID push button with blue/amber LED
- Memory: 1GB-two 512MB DDR-2 667 MHz, ECC SDRAM
- Media drives: SATA DVD Combo drive and Floppy drive
- Hard drives : five 73 GB or larger; 15K RPM, (3.5”) SAS Hard drives
- Removable Drive: 3.5 inch, 1.44 Mb floppy
- Video: integrated ATI ES1000 video controller; VGA connector, Video memory 16 MB
- 930 W Dual Redundant Power Supply
- Two 110 Volt Power Cords (tower only)
- USB compatible Windows Keyboard
- USB Optical Mouse

Optional features

The following is a list of the additional options that may be configured in your platform:

- Dual NIC
- LCNP4M
- Single NIC
- Universal ControlNet Interface
- Memory upgrade to 2 GB, 3 GB, or 4 GB

Power cords

The following table lists the AC power cords applicable to tower configuration.

Part Description	Part Number
AC power cord, 110 V	Use Dell power cord supplied with server
AC power cord, 220 V	(2) 5130557-100

The following table lists the Honeywell AC power cords (factory installed) applicable to a cabinet, rack mount configuration.

Part Description	Part Number
AC power cord, 120 V	51306373-600
AC power cord, 240 V	51306373-600

1.3 Finding Information for Your Platform

Honeywell documentation

The following table lists other Honeywell publications that may be useful when installing or operating the PE2900III-Honeywell server platform.

Table 1-1 Honeywell Publications

Publication	Contains information on
ADP01: *Honeywell Peripheral Adapters*	Contains information for using the OEP/IKB adapter with computer platforms that do not have the ISA card.
FE05: *Fault Tolerant Ethernet Installation and Service Guide*	Contains information for installing and using FTE.

Dell documentation

The following table lists Dell publications and other sources of information that will be useful when installing, operating and servicing the Honeywell Server.

Table 1-2 Dell Publications

Publication	Contains information on	Available
Information Update	Last-minute updates about technical changes to your computer or advanced technical-reference material for experienced users or technicians	Packaged with the computer
Dell™ PowerEdge™ Product Information Guide	Warranty information Safety information	Packaged with the computer www.dell.com
Getting Started With Your System	Unpacking and connecting cables	Packaged with the computer
Quick Installation Guide	Installing and configuring the server and operating system	Packaged with the computer Product Documentation CD
Dell™ PowerEdge™ PE2900III Systems User's Guide	How to remove and replace parts Technical specifications How to configure system settings How to troubleshoot and solve problems	Product Documentation CD www.dell.com
Rack Installation Guide	Installing the system in a server rack or cabinet	Packaged with the computer www.dell.com
Windows Installation Instructions and Important Information	Initialization of the Windows operating system	Packaged with the computer www.dell.com
Dell™ Systems – Raid Controller Initialization	Initializing the RAID controller	Packaged with the computer
Dell™ Systems – Upgrading Raid Firmware	Upgrading the RAID firmware	Packaged with the computer
Dell™ PowerEdge™ 2900III Systems Installation and Troubleshooting Guide	Diagnosing problems Using status indicators for troubleshooting	Product Documentation CD www.dell.com

1.4 TPN Slot Requirements

For detailed slot configuration see Table 4-2.

TPN node setup

Slot Description	Option
Slot 1 – PCI-X	Dual NIC/Single NIC/Free Slot
Slot 2 – PCI-X	LNCP4M
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

1.5 FTE Slot Requirements

The default configurations listed below are for FTE connectivity through the on-board NICs. The optional configurations listed below are for FTE connectivity through an Intel Dual NIC card. For more detailed slot configuration see Table 4-3.

If the default network configuration fails (dual embedded or Intel Pro MT PCI add-on card) fails, and if you are cannot find the similar card to replace with, then you can use the Intel Pro 1000 MT PCI based Server adapter NIC card (NE-NICS02), Single server adapter (NE-NICSS1), and NE-NICS03 card, in slot 3 PCIEx8.

FTE Supervisory and ControlNet (Default)

Slot Description	Option
Slot 1 – PCI-X	Free Slot
Slot 2 – PCI-X	ControlNet
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

FTE Supervisory and ControlNet (Optional)

Slot Description	Option
Slot 1 – PCI-X	Dual NIC
Slot 2 – PCI-X	ControlNet
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

FTE co-joined via single NIC (Default)

Slot Description	Option
Slot 1 – PCI-X	Single NIC
Slot 2 – PCI-X	LCNP4M/ControlNet
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

FTE co-joined via on-board single NIC (Optional)

Slot Description	Option
Slot 1 – PCI-X	Dual NIC
Slot 2 – PCI-X	LCNP4M/ControlNet
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

FTE co-joined via single NIC for EHG (Default)

Slot Description	Option
Slot 1 – PCI-X	Single NIC
Slot 2 – PCI-X	LCNP4M/ControlNet
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

FTE co-joined via on-board NIC for EHG (Optional)

Slot Description	Option
Slot 1 – PCI-X	Dual NIC
Slot 2 – PCI-X	LCNP4M/ControlNet
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

1.6 General Ethernet Slot Requirements

General Ethernet must be used on the first/second on-board NICs. For more detailed slot configuration see Table 4-3.

Option 1 – Single Ethernet (one on-board NIC used)

Slot Description	Option
Slot 1 – PCI-X	Free Slot
Slot 2 – PCI-X	Free Slot
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

Option 2 – Dual Ethernet (both on-board NICs used)

Slot Description	Option
Slot 1 – PCI-X	Free Slot
Slot 2 – PCI-X	Free Slot
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

Option 3 – 3 NICs, Ethernet (both on-board NICs used plus optional single NIC)

Slot Description	Option
Slot 1 – PCI-X	Single NIC
Slot 2 – PCI-X	Free Slot
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

Option 4 – 4 NICs, Ethernet (both on-board NICs used plus optional dual NIC)

Slot Description	Option
Slot 1 – PCI-X	Dual NIC
Slot 2 – PCI-X	Free Slot
Slot 3 – PCI-E x8	Free Slot
Slot 4 – PCI-E x4	Free Slot
Slot 5 – PCI-E x4	Free Slot
Slot 6 – PCI-E x4	Free Slot

1.7 Honeywell Server Options

Device options

In addition to the standard configuration for the server, your platform may be configured with additional options based on the model number you ordered. The following table lists optional items for this server.

Model Number	Option Description
TP-LCNP02-100	LCNP4M
NE-NICS01-100	Dual NIC
MZ-PCEB32-100	Single NIC

Model Number	Option Description
TC-PCIC02-100	ControlNet Interface
MZ-PCEM03-100	1 GB Memory (2 x 512 MB memory modules)
NE-NICSS1	Single NIC Card PCIe, Server
NE-NICS02	Dual NIC Card PCIe Port STP
NE-NICS03	Dual NIC Card PCIe, GB, ET Chipset

If the default network configuration fails (dual embedded or Intel Pro MT PCI add-on card) fails, and if you are cannot find the similar card to replace with, then you can use the Intel Pro 1000 MT PCI based Server adapter NIC card (NE-NICS02), Single server adapter (NE-NICSS1) card, and NE-NICS03 card in slot 3 PCIEx8.

Memory Option configuration

System memory can be increased to a maximum of 4 GB. The memory capacity can be increased to 2 GB by ordering one memory option kit, MZ-PCEM03, 3 GB by ordering two memory option kits, MZ-PCEM03, and 4 GB by ordering three memory option kits, MZ-PCEM03. Each option kit comes with two 512 MB DIMMs. Memory devices must be from the same memory supplier.

Table 1-3 shows the placement of memory devices for the memory capacity options. The table is organized so that the DIMM sockets are in the same order as they are located on the motherboard.

Table 1-3 Standard and Optional Memory Configuration

DIMM Socket	1 GB Memory (standard)	2 GB Memory	3 GB Memory	4 GB Memory
1	512 MB	512 MB	512 MB	512 MB
5			512 MB	512 MB
9				
2	512 MB	512 MB	512 MB	512 MB
6			512 MB	512 MB
10				
3		512 MB	512 MB	512 MB
7				512 MB
11				
4		512 MB	512 MB	512 MB

8				512 MB
12				

1.8 Other Options

Honeywell offers a cabinet mounted 8-port KVM switch/control console (model number TP-KVMCB1 for switch with PS/2 interface and model number TP-KVMCB2 for switch with USB interface) to provide a human interface (booting and maintenance activities) to cabinet mounted servers. Either option comes pre-installed from the Honeywell factory.

1.9 Specifications

Environmental specifications for a tower unit

Table 1-4 Environmental Operating Specifications for a Tower Unit

Description	Tower (Not Rackable)
Temperature	10º to 35º C (50º -95º F)
Relative Humidity	20 to 80%, non-condensing
Max Vibration	0.26” G at 5-350 Hz for 2 minutes
Max Shock	1 shock pulse of 41 G for up to 2 ms
Altitude	-50 to 10,000 ft

Table 1-5 Environmental Storage Specifications for a Tower Unit

Description	Tower (Not Rackable)
Temperature	-40º to 65º C (-40º to 149º F)
Relative Humidity	5 to 95%, non-condensing
Max Vibration	1.54 G at 10 – 250 Hz for 15 ms
Max Shock	6 shock pulses of 71 G for up to 2 ms
Altitude	-50 to 35,000 ft

Environmental specifications for a cabinet

The following table lists operating environmental limitations in a cabinet.

Table 1-6 Environmental Operating Specifications for a Cabinet

Description	Cabinets
Ambient room temperature	10 to 30 º C (50º - 86º F)

Humidity	20 to 80% RH, non-condensing
Operating vibration	0.012" P-P displ to 12.7 Hz, then 0.1g to 150 Hz; 60 min per axis, all 3 axes
Site induced shock	6g, 10 msec half-sine, 1 positive, 1 negative

Electronic assembly specifications

The following tables list electronic assembly specifications.

Table 1-7 Typical Operating Power Requirements

Description	Requirement
DC POWER	N/A
AC Voltage	120 (90-132) Vrms 240 (180-260) Vrms
AC RMS Current	2.45 Arms 1.34 Arms
AC Power	294 Watts 323 Watts

Table 1-8 Maximum Operating Power Requirements

Description	Requirement
DC POWER	N/A
AC Voltage	120 (90-132) Vrms 240 (180-260) Vrms
AC RMS Current	2.9 Arms 1.55 Arms
AC Power	350 Watts 350 Watts

Table 1-9 Electronic Assembly Weight and Dimensions

Description	Requirement
Height	478.79 mm (18.85 in.) w/feet
Width	226.57 mm (8.92 in.)
Depth	674.37 mm (26.55 in.) including LCD panel
Weight	45.36 Kg (100 lbs)

Hard disk drive specifications

The server platform has eight hard disk drive bays. It uses four 73 GB SAS hard drives for RAID-5 (Striping). The fifth hard drive is used as a hot spare. The sixth through eighth hard drive bays are empty. There is no option to add additional hard drive(s). Disk drives in this platform must be the same size (GB) and speed (RPM).

Table 1-10 73 GB Hard Disk Drive Power Requirements

Description	Requirement
DC 5 volt Power (typ)	5 Watts +/- 5%
DC 12 volt Power (typ)	12 Watts +10%, -8%
Other DC POWER	22 Watts Max, 10.0 Watts idle
AC Power	N/A

Table 1-11 73 GB Hard Disk Drive Weight and Dimensions

Description	Requirement
Height	25.4 mm (1 in.)
Width	101.6 mm (4 in.)
Depth	146.0 mm (5.75 in.)
Weight	0.75 kg (1.65 lbs)

Removable media specifications

The server has one dedicated 3.5 inch floppy drive. This floppy drive is to be left in place and cannot be remotely mounted. The server platform is configured with one removable media drive, a DVD Combo drive. The DVD Combo drive is connected to the SATA A connector on the motherboard.

Table 1-12 Removable Media Operating Power Requirements

Description	Device Requirements
	CDRW/DVD ROM
DC 5 volt Power	13.0 Watts

Mouse and Keyboard

The USB mouse is the standard cursor control device and is included with the server platform. A USB standard keyboard is also included.

When running Dell diagnostics the USB keyboard must be connected to a USB port on the back panel. To run Dell diagnostics successfully while the keyboard is connected to a front panel USB port you must download the latest diagnostics from the Dell Support Website at http://support.dell.com.

Honeywell offers a cabinet mounted 8-port KVM switch/control console (model number TP-KVMCB1 for switch with PS/2 interface and model number TP-KVMCB2 for switch with USB interface) to a provide human interface (booting and maintenance activities) to cabinet mounted servers. Either option comes pre-installed from the Honeywell factory.

Monitor

A monitor is required for the server operating system. This platform is configured with a single screen option only and an on-board integrated ATI ES1000 video controller. A monitor does not come with this server platform; you must order a monitor separately. A laptop with terminal emulation software can also be used.

CAUTION: The video cable must support DDC. If either a monitor or video cable that does not support DDC is connected, the display generator will default to a resolution that precludes communication with the system software and stops startup. A quick check to determine if a cable is DDC compatible is to check that pins 5, 9, and 12 of the HD 15 connector are wired. The supplied cable, part number 51196742-200 is DDC compatible.

The server platform supports industrial standard video formats, typically 1280X1024, at a refresh rate of 75Hz or 1024X768 at a refresh rate of 75Hz.

1.10 Industrial Regulatory Compliance

Overview

The compliance specifications in this section apply to cabinet installations.

WARNING

Honeywell does not claim Safety Compliance or Electromagnetic Compatibility (EMC) Compliance for system equipment configurations that have not been described in this manual as standard system configurations. Any equipment configuration other than that described in this publication decertifies the Safety and EMC compliance of this product.

Electromagnetic Compatibility (EMC)

Table 1-13 EMC Specifications (Industrial Regulatory)

European Community:	
Emissions:	IEC 61326, 1997 (Industrial Locations, CISPR 11, Class A)
Immunity:	IEC 61326, 1997 (Industrial Locations)
Attention: The following formula is a proximity guideline, for use of Portable Transceivers	
	(walkie-talkies) in the frequency range of 80MHz to 1GHz: **D > 0.30*√{P}** (D must be greater than 0.30 multiplied by the square root of P) **D** = Distance from equipment, in meters. **P** = Power Output of the Portable Transceivers (walkie-talkies), in Watts. **Examples:** P = 10 Watts, D > 0.949 meters P = 5 Watts, D > 0.671 meters P = 1 Watt, D > 0.300 meters
	Note: Electrical cables, which are routed external to the equipment, must be fully shielded cables (360 degree metallic shielding), in order to comply with the above EMC standards.

Safety compliance

Table 1-14 Safety Compliance (Industrial Regulatory)

Product Safety Compliance:	
	CSA C22.2 No. 1010.1-92 (R1999) & 1010.1B-97 (R2001) Am. 2
	IEC 61010-1, 2001, 2nd edition
	Note: Within the above referenced standards is a “Normative Reference” section citing additional standards, which may apply as, suited and required for product compliance.

1.11 Light Industrial Regulatory Compliance

The compliance specifications in this section apply to installations other than cabinets.

WARNING

Honeywell does not claim Safety Compliance or Electromagnetic Compatibility (EMC) Compliance for system equipment configurations that have not been described in this manual as standard system configurations. Any equipment configuration other than that described in this publication decertifies the Safety and EMC compliance of this product.

Electromagnetic Compatibility (EMC)

Table 1-15 EMC Specifications (Light Industrial Regulatory)

European Community:	
Emissions:	IEC 61326, 1997 (Basic Requirements, CISPR11, Class A)
Immunity:	IEC 61326, 1997 (Basic Requirements)
Attention: The following formula is a proximity guideline, for use of Portable Transceivers	
	(walkie-talkies) in the frequency range of 80MHz to 1GHz: **D >** $\sqrt{\textbf{\{P\}}}$ (D must be greater than the square root of P) **D** = Distance from equipment, in meters. **P** = Power Output of the Portable Transceivers (walkie-talkies), in Watts. **Examples:** P = 10 Watts, D > 3.162 meters P = 5 Watts, D > 2.236 meters

European Community:	
	P = 1 Watt, D > 1.000 meters
	Note: Electrical cables, which are routed external to the equipment, must be fully shielded cables (360 degree metallic shielding), in order to comply with the above EMC standards.

Safety Compliance

Table 1-16 Safety Compliance (Light Industrial Regulatory)

Product Safety Compliance:	
	CSA C22.2 No. 1010.1-92 (R1999) & 1010.1B-97 (R2001) Am. 2
	IEC 61010-1, 2001, 2nd edition
	Note: Within the above referenced standards is a “Normative Reference” section citing additional standards, which may apply as, suited and required for product compliance.

2. Installation

2.1 Introduction

Overview

This section contains procedures for installing and cabling the server as a tower unit or in a 1-meter deep Honeywell cabinet, model number MP-C1MCB1.

Tasks for installing the server

The following table lists the major platform installation tasks.

Table 2-1 Server Installation Tasks

	Task	For more information see . . .
✓	Be aware of all power and grounding requirements for your furniture.	Specific site requirements Section 2.2 “Power and Grounding Requirements” *TPN System Installation (SW20-600), Section 4, “System Grounding”*
✓	Install Tower Unit or Install the Server in the Cabinet	Section 2.4, Installing the Server and Connect Cables
✓	Start up the Server	Section 2.6, Starting up your Server.

Before you begin

Before performing the procedures in this section, perform or verify the following tasks have been performed.

✓	Description
	Verify the cabinet has been properly grounded.
	Unpack the platform from the box and verify all parts are accounted for.
	Use a #2 Philips head screwdriver.
	Position the server on a secure surface near the cabinet it will be mounted in.
	Identify and verify all necessary cables for your particular configuration are available.

2.2 Power and Grounding Requirements

Grounding for computer based nodes

The ground connection is made through the third wire in the AC power cord.

Grounding cabinets

The *TPN System Installation Manual, SW20-600, Section 4, "System Grounding"* contains information on grounding furniture, including the following:

- Ground Wiring Overview
- Grounding LCN Cabinets and Stations
- Cabinet Logic Ground
- Grounding LCN Cables

AC Power Warning

53895

WARNING

The power supply circuit is connected to AC power when the power cable is connected. The power control switch on the front panel only enables the power supply circuit outputs.

ATTENTION

It is strongly recommended that the power cord be connected to a clean power source with backup such as an Uninterruptible Power Source (UPS).

2.3 Cabinet Spacing Requirements

Server Arrangements

Due to physical constraints, only one (1) 2900III-based Honeywell server can be mounted in a new build 1-meter deep Rittal MP-C1MCB1 cabinet from Honeywell. The server must be mounted in rack space interval 11U through 15U counting from the bottom of the cabinet and moving up.

Thermal test results verified that the Honeywell 1-meter deep cabinet will provide adequate AC power and acceptable operating intake air temperatures for up to three (3) 2900III-based rack mount servers. Therefore, on a special project bases, a trained service technician can mount up to two additional servers. The mounting instructions for the additional servers are not in this document. These servers must be mounted in the first 15U of vertical rack space.

The room ambient temperature must be kept between 10º and 30º C (50º to 86º F).

Unused Cabinet Spaces

ATTENTION

To ensure proper computer cooling and airflow through the cabinet, all unused rack mount locations must have a blank front panel and air duct baffle installed.

All unused rack mount locations must have blank front panels and air duct baffles. These are available in four height options. Table 2-2 shows the four height options and the corresponding part and tab numbers each.

Table 2-2 Air Duct Baffle and Blank Front Panel Height Options

Height Option	Part	Part Number	Tab number
1U	Blank front panel	51201248	-100
	Air duct baffle	51303521	-100
2U	Blank front panel	51201248	-200
	Air duct baffle	51303521	-200
3U	Blank front panel	51201248	-300
	Air duct baffle	51303521	-300
4U	Blank front panel	51201248	-400
	Air duct baffle	51303521	-400

2.4 Installing the Server and Connect Cables

Overview

This section contains procedures for installing and cabling the server as a tower unit or in a 1-meter deep Honeywell cabinet, model number MP-C1MCB1. The human interface is accessed locally in the cabinet. This procedure assumes a new 1-meter deep equipment cabinet, Honeywell model number MP-C1MCB1, was shipped from the Honeywell factory with VersaRail slides pre-assembled.

Honeywell server back panel connections

Figure 2-1 shows the back panel of the server and identifies the connectors for all devices. It also shows an optional dual NIC card installed. Your configuration may not include this card.

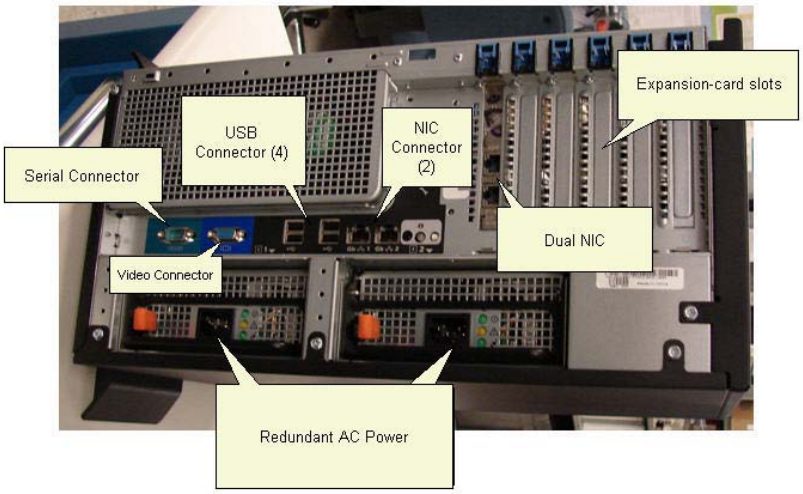


Figure 2-1 Back Panel Connections

Install the server and connect the cables

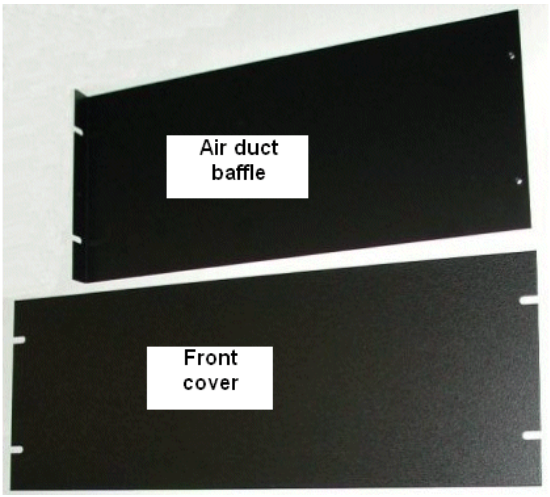
Use this procedure to install the server and connect all power cords and cables to the back panel of the server. Refer to Figure 2-1 for back panel connections.

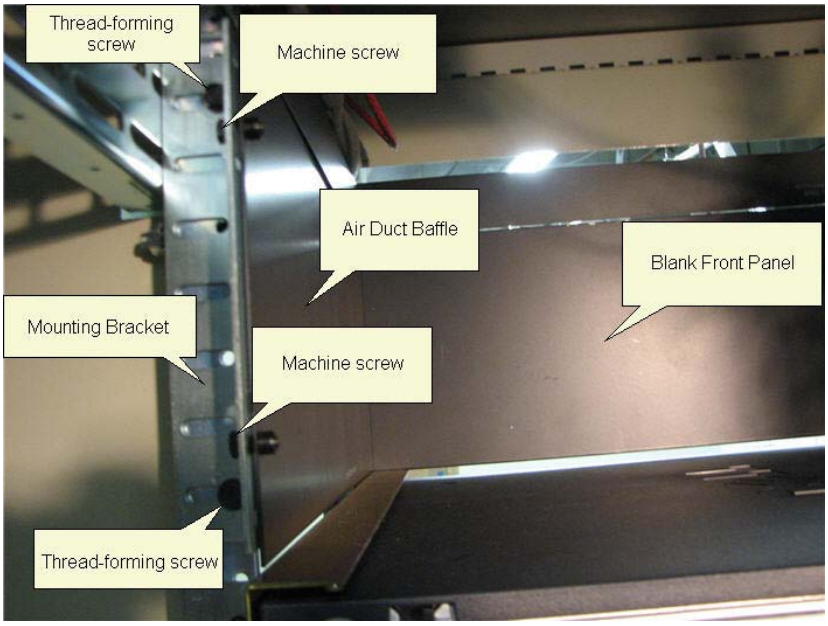
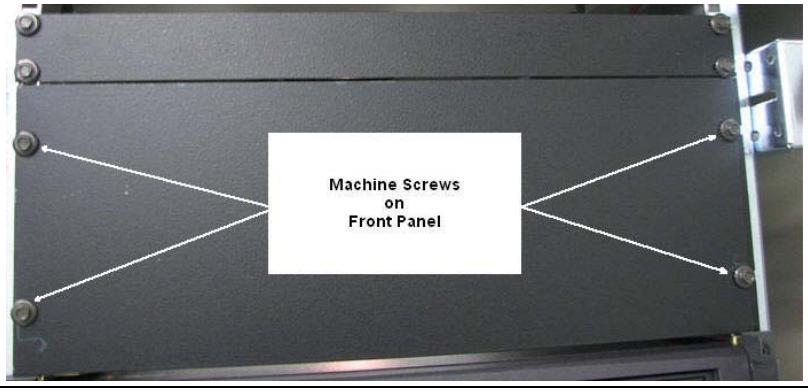
Step	Action
1	If the server is a tower unit, place the server in its proper location. Connect the power cords and all cables to the back panel of the server. Go to section 2.6 to start up your server. If the server is a rack mount, open the front cabinet doors to access the mounting rails and continue to the next step.
2	Fully extend the right and left VersaRail slides (pre-installed at the Honeywell factory) in the cabinet.
3	Lower the server into the J-shaped slots in each slide, starting with the slot closest to the cabinet. Gently push the server toward the cabinet until the retaining clips snap into place. Note: The VersaRail kit includes a cable management arm (installed in the

Step	Action
	Honeywell factory) that mounts to the rear of the VersaRail. AC power cords and KVM cables will be pre-routed through the cable management arm. For additional information, see the *"Rack Installation Guide"* provided with the instructions shipped with the cabinet.
4	Slide the server directly into the cabinet and engage the captivated retaining screws in the front flange of the VersaRails. Once both retaining screws are engaged in the threaded inserts, tighten them until the server rack mount flanges contact the front mounting rails of the cabinet.
5	If you are using the 8-port KVM switch/control console for your human interface (pre-installed in the Honeywell factory), connect the KVM cable mouse and keyboard connections to the USB connectors on the rear of the server. The KVM cable may have separate USB connections for the mouse and keyboard or they may be combined into one USB connector via a USB to PS/2 adapter (included with the KVM cable).
	Connect the video cable and network interface cable(s).
 **6**	**WARNING**: AC power cords from all computing nodes mounted within a given cabinet must be distributed across the two power entries as equally as possible. Failure to do so may result in tripping the circuit breaker(s). Connect the Honeywell AC power cords. Note: Make sure that the power cords are connected to separate power entries. For more power cord information refer to Power cords in Section 1.2.
7	If you are not using Fault Tolerant Ethernet (FTE), connect the Ethernet cable to the on-board RJ-45 connector. If you are using an Intel dual NIC card for FTE, connect the FTE cable to the NIC card in the expansion slot. If you are using the on-board NICs for FTE, connect the FTE cable to the on-board RJ-45 connector.
8	Secure any loose cables, and verify that all cables have proper strain relief.
9	If necessary, continue to Section 2.5 to install air duct baffles and blank front panels. Note: Any unused rack mount space must have an air duct baffle and blank front panel installed.
10	Go to Section 2.6, Starting up your Server, to complete the installation.

2.5 Install air duct baffles and blank front panels in cabinet

Use the following procedure to install the air duct baffle and blank front panel in the cabinet. These are available in four height options, refer to Table 2-2 for height options. Installing these parts will insure that the airflow within the cabinet allows proper cooling of the computing nodes.



Step	Action
1	Place the air duct baffle inside the cabinet with the bent tab resting along the front of the right cabinet rail. 
2	Place the blank front panel across the front of the cabinet rails and attach it to the air duct baffle and right cabinet rail using two machine screws and two external tooth washers threaded into the two clip nuts and tighten the screws. 
3	Attach the other side of the blank front panel to the left cabinet rail using two machine screws and two external tooth washers threaded into the two clip

Step	Action
	nuts and tighten the screws.
4	Attach the rear mounting bracket to the rear cabinet rail using two thread forming screws and two external tooth washers and tighten the screws.
5	Attach the air duct baffle to the rear mounting bracket using two machine screws and two external tooth washers threaded into the two self clinching nuts. Tighten the screws.

2.6 Starting up your Server

Overview

The following table lists those tasks that must be performed prior to operating your server platform. This section contains procedures for each of these tasks.

Note: Cabinet mounted servers that do not have a KVM switch/console require the connection of the USB mouse and keyboard (supplied with the server) for server startup.

✓	Task
	Turn on power and check status
	Check LCNP4M status

Turn on power and check status

Step	Action
1	Press the power button on the front panel of the PE2900III-based Honeywell Server.
2	Wait for the power light to become solid green.
3	If the power light does not become solid green, refer to the “Advanced Troubleshooting” section of the *Dell Precision™ PE2900III System User's Guide.*

Check LCNP4M status

If this is a TPS node with the LCNP4M board installed, verify that the LCNP4M passed self test.

Step	Action
1	From the **Start** menu, go to Programs>Honeywell TPS, select **LCNP4M Status**.

Step	Action
2	Verify that the LCNP4M status indicates **Passed Self Test** and the circle is green.
3	Verify that **TPN Address** appears in the **LEDs** field of the LCNP Status display once Board 0 has been configured for the node's TPN address. You will need to reset the LCNP after configuration.

REFERENCE

Refer to the LCNP Status section in the *LCNP Status User's Guide* for more information.

3. Operation

3.1 Overview

Front view of enclosure

The following figure shows the front view of the server.

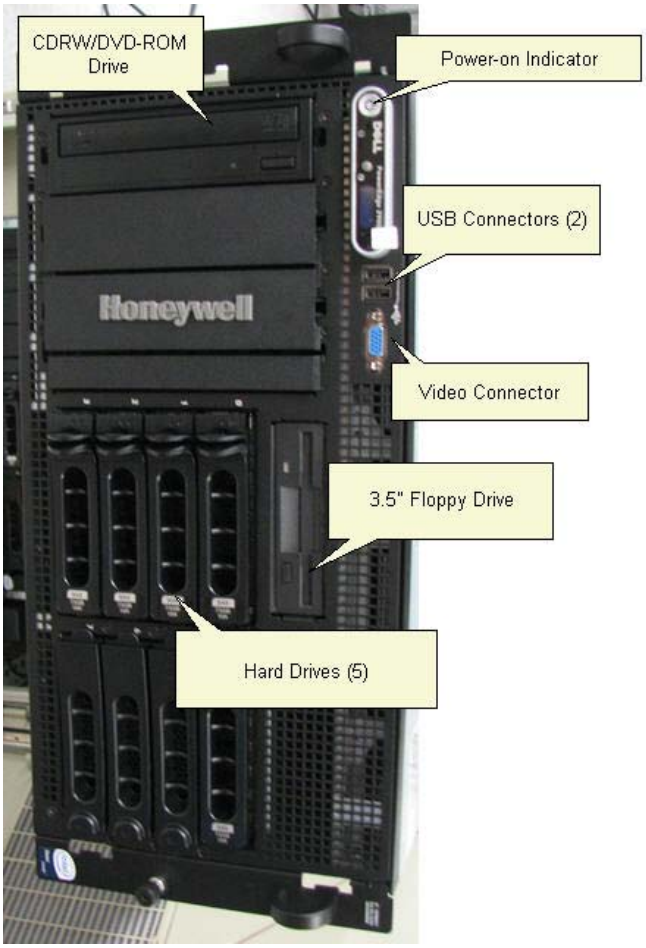


Figure 3-1 Front View of PE2900III-based Server

Additional references

The following table lists the Dell publications that contain operation and servicing information.

Table 3-1 Dell Publications for Operation and Servicing

Publication	Contains information on	Available
Information Update	Last-minute updates about technical changes to your computer or advanced technical-reference material for experienced users or technicians	Packaged with the computer
Dell™ PowerEdge™ Product Information Guide	Warranty information Safety information	Packaged with the computer www.dell.com
Dell™ PowerEdge™ PE2900III Systems User's Guide	How to remove and replace parts Technical specifications How to configure system settings How to troubleshoot and solve problems	Product Documentation CD www.dell.com
Rack Installation Guide	Installing the system in a server rack or cabinet	Packaged with the computer www.dell.com
Windows Installation Instructions and Important Information	Initialization of the Windows operating system	Packaged with the computer www.dell.com

3.2 Network Connections

Overview

Each server platform must be connected to an LCN network and/or an ETHERNET network. The standard default for the on-board NIC in the BIOS is enabled without PXE. For FTE configurations using the Intel Dual NIC card for connectivity, the BIOS must be disabled, refer to Section 4.5 to verify BIOS settings

Ethernet network

Two ETHERNET 10/100/1000 embedded Base T connections are standard on the server platform. Most TPS/Experion FTE systems will use the on-board NICs. If you are using FTE, you must install the FTE cables according to the specific instructions in the *FTE*

Installation and Service Guide. Some Experion configurations using the on-board NICs may also use an additional single or dual NIC card.

LCN network

The connection to the LCN is made through a Local Control Network Processor (LCNP4M) card. This card is a Honeywell card that allows the TPS Operator Station to emulate Universal Stations. This card provides the communication path for the server to other LCN modules. The LCNP4M consists of an LCNP4M card, a MAU cable, and the LCN MAU (Media Access Unit). The LCNP4M card is a half length PCI card that consumes PCI-X slot 2. The LCNP4M, MAU, and MAU cable are required to connect to the LCN Network.

The LCN node address should be set to the address the customer requires. If the LCN address is not known, the node address should be set to zero (0). Setting the address to zero (0) allows the node to be connected to the LCN without the risk of an address conflict with some other node. This is consistent with the current LCN standard procedure.

The server platform uses a digital system clock. When the server platform is added to an existing system that contains node running analog clocks, that system must have at least two (2) KxLCN boards for analog/digital conversion.

Note: LCNP4M card cannot be replaced with an LCNP4 card. The LCNP4M (model number TP-LCNP02-100) is required**.**

LCN cables

Tower Unit

The two cables and T-connectors (and terminators, if applicable) must be located underneath (the future location) of the unit, with an additional loop, 1 meter in length (with a T-connector), to be routed into the rear of the platform where the connection is made to the LCN MAU. The cable between the LCNP4M board and the LCN MAU is 2 meters in length.

Cabinet Mounted Server

The two LCN cables and with T-connectors (and terminators, if applicable) are routed vertically inside the left rear corner of the cabinet (when viewed from the rear door) near the vertical cable duct where the connection is made to the LCN MAU. The cable between the LCNP4M board and the LCN MAU is 2 meters in length.

Refer to *LCN System Installation, Subsection 3.6* for the rules and techniques of installing an LCN cable system.

LCN connections

The LCN Cable A and Cable B connections are made through a single cable from the LCNP4M board to the LCN Media Access Unit (MAU) contained in a metal housing.

MAU connection

Connect the MAU to both Cable A and Cable B coax T-connector as shown below (tower unit MAU shown, cabinet mounted MAU similar).

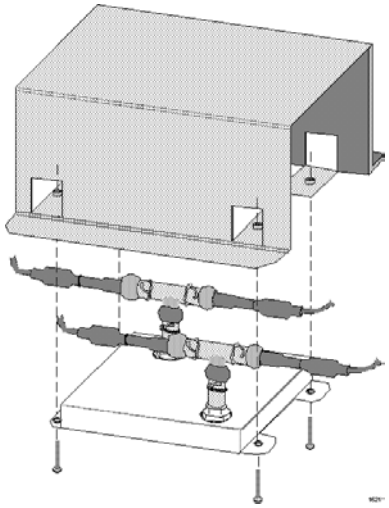


Figure 3-2 LCN MAU to LCN Cable T-Connections

ControlNet Network

A ControlNet Network is a single coaxial trunk cable broken up into segments interconnected by links. Node Connections to the network are created through a Tap and drop cable. Repeaters are used to link segments together and for changes in media from coax to fiber optic. All points on the network must either have an interface card or a terminator. Terminators are comprised of termination resistors, which are used to mark the beginning and end of a trunk segment and TDLs (Tap Dummy Load) which terminate a drop cable when no node is present. The model number for the ControlNet Universal Interface is TC-PCIC02-100.

4. Servicing

4.1 Servicing the PE2900III-Honeywell Server

Before you begin servicing

Attention

Perform a complete system shutdown before you begin any of the procedures in this section.

CAUTION

Before you begin any of the procedures in this section, follow the safety instructions in the *Dell System Information Guide*.

CAUTION

To avoid electrical shock, always unplug your computer from the electrical outlet before opening the cover.

Attention

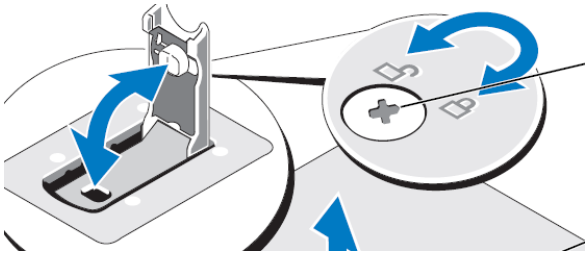
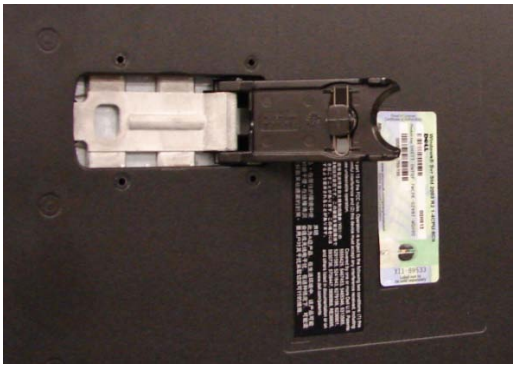
Be careful when opening the computer cover to ensure that you do not accidentally disconnect cables from the system board.

Accessing the electronics

To simplify servicing the server enclosure, see also “Removing and Installing Parts” in the Dell™ PowerEdge™ 2900III Systems Installation and Troubleshooting Guide.

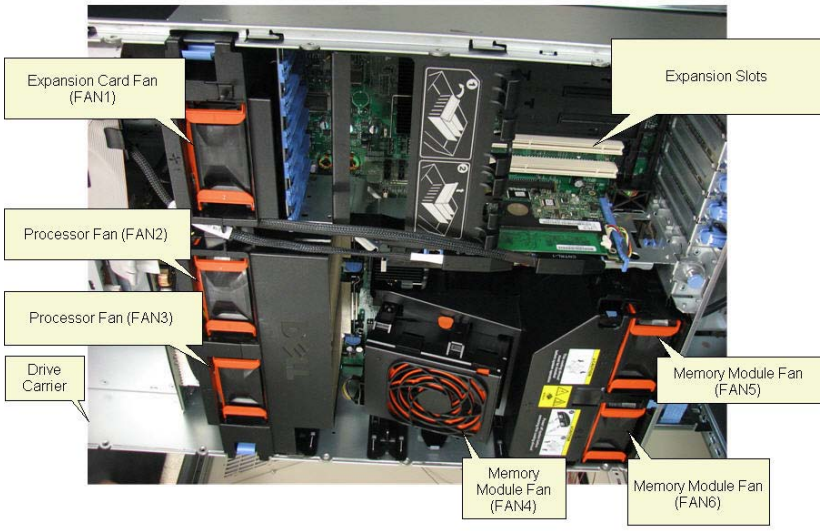
Step	Action
1	Perform a complete system shutdown.
2	Disconnect power cords and cables from the bank panel of the server.
 3	**Caution** Because of the weight (100 lbs, 45.36Kg) and length of the server two people should perform this procedure. Remove the server from the cabinet or tower unit and place on a secure surface.
4	For a tower unit: Use the system key to unlock the key lock at the right side of the bezel. While grasping the bezel, push the release latch on top of bezel, and rotate the top of the bezel away from the front panel. Unhook the bottom of the bezel and pull the bezel away from the system. Place the unit on its side on a flat stable surface with the feet overhanging the edge of the work surface.  

Step	Action
5	For a rack mount server: Use the system key to unlock the key lock at the left side of the bezel. While grasping the bezel, push the release latch on left edge of the bezel, and rotate the left edge of the bezel away from the front panel. Unhook the right side of the bezel and pull the bezel away from the system. 

Step	Action
6	Turn the latch release lock on the cover latch counterclockwise to the unlocked position. Lift up on the latch on top of the system.  

Step	Action
7	Grasp the cover on both sides and carefully lift the cover away from the system and set aside.  Rack mount  Tower Unit

Step	Action
8	Set the cover aside, away from the system.  Rack Mount  Tower Unit

Step	Action
9	Service the hardware components as required: • For servicing the LCNP4M board, see Section 4.2. • For servicing the hard drives and power supplies, see Section 4.3. • For servicing other Honeywell installed options, see Section 4.4. • For other components, see the *Dell™ PowerEdge™ 2900III Systems Installation and Troubleshooting Guide.* 

4.2 Servicing the LCNP4M

LCNP4M board description

The LCNP4M board has 16 MB of on-board memory.

Figure 4-1 LCNP4M Board

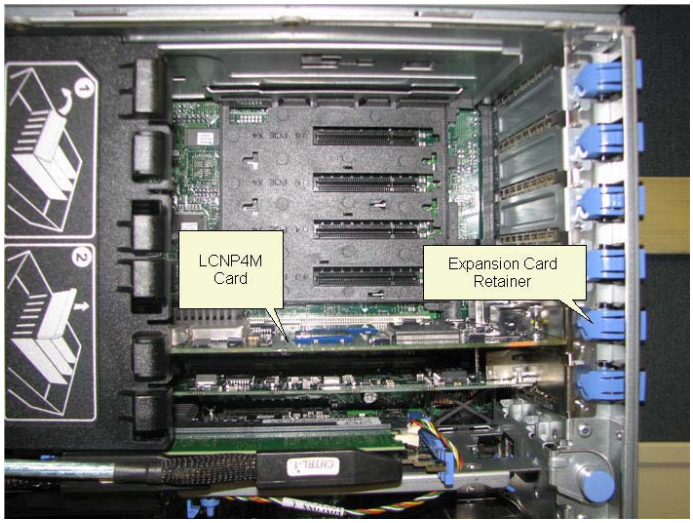
Replace the LCNP4M board

The LCNP4M board is located in the PCI-X slot 2. Use the following procedure to replace the LCNP4M assembly. See also *"Removing an Expansion Card" and "Installing an Expansion Card" in the Dell™ PowerEdge™ 2900III Systems Installation and Troubleshooting Guide.*

ESD HAZARD

The LCNP4M board is an electrostatically sensitive device. Use a grounding strap and grounded work surfaces and equipment when handling this component. Store and transport parts only in electrostatically safe containers.

Step	Action
1	Perform all procedures in Section 4.1 to access the LCNP4M card including: • Shutting down system • Disconnecting power cords and cables from the server • Accessing the electronics.

Step	Action
2	Disconnect the LCN MAU cable from the LCNP4M board.
3	Open the blue plastic expansion card retainer adjacent to the LCNP4M card in PCI-X slot 2. 
4	While wearing a grounded ESD wrist strap, grasp the LCNP4M card at the corners and gently remove it from PCI-X slot 2.
5	Align the LCNP4M card edge with the card edge guide.
6	Insert the LCNP4M card firmly into PCI-X slot 2 until the card is fully seated.
7	Install the screw that secures the assembly card bracket to the expansion slot cage. (The top of this screw may be on the underside of the bracket.)
8	Close the blue expansion card retainer.
9	Replace the cover and bezel.
10	Reconnect the LCN MAU cable to the LCNP4M card. Note: Do not route cables over or behind the cards. Cables routed over the cards can prevent the system cover from closing properly or cause damage to the equipment.
11	Replace the cover and bezel.

Step	Action
12	Replace the server in the cabinet. If using the server as a tower unit, return it to its proper location.
13	Reconnect the power cords and cables to the back panel of the server.
14	Reconnect the LCN MAU cable.
15	Press the Power On/Off button to turn the power back on.
16	Restart the Operating System.

4.3 Servicing the Hard Disk Drives and Power Supply

Overview

The server from Honeywell is configured with 5, 73 GB 15K RPM, SAS hard drives. Four are used in a RAID-5 configuration and the 5th hard drive is a hot spare. The configuration also contains redundant power supplies. Both the hard disk drives and power supplies are hot swappable. You must, however, remove and replace only one power supply or hard disk drive at a time in a system that is powered on. Refer to the Dell documentation for detailed instructions on swapping the power supply and hard disk drive.

References

The following table lists the specific Dell publications and relevant sections for troubleshooting and servicing the hard disk drives and power supplies.

Table 4-1 Dell Publications for Hard Disk Drives and Power Supplies

Publication	Contains this type of information
Dell™ PowerEdge™ 2900III Systems Installation and Troubleshooting Guide	System Overview Basic Troubleshooting Indicators, Codes, and Messages Removing and Installing Parts Jumpers and Connectors Using the System Setup Program Indicators, Codes, and Messages Finding Software Solutions Running the System Diagnostics Troubleshooting Your System Installing System Options Installing Drives Getting Help Jumpers, Switches, and Connectors I/O Ports and Connectors Abbreviations and Acronyms

4.4 Servicing Honeywell Options

Overview

CAUTION

Be careful not to damage the EMI gasket fingers when removing/installing boards.

ESD HAZARD

Use a grounding strap and grounded work surfaces and equipment when handling any electrostatically sensitive components such as the video cards, NIC adapter cards, and SCSI controller cards. Store and transport parts only in electrostatically safe containers.

Slot requirements for TPN Node Setup

The following table identifies the specific slots for the Honeywell options for a TPN node configuration.

Table 4-2 Slot Requirements for TPN Node Configuration

PCI-X slot1	PCI-X slot 2	PCI-E x8 slot 3	PCI-E x4 slot 4	5 PCI-E x4 slot 5	6 PCI-E x4 slot 6
Free Slot/ Dual NIC/ Single NIC	LCNP4M	Free Slot	Free Slot	Free Slot	Free Slot

Slot requirements for General Ethernet and FTE Node Setup

The following table identifies the specific slots for each of the Honeywell options for general Ethernet and FTE node configurations. The default configurations listed below are for FTE connectivity through the on-board NICs. The optional configurations listed below are for FTE connectivity through an Intel Dual NIC card.

Table 4-3 Slot Requirements for General Ethernet and FTE Node Configurations

Configuration	PCI-X slot 1	PCI-X slot 2	PCIE x8 slot 3	PCIE x4 slot 4	PCIE x4 slot 5	PCIE x4 slot 6
FTE Supervisory and ControlNet (Default)	Free Slot	ControlNet	Free Slot	Free Slot	Free Slot	Free Slot
FTE Supervisory and ControlNet (Optional)	Dual NIC	ControlNet	Free Slot	Free Slot	Free Slot	Free Slot
FTE co-joined via single NIC (Default)	Single NIC	LCNP4M/ ControlNet	Free Slot	Free Slot	Free Slot	Free Slot
FTE co-joined via on-board single NIC (Optional)	Dual NIC	LCNP4M/ ControlNet	Free Slot	Free Slot	Free Slot	Free Slot
FTE co-joined via single NIC for EHG (Default)	Single NIC	LCNP4M/ ControlNet	Free Slot	Free Slot	Free Slot	Free Slot
FTE co-joined via on-board NIC for EHG (Optional)	Dual NIC	LCNP4M/ ControlNet	Free Slot	Free Slot	Free Slot	Free Slot
1 NIC, Standard Ethernet via one on-board NIC	Free Slot	Free Slot	Free Slot	Free Slot	Free Slot	Free Slot
2 NICs, Standard Ethernet via two on-board NICs	Free Slot	Free Slot	Free Slot	Free Slot	Free Slot	Free Slot

Configuration	PCI-X slot 1	PCI-X slot 2	PCIE x8 slot 3	PCIE x4 slot 4	PCIE x4 slot 5	PCIE x4 slot 6
3 NICs, Standard Ethernet via two on-board NICs plus single NIC	Single NIC	Free Slot	Free Slot	Free Slot	Free Slot	Free Slot
4 NICs, Standard Ethernet via two on-board NICs plus dual NIC	Dual NIC	Free Slot	Free Slot	Free Slot	Free Slot	Free Slot

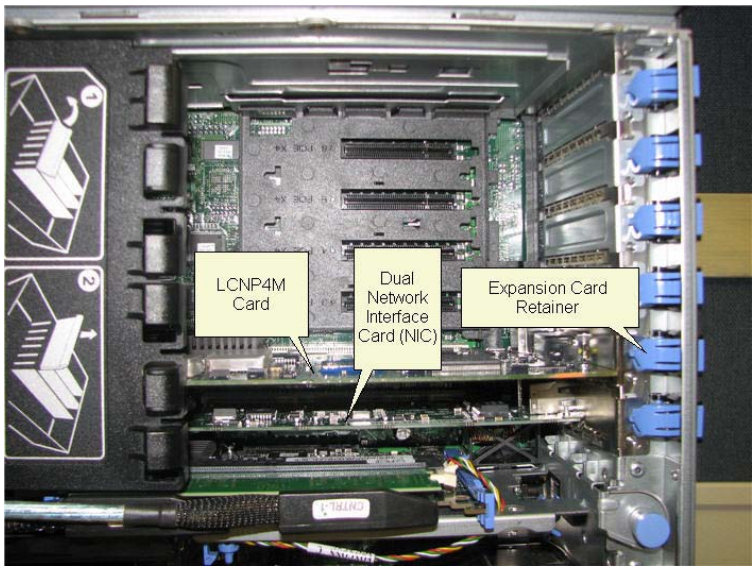
Replace cards in expansion slots

Use the following procedure to replace the expansion cards in the PCI slots. See also *"Removing an Expansion Card" and "Installing an Expansion Card" in the Dell™ PowerEdge™* PE2900III *Systems Installation and Troubleshooting Guide.*

ESD HAZARD

Expansion cards are electrostatically sensitive device. Use a grounding strap and grounded work surfaces and equipment when handling these components. Store and transport parts only in electrostatically safe containers.

Step	Action
1	Perform all procedures in Section 4.1 to access the expansion card slots including: • Shutting down system • Disconnecting power cords and cables from the computer • Accessing the electronics.
2	Disconnect cable(s) from the expansion card.

Step	Action
3	Open the blue expansion card retainer adjacent to the slot. 
4	While wearing a grounded ESD wrist strap, grasp the expansion card at the corners and gently remove it from the slot.
5	If you are replacing an expansion card, align the expansion card edge with the card edge guide and insert the expansion firmly into the slot unit the card is fully seated. If you are removing an expansion card permanently, install a metal filler bracket over the empty expansion slot opening. If you are installing a new expansion card, remove the metal filler bracket. Align the expansion card edge with the card edge guide and insert the expansion firmly into the slot unit the card is fully seated. Note: Keep this bracket in case you need to remove the expansion card later. Filler brackets must be installed over empty expansion card slots to maintain Federal Communications Commission (FCC) certification of the system. The brackets also keep dust and dirt out of the system and aid in proper cooling and airflow inside the system.
6	Close the expansion card retainer.

Step	Action
7	Connect expansion card cable to the expansion card. Note: Do not route cables over or behind the cards. Cables routed over the cards can prevent the system cover from closing properly or cause damage to the equipment.
8	Replace the cover and bezel.
10	Replace the server in the cabinet. If using the server as a tower unit, return it to its proper location.
11	Reconnect the power cords and cables to the back panel of the server.
12	Press the Power On/Off button on the platform to turn the power back on.
13	Restart the Operating System.

Add additional memory

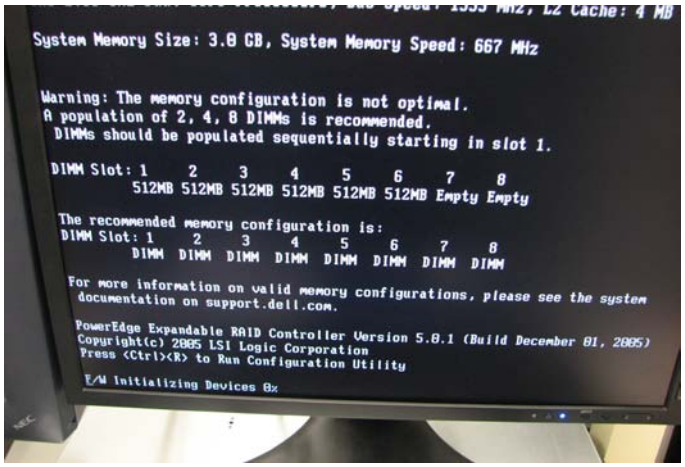
System memory can be increased to a maximum of 4 GB. The memory capacity can be increased to 2 GB by ordering one memory option kit, MZ-PCEM03, 3 GB by ordering two memory option kits, MZ-PCEM03, and 4 GB by ordering three memory option kits, MZ-PCEM03. Each option kit comes with two 512 MB DIMMs. Memory devices must be from the same memory supplier.

Table 4-4 shows the placement of memory devices for the memory capacity options. The table is organized so that the DIMM sockets are in the same order as they are located on the motherboard.

Table 4-4 Memory Upgrade Configuration

DIMM Socket	1 GB Memory (standard)	2 GB Memory	3 GB Memory	4 GB Memory
1	512 MB	512 MB	512 MB	512 MB
5			512 MB	512 MB
9				
2	512 MB	512 MB	512 MB	512 MB
6			512 MB	512 MB
10				
3		512 MB	512 MB	512 MB
7				512MB
11				
4		512 MB	512 MB	512MB
8				512MB
12				

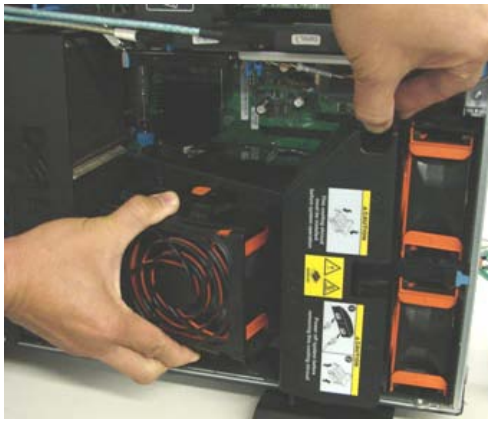
Note: When adding additional memory you may get a warning message that appears during boot up stating the memory is not optimal. This message occurs because of the interleaf memory socket design. You do not need to do anything to resolve this message. The following screen capture is an example (only) of the message. For the 2900III-based server there will be 12 DIMM slots listed.

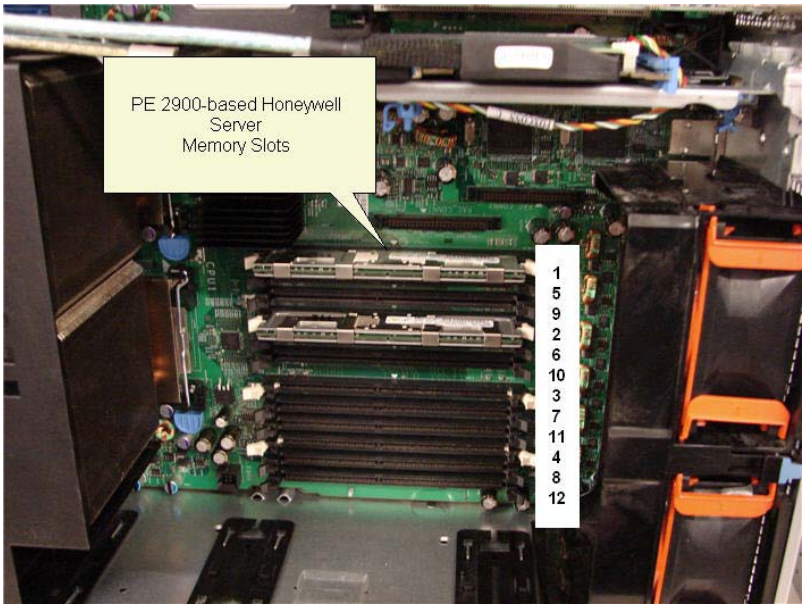


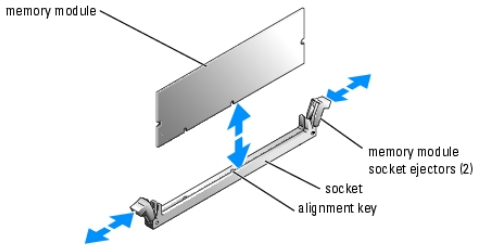
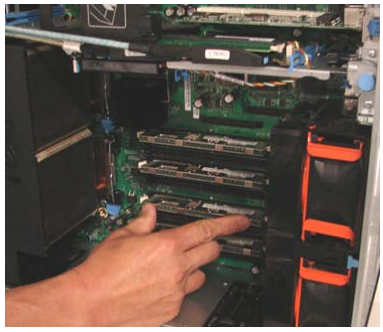
Use the following procedure to install the memory upgrade. See also "*Dell™ PowerEdge™ PE2900III Systems User's Guide*".

ESD HAZARD

Memory is electrostatically sensitive. Use a grounding strap and grounded work surfaces and equipment when handling these components. Store and transport parts only in electrostatically safe containers.

Step	Action
1	Perform all procedures in Section 4.1 to access the motherboard including: • Shutting down system • Disconnecting power cords and cables from the server • Accessing the electronics.
2	Press the release latch on the shroud and lift the handle. Slide the fan unit out, along the tracks. 

Step	Action
	CAUTION The DIMMs are hot to the touch for some time after the system has been powered down. Allow time for the DIMMs to cool before handling them. Handle the DIMMs by the edges and avoid touching DIMM components.
3	The DIMM sockets are now exposed. Refer to Table 4-4 for DIMM socket configuration. Standard configuration is shown below. 

Step	Action
4	While wearing a grounded ESD wrist strap, press the socket ejectors on the memory module socket down and out to allow the memory module to be inserted into the socket.  
5	Align the memory module's edge connector with the alignment key on the memory module socket, and insert the memory module into the socket. Note: The memory module socket has an alignment key that allows you to install the memory module in the socket in only one way.
6	Press down the memory module with your thumbs while pulling up on the socket ejectors with your index fingers to lock the memory module into the socket. When the memory module is properly seated in the socket, the socket ejectors on the memory module socket align with the socket ejectors on the other sockets that have memory modules installed.
7	Align the cooling shroud fan on its tracks and slide back into position. Make sure the release handle closes securely.
8	Replace the cover and bezel.

Step	Action
9	Replace the server in the cabinet. If using the server as a tower unit, return it to its proper location.
10	Reconnect the power cords and cables to the back panel of the server.
11	Press the Power On/Off button on the platform to turn the power back on.
12	Restart the Operating System.

4.5 Verifying Correct BIOS Settings

Purpose

All Honeywell systems must have the Honeywell recommended BIOS version. Honeywell configures specific BIOS settings in the factory for each of the server platform configurations. BIOS settings for the server are listed in Table 4-7so that you may verify the correct settings. Table 4-5 and Table 4-6 below list specific embedded NIC BIOS settings for FTE and non-FTE configurations using an Intel Dual NIC card for connectivity. If you are using the on-boards NICs for FTE and non-FTE connectivity, use Table 4-7 to verify specific embedded NIC BIOS settings.

Table 4-5 Embedded NIC 1 BIOS Settings using Intel Dual NIC Card for Connectivity

Configuration	BIOS setting	
	Embedded GB NIC 1	Toe Capability
FTE only	Disabled	Disabled
FTE with EHG	Enabled without PXE	Enable
No FTE, but 1 or 2 Ethernet ports	Enabled without PXE	Enabled
No FTE, but 3 Ethernet ports	Enabled without PXE	Enabled

Table 4-6 Embedded NIC 2 BIOS Settings using Intel Dual NIC Card for Connectivity

Configuration	BIOS setting	
	Embedded GB NIC 2	Toe Capability
FTE only	Disabled	Disabled
FTE with EHG	Disabled	Disabled
No FTE, but 1 or 2 Ethernet ports	Enabled without PXE	Enabled
No FTE, but 3 Ethernet ports	Enabled without PXE	Enabled

Accessing BIOS

Use this procedure to access BIOS and view the settings. **DO NOT** attempt to do this procedure unless you are familiar with BIOS.

Step	Action
1	Turn on the server. Press **F2** to enter the BIOS Setup.
2	Check the BIOS version is 2.4.3 or later.

BIOS Settings

This table lists the BIOS settings configured in the factory for the server platform. Your configuration may vary.

Table 4-7 BIOS Settings

	Item	Value
System Time		(As appropriate)
System Date		(As Appropriate)
Memory Information		
	System Memory Size	1.0 GB or greater
	System Memory Type	DDR2 FB-DIMM
	System Memory Speed	667 MHz or greater
	Video Memory	16 MB
	System Memory Testing	Enabled
	Redundant Memory	Disabled
	Snoop Filter	Disabled
	Low Power Mode	Disabled
CPU Information		
	64-bit	Yes
	Core Speed	2.83 GHz or greater
	Bus Speed	1333 MHz or greater

	Item	Value
	Execute Disable	Enabled
	Number of cores per processor	4
	Virtualization Technology	Disabled
	Adjacent Cache Line Prefetch	Enabled
	Hardware Prefetcher	Enabled
	Demand_Based Power Management	Disabled
	Processor 1 Family-Model-Stepping • Intel® Xeon® CPU E5440 • Level 2 Cache • Number of Cores	06-17-A or greater 2.83 GHZ or greater 12 MB or greater (2x6MB) 4
SATA Port A		CD ROM Reader
SATA Port B		OFF
Boot Sequence		
	✓ SATA CD-ROM Device ✓ Diskette drive A: ✓ Hard drive C: **Note**: ✓ implies Enabled	Enabled Enabled Enabled
Boot Sequence Retry		Disabled
Integrated Devices		
	Integrated RAID Controller	Enabled
	Embedded SATA	ATA Mode
	IDE CD-ROM Controller	Off
	Diskette Controller	Auto
	User Accessible USB Ports	All Ports ON
	Internal USB Port	On

	Item	Value
	Embedded GB NIC 1 MAC Address Capability Detected	Default: Enabled without PXE Xxxxxxxxxxx TOE If you are using an Intel Dual NIC card in your configuration see Table 4-5.
	Embedded GB NIC 2 MAC Address Capability Detected	Default: Enabled without PXE Xxxxxxxxxxx TOE If you are using an Intel Dual NIC card in your configuration see Table 4-6.
	OS Watchdog Timer	Disabled
	I/OAT DMA Engine	Disabled
	System Interrupts Assignments	Standard
PCI IRQ Assignment		
	Embedded Video	IRQ 5
	Embedded USB UHCI Controller 1	IRQ 15
	Embedded USB UHCI Controller 2	IRQ 14
	Embedded USB UHCI Controller 3	IRQ 15
	Embedded USB UHCI Controller 4	IRQ 14
	Embedded USB EHCI Controller	IRQ 15
	Embedded SATA	IRQ 11
	Integrated RAID	IRQ 10
	Embedded NIC 1	IRQ 10
	Embedded NIC 2	IRQ 10

	Item	Value
Serial Communication		
	Serial Communication	On without Console Redirection
	External Serial Connector	COM1
	FailSafe Baud Rate	115200
	Remote Terminal Type	VT100/VT220
	Redirection After Boot	Enabled
Embedded Server Management		
	Front-Panel LCD Options	Default
	User Defined LCD String	<Enter> “Blank Line”
System Security		
	System Password	Not Enabled
	Setup Password	Not Enabled
	Password Status	Unlocked
	Power Button	Enabled
	TPM Security	Off
	TPM Activation	No Change
	TPM Clear	No
	NMI Button	Disabled
	AC Power Recovery	Off
Keyboard NumLock		On
Report Keyboard Errors		Report

Exiting the BIOS setup utility

Step	Action
1	Press <Esc> key.
2	Select “Save Changes and Exit” option and then press **Enter.**
3	The system reboots.

4.6 Spare Parts Lists

Spare parts

The following table lists the optimal replaceable units (ORUs) for the server.

Table 4-8 Spare Parts for PE2900III-based Server

Description	Part No.
Mouse USB Optical Mouse	51153747-901
Keyboard USB Keyboard	51153747-902
Expansion RAM 512MB, 667 MHZ, DDR2, ECC, and SDRAM, as 1 unit of 512 MB DIMM. Must be installed in pairs.	51153731-911
Processor 2.83 GHz Intel® XEON™ Stepped E5440 Processor, 2X6MB shared L2 cache	51154700-910
RAID Controller SCSI RAID 5	51154700-902
Rack mount Rails for PE2900 Versa rails for PE2900	51154700-903
CDRW/DVD-ROM ASSY DVD Combo, TSST, 48X Serial ATA DVD Combo, TSST, 48X Serial ATA	51154700-908 51154700-909
Floppy Drive 3.5 inch, 1.44 MB	51154700-905

Description	Part No.
Manuals Electronic Documentation	51154700-907
Software Windows 2003 Server w/SP2	

5. Notices

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5.1 Documentation feedback

You can find the most up-to-date documents on the Honeywell Process Solutions support website at:

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hpsdocs@honeywell.com

Use this email address to provide feedback, or to report errors and omissions in the documentation. For immediate help with a technical problem, contact your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC) listed in the “Support and other contacts” section of this document.

5.2 How to report a security vulnerability

For the purpose of submission, a security vulnerability is defined as a software defect or weakness that can be exploited to reduce the operational or security capabilities of the software. Honeywell investigates all reports of security vulnerabilities affecting Honeywell products and services.

To report a potential security vulnerability against any Honeywell product, please follow the instructions at:

https://honeywell.com/pages/vulnerabilityreporting.aspx

Submit the requested information to Honeywell using one of the following methods:

- Send an email to security@honeywell.com.

or

- Contact your local Honeywell Process Solutions Customer Contact Center (CCC) or Honeywell Technical Assistance Center (TAC) listed in the "Support and other contacts" section of this document.

5.3 Support

For support, contact your local Honeywell Process Solutions Customer Contact Center (CCC). To find your local CCC visit the website, https://www.honeywellprocess.com/en-US/contact-us/customer-support-contacts/

5.4 Training classes

Honeywell holds technical training classes on Experion PKS. These classes are taught by experts in the field of process control systems. For more information about these classes, contact your Honeywell representative, or see http://www.automationcollege.com.

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