



IntelliVue Information Center iX

SERVICE AND INSTALLATION GUIDE

PHILIPS

Notice

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About this Document

This document contains Service, Installation, and configuration information for the following:

Local PIIC iX

Small Network PIIC iX

Enterprise Network PIIC iX

Overview PIIC iX

Express PIIC iX

Patient Link PIIC iX

Enterprise Link

Small Network Link

Small Server PIIC iX

Enterprise Server iX

Web Server iX

Mobility Server iX

Physiological Server iX

Data Warehouse Connect Interface Feature

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Overview

The Philips Intellivue Information Center iX (PIIC iX) System combines the real-time monitoring surveillance of a central station with clinical decision support tools. PIIC iX permits capturing complete waveforms, trends, alarms, and numerics from networked IntelliVue Patient Monitors (IPMs), Telemetry Systems, and the HeartStart MRx Monitor/Defibrillator.

Systems range from a single Local PIIC iX (stand-alone) to a High Availability networked Enterprise system supporting 1024 beds and connected to various systems, such as Web Servers, Hospital Information Systems, Active Directory, ICIP Systems, 12-Lead ECG Management Systems, External Time Sources, Paging Systems, and bedsides.

Available Philips-Supplied platforms are a desktop PC running Windows Embedded 8.1 Industry Pro (64-bit) and a Server running Windows Server 2012 R2 Standard Edition for Embedded Systems Operating Systems. The PIIC iX B.02 application can be installed on Windows 7 SP1 Professional (32-bit) and a Server running Windows Server 2008 R2 SP1 Standard Edition (64-bit) Operating Systems, however. For Enterprise iX Systems you can deploy a VMware OVA template or Microsoft Hyper-V package for virtual installation of Server iX on Customer-Supplied Hardware (CSH).

Intended Use

The intended use of the PIIC iX Software is to display waves, parameters, and trends; format data for strip chart recordings and printed reports; and provide the secondary annunciation of alarms from other networked medical devices at a centralized location. The PIIC iX Software provides for the retrospective review of alarms, waves, and parameters from its database.

An additional intended use of the PIIC iX Software is to provide primary annunciation of alarms and configuration and control access for networked telemetry monitors.

This product is intended for use in health care facilities by trained healthcare professionals. This product is not intended for home use.

PIIC iX Systems

A PIIC iX System consists of medical software running on a standard PC or Server with a Windows Operating System. If you decide to purchase your own display, rather than a Philips-supplied Display, it must comply to requirements described in **Customer-Supplied Display Requirements**. Philips will not install and cannot guarantee compliance with the EMC Directive of any Display not supplied by Philips.

General descriptions of Philips-provided devices are described throughout this document. For more detailed information on a particular device see the manufacturer documentation.

Key functionality

- Continuous surveillance monitoring of wired, wireless, and telemetry monitors
- Supports up to 32 patients on each Surveillance Station
- Supports Single or Dual Display configurations
- Supports Displays at 1280 x 1024, 1920 x 1080, 2560 x 1440, and 2560 x 1600 native resolutions
- Clinical Decision Support tools, including real-time Trend Display and Retrospective Review Applications
- ST/AR, the algorithm from Philips that provides continuous multi-lead analysis of ST segments and Arrhythmia detection with highly accurate, proven performance
- Web access of single- and multi-patient views
- Scalable to support from 4 to 1024 patients with up to 7 day full disclosure
- HL7 data export to IBE, ICCA, Philips legacy systems, and other Clinical Information Systems
- Inbound ADT interface
- Direct ECG export to Philips TraceMasterVue ECG Management System and other Cardiology Management Systems
- Integrated Paging controls including Waveform Paging

Added Features with Release A.01

- Active Directory interface that permits User information to be imported directly from the Server to the PIIC iX
- HL7 Tool with simulator and diagnostic ability that permits viewing HL7 service output and troubleshooting HL7 installation
- MRx defibrillator/monitor compatibility
- Switch Port Location Mapping that permits Equipment mapping to a location
- Retrospective Web Application enhancements that include:
 - iPad 2/3, Amazon Kindle, Samsung Galaxy (tablet 8.9 and 7)
 - Cardiac Review and associated reports
 - ECG Statistics and associated reports
 - Support for Web Portal Browser-based viewing of PIIC and PIIC iX patient retrospective data
- Single- and Multi-Patient Web remote surveillance review of physiological waves and parameters for up to 32 patients from a location other than that of the PIIC iX (Doctor lounge, for example)
- Additional Performance monitoring tools
 - Application Performance Monitor
 - System Performance Monitor
- Multiple Smart-hopping zones
- RAID on PC platform

Added Features with Release A.02

- Mobile access to monitoring data by networked, supported devices running IntelliVue Mobile Caregiver application
- Automatic transmission of PIIC iX and APC network statistics to an Application Performance Monitor (APM) Server

Added Features with Release B.00

- Distributed or Centralized Event delivery
- Distributed or Centralized Outbound HL7 Data
- Surveillance based Multicast Zones
- Trend upload
- HL7 store and forward
- HL7 unicode support
- HL7 support of external devices (IntelliBridge Systems)
- 12-lead Full Disclosure
- Retrospective Configuration Editor
- Addition of Patient Link PIIC iX, a host server licensed for HL7 (not licensed for surveillance or overview)
- System-Based Software Licensing
- Auto-Reconnect and Settings Sync from Local Mode
- Synchronization with settings from MX40
- Management of unassigned (orphan) devices
- Ability to forward .pdf reports to multiple destinations
- DIACAP Compliance
- PIIC iX B.00 Demo additions include:
 - Ability to connect to real bedside (IPM and MX40), as long as they are also running in demo mode,
 - Ability to customize licensed options so that the demo reflects the actual purchased options,
 - A new recorded simulation file includes 12- Lead diagnostic Full Disclosure Waves from the bedside monitor,
- Mobile Caregiver support for compatible Android devices
- OVA image available for virtual installation (VMware)

Added Features with Release B.01

- Introduction of PIIC iX Express
- 12 Lead Orders from an EMR/HIS system can be viewed, associated to a 12-lead ECG capture, and exported
- Display of Early Warning Score (EWS) obtained at the bedside monitor in the monitoring sector or patient window
- Remote Sector Setup
- **Data Warehouse Connect** feature allows patient data to be exported directly from surveillance stations to a Data Warehouse Connect Server destination for long term storage
- **Philips Holter Export** is added.
- Alarm Summary Application permits on screen display summarizing a patient's alarms for selected measurements over a specific time period, the same information included in the Alarm Summary Report.
- Added compatibility with Microsoft Windows 8.1 and Windows Server 2012 Operating Systems
- Does not require the same PIIC iX B.01.xx Software releases on all systems for compatibility, and the Primary server does not have to be the latest PIIC iX B.01 software release in the topology.
- IntelliBridge System C.01 support
- **File Export Destination** interfaces permits configuration of shared file locations you can select using **Philips Holter Export**, **Electronic Reports**, **Wave Strip Export**, and **Archive Export** features.
- ICCA H.00 interoperability using IHE as the mandatory interface

New Features with Release B.02

- Enhancement to PIIC iX Web Multi-Patient View, the Near-Real-Time patient monitoring Windows application, permits connection to one or more PIIC iX B.02 Web Servers in one browser window, and connection to a single PIIC iX A.02.xx Web Server in a separate browser instance,
- Mobility Server interface enhancements,
- Microsoft Hyper-V support,
- SQL Server Off-loading,
All dedicated Servers running on Windows Server can off load SQL Server service to a remote SQL Server Instance,
- Security Hardening of Windows 8.1, Server 2012 R2, SQL Server 2014, and .NET, Optional compliance to the Department of Defense Information, Assurance, Certification, and Accreditation Process (DIACAP),
- Support for HP DL180 Gen9 Server.

Operating Systems

Table 1-1 PIIC iX and Server iX Operating Systems

	Operating Systems			
	B.01.xx/B.02.xx	B.00.xx	A.02.xx	A.01.xx
PIIC iX	<i>Windows Embedded 8.1 Industry Pro (64-bit)</i>	<i>Windows 7 SP1 Professional (32-bit)</i>	<i>Windows 7 SP1 Professional (32-bit)</i>	<i>Windows 7 SP1 Professional (32-bit)</i>
Server iX	<i>Windows Server 2012 R2 Standard Edition for Embedded Systems</i>	<i>Windows Server 2008 R2 SP1 Standard Edition (64-bit)</i>	<i>Windows Server 2008 R2 SP1 Standard Edition (64-bit)</i>	<i>Windows Server 2008 R2 SP1 Standard Edition (64-bit)</i>

Although PIIC iX B.02.xx is shipped with Windows Embedded 8.1 Industry Pro x64 and Server iX B.02.xx is shipped with Windows Server 2012 R2 Standard for Embedded Systems (**Table 1-1**), the PIIC iX B.02 applications are compatible with some earlier release PIIC iX operating systems (**Table 1-2**)

PIIC iX Application Software Interoperability

PIIC iX B.02 hosts can co-exist with hosts at different Release B.02.xx versions (fix level differences). The Topology Primary Server does not need to be the latest B.02.xx version. Microsoft Operating System versions that are supported in PIIC iX B.02 are those shipped with PIIC iX A.01, A.02, B.00, B.01, and B.02.

Table I-2 Compatible PIIC iX Applications and Operating Systems

	Application		
	PIIC iX B.00	PIIC iX B.01	PIIC iX B.02
Windows Operating System Image Revision			
A.01.xx - Windows 7	Yes	Yes	Yes
A.02.xx - Windows 7	Yes	Yes	Yes
B.00.xx - Windows 7	Yes	Yes	Yes
B.01.xx - Windows 8.1	No	Yes	Yes
B.02.xx - Windows 8.1	No	No	Yes
Windows Server Operating System Image Revision			
A.01.xx - Server 2008 R2	Yes	Yes	Yes
A.02.xx - Server 2008 R2	Yes	Yes	Yes
B.00.xx - Server 2008 R2	Yes	Yes	Yes
B.01.xx - Server 2012 R2	No	Yes	Yes
B.02.xx - Server 2012 R2	No	No	Yes

Software Updates

PIIC iX includes distribution of application software patch updates to support deployment of software corrections.

Online Configuration

The majority of the technical and clinical (unit) configuration changes can be made online while Surveillance stations continue to monitor patients.

Remote Support

PIIC iX includes a full feature set of remote support tools that permit remote configuration, troubleshooting, and repair for Surveillance/Overview Stations and Servers. PIIC iX includes flexible remote connectivity deployment options for the traditional IPSEC or M2M iSSLlink. Support for Servers and Surveillance/Overview Stations is supported, including *over the shoulder* clinical help with appropriate security policies and features.

Customer-Supplied Hardware with Virtualization

PIIC iX includes a Customer-Supplied Hardware (CSH) option for Enterprise Servers and Web Servers.

Supported AntiVirus Software

Best practices for installation, support, and upgrade of Antivirus software used on machines running the PIIC iX Patient Monitoring application are described in the *PIIC iX and PIIC Antivirus Software Use And Configuration Guide, 4535 643 73031, Edition 5*.

Prominent supported Antivirus features and specific recommendations for peak performance of PIIC iX are also described.

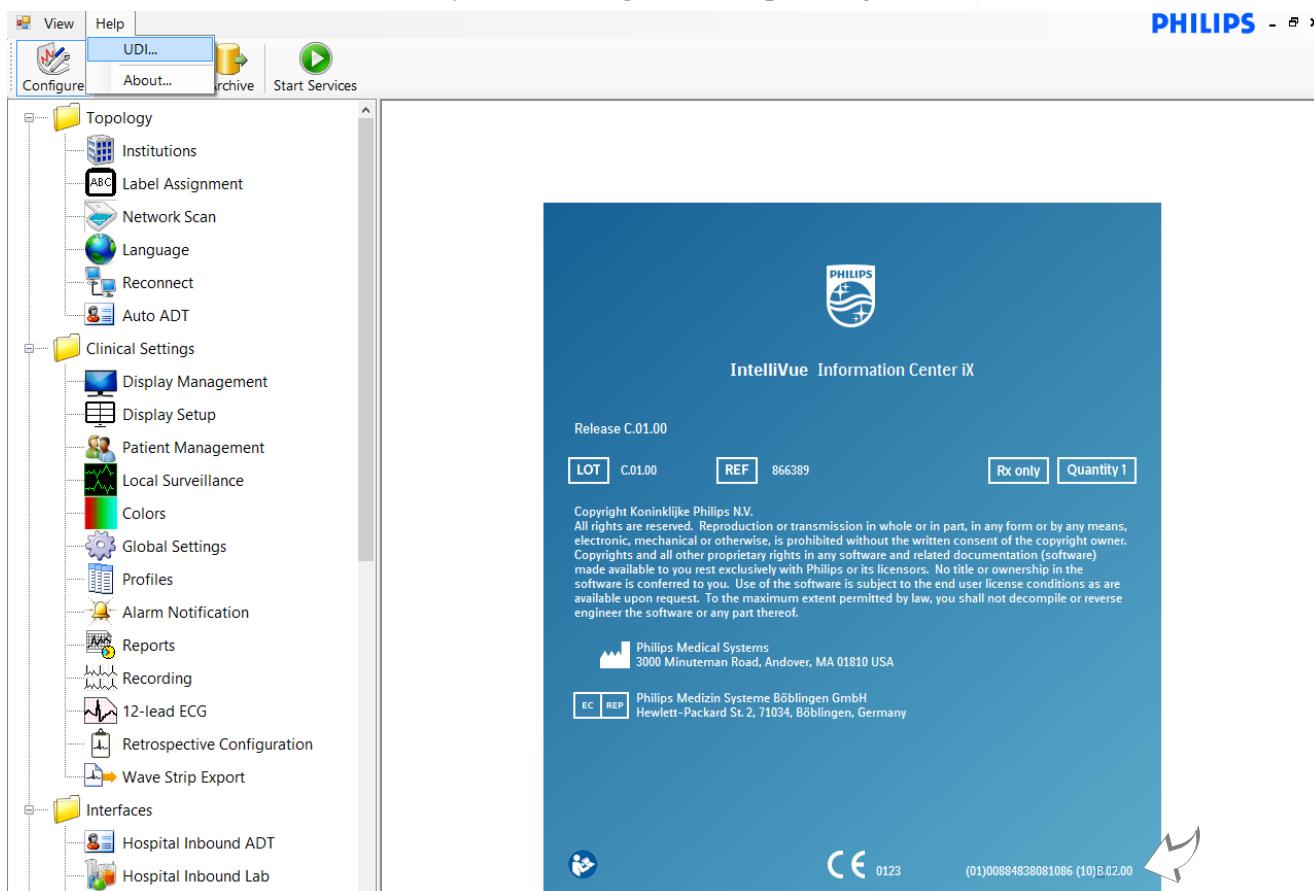
Centralized Online AntiVirus and Security Patch Support

PIIC iX includes deployment of updated anti-virus signatures and Microsoft Security Patches.

Unique Device Identifier (UDI)

FDA is establishing a unique device identification (UDI) system to adequately identify medical devices through their distribution and use. You can find the PIIC iX UDI on the PIIC iX USB Media Kit label and in the product software.

- In the **PIIC iX System Configuration** top menu go to **Help > UDI**.



Philips IIC iX Systems Description

A PIIC iX system with Philips-supplied hardware consists of medical software running on a standard PC or Server (**Chapter 3**) with a Windows Operating System. If you are using Customer-Supplied Hardware (CSH), the system components must comply with specifications documented in the *System Administrator Guide*.

WARNING	Hardware and software products (including, but not limited to PCs, Servers, peripheral devices, and network infrastructure components) that are not approved by Philips as part of an Information Center system are not approved or supported by Philips for use with Information Center and Clinical Network/Database Server systems.
	Use of hardware and software that has not been approved by Philips for use with the Information Center and Clinical Network/Database Server can result in the loss of central monitoring - including alarm annunciation - or in degradation of monitoring performance.

Table I-1 PIIC iX System Products

Product	Description
Surveillance	
PIIC iX	
Network PIIC iX	Primary real-time Surveillance PIIC iX networked with a Primary Server (Small or Enterprise)
Local PIIC iX	Primary real-time Surveillance PIIC iX with a local configuration database and up to eight Overview connections
Express PIIC iX	A local database PIIC iX licensed with Patient Connection and Surveillance features, similar to Local but with limited functionality
Overview	
Overview PIIC iX	Client capable of viewing the same surveillance information that is being acquired and displayed on an existing Surveillance PIIC iX
Primary Server	
Small Server PIIC iX	Small PC-based platform that provides shared storage of physiological and configuration data It may also support Web and hospital interfaces.
Enterprise Server iX	Large Server-based platform that provides shared storage of physiological and configuration data It may also support Web and hospital interfaces.
Physiological Server	
Physiological Data Storage Server	In topologies with greater than 128 beds, one or more Servers host a physiologic database
Web Server	
Web Server iX	Philips- or Customer-supplied hardware system that operates as a Web Server optionally running Enterprise Portal, which permits navigation to configured PIIC iX or PIIC system topologies
Web Server PIIC iX (Dedicated)	

Table I-1 PIIC iX System Products

Product	Description
Mobility Server	
Mobility Server iX (Dedicated)	Philips- or Customer-supplied hardware host that is licensed for the Mobile Access feature
Other	
System Configuration Station	Customer-Supplied Hardware meeting minimum hardware specification that can be used as a system running only PIIC iX System Configuration with no licensed features to support product remotely
PIIC iX Test System	System that permits pre-deployment testing using demo running on a Windows Server 2012 (R2) Hyper-V virtual machine.
Acquisition	
Patient Link PIIC iX	System with no surveillance monitoring that offers bed-to-bed overview,
Small Network Link	recording, and printing to one clinical unit
Enterprise Link	

Table I-2 PIIC iX System Capabilities

	Dedicated Mobility Server iX	Dedicated Web Server iX	Dedicated Physiologic Server iX	Enterprise Server with Separate Physiologic DBS ¹	Enterprise Server with Physiologic DBS ¹	PIIC iX Network				
Max # of beds/sectors on host	32		64	16	32	32		128 Storage		
Max # of beds/sectors in Topology	32	64		16	32	32	512	1024		
Max # of Connected iX Systems	8 ²	8			8	See Server iX column	160	160		
Max # of Servers in Topology	1	1	1	1			1	1	1024	1

¹ When > 512 beds is reached the Physiologic database license must be manually removed from Primary Server and enabled on a dedicated Physiologic Server or performance problems can occur.

² Only Overview iX

Table I-3 Compatibility Matrix - Philips Products

Device/Product	Software/Version
Application Performance Monitor	
APM	B.02
IntelliVue Bedside Monitor¹	
IPM (MP60-90)	
IPM (MP20-50)	
IPM (MP5/MP5T)	J.0 ² , J.1, J.2, K.0, K.1, K.2, L.0
IPM (MP2/X2)	
IPM MX800, MX700	
Telemetry	
PWD	B.00 and later
PWM MX40	B.02 and later
MRx	
MRx M3535A	F.03.05 and later
IntelliVue Cableless Measurements	
IntelliVue Cableless Measurements	A.1 and later
Paging	
IntelliSpace Event Management	IEM Rev 9.0, 10.0, 11.0
Care Event	A.00, A.01
CCP	
HIF	C.00
CCP	A.00
12-Lead ECG	
IECG	A.01 and later
Trace Master View	C.02, C.03
DatamedFT	2.0.14 and later
ICCA/HL7	
HL7/ICCA	G.00.xx and later
ICCA Trend Upload Support	H.00 ³
ICCA with Wave Strip Export	(Requires IBE)
ICCA XLink Wave Strip HTTP Import	F.00.01 and later
IntelliBridge Enterprise	
IntelliBridge Enterprise	B.02 ⁴ , C.00 ⁵
IntelliBridge and IntelliBridge System (IBS)	
IntelliBridge and IntelliBridge System (IBS)	EC10 Module EC40 and EC80 B.00 (No Alarms), EC40 and EC80 B.01, C.01 Alarm Support
PIIC Classic Prior Unit Data	
PIIC Classic	N.01.12 and later
PIIC iX Operating System	
PIIC iX Software Operating System	A.01, A.02, B.00, B.01, B.02
VMware	
vSphere (including ESXi and vCenter Server)	5.0 U3, 5.1 and 5.5
vSphere	6.0
Hyper-V	
Microsoft Hyper -V	Microsoft Server 2012 R2
IntelliVue Mobile Caregiver	
IntelliVue Mobile Caregiver	B.02

Table I-3 Compatibility Matrix - Philips Products

Device/Product	Software/Version
Web Retrospective	
Safari Mac OS X	10.10
Safari iPad iOS	8
Internet Explorer	Windows 7 / 8.1 with IE 8, 9, 10, 11
Chrome	37 or greater with Windows 7 SP1, 8.1
Firefox	31 or greater with Windows 7 SP1, 8.1
Android Tablets	Opera Mobile only
Multi-patient View	
Compatible Operating Systems and Supported Browsers	Windows XP, 32-bit SP3 with Internet Explorer 8 Windows 7, 32- or 64-bit with Internet Explorer 8, 9 or 10 (32-bit browser only) Windows 8, 32- or 64-bit with Internet Explorer 10 (32-bit browser only) Windows 8.1, 32- or 64-bit with Internet Explorer 11 (32-bit browser only)
Mobility⁶	
Apple iPad 2, 3, 4, Mini 1 & 3, Air 1 & 2	iOS 8
Apple iPhone 4S, 5, 5S, 5C, 6, 6 Plus	
Apple iPod Touch	
Samsung S3, S4, S5	
HTC One	Android 4.x
Motorola Maxx	
Samsung S6, S6 Edge	Android 5.x
Google Nexus 7" Tablet	Android 4.x, 5.x
Samsung Galaxy 3 (7 or 10") Tablet	Android 4.x
AntiVirus Software	
McAfee Virus Scan Enterprise	8.7i, 8.8
Symantec Endpoint Protection	11.0.4, 12.1

¹ MMS rev. F is not compatible with IPM rev J or greater on PIIC iX.

² Limitations with Bed-to-Bed overview and Alarm Reflector in versions earlier than J.01.xx.

³ Requires IHE

⁴ HIF B.02 included

⁵ CCP A.0 included

⁶ For most recent list of supported compatible devices and Operating Systems refer to CareEvent System Administrator Guide.

Table I-4 System Requirements

Surveillance PIIC iX		Small Server PIIC iX	Enterprise Server iX
SQL	SQL Server 2008 R2 Standard Edition ¹ SQL Server 2014 Standard Edition for Embedded Systems	SQL Server 2008 R2 Standard Edition SQL Server 2014 Standard Edition for Embedded Systems	SQL Server 2014 Standard Edition for Embedded Systems
Hardware Platform²	HP rp5800	HP rp5800	HP DL180 Gen ³
Operating System	Windows 7, SP1 Professional 32-bit Windows Embedded 8.1 Industry Pro Professional 64 bit	Windows 7, Professional 32-bit Windows Embedded 8.1 Industry Pro Professional 64 bit	Windows Server 2008 R2, SP1 Standard 64-bit Windows Server 2012 R2 Standard Edition for Embedded systems 64 bit

¹ Any machine running application software with the Demo license may use SQL Server 2008 R2 Express Edition. This is also true for any machine running Applications software with no license (System Configuration Station only machine, for example).

² PIIC iX software is also compatible to some shipped PIIC Hardware. Refer to the *PIIC iX Hardware Upgrade Guide* for hardware compatibility requirements.

³ HP DL380e Gen8 hardware shipped with earlier PIIC iX releases is also compatible with PIIC iX B.02.xx.

Product Options

Table 1-5 Options Available Under Product # 866389

Option	Description	
Documentation		
DFU	Instructions for Use	
MDK	Software Media Kit	
Customer Hardware		
H00	Customer Supplied Hardware	Requires NEW, 30N
Type of Install		
NEW	New Installation of B.xx	Select 1 of: NEW, SMA, UPG
SMA	Upgrade with SMA	
UPG	Upgrade existing PIIC iX B.xx	
Software Release		
RVB	PIIC iX Software Release B	Required
Pricing Options		
05P	PIIC iX Express Base B	Requires NEW
10P	PIIC iX Local Base B	Requires NEW
1PU	Upgrade Local Base B	Requires UPG
20P	Small Network Base B	Requires NEW
2PU	Upgrade Sm Network Base B	Requires UPG
30P	Enterprise Network Base B	Requires NEW
3PU	Upgrade Lg Network Base B	Requires UPG
Upgrade From A to B		
AB0	Overview Upgrade to B	[4-1024]
AB1	Local Upgrade to B	[4-32]
AB2	Sm Network Upgrade to B	[4-64]
AB3	Lg Network Upgrade to B	[4-1024]
ABS	SMA A to B Upgrade	[4-1024]
Upgrade Path		
UPA	Upgrade from PIIC iX A	
UPC	Upgrade from PIIC Classic	
View		
00N	PIIC iX OverView B/pt	Requires NEW
00S	SMA M3151 to B/pt	Requires SMA, UPC
00U	Upgrade M3151 to B/pt	Requires UPG
Large/Enterprise Network PIIC iX		
30N	PIIC iX Enterprise B/pt	[4-1024] Requires NEW
30S	SMA M3155/54 to B/pt	[4-1024] Requires SMA
30U	Upgrade M3155/54 to B/pt	[4-1024] Requires UPG
Large/Enterprise Network PIIC iX - No View		
35N	Enterprise Link B/pt - No View	[4-1024]

Table 1-5 Options Available Under Product # 866389

Option	Description	
Small Network PIIC iX		
20N	PIIC iX Small Network B/pt	[4-64] Requires NEW
20S	SMA M3145/69 to B/pt	[4-64] Requires SMA, UPC
20U	Upgrade M3145/69 to B/pt	[4-64] Requires UPG
Small Network PIIC iX - No View		
25N	Small Network Link B/pt - No View	[4-64] Requires NEW
Local/Standalone PIIC iX		
10N	PIIC iX Local B/pt	[4-32] Requires NEW
10S	SMA M3150 to B/pt	[4-32] Requires SMA, UPC
10U	Upgrade M3150 to B/pt	[4-32] Requires UPG
PIIC iX Standby System		
SBS	PIIC iX Standby System B	[1-32]
PIIC iX Express		
05N	PIIC iX Express B/pt	[4-16] Requires NEW
Physio Server		
PHY	Physio Server B	[1-32] Requires NEW
PHS	Physio Server SMA B	[4-32] Requires SMA, UPC
Gateway		
GTW	Gateway B	[4-64]
Dual Display Software		
C01	Expanded Patient Display B/pt	[4-1024]
EC1	Dual Display Software eB/pt	[4-1024]
Network Type		
CSC	Customer Supplied Network	
PSC	Philips Supplied Network	
Data Storage		
EDB	12 Lead Full Disclosure B/pt	[4-1024] Requires UPC
FDB	12 Lead Full Disclosure B/pt	[4-1024]
DS4	4 Days Full Disclosure B/pt	[4-16] Requires 05N
E04	4 Days Full Disclosure eB/pt	[4-1024] Requires UPC
D07	7 Days Full Disclosure B/pt	[4-1024]
Clinical Options/Interfaces		
DEV	Device Interfacing B/pt	[4-1024]
MAP	ST MAP Surveillance B/pt	[4-1024] Requires NEW
EMP	ST Map Surveillance eB/pt	[4-1024] Requires NEW
TRD	Surveillance Trends B/pt	[4-1024] Requires NEW
ERD	Surveillance Trends eB/pt	[4-1024] Requires UPC
WLD	Device Location B/pt	[4-1024] Requires NEW
ELD	Device Location B/pt	[4-1024] Requires UPC
C17	12 Lead Capture/Export B/pt	[4-1024] Not with 05N, GTW
E17	12 Lead Capture/Export eB/pt	[4-1024] Requires UPC
LED	12-Lead Orders B/pt	[4-1024]
CX2	ADT Interface B/pt	[4-1024] Requires NEW
EX2	ADT Interface eB/pt	[4-1024] Requires UPC
C14	HL7 Vital Signs Interface B/pt	[4-1024] Requires NEW

Table 1-5 Options Available Under Product # 866389

Option	Description	
E14	HL7 Vital Signs Interface eB/pt	[4-1024] Requires UPC
C23	Holter Export B/pt	[4-1024] Requires NEW
E23	Holter Export eB/pt	[4-1024]
LAB	LAB Interface B/pt	[4-1024] Requires NEW
SPE	Specialty Review Editor B/pt	[4-1024] Requires NEW
RPT	Report/Wave Strip Export B/pt	[4-1024] Requires NEW
Device Connectivity		
MP1	Monitor Package 1 B/pt	[4-16] Requires NEW
MP2	Monitor Package 2 B/pt	[4-16] Requires NEW
MP3	Monitor Package 3 B/pt	[4-16] Requires NEW
Web		
EEB	Web eB/pt	[4-1024] Requires UPC
WEB	Web B/pt	[4-1024] Requires NEW
EPW	Multi-Patient Web eB/pt	[1-1024] Requires UPC
MPW	Multi-Patient Web B/pt	[4-1024] Requires NEW
E72	Web Wave Strip Access eB/pt	[4-1024] Requires UPC
C72	Web Wave Strip Access B/pt	[4-1024] Requires NEW
WSX	Wave Strip Export B/pt	[4-1024] Requires New
Mobility		
M01	Mobile Caregiver B/pt	[4-1024] Requires NEW
M10 ¹	3rd Party Mobility B/pt	[4-1024]
DIACAP		
DCP	DIACAP B	
Data Warehouse		
DLS	Data Live Service B/pt	[4-1024] Requires NEW
DRS	Data Research Service B/pt	[4-1024] Requires NEW
DWL	Data Warehouse Live B/pt	[4-1024]
DWR	Data Warehouse Research B/pt	[4-1024]
Options with no Features		
ENT	SQL Server Enterprise B	[1-32]

¹ For use with AirStrip

Table I-6 Options Available Under PIIC iX Upgrade Product # 866390

Option	Description	Comments/Notes
Documentation		
DFU	Instructions for Use	
MDK	System B Media Kit	
Customer Hardware		
H00	Customer Supplied Hardware	
Software Release		
RVB	PIIC iX Software Release B	Required View
00N	Add Overview pts B	Requires NEW
00S	SMA M3151 to B/pt	Requires UPC
00U	Upgrade M3151 to B/pt	Requires UPG
Type of Install		
NEW	New Install	
SMA	Upgrade with SMA	
STU	System Type Upgrade	
UPG	Upgrade PIIC or PIIC iX	
Network Type		
CSC	Customer Supplied Network	
PSC	Philips Supplied Network	
Upgrade From A to B		
AB0	Overview Upgrade to B/pt	[4-2556]
AB1	Local Upgrade to B/pt	[2-28]
AB2	Sm Network Upgrade to B/pt	[2-60]
AB3	Lg Network Upgrade to B/pt	[2-1020]
ABS	SMA A to B Upgrade/pt	[2-1020]
Upgrade Path		
UPA	Upgrade from PIIC iX A	
UPC	Upgrade from PIIC Classic	
Enterprise Network PIIC iX		
03U	Overview > Enterprise B/pt	[4-1024]
13U	Local > Enterprise B/pt	[4-1024]
23U	Small NW > Enterprise B/pt	[4-1024]
30N	Add Enterprise Network PIIC iX B pts	[2-1020]
30S	SMA M3155/54 to PIIC iX B	[2-1020]
30U	Upgrade M3155/54 to PIIC iX B/pt	[2-1020]
Enterprise Network PIIC iX - No View		
35N	Add Enterprise Link pts B	[2-1020]
Small Network PIIC iX		
12U	Local > Small Network B/pt	[4-64]
20N	Small Network pts B	[2-60]
20S	SMA M3145/69 to PIIC iX B	[2-60]
20U	Upg M3145/69 to PIIC iX B/pt	[2-60]
Small Network PIIC iX - No View		
25N	Add Small Network Link pts B	[2-60]
PIIC iX Standalone		
01U	Overview > Local B/pt	[4-32]
10N	Add Local pts B	[2-28]
10U	Upgrade M3150 > B/pt	[2-28] UPG, UPC
10S	SMA M3150 > PIIC iX Local B/pt	[2-28]
51U	Express > Local B/pt	[4-32]

Table I-6 Options Available Under PIIC iX Upgrade Product # 866390

Option	Description	Comments/Notes
PIIC iX Standby System		
SBS	PIIC iX Standby System B	[1-50]
PIIC iX Express		
05N	Add PIIC iX B Express pts B	[2-12]
Physio Server		
PHY	Physio Server B	[1-8]
PHS	Physio Server SMA B	[1-32] Requires SMA, UPC
Gateway		
GTW	Gateway B	[2-56]
Dual Display Software		
C01	Expanded Patient Display B/pt	[2-1020]
EC1	Dual Display Software eB/pt	[2-1020]
12 Lead Full Disclosure		
FDB	12 Lead Full Disclosure B/pt	[2-1020]
EDB	12 Lead Full Disclosure B/pt	[2-1020]
Data Storage		
DS4	4 Days Full Disclosure B/pt	[4-16]
E04	4 Days Full Disclosure B/pt	[2-1020]
D07	7 Days Full Disclosure B/pt	[2-1020]
Clinical Options/Interfaces		
DEV	Device Interfacing - no IPM B/pt	[2-1020]
MAP	ST MAP Surveillance B/pt	[2-2556]
EMP	ST MAP Surveillance eB	[2-2556]
TRD	Surveillance Trends B/pt	[2-2556]
ERD	Surveillance Trends eB/pt	[2-2556]
WLD	Device Location B/pt	[2-1020]
ELD	Device Location eB/pt	[2-1020]
C17	12 Lead Analysis/Export B/pt	[2-1020]
E17	12 Lead Analysis/Export eB/pt	[2-1020]
LED	12-Lead Orders B/pt	[2-1020]
CX2	ADT Interface B/pt	[2-1020]
EX2	ADT Interface eB/pt	[2-1020]
C14	HL7 Vital Signs Interface B/pt	[2-1020]
E14	HL7 Vital Signs Interface eB/pt	[2-1020]
C23	Holter Export B/pt	[2-1020]
E23	Holter Export eB/pt	[2-1020]
LAB	LAB Interface B/pt	[2-1020]
SPE	Specialty Review Editor B/pt	[2-1020]
RPT	Report/Wave Strip Export B/pt	[2-1020]
Device Connectivity		
MP1	Monitor Package 1 B/pt	[2-12]
MP2	Monitor Package 2 B/pt	[2-12]
MP3	Monitor Package 3 B/pt	[2-12]
Web		
WEB	Web B/pt	[2-1020]
EEB	Web eB/pt	[2-1020]
MPW	Multi-Patient Web B/pt	[2-1020]
EPW	Multi-Patient Web eB/pt	[2-1020]
C72	Web Wave Strip Access B/pt	[2-1020]
E72	Web Wave Strip Access eB/pt	[2-1020]
WSX	Wave Strip Access B/pt	[2-1020]
Mobility		
M01	Mobile Caregiver B/pt	[2-1020]
M10 ¹	3rd Party Mobility B/pt	[2-1020]

Table I-6 Options Available Under PIIC iX Upgrade Product # 866390

Option	Description	Comments/Notes
DIACAP		
DCP	DIACAP B	
Data Warehouse		
DLS	Data Live Service B/pt	[2-1020]
DRS	Data Research Service B/pt	[2-1020]
DWL	Data Warehouse Live B/pt	[2-1020]
DWR	Data Warehouse Research B/pt	[2-1020]
Options With No Features		
ENT	SQL Server Enterprise B	[1-32]

¹ For use with AirStrip

Hardware Upgrade Options

Table 1-7 lists Hardware Upgrade Options available under Product # 866424**Table I-7 Hardware Upgrade Options Available Under Product # 866424**

Option	Description	
H10	PC Hardware	
H1R	PC Hardware with RAID	
H20	Small Network Server	
H2R	Small Network Server with RAID	
H30	Server Hardware	
H31	HP DL180 Gen 9 Server Hardware	
H1U	UPS hardware	
HP rp5800 Platform Upgrades		
H2V	HP rp5800 Dual Video Upgrade Second Speaker Upgrade	Display Port-to-VGA Converter
SPK	Second Speaker	
HP DL380 G7 ¹ Platform Upgrades		
H3M	HP DL380 G7 12 GB Memory Upgrade	3 x 4 GB ECC memory modules
H3D	HP DL380 G7 2x 300 GB Upgrade	2 x 300 GB HD
H3U	Server UPS hardware	
PIIC iX Test System		
T01	PIIC iX Test System	
Printers		
PRT	Color Printer	
PIIC iX Dual Video		
H01	HP rp5800 Display Port-to-VGA Converter Dual Video	
SQL Licensing		
S01	SQL Svr Std 2014 1 CAL	
Operating System Licensing		
W08	Windows Server 2008 R2	
W12	Windows Server 2012 R2	
WN7	Windows 7 for PC	
WN8	Windows 8 for PC	
HV1	Microsoft Hyper-V	

¹ Do not install Windows Server 2012 R2, which is the Server iX B.01 and B.02 Operating System, on an HP DL380 G7 Server.

PIIC iX Web Server

With appropriate licensing one host in the topology may have the Web Server feature and must have either the Configuration Database feature or the Database Connectivity feature. If you have more than 255 patients in the topology, a Dedicated Web Server is required. A Dedicated Web Server requires the Database Connectivity feature with no other features.

When connected to a small Primary Server, the Dedicated Web Server must run on Client-Class Hardware or better. When connected to a Enterprise Primary Server, the Dedicated Web Server must run on Server-Class Hardware.

PIIC iX Web Applications

PIIC iX Web can be licensed for Single-Patient and/or Multi-Patient View applications. PIIC iX Single-Patient View allows a user to select a patient, see all available near real time (NRT) data, review retrospective data, and perform strip workflow. In PIIC iX B.02.xx Multipatient View permits patient selection from any B.02 PIIC iX Web Host configured in the PIIC iX Enterprise Portal that has the proper host licensing and Remote Access to Patient Data settings. Multi-Patient View enables NRT review of physiological waves, parameters, and alerts for up to 32 patients. It also allows a user to select a patient in order to see all available near real time data, review retrospective data, and perform strip workflow. Both the Single-Patient and Multi-Patient View applications allow you to view a patient's strip tile, make caliper measurements, and print and/or export the strip to the clip board. Both the Single-Patient and Multi-Patient View applications allow clinicians to view patients from any PC/laptop that has network access to the PIIC iX Web Server and is running Windows 7 or Windows 8.1.

The Enterprise Portal, a Web application that runs on the PIIC iX Web server, allows a user to navigate to any PIIC iX or PIIC (Release N.01.12 or later) system in the enterprise. Although it runs on the PIIC iX Web server, the Portal Web page is accessible from any intranet browser and can be used to access patients on a PIIC iX licensed to support PIIC iX Web and Wave Strip Export. The Portal is not required for Single/Multi-Patient View. Portal is required for PIIC/PIIC iX interoperability.

PIIC iX Mobility Server

The Mobility Server feature is a feature option (**Page 1-14**) that supports devices using the IntelliVue Mobile Caregiver application. The Mobility service can be combined with the PIIC iX Web service or can be installed on a dedicated Mobility Server. The Mobility service cannot be deployed on a Small Primary Server or Local PIIC iX System.

IntelliVue Mobile Caregiver Application

IntelliVue Mobile Caregiver is an application available to licensed mobile clients that provides secured access to PIIC iX patient data.

For details about mobile client installation and use of IntelliVue Mobile Caregiver refer to **Appendix E** or the *Philips IntelliVue Mobile Caregiver Installation and Use Guide, 4535 645 40421, Edition 2*.

PIIC iX Data Warehouse Connect

The PIIC iX Data Warehouse Connect feature permits export of patient data directly from PIIC iX surveillance hosts to a data storage server for longer than the typical physiological short-term storage. Stored information can be used for post-discharge sentinel event review or research. Installation of Data Warehouse Connect creates a web site that can be accessed by compatible browsers to navigate and view a single patient's exported data.

You can use the Data Warehouse Connect feature in any of the following models.

- As a Standalone system in which the Data Warehouse Connect Host and Database reside on the same hardware or Virtual Machine,
- As a single Data Warehouse Connect storage system that exports Database/Storage to a separate dedicated storage environment, or
- As a large scale Data Warehouse Connect System that comprises multiple Data Warehouse Connect hosts and employs Microsoft Network Load Balancing (NLB).

For complete details about installing and configuring the PIIC iX Data Warehouse Connect Server and using the Data Warehouse Connect Patient Data Viewer refer to the *Philips Data Warehouse Connect Installation and Use Guide, 4535 645 40421, Edition 2*.

PIIC iX Feature Description

The Philips IntelliVue Information Center iX displays information received from point of care equipment including waveforms, trends, alarms, and numerics. A brief overview of the PIIC iX surveillance features are described in this document. For detailed information of PIIC iX Surveillance functionality refer to the *PIIC iX Instructions for Use*.

The Philips IntelliVue Information Center iX software allows you to:

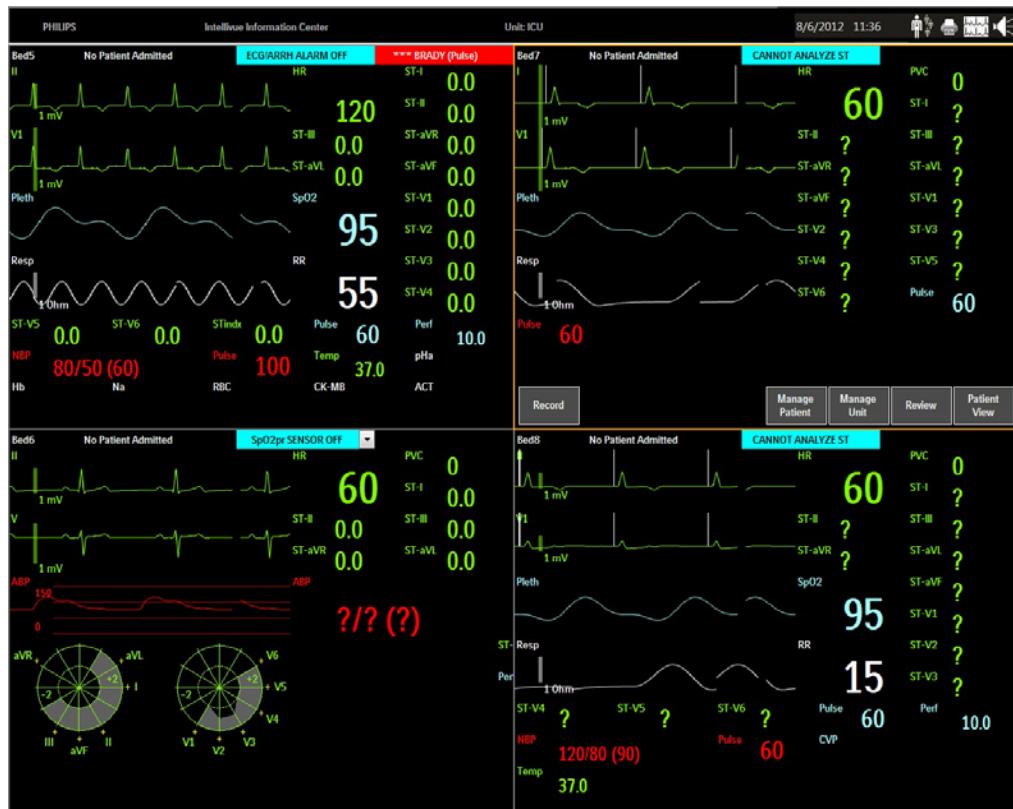
- View waves and physiological parameter information sent over the monitoring network.
- Be alerted to and respond to patient alarms detected by networked monitoring devices.
- Perform ST/AR multilead arrhythmia analysis on up to two leads of ECG. ST/AR ST segment monitoring provides ST elevation and depression measurements for telemetry-monitored patients.

NOTE ST/AR analysis for IntelliVue Patient Monitors is done at the monitor. ST analysis for all bedside monitors is done at the monitor.

- For IntelliVue Telemetry, perform QT interval monitoring. QT interval monitoring can assist in the detection of prolonged QT interval syndrome. If the patient is monitored by an IntelliVue Patient Monitor, QT/QTc analysis is provided by the IntelliVue Patient Monitor.
- Make strip chart recordings on a Philips Recorder and (if a printer is available) print reports requested from the point-of-care and/or the PIIC iX.
- Access a retrospective review of patient data.
- View real-time data for a patient being monitored by another Information Center. You can view both real-time and stored data for a patient monitored on another Information Center, and that Information Center can be in the same clinical unit or in another unit.
- Provide the management of grouping of beds per nursing assignment (Care Groups). A single Care Group is typically named for a caregiver who is responsible for multiple patients within a single care unit. A Care Group can be assigned a color that will display as the background for the bed label on the Information Center. Color by Care Group helps the caregiver to quickly identify beds within their Care Group.
- Provide notification of alarms in textual format to a receiving device such as a pager, marquee display or cell-phone. This option, Alert Data Integration (available in limited geographies), is for secondary notification of alarms. It is not intended for primary notification of alarms.

Surveillance PIIC iX Main Screen

The Main Screen displays real-time waves, numerics, and alarms for up to 32 patients (on one or more displays). The number of waves and amount of information that appears in a sector depends on the size of the sector.



The layout of the patient sectors on the Main Screen can vary depending on how your system is set up. Patient sectors can be configured to be different sizes and can be added or removed as needed for long term census changes. Your system may be set up to allow you to minimize sectors that currently are not actively monitoring a patient. If available, you can minimize sectors if:

- The monitor is in standby.
- There is no equipment assigned to the sector.
- Sector has been cleared.
- Sectors are restored automatically when monitoring resumes or when you click anywhere on the minimized sector.

PIIC iX Application Window

The Application Window presents each PIIC iX clinical application or Patient Window.

On Single Display Systems the Application Window opens at the bottom half of the screen. All the patient sectors are still visible in the top half of the screen, but are compressed. On Dual Display Systems one Display shows the Main Screen and the other shows a full-screen Application Window.

A task bar on the bottom of the Application Window provides quick access to other PIIC iX applications for the selected bed. When you click or mouse over a task bar Application Button a menu lists its associated selections.



If you double-click the **Main Setup** task bar button the full suite of PIIC iX application selections appear in the sections:

- **Patient Window**
- **Manage Patient**
- **Measurements**
- **Review**
- **Manage Unit**
- **Main Setup**

Patient Window	Manage Patient	General Review	Caregiver Assignments	Main Setup
ECG Analysis	Measurements	Hemodynamic Review	Unit Settings	System Configuration
Remote Display (XDS)		Respiratory Review	Locate Devices	Product Support
		Neuro Review	Audit Log	
		Cardiac Review	Clinical Reports	
		12-Lead Capture Review	Display Setup	
		Alarm Review	System Help	

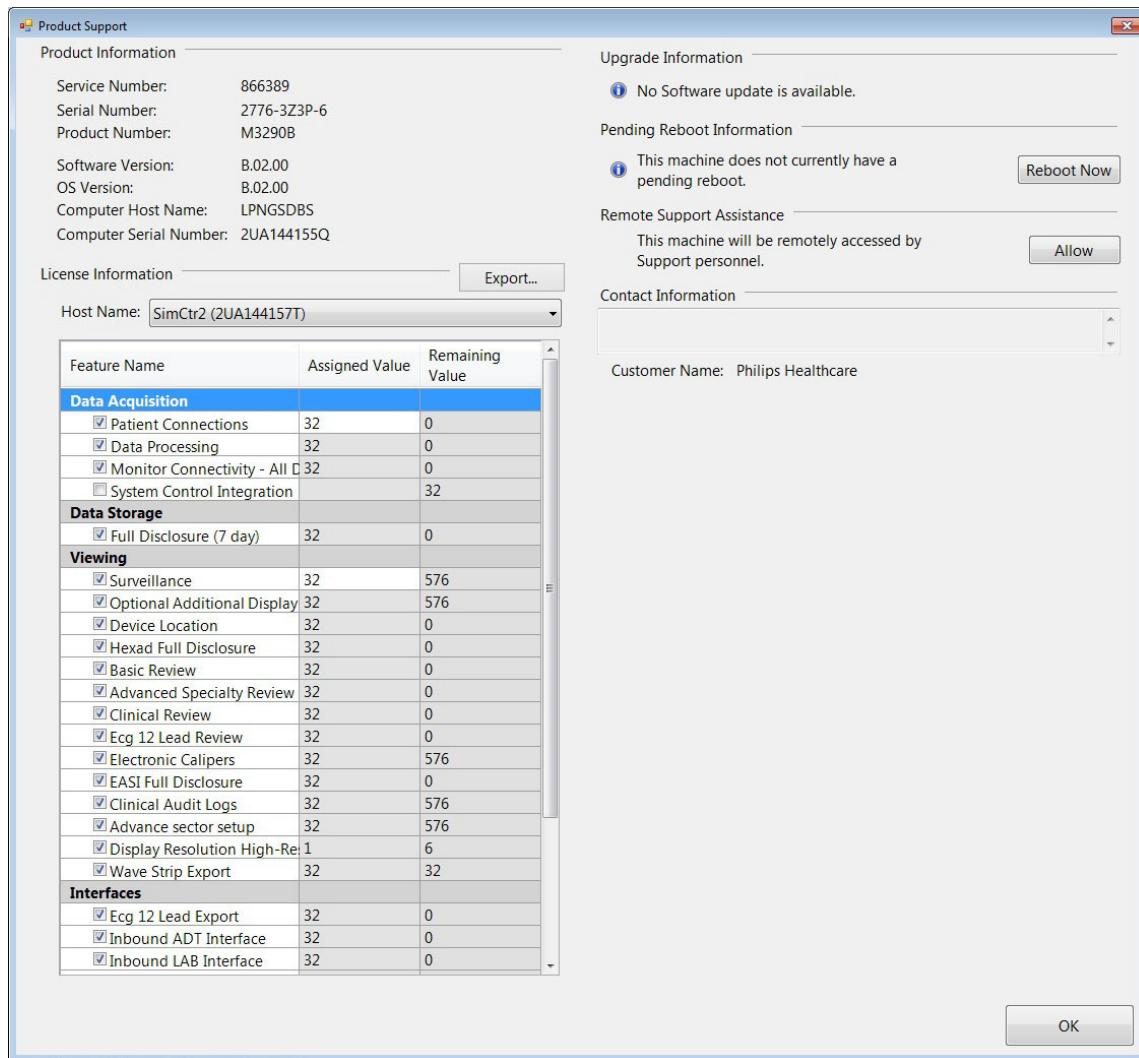
Patient Window	Manage Patient	Measurements	Review	Manage Unit	Main Setup
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Opening the Patient Window

In order to open the Patient Window for a particular patient position the cursor in the patient sector so that the **Patient Window** button appears in the sector. When you click the button the Patient Window for the selected patient opens in the Application Window area.

PIIC iX Product Support Screen

You can access the **Product Support** screen from the **Main Setup** task bar button or by clicking the **Phillips** icon in your application. After your System is licensed the Software **Serial Number** appears on the **Product Support** screen in the **Product Information** section.



The **Export** button permits printing license information and the feature assignment of each host in the topology.

PIIC iX System Configuration

System Configuration is a configuration editor that permits setting up system topology, configuring clinical and non-clinical features (**Chapter 6**). It also includes a **Tools** menu (**Chapter 7**).

System Configuration permits propagation of System Topology between Primary Server and PIIC iX hosts. Philips does not support running System Configuration behind a Network Address Translator (NAT), however.

Generating the License

With PIIC iX B.00 and later Licensing information is generated from the initial sales order and stored on the Philips Licensing Server. Before you can run your PIIC iX B.xx, your license must be authorized by the Field Support Engineer (FSE) using the **Philips Licensing Agent**.

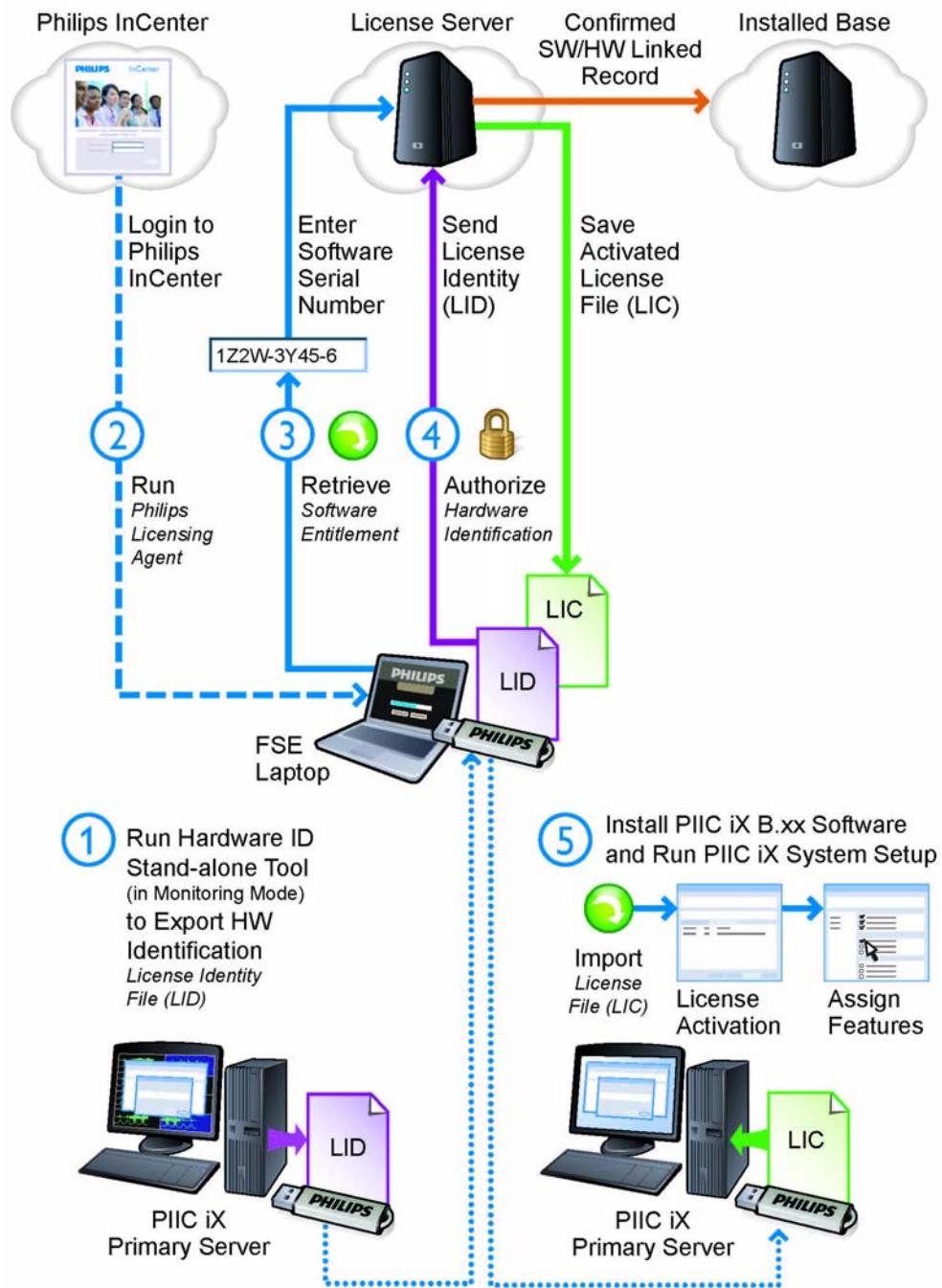


Figure 1-1 PIIC iX Licensing Activation Work Flow

The steps you must complete to effectively license the PIIC iX system include:

- ① Exporting the Hardware ID**
- ② Using the Philips Licensing Agent Application**
- ③ Retrieving Software Entitlements**
- ④ Authorizing and Confirming Your Licensing**
- ⑤ Importing PIIC iX Licenses**

Instructions to add the **initial** PIIC iX B.02 licensing is included in the following sections. For complete and detailed instructions describing adding your licenses, upgrading options, merging multiple licenses, or migrating from PIIC iX A.xx to B.xx, refer to the *PIIC iX Licensing Activation Guide, 4535 645 40451, Edition 2*.

Exporting the Hardware ID

Important The **Export HW Identification** feature permits exporting the machine unique identification to a file so that it can be used in the Licensing Agent to bind a license to the machine. Hardware ID Export can be done using PIIC iX System Setup or with a standalone executable Hardware ID tool ([Page 29](#)).

On a new B.02 System you can get the Hardware ID using the **License Configuration** screen of **PIIC iX System Setup** or by using an application file included in the PIIC iX B.02 product installation. The tool is also available on the PIIC iX B.02 Media Kit USB Flash drive if you want to copy it to your system before installing PIIC iX B.02 software.

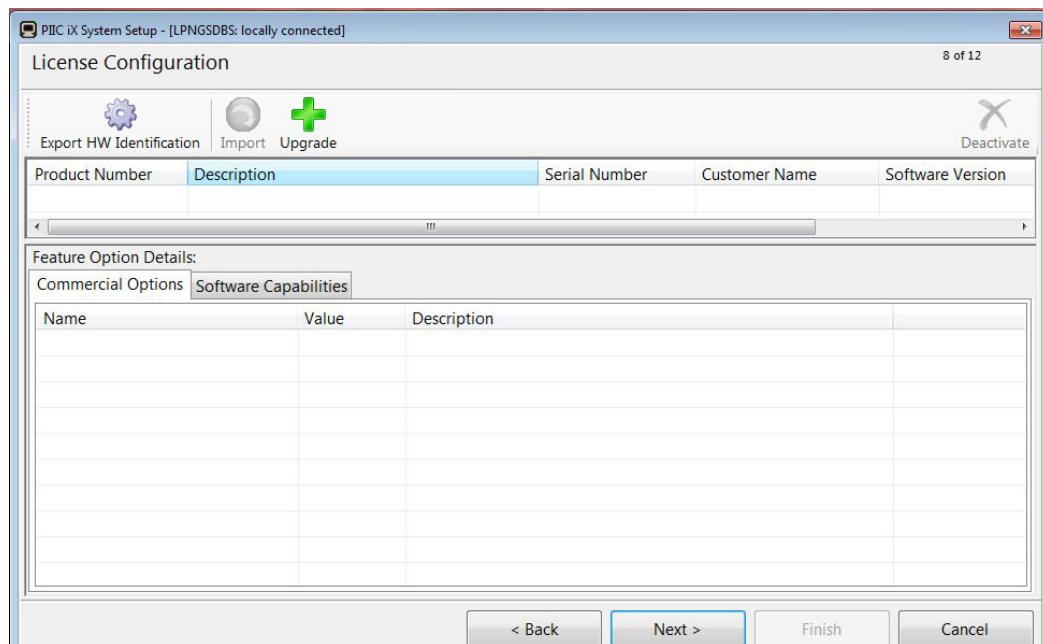
- On a system that *does have* PIIC iX B.02 installed, the Hardware ID tool location is:
C:\Program Files\Philips\PIIC iX\B.00\Product\License\Philips.PIC.HardwareIdentityTool.Standalone.exe

NOTE Windows Server Operating Systems use folder **Program Files (x86)** rather than **Program Files**.

- On a system that *does have* PIIC iX B.02 installed, the file location is:
<Philips Media USB Drive>:\Tools\Philips.PIC.HardwareIdentityTool.Standalone.exe
- On InCenter the location of the file is:
Service > Software > Software Downloads > Patient Monitoring > License Agent

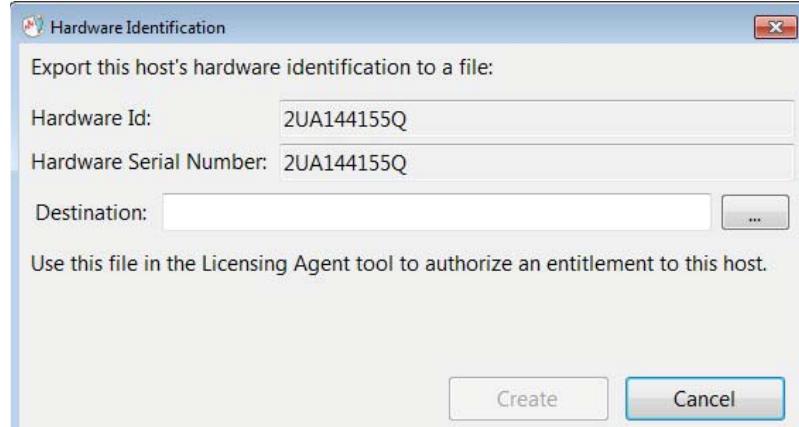
If you want to use the License screen in PIIC iX System Setup,

- I Open **PIIC iX System Setup** on the Primary Server iX and click **Next >** on each screen making no changes until you see the PIIC iX **License Configuration** screen.



- 2 Insert USB media in the appropriate port of your PIIC iX.
- 3 Open **Export HW Identification** by clicking the icon  on the PIIC iX **License Configuration** screen.

The **Hardware Identification** dialog opens.



- 4 Click the **Destination** ellipsis button and browse to a location on USB media where you want to create the Hardware Identification file (License Identity Files *.PhilipsLID). Then click **Create**. This is the file you will use with the **Philips Licensing Agent** application.
- 5 Close **PIIC iX System Setup**. You will have to run **PIIC iX System Setup** after the authorized License File is created.

If you want to use Philips.PIC.HardwareIdentityTool.Standalone.exe,

- I Copy the Hardware ID executable, *Philips.PIC.HardwareIdentityTool.Standalone.exe*, on a USB Flash drive.

On the PIIC iX B.02 USB Flash drive, the location of the file is:

<Philips Media USB Drive>:\Tools\Philips.PIC.HardwareIdentityTool.Standalone.exe

On InCenter the location of the file is:

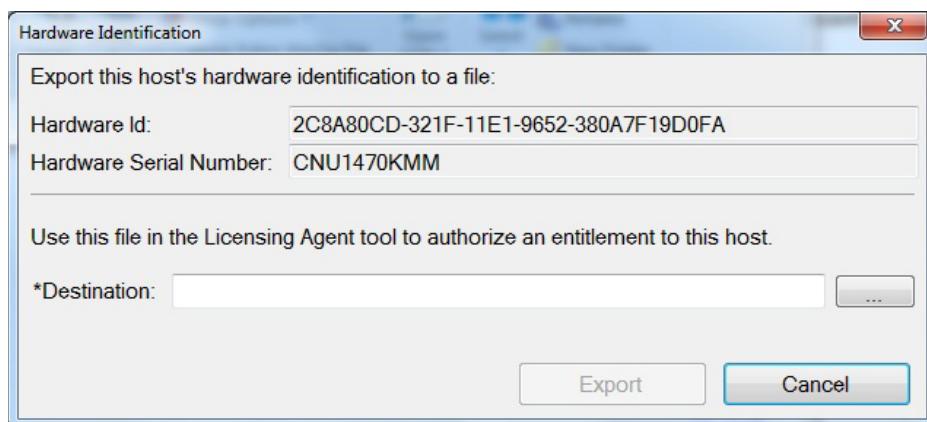
Service > Software > Software Downloads > Patient Monitoring > License Agent

- 2 Get the Hardware ID from your PIIC iX Release A.xx Primary Server or Local PIIC iX System.

- a Put the USB Flash Drive with the Hardware ID executable in the appropriate port of your PIIC iX A.xx Primary Server or Standalone desktop, then double-click the file to run it.

The **Hardware Identification** dialog opens and populates the **Hardware Id** and **Hardware Serial Number** information for your system.

- b Click the **Destination** Ellipsis and browse to a location on USB media where you want to create the Hardware Identification file (*.*PhilipsLID*). Then click **Export**.



This is the file you will use with the **Philips Licensing Agent** application Refer to **Authorizing and Confirming Your Licensing**.

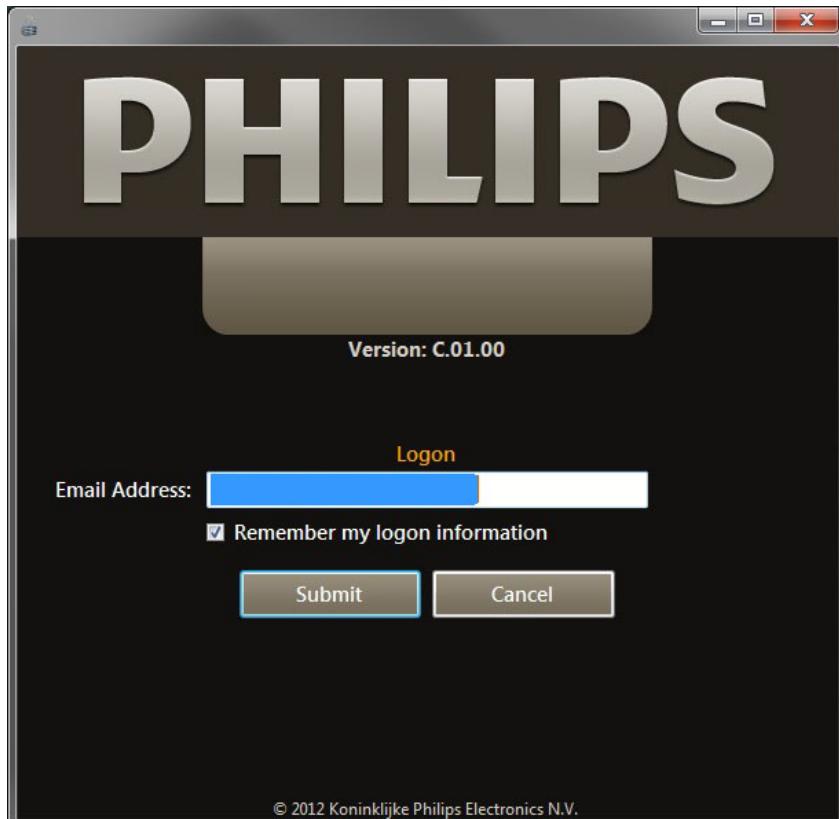
- 3 Remove the USB from the PIIC iX System.
- 4 If you must install the Philips Licensing Agent application refer to **Using the Philips Licensing Agent Application**.

Using the Philips Licensing Agent Application

In order to install your PIIC iX licenses you must download and install the Philips Licensing Agent application from InCenter. The application permits retrieving and binding licenses from the Philips License Server. It also provides a way to export the authorized licenses.

- I Install the Philips licensing Agent tool on your laptop or on the PIIC iX primary Server that has a network connection to the Philips License Server. To access the *Philips Licensing Agent* application, log on InCenter and go to:
Service > Software > Software Downloads > Patient Monitoring > License Agent

- 2** After you install the *Philips Licensing Agent* application on a Field Service laptop open the application and log on using a valid E-mail Address.
This tool is intended to be used only by Philips personnel or distributors.

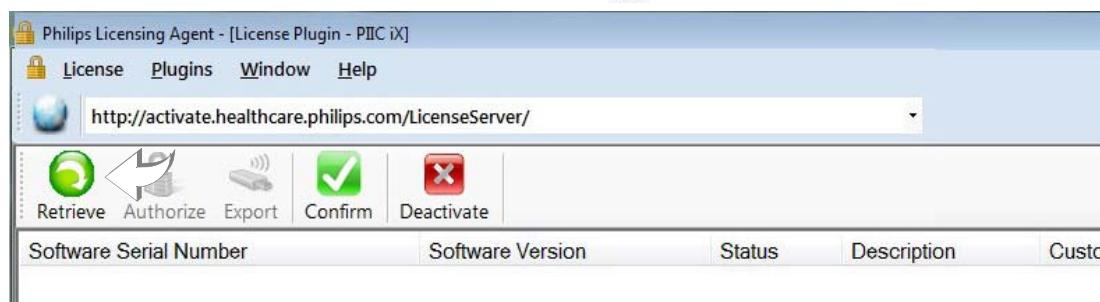


- 3** Once you successfully log on the *Philips Licensing Agent* application select **PIIC iX** in the **Plugins** drop-down menu.

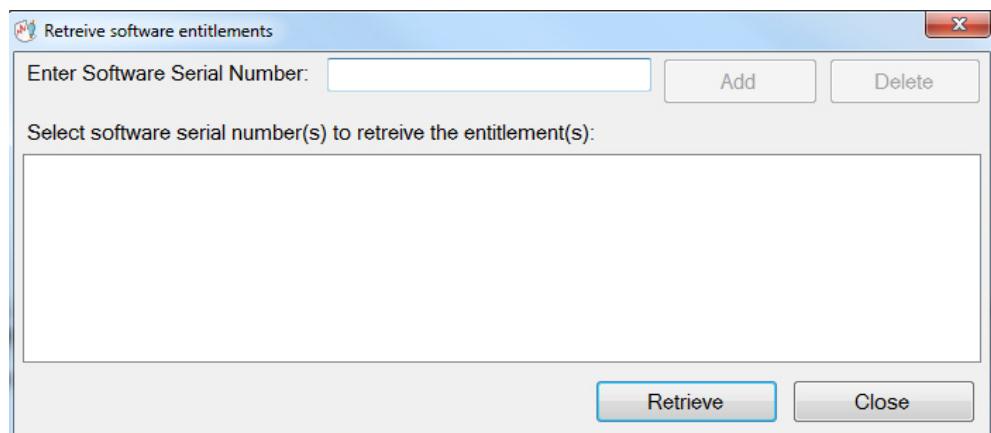


Retrieving Software Entitlements From the Philips Licensing Server

- In the *Philips Licensing Agent* click **Retrieve**  in the top menu.

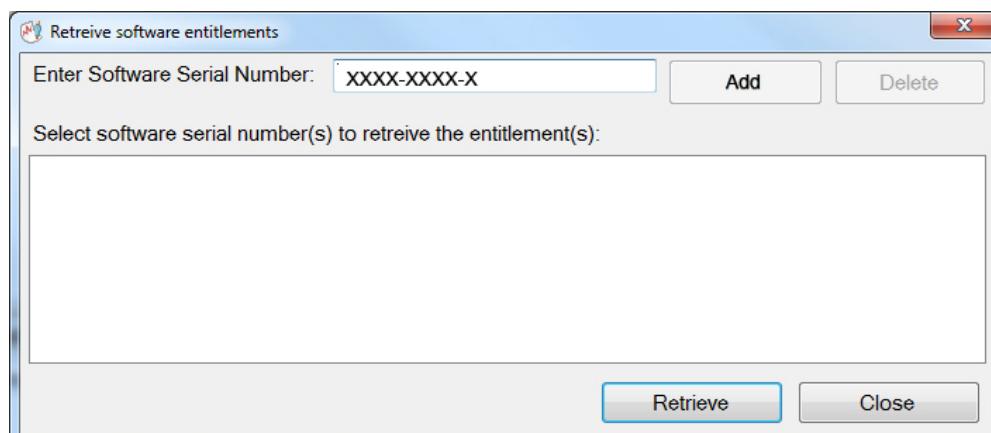


The **Retrieve software entitlements** dialog opens.

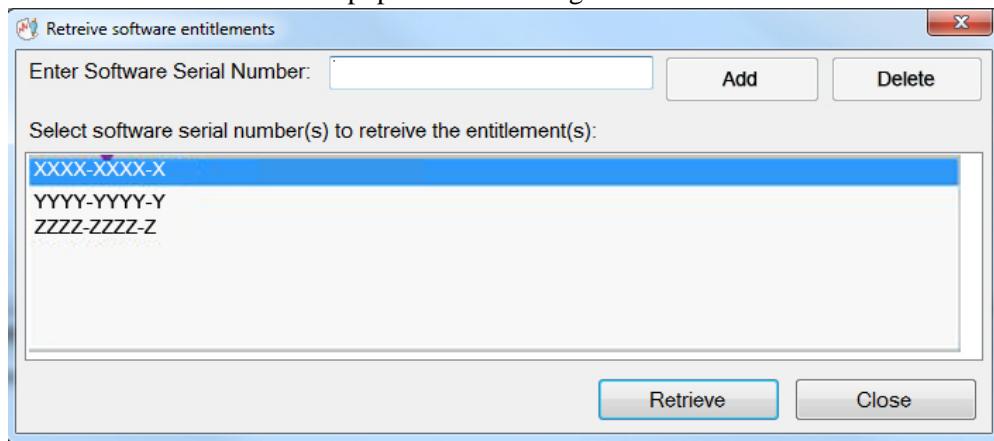


- Enter the Software Serial Number.

The **Software Serial Number** appears on the customer's **Software License Certificate**. Two **Software License Certificates** are shipped with the product. One certificate is attached to the PIIC iX Primary Server hardware (for Philips-supplied hardware systems) or the Product Media Kit (for Customer-supplied hardware systems) and the second certificate is included in the accessory box.



After you enter the Software Serial Number in the dialog click **Add**.
The Software Serial Number populates the dialog list.



- 3** Select the desired Software serial number(s) in the text box and click the **Retrieve** button.
The **Software Serial Number** entitlement populates the *Philips Licensing Agent* screen with a **Status** of **Entitled**.

Software Serial Number	Software Version	Status	Description	Customer Name	Hardware Id
XXXX-XXXX-X	B.02.00	Entitled	PIIC iX Sandbox	Customer For Internal Use	

Commercial Options				
Name	Entitled	Authorized	Confirmed	Description
00N	48	N/A	N/A	00N View B
30N	48	N/A	N/A	30N Large Network PIIC iX B
C14	48	N/A	N/A	C14 HL7 Vitals Signs Intfce B
C17	48	N/A	N/A	C17 12-Lead Analysis/Export B
C67	48	N/A	N/A	C67 Alert Data Integration B
C72	48	N/A	N/A	C72 Web Wave Strip Access B
CX2	48	N/A	N/A	CX2 ADT Interface B
D07	48	N/A	N/A	D07 7 Days Storage B
LAB	48	N/A	N/A	LAB Lab Interface B
MAP	48	N/A	N/A	MAP ST Map Surveillance B
MPW	48	N/A	N/A	MPW Multi-Patient Web B
RPT	48	N/A	N/A	RPT Report Distribution B
TRD	48	N/A	N/A	TRD Surveillance Trends B
WEB	48	N/A	N/A	WEB Web B
WLD	48	N/A	N/A	WLD Device Location B

Software Capabilities				
Name	Entitled	Authorized	Confirmed	Description
00N	48	N/A	N/A	00N View B
30N	48	N/A	N/A	30N Large Network PIIC iX B
C14	48	N/A	N/A	C14 HL7 Vitals Signs Intfce B
C17	48	N/A	N/A	C17 12-Lead Analysis/Export B
C67	48	N/A	N/A	C67 Alert Data Integration B
C72	48	N/A	N/A	C72 Web Wave Strip Access B
CX2	48	N/A	N/A	CX2 ADT Interface B
D07	48	N/A	N/A	D07 7 Days Storage B
LAB	48	N/A	N/A	LAB Lab Interface B
MAP	48	N/A	N/A	MAP ST Map Surveillance B
MPW	48	N/A	N/A	MPW Multi-Patient Web B
RPT	48	N/A	N/A	RPT Report Distribution B
TRD	48	N/A	N/A	TRD Surveillance Trends B
WEB	48	N/A	N/A	WEB Web B
WLD	48	N/A	N/A	WLD Device Location B

Authorizing and Confirming Your Licensing

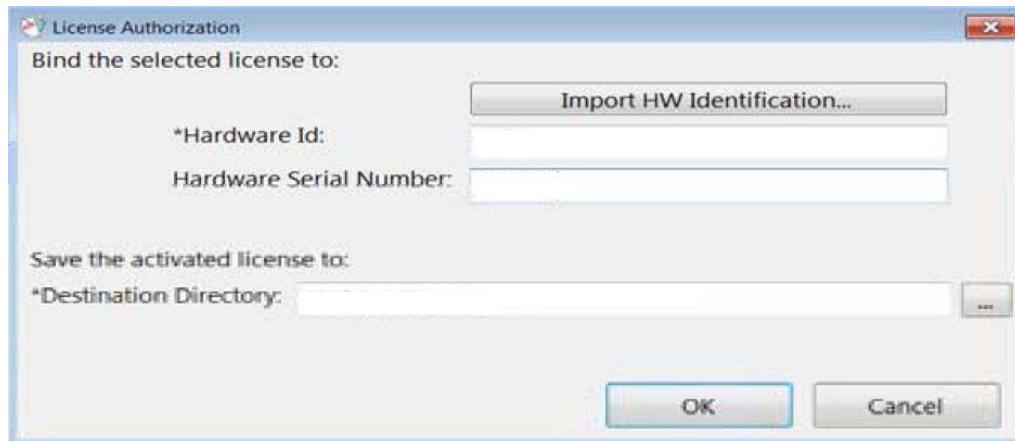
During the authorization process an entitlement is bound to a unique hardware identifier of the PIIC iX primary server or local system. Once the process is complete, the license is authorized to be used on the product. In addition, the License Server and Install Base are updated which confirms that the license is installed on the system.

Important You must have the Hardware Identification file (*.PhilipsLID) of your PIIC iX available locally or on a USB Flash Drive to authorize your license. Refer to **Exporting the Hardware ID** for detailed instructions.

- 1 Insert the USB media that has the Hardware Identification file (*.PhilipsLID) in the appropriate port of your laptop.
- 2 In the *Philips Licensing Agent* top menu click **Authorize** .

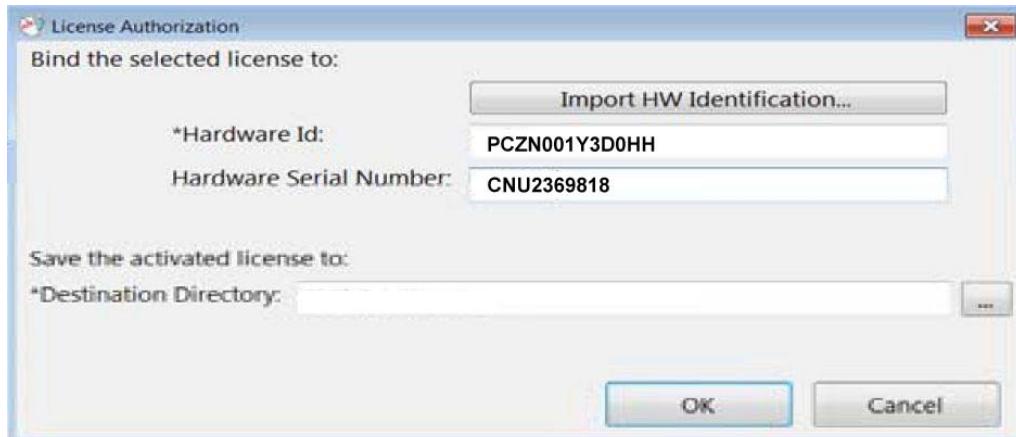


The **License Authorization** dialog opens. It permits binding the selected license to the hardware and saving the activated license.



- 3 Click **Import HW Identification** in the **License Authorization** dialog. A **Select License Identification** dialog opens that permits you to browse to the USB drive that contains the Hardware identification file.

After you select the *.Philips LID file on the USB Flash drive the **Hardware Id** and **Hardware Serial Number** text boxes of the **License Authorization** dialog populate.



- 4 Click the ***Destination Directory** ellipsis button, browse to the USB drive again, and select the location where you want to save the license file (*.PhilipsLIC). Then click **OK**. On the *Philips Licensing Agent* screen the **Status** of the license changes to **Confirmed**.



Importing PIIC iX Licenses

Refer to licensing import instructions on **page 5-23**.

Supporting Documentation

Document	Part Number	Location
PIIC iX Service And Installation Guide	4535 645 40541, Ed. 2	Available on PIIC iX B.02 Media Kit 4535 645 86811
PIIC iX Instructions For Use	4535 645 39421	
PIIC iX Quick Start Guide	4535 645 40551, Ed. 2	
PIIC iX Web Installation Configuration and Use Guide	4535 645 40431	
IntelliVue Mobile Caregiver Installation and User Guide	4535 645 40421, Ed. 2	
PIIC iX HL7 Programmers Guide	4535 645 40501	
PIIC iX Supported Parameters (for HL7)	4535 645 40511	
PIIC iX Licensing Activation Guide	4535 645 40451, Ed. 2	
PIIC iX Software Upgrade Install Note	4535 645 40561, Ed. 2	
PIIC iX Data Warehouse Connect Installation and Use Guide	4535 645 40411, Ed. 2	
PIIC iX Clinical Configuration Guide	4535 645 40521	Available on InCenter
System Administrator Guide	4535 645 60011, Ed. 2	
Data Warehouse Connect Reference Guide	4535 645 61801	
IntelliBridge SC 50 Device Interfacing Engine Installation and Configuration Guide	866145-90020	
PIIC iX Security Recommendations for IntelliVue Clinical Networks	4535 646 01951	
IntelliVue Network Specification C.01 IntelliVue Network Specification CD	4535 644 97141 4535 645 68731	
ICCA H.00 to PIIC iX B.0x Configuration	4535 644 82001	
Connected Care Platform A.0 Integration Reference Guide	4535 645 56821	

Regulatory

For Regulatory and Safety Specifications that the PIIC iX and other Philips-provided components comply with refer to the **Information Center Safety and Specifications** chapter of the *PIIC iX Instructions for Use*.

Deploying the PIIC iX System

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Philips-Supplied PIIC iX Hardware	2-2
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Overview

PIIC iX System deployments range from PIIC iX Local to Enterprise iX supporting 1024 beds and connected to various systems such as Web Servers, Hospital Information Systems, Active Directories, ICIP/ICCA Systems, 12-Lead ECG Management Systems, External Time Sources, Paging Systems, and Bedsides.

The Enterprise Server software can be delivered on Philips-Supplied Hardware or for use on Customer-Supplied Hardware (CSH).

Customer-Supplied Hardware (CSH) Systems

The Enterprise Server can be ordered as Software-only product for use on Customer-Supplied Hardware (CSH). The CSH product **can be virtualized** using VMware or Hyper-V. Supported versions are:

VMware	ESXi 5.0 (Update 3) ESXi 5.1 (Updates 2 or 3) ESXi 5.5 (Update 2) ESXi 6.0
Microsoft Hyper-V	Microsoft Server 2012 R2 (VHDX)

The CSH solution supports the installation of all the Server iX applications in accordance with specifications in the *System Administrator Guide*.

Philips-Supplied PIIC iX Hardware

On Philips-supplied hardware Systems -- PIIC iX (Local, Network, Overview, Patient Link, Express, and Small Server) -- are shipped on configured HP rp5800/5810 platforms. Enterprise Server, Physiological Server, Mobility Server, and Web Server are shipped on configured HP DL180e Gen9 Servers.

Deployment of Software

Product	Content
PIIC iX B.02 Media Kit 4535 645 86811	PIIC iX B.02 USB flash drive Application Software Microsoft SQL Server 2014 R2 Microsoft Windows 8.1 Microsoft Windows Server 2012 R2 PIIC iX B.02 Service Documentation.pdf

Deployment Models

For complete deployment description refer to the ***System Administrator Guide***.

Express PIIC iX Deployment

Express PIIC iX is a Local PIIC iX with patient connection and limited Surveillance features.

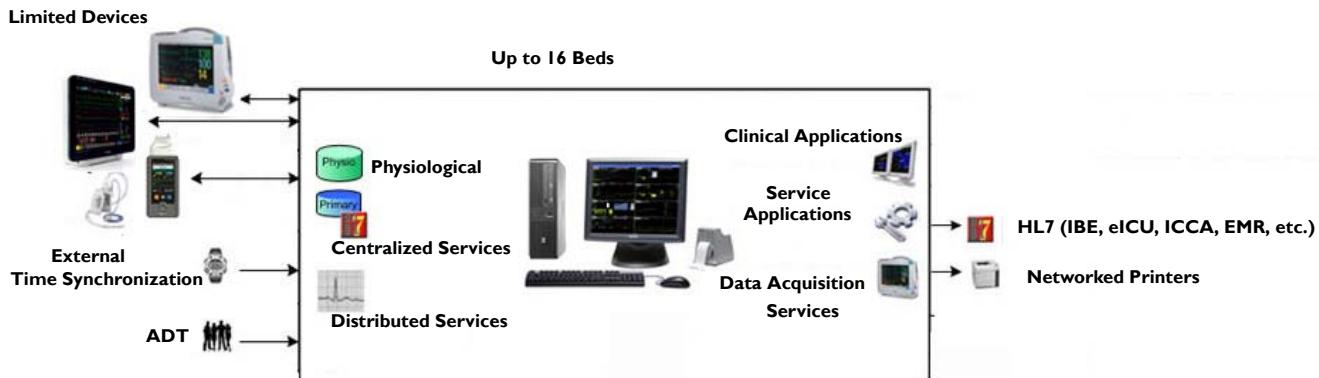


Figure 2-1 Express PIIC iX Deployment

Express PIIC iX systems support the following licensed features:

- HL7 Vital Outbound Interface**
- Inbound ADT Interface**
- Inbound ADT Interface**
- Full Disclosure**
- Surveillance**
- Patient Connections**
- Data Processing**
- Monitor Connectivity Type**
- Interface Gateway**
- Configuration Database**
- Physiologic Server**

In **Figure 2-3** note the following:

- Express PIIC iX systems may have up to 16 patient connections and do not support other Licensed Systems connection.
- Express PIIC iX runs on HP rp5800/5810 hardware.

Data Acquisition Systems

A Data Acquisition host (Patient Link PIIC iX or IntelliBridge System, for example) is a host licensed with the patient connection feature, but not licensed for surveillance. A Data Acquisition host enables the system to integrate with external systems such as HL7 without requiring a central station. An Acquisition System can be deployed in a clinical unit where the user does not want Surveillance Monitoring, but does want external interface such as HL7. IntelliBridge System (IBS) supports third-party connectivity that enables the system to receive data from bedside devices by way of EC40/80 hubs or third party host servers.

Table 2-1 Data Acquisition Host Features

	Patient Link PIIC iX	Network Link	IBS (Local)	IBS (Network)
Patient Connection	X	X	X	X
Local Database	X		X	
Physiological Server	X		X	
Interface Gateway	X		X	
System Control	X	X		
HL7 Vital Outbound	X	X	X	X
Monitor Connectivity type	X	X		
Third-Party Connectivity Type	X	X	X	X
Data Processing		X		
Inbound ADT		X		
12 Lead Export		X		
Electronic Report Distribution		X		
Inbound Lab Interface		X		
Wave Strip Export		X		
WEB Single Patient		X		
WEB Server			X	
WEB Multi Patient		X		
Data WareHouse Connect Export		X		
Holter Data Export		X		

- Clinical units in which an Acquisition host resides cannot have any other Surveillance or Overview Systems.
- The number of assigned beds to an Acquisition System cannot exceed the limit of the System's Patient Connections feature assignment.

Small Server/Local PIIC iX Deployment



Figure 2-2 Small Server PIIC iX Deployment

In **Figure 2-3** note the following:

- Small Server PIIC iX systems may have up to 8 other licensed systems and up to 64 patient connections if appropriately licensed (**Table 5-4**).
- All inbound ADT and Labs originate from CCP.
- Up to 64 Patient Connections are allowed in the topology.



Figure 2-3 Local PIIC iX Deployment

In **Figure 2-3** note the following:

- Local PIIC iX systems may have up to 8 Overview systems (**Table 5-4**).
- Local PIIC iX systems cannot include Mobility Service but can have a separate Mobility Server.
- In a Local PIIC iX deployment up to 32 beds and 8 connected Overview Systems are permitted.

Mid Size Deployment

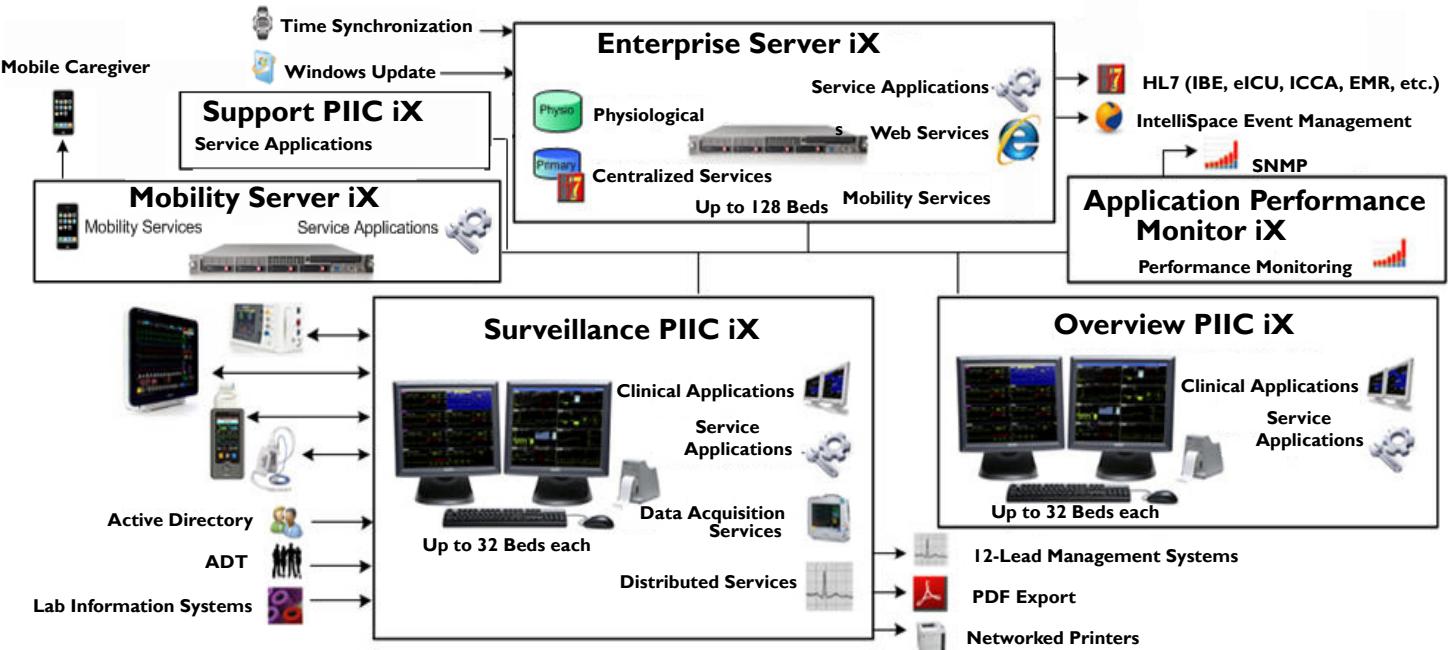


Figure 2-4 Mid Size Deployment

In **Figure 2-4** note the following:

- In Mid Size deployment the Primary Server can either be an Enterprise Server iX or Small Server PIIC iX. The Small Primary Server, which cannot be virtualized, runs on client-class hardware and supports up to 8 connected systems and 64 beds.
- An Enterprise Server iX acts as a Physiological Server for a Topology with up to 512 beds.
- Data Acquisition Services run on Surveillance systems but not on Overview systems.
- Support systems can be installed on virtual machines or directly on customer-supplied hardware. A Support system is any unlicensed system, optionally running on customer-supplied hardware, or even a customer-supplied operating system running SQL Server Express. Unlicensed systems can still run System Configuration in order to configure or diagnose PIIC iX.
- All Servers (except Small Primary Servers) can be installed on virtual machines on customer-supplied hardware. Servers on customer-supplied hardware require virtualization.
- Mobility and Web Server iX can co-reside on the same host. Dedicated Mobility servers and Dedicated Web Servers are permissible in any topology.
- When connected to a Small Primary server, the Dedicated Web Server must run on client-class hardware.
- When more than 64 Bed Labels are configured within a Clinical Unit, Alarm Reflection and Bed-to-Bed Overview are disabled for that Unit.
- Monitoring Equipment Labels must be unique within the network.
- All systems must reside in the same time zone.

Enterprise Deployment

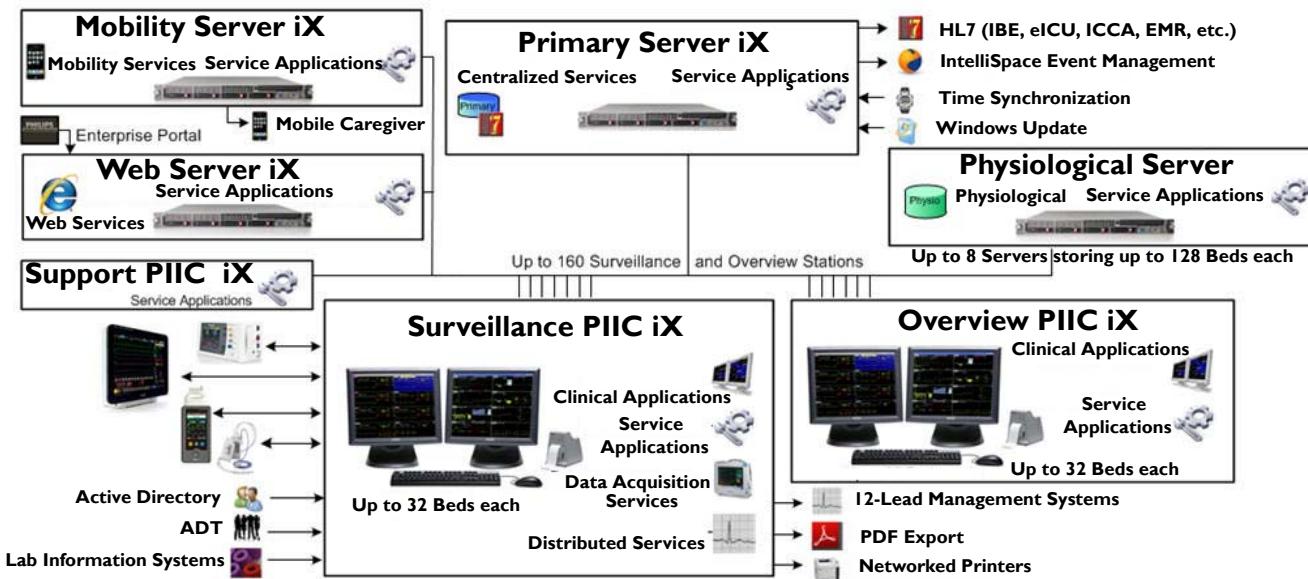


Figure 2-5 Typical Deployment supporting 513 - 1024 Beds

In **Figure 2-5** note the following:

- An Enterprise Primary Server iX supports up to 160 Systems.
- Dedicated Physiological Servers are permitted in any Topology where there is a Large Primary Server, and there can be more than one Physiological Server in the topology.
- A Physiological Server can support up to 128 Beds.
- Dedicated Mobility servers and Dedicated Web Servers are permitted in any topology.
- When connected to a Large Primary Server (or Virtualized equivalent) the Dedicated Web Server must run on Server-Class Hardware.

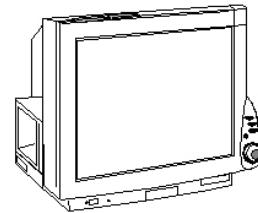
Virtualization Deployment

Enterprise Servers can be deployed as virtual machines running compatible versions of VMware vSphere or Microsoft Hyper-V. The virtual machines must be configured to support the minimum specification defined for each Enterprise Server topology. Refer to the *System Administrator Guide*.

Compatible Patient Monitors



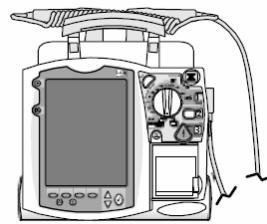
**MX40 IntelliVue Telemetry
Patient Wearable Monitor (PWM)**



**Wired/Wireless
IntelliVue Patient Monitors**



**Wired/Wireless MP5
Wireless MP5T
Patient Monitor**



MRx Defibrillator/Monitor



**Wired/Wireless
MP2/X2 Patient Monitor**

Using Philips-Supplied System Hardware

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Overview

Philips-provided hardware components of PIIC iX Systems are typically industry standard equipment tailored to PIIC iX applications. Philips-provided hardware components change as newer models with improved performance features become available. This chapter describes and illustrates general hardware features at the time of related product release.

WARNING **Hardware and software products (including, but not limited to PCs, Servers, peripheral devices, and network infrastructure components) that are not approved by Philips as part of a PIIC iX system are not approved or supported by Philips for use with PIIC iX and Clinical Network/Database Server systems.**

Use of hardware and software that has not been approved by Philips for use with the PIIC iX and Clinical Network/Database Server can result in the loss of central monitoring - including alarm annunciation - or in degradation of monitoring performance.

PIIC iX B.02 Supported Hardware

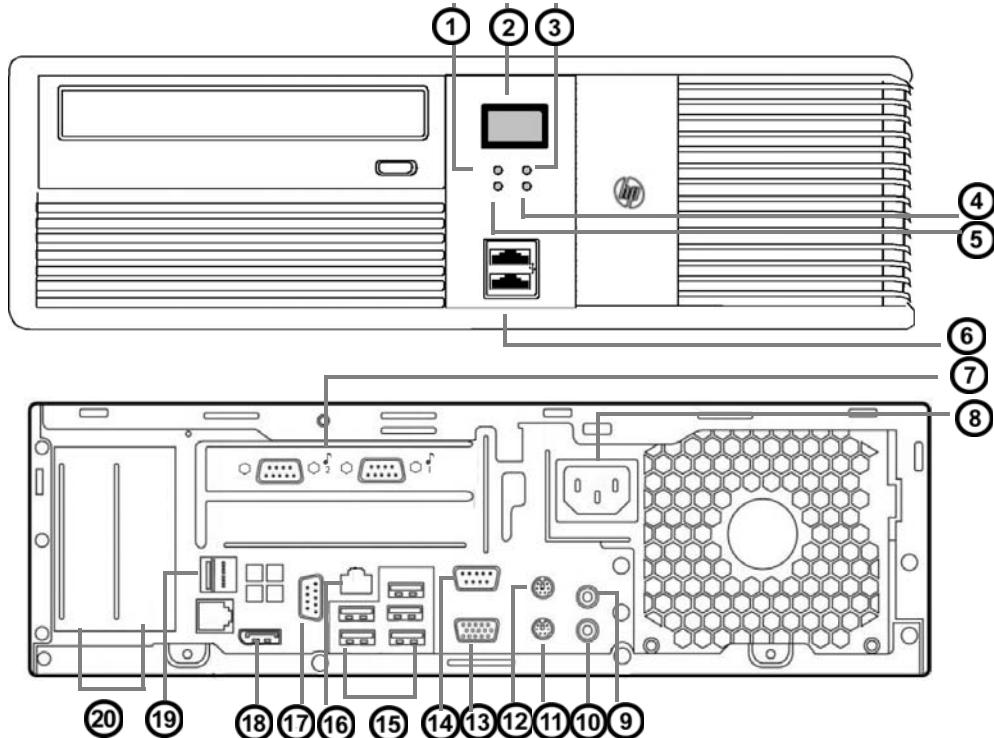
HP rp5800
HP DL180 Gen9
HP DL380e Gen8¹

¹ PIIC iX B.02.xx using Philips Supplied Hardware (PSH) ships on HP DL180 Gen9 servers, but is compatible with HP DL380e Gen8 servers shipped with earlier PIIC iX software releases.

Philips-Supplied PC Hardware

Philips-supplied and configured hardware that currently ships with the PIIC iX B.02 Local PIIC iX and Small Server PIIC iX is the HP rp5800 PC.

HP rp5800



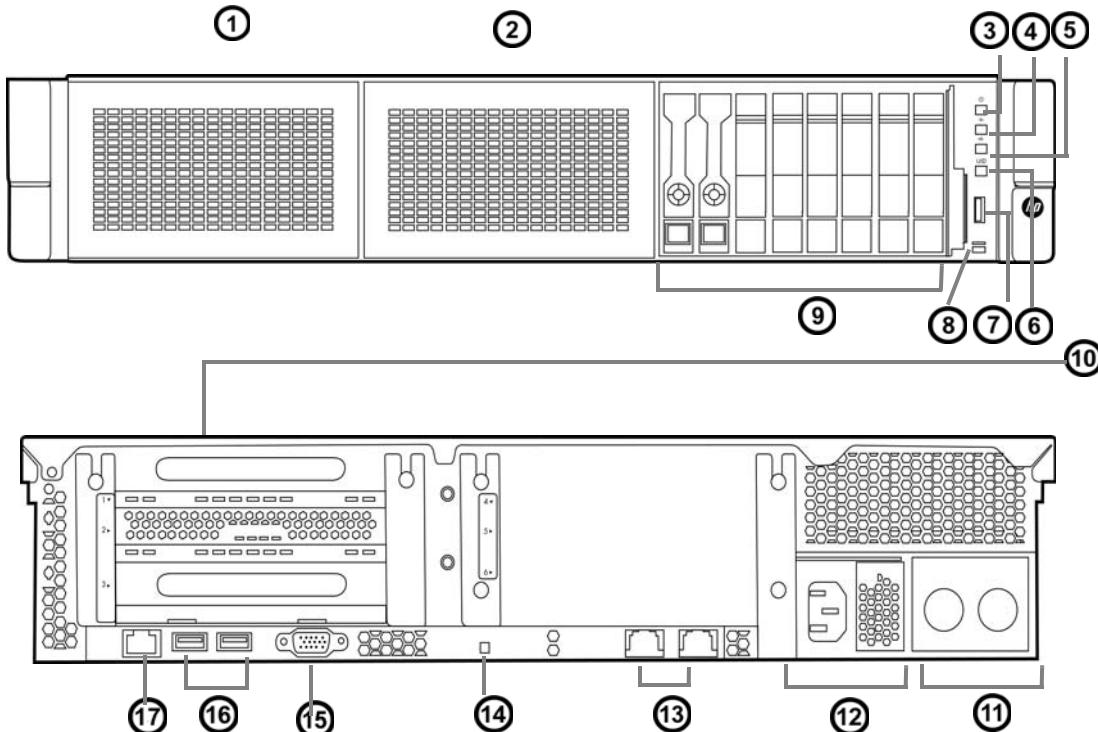
1	Power LED	11	Keyboard Connector
2	Power Button	12	Mouse Connector
3	Hard Drive Activity LED	13	VGA Port
4	NIC Activity Indicator LED	14	RS-232 Serial Port, (Com 1) (not used)
5	NIC Link Indicator LED	15	USB Ports (5) - Philips recommends using top left port for 2-Channel USB Recorder, top right for first touch display, center right for the second touch display, and bottom right for supported Printer.
6	USB Ports with sliding door (2) Use top port for USB media.	16	RJ-45 LAN Connector
7	Horizontal Slots (2) - Use top slot for Audio Card. Two Audio Card Connectors accommodate two external speakers. Some installations connect to Remote Speaker Kit or Multi Speaker Distribution Rack.	17	RS-232 Serial Port (Com 2) (not used)
8	Power Cord Connector	18	Display Port - Supports Philips-supplied DisplayPort-to-VGA Adapter connecting 1280 x 1024 or 1920 x 1080 Primary Display Can be used with Display Port Cable for 2560 x 1600 and 2560 x 1440 Displays
9	Line-in Audio (not used)	19	USB + Power Port (24-Volt) (not used)
10	Line-out Audio (not used)	20	Vertical Slots (2)

Figure 3-1 HP rp5800 Controls and Connectors

Philips-Supplied Enterprise Server Hardware

With PIIC iX B.02 the Philips-supplied and configured hardware that currently ships for the Enterprise Server is the HP **DL180e Gen9** 2U rack server. RAID 1 is included on all Philips-Supplied Enterprise Servers. PIIC iX B.02 software is also compatible with some earlier release PIIC iX hardware (refer to *PIIC iX Software Upgrade Note*) and some PIIC Classic hardware (refer to *PIIC iX Hardware Upgrade Guide*).

HP DL180 Gen9

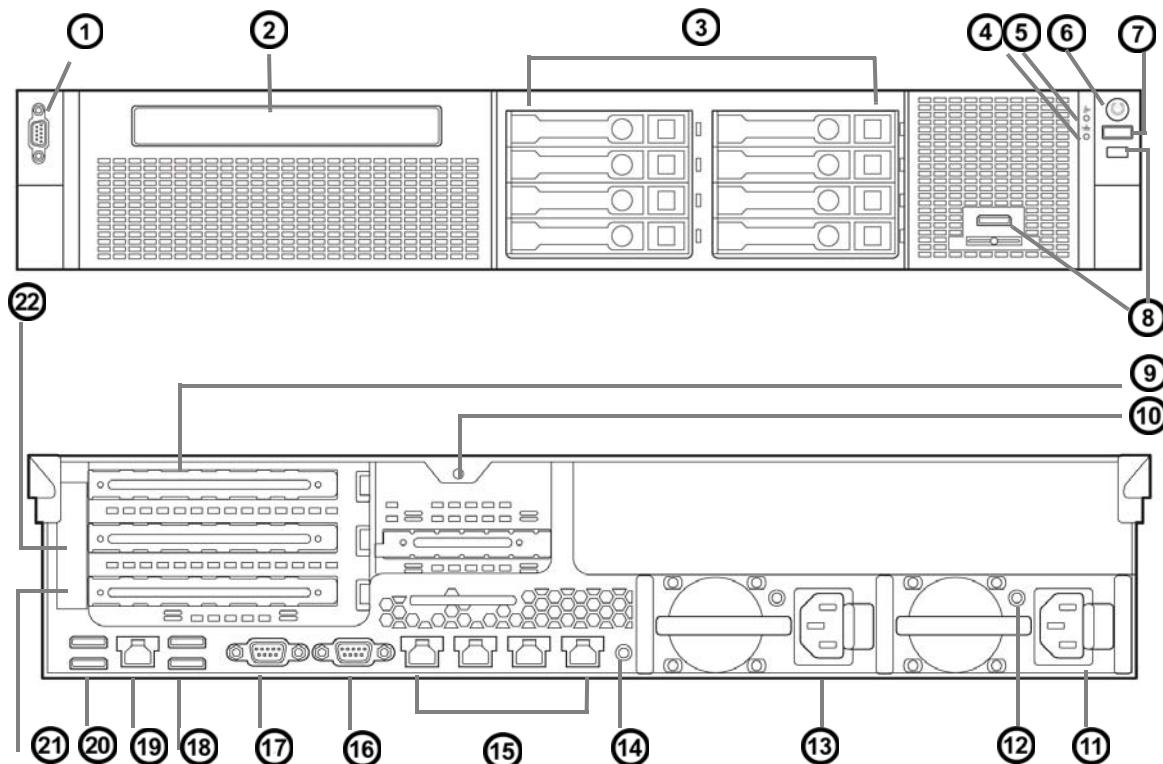


1	Drive Bay 1	9	8 SFF Drive Bay (3)
2	Drive Bay 2	10	PCIe3 Slots 1-3
3	Power On/Standby Button and System Power LED	11	Power Supply Bay 2 and LED ¹
4	Health LED	12	Power Supply Connector I and LED
5	NIC Status LED	13	NIC Connectors
6	UID LED	14	UID LED
7	USB Port	15	Video Connector
8	Serial Label Pull Tab	16	USB 3 Connectors
		17	Dedicated iLO Connector

¹ For information about adding a second Power Supply (see **Replaceable Parts**) refer to HP DL180 Gen9 Server Maintenance and Service Guide. For additional information refer to **Installing Second Power Supply in Server**.

Figure 3-2 HP DL180 Gen9 Controls and Connectors

HP DL380e Gen8



1	Video Connector	12	Power Supply Bay 1 LED
2	Optical Drive (not used, shown populated)	13	Customer supplied Power Supply Bay 2 LED
3	SFF Drives	14	UID LED
4	Health LED	15	NIC Connectors labeled 1 through 4 NIC Connectors 2 through 4 not used
5	NIC Status LED	16	Serial Connector
6	Power On/Standy Button	17	Video Connector
7	UID Button/LED	18	USB Ports
8	USB Ports	19	iLO Connector (Default: Disabled)
9	PCIe Slot 1	20	USB Ports
10	PCIe Slot 4	21	PCIe Slot 2
11	Power Supply Bay 1	22	PCIe Slot 3

Figure 3-3 HP DL380e Gen8 Controls and Connectors

Other Philips-Supplied Hardware Components

Displays

Both 19-inch (1280x1024) and 24-inch (1920x1080) Touch and Non-touch Displays are available as purchased products. Refer to the specific Display **Documentation** for a complete description of its troubleshooting procedures, functionality, and maintenance requirements.

If you want to supply your own Display, it must comply with criteria and specifications described in **Customer-Supplied Display Requirements, Appendix E**.

WARNING **Be sure that you use the native resolution for your Display or patient data may not appear accurately.**

The PIIC iX Main Screen shows real-time waveforms, numerics, and alarms for up to 32 patients (on one or more displays). The following display resolutions are supported:

Display Resolution	Display Interface	Max Patients Single Display	Max Patients Dual Display ¹	Max Row x Column
1280 x 1024	VGA	16	32	8 x 2
1920 x 1080	HD15	24	32	8 x 3
2560 x 1440 ²	DisplayPort	32	32	8 x 4
2560 x 1600 ²		32	32	8 x 4

¹ Refer to **Supported Dual Display Combinations**

² When single display is configured for Application Window Side-by-Side with Surveillance, the maximum number of configurable columns in Display Setup is 2.

Supported Dual Display Combinations

VGA HD15 1280X1024 with VGA HD15 1280x1024

VGA HD15 1920x1080 with VGA HD15 1920x1080

VGA HD15 1920x1080 with VGA HD15 1280x1024

DisplayPort 2560x1440 or 1600 with VGA HD15 1280x1024

DisplayPort 2560x1440 or 1600 with VGA HD15 1920x1080

Table 3-1 Display Sectors

Resolution	1280 x 1024	1920 x 1080	2560 x 1440	2560 x 1600
Typical Display Size	19 inch	24 inch	27 inch	30 inch
Maximum Columns	2	3	4 ¹	4 ¹
Maximum Sectors in a Column				
1 wave	8		8	
2 waves				
2 waves and second header row ²	7			
3 waves	3		5	
3 waves and second header row ²			4	5

Table 3-1 Display Sectors

Resolution	1280 x 1024	1920 x 1080	2560 x 1440	2560 x 1600
Typical Display Size	19 inch	24 inch	27 inch	30 inch
Maximum Columns	2	3	4 ¹	4 ¹
	Maximum Sectors in a Column			
4 waves	2		4	
4 waves and second header row			3	4
5 waves	2		3	
5 waves and second header row ²				
ST Map (1 wave)	3		5	
ST Map (1 wave) and second header row ²			4	5
Trends (1 wave)	5	7	8	
Trends (1 wave) and second header row ²	4	6	7	

¹ When a 2560 x 1440 or 2560 x 1600 single display is configured for Application Window Side-by-Side with Surveillance, the maximum number of configurable columns in Display Setup is 2.

² Second header row is the only way to display Screen Notes.

NOTES Second header row is positioned beneath the name row. Icons appear in the second row and will not be obscured by alarms. Second header rows will never display when an application is opened in the lower half of the screen and the sectors are in the top half of the screen.

To determine the maximum number of sectors on a display, multiply **Maximum Columns** by **Maximum Sectors in a Column**.

For example,

Maximum sectors for 2 waves and 2nd header row on a 1920 x 1080 display are
 $3 \times 7 = 21$ sectors.

Connecting Displays to the HP rp5800

Note the following guidelines when connecting one or two Displays to the HP rp5800. Be sure that you use the native resolution for your Display or patient data may not appear accurately.

- **Single Display Systems:** Connect a Single Display directly into the VGA connector of HP rp5800 rear panel ([page 3-2](#)).

If you are using a single Display that has 2560 resolution, connect the Display directly into the Display Port.

Important Be sure that your VGA cable has pins 9 and 15 wired or you may have resolution problems. A Blue insulator between pins is intended to indicate that these pins are wired.

- **Dual VGA Display Systems:** Connect the secondary Display directly into the VGA Port on the HP rp5800 rear panel ([page 3-2](#)).

Connect the primary Display to the VGA connection of the Display Port-to-VGA Converter (4535 642 93721). Then plug the Display Port-to-VGA Converter into the Display Port on the HP rp5800 rear panel ([page 3-2](#)).

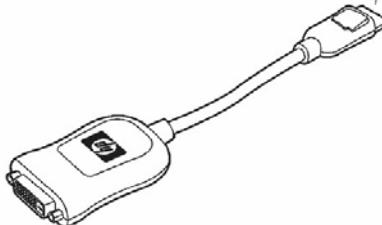


Table 3-2 Display Required Specifications for PIIC iX

Specification	Native Resolution	Interface
Single Display	1280 x 1024	VGA HD15 ¹
	1920 x 1080	
	2560 x 1440	
	2560 x 1600	DisplayPort
Dual Display	1280 x 1024 with 1280 x 1024	VGA HD15 ²
	1280 x 1024 with 1920 x 1080	
	1920 x 1080 with 1920 x 1080	
	2560 x 1440 with 1280 x 1024	
	2560 x 1600 with 1280 x 1024	DisplayPort VGA HD15
	2560 x 1440 with 1920 x 1080	DisplayPort VGA HD15
	2560 x 1600 with 1920 x 1080	DisplayPort VGA HD15
	2560 x 1600 with 1920 x 1080	DisplayPort VGA HD15

¹ Connect a Single Display directly into the VGA connector of the HP rp5800 rear panel.

² Connect the primary Display to the VGA connection of the DisplayPort-to-VGA Converter (4535 642 93721). Then plug the DisplayPort-to-VGA Converter into the DisplayPort on the HP rp5800 rear panel. Connect the secondary Display directly into the VGA Port on the HP rp5800 rear panel.

Installing Remote Display

You can install a Remote Display that permits viewing PIIC iX data at remote locations. Remote Display cable lengths can be up to 90 m (300 ft). Up to six Remote Displays can be connected to a PIIC iX. Remote Displays must be ordered separately.

The Remote Display installation requires a 6-way Video Splitter (**Figure 3-4**) that uses AC power. The video output of the PIIC iX connects to 5 BNC Video Splitter inputs; the Displays connect to the 5 BNC Video Splitter outputs.

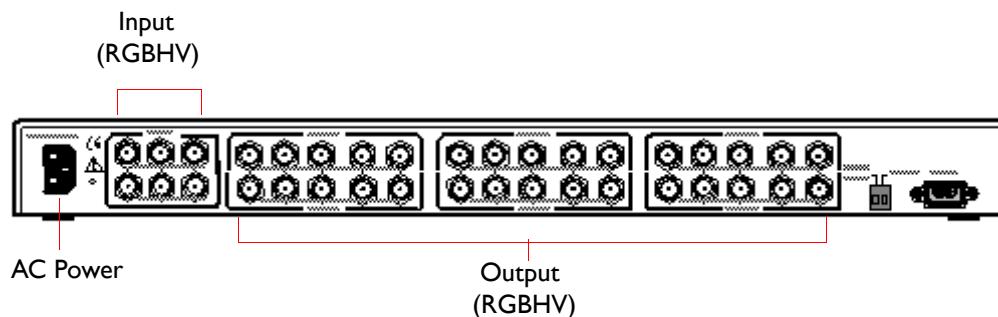


Figure 3-4 Remote Display 6-Way Video Splitter

Keyboard-Video-Mouse Switch

A Philips provided **Keyboard-Video-Mouse (KVM) Switch** permits control of up to four PIIC iX Systems with one (PS/2 or USB) keyboard and mouse or trackball.

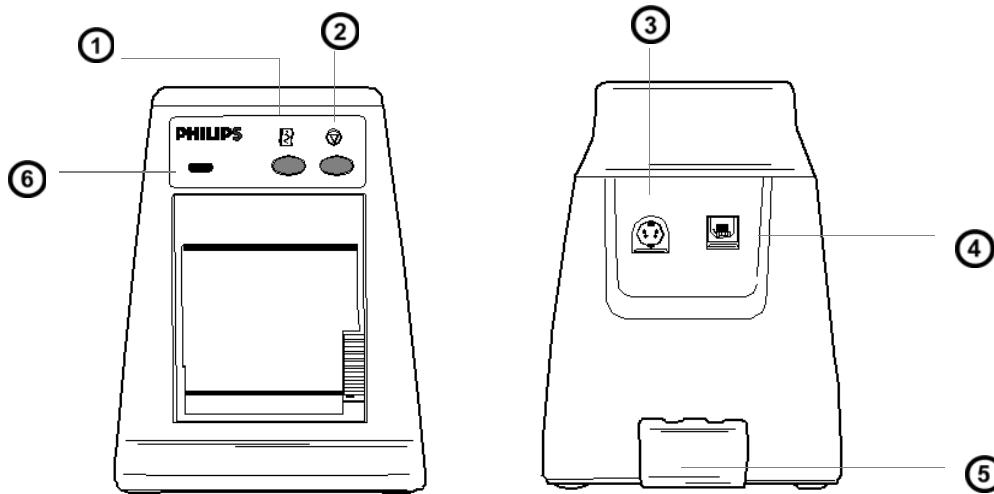
The KVM Switch can be used with only a keyboard, only a keyboard and mouse, or a keyboard, mouse, and second display. Installation instructions are included in the KVM Switch documentation. When using switched video, some other capabilities are not supported: dual resting display mode, switched Touch Screen display, KaVoom Software Keyboard Mouse Switch.

2-Channel USB Recorder

The **2-Channel USB Recorder** directly connects to a PIIC iX USB port. The **2-Channel USB Recorder** is a 50 mm wide thermal array recorder that provides high resolution, high quality waveforms. The grid and waveforms are printed simultaneously to assure accurate registration. The recorder has the capability for up to two waveforms with multiple lines of annotation, which includes:

- Patient name (as in the Admit window)
- Patient Medical Record number (as in the Admit window)
- Bed label
- Date and time of the first printed waveform
- Alarm/INOP message of the highest priority, most recent event
- Patient parameters available at the time of recording

- Recorder speed



1	Run/Cont key - makes the current timed recording continuous	4	USB Connector - Connect to PC
2	Stop key - stops the currently printing recording With PIIC iX B.01 and later you can press the Continuous and Stop keys simultaneously to stop the recording job and clear the recorder queue.	5	Strain Relief Clip to Tie Wraps
3	Power - connect to Universal Power Module	6	LED

Recorder Button and LED Descriptions

Button	Description	LED State
Stop	Printing stops immediately	Yellow LED flashes three times, then Green LED On
Continuous	Recorder starts after pause of several seconds LED blinks	Green LED Blinking

LED State	Description
Blinking Green	Continuous Record Mode
Blinking Yellow	After recorder powers up but before communication is established with the host PIIC iX
	Communication is lost
	Paper Out condition is detected
	Door Open condition is detected
Green On	Normal Record Mode - either printing or in standby
LEDs Off	No power

Philips Provided UPSs

Important If you use a UPS not supplied by Philips it must comply to **Customer-Supplied UPS Requirements**.

Preventive Maintenance

NOTE All preventive maintenance is the responsibility of the user.

Recommended frequency is every six months, or more frequently in harsh environments.

Clearing Air Intakes

Fans used to cool electronic devices can develop dust build up in air intake areas. This build up must be removed to assure proper cooling and circuit operation. PIIC iX and Server iX air intakes should be checked regularly and dust build up removed.

Replacing UPS Batteries

WARNING **Do not attempt to disassemble the UPS. It contains no serviceable parts except the battery, and interior voltages can be hazardous. Battery replacement should be performed by trained service personnel only.**

To assure dependable UPS performance, regular replacement of UPS batteries is recommended.

- For ambient temperature normally below 25° C (77° F), UPS batteries should be replaced every three years.
- For ambient temperature normally above 25° C (77° F), UPS batteries should be replaced every two years.

Purchase of spare batteries is not recommended since they need to be recharged at least every six months to maintain their capacity. Instead, batteries should be purchased close to the time they must be used.

You can purchase a spare, charged UPS if you need backup emergency power. For re-order information see **page 9-94**. For complete battery replacement instructions, refer to the UPS documentation.

For complete battery replacement instructions, refer to the UPS documentation.

Tripp-Lite UPS

WARNINGS	<p>Connect the UPS directly to a properly grounded AC power source. Do not use adapters that would eliminate the UPS connection to ground.</p> <p>The UPS contains a Battery. The output terminals may be live even when the UPS is not connected to an AC power source.</p> <p>Do not use extension cords to connect the UPS to an AC power source.</p> <p>Do not plug the UPS into itself; this will damage the UPS.</p> <p>If the UPS is to be connected to a motor-powered AC generator, the generator must provide filtered, frequency-regulated computer-grade output.</p> <p>Do not open the UPS for any reason except for battery replacement. There are no user-serviceable parts inside.</p> <p>The batteries present a risk of electrical shock and burn from high short-circuit current; observe proper precautions. Use tools with insulated handles, and replace the existing batteries with the same number and type (Sealed Lead Acid). DO NOT OPEN THE BATTERIES. Do not short or bridge the battery terminals with any object.</p> <p>During hot-swap battery replacement the UPS does not provide backup power if there is a blackout or other power interruption.</p> <p>With the exception of battery hot-swapping, do not operate the UPS without batteries.</p>
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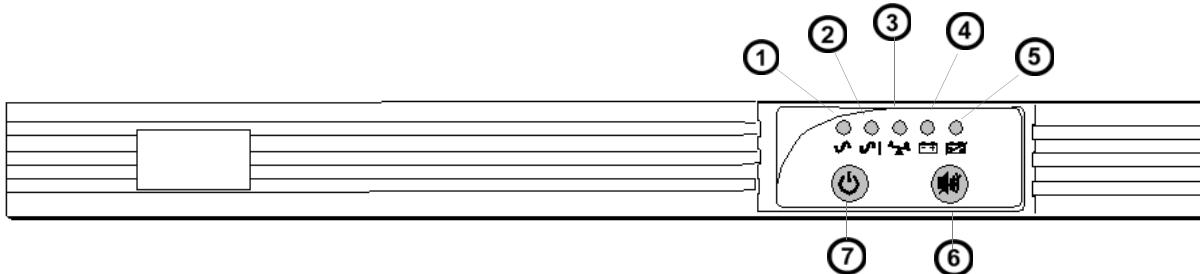
Important	PIIC iX systems must be powered by uninterruptable power sources. During a power outage the UPS is used to provide battery backup power until power from an emergency generator is available (or until the UPS batteries are exhausted). PIIC iX does not support the use of serial or USB cable connections to the UPS.
------------------	--

Location Requirements

- Install the UPS inside and away from excess moisture, heat, conductive contaminants, dust, or direct sunlight.
- For best performance keep temperature at 59 - 77° F (15 - 25° C). Due to battery replacement schedule recommended best performance means limiting the temperature range to 25° C.
- Leave adequate space around all sides of the UPS for proper ventilation. Do not obstruct the vents or fan openings.

Connecting the PIIC iX PC to the UPS

- 1 Connect the UPS input power cord to a properly grounded, emergency-power electrical outlet. If necessary allow the UPS battery to charge. A full charge of the battery may take up to 12 hours.
- 2 Plug the PIIC iX PC, recorder power supply, and other approved accessory device power cords into the UPS battery backup outlets.
- 3 Turn on the UPS.



Item	Description	Behavior
1	Power LED	Steady Green when UPS is ON and supplying connected devices with AC power. While running on batteries, the Power LED blinks green and the UPS sounds a repeating sequence of four beeps.
2	Voltage Correction	Steady Green when UPS is automatically correcting high or low AC voltage without utilizing battery power.
3	Output Load Level	LED color indicates approximate electrical load of equipment connected to the UPS AC outlets. <ul style="list-style-type: none"> ■ Green - light load ■ Yellow - medium load ■ Red - overload If the LED is red (steady or flashing) unplug the devices to clear the overload.
<i>Caution</i> — Be sure to correct overloads immediately, or UPS could shut down and not operate if power is lost.		
4	Battery Charge	The Battery Charge LED color indicates the charge state of the UPS battery When the UPS is operating on AC power: <ul style="list-style-type: none"> ■ Green - indicates a full charge ■ Yellow - indicates that the UPS has approximately a 50% charge ■ Red - indicates the UPS is beginning to charge (or in the charging process) When the UPS is operating on battery power: <ul style="list-style-type: none"> ■ Green - indicates a high level of energy ■ Yellow - indicates a medium level of energy ■ Red - indicates a low level of energy A Steady Red light with an intermittent audible alarm indicates that the UPS batteries need to be recharged or replaced.
6	Mute/Test	Silences/Mutes UPS audible alarms <ul style="list-style-type: none"> ■ Press and release the button.

Item	Description	Behavior
7	On/Off/ Standby	<p>To turn the UPS ON:</p> <ul style="list-style-type: none"> ■ With the UPS plugged in an AC power supply¹, press and hold the On/Off/Standby button for one second and release. <p>To turn the UPS OFF:</p> <ul style="list-style-type: none"> ■ With the UPS on and receiving power, press and hold the On/Off/Standby button for one second and release. ■ Unplug the UPS from the wall outlet. <p>¹ After you plug the UPS into the AC power supply, the UPS batteries automatically charge. You must turn the UPS ON to power the outlets.</p>

Figure 3-5 Tripp•Lite 110-127VAC 60Hz and 220-240VAC 50/60Hz Front Panel

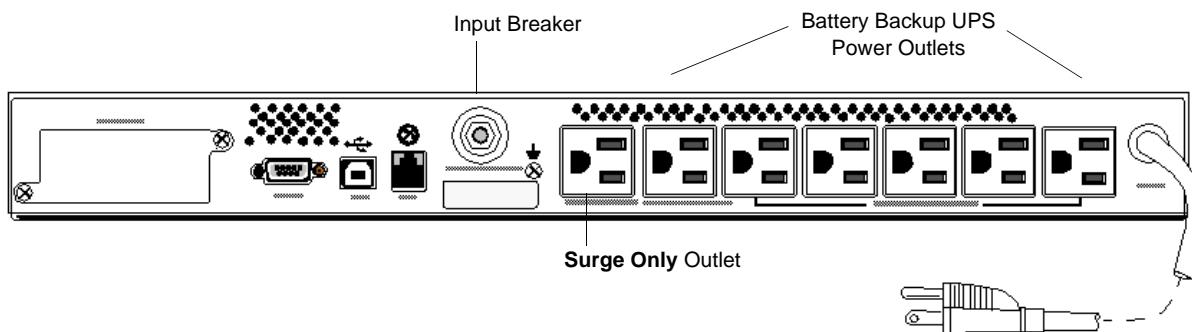


Figure 3-6 Tripp•Lite 110-127VAC 60Hz UPS Rear Panel

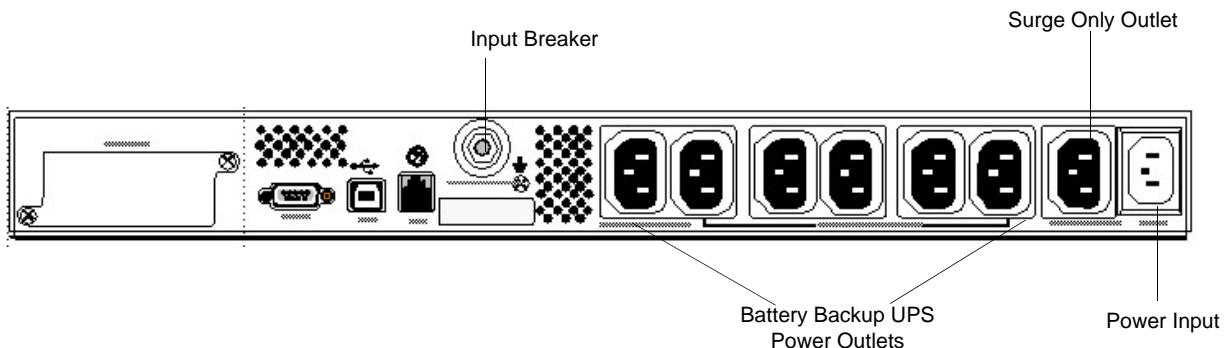


Figure 3-7 Tripp•Lite 220-240VAC 50/60Hz UPS Rear Panel

Connecting Devices to the UPS

WARNING **Do not connect devices other than those approved by Philips to the BATTERY BACKUP outlets on the UPS. If you connect devices other than what is listed in this section equipment can fail and possibly interrupt patient monitoring.**

Except as noted, the following devices must be powered by a UPS. Generally, the same UPS is not used for both the PIIC iX devices and the system infrastructure components.

- PC (**page 3-2**),
- 2-Channel USB Recorder Power Supply,
- Network Switches,
- Routers,
- Access Point Controllers,
- Sync Units, *and*
- Remote Power Supplies (Power Over Ethernet).

Displays and Video Splitters **can** be connected to the SURGE outlet of the UPS or to a separate non-UPS outlet. Printers should **not** be connected to a UPS.

Power Failure Behavior

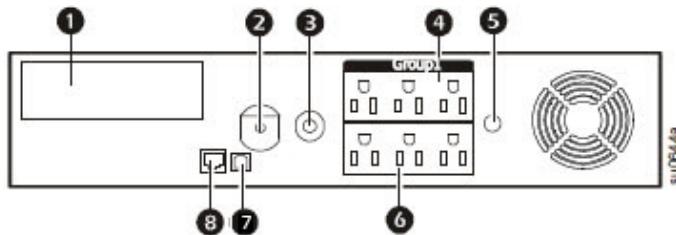
After power failure the Philips-supplied APC UPS for PIIC iX provides power until power is restored or the battery is run down.

WARNING **If a power failure lasts longer than the battery the PC may need to be manually restarted.**

NOTE Power failure and restoration messages appear in the **Event Log**.

Enterprise Server iX UPS

APC Rack Mount 1000VA 120V/1500VA 100V UPS



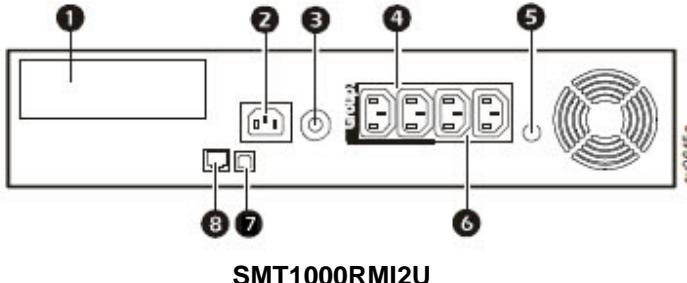
SMT1000RM2U, SMT1500RMJ2UB

1	SmartSlot for optional NMC accessory card	5	Chassis ground connection screw
2	UPS input	6	Outlets
3	Circuit breaker/overload protection	7	USB port ¹
4	Controlled outlet group (Group 1) Do not use with Philips installations.	8	RJ45 connector - serial UPS monitoring port ¹

¹ USB or Serial communication ports are not supported when connecting UPS to a Server running Windows Server 2008 or 2012 Operating Systems.

CAUTION Do not use Controlled outlet group (Group 1) with Philips installations.

APC Rack Mount 1000VA 230V UPS



1	SmartSlot for optional NMC accessory card	5	Chassis ground connection screw
2	UPS input	6	Outlets
3	Circuit breaker/overload protection	7	USB port ¹
4	Controlled outlet group Do not use with Philips installations.	8	RJ45 connector - serial UPS monitoring port ¹

¹ USB or Serial communication ports are not supported when connecting UPS to a Server running Windows Server 2008 or 2012 Operating Systems.

CAUTION Do not use Controlled outlet group (Group I) with Philips installations.

Specifications

This section provides physical, environmental, electrical, and safety specifications for PIIC iX system components.

CAUTION The following specifications are for units shipped at the time of document publication.

Physical Specifications

Table 3-3 Physical Specifications of PIIC iX/Server iX System Components

Philips Component	Product Part #	Height cm (in.)	Width cm (in.)	Depth cm (in.)	Weight kg. (lbs.)
HP rp5800 PC	4535 644 50621 4535 644 50661	10 (3.95)	34 (13.3)	38 (14.9)	6.84 (15.08)
HP DL180 Gen 9	4535 645 52601	8.75 (3.44)	44.54 (17.50)	60.70 (23.90)	16.59 (36.58) ¹
HP DL380e Gen 8	4535 643 83431 4535 644 84811	8.73 (3.44)	44.55 (17.54)	69.85 (27.5)	27.66 (61.00) ¹
19" Non-Touch Display	865058	38.6 (15.21)	42.9 (16.9)	20.7 (8.15)	8.0 (17.66)
19" Touch Display	865059	38.6 (15.21)	42.9 (16.9)	20.7 (8.15)	8.0 (17.66)
24" Non-Touch Display	866125	41.7 (16.42) ²	60.8 (23.94)	19.4 (7.64) ²	8.7 (19.2)
24" Touch Display	866126	41.7 (16.42) ²	60.8 (23.94)	19.4 (7.64) ²	8.9 (19.6)
6-Way Video Splitter	862211	4.3 (1.75)	44 (17.5)	21.6 (8.5)	1.7 (3.9)
Keyboard-Video-Mouse Switch	4535 642 99471	5.5 (2.2)	8.7 (3.4)	21 (8.3)	0.77 (1.7)
2-Channel USB Recorder	862120	11.2 (4.4)	14.3 (5.6)	14.5 (5.7)	0.19 (.42)
UPS Tripp Lite SmartPro Rack Mount	SMART500RTIU 4535 602 98591	4.45 (1.75)	44.5 (17.5)	29.8 (11.75)	8.0 (17.6)
	SMX500RTIU 4535 642 98601				8.5 (18.8)
UPS Tripp Lite SmartPro	SMART1050SLT 4535 642 98581	26.04 (10.25)	17.15 (6.75)	33.7 (13.25)	8.2 (18.0)
UPS APC Rack Mount 1000VA 120V	SMT1000RM2U 4535 643 32421	8.9 (3.5)	43.2 (17.0)	45.7 (18)	28.18 (62.13)
UPS APC Rack Mount 1500VA 100V	SMT1500RMJ2UB 4535 643 32431	8.9 (3.5)	43.2 (17.0)	45.7 (18)	28.64 (63)
UPS APC Rack Mount 1000VA 230V	SMT1000RMI2U 4535 643 32441	8.9 (3.5)	43.2 (17.0)	45.7 (18)	31.45 (69.2)

¹ Exact weight depends on configuration

² Includes stand

Environmental Requirements

Table 3-4 Environmental Requirements for PIIC iX/Server iX System Components

	Part Number	Temperature	Relative Humidity (Non-condensing)
Philips System		15 - 30 °C 59 - 86 °F	20 - 80% @ 30°C (86 °F)
Philips Components			
HP DL180 Gen9	4535 645 52601	Operating ¹ 10 to 35°C (50 to 95°F) Storage -30 to 60°C -22 to 140°F	Operating 8 - 90% Storage 5 - 95%
HP DL380e Gen8	4535 643 83431 4535 644 84811	Storage -30 to 60°C -22 to 140°F	Operating 10 - 90% Storage 5 - 95%
HP rp5800	4535 644 50621 4535 644 50661	Operating ¹ 10 to 40°C (50 to 104°F) Storage -30 to 60°C -22 to 140°F	Operating 20- 85% Storage 5 - 90%
19" Non Touch Display	865058	10 - 40 °C 50 - 104 °F	0 - 80%
19" Touch Display	865059	10 - 40 °C 50 - 104 °F	0 - 80%
24" Non-Touch Display	866125	Operating 0 to 35°C (32 to 95°F)	Operating 20 - 80%
24" Touch Display	866126	Storage -20 to 60°C -4 to 140°F	Storage 10 - 90%
6-way Video Splitter	862211	-40 - 70 °C 15 - 158 °F	5 - 95%
2-Channel USB Recorder	862120	0 to 30 °C 32 to 86 °F	10 - 95%
UPS Tripp Lite SmartPro Rack Mount	SMART500RTIU 4535 642 98591	0 - 40 °C 32 - 104 °F	0 - 85%
	SMX500RTIU 4535 642 98601	0 - 40 °C 32 - 104 °F	0 - 85%
UPS Tripp Lite SmartPro	SMART1050SLT 4535 642 98581	0 - 40 °C 32 - 104 °F	0 - 95%
APC UPS	SMT1000RM2U 4535 643 32421	-15 - 45 °C 5 - 113°F	0 - 95%
	SMT1500RMJ2UB 4535 643 32431	Operating 0 - 40 °C 32 - 104 °F Storage -15 - 45°C 5 - 113°F	0 - 95%
	SMT1000RMI2U 4535 643 32441	Operating 0 - 40 °C 32 - 104 °F Storage -15 - 45°C 5 - 113°F	0 - 95%

¹ Operating temperature is de-rated 1.0°C per 305 m (1000 ft) to 3050 m (10,000 ft) above sea level, no direct sustained sunlight. Maximum rate of change is 20°C/Hr. The upper limit may be limited by the type and number of options installed.

Electrical Specifications

Table 3-5 Electrical Specifications of PIIC iX/Server iX System Components

Philips Component	Product Part #	Input Voltage (VAC)	Manual Switching Required?	Input Frequency (Hz)	Power Output (typ) (Watts)
HP DL180 Gen9	4535 645 52601	100 - 240	No	47 - 63	550
HP DL380e Gen8	4535 643 83431 4535 644 84811	100 - 240	No	50 - 60	526
HP rp5800	4535 644 50621 4535 644 50661	90 - 264	No	50/60 ± 3	240
19" Non Touch Display	865058	85 - 265	No	50/60	
19" Touch Display	865059	85 - 265	No	50/60	
24" Non-Touch Display	866125	100 - 240	No	50/60	
24" Touch Display	866126	100 - 240	No	50/60	
6-Way Video Splitter	862211	100 - 240	No	50/60	10
UPS Tripp Lite SmartPro Rack Mount	SMART500RTIU 4535 642 98591	93 - 133		60 ± 2	
	SMX500RTIU 4535 642 98601	193 - 258		50/60 ± 2	
UPS Tripp Lite SmartPro	SMART1050SLT 4535 642 98581	108 - 132		50/60 ± 3	
APC UPS	SMT1000RM2U 4535 643 32421	82 - 144	No	50/60 ± 3	700
	SMT1500RMJ2UB 4535 643 32431	74 - 123		50/60 ± 3	1000
	SMT1000RMI2U 4535 643 32441	160 - 286	No	50/60 ± 3	700

Site Planning and Preparation

Overview	4-1
Site Planning	4-2
Network Design Considerations	4-5
Network Connection.....	4-8
Patient Safety Considerations.....	4-9

Overview

The PIIC iX System is the information hub of a clinical patient monitoring environment. A PIIC iX with Surveillance displays patient monitoring information from bedside and telemetry monitors and provides alarm annunciation, arrhythmia, ST analysis, and patient data storage and review.

Detailed descriptions of site planning for the patient monitoring environment are provided in the *IntelliVue Patient Monitor Installation Guide*. This chapter focuses principally on the unique requirements of installing PIIC iX components.

Primary Servers (Enterprise or Small), which contains the Configuration database, can be located in an equipment room or wiring closet. It must be accessible to service personnel. Significant planning and careful network design is required to ensure effective network operation.

Site Planning

Considerations

Elements of site planning that should be considered in preparing for a PIIC iX System installation include the following:

Design	Selecting appropriate components that best meet the monitoring needs of the clinical environment
Location	Selecting locations for PIIC iX Servers, Surveillance/Overview Stations, Display(s), Keyboard, Mouse, UPS, Recorders, Printers, network components and Server(s)
Network	Assuring that proper network cabling, conduit, wall boxes, and faceplates are provided for connecting devices to the Network
Cabling	Selecting proper type and length equipment cabling to interconnect system components
Web Access	Providing hospital intranet connection to PIIC iX Web Server
Environment	Ensuring that the installation meets environmental specifications recommended for each component
Electrical	Ensuring that electrical outlets with proper grounding, electrical backup, voltage, current, and frequency are available to power the system and components
Safety	Ensuring that all safety requirements are met

Responsibilities

Planning and preparing the site for an installation is a joint responsibility between the Customer and Philips. To ensure that the system is properly designed and that all necessary preparations are completed when the system is delivered, contact a Philips Sales and Support Representative and set up a schedule for consultation, delivery, and installation.

Customer

The customer must perform the following site preparation:

- Ensure that the site complies with all structural, environmental, network, electrical, cabling, and safety requirements
- Install all mounts or wall channels required for wall mounted devices
- Install all required PIIC iX Network components and Network cables
- Provide a properly configured hospital intranet connection
- Remove old equipment
- Manage RF frequency at the site (applies to 802.11, 1.4/2.4 GHz IntelliVue Telemetry System)

NOTES If there are any concerns about the structural, environmental, network, electrical, RF, cabling, or safety requirements for the installation, contact an independent consulting engineer or the Response Center.

The Customer is also expected to assist the Service Provider during the installation process by providing personnel with knowledge of the hospital environment and its facilities, resources, policies, and procedures.

Philips Responsibilities

Philips is responsible for providing a **fully configured** product.

- All ordered system hardware, network components, and peripheral equipment are fully tested and ready for installation
- Windows operating system and Philips application software are preloaded with customer purchased options and factory default configurations
- LAN on Motherboard (LOM) connections are available in the Server
- All ordered mounting hardware and equipment cabling is included as well as Philips support and service documentation and shipment inventory Packing List

The Service Provider is responsible for installing the system at the Customer site, which includes:

- Removing the products from their shipment containers and installing them in their designated locations
- Connecting the PIIC iX Surveillance Stations, Overview Stations, Printers, and Servers to the Network and to all peripheral equipment
- Connecting electrical power to PIIC iX Surveillance/Overview Stations, Printers, Servers, and all Network components
- Installing purchased feature and upgrade options
- Starting up the PIIC iX system and configuring it to Customer specifications
- Verifying system operation and testing system performance using recommended **Testing Product Assurance** procedures
- Ensuring Customer satisfaction and acceptance of the installation
- Removing packaging materials (if necessary)

Location Requirements

In general, PIIC iX Servers should be located so that they are not accessible to patients and clinicians but convenient to service and support personnel. Typically this location is a wiring closet or specifically-designed room for Server equipment. Considerations when selecting and planning locations for the Primary/Physiologic Data Storage Server are:

- Wiring Closet Planning
- Network Switch Location
- Server and UPS Location

Wiring Closet Planning

Locked wiring closets or equipment rooms are recommended locations for all active Network components (except access points) because they can be made secure from unauthorized access and required electrical and environmental conditions can be maintained.

CAUTION In planning wiring closets, carefully consider the availability of properly grounded electrical outlets of the correct voltage and frequency for each device and the environmental control of temperature and humidity. The high density of devices in a small room can lead to large heat loads in a small space that must be controlled.

Network Switch Location

Network switches are the central communication hubs of the Clinical Network. Therefore, they should be located at a point central to the PIIC iX Surveillance Stations, Overview Stations, and Servers. In selecting switch locations, consideration should be given to the cabling distances between devices because cabling is a key cost and limitation of Network design. In general, switches should be in wiring closets centrally located on the Network.

Server Location

The Primary Server is the network device most accessed by service personnel. Software installation, system and device configuration, network maintenance, and troubleshooting all take place at the Server.

UPS Location

Active Clinical Network components must be on a UPS (Uninterruptible Power Supply) to assure network operation during short power interruptions.

WARNING **The Servers must be connected to a UPS.**

Do not connect devices other than those approved by Philips to the BATTERY BACKUP outlets on a Philips-provided UPS. If you connect devices other than what is listed in this section equipment can fail and possibly interrupt patient monitoring.

Connect the following devices to the BATTERY BACKUP outlets of a UPS.

- Core and Edge Switches
- Surveillance PIIC iX and Overview PIIC iX
- 2-Channel USB Recorders

Up to three Clinical Network components (switches or repeaters, for example) may be connected to a single UPS.

Philips recommends that Access Points (unless on POE) and Repeaters are also connected to a UPS.

The Printer must not be connected to a UPS Outlet. Other components and displays may be connected to the non battery-backed ACCESSORY outlets of a Philips-provided UPS or to a separate non-UPS electrical outlet with the same ground in compliance with devices ratings.

Consider the following when selecting UPS locations:

- Be sure all devices are far enough away from electrical equipment that may produce strong electromagnetic fields which can affect data transmission,
- Devices are protected from exposure to water or excessive moisture, lint, dust, or dirt,
- All devices are easily accessible to service personnel,
- There is at least 5 cm (2 in.) clearance around each device for adequate air circulation, and
- All device ventilation holes are not obstructed.

Network Design Considerations

This section describes considerations for designing a IntelliVue Clinical Network (ICN) for a specific clinical environment.

Reviewing Clinical Requirements

Designing an ICN requires a full understanding of the monitoring requirements of the clinical unit(s) it will serve. Key elements to consider include:

- **Number of Units and Beds**
- **Patient Monitoring Level**
- **Patient Monitor Type**
- **Central Monitoring Locations**
- **Type of Patient Data Access**
- **Future Requirements**

Number of Units and Beds

The number of beds determines the number of patient monitors, Surveillance Stations, Overview Stations, and Servers required. The number of Clinical Units and their locations determines how the PIIC iX System should be networked to provide efficient and convenient access to patient monitoring data.

Patient Monitoring Level

The level of monitoring required for patients determines which PIIC iX System can serve each clinical unit and its level of clinical application software. The more intensive the monitoring requirements, the more capability is required of PIIC iX hardware and software. Since hardware and software cost increases with capability, it is important to understand the exact patient monitoring requirements for each clinical unit, both present and future.

Patient Monitor Type

Another system design consideration is the type of patient monitor that will be used-- IntelliVue Telemetry, IntelliVue Patient Monitors (wired and/or wireless).

For installations dealing with acute patient care where patients remain in their beds wired bedside monitors, are generally required. For less acute care installations that have ambulatory patients, telemetry monitors are generally required. For installations that have patients who may change from bed-restricted to ambulatory, both wired and telemetry monitors should be available. And for installations where patient monitors may be frequently moved from bed to bed, wireless monitors may be preferred. The software can accommodate all of these types of installations, providing continuous collection of monitoring data as patients change beds or from bed restricted to ambulatory. **Patient Monitors** can be:

Wired IntelliVue Patient Monitors (IPMs) that connect directly to a Network switch.

Wireless IPMs that transmit patient monitoring data to a Wireless Network.

IntelliVue Telemetry PWDs and IntelliVue MX40 Patient Wearable Monitors (PWMs) that transmit patient monitoring data to a Wireless Network.

HeartStart MRx Monitors that connect to the Philips IntelliVue Monitoring Network.

Central Monitoring Locations

Central Monitoring locations should generally be in clinical units where patient beds are located. While the IntelliVue Network provides extensive access to patient monitoring data both within and across clinical units and at multiple distant locations, there are limitations on the length of cable runs for each network interconnection. Cable length limitations must be carefully reviewed in selecting patient data review locations.

Type of Patient Data Access

The type of access to patient data and monitoring controls at each monitoring location should be considered when designing the system. For example, does the clinician need to view both real-time and stored patient data from a clinical unit and/or other clinical units? Will it be necessary to silence alarms or change monitoring control settings? The answers to these types of questions are critical to the selection of monitoring hardware and network design. And they have great impact on the effectiveness of the PIIC iX System in meeting the needs of clinicians, as well as system cost.

Future Requirements

When designing an ICN both present and future requirements should be considered. Consideration should be given to possible future growth or requirements in system design.

Designing the System

NOTES

- This document does not describe the design and implementation of PIIC iX systems in detail because each clinical environment requires careful analysis by an experienced network designer. Philips Service Providers are trained to assist customers in reviewing their clinical requirements and designing a Server system that meets those requirements and will be supported by Philips Healthcare.
- The general concepts and capabilities of PIIC iX System components described should only be used as a reference for understanding the final design. Consult a Philips Service Provider for system design advice.
- Philips recommends that customers consult with a Philips representative when designing an ICN for their clinical environment to assure optimum selection of equipment and system performance.

Once the patient monitoring requirements of the clinical unit are determined, the ICN can be optimally designed.

Some key elements to consider in system design follow.

- Select the **hardware components** that will satisfy the clinical requirements,
- Determine which PIIC iX feature **options** you require,
- Determine the **switch requirements**-- the number of switches required and the devices (Surveillance Stations, Overview Stations, IntelliVue patient monitors, Access Points) that will be connected to each switch port.
- Determine the **Cable Plant requirements** -- cabling types/lengths and components (wall boxes, repeaters, media translators) necessary to interconnect network devices.

Drawing the Design

Once you determine your hardware and software requirements, Philips suggests that you sketch your Network including all required devices, components, and cabling. The final design should show all relevant information (Device Names, Locations, Cable Types, Cable Lengths, and so on).

The **Philips IntelliVue Clinical Network** documentation provides examples, details and connection type diagrams that can assist in the connection planning.

Network Connection

Because the PIIC iX client-class hardware obtains information from patient monitors connected to the Network, the network connection wall box must be installed near the Surveillance PIIC iX/Overview iX location.

Clinical Network cabling, wall boxes, and faceplate installation are generally the responsibility of a certified cabling professional. Network design should give careful consideration to the locations of cabling wall boxes, both for the clinical equipment -- Surveillance PIIC iX, Overview iX, printer -- and for the active Network components that require them. Distances between wall boxes and connected devices depends on cable lengths.

PIIC iX TCP/IP Settings

Settings required for connection to the hospital network are site-specific, and are added during hardware installation.

The following settings must be determined before installation:

IP Address	. . .
Subnet Mask	. . .
Default Gateway	. . .
DNS IP Address (search order)
WINS IP Address	primary . . . secondary . . .

Equipment Cabling

When selecting locations for system components, consider the lengths of cables required for interconnections. Standard length interconnection cables are provided with each component, but other cable lengths are available as options.

Patient Safety Considerations

Medical Device Standards

CAUTION PIIC iX is not suitable for installation in the Patient Care Vicinity (Patient Environment).

All medical devices must comply with international safety requirements for medical electrical equipment (IEC 60601-1 Medical electrical equipment — Part 1: General requirements for basic safety).

When connecting medical or non-medical equipment to a medical device (bedside monitor) a medical electrical system is created. Medical electrical systems must comply with IEC 60601-1 clause 16 requirements or IEC 60601-1-1 medical electrical equipment - Part 1-1: Collateral Standard — Safety requirements for medical electrical systems. When forming a medical electrical system, all equipment used within the patient environment (within 1.5 m from the patient and up to 2.5 m from the floor) must have its touch (enclosure) leakage current and patient leakage current measured. Measurements can be made using nominal mains voltage. Touch leakage current should be less than 100 µA in normal condition. Touch leakage current should be less than 500 µA (300 µA United States) when any one equipment, in-turn, of the medical electrical system, has an open earth ground (Class I, at the wall plug). Medical electrical equipment of the medical electrical system must have its patient leakage current measured. Type B and Type BF patient applied parts are limited to 100 µA in normal condition. Type CF patient applied parts are limited to 10 µA in normal condition.

NOTE Leakage current measurements referred to are to be measured at the patient monitor. If in doubt, consult the Technical Services Department or your local representative.

Philips Device Location Requirements

PIIC iX Overview/Surveillance Stations, Servers, Displays, Printers, and active Network components may be connected to bedside monitors through the ICN provided that they are located outside the **Patient Environment**.

Patient Environment

None of the PIIC iX Surveillance or Server equipment is intended for use within the patient environment. **Figure 4-1** shows acceptable distances from the patient environment.

WARNING **Do not place PIIC iX Local, Overview, Enterprise Server iX, Small Server, Patient Link, Express, displays, recorder, Printer, and ICN components within 1.5 meters (4.9 ft.) horizontally and 2.5 m (8.2 ft.) vertically above the floor from any patient care location in which medical diagnosis, monitoring, or treatment of the patient is carried out.**

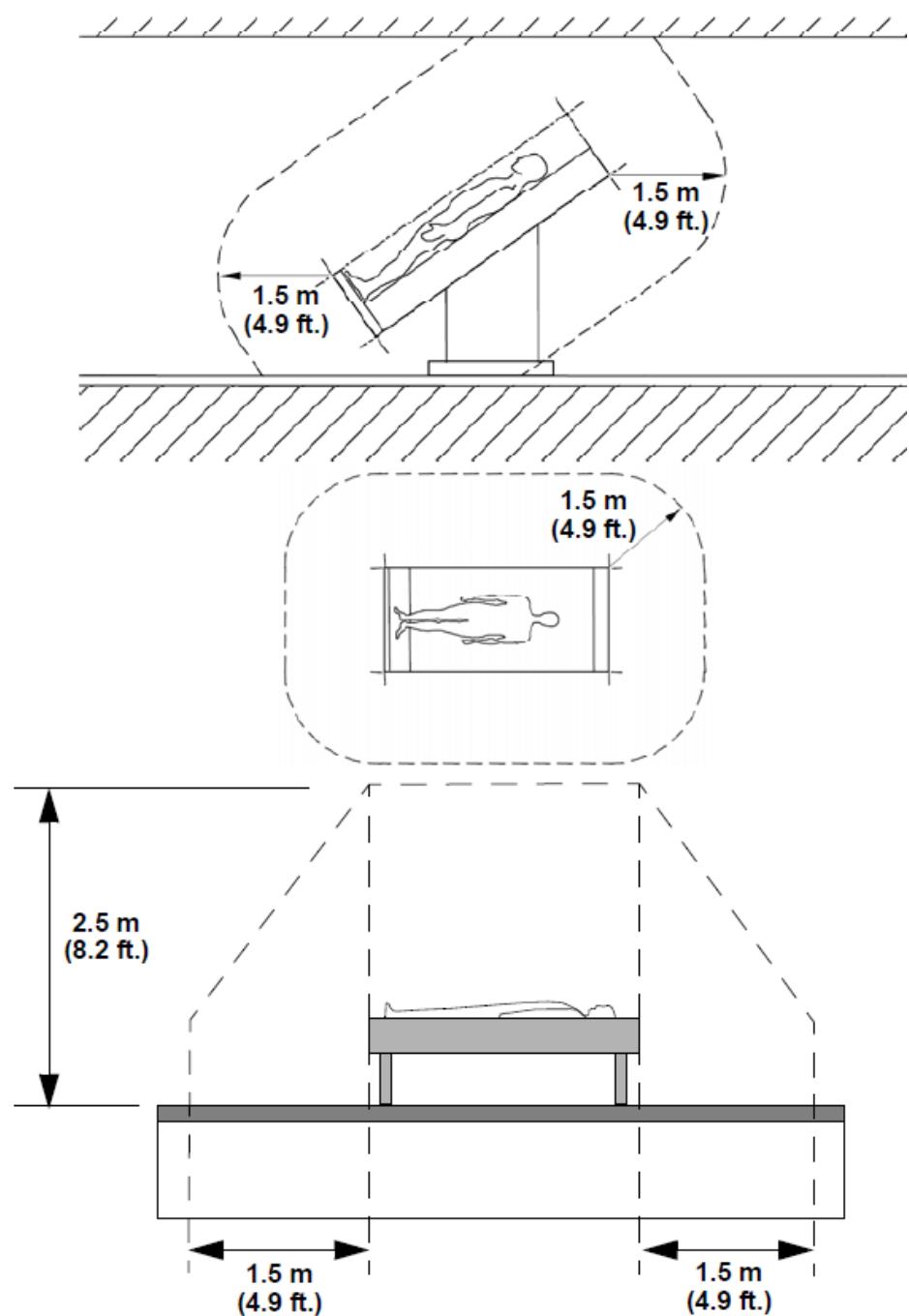


Figure 4-1 Equipment Location Distances From Patient Environment

Installing and Updating System

Software Installation Types	5-2
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Software Installation Types

Table 5-1 Installation, Upgrade, and Patch Types

Software Re-install	Re-installation of and configuration of PIIC iX system software which includes Operating System and Application page 5-2
Application Re-install	Installation of Application Software on a PIIC iX device that has an installed Operating System page 9-9
Application Only Upgrade	Upgrade of PIIC iX application page 5-52 Each release is in the form, V.U.F (For example, C.02.11). <ul style="list-style-type: none">■ (V) Software Version - Introduces major release with significant new features and functionality■ (U) Upgrade - Provides minor enhancements or improvements to reliability, performance, maintainability, serviceability, and so on■ (F) Fix - Corrects Product defect
Application Patch/Update	Applying a Fix to a current PIIC iX application page 5-63 Each release is in the form, V.U.F (For example, C.02.11). <ul style="list-style-type: none">■ (V) Software Version - Introduces major release with significant new features and functionality■ (U) Upgrade - Provides minor enhancements or improvements to reliability, performance, maintainability, serviceability, and so on■ (F) Fix - Corrects Product defect
Operating System Hot Fix	A single, cumulative package which includes one or more files that are used to address a problem in the Operating System

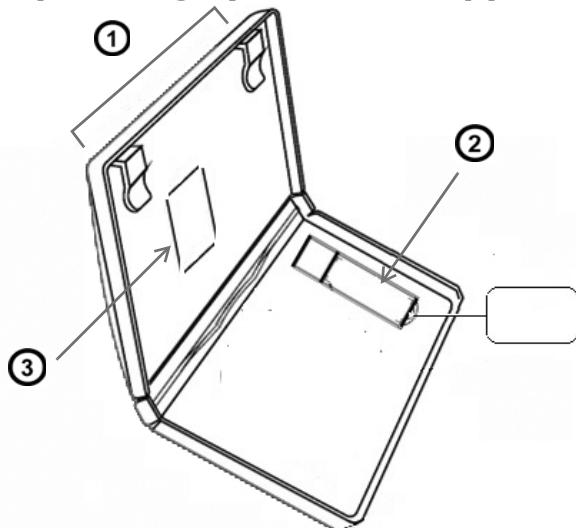
Re-installing Software on Philips-Supplied Hardware Systems

Philips-provided hardware PIIC iX systems are shipped with all system software (operating system and application software) properly installed. If necessary, you can re-install the full system software (OS and Application) or Application Software only. The following information describes re-installing PIIC iX B.02 software (Operating System and Application) or PIIC iX B.02 software (Application only) on hardware that originally shipped with PIIC iX B.02.

If you want to install PIIC iX B.02 software on hardware that was shipped with an earlier version of PIIC iX refer to the *PIIC iX Software Upgrade Note, 4535 645 40561, Edition 2*.

- Important**
- ▶ If you just want to re-install the Application Software refer to **Re-Installing Application Only**. Operating System releases that are supported in B.02 are those shipped with PIIC iX A.01, A.02, B.0, B.01 (Windows 8.1 and Server 2012), and B.02 (Windows 8.1 and Server 2012).
 - ▶ If you want to apply a PIIC iX B.02.xx Application Software Upgrade refer to **Upgrading Application Software**.
 - ▶ For information describing how to upgrade to PIIC iX B.02.xx from PIIC iX A.xx.xx / B.00.xx/B.01.xx refer to the *PIIC iX Software Upgrade Note, 4535 645 40561, Edition 2*.

Re-Installing Operating System and Application Software



1	PIIC iX B.02 Media Kit 4535 645 86811
2	PIIC iX Software USB Flash Drive
3	Service Password Label

PIIC iX B.02.xx media kit includes Microsoft Windows Server 2012 R2 and Windows Embedded 8.1 Industry Pro (64-bit). The PIIC iX B.02.xx application can be installed on compatible previously shipped operating systems, however.

PIIC iX B.02.xx Systems installed on Philips Supplied hardware are shipped with the Microsoft Windows Operating Systems activated. But if a repair requires re-installing the Operating System you may have to activate it. Refer to **Activating Windows Operating System, page 9-14**.

Important Operating System Activation requires Internet connection. If you do not have an Internet connection you may have to use the telephone method to activate your operating system (**page 9-14**).

- I Before you start the installation** put the media that contains the Philips software into the appropriate USB port. Then restart the PC/Server. Be sure to install software on the Primary Server first, then install software on member Hosts.

Important Be sure that you have no other USB flash drives in other ports or an error appears during installation. You must remove the additional device(s) and click **OK** in the error dialog to restart the machine.

- 2** During the boot sequence, press **F9** to open the **Boot Menu** on client-class hardware or **F11** to open the **Boot Menu** on Enterprise Server hardware.
- 3** Use the keyboard up/down arrow keys to select the USB device on which the PIIC iX software is installed (**Front USB 2**, for example). Then press **Enter**.

The HP logo appears, then a non-interactive powershell screen appears while the Installer attempts to identify and classify the platform so that the correct operating system image is applied. During this process status information appears periodically.

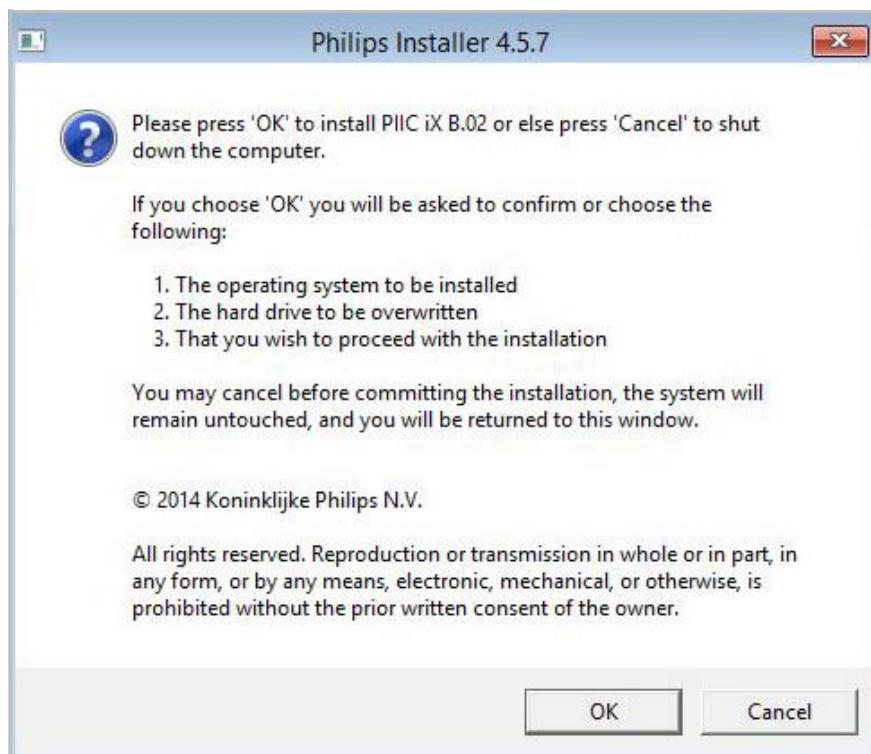
NOTE Installer illustrations are representative of the actual screens shown during product installation; actual screens and text that appears on screens may be slightly different.

Important If the destination platform is not supported an error appears, and the installation will fail.

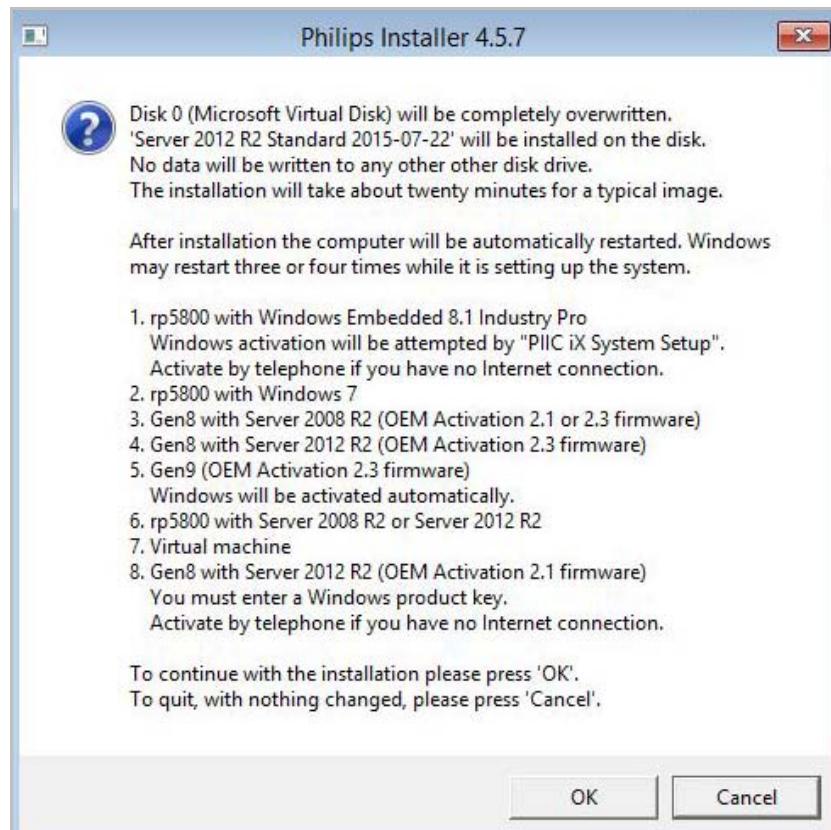
Supported platforms for PIIC iX B.02 Operating System installation are:

Platform ¹	Release
HP rp5800	B.02
HP DL380e Gen8	
HP DLI80 Gen9	

- ¹ If you are upgrading devices originally shipped with PIIC Classic to PIIC iX be sure that these devices are supported for PIIC iX upgrade. Refer to the *PIIC iX Hardware Upgrade Guide*, 4535 645 46691, for supported hardware information.
- 4** A Windows Installer dialog opens and describes the actions that will occur if you click **OK**. Click **OK** to begin Installation or **Cancel** to quit.



- 5** Once the destination Disk is discovered, the installer reports the approximate installation time. It also lists operating system activation requirements.

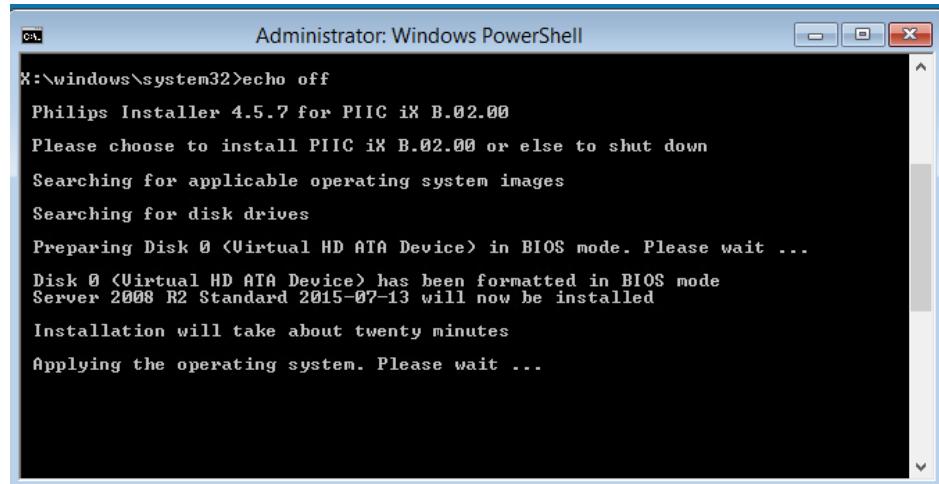


The dialog alerts you of operating system activation requirements. If you do not have an Internet Connection, you may have to activate the operating system by phone after software installation.

- 6** To continue the installation click **OK**, or click **Cancel** to quit.

Important If you want to discontinue the installation you can select **Cancel** and remove the installation media. PIIC iX installation will not continue.

If you selected **OK** in the Windows Installer screen the *Installer* formats the drive and exports and applies the appropriate Operating System image.

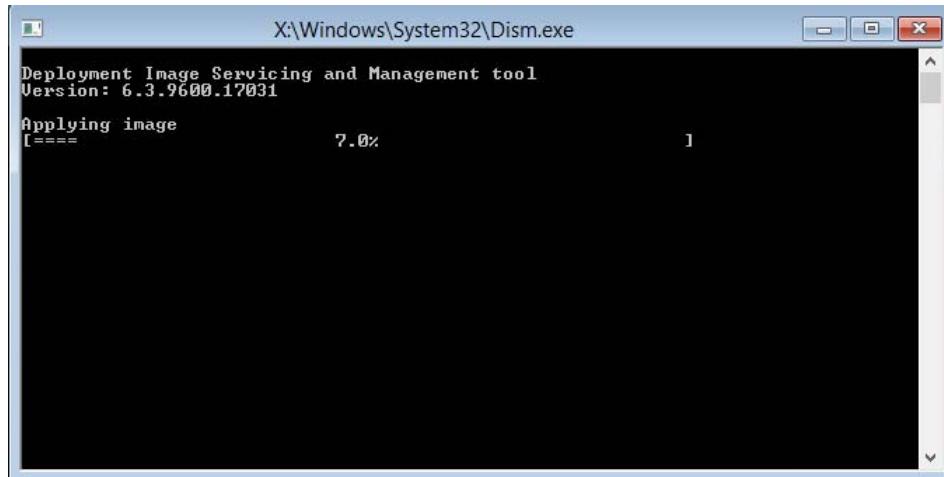


```
X:\windows\system32>echo off
Philips Installer 4.5.7 for PIIC ix B.02.00
Please choose to install PIIC ix B.02.00 or else to shut down
Searching for applicable operating system images
Searching for disk drives
Preparing Disk 0 <Virtual HD ATA Device> in BIOS mode. Please wait ...
Disk 0 <Virtual HD ATA Device> has been formatted in BIOS mode
Server 2008 R2 Standard 2015-07-13 will now be installed
Installation will take about twenty minutes
Applying the operating system. Please wait ...
```

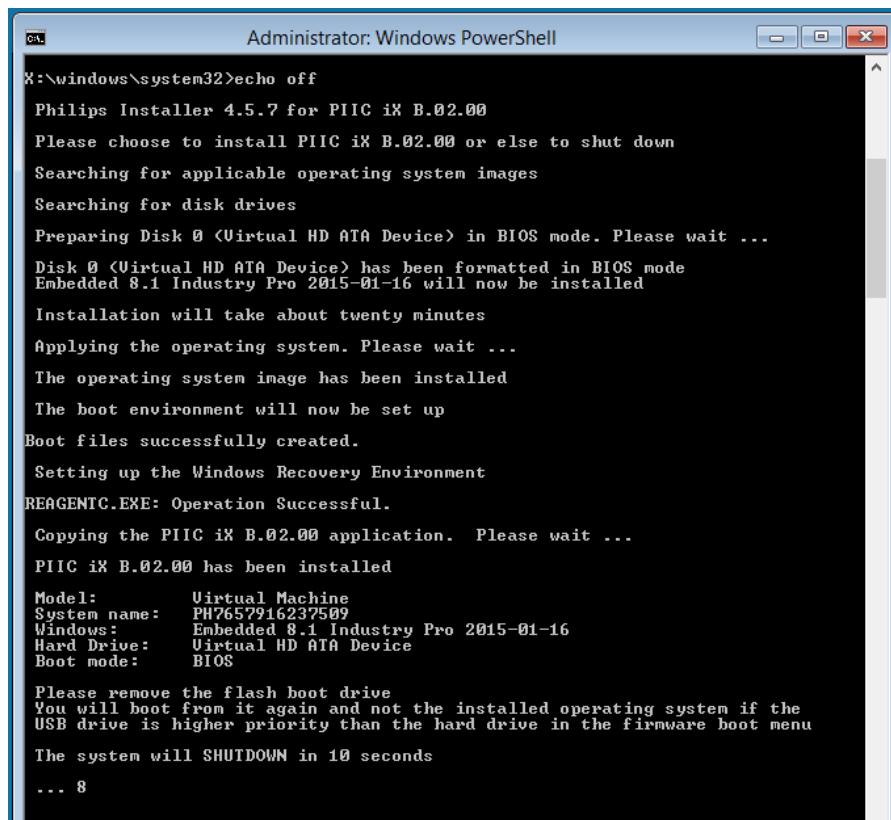
Windows Embedded 8.1 Industry Pro (64-bit) for client-class platform

Windows Server 2012 R2 for server-class platform

A **Deployment Image Servicing and Management tool** shows the image application progress percentage.



When PIIC iX installation completes the status appears in the Powershell screen. An alert that the system will reboot in 10 seconds appears.



```

Administrator: Windows PowerShell
X:\windows\system32>echo off
Philips Installer 4.5.7 for PIIC iX B.02.00
Please choose to install PIIC iX B.02.00 or else to shut down
Searching for applicable operating system images
Searching for disk drives
Preparing Disk 0 <Virtual HD ATA Device> in BIOS mode. Please wait ...
Disk 0 <Virtual HD ATA Device> has been formatted in BIOS mode
Embedded 8.1 Industry Pro 2015-01-16 will now be installed
Installation will take about twenty minutes
Applying the operating system. Please wait ...
The operating system image has been installed
The boot environment will now be set up
Boot files successfully created.
Setting up the Windows Recovery Environment
REAGENTC.EXE: Operation Successful.
Copying the PIIC iX B.02.00 application. Please wait ...
PIIC iX B.02.00 has been installed
Model: Virtual Machine
System name: PH7657916237509
Windows: Embedded 8.1 Industry Pro 2015-01-16
Hard Drive: Virtual HD ATA Device
Boot mode: BIOS

Please remove the flash boot drive
You will boot from it again and not the installed operating system if the
USB drive is higher priority than the hard drive in the firmware boot menu

The system will SHUTDOWN in 10 seconds
... 8

```

Important If you do not have the correct setting for **Secure Boot** a warning message will appear. You must have **Secure Boot** enabled on your HP DL180 Gen9 server for successful PIIC iX B.02.xx software installation. It is equally important that you have the **UEFI Optimized Boot** setting enabled ([page 9-56](#)).

7 Remove the USB flash drive containing the Philips Software.

After PIIC iX application software files are installed the initial PIIC iX System Setup screen opens ([page 5-8](#)). You can cancel out of System Setup and run it any time using the Desktop shortcut, **PIIC iX System Setup**. A **Login to System Setup Access** dialog requires entry of **User Name** and **Password** of user with appropriate administrative privilege ([page 6-135](#)).

Activating the Windows Operating System

PIIC iX B.02 Systems have activated Operating Systems when shipped from the factory on Philips Supplied Hardware. There may be times after you change hardware (motherboard, for example), install the same Operating System on a replacement computer, or experience some other activation error, that your Windows Operating System may require re-activation. If you must re-activate your Windows Operating System refer to **Activating Windows Operating System, page 9-14**.

PIIC iX System Setup Screens

Before you run System Setup for an **initial** software installation or software upgrade you must acquire your license file from the Philips Licensing Server. (Refer to **Generating the License**).

Complete information about PIIC iX licensing, which includes migration and upgrade information, is described in the *PIIC iX Licensing Activation Guide, 4535 645 40451, Edition 2*.

Important In order to run System Setup a user must log on as **SupportUser** with the appropriate password. With PIIC iX B.00 and later the **PatientMonitoring20** account is the auto log on account for Surveillance hosts with no Administrative privilege. Refer to your PIIC iX product media label for the correct Administrative account User Name and Password.

It is imperative that you document, archive, and manage all factory default password changes made in System Configuration. If you lose or forget changed passwords you must create an archive and restore factory default passwords. This causes your system to re-initialize.

PIIC iX System Setup is a Wizard application and an extension to the Operating system and PIIC iX Application installer. It must run successfully before the PIIC iX surveillance application operates. When a user with Administrative privilege double-clicks the **PIIC iX System Setup** Desktop icon, **System Information**, which is the initial System Setup screen opens. The number of System Setup screens that appear on a system vary slightly by product type.

If you are not logged on as **SupportUser** and must run **PIIC iX System Setup**,

- 1 Press and hold the Shift key and right-click the **PIIC iX System Setup** shortcut on the desktop.
- 2 Select **Run as different user** in the list.
- 3 Enter *SupportUser* as the **User name** and the appropriate **Password** in the **Windows Security** dialog. Then click **OK**.



The **Access to PIIC iX System Setup** dialog opens.

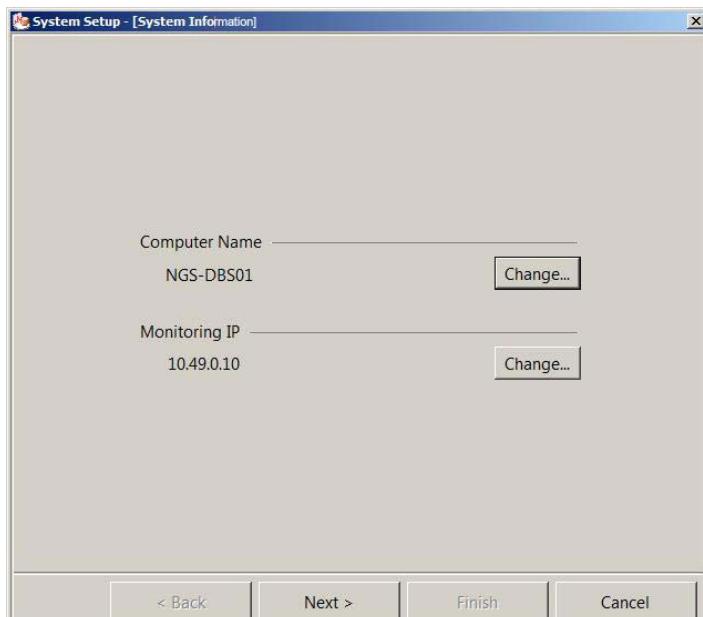
- 4 Enter the local service user and password in the **Access to PIIC iX System Setup** dialog. Then click **OK**.

System Setup presents its first screen.

System Information

System Information is typically the first **PIIC iX System Setup** screen and permits changing **Computer Name** and **Monitoring IP**. Screens that appear depend on the system you are installing.

Important SupportUser can run System Setup at initial installation or by using the Desktop icon any time after product installation. **System Information** is the first screen to appear.



Important If you want to change the name of a computer that is part of an existing system, refer to **Changing Computer Names, page 9-18**.

- I If you want to change **Computer Name** click the adjacent **Change** button, and do the following.
 - a Enter the desired name in the text box, then click **OK**.
A message appears.
 - b Click **Yes** in the message dialog.

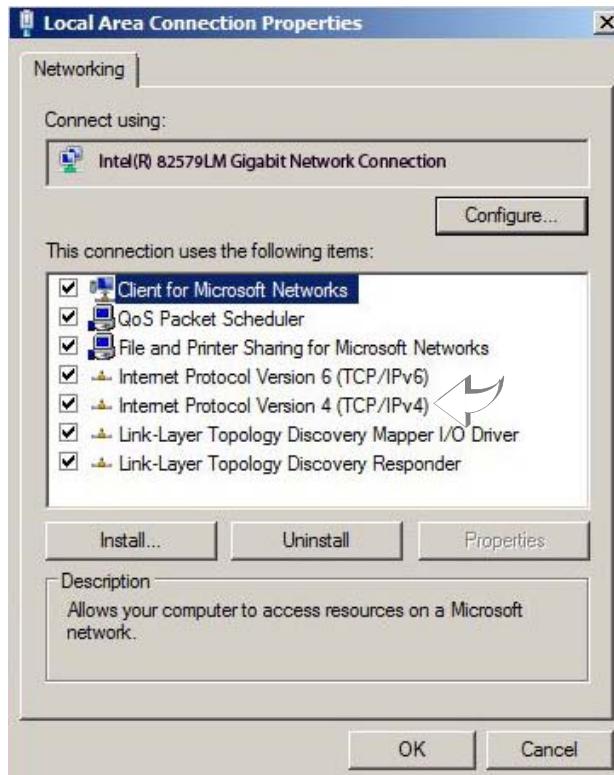
Important Any change to computer name requires a system restart. Do this immediately rather than progress through System Setup if your system relies on DNS. You must immediately restart your host so that you can connect to the primary server.

- 2 If you want to change the **Monitoring IP Address** or configure the network adapter, click the adjacent **Change** button to open the **Network Connections** window.
The **Network Connections** window opens.

- a In the **Network Connections** window select the desired Local Area Connection icon.



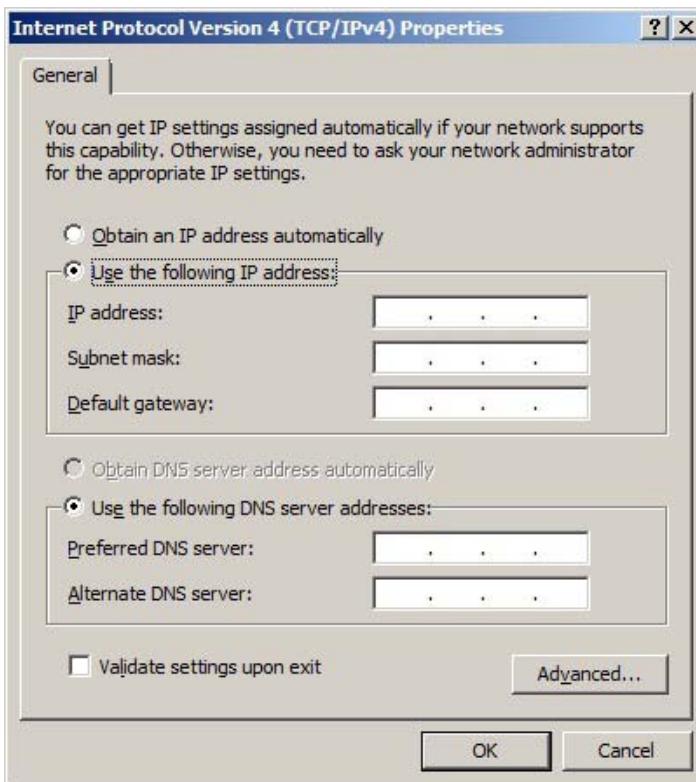
- b Right-click the connection icon and select **Properties** from the list. The **Local Area Connection Properties** sheet opens.



- c Select the **IPv4** connection from the list and click **Properties**.

NOTE IPv6 is not supported.

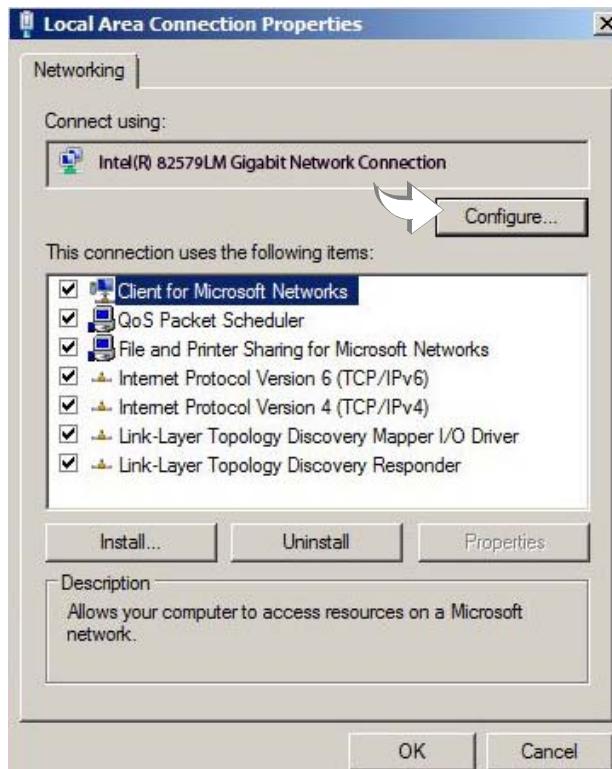
- d On the **General** tab configure the desired IP Address information, then click **OK**.



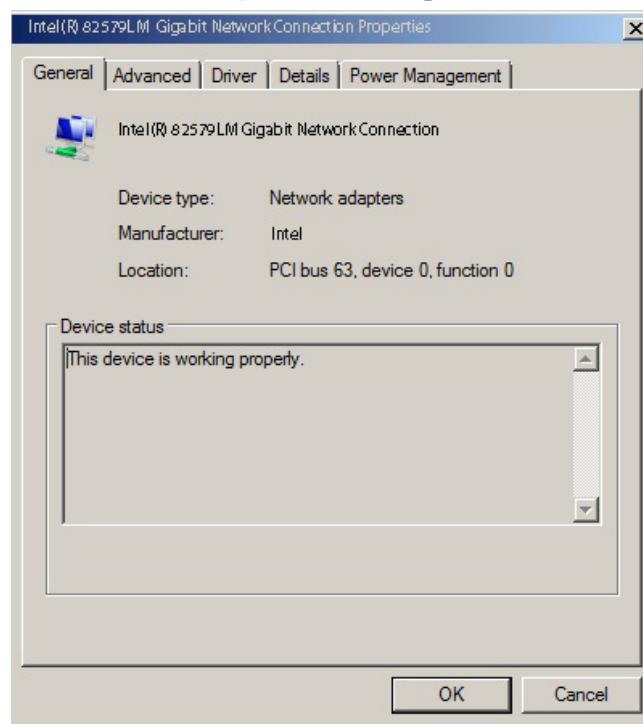
- 3 If you want to set the network connection Speed & Duplex, do the following.

Important PIIC iX software sets Speed & Duplex as **Auto Negotiate** as a default.

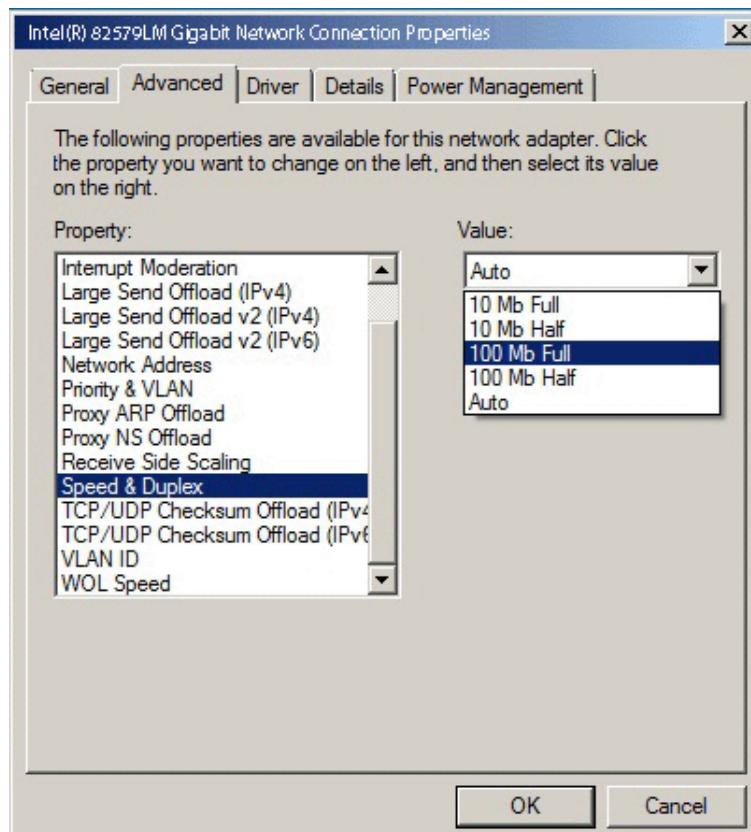
- a In the **Local Area Connection Properties** sheet click **Configure**.



The Network Connection **Properties** sheet opens.



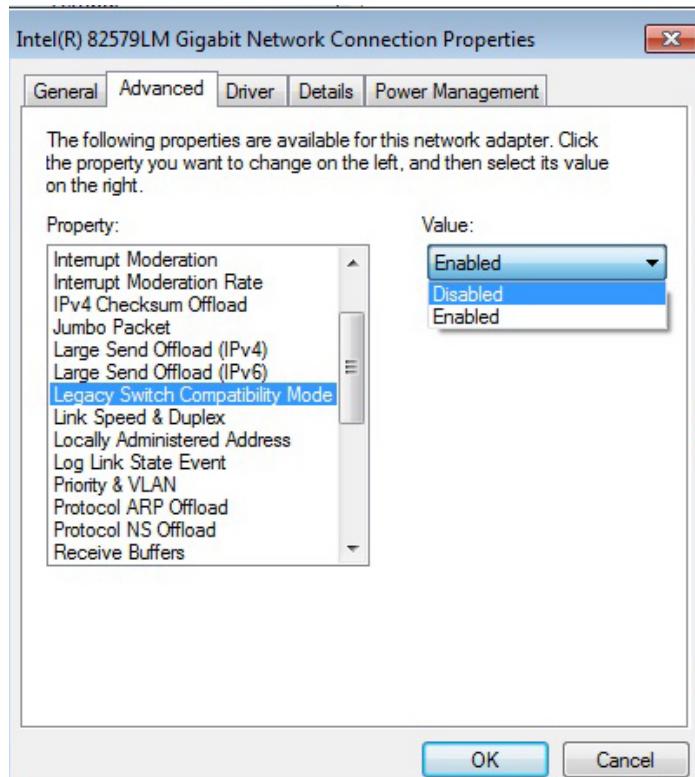
- b On the **Advanced** tab select **Speed & Duplex** in the **Property** list.



- c In the **Value** drop-down list select the desired setting.

Important The setting you choose in the **Value** list **must match** any hard-coded setting on the network switch that you are connecting to. Philips recommends that you use **Auto** as the **Value** for **Speed & Duplex**. Host Qualification will negotiate the necessary Value for you.

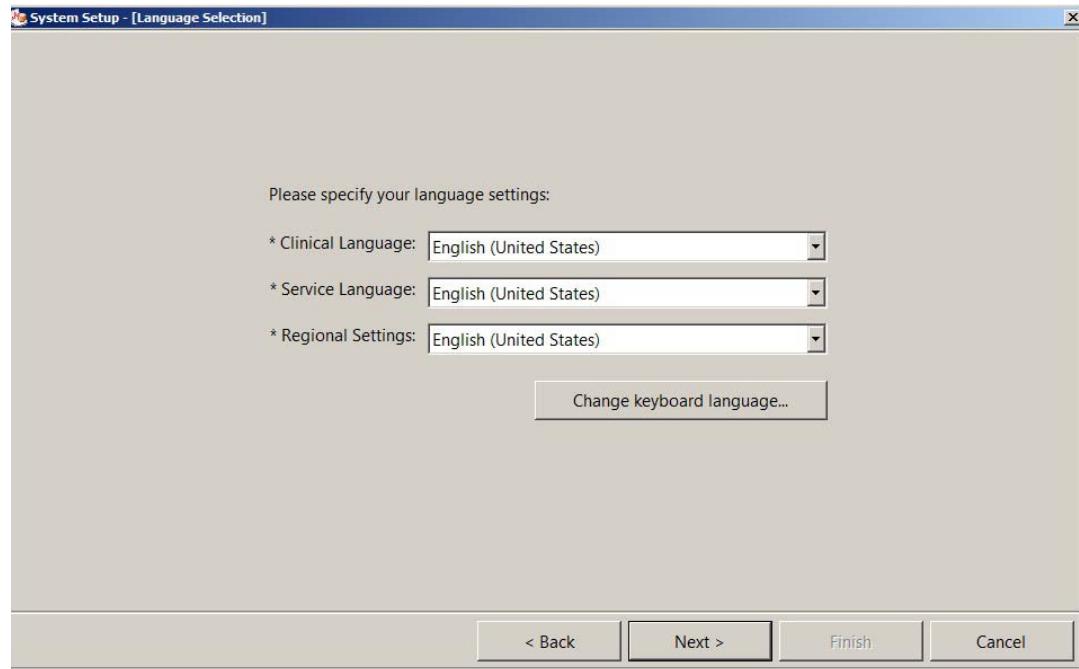
- d If you select a value other than **Auto** you must enable the **Legacy Switch Compatibility Mode** property by selecting it in the **Property** list, then clicking the down arrow and selecting **Enabled**.



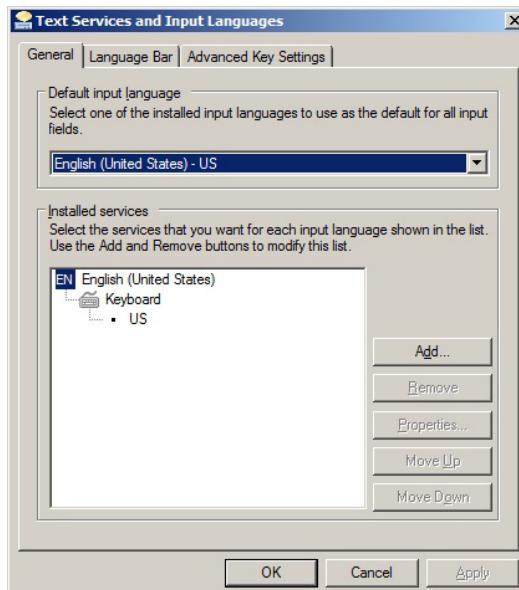
- e When desired information is complete, click **OK**. Then close open dialogs.
- 4 Click **Next >** in the **System Information** screen to continue.

Language Selection

- I To choose desired language settings in the **Language Selection** screen select desired language from the drop-down list for **Clinical Language**, **Service Language** and **Regional Settings**.

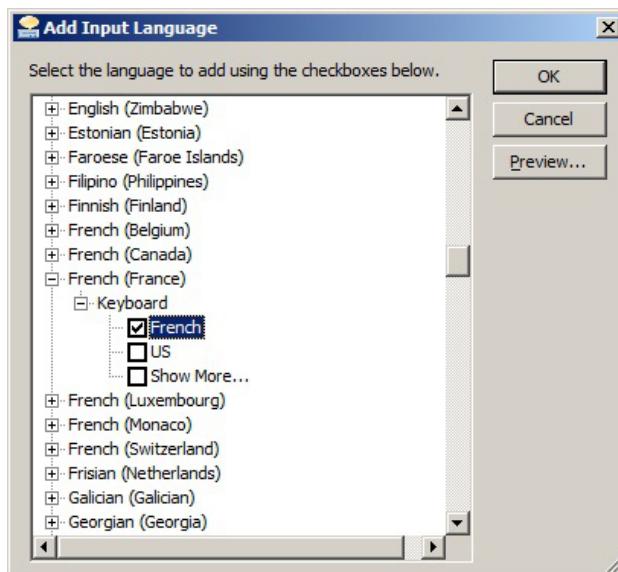


- 2 Click the **Change keyboard language** button to open the **Text Services and Input Languages** dialog, a Windows Operating System applet.



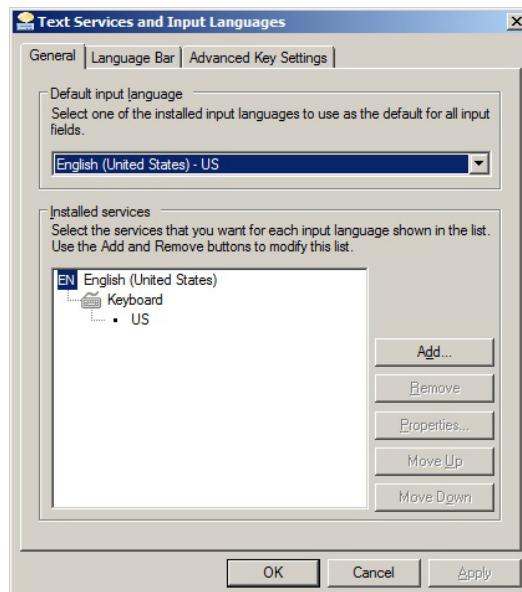
- 3 If you want to add a language keyboard click **Add**.

- 4** In the **Add Input Language** dialog select the desired language and keyboard. You can view the selected keyboard layout if you click **Preview**.



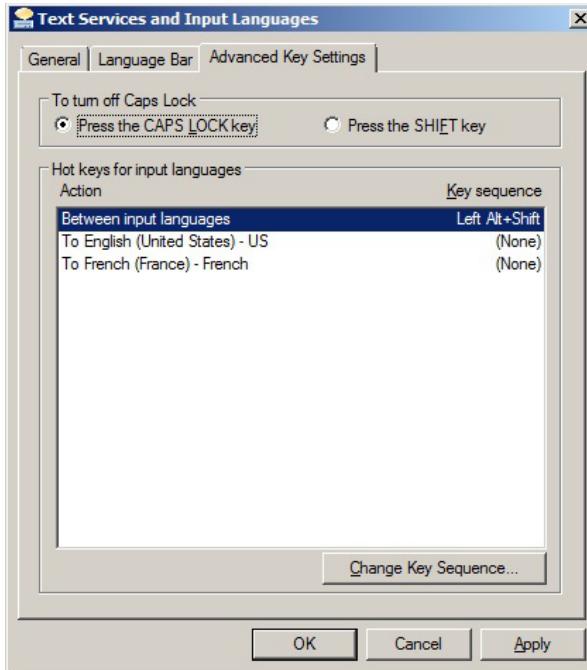
For a **Japanese** input language you must select **Microsoft IME** (Input Method Editor) as the keyboard selection. Refer to **page 5-54** for instructions to add Japanese as an input language.

- 5** After adding the new language keyboard click **OK**.
- 6** In the **General** tab of the **Text Services and Input Languages** dialog go to the **Default Input Language** section and click the down arrow to select the desired language as the default for all input fields. Then click **Apply** in the dialog.

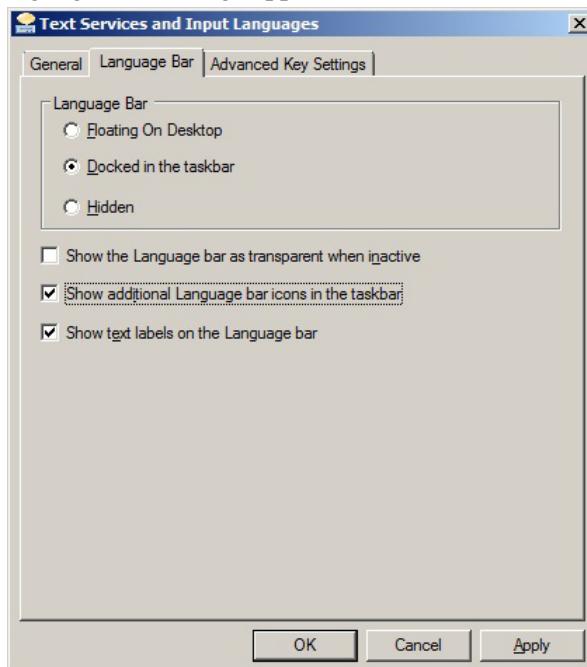


- 7** When you complete all desired changes click **OK**.

- 8** In the **Advanced Key Settings** tab of the **Text Services and Input Languages** dialog you can customize hot keys for input languages if you click **Change Key Sequence**.



- 9** In the **Language Bar** tab of the **Text Services and Input Languages** dialog you can customize Language Bar settings appearance and location.

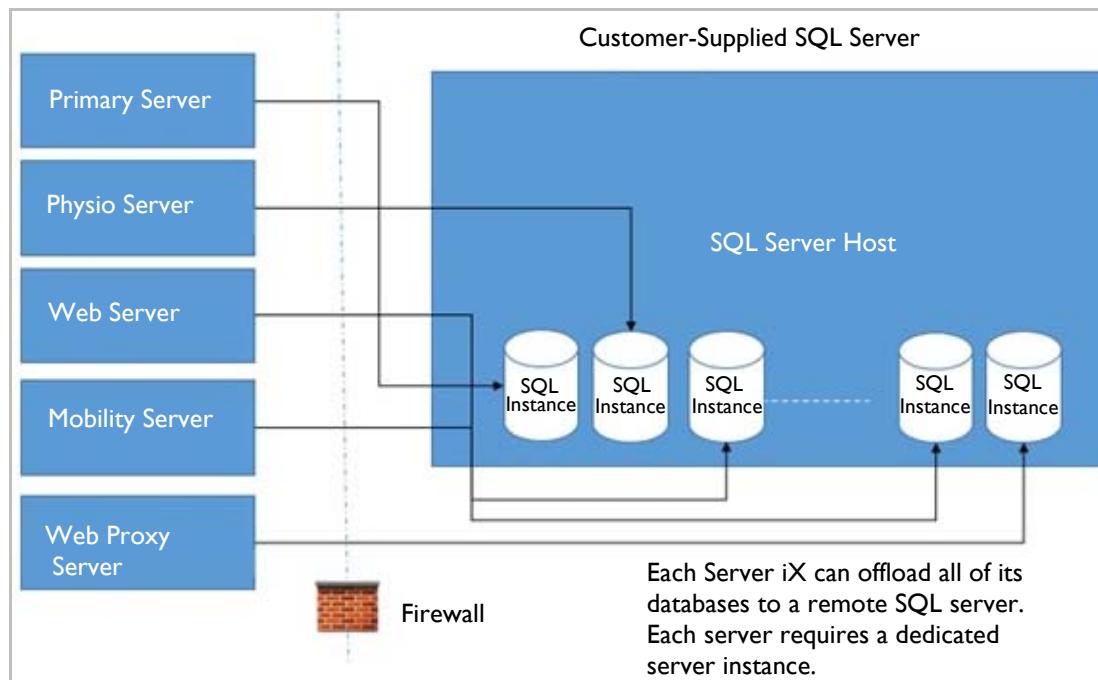


- 10** When desired changes are complete click **OK** in the **Text Services and Input Languages** dialog.
- 11** Click **Next >** in the **Language Selections** screen to continue.

SQL Server Connection

Server installations include the **SQL Server Connection** screen of System Setup. The screen permits you to off load a selected Server iX database to a remote SQL server and to configure authentication.

Refer to the *System Administrator Guide, 4535 645 60011*, for remote SQL Server Host Requirements and offloading database deployment information



Important If you must re-install the PIIC iX application, you must start SQL server service on the local machine.

Offload the Server iX Database as follows,

- I Click the **Specify database(s) to offload** down-arrow in the **SQL Server Connection** screen. Then select the desired which databases you want to off load to a remote machine from the list.
Selections include **None**, **Philips.PatientData** (for use with the Data Warehouse Connect product), or **All Databases**.

Specify database(s) to offload:	Philips.PatientData
*Server Name:	10.101.48.20
Instance Name:	
*Authentication:	SQL Server Authentication
*Login Name:	vm
*Password:	**
Test Connection	

- 2 If you are **not** off loading the SQL Database, select **None** in the **Specify database(s) to offload** drop-down list.

Important For the **All Databases** selection, a dedicated SQL server instance per host is required. If the SQL server instance is configured by a different server, an error reports that the server requires its own dedicated SQL server instance.

- 3 For any selection other than **None**:
 - a Enter the **Server Name, Instance Name**, and select an **Authentication**. Authentication selections are **SQL Authentication** or **Windows Authentication**.
 - b If you select **SQL Authentication**, enter the appropriate **Login Name** and **Password**.

Important Login account must have **Sysadmin** server role permission.

- c If you select **Windows Authentication** you must comply with the following.
 - The server must be joined with or have access to the SQL server domain,
 - An active directory user account with local **Administrator** privilege which has an associated SQL login and **Sysadmin** server role permission is required, and
 - The *Domain/Servername\$* must have an associated SQL login and **Sysadmin** server role permission.

- 4 Click **Test Connection** to test the connection of the configured location.

Refer to **SQL Database Offload Errors** if you encounter errors and cannot successfully connect to the SQL server host.

Important If the account does not have sufficient permission to set up the product databases, the connection fails with an error message.

- 5 Click **Next >** to continue.

Database Installation

- ▶ In the **Database Installation** screen click **Install**. A progress bar appears. When databases are successfully installed the message, *Databases installed successfully* appears. Click **Next >** to continue.



Connect to Server

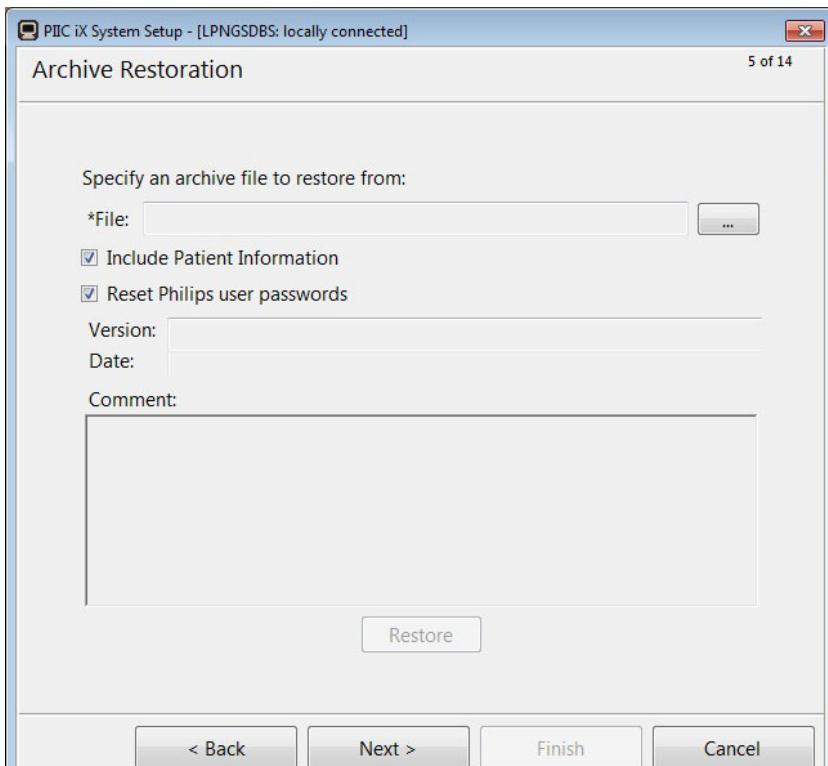
- I In the **Connect to Server** page specify which device is the Primary Server, the server on which the Configuration database resides:
This host (for Local PIIC iX Small Network PIIC iX, or Enterprise iX Primary Server),
Other host (to connect to a Primary Server that has the Configuration database).
If you are connecting to **Other Host** a login dialog will permit entering the appropriate **User Name** and **Password**. If this is the case enter appropriate credentials in the Login dialog, then click **OK**.
If the host is not currently part of the Primary Server topology, a dialog will open that will permit you to add the host.

A screenshot of a configuration dialog box. The title bar says "Specify which host has the configuration database:". Inside, there are two radio buttons: one selected for "This host." and one unselected for "Other host:" followed by a text input field.

If your PIIC iX is connecting to a Primary Server and the Server has already configured the system topology, it will receive its configuration from the Primary Server. Otherwise, you must run **PIIC iX System Configuration** locally ([page 6-3](#)).

- 2 Click **Next >** in the **Connect to Server** screen to continue.

Archive Restoration



- I If your device permits it and you want to restore an archive the **Archive Restoration** screen permits that. If you want to restore an archive do the following.
- Click the Ellipsis button to open a **Browse** window. Then select the correct file name from its location and click **OK**.
 - If your archive includes patient's demographic settings and you want to restore them, click the **Include Patient Information** check box.

If you try to restore an archive created on a different server, a message appears, “*The archive was created on a different server. Do you want to update the server host name in the topology to {your host name}?*”

In the Message dialog you must click **Yes** to rename the archived server to the current host name or **No** to keep the archive server name.

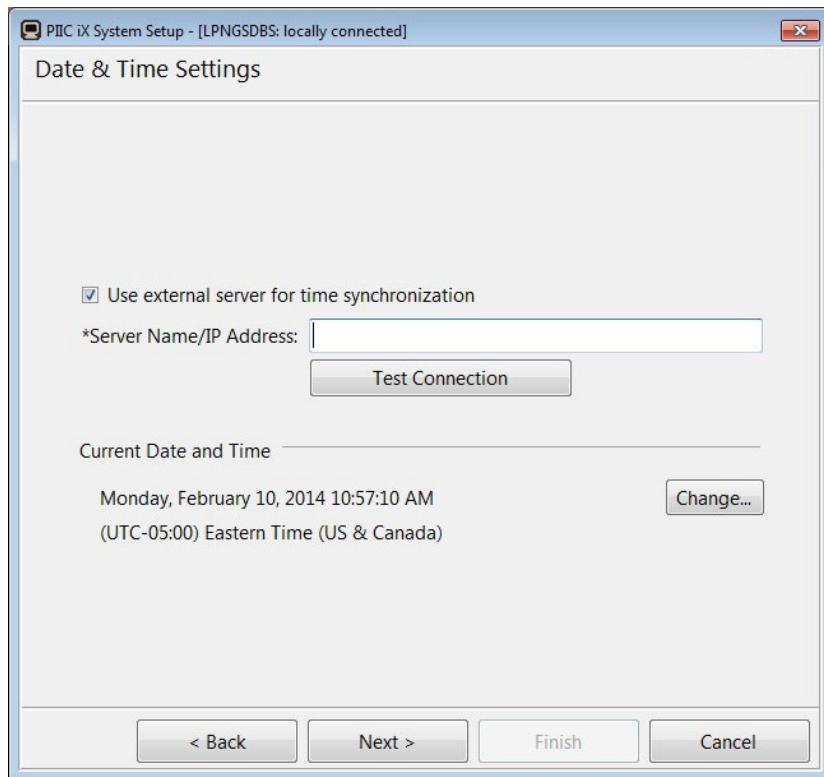
The **Archive Restoration** feature also permits resetting the Philips User password to the factory default when you check the **Reset the Philips User Password** check box. By default the check box is clear. If you select to reset the Philips User Password, the Philips Factory User password is reset to the factory default after successful restore of the archive.

- If you must restore the Philips Default passwords check the **Reset the Philips User Password** check box. When your archive is restored the default Philips passwords will be active.
- Click **Next >** in the **Archive Restoration** screen to continue.

Date & Time Settings

Important The **Date & Time Settings** screen appears on any device that is a Primary Server and will synchronize with its clients/hosts. Philips recommends that you use an external server for time synchronization. The difference between the external time server and the local machine needs to be less than 15 minutes apart, otherwise the synchronization will not take place.

- 1 To set an external server for time synchronization, click the **Use external server for time synchronization** text box.
- 2 Enter the Server name in the appropriate text box and in the format **Server Name/IP Address**.



- 3 Press **Test Connection** to validate connection to the Server.
- 4 You can also change the **Current Date & Time** value if you click the **Change** button. When you click the **Change** button the Windows **Date and Time** dialog opens permitting modifications to date, time, and time zone.
- 5 Click **Next >** in the **Date & Time Settings** screen to continue.

Topology Configuration

- ▶ In the **Topology Configuration** screen you can configure your system to add clinical units, hosts, and equipment to the topology during installation, or you can perform these tasks later (**page 6-5**).
When desired changes are made click **Next >** to open the **License Configuration** screen.

License Configuration

The **License Configuration** screen permits:

- Exporting the system hardware identity file so that you can generate a license file
See **Exporting the Hardware ID**.
- Upgrading the feature options in your license if you already have a base installation of PIIC iX B.02 (See *PIIC iX License Activation Guide, 4535 645 40451, Edition 2*),
- Deactivating your license (See *PIIC iX License Activation Guide, 4535 645 40451, Edition 2*), or
- Importing your license file, which is described in this section.

If you do **not** want to import a license click **Next >** then click **Yes** in the dialog to progress to the next applicable System Setup screen without using a license.

If you have already generated a license file as described in *Generating the License, import the authorized license as follows.*

- 1 Insert the USB media that has the authorized license file (*.PhilipsLIC) in the appropriate port of your PIIC iX.
- 2 On the PIIC iX **License Configuration** screen click **Import**.



Then browse to the USB drive location of the activated license file.

- 3 Click **OK** in the browse window.

The activated license is assigned to the PIIC iX System. Several descriptive fields are populated in the top section of the PIIC iX **License Configuration** screen.

Product Number	Description	Serial Number	Customer Name	Software Version	Sales Order Numbers
866999	PIIC IX	190R-4A12-B	Philips Healthcare	B.01.00	6100315679

Feature Option Details:	
Commercial Options	Software Capabilities
Description	Value
Patient Connections	64
Data Processing	64
Surveillance	640
Ecg 12 Lead Export	64
Inbound ADT Interface	64
Inbound LAB Interface	64
Optional Additional Display	640
Horizon Trend Surveillance	640
ST-Map Surveillance	640
Alert Data Outbound Interface	64
Device Location	64
Hexad Full Disclosure	64
Basic Review	64
Advanced Specialty Review	64
Clinical Review	64
Ecg 12 Lead Review	64

Feature Option Details appear in **Commercial Options** and **Software Capabilities** tabs in the lower part of the screen. The **Software Capabilities** tab lists a **Description** and a **Value** for each purchased/licensed Feature Option for the system.

Important If you try to import a license with a software serial number that already exists, upon confirmation, the existing license will be replaced by the new license. If the new license does not include all the features of the current host assignment, an error appears and the license replacement fails.

If you try to import a license with a different software serial number, an error appears. Only one software license is permitted per system.

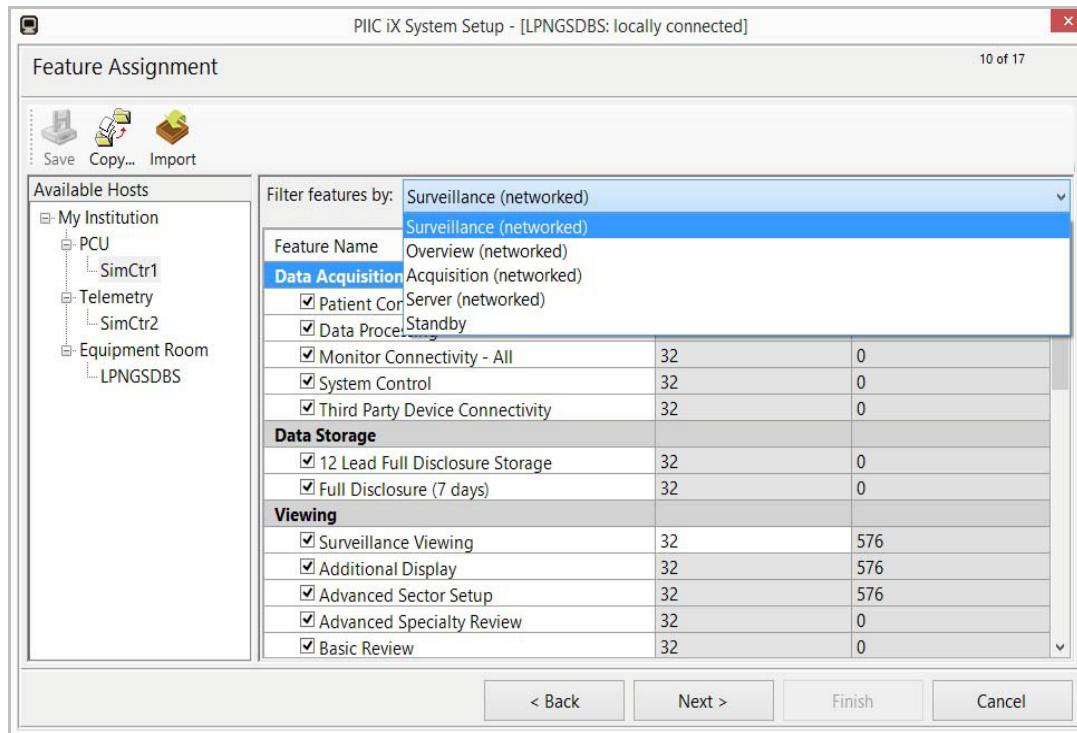
- 4 Click **Next >** to continue to the **Feature Assignment** screen which permits distribution of purchased features to the hosts in your topology.

Feature Assignment

The **Feature Assignment** screen lists all applicable features and associated values from the system license and permits assigning applicable features and values to hosts. When you add a new PIIC iX B.02 license an **Import** feature permits importing existing host-feature assignment from a PIIC iX A.x archive.

Assign feature options to the hosts in your topology as follows

- I The **Feature Assignment** screen populates the left pane with the hosts in your topology. Initially, a full list of purchased features are shown along with the purchased option value in the **Remaining Value** column. The feature list is filtered by the type of host that is currently selected in the pane. Filters include **Server (networked)**, **Surveillance (networked)**, **Overview (networked)**, **Acquisition (networked)**, **Standalone** and **Standby**. If you want to see the feature option codes associated with features, right-click inside the feature list and select **Show Code**.



Refer to the following for available Features for the following filters.

Server (networked)	Table 5-2
Surveillance (networked)	Table 5-3
Overview (networked)	Table 5-4
Standalone	Table 5-5
Acquisition (networked)¹	Table 5-6
Standby	Standby is the only feature available with this selection. Refer to Appendix H for detailed information about a Biomed Spare configured as a Warm Standby System.

¹ The **Acquisition** filter permits feature assignment for Patient Link and IBS.

- 2 Select the desired host in your topology in the left pane of the **Feature Assignment** screen.
- 3 Click the check box to select a desired feature. Then enter an **Assigned Value** for the selected host.
The **Remaining Value** amount automatically recalculates.

Important If you want to select all the features press **Ctrl + A** keys concurrently.

- 4 When all of your selections are complete for the selected host click **Save**.
If you want to assign the same features and values to another host in the topology you can **Save**, then **Copy** the configuration to another host in your system. Otherwise repeat **Step 2** and **Step 3** for each host in your topology.

If you want to import a PIIC iX A.xx/B.00/B.01 Archive do the following

- 1 Click the **Import** icon in the menu bar and browse to the location of the archive file.
- 2 Select the desired archive file (*.rkv) then click **Open**.
The system converts feature assignments for each host in the archive from A.xx/B.00/B.01 to B.02 as long as the features can be consumed from the B.02 entitlement.

PIIC iX Feature Options

Table 5-2 PIIC iX Feature Options For Server Systems

Feature	Description/Notes
Data Storage	
Physiologic Database PHY¹	Determines location of a Physiologic Database At least one host in system is assigned this feature.
Configuration Database¹	Determines the location of the configuration database <ul style="list-style-type: none"> ■ DB1 - Local Configuration Database ■ DB2 - Network Configuration Database (Small Server) ■ DB3 - Network Configuration Database (Large Server) Only one host can have this feature.

Table 5-2 PIIC iX Feature Options For Server Systems (continued)

Interfaces	
Interface Gateway GWS¹	Determines location External Interface Services run (HL7, for example) Only one host can have this feature. Configuration Database feature is a prerequisite.
Mobility Access MOB	Determines Mobility Service Server Option value specifies the number of beds that can be accessed concurrently
Web Server WEB	Provides access from WEB clients to view patient data monitored on systems that are licensed with either WEB Wave Strip export (WAV), Web Single Patient View (C70), or Web Multi Patient View (C82)
Other	
Connected Clients CCL¹	Allows other licensed hosts to connect to the primary server Configuration Database feature is a prerequisite.

¹Default assigned feature for a host that is a Primary Server

Table 5-3 PIIC iX Feature Options For Surveillance Systems

Feature	Description/Notes
Data Acquisition	
Patient Connections PCX	Determines number of connected patients for real-time monitoring Option ranges from 4 to 32 patients. For upgrades this feature can only be augmented, it cannot be introduced.
Data Processing PPX	Allows data to be processed for viewing Patient Connection feature is a prerequisite; the option value must match the value of the PCX feature.
Monitor Connectivity	Determines which monitors can connect to a system <ul style="list-style-type: none"> ■ MP0 - connects to MX20-40, X2, MP2-5, MP20-30, PWD and MX400-450 ■ MP1 - connects MX480-500, MP40-50 and MRx ■ MP2 - connects to MP60, MP70, and MX550 ■ MP3 - connects MP80 and MP90 ■ MP4 - connects MX800 ■ MPX - connects to all supported devices Patient Connection (PCX) feature is a prerequisite
Third Party Device Connectivity MP6	Permits connectivity to third party devices connected to EC40/80 hubs and third party LAN devices. Patient Connection (PCX) feature is a prerequisite
System Control GBC	Allows system controls functionality from the point of care Patient Connection (PCX) feature is a prerequisite, and option value must match PCX.
Data Storage	
Full Disclosure	Determines how much data will be shown on the Review application <ul style="list-style-type: none"> ■ D02 - Full Disclosure (2 days) ■ D03 - Full Disclosure (3 days) ■ D04 - Full Disclosure (4 days) ■ D05 - Full Disclosure (5 days) ■ D06 - Full Disclosure (6 days) ■ D07 - Full Disclosure (7 days) If no Full Disclosure is selected 1 day of storage is provided. Data Processing feature (PPX) is a prerequisite, and option value must match the value of PPX. Feature is determined by the Monitoring host.
12-Lead Full Disclosure I2S	Permits view and storage of 12-lead full disclosure data (8 waves at 500 samples/second) Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX. Feature is determined by the Monitoring host.

Table 5-3 PIIC iX Feature Options For Surveillance Systems (continued)

Feature	Description/Notes
	Viewing
Surveillance PXX	<p>Provides surveillance monitoring and/or overview access to monitored patients Option ranges from 4 to 32 patients.</p> <p>If feature co-exists with Data Processing (PPX) and Patient Connection (PCX) features,</p> <ul style="list-style-type: none"> ■ Option value must match PPX and PCX features. ■ System can provide real-time monitoring. <p>If there are no Data Processing (PPX) and Patient Connection (PCX) features,</p> <ul style="list-style-type: none"> ■ The system can only provide overview access to monitored patients.
Additional Display C01	<p>Enables the use of multiple displays</p> <p>Surveillance feature (PXX) is a prerequisite, and option value must match PXX. If the number of configured displays exceeds the number of purchased option, it is reported by System Validation.</p> <p>Feature is determined by the Viewing host.</p>
Horizon-Trend Surveillance TRD	<p>Provides ability to view Horizon Trend and numerics on the Sector Window</p> <p>Feature is determined by the Viewing host.</p> <p>Surveillance feature (PXX) is a pre-requisite.</p>
ST-Map Surveillance MAP	<p>Provides ability to view ST-Map on the Sector Window</p> <p>Surveillance feature (PXX) is a pre-requisite, and option value must match value of PXX.</p> <p>Feature is determined by the viewing host.</p>
Device Location WLD	<p>Provides location information for equipment</p> <p>Feature is determined by the Monitoring host.</p> <p>Surveillance (PXX) and Data Processing (PPX) features are prerequisites. The option value must match the value of both.</p>
Hexad Full Disclosure HXD	<p>Provides ability to view hexad data</p> <p>Surveillance (PXX) and Data Processing (PPX) features are prerequisite; The option value must match the value of both.</p> <p>Feature is determined by the Monitoring host.</p>
Specialty Review	<p>Permits configuration in Retrospective Configuration editor</p> <ul style="list-style-type: none"> ■ RE1 - Basic, allows configuration of default retrospective application settings ■ RE2 - Advanced, allows configuration of default retrospective application settings and customizations of new review applications <p>Surveillance (PXX) and Data Processing (PPX) features are a prerequisite; the option value must match the value of PPX.</p>
12-Lead Capture Review and Analysis I2L	<p>Permits view of 12-Lead capture data in the Review Application</p> <p>Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX.</p> <p>Feature is determined by the Monitoring host.</p>
Electronic Calipers ECP	<p>Provides ability to use the Calipers in the Application</p> <p>Feature is determined by the Viewing host.</p> <p>Surveillance (PXX) and Data Processing (PPX) features are prerequisites. The option value must match the value of both.</p>

Table 5-3 PIIC iX Feature Options For Surveillance Systems (continued)

Feature	Description/Notes
EASI Full Disclosure E01	Provides ability to view EASI data Surveillance (PXX) and Data Processing (PPX) features are prerequisite; The option value must match the value of both. Feature is determined by the Monitoring host.
Clinical Audit Log AUD	Allows viewing the Audit Log from the Surveillance Application Surveillance (PXX) feature is a prerequisite, and option value must match PXX.
Advanced Sector Setup ADS	Allows configuring three or more columns in Display Setup and minimize and auto resize of sectors Surveillance (PXX) feature is a prerequisite, and option value must match PXX.
Display Resolution Hi-Res S03	Determines the display resolution that can run the monitoring application The application will not run if you try to connect the system to a High Resolution display (2560 x 1440 or 2560 x 1600) without having purchased this option.
Wave Strip Export WSX	Permits automatic export of alert and saved strips to a configurable network share
WEB Wave Strip Access C72	Permits wave strip export to non-PIIC iX Systems WEB Server is required in topology. Violations are reported by System Validation. Data Processing (PPX) feature is a prerequisite; Option value must match PPX value.
Interfaces	
12-Lead Export C17	Enables publishing 12-lead to external systems such as TraceMasterVue Data Processing (PPX) feature is a prerequisite; Option value must match PPX value. Interface Server feature in the topology is required and if user configures 12 Lead Export client without the feature, it is reported by System Validation. This feature is determined by the Monitoring host.
12-Lead Orders ORD	Permits forwarding of HIS 12-lead orders from the CCP orders service to the PIIC 12 lead service
Inbound ADT Interface CX2	Allows the user to see the hospital information system patients database Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX. Interface Server required in topology; Violations are reported by System Validation. If you configure an ADT client without the feature, it is reported by System Validation. Feature is determined by the Monitoring host.
Inbound LAB Interface LAB	Enables importing patient labs from external systems Data Processing (PPX) feature is a prerequisite; Option value must match PPX value. Interface Server feature in the topology is required and If user configures LAB client without the feature, it is reported by System Validation. This feature is determined by the Monitoring host.

Table 5-3 PIIC iX Feature Options For Surveillance Systems (continued)

Feature	Description/Notes
Alert Data Outbound Interface C67	Enables publishing alert data to external systems such as Orchestrator Data Processing (PPX) feature is a prerequisite; Option value must match PPX value. Interface Server feature in the topology is required, and If user configures ADI client without the feature, it is reported by System Validation. This feature is determined by the Monitoring host.
Electronic Report Distribution RPT	Enables electronic distribution of reports to external systems such as EMR Data Processing (PPX) feature is a prerequisite; Option value must match PPX value. Feature is determined by the Monitoring host.
WEB Multi Patient View C82	Permits Real Near Time Multi Patient view WEB participation Data Processing (PPX) feature is a prerequisite; Option value must match PPX value.
WEB Single Patient View C70	Permits Retrospective and Near Real Time Web participation of host patients (Web clients can view data for patients in this host.) Data Processing (PPX) feature is a prerequisite; Option value must match PPX value.
HL7 Outbound Interface C14	Enables sending HL7 data to external systems such as EMR Patient Connection feature (PCX) is a pre-requisite; Interface Server feature is required in topology. Violations are reported by System Validation. If you try to configure an HL7 client without this feature, it is reported by System Validation. Feature is determined by the Monitoring host.
12-Lead Full Disclosure Capture FDC	Permits capture of 12-lead ECGs from full disclosure data of Cardiac Review Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX. Feature is determined by the Monitoring host.
Holter Data Export HDX	Permits manual export of Waves to a configurable network share
Patient Data Export PDX	Permits export of raw patient data to a licensed, configured Data Warehouse Server Refer to <i>Data Warehouse Connect Installation and Use Guide</i> for detailed information about data storage and view.

Table 5-4 PIIC iX Feature Options For Overview Systems

Feature	Description/Notes
Viewing	
Surveillance PXX	<p>Provides surveillance monitoring and/or overview access to monitored patients Option ranges from 4 to 32 patients.</p> <p>If feature co-exists with Data Processing (PPX) and Patient Connection (PCX) features,</p> <ul style="list-style-type: none"> ■ Option value must match PPX and PCX features. ■ System can provide real-time monitoring. <p>If there are no Data Processing (PPX) and Patient Connection (PCX) features,</p> <ul style="list-style-type: none"> ■ The system can only provide overview access to monitored patients.
ST-Map Surveillance MAP	<p>Provides ability to view ST-Map on the Sector Window</p> <p>Surveillance feature (PXX) is a pre-requisite.</p> <p>Option value must match value of PXX feature.</p> <p>Feature is determined by the viewing host.</p>
Horizon-Trend Surveillance TRD	<p>Provides ability to view Horizon Trend and numerics on the Sector Window</p> <p>Feature is determined by the Viewing host.</p> <p>Surveillance feature (PXX) is a pre-requisite.</p>
Specialty Review	<p>Permits configuration in Retrospective Configuration editor</p> <ul style="list-style-type: none"> ■ RE1 - Basic, allows configuration of default retrospective application settings ■ RE2 - Advanced, allows configuration of default retrospective application settings and customizations of new review applications <p>Surveillance (PXX) and Data Processing (PPX) features are a prerequisite; the option value must match the value of PPX.</p>
Electronic Calipers ECP	<p>Provides ability to use the Calipers in the Application</p> <p>Feature is determined by the Viewing host.</p> <p>Surveillance (PXX) and Data Processing (PPX) features are prerequisites.</p> <p>The option value must match the value of PPX.</p>
Optional Additional Display C01	<p>Enables the use of multiple displays</p> <p>Surveillance feature (PXX) is a prerequisite, and option value must match PXX.</p> <p>If the number of configured displays exceeds the number of purchased option, it is reported by System Validation.</p> <p>Feature is determined by the Viewing host.</p>
Display Resolution High-Res S03	<p>Determines the display resolution that can run the monitoring application</p> <p>Represents High Rs Display. The application will not run if you try to connect the system to a High Resolution display (2560 x 1440 or 2560 x 1600) without having purchased this option.</p>
Advanced Sector Setup ADS	<p>Allows configuring three or more columns in Display Setup and minimize and auto resize of sectors</p> <p>Surveillance (PXX) feature is a prerequisite, and option value must match PXX.</p>
Clinical Audit Log AUD	<p>Allows viewing the Audit Log from the Surveillance Application</p> <p>Surveillance (PXX) feature is a prerequisite, and option value must match PXX.</p>

Table 5-5 PIIC iX Feature Options For Standalone Systems

Feature	Description/Notes
Data Acquisition	
Patient Connections PCX	Determines number of connected patients for real-time monitoring Option ranges from 4 to 32 patients. For upgrades this feature can only be augmented, it cannot be introduced.
Data Processing PPX	Allows data to be processed for viewing Patient Connection feature is a prerequisite; the option value must match the value of the PCX feature.
Monitor Connectivity Type	Determines which monitors can connect to a system <ul style="list-style-type: none"> ■ MP0 - connects to MX20-40, X2, MP2-5, MP20-30, PWD and MX400-450 ■ MP1 - connects MX480-500, MP40-50 and MRx ■ MP2 - connects to MP60, MP70, and MX550 ■ MP3 - connects MP80, MP90 and MX600-700 ■ MP4 - connects MX800 ■ MPX - connects to all supported monitor devices Patient Connection (PCX) feature is a prerequisite.
System Control GBC	Allows system controls functionality from the point of care Patient Connection (PCX) feature is a prerequisite, and option value must match PCX.
Data Storage	
Full Disclosure	Determines how much data will be shown on the Review application <ul style="list-style-type: none"> ■ D02 - Full Disclosure (2 days) ■ D03 - Full Disclosure (3 days) ■ D04 - Full Disclosure (4 days) ■ D05 - Full Disclosure (5 days) ■ D06 - Full Disclosure (6 days) ■ D07 - Full Disclosure (7 days) If no Full Disclosure is selected 1 day of storage is provided. Data Processing feature (PPX) is a prerequisite, and option value must match the value of PPX. Feature is determined by the Monitoring host.
12-Lead Full Disclosure I2S	Permits view and storage of 12-lead full disclosure data Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX. Feature is determined by the Monitoring host.
Physiologic Database PHY	Determines location of a Physiologic Database At least one host in system is assigned this feature.
Configuration Database	Determines the location of the configuration database <ul style="list-style-type: none"> ■ DB1 - Local configuration database

Table 5-5 PIIC iX Feature Options For Standalone Systems (continued)

Viewing	
Surveillance PXX	<p>Provides surveillance monitoring and/or overview access to monitored patients Option ranges from 4 to 32 patients.</p> <p>If feature co-exists with Data Processing (PPX) and Patient Connection (PCX) features,</p> <ul style="list-style-type: none"> ■ Option value must match PPX and PCX features. ■ System can provide real-time monitoring. <p>If there are no Data Processing (PPX) and Patient Connection (PCX) features,</p> <ul style="list-style-type: none"> ■ The system can only provide overview access to monitored patients.
ST-Map Surveillance MAP	<p>Provides ability to view ST-Map on the Sector Window</p> <p>Surveillance feature (PXX) is a pre-requisite, and option value must match value PXX.</p> <p>Feature is determined by the viewing host.</p>
Horizon-Trend Surveillance TRD	<p>Provides ability to view Horizon Trend and numerics on the Sector Window</p> <p>Feature is determined by the Viewing host.</p> <p>Surveillance feature (PXX) is a pre-requisite.</p>
Specialty Review	<p>Permits configuration in Retrospective Configuration editor</p> <ul style="list-style-type: none"> ■ RE1 - Basic, allows configuration of default retrospective application settings ■ RE2 - Advanced, allows configuration of default retrospective application settings and customizing f new review applications <p>Surveillance (PXX) and Data Processing (PPX) features are a prerequisite; the option value must match the value of PPX.</p>
EASI Full Disclosure E0I	<p>Provides ability to view EASI data</p> <p>Surveillance (PXX) and Data Processing (PPX) features are prerequisite; The option value must match the value of both.</p> <p>Feature is determined by the Monitoring host.</p>
Hexad Full Disclosure HXD	<p>Provides ability to view hexad data</p> <p>Surveillance (PXX) and Data Processing (PPX) features are prerequisite; The option value must match the value of both.</p> <p>Feature is determined by the Monitoring host.</p>
Device Location WLD	<p>Provides location information for equipment</p> <p>Feature is determined by the Monitoring host.</p> <p>Surveillance (PXX) and Data Processing (PPX) features are prerequisites.</p> <p>The option value must match the value of both.</p>
12-Lead Capture Review and Analysis I2L	<p>Permits view of 12-Lead capture data in the Review Application</p> <p>Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX.</p> <p>Feature is determined by the Monitoring host.</p>
Electronic Calipers ECP	<p>Provides ability to use the Calipers in the Application</p> <p>Feature is determined by the Viewing host.</p> <p>Surveillance (PXX) and Data Processing (PPX) features are prerequisites.</p> <p>The option value must match the value of both.</p>
Additional Display C01	<p>Enables the use of multiple displays</p> <p>Surveillance feature (PXX) is a prerequisite, and option value must match PXX.</p> <p>If the number of configured displays exceeds the number of purchased option, it is reported by System Validation.</p> <p>Feature is determined by the Viewing host.</p>

Table 5-5 PIIC iX Feature Options For Standalone Systems (continued)

WEB Wave Strip Access C72	Permits wave strip export to non-PIIC iX Systems WEB Server is required in topology. Violations are reported by System Validation. Data Processing (PPX) feature is a prerequisite; Option value must match PPX value.
Display Resolution High-Res S03	Determines the display resolution that can run the monitoring application Represents High Res Display. The application will not run if you try to connect the system to a High Resolution display (2560 x 1440 or 2560 x 1600) without having purchased this option.
Advanced Sector Setup ADS	Allows configuring three or more columns in Display Setup and minimize and auto resize of sectors Surveillance (PXX) feature is a prerequisite, and option value must match PXX.
Clinical Audit Log AUD	Allows viewing the Audit Log from the Surveillance Application Surveillance (PXX) feature is a prerequisite, and option value must match PXX.
Interfaces	
I2-Lead Full Disclosure Capture FDC	Permits capture of I2-lead ECGs from full disclosure data of Cardiac Review Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX. Feature is determined by the Monitoring host.
I2-Lead Orders ORD	Permits forwarding of HIS I2-lead orders from the CCP orders service to the PIIC I2 lead service
Inbound ADT Interface CX2	Allows the user to see the hospital information system patients database Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX. Interface Server required in topology; Violations are reported by System Validation. If you configure an ADT client without the feature, it is reported by System Validation. Feature is determined by the Monitoring host.
HL7 Interface C14	Enables sending HL7 data to external systems such as EMR Patient Connection feature (PCX) is a pre-requisite; Interface Server feature is required in topology. Violations are reported by System Validation. If you try to configure an HL7 client without this feature, it is reported by System Validation. Feature is determined by the Monitoring host.
Alert Data Outbound Interface C67	Enables publishing alert data to external systems such as Orchestrator Data Processing (PPX) feature is a prerequisite; Option value must match PPX value. Interface Server feature in the topology is required. If the user configures ADI client without the feature, it is reported by System Validation. This feature is determined by the Monitoring host.
I2-Lead Export C17	Enables publishing I2-lead to external systems such as TraceMasterVue Data Processing (PPX) feature is a prerequisite; Option value must match PPX value. Interface Server feature in the topology is required and if user configures I2 Lead Export client without the feature, it is reported by System Validation. This feature is determined by the Monitoring host.

Table 5-5 PIIC iX Feature Options For Standalone Systems (continued)

Inbound LAB Interface LAB	Enables importing patient labs from external systems Data Processing (PPX) feature is a prerequisite; Option value must match PPX value. Interface Server feature in the topology is required and If user configures LAB client without the feature, it is reported by System Validation. This feature is determined by the Monitoring host.
Electronic Report Distribution RPT	Enables electronic distribution of reports to external systems such as EMR Data Processing (PPX) feature is a prerequisite; Option value must match PPX value. Feature is determined by the Monitoring host.
Mobility Access MOB	Determines Mobility Service Server Option value specifies the number of beds that can be accessed concurrently
WEB Single Patient View C70	Permits Retrospective and Near Real Time Web participation of host patients (Web clients can view data for patients in this host.) Data Processing (PPX) feature is a prerequisite; Option value must match PPX value.
WEB Multi Patient View C82	Permits Real Near Time Multi Patient view WEB participation Data Processing (PPX) feature is a prerequisite; Option value must match PPX value.
Web Server WEB	Provides access from WEB clients to view patient data monitored on systems that are licensed with either WEB Wave Strip export (WAV), Web Single Patient View (C70), or Web Multi Patient View (C82) Option value is the number of concurrent Web Client connections.
Third Party Device Connectivity MP6	Permits connectivity to third party devices on EC40/80 hubs and third party LAN devices Requires Patient Connection (PCX) as a prerequisite
Interface Server GWS	Determines location External Interface Services run (HL7, for example) Only one host can have this feature. Configuration Database (CDB) feature is a prerequisite.
Holter Data Export HDX	Permits manual export of Waves to a configurable network share
Patient Data Export PDX	Permits export of raw patient data to a licensed, configured Data Warehouse Server Refer to <i>Data Warehouse Connect Installation and Use Guide</i> for detailed information about data storage and view.
Other	
Connected Clients CCL	Allows other licensed hosts to connect to the primary server Configuration Database (CDB) feature is a prerequisite.

Table 5-6 PIIC iX Feature Options For Acquisition Systems

Feature	Description/Notes
Data Acquisition	
System Control GBC	Allows system controls functionality from the point of care Patient Connection (PCX) feature is a prerequisite, and option value must match PCX.
Patient Connections PCX	Determines number of connected patients for real-time monitoring Option ranges from 4 to 32 patients. For upgrades this feature can only be augmented, it cannot be introduced.
Data Processing PPX	Allows data to be processed for viewing Patient Connection feature is a prerequisite; the option value must match the value of the PCX feature.
Monitor Connectivity Type MP6	Determines which monitors can connect to a system <ul style="list-style-type: none"> ■ MP0 - connects to MX20-40, X2, MP2-5, MP20-30, PWD and MX400-450 ■ MP1 - connects MX480-500, MP40-50 and MRx ■ MP2 - connects to MP60, MP70, and MX550 ■ MP3 - connects MP80, MP90 and MX600-700 ■ MP4 - connects MX800 ■ MPX - connects to all supported monitor devices Patient Connection (PCX) feature is a prerequisite
Third Party Device Connectivity MP6	Permits connectivity to third party devices connected to EC40/80 hubs and third party LAN devices. Patient Connection (PCX) feature is a prerequisite
Data Storage	
12-Lead Full Disclosure I2S	Permits view and storage of 12-lead full disclosure data Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX. Feature is determined by the Monitoring host.
Viewing	
Wave Strip Export WSX	Permits automatic export of alert and saved strips to a configurable network share
Interfaces	
12-Lead Full Disclosure Capture FDC	Permits capture of 12-lead ECGs from full disclosure data of Cardiac Review Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX. Feature is determined by the Monitoring host.
Inbound ADT Interface CX2	Allows the user to see the hospital information system patients database Patient Connection feature (PCX) is a pre-requisite, and option value must match PCX. Interface Server required in topology; Violations are reported by System Validation. If you configure an ADT client without the feature, it is reported by System Validation. Feature is determined by the Monitoring host.

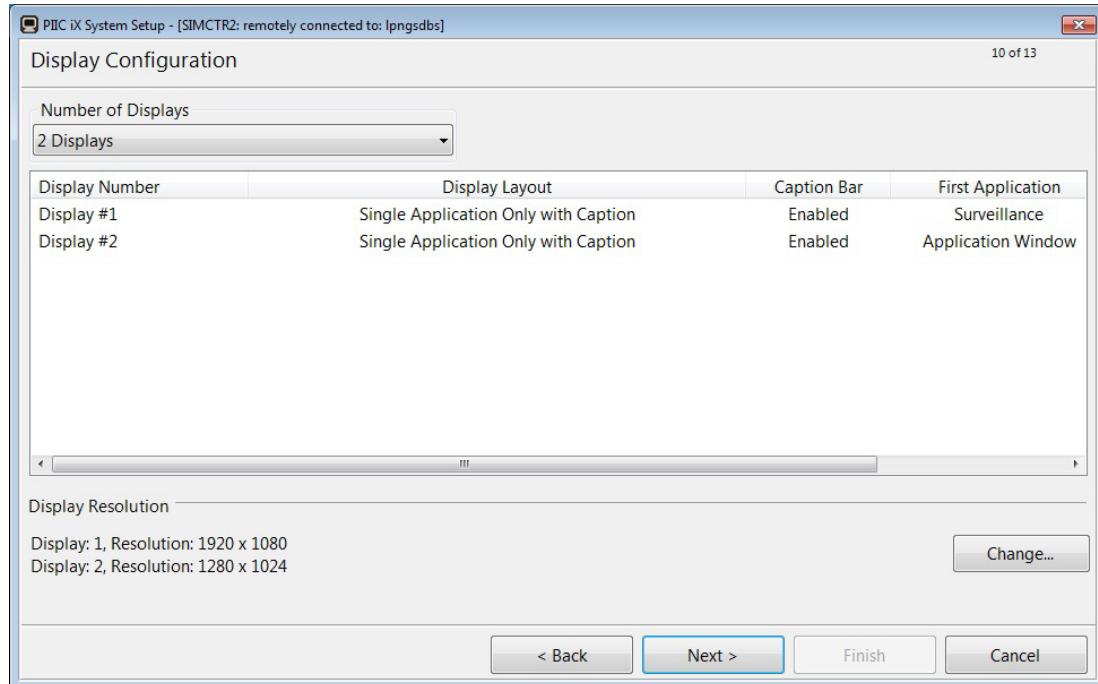
Table 5-6 PIIC iX Feature Options For Acquisition Systems (continued)

HL7 Outbound Interface C14	Enables sending HL7 data to external systems such as EMR Patient Connection feature (PCX) is a pre-requisite; Interface Server feature is required in topology. Violations are reported by System Validation. If you try to configure an HL7 client without this feature, it is reported by System Validation. Feature is determined by the Monitoring host.
Alert Data Outbound Interface C67	Enables publishing alert data to external systems such as Orchestrator Data Processing (PPX) feature is a prerequisite; Option value must match PPX value. Interface Server feature in the topology is required. If the user configures ADI client without the feature, it is reported by System Validation. This feature is determined b the Monitoring host.
Holter Data Export HDX	Permits manual export of Waves to a configurable network share
Patient Data Export PDX	Permits export of raw patient data to a licensed, configured Data Warehouse Server Refer to <i>Data Warehouse Connect Installation and Use Guide</i> for detailed information about data storage and view.

- 3 Once all desired licenses are assigned click **Next >** to continue to the next System Setup screen.

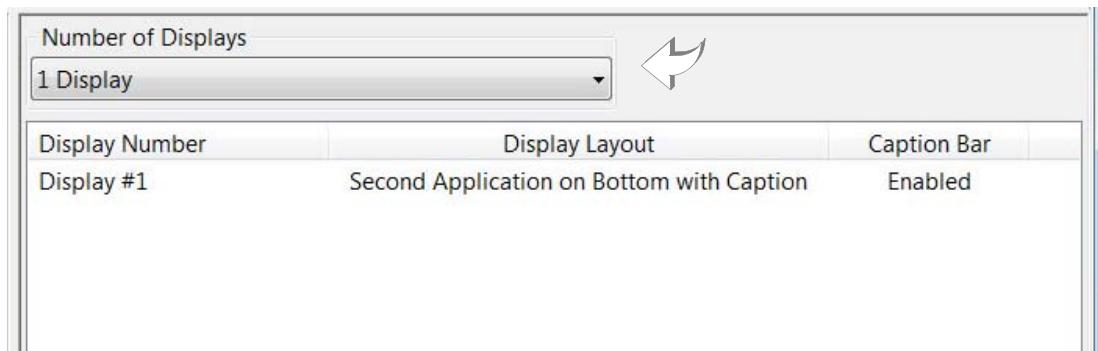
Display Configuration

The **Display Configuration** screen permits selection of Display settings.



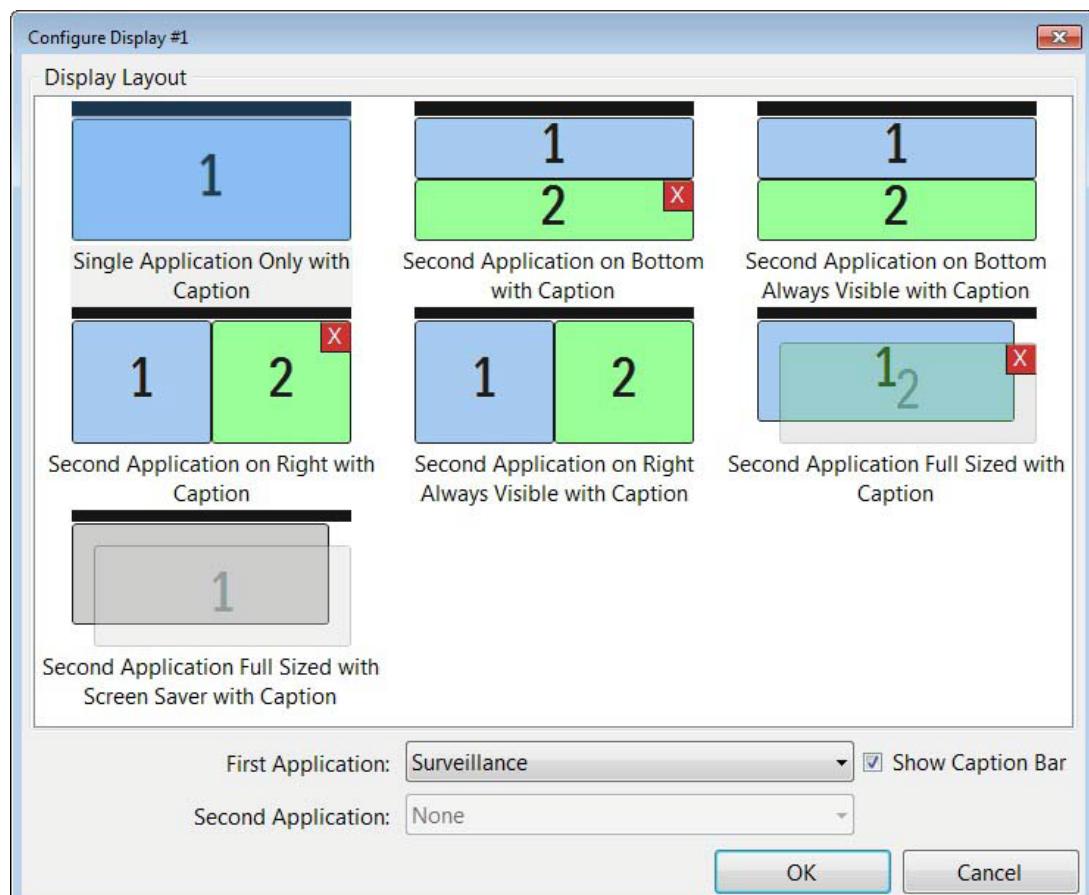
If you want to configure the Number of Displays

- I In the **Number of Displays** section of the screen, select the desired number of Displays from the drop down list.



2 Configure the **Display Layout**.

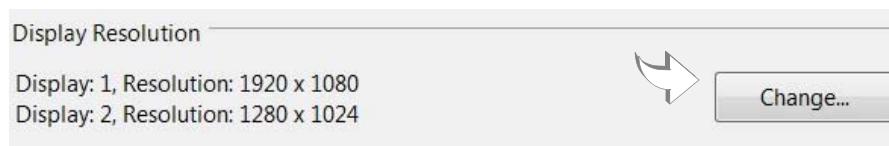
- a Double-click the desired Display in the **Display Number** column.
 The **Configure Display #n** screen opens and shows **Display Layout** selections.



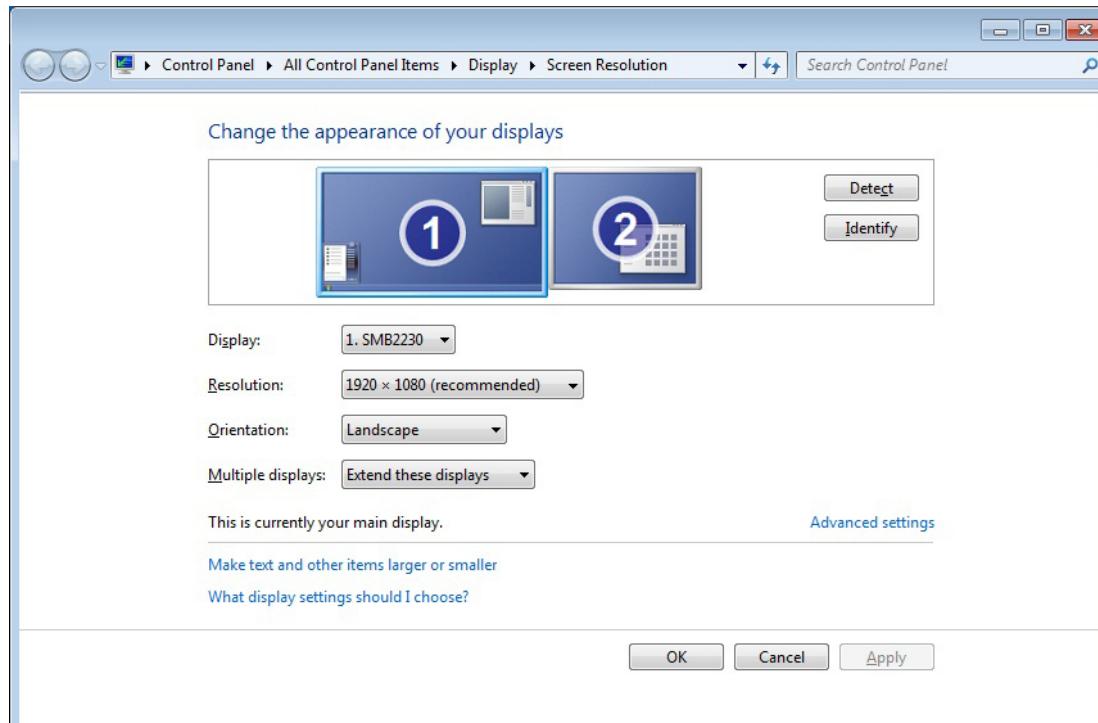
Selections/Settings	Description
Show Caption Bar	► Click check box to show caption bar. The words, with Caption , are added to Display Layout descriptions. Clear the check box to hide caption bar.
Display Layout Selections	
Single Application Only with Caption ¹	
Second Application on Bottom with Caption ¹	
Second Application on Bottom Always Visible with Caption ¹	
Second Application on Right with Caption ¹	
Second Application on Right Always Visible with Caption ¹	
Second Application Full Sized with Caption ¹	
Second Application Full Sized with Screen Saver with Caption ¹	
First Application	<ul style="list-style-type: none"> ■ Surveillance ■ Application Window
Second Application	<ul style="list-style-type: none"> ■ Application Window ■ None

¹ The words, **with Caption**, do not appear in **Display Layout** descriptions when the **Show Caption Bar** check box is clear.

- b** Click the down arrow next to **First Application** and select desired setting from the list.
 - c** If applicable, click the down arrow next to **Second Application** and select desired setting from the list.
 - d** Click the **Show Caption Bar** check box if you want the Caption Bar to show, or clear the check box if you do not want the Caption Bar to show.
 - e** When configuration is complete click **OK**.
- 3** Check the Display Resolution of each display.
- a** Click the **Change** button in the **Display Resolution** section on the bottom of the **Display Configuration** screen to open Windows Control Panel Screen Resolution applet which permits configuration of Display properties.



Important Always click the **Change** button in the **Display Resolution** section on the bottom of the **Display Configuration** screen and verify all Display settings even when the correct Display properties appear. This is an important step to complete, otherwise Display properties may not be set properly in the Windows Operating system.



Important Be sure to verify that the display resolution information matches the native resolution of your display(s).

- b** With desired hardware selected in the **Display** list set **Resolution**.
- **Display** populates list of physical displays discovered and permits selecting a display from the list. If you are using a Video Splitter, Displays are identified as **Generic Non-PnP Monitor** and may show Windows 7 default resolution **1024 x 768**. Be sure to change the resolution to match the native resolution of the customer displays.
 - **Resolution** permits setting desired resolution.

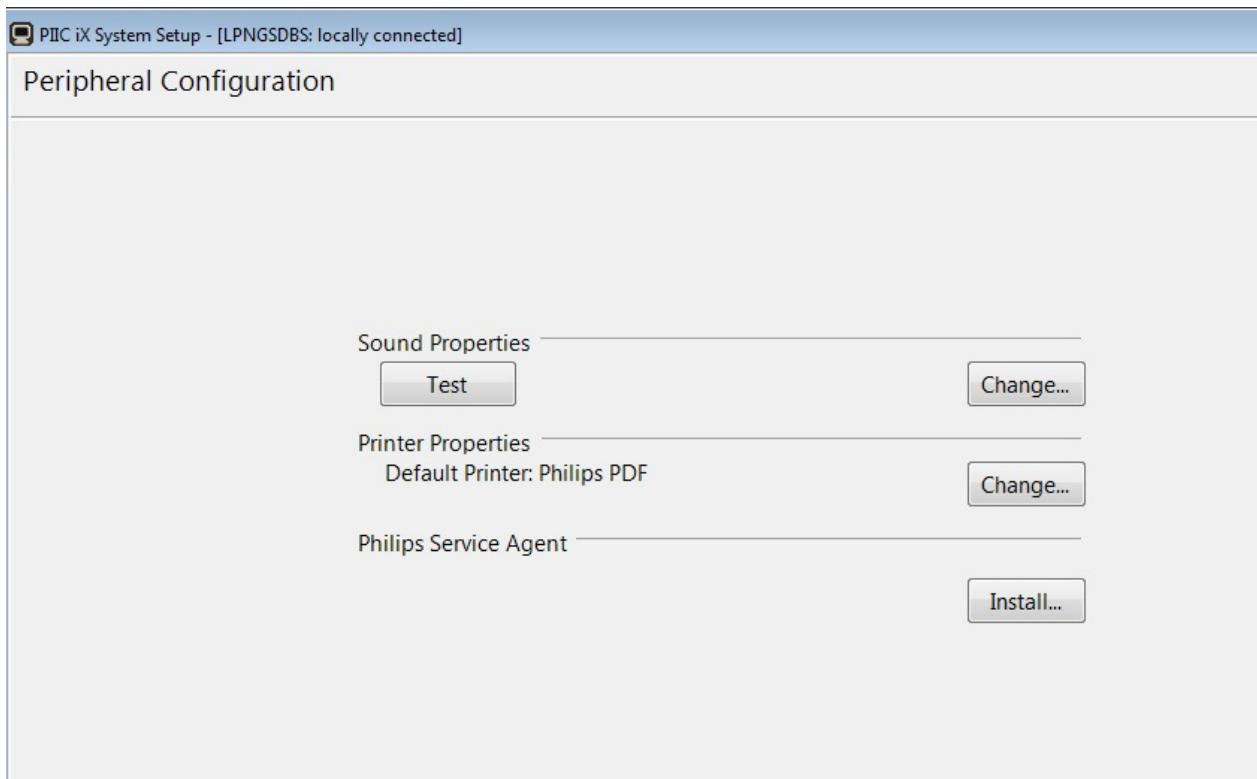
WARNING **Be sure that you use the optimal [native] resolution for your Display or patient data may not appear accurately.**

- **Orientation** permits customizing orientation from the drop down list **Landscape, Portrait**.
- c** Be sure that when display configuration/verification is complete you click **OK** and **Keep Changes**.

NOTE Display resolution changes will not appear when you return to the PIIC iX System Setup screen.

- 4 Click **Next >** in the **Display Configuration** screen to continue to the **Peripheral Configuration** screen.

Peripheral Configuration



CAUTION Some non-Philips provided displays can override/disable sound generated by the PC. The **Test** button permits sound to be verified.

- 1 In the **Peripheral Configuration** screen you can test and configure **Sound Properties**.
 - a Click the **Test** button to check the audible alarm tone.

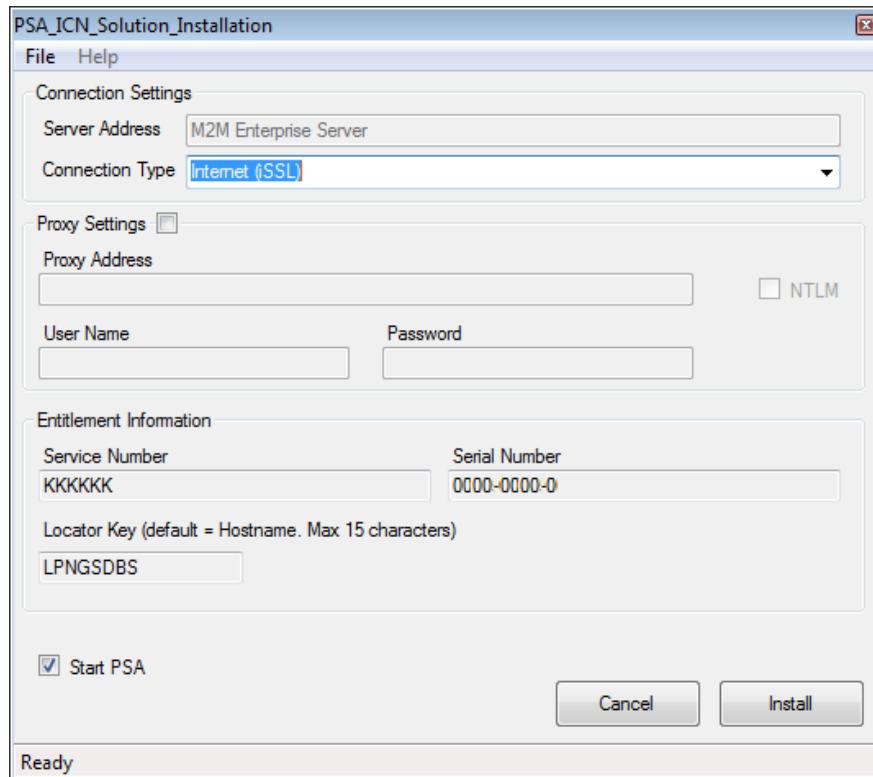
On a host licensed with the Surveillance feature, a **Sound is operating as expected** check box appears next to **Sound Properties**. If the check box is present you must click the check box to continue.
 - b If you want to configure speakers click the **Change** button adjacent to **Sound Properties**.

The Windows Control Panel **Sound** dialog opens.
- 2 In the **Peripheral Configuration** screen click adjacent **Change** button to configure Printer properties.

The **Devices and Printers** dialog opens. Refer to **Installing Printers, page 5-68**.
- 3 PSA service must be installed on all monitoring devices that will be accessed remotely from the M2M Enterprise Server Web interface. You can install PSA using the **Peripheral Configuration** screen or you can install it later using the **Philips Service Agent** feature in the External Tools folder in the **Tools** menu (**page 7-36**).

If you want to install Philips Service Agent at this time do so as follows.

- a On the **Peripheral Configuration** screen click the adjacent **Install** button to initiate Philips Service Agent installation. The **PSA_ICN_Solution_Installation** dialog opens.
In the **Connection Settings** section the **Server Address** automatically populates with the **PRS Enterprise Server**.



- b Click the down arrow to select the **Connection Type**. Select **Internet (iSSL)** or **IPSEC VPN**.
 - Internet (iSSL)**
 - IPSEC VPN**
- c If the hospital uses a Web Proxy Server click the **Proxy Settings** check box and enter the **Proxy Address** in the text box. The Proxy Address is the IP Address or Host Name of the proxy server followed by a colon and the port number 8080 (**192.168.100.1:8080**, for example).

NOTE If the **Proxy Settings** check box is clear all associated text boxes are dimmed. You must click the check box if you want to add Proxy Server information.

- d If necessary enter Proxy Server **User Name** and **Password** in appropriate text boxes, and select **NTLM** if required.
- e Confirm that the **Start PSA** check box is checked, then click **Install**. PSA installation begins and displays several installation windows and a command line

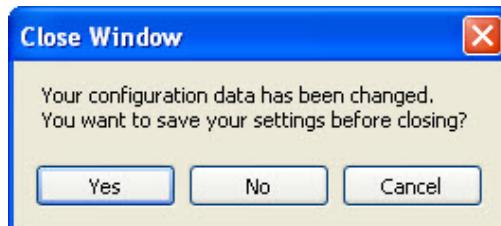
configuration window.

When the installation is complete a message appears in the bottom section of the dialog.

Installation completed successfully. Please close the application.

- f Close the dialog.

When you close the dialog, a **Close Window** message appears.



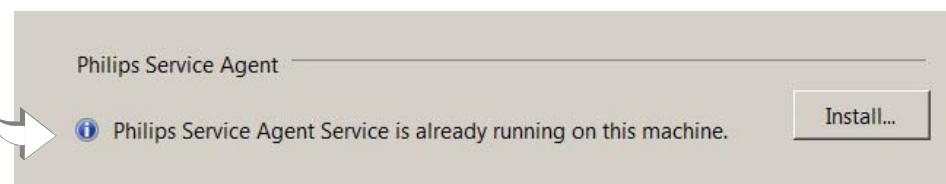
- 4 Click **Yes** in the dialog.

Philips recommends that you save the values entered during the Installation for future reference. All values entered, except the Password value, are saved to:

C:\Program files (x86)\Philips\PIIC iX\B.00\Product\PSA\PSA_ICN_Solution_Installation\configuration.xml.

C:\Program files\Philips\PIIC iX\B.00\Product\PSA\PSA_ICN_Solution_Installation\configuration.xml.

An icon precedes **Philips Service Agent** on the **Peripheral Configuration** screen which determines that the service is installed.



- g If you experience problems during installation of the Philips Service Agent or you want to uninstall it refer to **Chapter 8, Philips Remote Service**.

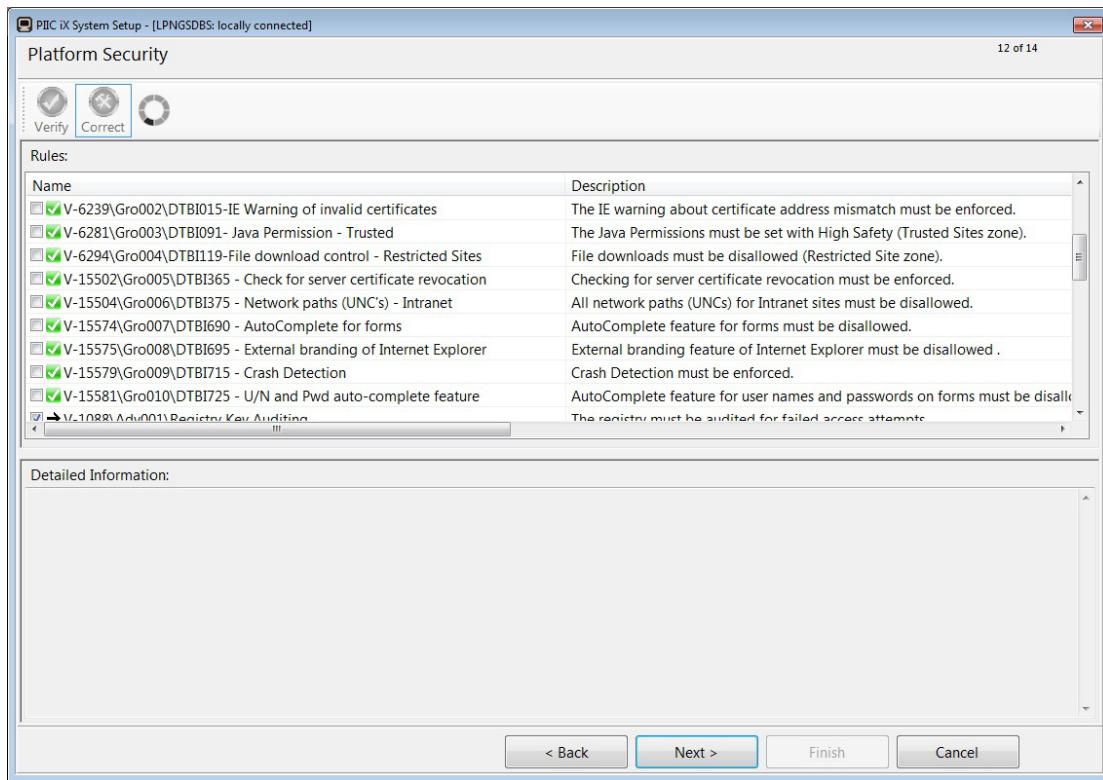
Important Problems that can occur during PSA installation follow.

- If PSA is already installed and working then a notification message reports that Philips Service Agent is already running on the machine.
- If PSA is installed but not running a message reports that Philips Service Agent Service is not running on the machine and suggests referral to PSA log files for error details.
- If you try to install PSA on a host that is not licensed a message reports the failure.
- If Serial number and product Id do not match with the product license file a message reports failure to validate the Philips Service Agent configuration and a dialog opens asking if you want to re-install.

- 5 After changes are complete in the **Peripheral Configuration** screen click **Next >** to continue.

Platform Security

Platform Security ensures that the PIIC iX patient monitoring software environment meets or exceeds security standards. It runs automatically during the installation.



When the **Rules** section is clear of errors green checks appear next to features. When a non-successful item is selected from the list, the **Detailed Information** text box contains a detailed problem description.

Warnings do not imply failure, but indicate that a rule is not covered by the application. If a certification rule fails, the tool does not prevent the installation from continuing or restrict patient monitoring activity.

- 1 If necessary correct failed rules as follows.
 - a Select the failed rules.
Additional data appears about the condition in the **Detailed Information** section at the bottom of the screen.
 - b Click **Correct** .
- 2 Click **Next >** in the **Platform Security** screen to continue.

Platform security runs during installation whether or not you have purchased the DIACAP feature option. The certification rule set is more extensive for users who purchase the DIACAP feature option, however. Tools and options not compatible with DIACAP certifications include IIS/Web, VNS (remote support), Wireshark, Kavoom, BlackIce PDF, Paging, and Mobility.

Important PIIC iX Users, **PatientMonitoring20** and **SupportUser**, have access to SQL Server software installation. Access to this capability must be restricted to authorized users.

Host Qualification

Host Qualification provides a post installation assessment of hardware and software. After qualification of each requirement completes, a log entry containing final status information is created for each item in the Qualification list. When the **Rules** section is clear of errors green checks appear next to features. Refer to **Appendix F** for a description of the Host Qualification Rules.

The screenshot shows the 'Host Qualification' interface. At the top, there are two buttons: 'Verify' (with a checkmark icon) and 'Correct' (with a wrench and screwdriver icon). Below these are sections for 'Rules' and 'Detailed Information'. The 'Rules' section is divided into 'Hardware' and 'Operating System' categories. Under 'Hardware', 'Disk Space' and 'Memory' are checked. Under 'Operating System', 'Fonts', 'Performance Counters', 'Philips Services', 'Philips Watchdog', and 'Shortcuts' are checked. The 'Detailed Information' section is currently empty. At the bottom, there is a blue bar with the text 'LPNGS3'.

Name	Description
Hardware	
<input checked="" type="checkbox"/> Disk Space	Determines if there is sufficient free disk space.
<input checked="" type="checkbox"/> Memory	Determines if there is sufficient physical RAM.
Operating System	
<input checked="" type="checkbox"/> Fonts	Ensures that the Philips Healthcare fonts are installed.
<input checked="" type="checkbox"/> Performance Counters	Ensures that custom performance counters are installed to measure application health.
<input checked="" type="checkbox"/> Philips Services	Ensures that the ServiceHost service is installed.
<input checked="" type="checkbox"/> Philips Watchdog	Ensures that the WatchdogHost service is installed.
<input checked="" type="checkbox"/> Shortcuts	Ensures that application shortcuts are created on the desktop.

NOTE Any rules that display a **Failure** icon must be corrected. Try to correct using the **Correct** icon or manually correct the failure when you highlight a specific rule additional data appears about the condition in the **Detailed Information** section at the bottom of the screen.

To correct a failed rule that can be corrected by the software do the following.

- 1 Select the failed rule.
Additional data appears about the condition in the **Detailed Information** section at the bottom of the screen.
- 2 Click **Correct**.
- 3 Repeat **Step 1** and **2** for each failed instance.
- 4 Click **Next >** in the **Host Qualification** screen to continue.

Setup Complete

- ▶ When the PIIC iX **Setup Complete** screen opens select the desired option, and click **Finish**.

Select...	If you want to...
Configure system topology and clinical unit settings	Open System Configuration which permits setting up system topology, configuring clinical and technical features, diagnosing the system, and so on System Configuration access requires User Name and Password authentication (page 6-139). (See Chapter 6 and Chapter 7)
Start Patient Monitoring Service	Run the Monitoring Application Note: This selection may include text describing that a reboot may be necessary. When the System restarts a Login dialog appears. You must enter your User Name and Password in the dialog to start the Monitoring Application (page 6-139).
Exit	Open Windows Desktop

Patient Link Installation on Server Operating System

If you are running Patient Link on a Server Operating System you will see a Log on Failure Error when your system restarts following System Setup completion.

Do the following to start monitoring services.

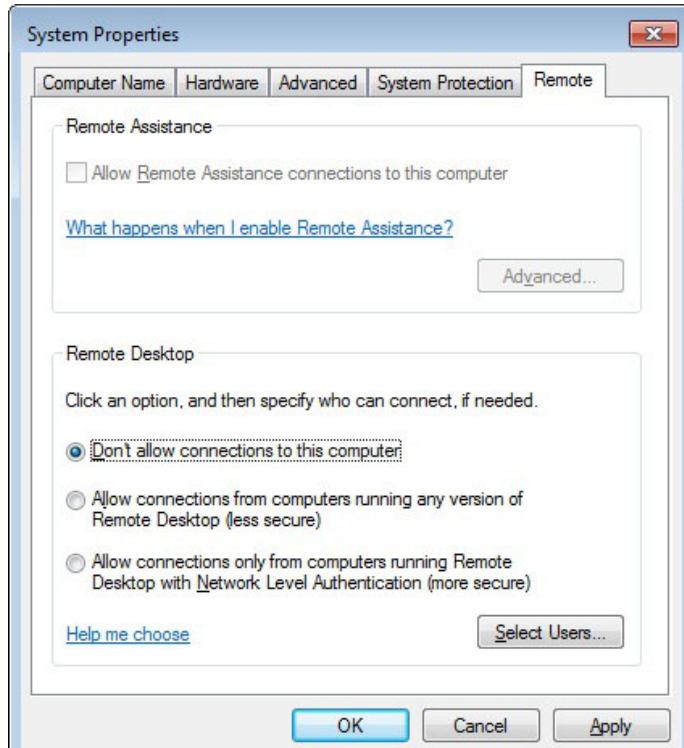
- 1 At the Server Login Screen log on with *SupportUser* credentials.
- 2 From the Server desktop open **PIIC iX System Configuration** with appropriate credentials.
- 3 Click the **Start Services** menu selection.

Each time your server restarts you must repeat these steps.

DIACAP Remote Access Disabling Requirement

If you have purchased and are running a DIACAP compliant System you must disable remote access to your system each time that you run System Setup.

- I On your Primary Server or PIIC iX Local machine open the **System Properties** dialog.



- 2 On the **Remote** tab go to the **Remote Desktop** section and select the **Don't allow connections to this computer** option.
- 3 Click **OK**.

Setting up a PIIC iX Surveillance Display

Important If you selected **Start Patient Monitoring Service** on the final **System Setup** page during your PIIC IX install the monitoring application on a Surveillance host will start up and open a **Display Setup** screen on the first startup of the monitoring application.

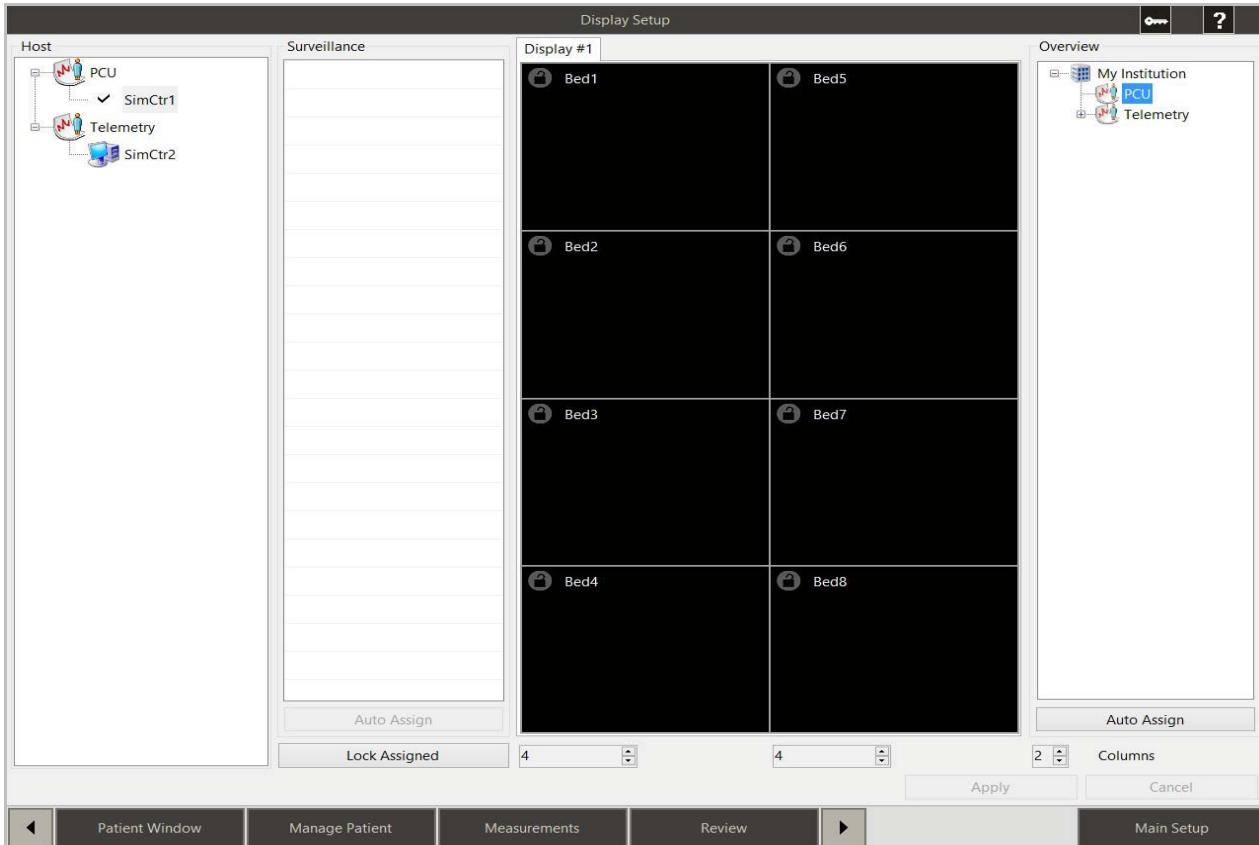
Display Setup determines the number of sectors that will show on each Display and whether the bed label is locked to a sector. You must configure this screen for each PIIC iX. You can also access this screen from each PIIC iX Application menu bar if you go to **Manage Unit > Display Setup**.

Sector and Column Layout

Important When a 2560 x 1440 or 2560 x 1600 single display is configured for Application Window Side-by-Side with Surveillance, the maximum number of configurable columns in Display Setup is 2.

- I** In the **Display Setup** screen use the up/down arrows to set the desired value for **Columns**.

The preview dynamically reflects the changes you select.



- 2** After you set the number of columns use the up/down arrows beneath each column to set the number of sectors per column.

Assign Bed Labels to Sectors

A list of available bed labels appear in the **Surveillance** and **Overview** lists the **Display Setup** screen.

- I If you want to manually assign a bed label, select the desired bed label from the list then select the desired clear sector location.

or

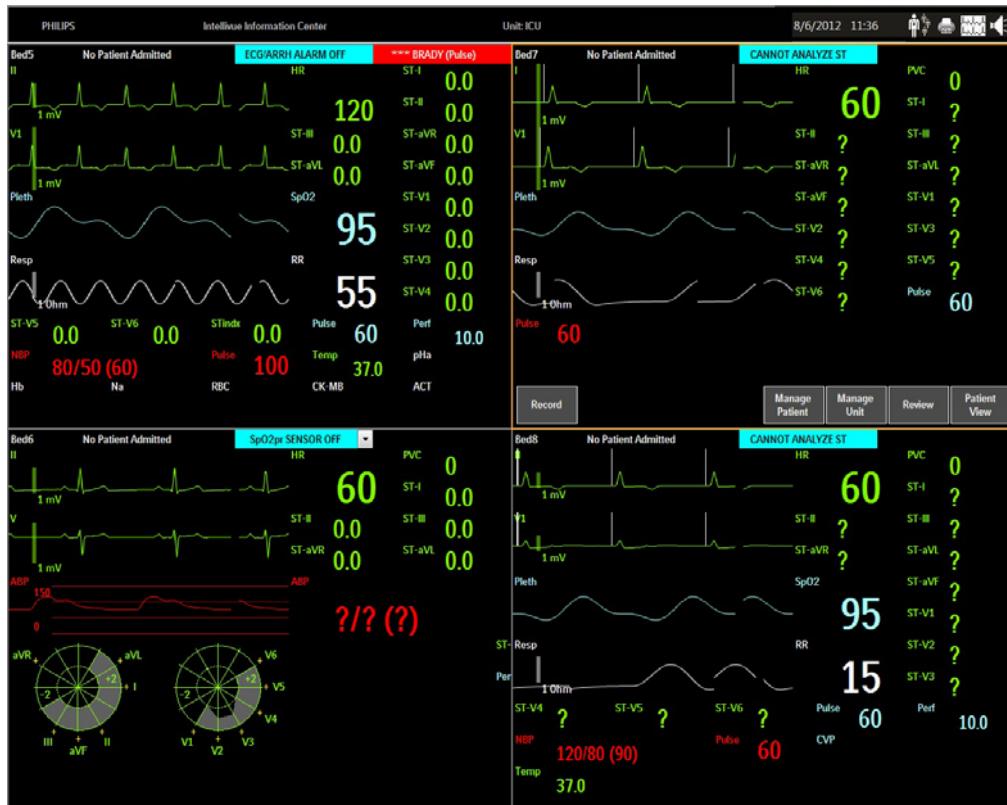
Click **Auto Assign** to automatically populate your sectors. Available beds fill the first column in listed order, then begin filling the next column.

- 2 Select the **Lock Assigned** button to lock all bed labels to their assigned sectors, or select the lock icon  in the desired sector if you want to lock a single bed label.

NOTE If a bed label is locked to a sector, it cannot be cleared with discharge or transfer. This does not depend on whether equipment is locked to a bed label.

CAUTION If you are using Switch Port Mapping you MUST lock bed labels to the sector.

- 3 After desired changes are made on **Display Setup** screen click **Apply** for changes to take effect immediately and open the Patient Monitoring **Main Screen**.



For information about using the clinical application refer to the *PIIC iX Instructions for Use*.

Desktop Shortcuts

Installation shortcuts/folders that may appear on the Desktop (depending on your system):

PIIC iX



PIIC iX System Configuration



PIIC iX System Setup



PIIC iX Patient Monitoring Services



Shortcuts



Upgrading Application Software

With PIIC iX B.02 you can install the application on PIIC iX Operating Systems A.01, A.02, B.00, and B.01. Instructions to install PIIC iX B.02 application follow.

- If you want to upgrade a PIIC iX B.00 system to PIIC iX B.02, refer to the *PIIC iX B.02 Software Upgrade Note, 4535 645 40561, Edition 2*.
- If you want to upgrade a PIIC iX B.01 system to PIIC iX B.02 using the PIIC iX patch with the update tool, refer to **Software Update**.

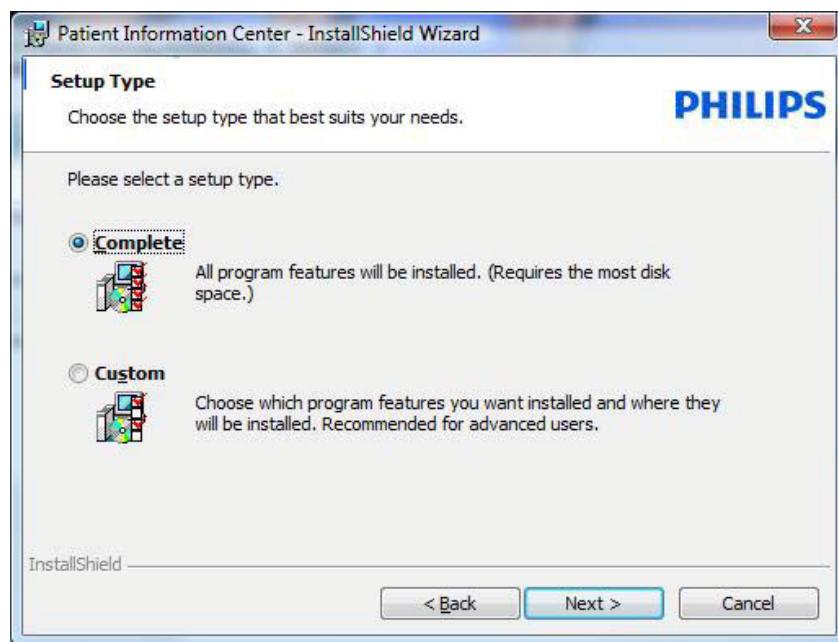
Important If you are upgrading from PIIC iX A.01.xx/A.02.xx/B.00.xx/B.01.xx you are required to update the application as described in *PIIC iX Software Upgrade Note, 4535 645 40561, Edition 2*. The following steps describe re-installation of a PIIC iX B.02 application on a PIIC iX B.02 system.

Installing the PIIC iX B.02 Application

Important If you are installing the PIIC iX B.02 application on an FSE laptop for remote configuration and you do not have SQL Server on your laptop be sure to include SQL Server during software installation. Refer to **Using An Unlicensed PIIC iX To View An Archive**. The following steps describe application installation on Philips-Supplied or Customer-Supplied PIIC iX Hardware or VM.

- 1 Put the PIIC iX Software USB Flash Drive into the appropriate drive of your PC/Server. Be sure to install software on the Primary Server first, then install software on member hosts.
- 2 Browse the USB drive to **App\Install32\setup**. Then double-click the Application file to begin the installation.
- 3 In the **Open File - Security Warning** dialog click **Run**.
- 4 If additional items are required on a PIIC iX or Server iX the InstallShield Wizard opens a dialog permitting installation of additional requirements (Wireshark, or UltraVNC Server (x86), for example). Click **Install** in the dialog to continue.
- 5 In the Patient Information Center - InstallShield Wizard **Welcome** screen click **Next >** to progress through the screens.
- 6 If you want to change the application location, click **Change** In the **Destination Folder** screen and set a custom destination. When desired destination is set, click **Next >** in the **Destination Folder** screen to continue.

- 7 Select **Complete** on the **Setup Type** screen, then click **Next >** to continue.

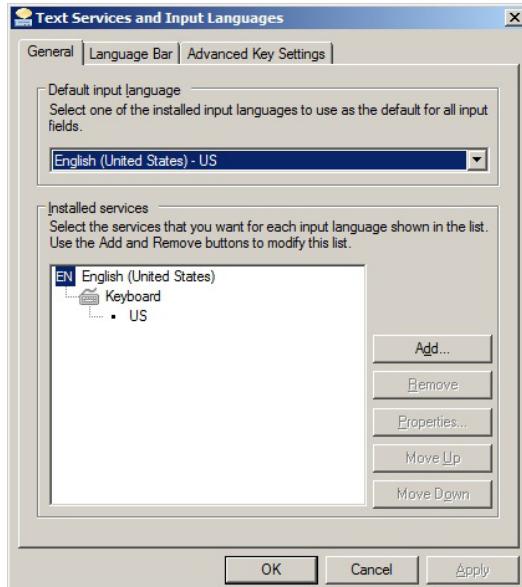


- 8 Click **Install** in the **Ready to Install the Program** screen.
A status bar shows the installation progress on the **Installing Patient Information Center** screen.
- 9 On the Patient Information Center - InstallShield Wizard **Completed** screen, click **Finish**.
The PIIC iX **System Setup - [System Information]** screen opens which is the initial **System Setup** screen. To use **System Setup** refer to **page 5-8**.

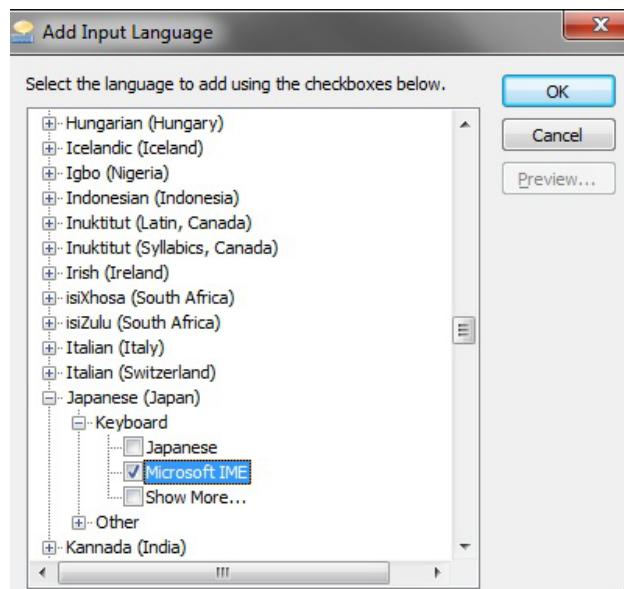
Important If a system was previously configured for SQL database offload, you must manually start SQL Server on the PIIC iX server after you re-install the PIIC iX application.

Adding a Japanese Keyboard

- 1 In the **Language Selection** screen of **System Setup** click the **Change keyboard language** button to open the **Text Services and Input Languages** dialog.
- 2 Click **Add** on the **General** tab of the **Text Services and Input Languages** dialog.

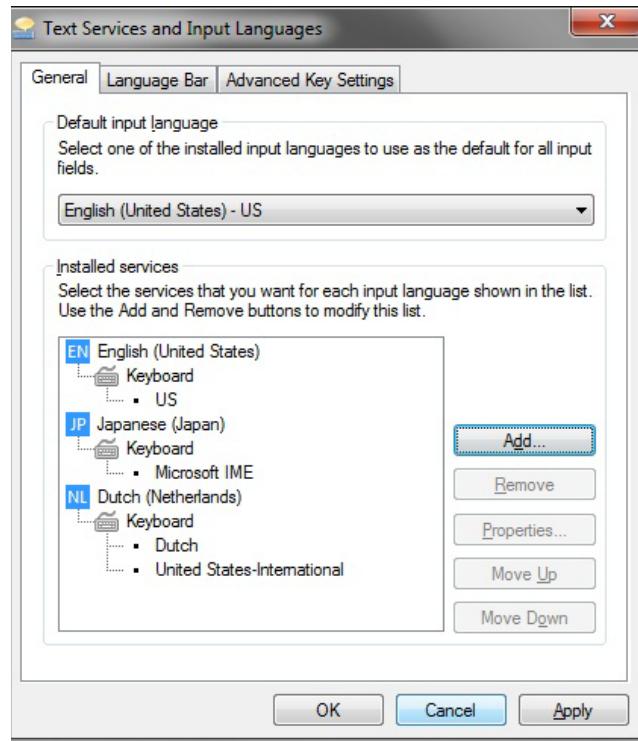


- 3 In the **Add Input Language** dialog expand **Japanese (Japan)** selection, expand **Keyboard**, and select **Microsoft IME**.
For a **Japanese** input language you must select **Microsoft IME** (Input Method Editor) as the keyboard selection.
- 4 Then click **OK**.



- 5 On the **General** tab of the **Text Services and Input Languages** dialog go to the **Default Input Language** section at the top of the dialog and click the down arrow to

select **Japanese (Japan) - Microsoft IME** as the default Input Language. Then click **Apply** in the dialog.



- 6** When desired changes are complete click **OK** in the **Text Services and Input Languages** dialog.

In the task bar notification area there will be a Language Bar icon for each installed language



EN - English

JP - Japanese.

In Japanese mode you can type in English or Japanese.

The *A* in the task bar signifies that you are in English mode.

You can also choose the **Show the Language Bar** option in the language selection list to have the language bar display in full on top of the screen.

If you want to switch between input languages while in Japanese input mode: Press the Esc + tilde keys concurrently.
(or the Esc + the key directly beneath it).



Connection Modes

Connection to a Primary Server can be planned or unplanned. At the bottom of the **System Configuration** screen you can verify or change the connection status of a device from the **Quick Unit Status** bar.



Mode	Description	PIIC iX Message	Quick Unit Status
<i>Connected</i>	A device is in <i>Connected</i> mode if it is able to access the Primary Server.	Status: Connected	SimCtr1
<i>Disconnected/Local</i>	A device is in <i>Disconnected</i> (or <i>Local</i>) mode if it is unable to access the Primary Server. This does not mean that the device cannot communicate with other devices or the Physiologic Data Storage Server. Depending on the topology a system can be disconnected from its Primary Server or Physiologic Data Storage Server.	Status: Local	SimCtr1
<i>Reconnect</i> <i>Reconnect Pending</i> <i>Reconnecting in xx seconds</i>	A device is in <i>Reconnect</i> mode if it is ready to transition from <i>Local</i> mode to <i>Connected</i> mode. Mode transition behavior depends on your Reconnect setting (6-33), which is set to Enable Auto Reconnect and Enable Database Synchronization from Disconnected Mode by default.	Status: Reconnect	SimCtr1
<i>Service Mode</i>	A device is in <i>Service</i> mode when the Primary Server prevents the device from accessing its configuration database. A PIIC iX in <i>Service</i> mode behaves the same as it does in <i>Disconnected</i> mode, but cannot transition to <i>Connected</i> mode until you take it out of Service mode from Quick Unit Status . Reconnect configuration settings do not apply when the host is in Service mode.	Status: Service Mode	SimCtr1
<i>Unreachable</i>	A device is in <i>Unreachable</i> mode if the Primary Server cannot connect to it.	Status: Local	SimCtr1

Synchronization From Disconnected Mode

NOTE Transitions to and from Disconnected mode are logged in the category, Service Audit.

When a PIIC iX is disconnected from the configuration server you can make configuration and application changes. These changes are synchronized back to the configuration server before reconnecting to it. This synchronization occurs automatically for patient related information only and ensures that the configuration database server is up to date with changes made locally. Synchronization occurs whenever the host detects that the Configuration Server is available.

Depending on the result of the synchronization, the following occurs if the host is configured to automatically reconnect.

IF ...	Then ...
Synchronization is successful and there are additional changes,	the remaining local changes are synchronized, and the periodic sync process continues until there are no more changes to synchronize.
Synchronization is successful and there are no more pending local changes to synchronize,	the host is reconnected automatically.
Synchronization fails due to a data conflict,	the conflict appears and no further sync occurs until you resolve the conflict. Once all conflicts are resolved, the periodic synchronization continues and includes any pending local changes. When the last Synchronization is successful, the host is reconnected automatically.
Synchronization fails due to an error other than conflict,	the current sync is aborted and the host attempts to sync again after a periodic interval. When the last sync is successful and there are no more pending local changes to synchronize, then the host is reconnected automatically.

System Interface Behavior When Surveillance PIIC iX is Disconnected From Primary Server

Connection	Server Local Mode
HL7	down
Alert Data Integration	down
I2-Lead Export	up
Web Access	up
HIF ADT Inbound	up
HIF ADT Outbound	up
HIF Labs	up

Transition From Disconnected to Connected Mode

A PIIC iX Overview in *Disconnected* mode will automatically restart when the Primary Server becomes available. By default a networked PIIC iX will reconnect when the Primary Server becomes available [page 6-33](#).

If default **Reconnect** settings were cleared the host will not automatically reconnect but transitions to *Reconnect* mode, and a **Reconnect Now** selection appears in the PIIC iX caption bar along with **Print Patient Summaries** and **Clinical Audit** selections. When you click **Reconnect Now** a message appears, *Patient information added or changed during the "Disconnected from Server Mode" will not be saved, and must be updated upon Reconnect.*

Reconnect to the Primary Server

- 1 Before you reconnect print patient summaries and export logs.
 - a Select **Print Patient Summaries** - to print reports for all settings changed.
 - b Select **Clinical Audit** to export logs.
- 2 When printing is complete click **Reconnect Now**.
- 3 Once connected update patient demographics, equipment, and settings.
When the PIIC iX reconnects with the Primary Server it uses the latest configuration data available on the Server.

Disconnection from the Physiologic Server

When a Physiologic Server assigned to a patient becomes unavailable, physiologic data is stored locally. If patient physiological data cannot be stored on the Physiologic Server a message appears, *Disconnected from Server XYZ – local data storage only. Contact Service.* When physiological patient data cannot be retrieved from assigned server an attempt is made to retrieve data locally. When the Physiologic Server becomes available, the data is rerouted automatically back to the Server and Status messages are cleared.

Unlocking the Keyboard

NOTE A System Status message appears whenever the keyboard is unlocked on a Surveillance System.

Warning: Use of the desktop is enabled. Press Alt-F11 to relock.

When you are using a Surveillance System the Windows Operating System task bar is hidden. You can access the Windows task bar when necessary as follows.

- 1 With your cursor focused press the **Alt + F11** keys simultaneously.
The **Login to access System Desktop** dialog appears.
- 2 Enter your **User Name** and **Password** in the appropriate text boxes, then click **OK**.
A valid User Name and Password is supplied with your PIIC iX media kit.

WARNING **If you open Operating System dialogs you must be sure to close them before returning to the Surveillance application. Open dialogs will cover patient monitoring information.**

- 3 To lock the keyboard press the **Alt + F11** keys simultaneously again. If you want to be sure that the keyboard is locked press **Ctrl + Esc** keys simultaneously. The Windows **Start** menu should not appear.

Desktop Appearance with PIIC iX B.02

With PIIC iX B.02 the Operating System desktop is locked down. The only desktop options visible are **PIIC iX System Configuration**, **PIIC iX System Setup**, and a **Shortcuts** folder.

The desktop **Shortcuts** folder provides access to some common Operating System utilities. You can also create your own program shortcuts using Windows **File Explorer**.



Accessing Task Manager

- At the Windows desktop right-click the task bar and select **Task Manager** from the list.

Adjusting Volume

Alarm volume should be verified during installation. You must be certain that the volume setting is audible in the care unit environment.

WARNING Consider environment noise when setting alarm volume. Be sure the Minimum Volume setting is audible in your care unit. If you adjust the Alarm Volume too low during patient monitoring it may result in patient danger.

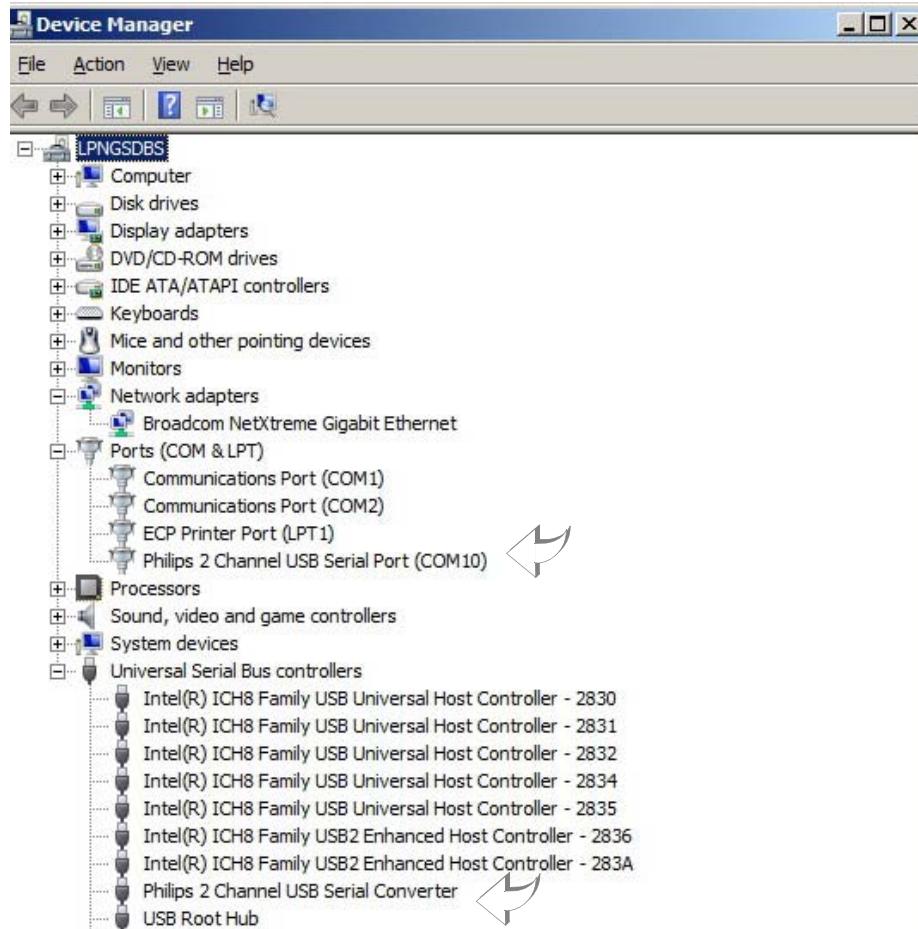
Do not rely exclusively on the audible alarm system for patient monitoring. The most reliable method of patient monitoring combines close personal surveillance with correct operation of monitoring equipment.

Verifying USB Recorder Installation

Each PIIC iX (Local Database, Networked, Overview or Small Server iX) can support one 2 Channel USB Recorder. The Recorder uses a device (XE-50 USB) driver and a USB Serial Port driver, both of which install automatically:

- 1 Connect the recorder to the desired USB port.
- 2 Open **Device Manager** in the **Control Panel** and verify that drivers are properly installed.

NOTE It does not matter which COM port is assigned to the recorder.



Important If you connect a second physical recorder to a PIIC iX the software will not support the recorder. It is not apparent that the additional device is not supported, however.

- 3 Refer to **Recorder Assignments** (page 6-55) to configure output to recorders.

Installing Patches on PIIC iX Systems

The **Software Update** tool in the **Tools** pane of **System Configuration** permits installation of PIIC iX application software patches to all connected Servers and hosts, and permits updating software on a Local PIIC iX.

On Systems that currently have PIIC iX B.01.xx or B.02.xx installed you can update your System with the Software Update tool as long as Patient Monitoring Services is running. When you use the Tool to update a PIIC iX B.00.xx system, however, behavior is slightly different. Refer to *PIIC iX Software Upgrade Note, 4535 645 40561, Edition 2*.

When you select **Announce** at the primary server the update process at each host does not occur until physically activated by the user at the specific machine ([page 5-65](#)).

Important It is imperative that you check with Hospital personnel before updating a server, host, or local device. Log files for patch updates are written to the User's *temp* folder.

Patient monitoring will stop on each surveillance machine before the patch is installed. Then each machine will restart before it returns to patient monitoring following patch update.

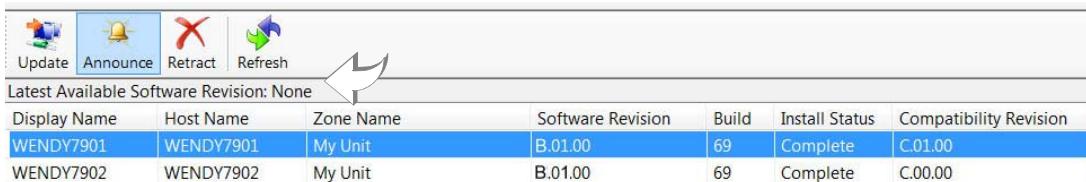
To install a software update on a PIIC iX B.02.xx System

Important All hosts must be connected to the Primary Server. If a desired host is not connected to the Server, an message appears during update attempt.

You must copy the required patch files, *Philips.PIC.Patch.PIIC_iX_ReleaseVersion.exe* (*Philips.PIC.Patch.PIIC_iX_B.02.00.111.exe*, for example) and *version.xml*, into the **C:\Program Files (x86)\Philips\PIIC iX\B.00\Product\Updates** or **C:\Program Files\Philips\PIIC iX\B.00\Product\Updates** folder of the **Primary Server** (which contains the Configuration database) before you can begin the update.

With PIIC iX B.02 if you do **not** currently have any files in your product updates folder, the Announce feature is enhanced so that you can browse to the patch file location and the patch will be copied into the **C:\Program Files\Philips\PIIC iX\B.00\Product\Updates** folder.

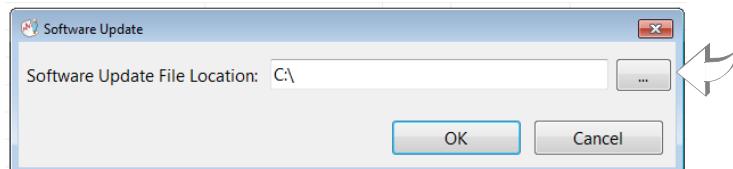
- I Select the desired Server name or Local PIIC iX, be sure that the **Latest Available Software Revision** value is **None**, then click **Announce**.



Display Name	Host Name	Zone Name	Software Revision	Build	Install Status	Compatibility Revision
WENDY7901	WENDY7901	My Unit	B.01.00	69	Complete	C.01.00
WENDY7902	WENDY7902	My Unit	B.01.00	69	Complete	C.00.00

A dialog opens that asks if you want to select the location of the software update files.

- 2 Click **Yes** in the dialog.
- 3 Click the ellipsis button and browse to the media that contains the Philips software update files. Then click **OK**.



The **Latest Available Software Revision** value updates, and a *Success* message appears in which you can click **OK**.

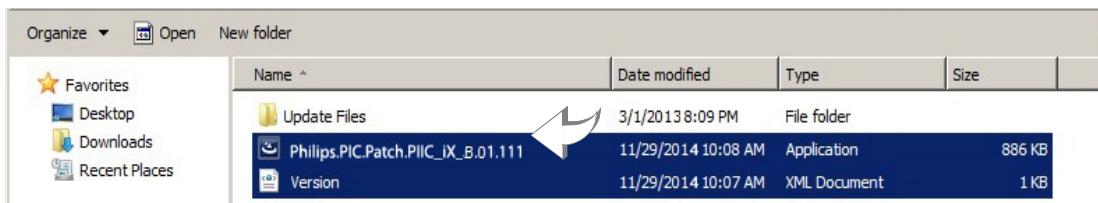
Or you can copy the patch files to the appropriate location on your primary server as follows,

Important If you are working on a Virtual machine, the patch files must be copied to a network share that is accessible to the virtual machine. Then copy the files from the network share to the \Product\Updates folder of the Virtual machine.

- I At the Primary Server put the media that contains the Philips software update files into the appropriate drive. Then copy the files, *Philips.PIC.Patch.PIIC_iX_ReleaseVersion.exe* and *version.xml*, into Server folder:

C:\Program Files (x86)\Philips\PIIC iX\B.00\Product\Updates

C:\Program Files\Philips\PIIC iX\B.00\Product\Updates



Important If your system was previously updated you must remove the earlier files with the same name from the **Updates** folder.

CAUTION The **Updates** folder also includes a child folder, **Update Files**. Do not copy the update files into the **Update Files** folder or the software update will not execute.

With PIIC iX B.02 once you copy the software update into the **Product/Updates** folder, the update is automatically announced for the Server and the **Install Status** changes to Waiting.

- 2 To check the **Install Status** go to the Primary Server or Local PIIC iX, open **System Configuration**, then click the **Tools** icon. Expand the **Upgrade** folder and double-click the **Software Update** icon.

The **Latest Available Software Revision** appears and an install status of waiting will be at the server.

Important If you choose to select the server and select **Update** from the list It is imperative that you check with Hospital personnel. As soon as you update the server, the update will occur immediately and all other hosts will restart in Service Mode.

- 3 In the **Software Update** screen at the Primary Server select all of the Hosts you want to announce the update to, then click **Announce**.

or

Right-click the desired Host(s) and select **Announce** for the list.

A message appears verifying that the host(s) has been notified of the update along with a progress bar.

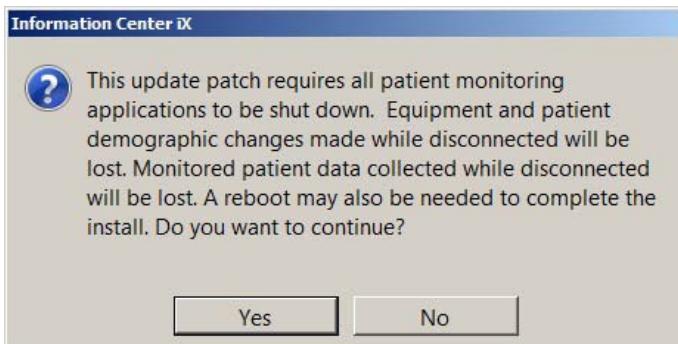
- 4 Click **OK** in the message dialog.

- 5 If you choose to retract the update announcement you can select the desired host(s) then click **Retract**.
- 6 Update all Servers before hosts. Update the Primary Server first. Then update Physiologic Data Storage Server(s), if applicable, after updating the Primary Server.

Important When you click **Update** on a Primary Server, the patch is immediately implemented and surveillance hosts will drop into *Service Mode*.

- a Select the Primary Server in the list. Then click **Update** or right-click the desired device and select **Update** from the list.

If all member hosts are in *Connected Mode* the following message appears.



- b Click **Yes** in the dialog to continue.

Important After you click **Yes** in the dialog it takes a few minutes for patient monitoring to shut down. Because of the size of the patch it will take some time for the system to restart.

- c Click **OK** in the dialog to begin the update on the Server.

Important When the update completes the product restarts. The Server may restart if the update requires a system restart. System Setup may need to run if the state is, *System Setup Needed*. If System Setup must be run on the Primary Server be sure that you start monitoring services on the Primary Server before continuing with the update process on the other servers and hosts in your topology.

- 7 After the update completes double-click the **PIIC iX System Configuration** Desktop icon at the Primary Server. Then enter **User Name** and **Password** in the **Login** dialog.
- 8 Verify the success of the update.

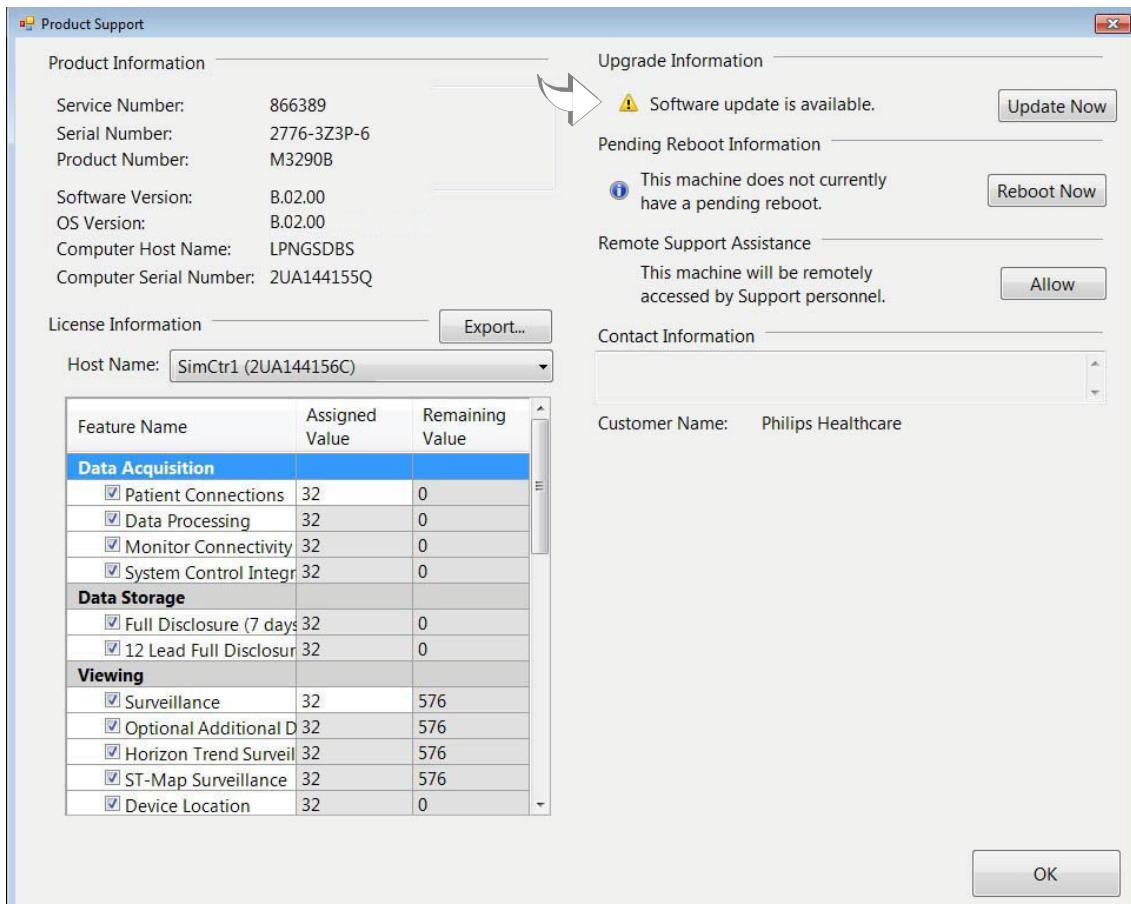
- a On the Server **System Configuration** screen click the **Tools** icon. Expand the **Upgrade** folder and double-click the **Software Update** icon. The **Latest Available Software Revision** V.U.F appears in the top margin of the **Software Update** screen just over the column headings.
- b Check that the **Install Status** is **Complete**.
- c Verify that the updated version number appears for the Server in the **Software Revision** column.

Important After the Server is updated its **Install Status** is **Complete** and each host has an **Install Status** of **Waiting**.

- 9 If you have Physiological Servers in your topology, repeat steps **6** through **8** for each Physiological Server.
- 10 Execute the update patch on each PIIC iX surveillance host as follows.

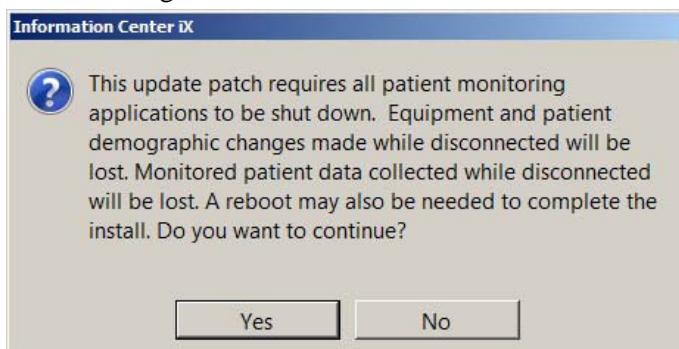
Important When there is a software update available, the password-protected **Update Now** button is active in the **Upgrade Information** section of the screen which permits you to choose when you want to implement the update on your system. If no update is required the status message, *No Software update is available*, appears.

- a With the application running on a selected host that is in *Service Mode*, click the Philips logo in the top left corner of the host Caption Bar.
The **Product Support** screen opens.



The **Upgrade Information** section of the **Product Support** screen includes information that a *Software update is available*. Click **Update Now**. Then enter **User Name** and **Password** in the **Login** dialog.

- b A message warns that Patient Monitoring will shut down. Click **Yes** in the dialog to continue.



A message reports that the update has begun on the host. When the update is complete the monitoring application restarts on the host and its status changes to *Reconnect* then *Connected Mode*. As Hosts restart status changes to *Reconnect*, then *Connected Mode*.

- 11 In the left pane on the Server **System Configuration** screen expand the **Upgrade** folder. Repeat **Step 8** to verify that the Host updated successfully.
- 12 Repeat **Step 3** through **11** for each member Host. As each Host update completes, it changes to *Reconnect* then *Connected Mode*.
- 13 Once all Servers and Hosts are updated verify entries for the initial install and all subsequent installed patches.
 - a At the Server **Software Update** screen right-click the each desired **Display Name** and select **Show update history** from the list.

The screenshot shows the 'Software Update' screen with a table of available software revisions. A context menu is open over a row for 'PIICiX ServeriX'. The menu items are 'Update', 'Retract', 'Announce', and 'Show update history.' The 'Show update history.' option is highlighted with a blue border. Below the table, there is a section titled 'Update History' with a table showing patch installation details for two entries.

Customer Name	Serial Number	Installed Date	Software Revision	Build	Install Status	Compatibility Revision
Philips R&D	2757024	1/5/2012 10:17:18	B.00.00	0	Complete	B.00.00
Philips R&D	2757024	12/20/2011 13:39:57	B.00.00	257	Complete	B.00.00

The **Software Revision** and **Install Status** indicate successful patch install.

- 14 At the **System Configuration** screen verify that each Host is in *Connected Mode*. Once connected the Host appears green in the **Quick Unit Status** bar.



Manual Patch Software Installation

Important It is imperative that you check with Hospital personnel before updating a device.

- 1 Insert the update media in the appropriate USB port of the host you want to update.
- 2 If the system is running the monitoring application, access the Desktop by pressing the **Alt + F11** keys simultaneously.
- 3 Enter User name and Password in the Login dialog.
- 4 At the Windows start screen log on as *SupportUser* with appropriate credentials.
- 5 Browse to the update media to the file:
Philips.PIC.Patch.PIIC_iX_ReleaseVersion.exe.
- 6 Right-click the executable and select **Run as Administrator** from the list.
When the update completes the product restarts. The system may restart if a restart is required by the update.

Installing Printers

PIIC iX uses the Windows Operating System Print Service to accommodate printer installation. Network printers that are on the Hospital LAN or PSCN can be shared, but local printers that connect directly to a PIIC iX cannot be shared. A list of printers compatible with the PCL5 Universal Print Driver appear on the *Specifications* tab of the HP site, <http://h20331.www2.hp.com/Hpsub/cache/344305-0-0-225-121.html>. Philips also ships a compatible Printer.

Setting IP Address of HP LaserJet M401dn Printer

To establish communications with the HP LaserJet M401dn Printer installed on the hospital LAN or the PSCN from the PIIC iX System, you must configure the following TCP/IPv4 settings for the printer:

- IP address
- subnet mask
- default gateway

Configuring a static IP address for the printer is not required for directly connected USB printer installations.

To configure the HP LaserJet M401dn Printer TCP/IPv4 settings:

- 1 Connect the printer to an AC power source, and press the front-panel power button to power the printer on.
The printer performs an initialization process and then displays the message **Ready** on the LCD Control Panel.
- 2 Press the arrow keys on the LCD Control Panel until **Setup Menu/Network Setup** appears and then press **OK** to enter the Network Setup Menu.
- 3 Press the arrow keys to select the **IPv4 Config Method** option, and then press **OK**.
- 4 Press the arrow keys to select the **Manual** option, and then press **OK**.
The printer default IP address setting displays with a cursor under the first octet of the address.
- 5 Using the LCD Control Panel, configure the printer TCP/IPv4 settings with the appropriate values for your PIIC/PIIC iX installation.
 - a Press the arrow keys to increment or decrement the displayed three-digit value until the correct value is shown and then press **OK**.
The cursor moves to the second octet of the IP address.
 - b Press the arrow keys to increment or decrement the displayed three-digit value until the correct value is shown and then press **OK**.
The cursor moves to the third octet of the IP address.
 - c Press the arrow keys to increment or decrement the displayed three-digit value until the correct value is shown and then press **OK**.
The cursor moves to the fourth octet of the IP address.

- d Press the arrow keys to increment or decrement the displayed three-digit value until the correct value is shown and then press **OK**.
A **Yes** prompt appears with the IP address you have configured.
- e Press **OK** to confirm the IP address settings.
The default **Subnet Mask** setting of 255.255.255.248 appears.
- f Press the arrow keys until the Subnet Mask setting of 255.255.248.000 appears, and then press **OK**.
A **Default Gateway** prompt appears.
- g Use the arrow keys to set the **Default Gateway** address as you did when setting the printer IP address in **Steps a** through e.
- h Press **OK** when the **Yes** prompt appears to confirm the printer TCP/IPv4 settings.
- i Press the back arrow button to exit the configuration menus and return the printer to the **Ready** state.
When the message **Ready** appears, the printer is ready to communicate with the configured IP address, subnet mask, and default gateway settings.

Network Connected Printer

Important Before you configure your printer be sure that the desired printer is powered on, connected to the network, and configured with a TCP/IP Address for the PSCN. If necessary refer to Printer Manufacturer documentation for setting an IP Address at the printer. If you are configuring an HP LaserJet M401dn Printer, refer to **Setting IP Address of HP LaserJet M401dn Printer**.

PIIC iX uses the Microsoft Windows tools to permit adding printers. Printer installation wizard screens are slightly different depending on your operating system. The following instructions are applicable to Windows 8.1/Server 2012 Operating Systems. For additional information refer to Windows Operating System documentation.

- 1 At the PIIC iX open Control Panel (**page 7-28**) and double-click **Devices and Printers**.
- 2 Click **Add a printer**.
- 3 If your printer was not found select **The printer that I want isn't listed**. Then select **Add a local or network printer with manual settings**, then click **Next**.
The **Choose a printer port** screen appears.
- 4 Select the **Create a new port** option, select **Standard TCP/IP Port** from the **Type of Port** drop-down menu, then click **Next**.
The **Type a printer hostname or IP address** screen opens.
- 5 In the **Device type** drop-down list select **TCP/IP Device**.
- 6 Enter appropriate text in **Hostname or IP address** text box. The **Port name** text box automatically populates.
- 7 Clear the **Query the printer and automatically select the driver to use** check box, then click **Next** through applicable screens.
If you see the **Additional port information required** screen, the printer is offline or not configured correctly.

- 8** In the **Install the Printer driver** screen, select **HP** as the printer **Manufacturer**, and **HP Universal Printing PCL 5** on the **Printers** list.
The **Which version of the driver do you want to use?** screen appears.
- 9** Select the **Use the driver that is currently installed (recommended)** option then click **Next**.
The **Type a printer name** screen appears.

- Important** When creating printer names be sure not to use special characters in the printer name. Special characters are not supported and can cause the system restart.
- 10** On the **Type a printer name** screen enter a **user-friendly** name to describe the printer. It is important to name each printer uniquely so that users can identify the device that they pick as a report destination ([page 6-47](#)).
The system now installs the printer driver as specified. Upon completion of the printer driver installation, the **Printer Sharing** screen appears.
 - 11** Complete information in the **Printer Sharing** screen if you want to share the added printer. If you do not want to share the printer select the **Do not share this printer** option. Click **Next** to continue.
 - 12** Print a test page by clicking the **Print Test Page** button on the last *Wizard* screen and click **Finish**.

Directly Connected USB Local Printer

WARNING **Use of a USB printer that has not been authorized by Philips may result in PIIC iX not restarting and may require reloading the Operating System to remedy.**

PIIC iX uses the Microsoft Windows tools to permit adding printers. Printer installation wizard screens are slightly different depending on your operating system. The following instructions are applicable to Windows 8.1 Operating System. For additional information refer to Windows Operating System documentation.

WARNING **Before making a USB connection to an HP LaserJet Pro 400 (M401dn) printer you must disable the printer's HP Smart Install feature (Step 1).**

- Important** Philips requires that you complete **Step 1** on all on all HP LaserJet Pro 400 (M401dn) printers to avoid the possibility of PIIC iX not starting if the printer was initially LAN connected and later USB connected.
- I If you are using HP LaserJet Pro 400, turn on the HP LaserJet Pro 400 (M401dn) printer (with the USB disconnected) and disable the **HP Smart Install** feature of the printer as follows.
 - a From the Home screen on the Printer control panel touch the setup button .
 - b Open the **Service** menu.

- c Scroll to and touch **HP Smart Install**.
 - d Adjust the value to **Off**.
- 2 Before you configure your directly connected USB printer be sure that the desired printer is connected to the PIIC iX and powered on.
- 3 At the PIIC iX open Control Panel ([page 7-28](#)) and double-click **Devices and Printers**.
- 4 Click **Add a printer**.
- 5 In the **Add Printer Wizard** printer type screen click **Add a local printer or network printer with manual settings**.
The **Choose a printer port** screen appears.
- 6 In the **Choose a printer port** screen select the **Create a new port** option, and select **Local Port** in the drop-down list. Then click **Next**.
- 7 Enter a name for the port in the **Port Name** dialog, then click **OK**.
The **Type a printer name** screen appears.
- Important** When creating printer names be sure not to use special characters in the printer name. Special characters are not supported and can cause the system restart.
- 8 On the **Type a printer name** screen enter a *user-friendly* name to describe the printer. It is important to name each printer uniquely so that users can identify the device that they pick as a report destination ([page 6-47](#)).
The system installs the printer driver as specified. Upon completion of the printer driver installation, the **Printer Sharing** screen appears.
- 9 Select the **Do not share this printer** option in the **Printer Sharing** screen and click **Next**.
- 10 Print a test page by clicking the **Print Test Page** button on the last *Wizard* screen and click **Finish**.
- 11 To configure which printers reports will be sent to refer to **Destinations, page 6-47**.

Printer Error Messages

Refer to **Chapter 10, Testing Product Assurance**.

Regional Settings for Bedside Generated Reports

For East Asian languages, reports that are initiated at the Bedside and sent to PIIC iX printers require a System Locale change in order to print properly. These Regional Settings appear in **Table 5-7** and require changing the **System Locale** property of the PIIC iX Operating System.

For all other Languages and Regional settings, no change is necessary. The default, English (United States), is used for the **System Locale** property.

Table 5-7 System Locale Settings Required for East Asian Languages

Regional Setting	System Locale
Chinese (Hong Kong S.A.R.)	Chinese (Traditional, Hong Kong S.A.R.)
Chinese (Macao S.A.R)	Chinese (Traditional, Macao S.A.R)
Chinese (People's Republic of China)	Chinese (Simplified, PRC)
Chinese (Singapore)	Chinese (Simplified, Singapore)
Chinese (Taiwan)	Chinese (Traditional, Taiwan)
Japanese (Japan)	Japanese (Japan)
Korean (Korea)	Korean (Korea)

- 1 Go to **Start > Control Panel** then click **Region and Language**.
- 2 Open the **Administrative** tab; and in the **Language for non-Unicode programs**, section click **Change system locale**.
- 3 In the **Current system locale** drop-down box click the down arrow and select the necessary language (**Table 5-7**).
- 4 Click **OK**.

NOTE A system restart is necessary for Regional Settings changes to take effect

- 5 To restart your computer, click **Restart now**.

Installing Software on Virtual Systems

PIIC iX Servers installed as virtual machines must be verified as part of the installation to be sure that the system is operating correctly. With PIIC iX B.02 you can deploy an OVA template using VMware vSphere or using a Microsoft Hyper-V package for virtual installation of Server iX. The template is available on InCenter in the following location.

Service > Software > Software Downloads > Patient Monitoring > Central Monitoring Systems > PIIC iX Release B

The folders, **VMware** and **Hyper-V**, are available in that location, that contain the appropriate virtual image.

Using VMware

On Virtual deployments compatible software for PIIC iX B.0x includes VMware vSphere 5.0 U3, 5.1, and 5.5 (ESXi and vCenter Server), and vSphere 6.0.

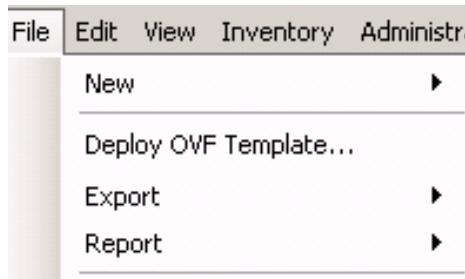
Refer to the *System Administrator Guide, Edition 2*, for additional virtual installation information.

Important Although Patient Link PIIC iX is supported in VMware deployment, multi-cast addressing connectivity must be designed, configured, and tested from the bedside to the data center where the virtualized server is most likely deployed.

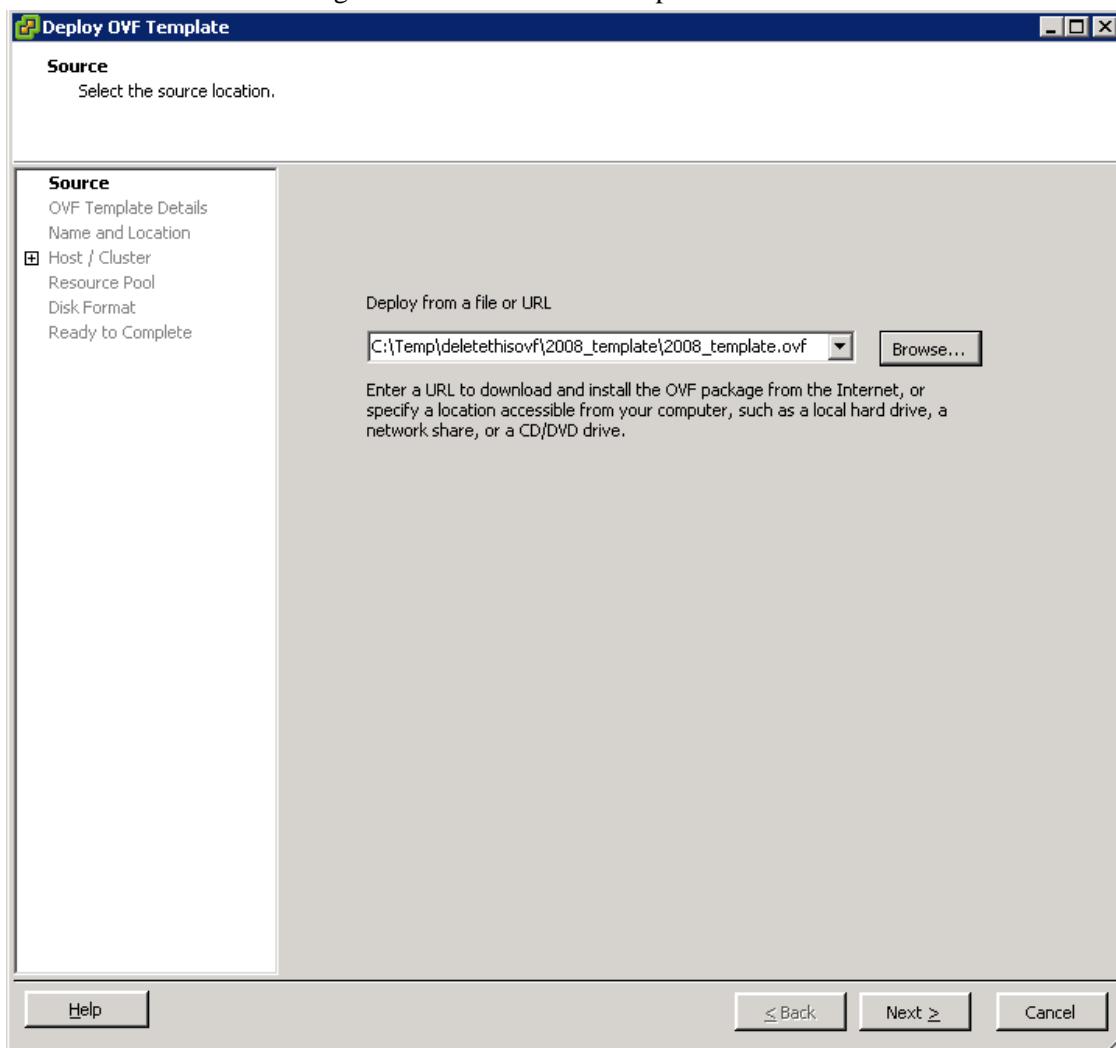
Deploying the VMware Template

The ova is a packed version of ovf, vmdk and mf files. Deploy the PIIC iX B.xx ova template as follows.

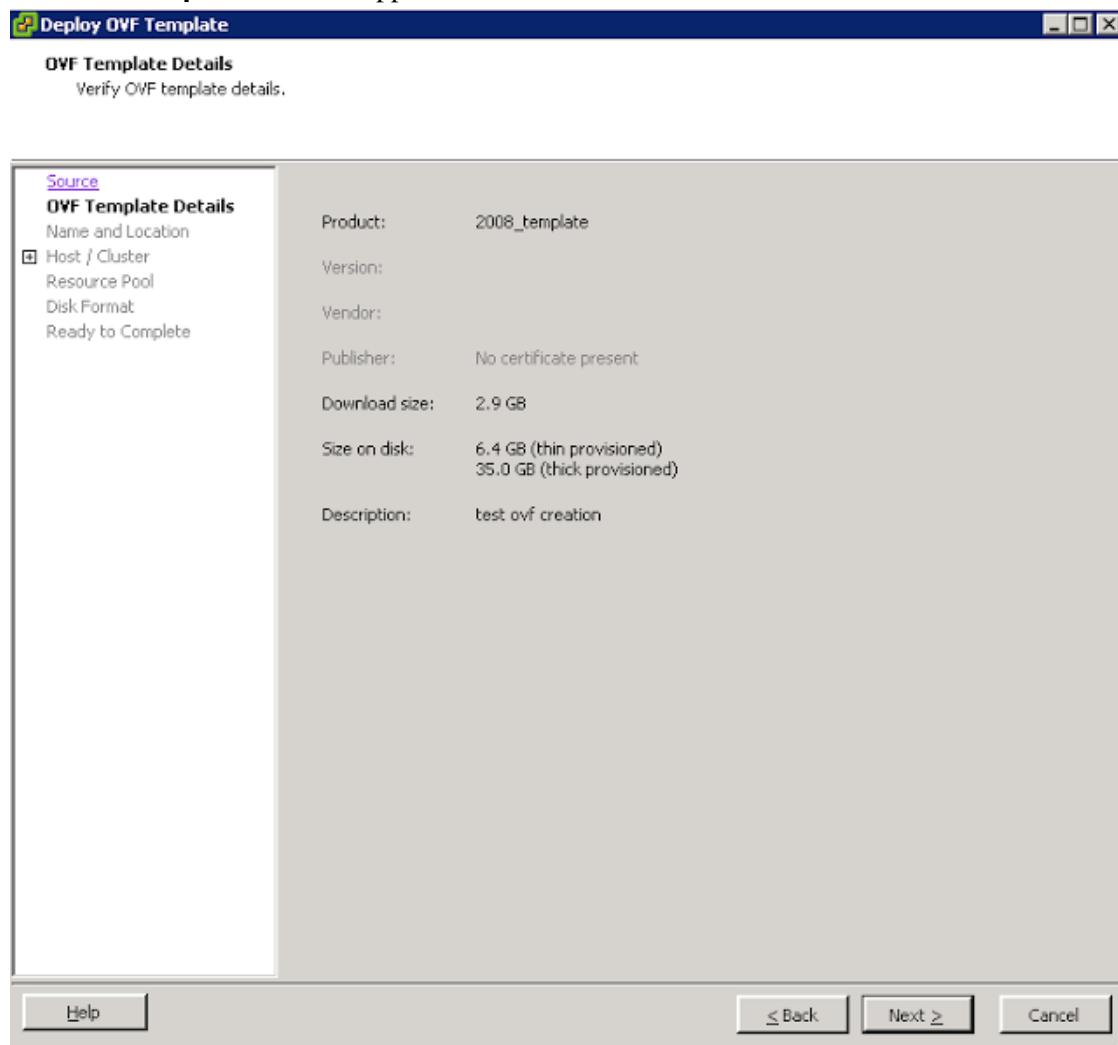
- 1 Copy the PIIC iX ova template to a network-accessible location.
- 2 At your vSphere client go to **File > Deploy OVF Template**.



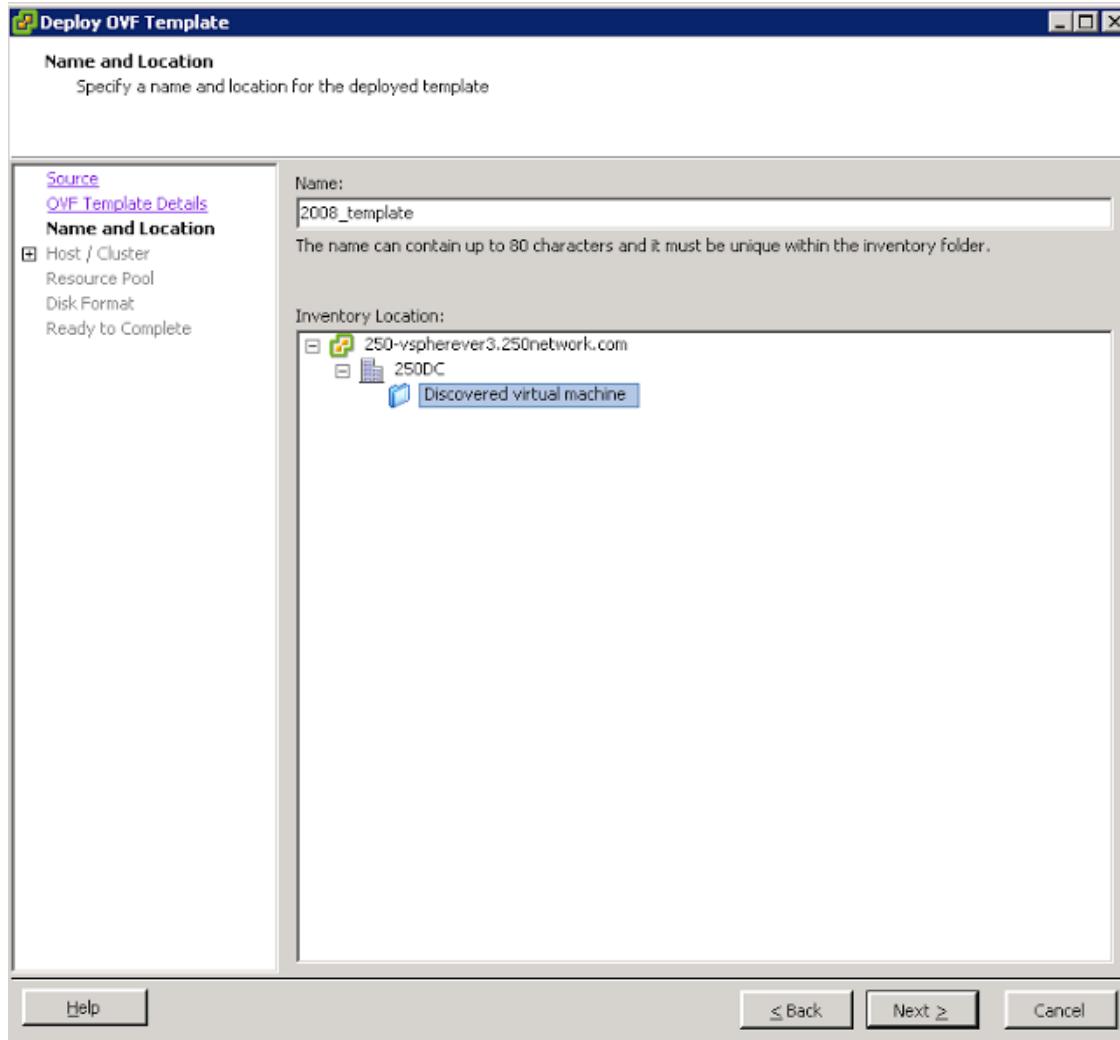
- 3** Click **Browse** and navigate to the PIIC iX ova template location.



- 4 Click **Next >**.
OVF Template Details appear.



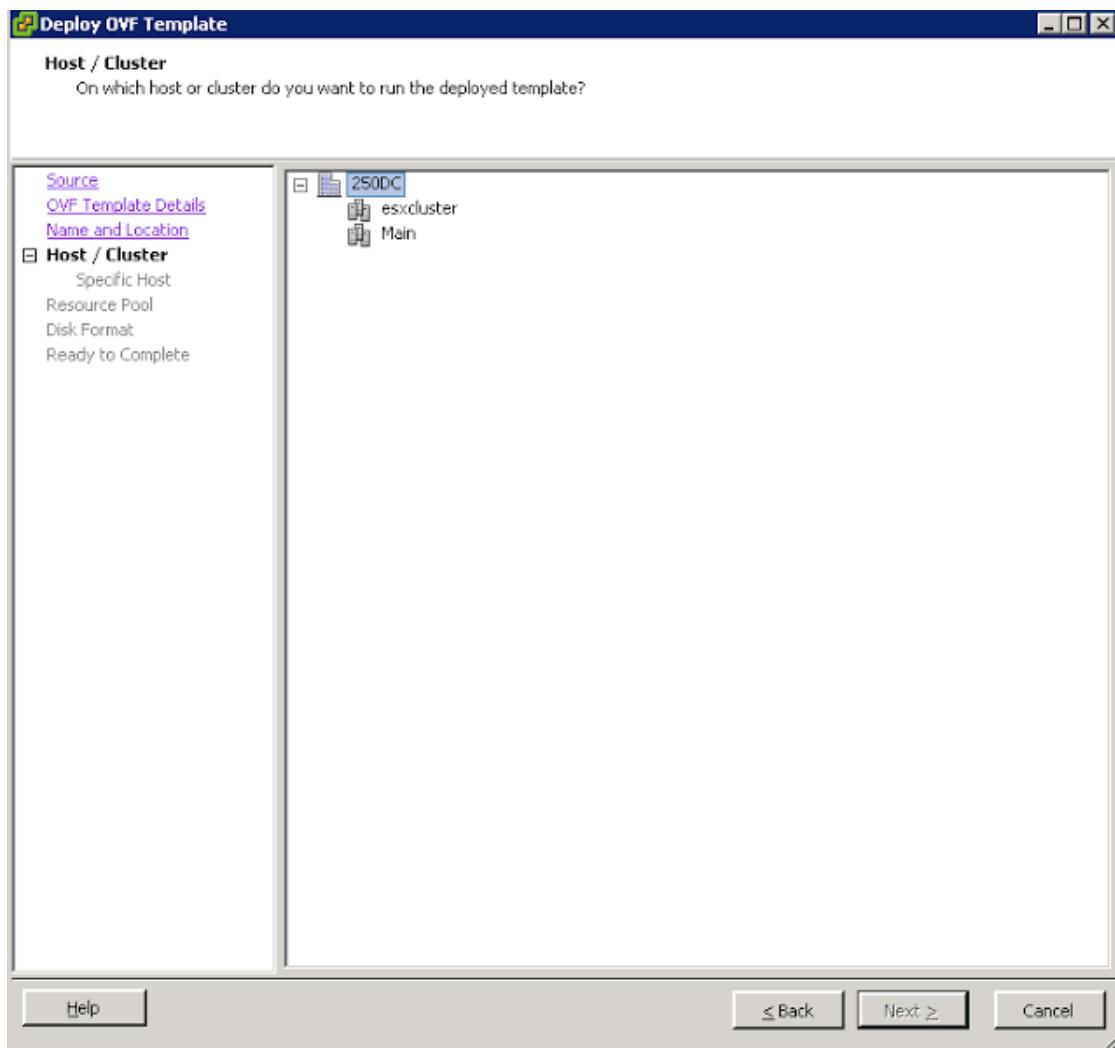
- 5 Click **Next >**.



- 6 In the **Name and Location** page enter a name for your Virtual Machine and place it in the desired Inventory Location.

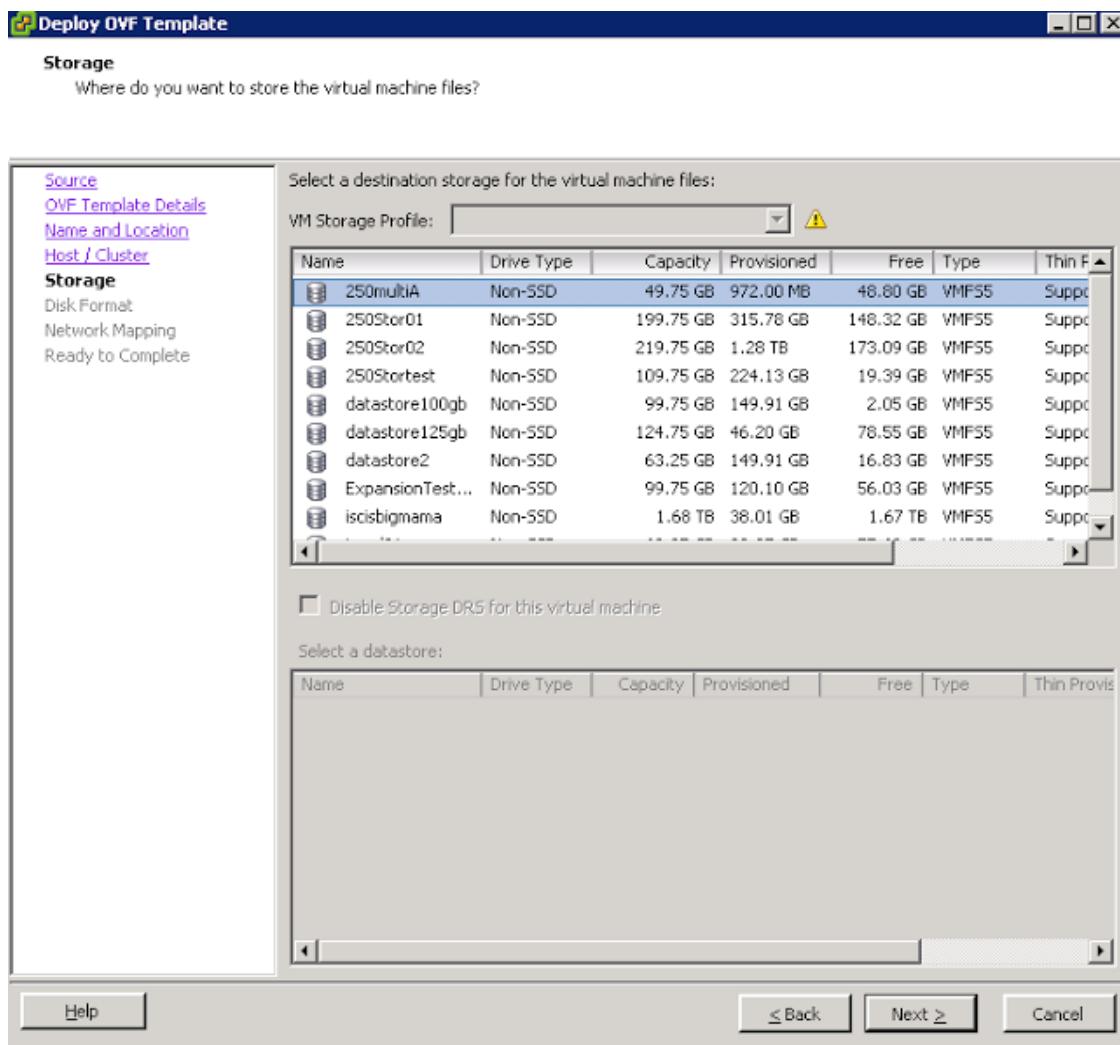
Important If you are installing multiple virtual machines at the same time, be sure to give each a unique name.

- 7 When the **Name and Location** page is complete click **Next >**.

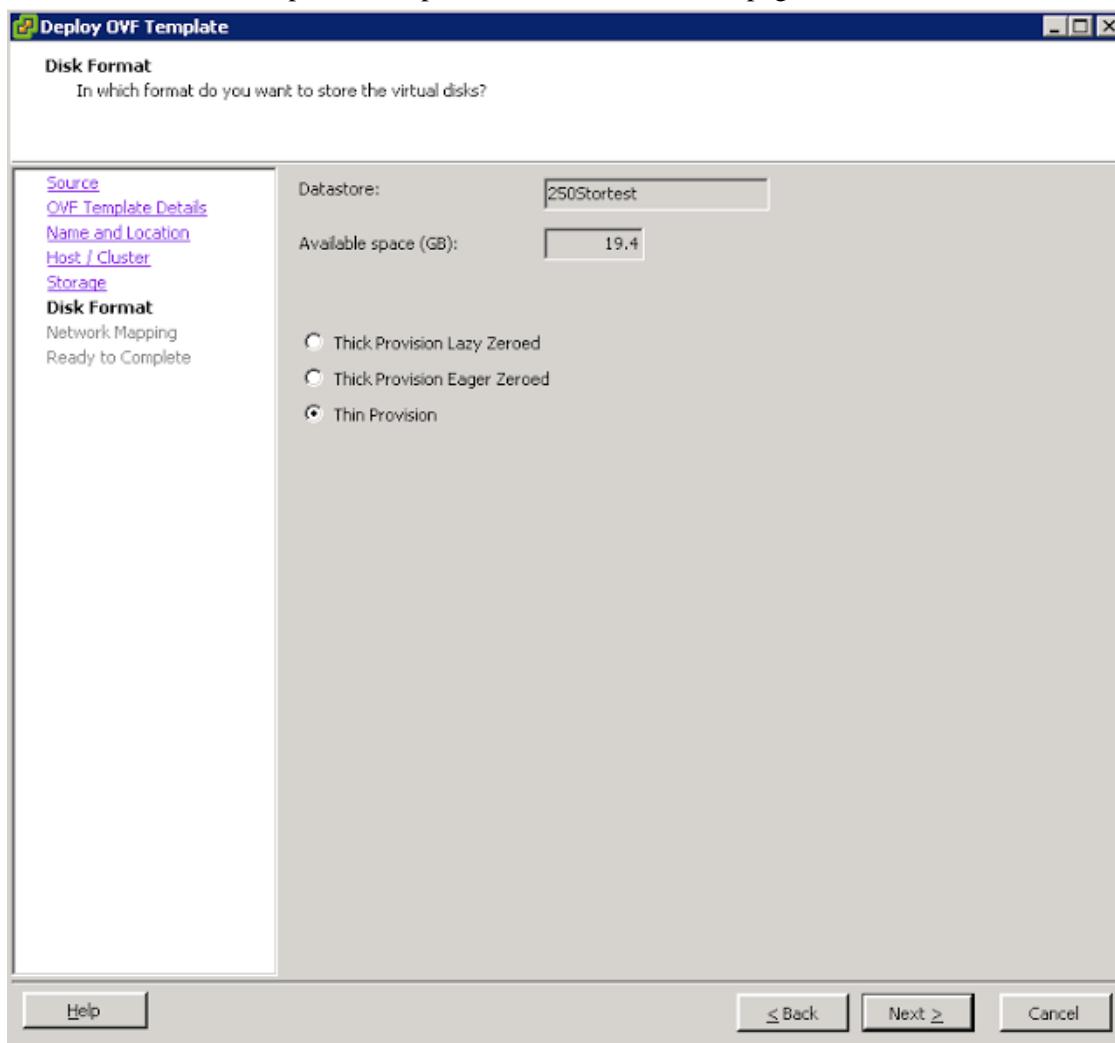


- 8 Select the host or cluster on which you want to run the deployed template. Then click **Next >**.

- 9 Choose the storage location on the **Storage** page, then click **Next >**.

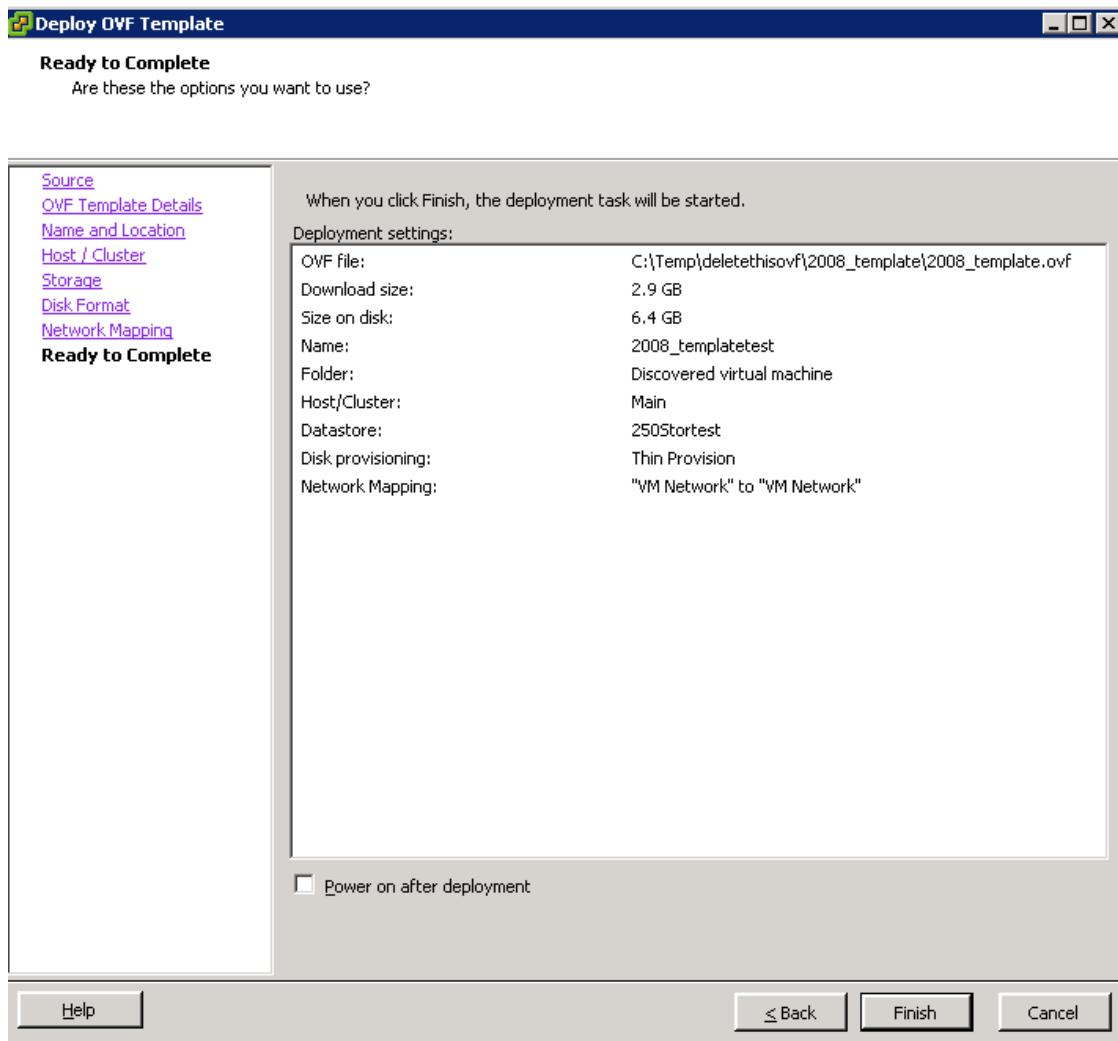


- 10 Choose the desired provision option on the **Disk Format** page, then click **Next >**.

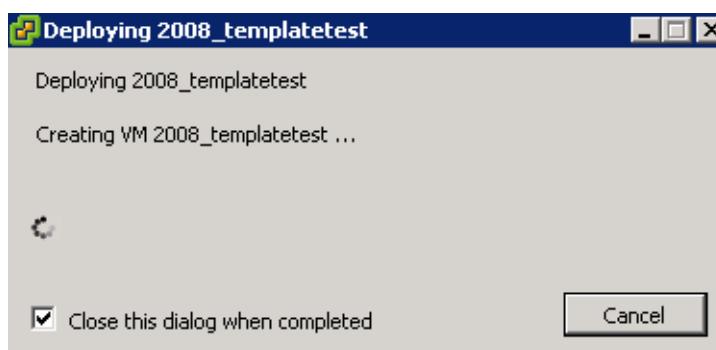


- 11 If you have an OVA Network Mapping page on your application, choose the desired network. then click **Next >**.

- I2** On the **Ready to Complete** page deployment settings appear--along with the option to power on after deployment. If settings are correct click **Finish**.



A status dialog appears during deployment.



- I3** After template deployment run PIIC iX System Setup on each new server and be sure to install Database (**5-8**).
- I4** Follow configuration steps documented in this document and be sure to activate Windows Operating System.

Using Hyper-V

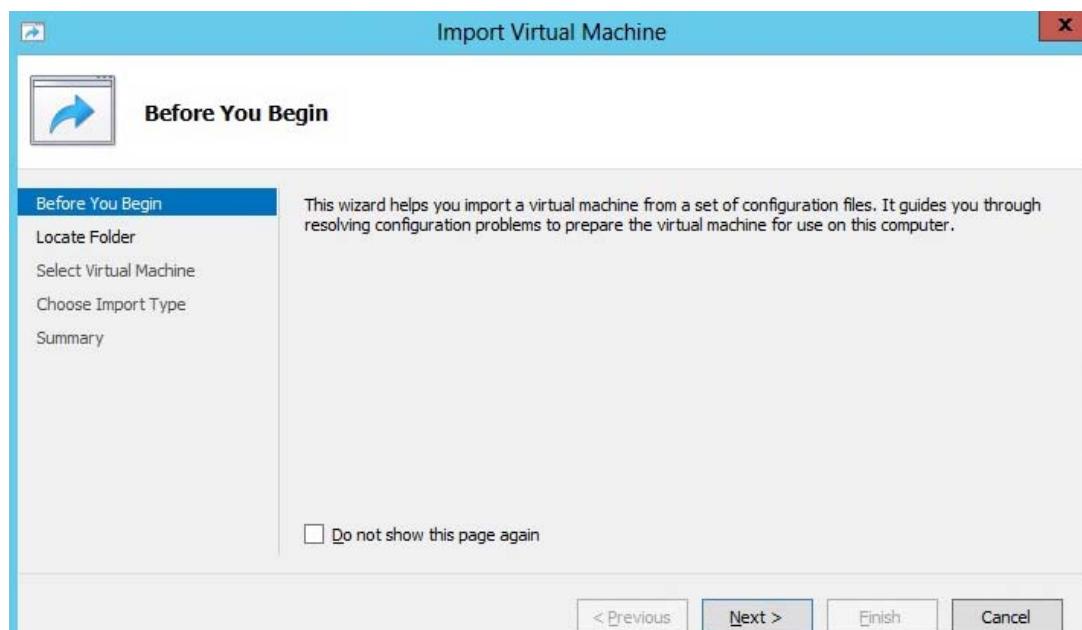
Copying the PIIC iX Software

- 1 On the target Server create a target folder.
This will be the folder into which you must copy the zipped Hyper-V package that you downloaded from InCenter.
- 2 Connect the device that includes the Hyper-V package into an appropriate port of your laptop and browse to **HYPERVERPIICIXB.02.00.ZIP**.
- 3 Copy the file, **HYPERVERPIICIXB.02.00.ZIP**, to the target folder. Then unzip it.

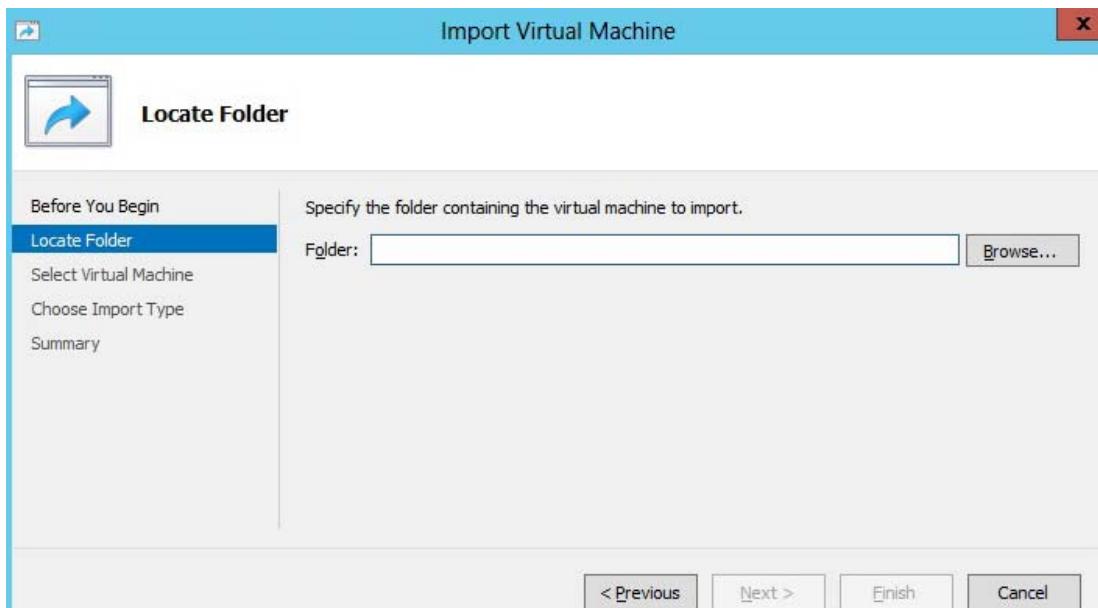
When the files are extracted a **HYPERVERPIICIXB.02.00** folder appears and contains the folders: **Snapshots**, **Virtual Hard Disks**, and **Virtual Machines**. You must navigate to this location when you install the virtual machine.

- 4 From your Server, go to **Administrative Tools > Hyper-V Manager**.
- 5 Select the Server in the **Hyper-V Manager** pane, then select **Import Virtual Machine** from the **Actions** pane.

The **Import Virtual Machine Wizard** opens to the **Before You Begin** screen.

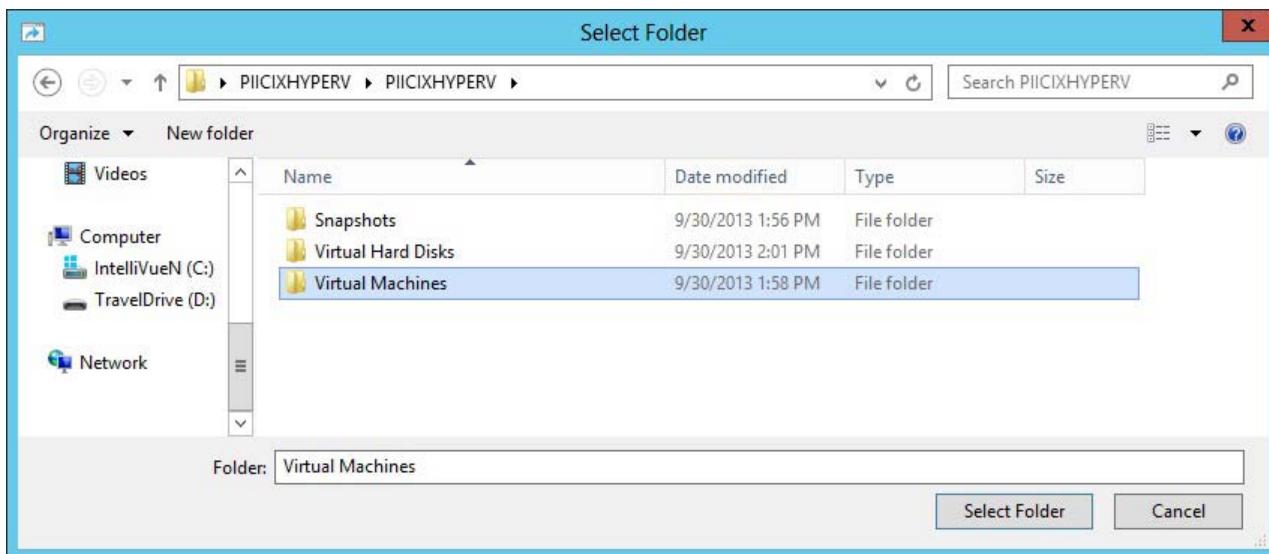


6 Click **Next >** to open the **Locate Folder** screen.

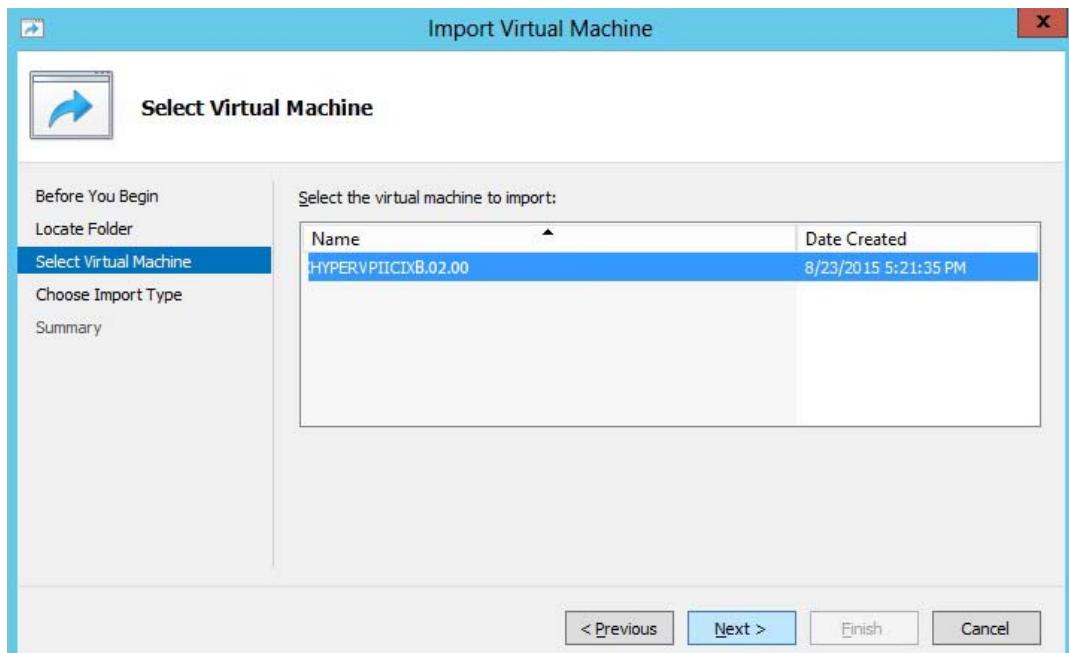


7 Click **Browse** in the **Locate Folder** screen and navigate to the unzipped **HYPERVPIICIXB.02.00** folder.

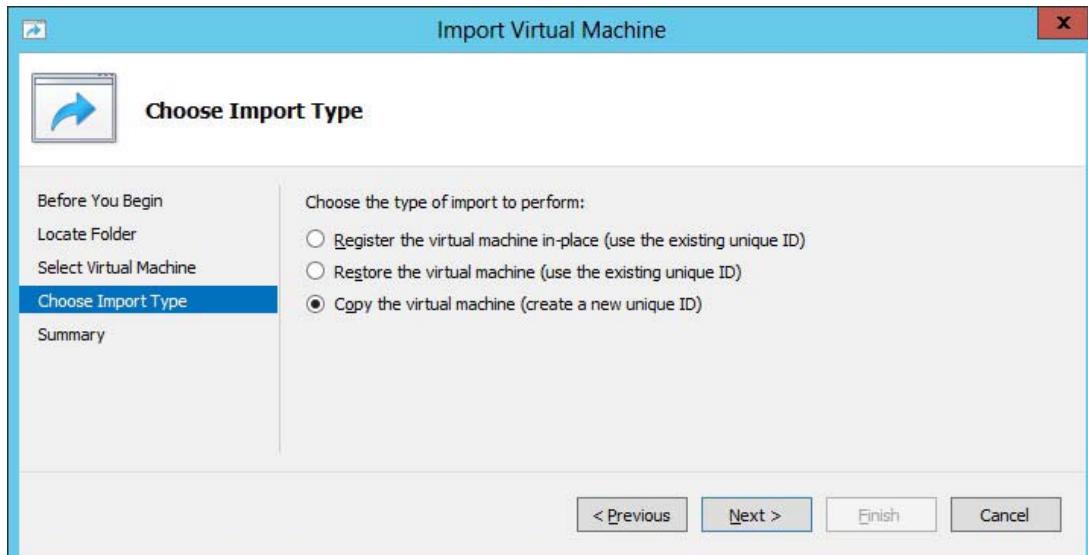
Then select the **Virtual Machines** folder.



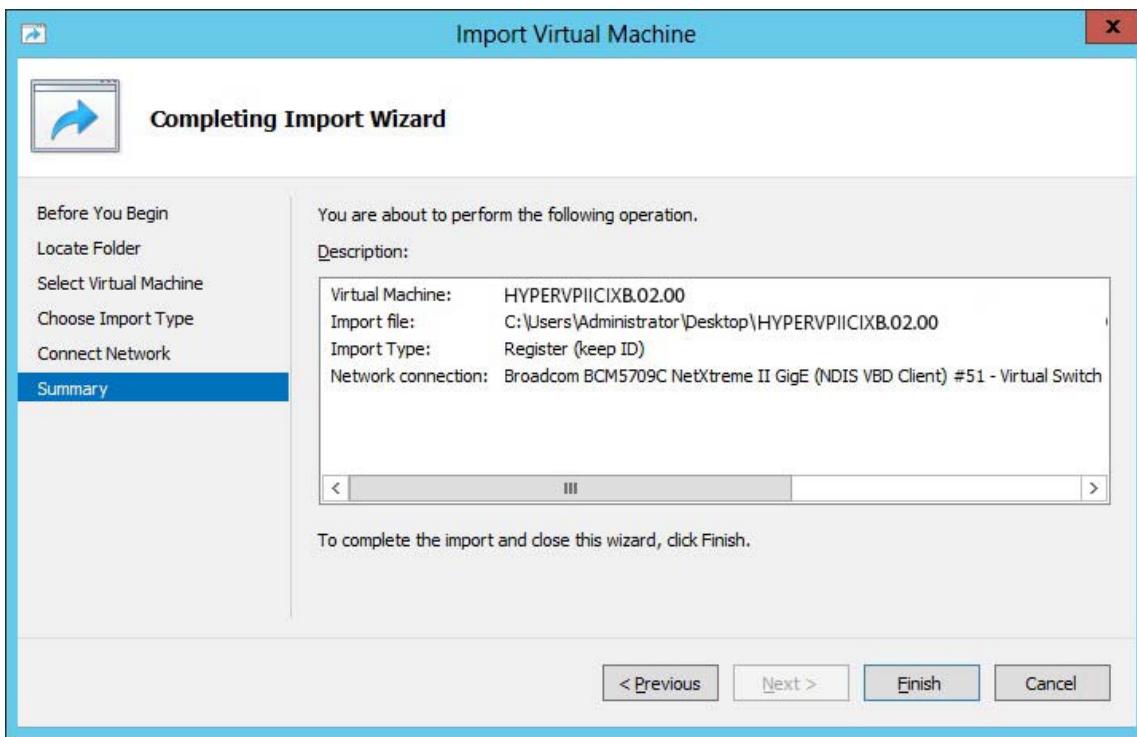
- 8 Click **Next >** in the **Locate Folder** screen to continue to the **Select Virtual Machine** screen.



- 9 Select the virtual machine to import from the list then click **Next >** to continue to the **Choose Import Type** screen.

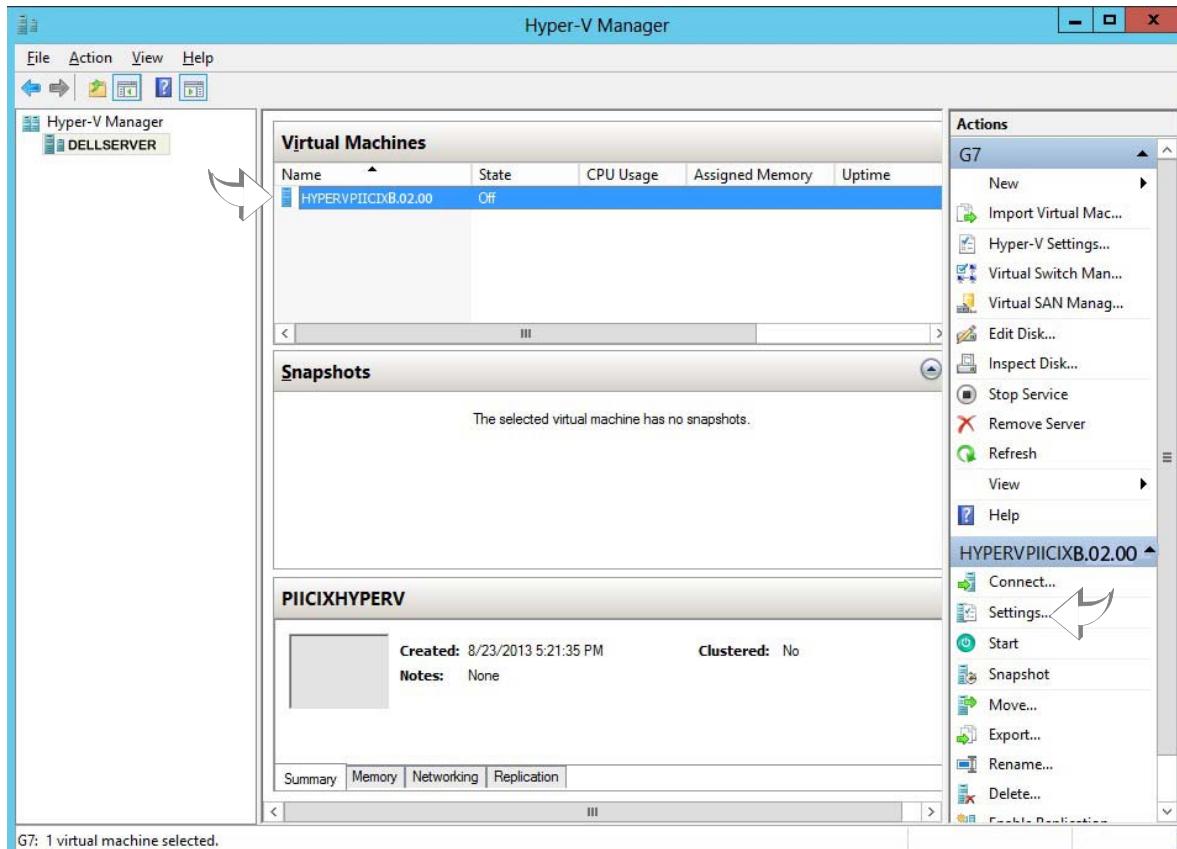


- 10 Select the **Copy the virtual machine (create a new unique ID)** option then click **Next >** to continue



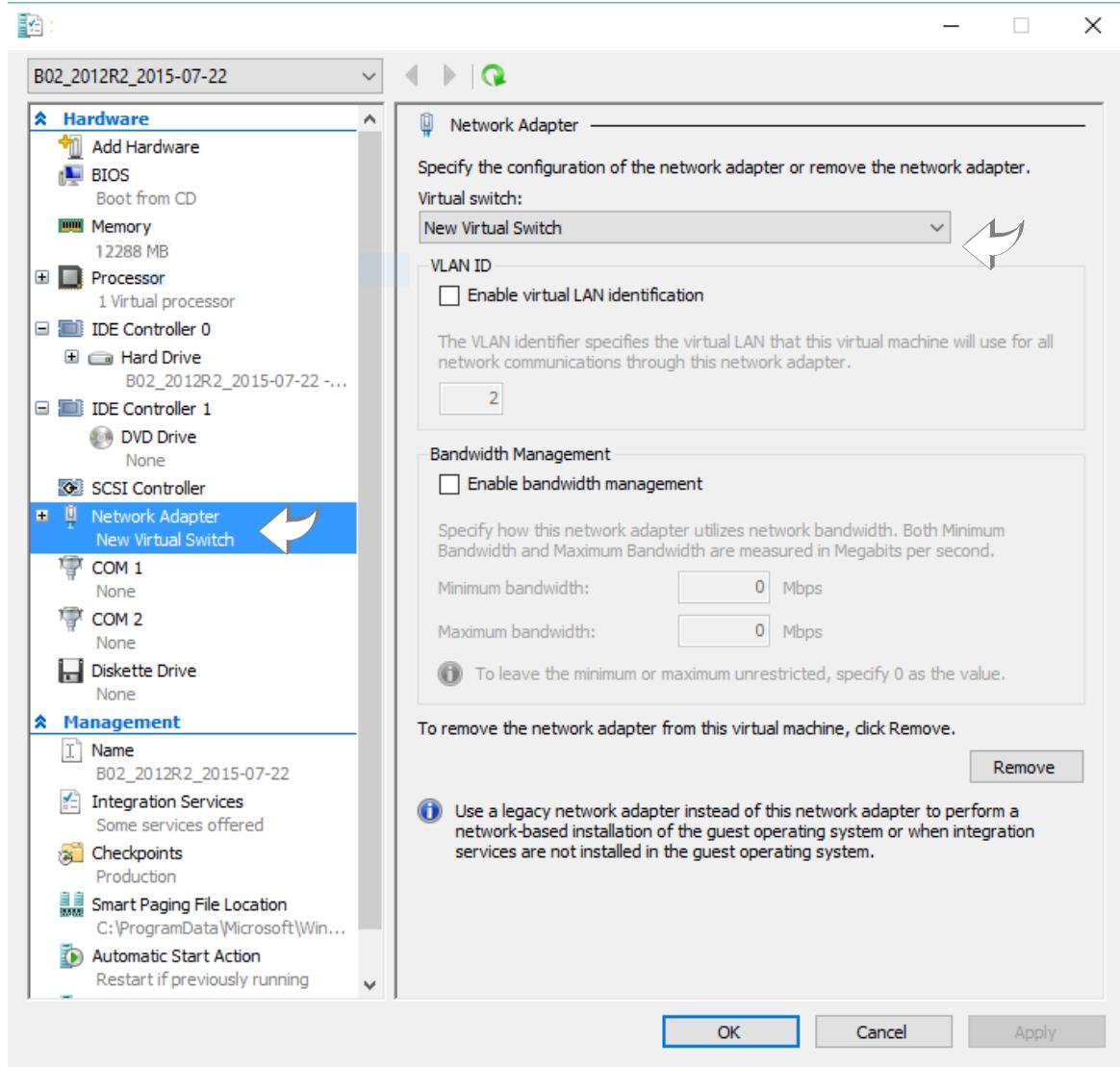
11 Click **Finish** in the **Completing Import Wizard** screen.

The new virtual machine appears in the **Hyper-V Manager** list.



- I2** Set the Network Adapter to use the desired virtual switch configured in the virtual machine.
 - a With the new Virtual machine selected click **Settings** in the **Actions** pane of **Hyper-V Manager**.

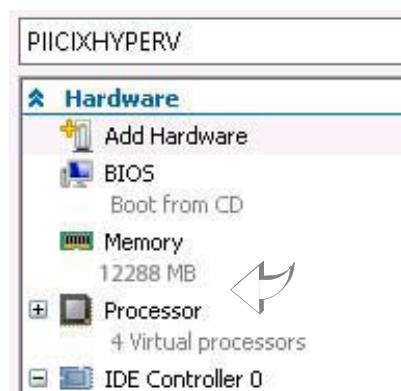
- b Select **Network Adapter** in the **Hardware** pane, then use the drop-down arrow to choose the desired **Virtual switch** from the list..



- c Click **OK**.

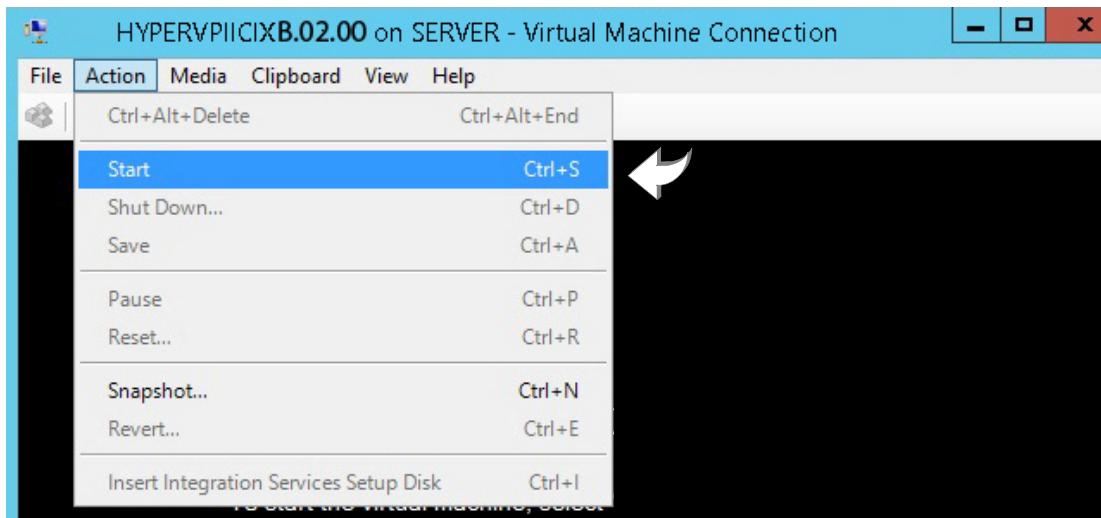
13 Check Virtual Machine settings.

- a With the new Virtual machine selected click **Settings** in the **Actions** pane of **Hyper-V Manager**.
- b In the **Hardware** pane of the Virtual machine be sure that **Memory** value is 12 GB and **Processor** value is 4 Virtual Processors. Then click **OK**.



14 Connect to the virtual machine using **Hyper-V Manager**.

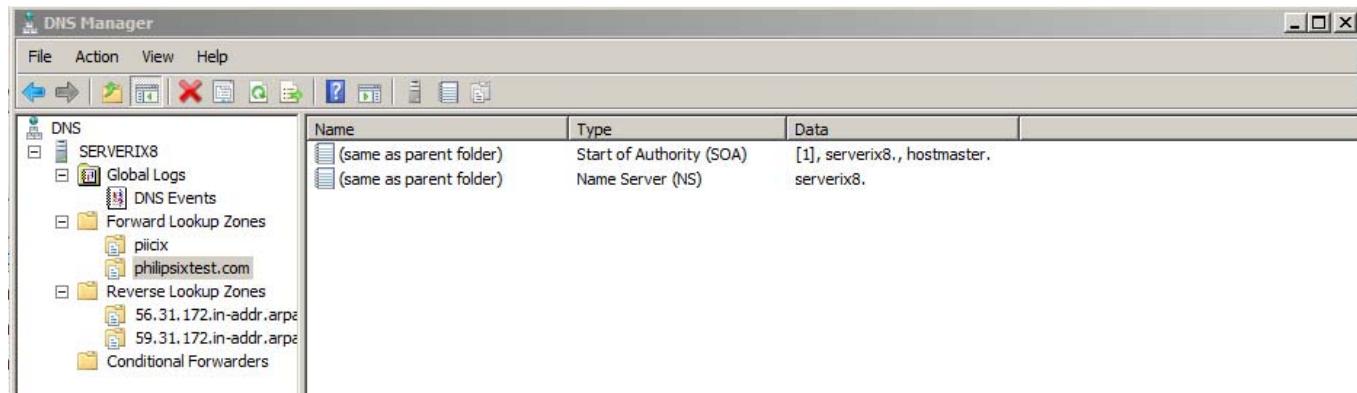
- a In the **Virtual Machines** section of **Hyper-V Manager** right-click the new virtual machine.
- b Select **Connect** in the drop-down list.
The **Virtual Machine Connection** window opens.

15 In the **Virtual Machine Connection** window go to **Action > Start**.

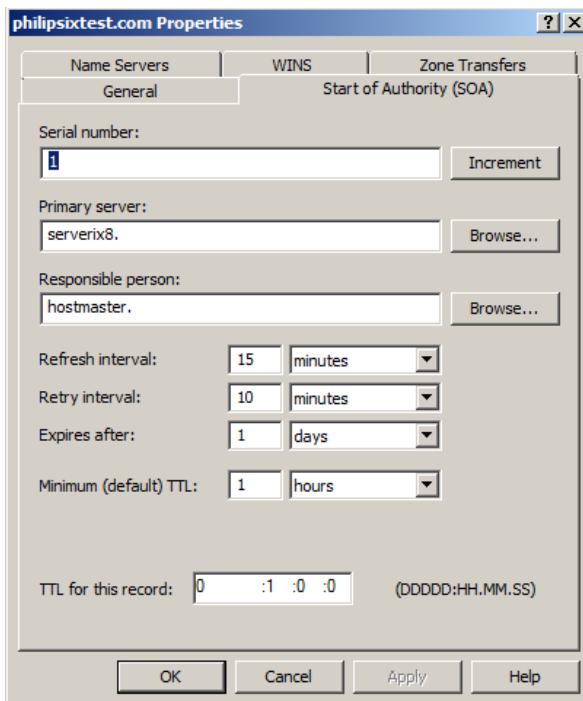
Configuring Primary as DNS Server

With PIIC iX B.00 and later a qualification test is added that will cause a DNS Server failure if your Primary Server is also the DNS Server unless you do the following.

- I Configure a forward lookup zone for philipsixtest.com.
 - a Go to **Administrative Tools > DNS Manager** and expand the desired Server in the panel.
 - b Create the **Forward Lookup Zone**, *philipsixtest.com*.



- c Right-click *philipsixtest.com* and select **Properties** from the list.



- d In the **Start of Authority (SOA)** tab be sure that the Primary Server appears in the Primary Server text box, then click **OK**.
- 2 Continue running PIIC iX System Setup.

Configuring the System

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Using System Configuration

System Configuration is a configuration editor that permits setting up system topology, configuring clinical and non-clinical features. It also includes a **Tools** menu (**Chapter 7**). **System Configuration** access requires **User Name** and **Password** authentication (**Page 6-139**).

The **System Configuration** screen includes a menu bar and icon selections which are described in the following sections.

If you want to open System Configuration

- 1 From the Windows desktop double-click **PIIC iX System Configuration**  or
From the PIIC iX application go to **Main Setup > System Configuration**.
The **Login to access System Configuration** screen opens.
- 2 Enter your **User Name** and **Password** in the appropriate text boxes of the **Login to access System Configuration** dialog. Then click **OK**.
The **System Configuration** screen opens.

System Configuration Menu Selections

Table 6-1 System Configuration Menu Description

Menu Item	Submenu Item	Description/Function
View	Configure	Opens left pane folders and permits configuration of Topology , Clinical Settings , Diagnostics , Interfaces , Network , and Security Access elements
	Tools (Tools & Diagnostics)	Opens left pane Tools and Diagnostics folders including Configuration , Clinical , Error Logs , Interfaces , Network , System Health & Status , Upgrade , and External Tools (Local) tools
	Filter by License	Filter by License is selected by default if you have a licensed system in the topology. Only the purchased licensed options appear in the left pane of System Configuration . If you want to view <i>all</i> available features and tools in the pane you must clear the Filter by License selection.
	Quick Unit Status	Permits viewing System Device Status at bottom of screen
	Exit	Closes System Configuration Window
Help	About	Opens Product Support screen which includes Service Number, Serial Number, Product Number, Software Version, OS Version, Computer Host Name, Computer Serial Number, License Information, Customer Name, Upgrade Information, Pending Reboot Information, Remote Support Assistance, and Contact Information Permits selection of a host from a list including host name and hardware serial number to view the host's feature assignment An Export button permits printing the license information and the feature assignment of each host in the topology.

System Configuration Icons

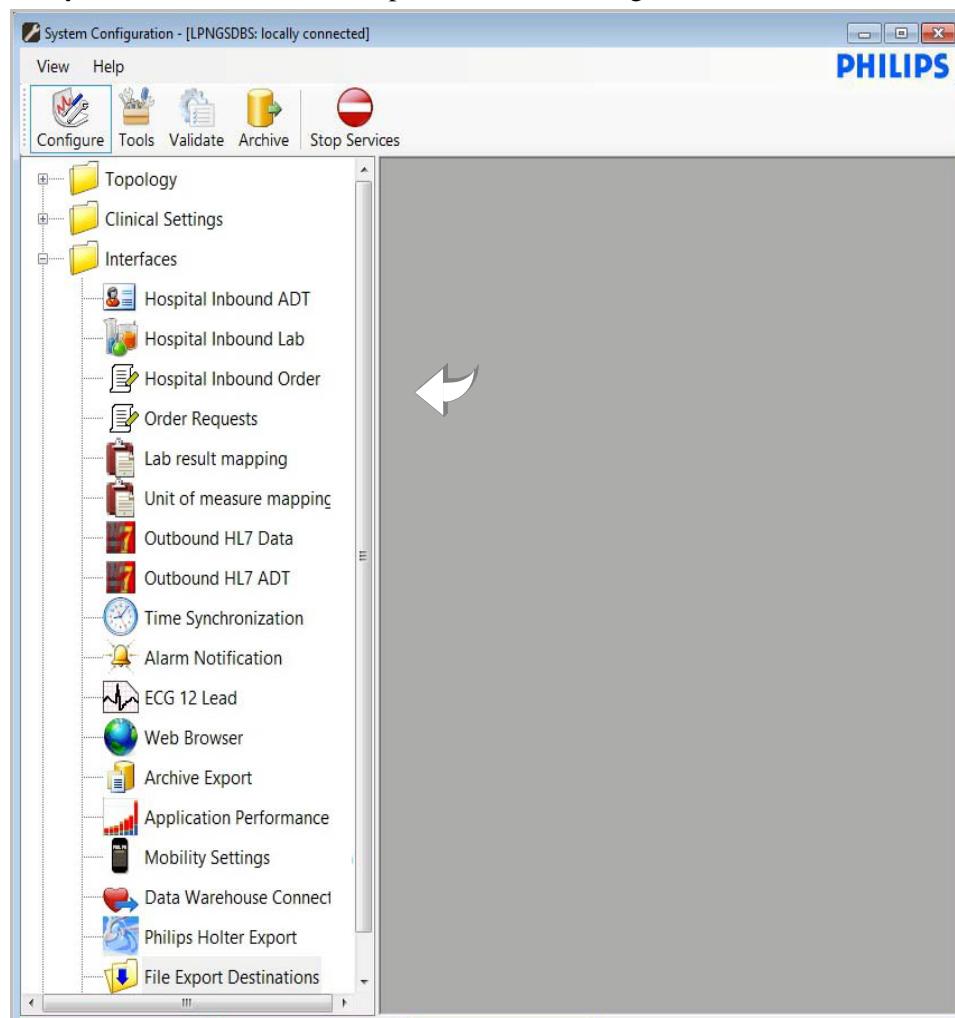
The **System Configuration** screen icons are **Configure**, **Tools**, **Validate**, **Archive**, and **Start/Stop Services**.



Configure

The **Configure** icon opens the **System Configuration** screen left pane which includes folders that permit configuration of **Topology**, **Clinical Settings**, **Interfaces**, **Network**, and **Security Access** elements.

- ▶ Click the **Configure** icon.
- The left pane populates.
- If you want to hide the folder pane click the icon again

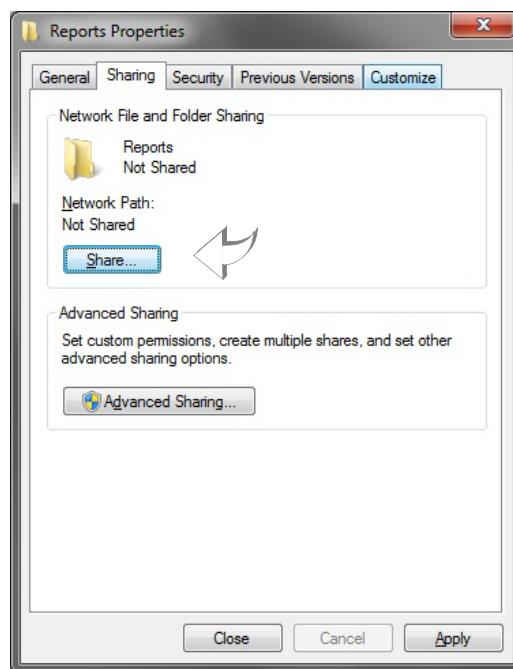


Setting File Sharing Locations

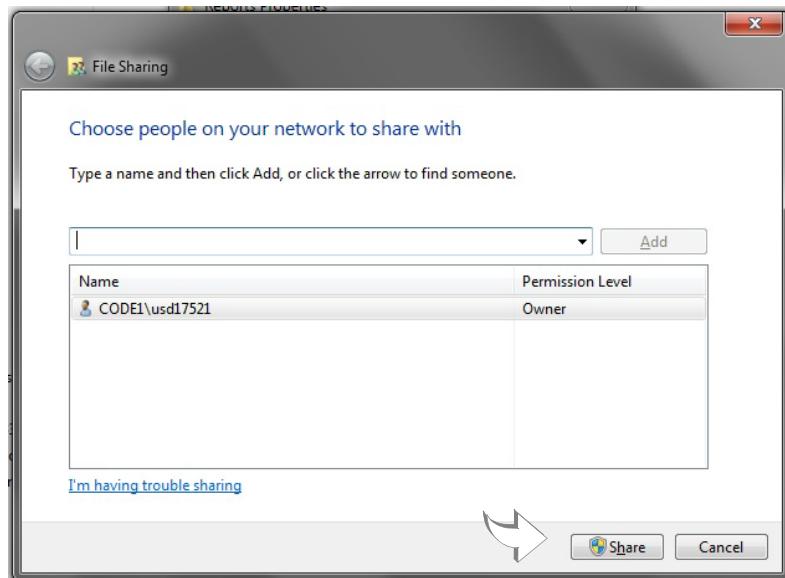
Certain Configuration features are designed to export output to a location in your system. With PIIC iX B.02 these include **Electronic Reports**, **Wave Strip Export**, **Archive Export**, and **Philips Holter Export**. Before you can accurately configure those features you must set up the shared location.

Create destination share folders in the desired locations as follows.

- 1 Browse to each desired output location on the share destination, create the new folder, and name the folder.
- 2 Set up the sharing properties for each folder.
 - a Right-click each new folder and select **Properties** from the drop-down list.
 - b In the folder **Properties** dialog go to the **Sharing** tab and click **Share**.



- c Add desired user(s) who will be able to access the destination folder then click **Share**.



- 3 Close all open dialogs.

Other User Requirements

- The User of share must be within customer infrastructure.
- User log on credentials must be static (no periodic mandatory updates of passwords).
- User log on requires administrative rights to the specified folder on the share.
- Perform maintenance to configured share locations/destinations (clean up, and so on).
- Customer is responsible for security; there is no encryption on files copied from PIIC iX to the share location.

Topology

The PIIC iX **Topology** folder includes **Institutions**, **Label Assignment**, **Network Scan**, **Language**, and **Reconnect** elements.

Topology folder tools permit:

- Adding or Modifying Institutions**
- Assigning Labels**
- Scanning the Network for APs or APCs**
- Specifying Language**
- Configuring Automatic Reconnect**

Institutions

A single default institution (labeled **My Institution** at initial installation) is included in the **Topology Configuration** screen **Available Zones** section. Each hospital/institution represents a single clinical facility which typically encompasses a set of clinical units, departments, and wards.

In each Institution the following top menu icons are available.

- Add Zone**
- Add Host**
- Add Beds**
- Manage Equipment**
- Add Network Device**
- Add Web Portal Host**
- Refresh**

If you want to add or modify an Institution

- 1 In the left pane of the **System Configuration** screen expand the **Topology** folder.
- 2 Click the **Add Institution** icon in the top menu.*



The **Add Institution** dialog opens.

A screenshot of the 'Add Institution' dialog box. The window has a title bar 'Add Institution' and a close button. Inside, there are several input fields:

- *Name: (Required field)
- Facility Id:
- Contact Information: (Text area)
- Address (Section):
 - Street1:
 - Street2:
 - City:
 - Region:
 - Country:
 - Zip Code:
- OK and Cancel buttons at the bottom right.

- a** Add desired information in appropriate **Add Institution** dialog text boxes.

Settings include:

***Name**
Facility Id
Contact Information
Address
Street1
Street2
City
Region
Country
Zip Code

Important You must enter information for all labels with an asterisk.

- b** When the dialog is complete click **OK**.

- 3** If you want to rename/modify an institution right-click the desired institution in the **Available Zones** pane and select **Properties**. from the list.

The **Edit** dialog opens.

- a** Add desired changes in appropriate **Edit** dialog text boxes.
b When the dialog is complete click **OK**.

Adding Zones

The PIIC iX **System Configuration** feature permits set up of **Zones** in its topology. A **Zone** can be an actual physical location or it can be a label that provides a way to graphically organize the system assets.

Types of **Zones** you can configure are **Clinical Unit**, **Central Supply**, **Equipment Room**, **Smart Hopping Zone**, and **Web Portal**.

Important Surveillance and Overview PIIC iX machines must be put in **Clinical Units**.

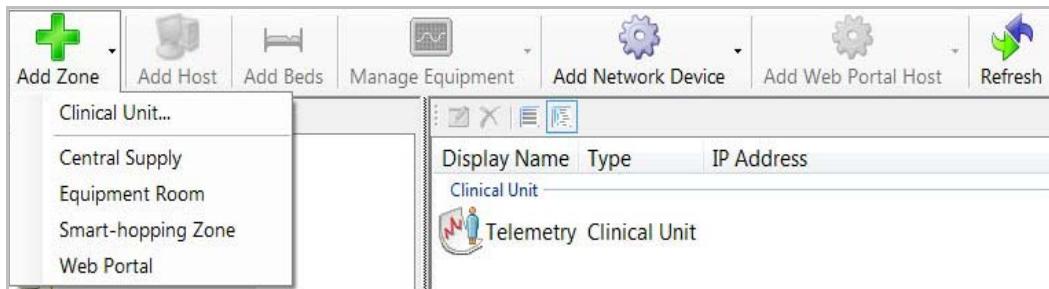
Clinical Unit	Permits custom naming for each clinical unit
Central Supply	Typically used to group or pool common devices used by the units (Telemetry pooling, for example)
Equipment Room	Permits describing location of Server(s), PCs, network equipment, and so on
Smart-hopping Zone	Permits storing APs and APCs within one isolated network that can be associated with one or more clinical units You must configure a Smart-hopping Zone before you can use the Network Scan feature.
Web Portal	Permits adding a zone into which Web Portal Hosts (PIIC iX and PIIC Release N and later) can be added and configured for viewing Refer to Appendix D for more PIIC iX Web details.

You can add desired Zones as follows

1 From the **Topology** folder double-click the desired *Institution*.

2 Click **Add Zone**.

A Zone can be an Equipment Closet, a Clinical Unit, or an area that defines a collection of devices within an Institution (For example, **Central Supply** could be assigned to several Clinical Units for equipment sharing).



3 If you want to add a Clinical Unit, Equipment Room, or Web Portal, select the zone type from the **Add Zone** list.

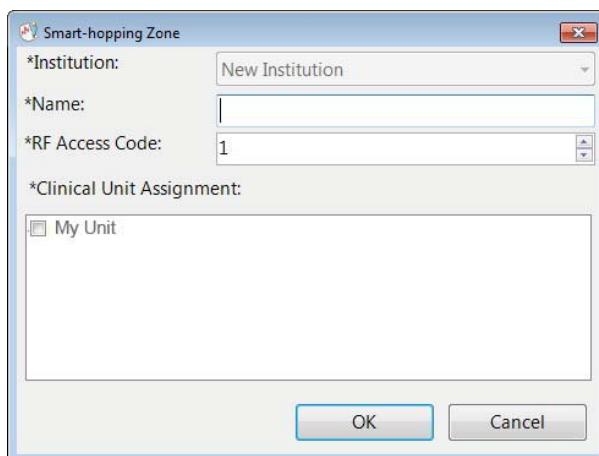
The selected zone type is added to the **Available Zones** list. You must enter a name for the zone.

4 If you want to add a Central Supply Zone, select **Central Supply** from the **Add Zone** list.

- a In the **Central Supply** dialog enter the desired **Name** for the zone,
- b Then select the Clinical Units that you want to assign from the **Clinical Unit Assignment** list.
- c When the dialog is complete click **OK**.

5 If you want to add a Smart-hopping Zone, select **Smart-hopping Zone**.

The **Smart-hopping Zone** dialog opens.



- a In the **Smart-hopping Zone** dialog the **Institution** text box automatically populates with the selected Institution name. Enter the desired **Name** for the zone.

- b Click the up/down arrows to set the **RF Access Code**.

- c Then select the Clinical Units that you want to assign from the **Clinical Unit Assignment** list.
- d When the dialog is complete click **OK**.

When you select a configured Zone from the **Available Zones** list only the icons that apply to the selection are active.

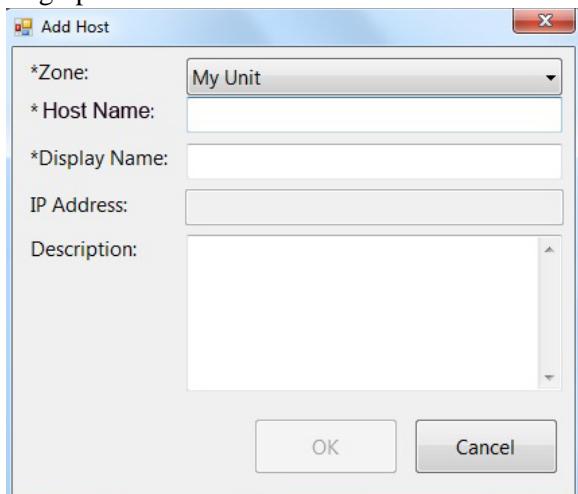
NOTE Multiple Smart-hopping zones are supported.

Adding Hosts

You can add hosts and configure them on a Primary Server. When you install software on the host and connect to the Primary Server, the server can push the configuration to each host.

The following steps describe adding hosts at a Primary Server. For detailed information about adding an IntelliBridge System to the topology refer to the *IntelliBridge SC 50 Device Interfacing Engine Installation and Configuration Guide*.

- 1 Select the desired **Clinical Unit** or **Equipment Room** from the list.
 - 2 Select **Add Host** or right-click the desired zone and select from the list.
- The **Add Host** dialog opens.



- 3 Enter or select the desired information in the dialog for the host that will use the Primary Server. Then click **OK**.

Settings/selections include:

***Zone**
***Host Name**
***Display Name**
IP Address
Description

Important You must enter information or make a selection for all labels with an asterisk.

- 4 If you have more hosts that you want to add you must repeat **Steps 2 and 3**.

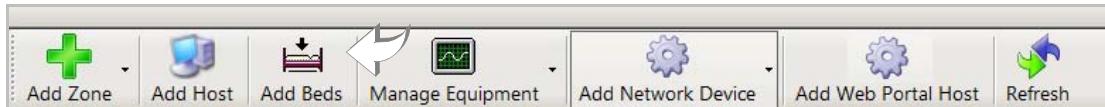
Clearing the Sectors of a Host

- You can clear the sectors of a host that has failed by right-clicking the host and selecting **Clear All Sector Assignments**. Refer to **Returning a Repaired Host to Monitoring** before you reconnect the host to the monitoring network.

Adding Beds

WARNING Clinical Units using J.1 IPMs and that have 64 beds or more will not be able to use the bedside monitor's Bedside Overview unless the *Popups* selection is *Off* or *By Caregiver in Alarm Notification*. Refer to the PIIC iX Clinical System Configuration Guide.

- I Select the desired unit (**My Unit**, for example) in the **Available Zones** list, then click **Add Beds**.



NOTE You can delete unwanted bed labels and add desired labels or rename them.

- 2 Add beds by entering appropriate information in the **Add Bed Labels** dialog.

When assigning a Bed Label be sure that:

**The bed label is unique,
It contains no more than 8 characters, and
It does not include an underscore (Bed_01, for example)**

Example

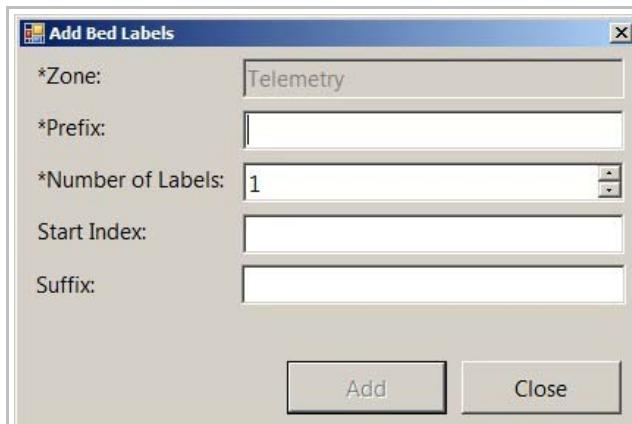
If you want to configure **Bed101** through **Bed105**, enter the following information in the **Add Bed Labels** dialog:

***Prefix** = **BED**

***Number of Labels** = **5**

***Start Index** = **101**

Suffix = blank



Important Bed Label is limited to eight characters. In some Display configurations eight characters may not appear, but five characters will appear in all Display configurations.
Printing Electronic Reports will fail if you include an underscore (bed_01, for example) in your bed label.

- 3 Click **Add**.

The new Bed Labels appear in the **Display Name** list.

Important If you try to use the same Bed number in another unit of your institution and error appears. You cannot repeat the same Bed number in another unit in an Institution.

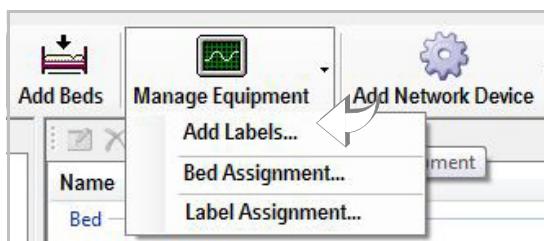
On a system that uses Unicode characters and connected recorders be sure to assign bed labels ASCII characters as the recorder only recognizes and prints ASCII characters. If you identify the bed label with Unicode characters patient information will not be available on printed recordings.

Managing Equipment

The **Manage Equipment** menu icon permits adding equipment labels, assigning equipment to bed labels, and assigning devices to equipment labels.

Adding Equipment Labels

- I With desired unit selected in the **Available Zones** list go to **Manage Equipment > Add Labels**.



- 2 Add the equipment labels by entering appropriate information in the **Add Equipment Labels** dialog.

For example, if you want to configure bedsides ICUMP501 through ICUMP505, enter the following:

***Prefix** = ICUMP

***Number of Labels** = 5

***Start Index** = 501

Suffix = blank

*Zone:	Telemetry
*Prefix:	ICUMP
*Number of Labels:	5
*Start Index	501
Suffix:	
Add Close	

If you make a mistake, delete the information and start again.

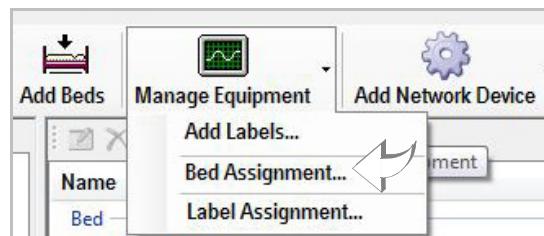
- 3 Repeat **Steps 1 and 2** to configure all of the monitoring device Equipment Labels.

Important You cannot add equipment labels when you are in Disconnected mode.

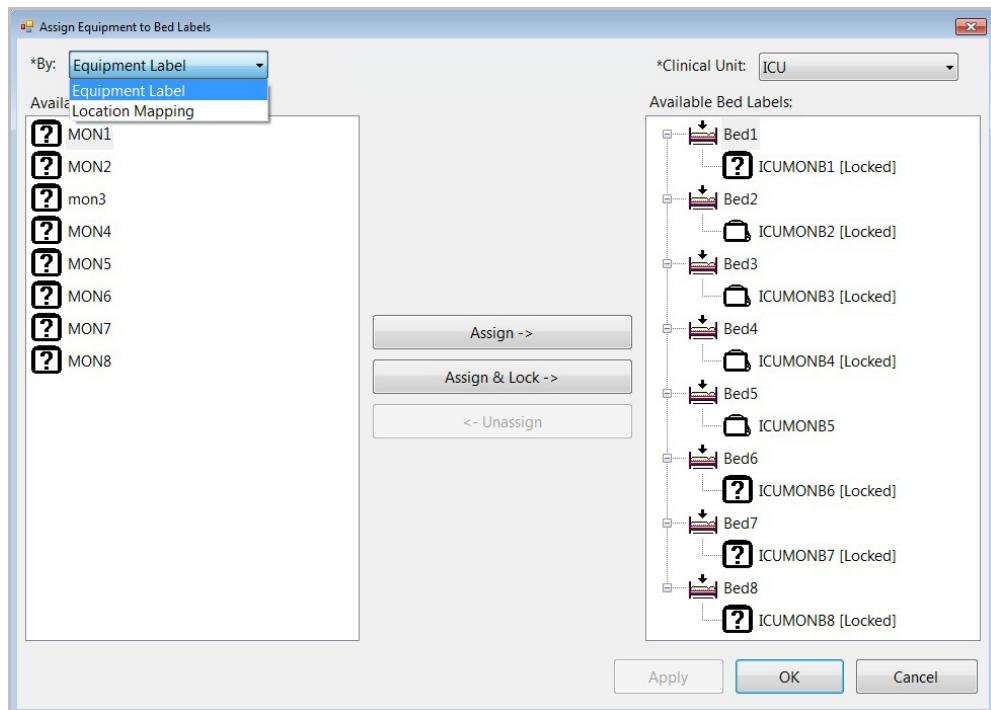
Assigning Equipment to Bed Labels

If you want to assign equipment to bed labels,

- I With desired unit selected in the **Available Zones** list go to **Manage Equipment > Bed Assignment**.



- 2 Assign available equipment to the beds as desired.



NOTE If you are accessing System Configuration while the device is monitoring, you will not be able to unassign equipment. The **Unassign** button is dimmed.

- a Use the **By** drop-down arrow to select **Equipment Label** or **Location Mapping** ([Page 6-19](#)) from the list.
- b Remove unwanted equipment from a Bed by selecting the equipment currently assigned to the bed in the **Available Bed Labels** list. Then click **Unassign**.
- c Add the desired equipment to a selected bed by selecting the new equipment in the **Available Equipment** list then click **Assign**. If you want to lock the equipment to the bed click **Assign & Lock** instead.

Important If a Host with assigned equipment fails (Disk failure, for example) you will see the message, *Error assigning the device A network exception occurred*. If this is the case you must remove the failed host from your topology to free the assigned equipment.

Important If you lock equipment to a Bed Label, the clinical user will **not** be able to remove that equipment from the Bed Label. The user can add additional equipment to the Bed Label, however. The locked equipment will have brackets with the word, locked, following the label. If you transfer the patient the equipment remains locked to the bed.

If you do not want the bedside monitor to transfer with the patient, you must lock the equipment to the bed label or the equipment label will transfer with the patient.

WARNING **Equipment that is not moving with the patient should be assigned and locked, or equipment will transfer with the patient and could leave patient not centrally monitored.**

- d When you have completed all desired assignments click **Apply** or **OK**.
Apply permits saving data and making additional changes. **OK** saves the configuration and closes the dialog.

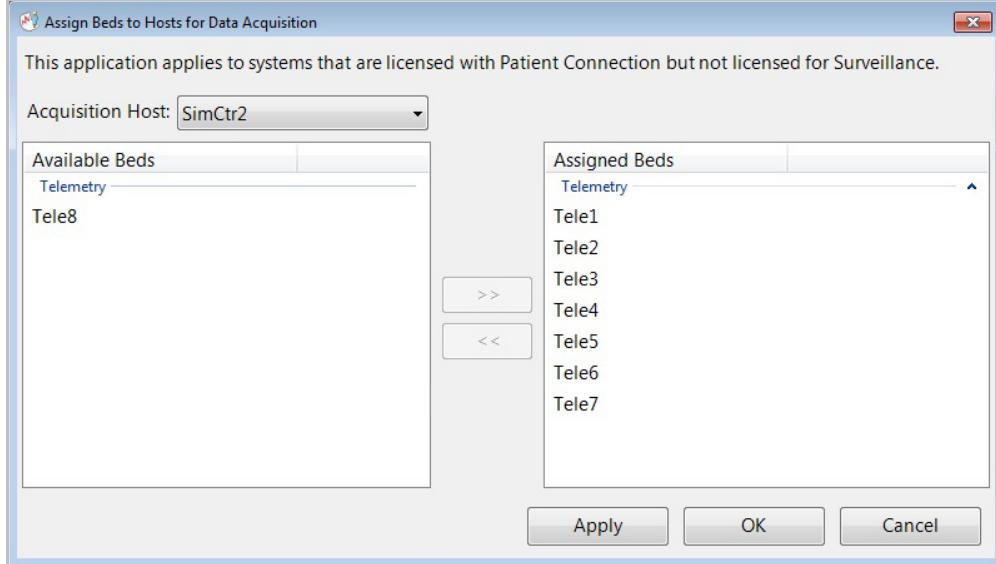
Assigning Beds to Hosts for Data Acquisition

Bed-to-Host Assignment applies to Patient Link devices. You must use the Bed-to-Host Assignment feature to assign beds to a host for data acquisition.

Important PIIC iX Patient Link does not allow bed label assignment to equipment while in *Monitoring Mode*. Equipment must be tied to a bed label either by using Location Mapping to have devices move to the correct beds when plugged into the corresponding switch port (**6-19**), or by locking equipment label to a bed label.

- 1 Right-click the desired acquisition host in the topology. A drop-down list appears with the selections **Delete**, **Properties**, and **Bed Assignment**.
- 2 Select **Bed Assignment** in the list.

The **Assign Beds to Hosts for Data Acquisition** dialog opens.

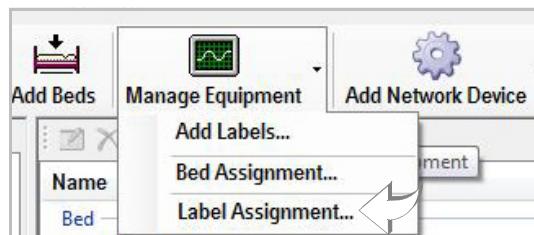


- 3 Add the desired beds to the **Acquisition Host** by selecting the Available Bed and clicking the arrow button.
- 4 When you have completed all desired assignments click **Apply** or **OK**. **Apply** permits saving data and making additional changes. **OK** saves the configuration and closes the dialog.

Assigning Devices to Equipment Labels

Important It is imperative with PIIC iX that you assign labels to all X2 patient monitors.

- With desired unit selected in the **Available Zones** list go to **Manage Equipment > Label Assignment**.



The **Assign Devices to Equipment Labels** dialog opens.

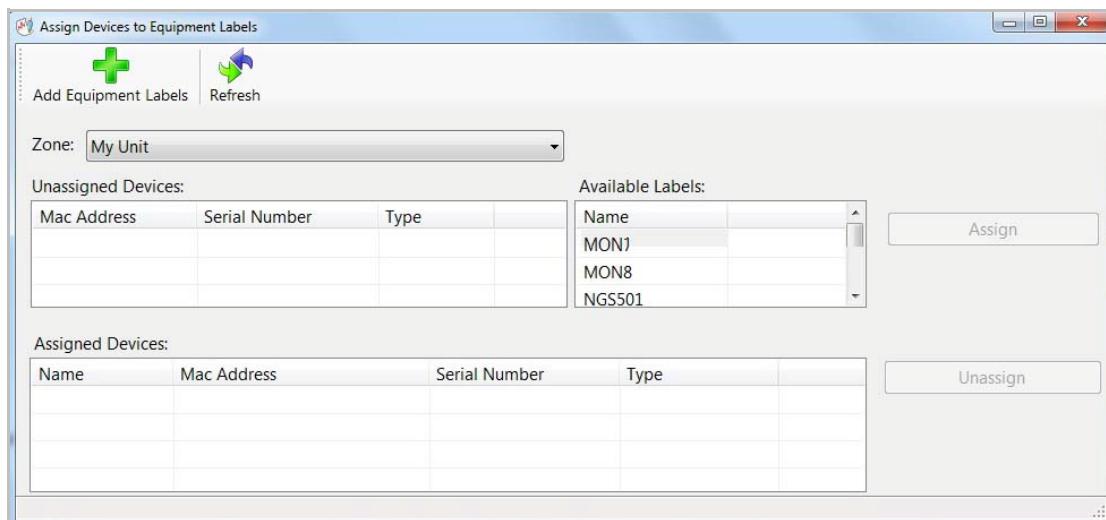


Table 6-2 Assign Devices to Equipment Labels Settings

Selection	Description
Add Equipment Labels	Opens Add Equipment Labels dialog which permits adding new equipment labels (page 6-10)
Refresh	Permits updating screen to its most current state
Zone	Permits selection of desired zone from the drop-down list

Table 6-2 Assign Devices to Equipment Labels Settings (continued)

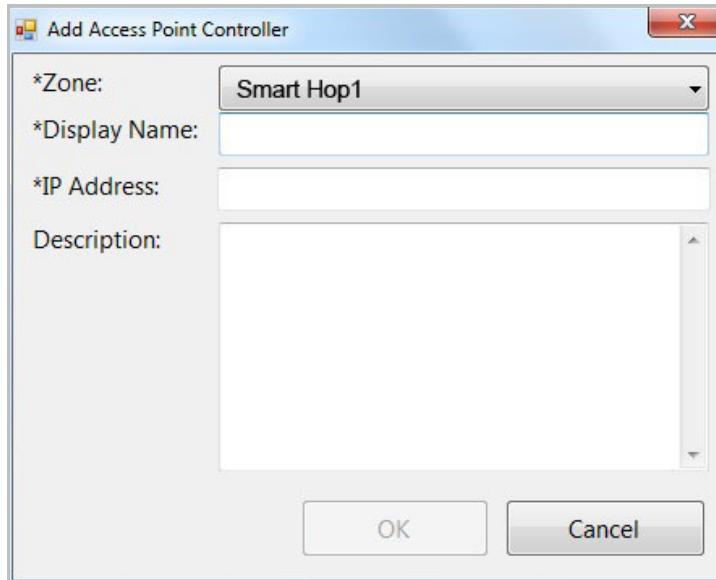
Selection	Description
Unassigned Devices	Shows list of unassigned devices with column headings Mac Address , Serial Number , and Type Permits selection and assignment of any unassigned device to an available equipment label <ol style="list-style-type: none"> 1 Click the desired label in the Available Labels list, then click the desired Unassigned Device. 2 Click the Assign button.
Available Labels	Shows list of available labels
Assigned Devices	Shows list of assigned devices with column headings Name , Mac Address , Serial Number , and Type Permits unassignment of any assigned device <ol style="list-style-type: none"> 1 Select the desired item in the Assigned Devices list. 2 Click the Unassign button. 3 If the Assigned Device is a telemetry device a dialog informs that you must press the check button on the PWD when the device beeps. Click OK in the dialog.

Adding Network Devices

The **Add Network Device** menu icon permits adding an Access Point Controller (**APC**) or Access Point (**AP**) in a **Smart Hopping** zone, or it permits adding a **Switch** or **Router** in a **Clinical Unit** or **Equipment Room** zone. The **Add Network Device** menu selections change depending on which **Available Zone** is selected.

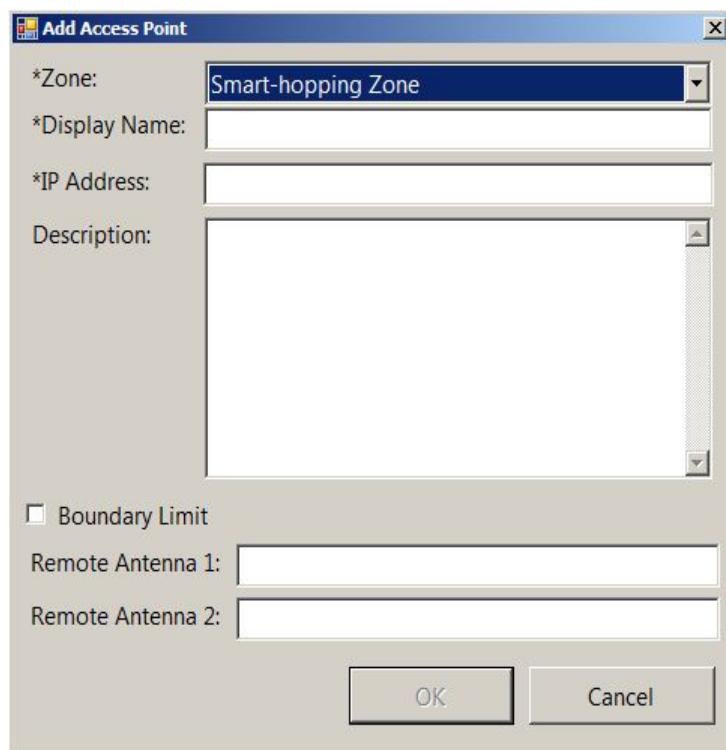
If you want to add an APC or AP to a Smart-Hopping Zone,

- ▶ With the appropriate Smart-Hopping Zone selected, click **Add Network Device**.
If you select **APC** the **Add Access Point Controller** dialog opens. The selections include:



Selection	Action>Note
*Zone	■ Click the down arrow and select the desired zone from the list.
*Display Name	■ Enter a user-friendly name for the accessible site.
*IP Address	■ If desired, enter IP Address of Host.
Description	■ Enter desired descriptive information in text box.

If you select **AP**, the **Add Access Point** dialog opens. The selections include:

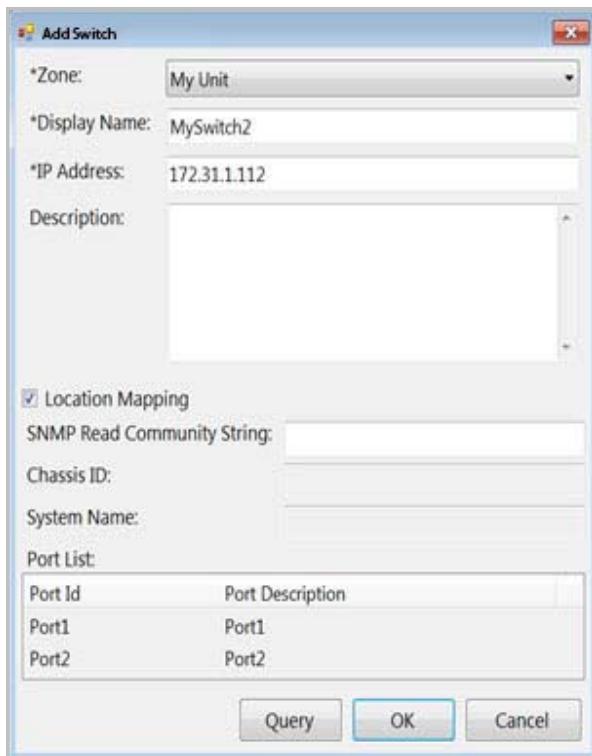


Selection	Action/Note
*Zone	■ Click the down arrow and select the desired zone from the list.
*Display Name	■ Enter a user-friendly name for the accessible site.
*IP Address	■ If desired, enter IP Address of Host.
Description	■ Enter desired descriptive information in text box.
Boundary Limit	■ Click Check box to set Access Point as Boundary Limit.
Remote Antenna 1	■ Enter Antenna description in text box.
Remote Antenna 2	■ Enter Antenna description in text box.

If you want to add a Switch to a Clinical Unit or Equipment Room Zone,

- ▶ With the appropriate Zone selected, click **Add Network Device**. Then select **Switch** from the list.

The **Add Switch** dialog opens. The selections include:



Selection	Action/Note
*Zone	■ Click the down arrow and select the desired zone from the list.
*Display Name	■ Enter a user-friendly name for the accessible site.
*IP Address	■ If desired, enter IP Address of Host.
Description	■ Enter desired descriptive information in text box.
Location Mapping	■ Click the check box if you are using the switch for location mapping. This allows assignment of patient equipment to a bed that has its equipment mapped to a switch port. Philips recommends that you lock the bed label when configuring Location Mapping.
SNMP Read Community String	■ Enter string if the value is changed from its default value (Public) by the network administrator.
Chassis ID	■ Enter applicable information in text box.
System Name	■ Enter applicable information in text box.
Query	■ Click button to populate dialog with switch-specific attributes. To query a switch (Page 6-20) you must configure the SNMP Read Community String .
Port List	
Port ID	Populates after successful Query
Port Description	Populates after successful Query

Location Mapping

A Switch Port Mapping tool is available for download from InCenter. Philips recommends that you use this tool to verify that the Philips-Supplied or Customer-Supplied Clinical Network infrastructure supports Location Mapping specifications before the installation continues, specifically the Link Layer Discovery Protocol for Media Endpoint Devices (LLDEP-MED) protocol. For detailed information about acquiring and using this tool refer to *PIIC iX Installation Note Using Location Mapping Tool, 4535 644 71851*. Philips recommends that you use the tool to validate proper Location Mapping operation for each switch.

Important Equipment labels (**Page 6-12**) are required in order to make Location Mapping operate. It is also recommended that you lock the bed label when configuring Location Mapping.

IntelliVue Patient Monitors (IPMs) use LLDP-MED to detect Switch Port mapping (Location Mapping) when connected to a Wired LAN. The IPM sends the switch port information in the (CI) message to PIIC iX. PIIC iX checks the switch port location in the message to determine if the device should be assigned to a bed based on the port location.

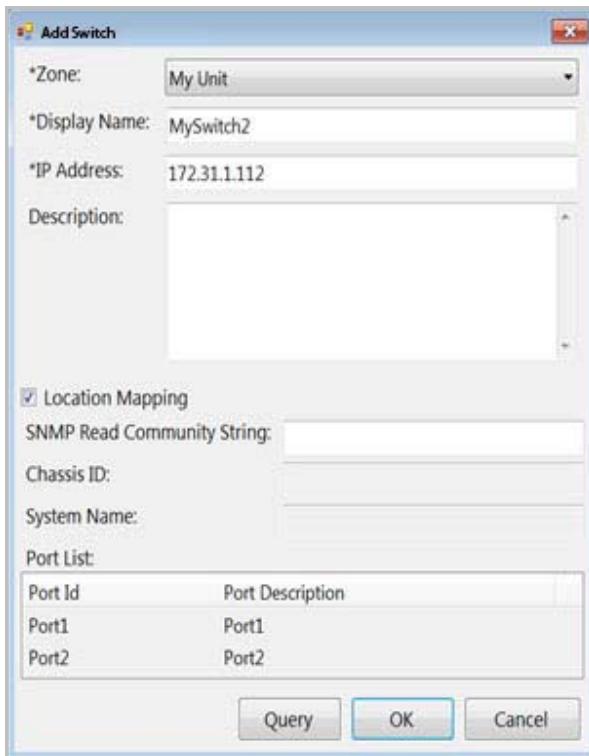
If the monitor **should** be assigned to a bed, the equipment label of the monitor is moved to the bed associated with the port. The equipment label of the monitor/device will remain assigned to the bed (through wired and wireless transitions) until any of the following situations occur:

- The monitor is plugged into a different switch port that is mapped to another bed.
In this case the monitor/device will be unassigned from its current bed and assigned to the new bed.
- The monitor is unassigned from the bed at the IPM or at the PIIC iX.
This is only allowed if the device is turned off or disconnected from the port.
- The user clears the sector that has the bed assigned.
This will also cause the device to be unassigned.

CAUTION Workflow settings do not apply while a device is in the mapped port. Special care may be needed for equipment management at patient discharge.

Querying a Switch

- I Complete each selection in the **Add Switch** dialog.



- a Click the down arrow and select the desired zone.
- b Enter the **Display Name**, **IP Address**, and optional **Description**.
- c Click the **Location Mapping** check box.
- d Enter the **SNMP Read Community String**.
Chassis ID and **System Name** entries are dimmed because they are read-only data.

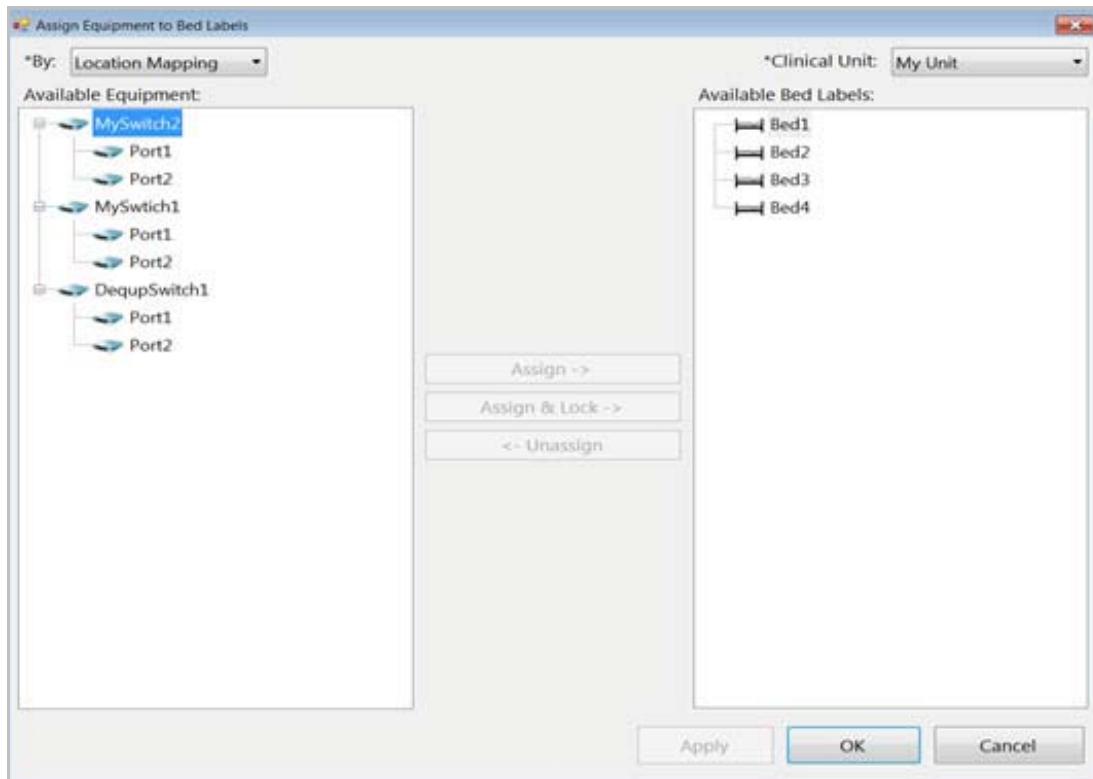
Important The default **SNMP Read Community String** is **Public** for Philips supplied Clinical Network switches that support LLDEP-MED. If this string is different for your network, contact your IT for the appropriate string.

Not all Switches support LLDEP-MED. Refer to the **IntelliVue Network Specification** for details.

- 2 When dialog is complete click **Query**.

The **Port List** section populates with **Port ID** and **Port Description** of detected switch ports.

Once Ports are detected they appear in the **Available Equipment** list of PIIC iX **Assign Equipment to Bed Labels** screen.

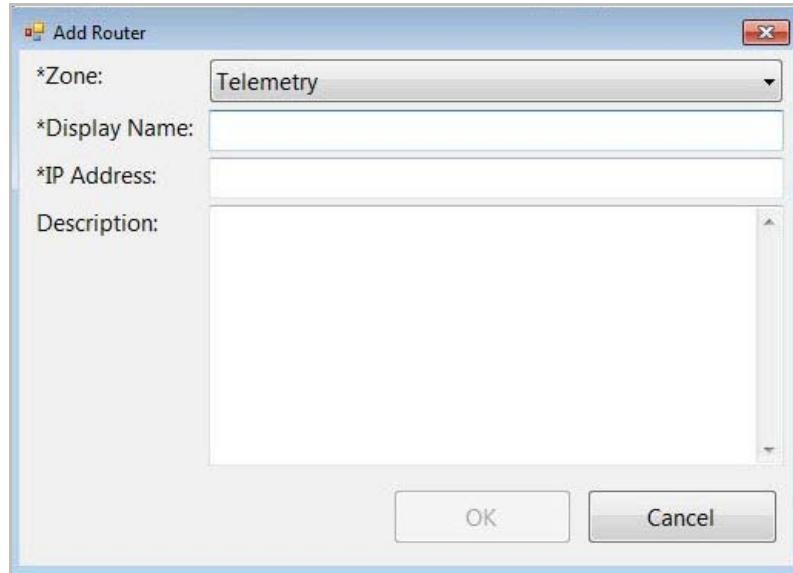


Important If you must replace a switch due to repair, verify that LLDP-MMED has been enabled and query the switch again to be sure the proper port assignments are made. The replacement switch may have different internal port configuration.

Be sure to Assign & Lock Bed Labels to mapped equipment.

If you want to add a Router to a Clinical Unit or Equipment Room Zone,

- ▶ With the appropriate Zone selected, click **Add Network Device**. Then select **Router** from the list.
- The **Add Router** dialog opens. The selections include:



Selection	Action/Note
*Zone	■ Click the down arrow and select the desired zone from the list.
*Display Name	■ Enter a user-friendly name for the accessible site.
*IP Address	■ If desired, enter IP Address of Host.
Description	■ Enter desired descriptive information in text box.

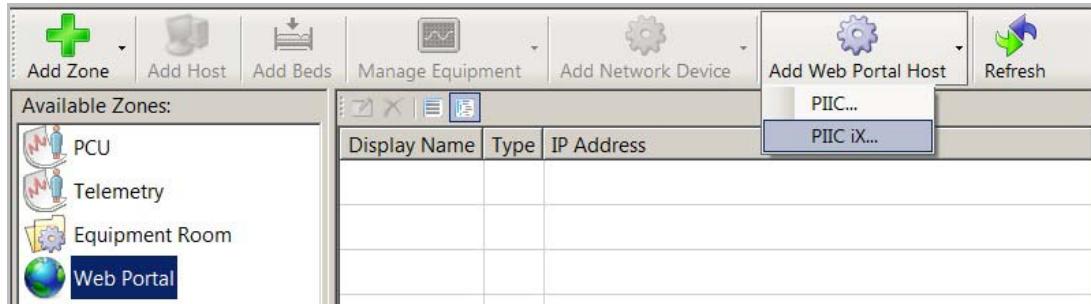
Add Web Portal Host

The **Add Web Portal Host** menu icon is active when you select a configured **Web Portal** Zone ([Page 6-8](#)) and permits:

- Access to any authenticated user to PIIC iX Web Applications (Single- or Multi-Patient View) from any PC browser.
- Access to any authenticated user to Classic PIIC (Release N.01.15 or later) Retrospective Web Applications from any PC browser.
- Access to Prior Unit data still available on Classic PIIC (Release N.01.15 or later) for the current patient.

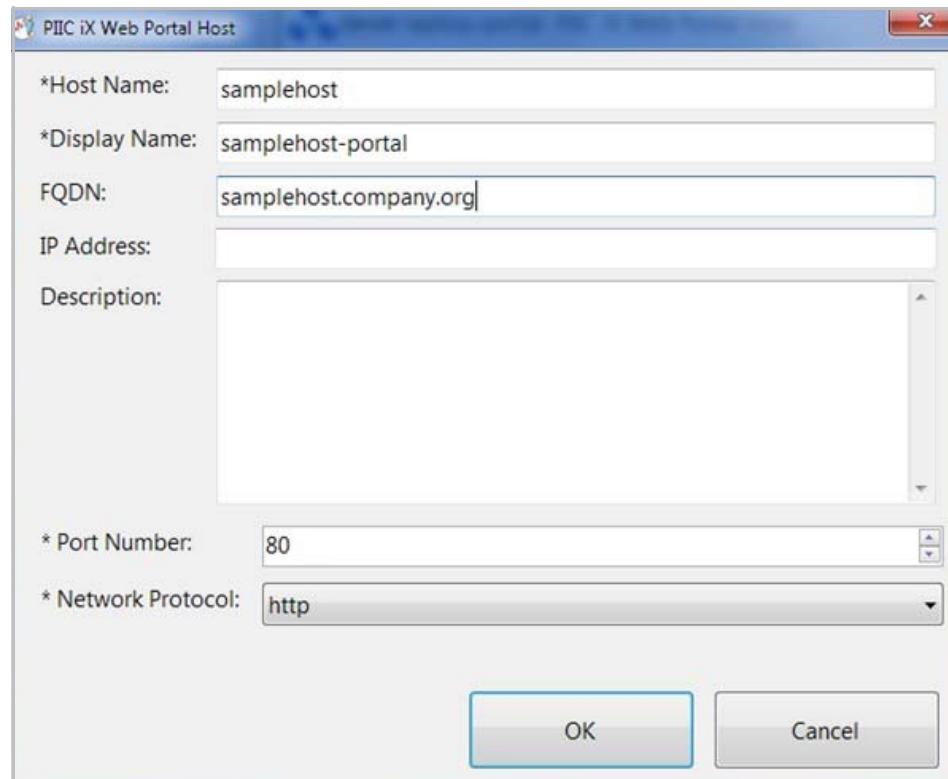
With PIIC iX B.02 you can configure multiple Web Servers that are available in the Enterprise Portal.

- 1 From the **Configure** pane expand **Topology** and double-click the desired Institution icon in the left pane. (**My Institution** is the default name at product installation.)
- 2 Select the Web Portal zone in the **Topology Configuration** screen, then click the **Add Web Portal Host** icon.



- 3 If a desired Host is part of a Classic PIIC System select **PIIC** from the list; if the desired Host is part of a PIIC iX System select **PIIC iX**.

The **Add PIIC Web Portal Host** dialog or **Add PIIC iX Web Portal Host** opens



Selection	Steps
*Host Name	■ Enter the Host Name of the PIIC iX or PIIC that will be available to access.
*Display Name	■ Enter a user-friendly name for the accessible site.
FQDN	<p>■ Enter fully qualified domain name.</p> <p>Important For communication with multiple PIIC iX Web servers that may exist on unconnected networks you must enter a Fully Qualified Domain Name (FQDN) of the Web Server. If you do not enter the FQDN of the remote Web Server(s) the MPV client will attempt to communicate using only the hostname which will be unsuccessful if both hosts are not on the same network.</p>
IP Address	■ Enter IP Address of Host.
Description	■ Enter desired descriptive information in text box.
*Port Number	■ Click the down arrow and select desired setting from the list. (Default is 80)
*Network Protocol	■ Click the down arrow and select desired setting from the list. (tcp, http, https)

Important PIIC Classic Database Server hosts **must be** configured using IP Address and **not** by Host Name. PIIC does not have DNS name resolution, so PIIC iX must pass a URL to PIIC with an IP Address rather than Host Name.

- 4 Enter required information in the dialog.
- 5 Click **OK**.

Prior Unit Data

The prior unit data feature is available after a Web Portal host is configured. It provides a browser-based view of Retrospective data for a patient who was previously monitored on another PIIC or PIIC iX system.

Important When using Prior Unit Data, which is part of PIIC iX Web enterprise Portal functionality, the PIIC system must be able to network connect to a PIIC iX in order to retrieve the patient data. Because the PIIC iX may be networked on the hospital side of the network address, route statements may be necessary on the PIIC or Client. Refer to the *PIIC Installation and Service Guide*.

Example Route Statement

Destination (Configured Route Address)	Subnet Mask	Gateway	Interface (DBS Monitoring LAN IP Address)
10.49.0.0	255.255.255.255	172.31.1.30	172.31.1.30

If data from a prior unit is available for a current patient an icon  appears in the PIIC iX Review Window title bar or in the PIIC application title bar. Refer to the *PIIC iX Instructions for Use* or *PIIC Release N.01 Instructions for Use* for detailed information.

Refreshing the Topology Configuration Screen

- Click the **Refresh** menu icon to ensure that you are viewing the screen in its current state.

Label Assignment

The **Label Assignment** element in the **Topology** folder permits assigning devices to Equipment labels. This tool is also accessible from the **Manage Equipment** menu ([Page 6-11](#)).

Important If you change the use model at your IPM or MRX (transport to bedside, for example), the change does not actually take effect until the device is assigned to a bed at the PIIC iX and communicating with PIIC iX.

- From the **Configure** pane expand **Topology** and double-click the **Label Assignment** icon in the left pane.

The **Assign Devices to Equipment Labels** dialog opens.

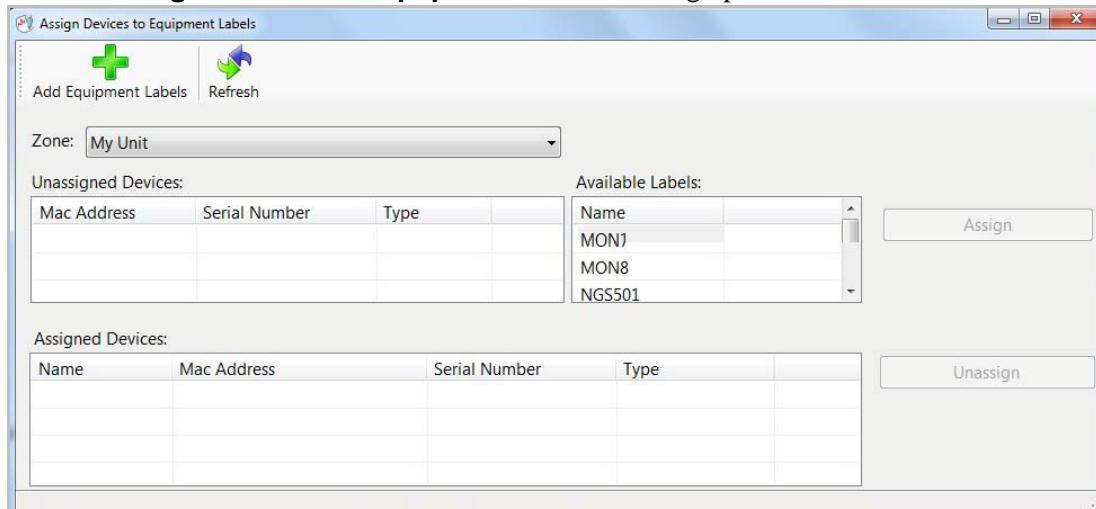


Table 6-3 Assign Devices to Equipment Labels Settings

Selection	Description
Add Equipment Labels	Opens Add Equipment Labels dialog which permits adding new equipment labels. (page 6-11)
Refresh	Permits updating screen to its most current state
Zone	Permits selection of desired zone from the drop-down list.
Unassigned Devices	<p>Shows list of unassigned devices with column headings Mac Address, Serial Number, and Type</p> <p>Permits selection and assignment of any unassigned device to an available equipment label</p> <ol style="list-style-type: none"> Click the desired label in the Available Labels list, then click the desired Unassigned Device. Click the Assign button.

Table 6-3 Assign Devices to Equipment Labels Settings (continued)

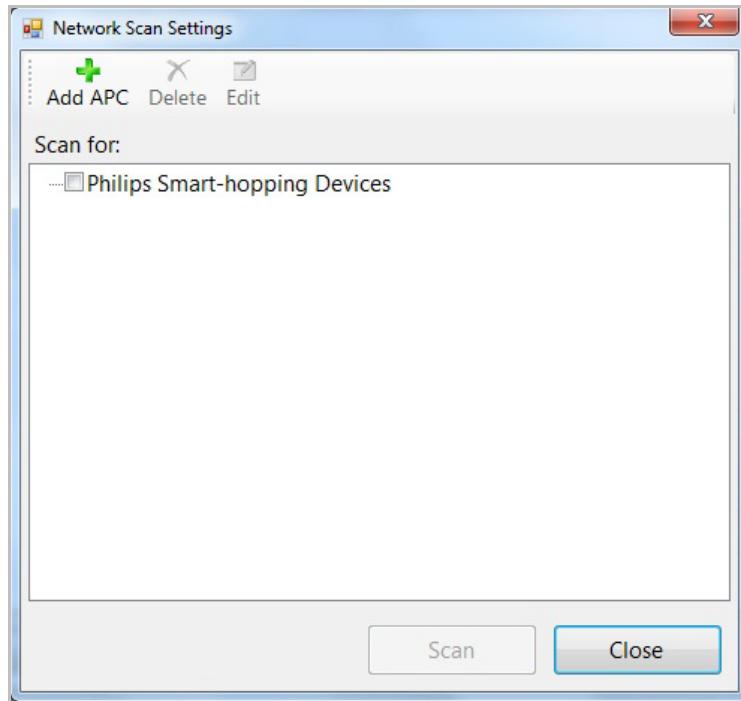
Selection	Description
Available Labels	Shows list of available labels
Assigned Devices	Shows list of assigned devices with column headings Name , Mac Address , Serial Number , and Type Permits unassignment of any assigned device <ol style="list-style-type: none">1 Select the desired item in the Assigned Devices list.2 Click the Unassign button.3 If the Assigned Device is a telemetry device a dialog informs that you must press the check button on the PWD when the device beeps. Click OK in the dialog.

Network Scan

The **Network Scan** element of the **Topology** folder permits configuration and selection of network scan settings. **Network Scan** searches the network to find infrastructure devices such as access points (APs), cluster APs, or Access Point Controllers (APCs) that are used by the system.

Important You must have a Smart-hopping Zone configured in your topology before you can use the Network Scan feature. If you do not have one configured a dialog will prompt you to add a Smart-hopping Zone (6-8).

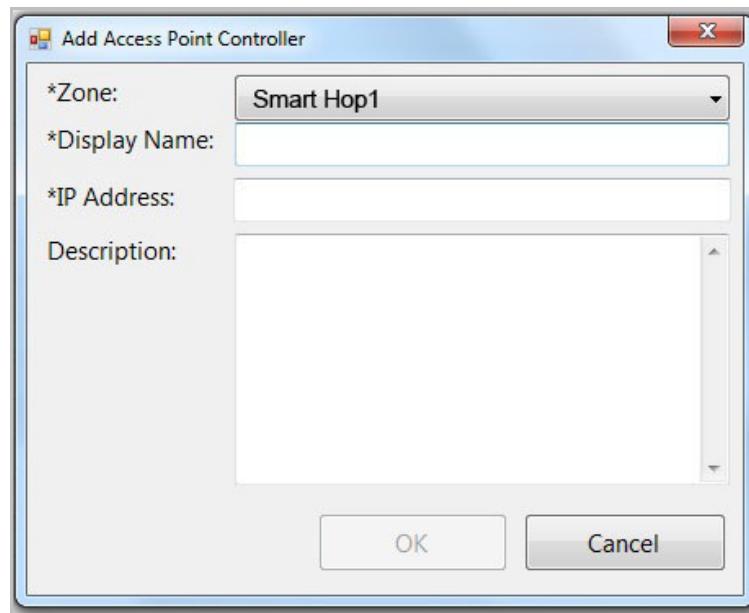
- ▶ From the **Configure** pane expand **Topology** and double-click the **Network Scan** icon. The **Network Scan Settings** dialog opens.



If you want to Add an APC

- I Click the **Add APC** icon.

The **Add Access Point Controller** dialog opens.



- 2 Select the desired **Zone** from the drop down list, then add applicable information in the dialog text boxes. When you see an asterisk before the label you **must** enter information in that text box. The **APC** dialog selections include:

***Zone**

***Display Name**

***IP Address**

Description

- 3 When all information is accurate and complete click **OK**.

The new APC populates the **Network Scan Settings** dialog.

- 4** Select the new APC in the dialog and click **Scan**.

All successfully found devices appears in the **Found Devices** list of the **Network Scan** screen. Applicable errors or messages appear at the bottom of the screen.

The screenshot shows the 'Scan' interface with the following components:

- Found Devices:** A table listing scanned devices. The columns are: Display Name, Device Type, IP Address, Status, Remote Antenna 1, and Remote Antenna 2. The data includes:

Display Name	Device Type	IP Address	Status	Remote Antenna 1	Remote Antenna 2
APC-06	Access Point Con...	172.31.241.0	Modif...		
AP-17	Access Point	172.31.242.17	New		
AP-38	Access Point	172.31.242.38	New		
AP-47	Access Point	172.31.242.47	New		
AP-88	Access Point	172.31.242.88	New		
AP-96	Access Point	172.31.242.96	New		
AP-99	Access Point	172.31.242.99	New		
- Boundary Limit:** An unchecked checkbox.
- * Zone:** A dropdown menu set to "Smart Hop".
- Save Selected Devices:** A button with a save icon.
- Errors/Messages:** A table listing errors and messages. The data includes:

Description
1 Modified Access Point Controller devices found.
6 New Access Point devices found.

- 5** If you want to change the Zone that the device is associated with click the **Zone** down-arrow and select a new zone from the list. If you want to save a device select it and click the **Save Selected Devices** button.

The new scanned devices are added to the System Topology.

The screenshot shows the System Topology interface with the following components:

- Display Name**: A column header for the list.
- Type**: A column header for the list.
- IP Address**: A column header for the list.
- Access Point** category:
 - AP-82 (Access Point) - IP: 172.31.244.139
 - AP-96 (Access Point) - IP: 172.31.244.140
- Access Point Controller** category:
 - APC-Nest1 (Access Point Controller) - IP: 172.31.241.0
 - APC-Nest2 (Access Point Controller) - IP: 172.31.241.1
- Clinical Unit** category:
 - New Unit (Clinical Unit)

If you want to Edit an APC or AP,

- 1 Right-click the desired APC or AP in the **Topology Configuration** screen and select **Properties**, or double-click the APC or AP. The **Edit** dialog opens.
- 2 Change all applicable settings.

The **APC** dialog selections include:

- *Zone**
- *Display Name**
- *IP Address**
- Description**

The **AP** dialog selections include:

- *Zone**
- *Display Name**
- *IP Address**
- Description**
- Boundary Limit checkbox**
- Remote Antenna 1**
- Remote Antenna 2**

- 3 When all information is accurate and complete click **OK**.

If you want to rename an AP or APC,

- 1 Right-click the desired AP in the **Topology Configuration** screen, then select **Rename**.
- 2 Enter the new name in the highlighted text box.

If you want to delete an AP or APC,

- 1 Right-click the desired APC in the **Topology Configuration** screen and select **Delete**.
- 2 Click **Yes** in the confirmation dialog.

If you want to configure an APC,

- Right-click the desired APC in the **Topology Configuration** screen, then select **Configure**.

The APC Configuration application opens. Refer to the *IntelliVue Smart-hopping Infrastructure Installation and Service Guide* for detailed information.

Language

The **Language** element of the **Topology** folder permits selection of **Clinical Language**, **Service Language**, and **Regional Settings**.

CAUTION PIIC iX does not support changing **Region and Language settings** directly with Control Panel. You must use the language setting capability in **PIIC iX System Setup** so that date format appears correctly in the PIIC iX features.

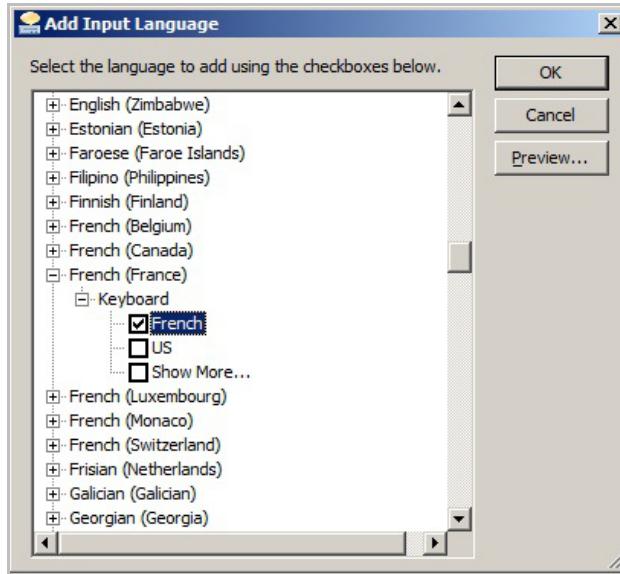
- 1 From the **Configure** pane expand **Topology** and double-click the **Language** icon in the left pane.
The **Specify Languages** dialog opens.
- 2 In the **Specify Languages** screen select desired language from the drop-down list for **Clinical Language**, **Service Language** and **Regional Settings**.
- 3 If desired change the Keyboard language.
 - a Click the **Change keyboard language** button to open the **Text Services and Input Languages** dialog, a Windows Operating System applet.



- b If you want to add a language keyboard click **Add**.

Important If you add a language keyboard remember to set it as the Default Input Language and be sure to click **Move Up** so that it appears above English.

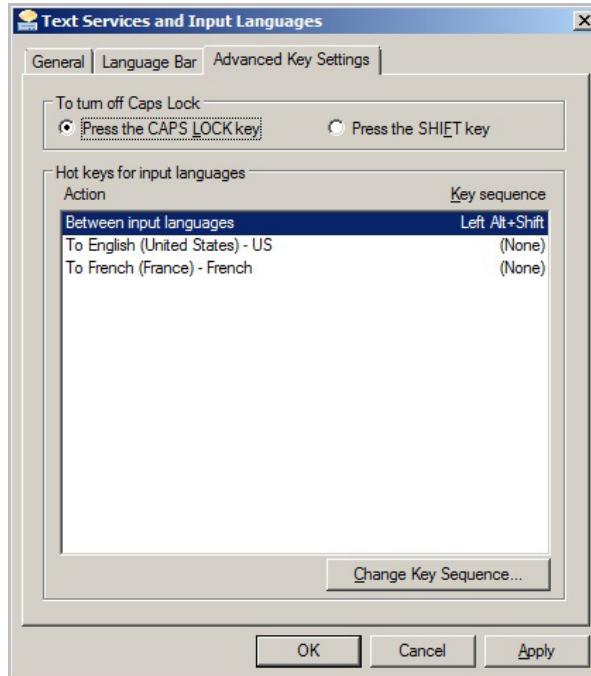
- c In the **Add Input Language** dialog expand the desired language and select the desired keyboard for the language. Then click **OK**. You can view the selected keyboard layout if you click **Preview**.



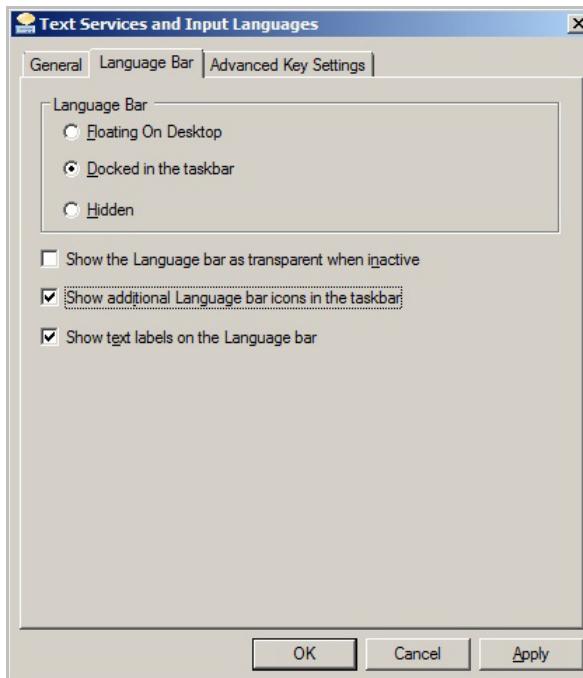
Important For the Japanese Language you must select Microsoft IME from its keyboard list.

- d On the **General** tab of the **Text Services and Input Languages** dialog go to the **Default Input Language** section at the top of the dialog and click the down arrow to select the Default input language. Then click **Apply**.
- e With the desired keyboard selected In the **Installed Services** section of the **Text Services and Input Languages** dialog click **Properties**. The **Properties for Microsoft IME** dialog opens which permits configuration. When desired changes are complete click **Ok** in the dialog.

- f In the **Advanced Key Settings** tab of the **Text Services and Input Languages** dialog you can customize hot keys for input languages if you click **Change Key Sequence**.



- g In the **Language Bar** tab of the **Text Services and Input Languages** dialog you can customize Language Bar settings appearance and location.



- h When desired changes are complete click **OK** in the **Text Services and Input Languages** dialog.

- 4 Click **OK** in the **Specify Languages** dialog.

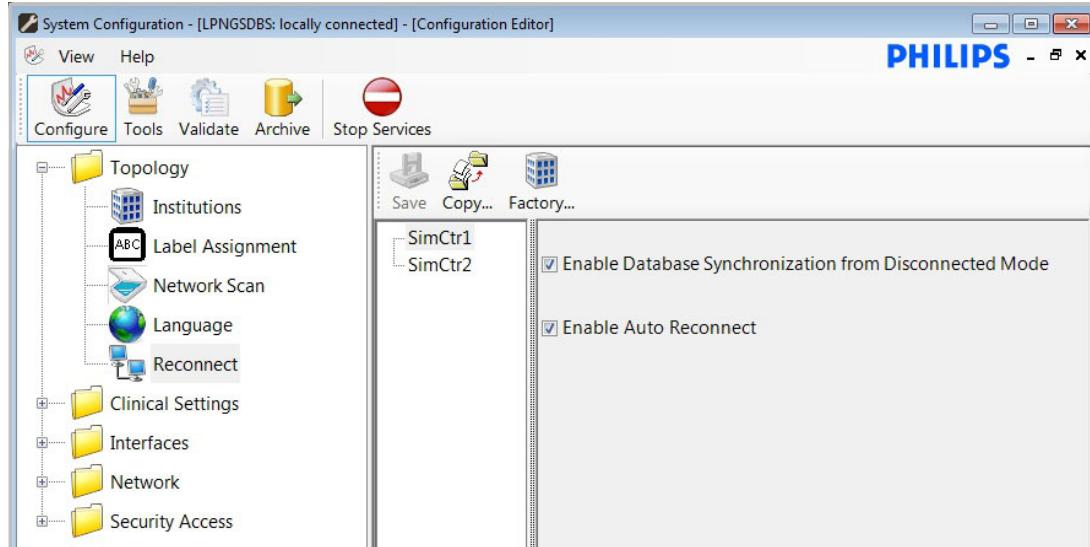
You can switch between different input languages by pressing the **Alt + Shift** keys.

Reconnect

The **Reconnect** feature permits synchronizing with the Primary Server all changes made during Local mode operation. By default the following settings are selected:

Enable Database Synchronization from Disconnected Mode

Enable Auto Reconnect



While a system is disconnected from the Primary Server you can continue to make configuration and application changes. These changes must be synchronized back to the Primary Server before reconnecting to it. If you clear the default settings, however, refer to [Page 5-59](#) for a description of transition from disconnected mode.

Clinical Settings

The **Clinical Settings** folder is a mix of clinical and technical system setup tools.

Clinical Settings folder tools include **Display Management**, **Display Setup**, **Patient Management**, **Local Surveillance**, **Colors**, **Global Settings**, **Profiles**, **Alarm Notification**, **Reports**, **Recording**, **ECG 12 Lead**, **Retrospective Configuration**, and **Wave Strip Export**.

NOTE When you change **Clinical Settings** at the PIIC iX Monitoring Application, the changes only affect the local PIIC iX host. When you change **Clinical Settings** via **System Configuration**, the changes can be targeted at any or all clinical units that are defined in the system.

*Unit-specific changes to **Patient Management**, **Local Surveillance**, **Colors**, **Global Settings**, **Profiles**, **Alarm Notification**, **Reports**, **Recording**, **ECG 12 lead**, **Update Users**, and **Data Warehouse Connect** can be made using the PIIC iX monitoring application. You can access these tools if you go to the PIIC iX **Manage Unit** application button and select **Clinical Settings**.*

System-wide changes to these clinical settings must be made in **System Configuration**. All of these clinical tools are fully described in a separate **System Clinical Configuration Guide**. Refer to the **System Clinical Configuration Guide** for a complete description of these tools, how to configure them, and the clinical implications of each selected configuration.

WARNING **Patient Category and Paced Mode set as the default for a Telemetry Profile will overwrite the default set at the bedside monitor default profile. Use care to be sure that Telemetry Profile defaults are the same as the bedside monitor profile defaults.**

CAUTION It is important that all Hospital units select consistent **Labels** for **Lifetime Id** and **Encounter Id** and that those **Labels** are not changed after initial configuration. For example, if one unit set **Lifetime Id** as **MRN** and another sets **Lifetime Id** as **SSN**, patient selection and output accuracy is compromised/mismatched.

Technical system setup information for **Display Management**, **Display Setup**, **Sector** and **Patient Window Layout, Reports, Recording, ECG 12 Lead, Retrospective Configuration**, and **Wave Strip Export** are included in the following sections.

Configuration information for **Patient Management**, **Local Surveillance**, **Colors**, **Global Settings**, **Profiles**, **Alarm Notification**, **Retrospective Configuration**, and **Wave Strip Export** is described in a separate *PIIC iX Clinical Configuration Guide*.

Display Management

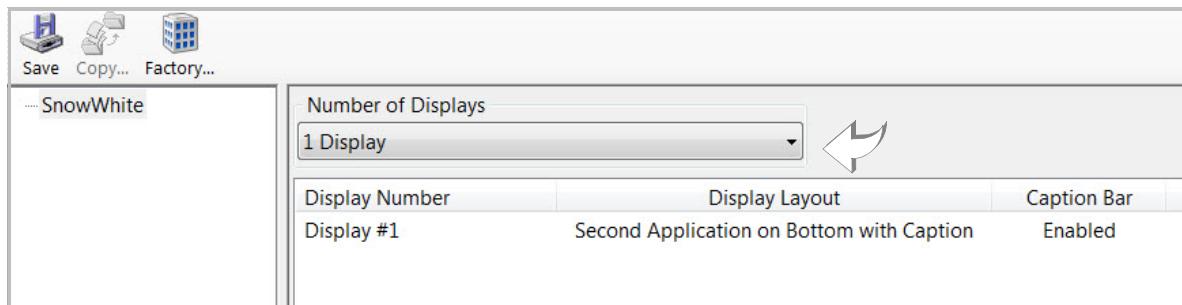
Display Management is available in **System Configuration** and permits setting the number and layout of physical displays.

The system uses Plug and Play (PnP) to try to determine screen resolution if Displays are connected. You can also access Display properties from the **Control Panel (Page 7-28)** to select the number of Displays, set screen resolution, or configure the relative positioning of the Displays.

WARNING **Be sure that you use the optimal [native] resolution for your Display or patient data may not appear accurately.**

- 1 Expand the **Clinical Settings** folder in the **System Configuration** left pane and double-click **Display Management**.
- 2 With the desired host selected go to the **Number of Displays** section of the screen, and select the desired number of Displays for that host from the drop down list.

Important If the selected host is a Patient Link device, you must open the Patient Link Display and change its **Display Layout** setting from **Surveillance** (the default) to **Application Window**. Otherwise, System Setup will not complete.



- 3 Double-click the desired Display in the **Display Number** column.
 The **Configure Display #n** screen opens and shows **Display Layout** selections.

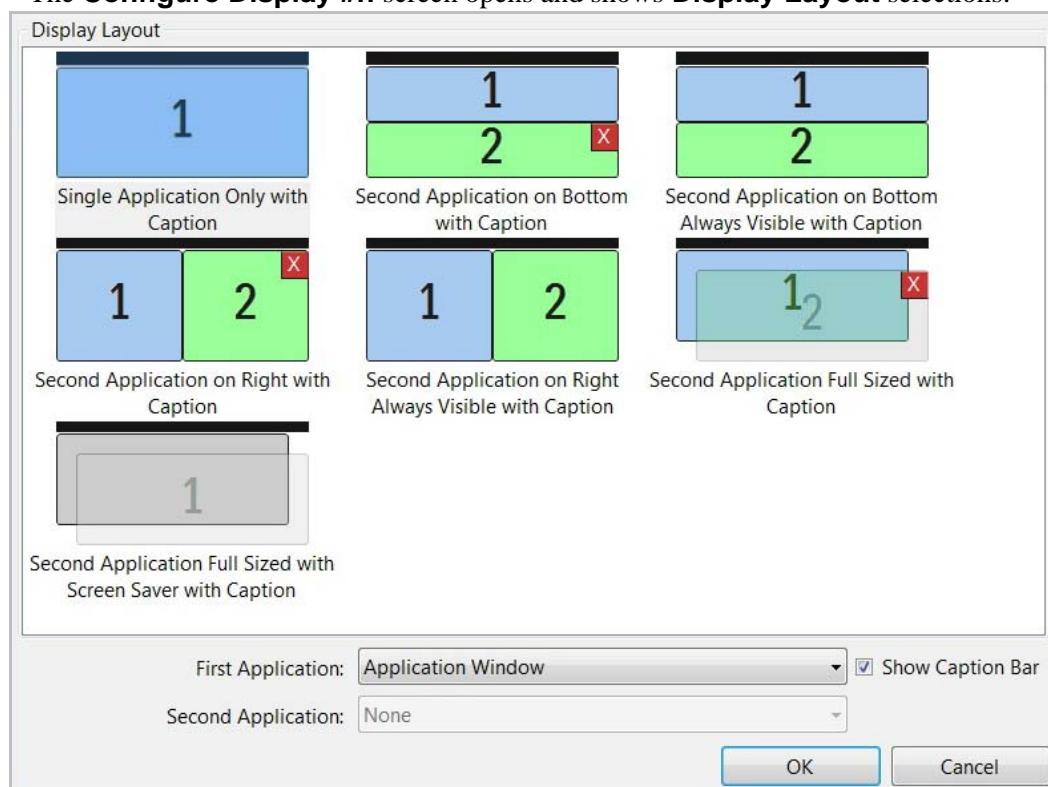


Table 6-4 Display Layout Selections

Selections/Settings	Description
Show Caption Bar	► Click check box to show caption bar. The words, with Caption , are added to Display Layout descriptions. Clear the check box to hide caption bar.
Display Layout Selections	
Single Application Only with Caption ¹	
Second Application on Bottom with Caption ¹	
Second Application on Bottom Always Visible with Caption ¹	
Second Application on Right with Caption ¹	
Second Application on Right Always Visible with Caption ¹	
Second Application Full Sized with Caption ¹	
Second Application Full Sized with Screen Saver with Caption ¹	
Application Settings	Selections
First Application	<ul style="list-style-type: none"> ■ Surveillance ■ Application Window
Second Application	<ul style="list-style-type: none"> ■ Application Window ■ None

¹ The words, **with Caption**, do not appear in **Display Layout** descriptions when the **Show Caption Bar** check box is clear.

- 4 Click the down arrow next to **First Application** and select desired setting from the list.
- 5 If applicable, click the down arrow next to **Second Application** and select desired setting from the list.
- 6 Click the **Show Caption Bar** check box if you want the Caption Bar to show, or clear the check box if you do not want the Caption Bar to show.

Important You must save Display configuration; if you do not save the configuration, a message appears.

- 7 Click **OK** to save changes or **Cancel**.

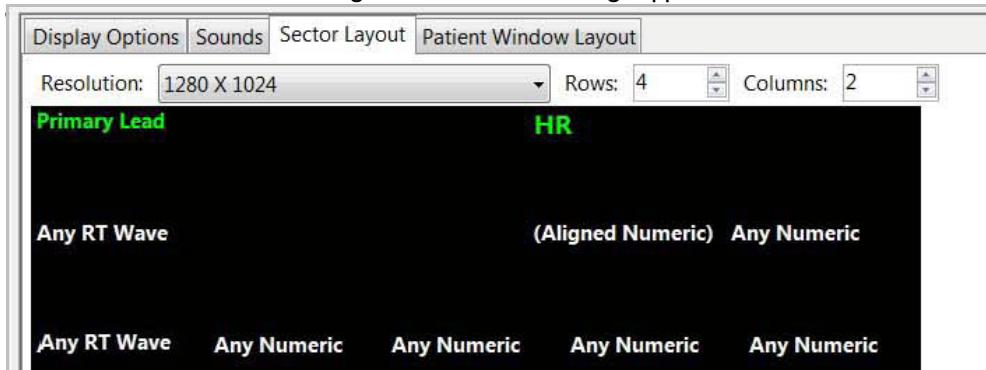
Configuring Sector and Patient Window Layout

You can configure the appearance of the PIIC iX Patient Window and Main Screen Sectors using tabs in the **Local Surveillance** tool.

- 1 Expand the **Clinical Settings** folder in the left pane of **System Configuration** and double-click **Local Surveillance**.
- 2 Click the **Sector Layout** tab to configure each patient sector; click the **Patient Window Layout** tab to configure the patient window.

Setting up Sector Layout

Important You must select a **Resolution** setting so that the sector image appears.



Sector Layout permits configuring a default layout for a sector. **Sector Layout** screen tile sections are fully described in a separate **System Clinical Configuration Guide**. Refer to the **System Clinical Configuration Guide** for a complete description of these settings and the clinical implications of each selection.

Possible menu selections appear when you click different tile areas of the screen. Description of settings in each menu are listed in **Table 6-5**.

Table 6-5 Sector Layout Settings

Menu Selection	Setting	Action/Description
Resolution	1280 x 1024 1920 x 1080 2560 x 1440 2560 x 1600	<ul style="list-style-type: none"> ■ Click the desired selection.
Rows	1 - 8	<ul style="list-style-type: none"> ■ Click the desired selection.

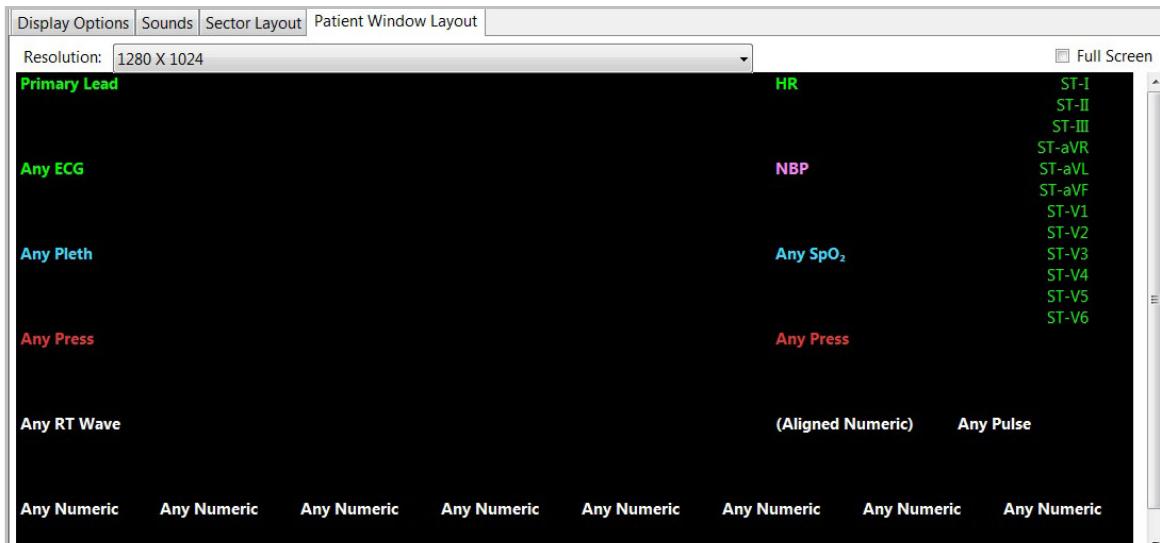
Table 6-5 Sector Layout Settings (continued)

Menu Selection	Setting	Action/Description
Columns	1 2 3 4	■ Click the desired selection. Wide screen 1920 x 1080 Displays accommodate up to 3 columns; 2560 x 1440 or 2560 x 1600 Displays accommodate up to 4 columns. If a 2560 x 1440 or 2560 x 1600 single display is configured for Application Window Side-by-Side with Surveillance, the maximum number of configurable columns is 2.
Change Layout	Big Numbers Horizon Numerics Trends ST Map STE Map Dedicated Numeric	1 Click the desired layout tile to access the Change Layout selection. 2 Click Change Layout to show a list of possible settings. 3 Click each desired setting. A check mark appears next to selection.
STs Displayed	None - No ST values appear Lateral - ST-aVL, ST-I, ST-V5, ST-V6 Inferior - ST-II, ST-aVF, ST-III Anterior - ST-V1, ST-V2, ST-V3, ST-V4	■ Click the desired selection. ST values appear in the upper right tile of the Sector.
Change Wave	Any ECG Any Pleth Any Press Any Resp Any EEG Any Agent Any Vent Any RT Wave	1 Click the desired wave tile to open the Change Wave dialog. 2 Click each desired wave in the list. A check mark appears next to selections.
Change Numeric	PVC NBP Blank Any Pulse Any SpO2 Any Press Any Resp Any EEG Any Agent Any Vent Any Temp Any SvO2 Any Numeric	1 Click the desired numeric tile in the layout to open the Change Numeric dialog. 2 Click each desired item in the list. A check mark appears next to selection.

Setting up Patient Window Layout

Patient Window Layout permits configuring default layout for the Surveillance Patient Window.

Important You must select a **Resolution** setting so that the Patient Window image appears correctly.



Patient Window Layout screen tile sections are fully described in a separate **System Clinical Configuration Guide**. Refer to the System **Clinical Configuration Guide** for a complete description of these settings and the clinical implications of each selection.

Possible menu selections appear when you click different tile areas of the screen. Description of settings in each menu are listed in **Table 6-6**.

Table 6-6 Patient Window Layout Settings

Menu Selection	Setting	Action/Description
Resolution	1280 x 1024 1920 x 1080 2560 x 1440 2560 x 1600	■ Click the desired selection.
Full Screen	Check box	■ Click the check box to select.
Change Layout	ST Map ST Snippets STE Map STE Snippets Trends Dedicated Numeric Horizon Numerics	<ol style="list-style-type: none"> 1 Click the desired layout tile to access the Change Layout selection. 2 Click Change Layout to show a list of possible settings. 3 Click each desired setting. A check mark appears next to selection.

Table 6-6 Patient Window Layout Settings (continued)

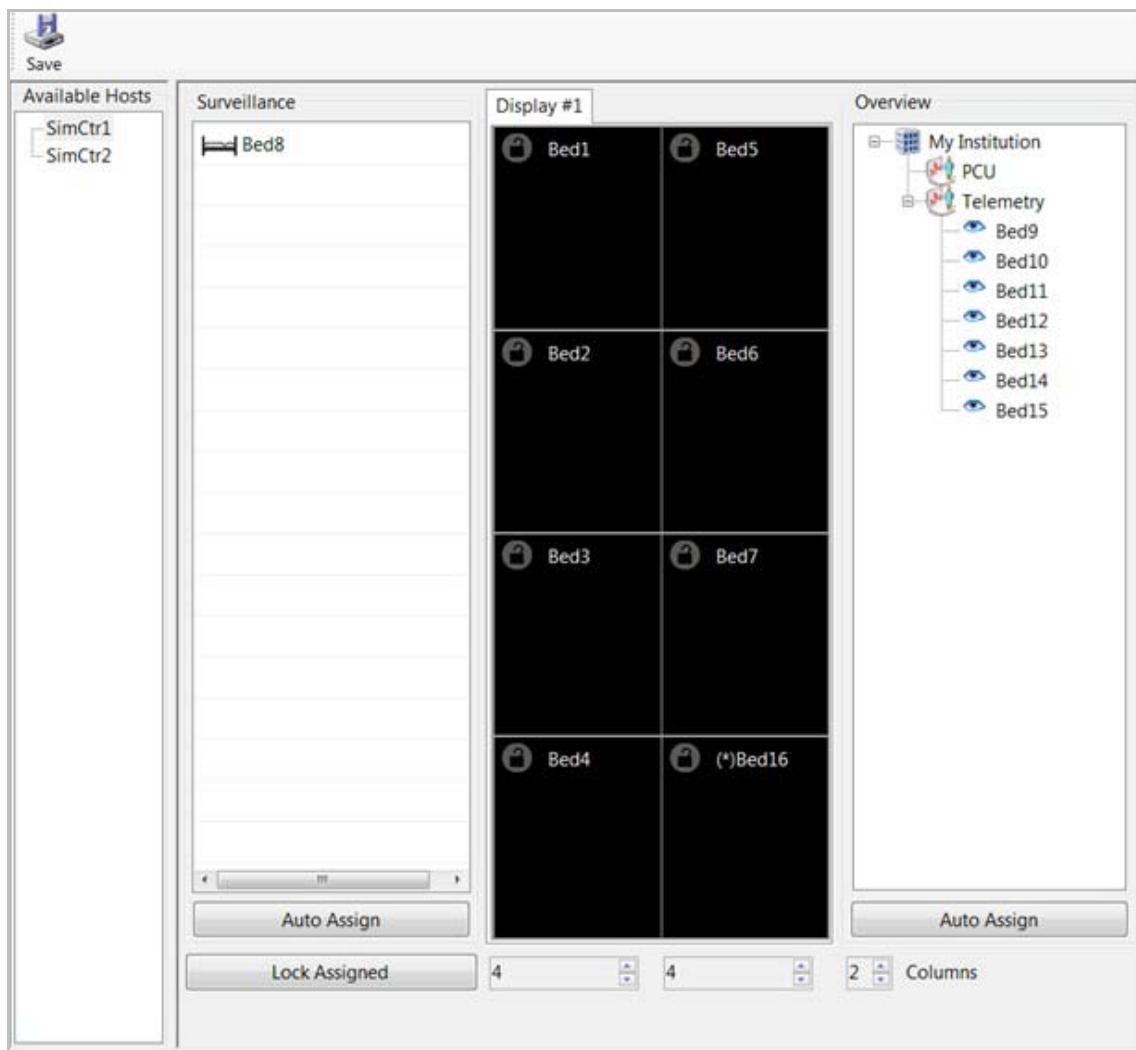
Menu Selection	Setting	Action/Description
Change Wave	Any ECG Any Pleth Any Press Any Resp Any EEG Any Agent Any Vent Any RT Wave	<p>1 Click the desired wave tile to open the Change Wave dialog.</p> <p>2 Click each desired wave in the list. A check mark appears next to selection.</p>
STs Displayed	None - No ST values appear Lateral - ST-aVL, ST-I, ST-V5, ST-V6 Inferior - ST-II, ST-aVF, ST-III Anterior - ST-V1, ST-V2, ST-V3, ST-V4 All - ST-I, ST-II, ST-III, ST-aVR, ST-aVL, ST-aVF, ST-V1, ST-V2, ST-V3, ST-V4, ST-V5, ST-V6	<p>■ Click the desired selection.</p> <p>ST values appear in the upper right tile of the Patient Window.</p>
Change Numeric	NBP Blank Any Pulse Any SpO2 Any Press Any Resp Any EEG Any Agent Any Vent Any Temp Any SvO2 Any Numeric	<p>1 Click the desired numeric tile in the layout to open the Change Numeric dialog.</p> <p>2 Click each desired item in the list. A check mark appears next to selection.</p>

Display Setup

Display Setup is available in **System Configuration** and permits setting the number of sectors that will show on each display, assigning labels to each sector (including Overview beds), and locking/unlocking a bed label to the sector.

- ▶ Expand the **Clinical Settings** folder in the **System Configuration** left pane and double-click **Display Setup**.

The default settings are 2 columns and 4 sectors per column.

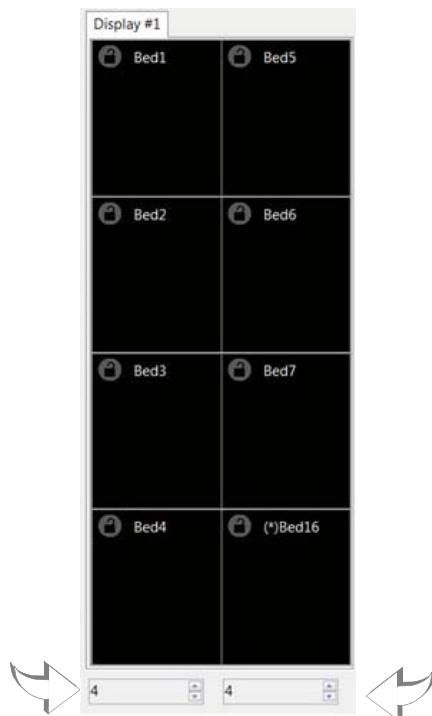


Sector and Column Layout

- I Use the up/down arrows at the bottom of the **Display Setup** screen to increase or decrease Display columns. The number of columns you can select is determined by the resolution of the Display. The preview dynamically reflects the settings you select.



- 2 After you set the number of columns use the up/down arrows beneath each column to set the number of sectors per column.

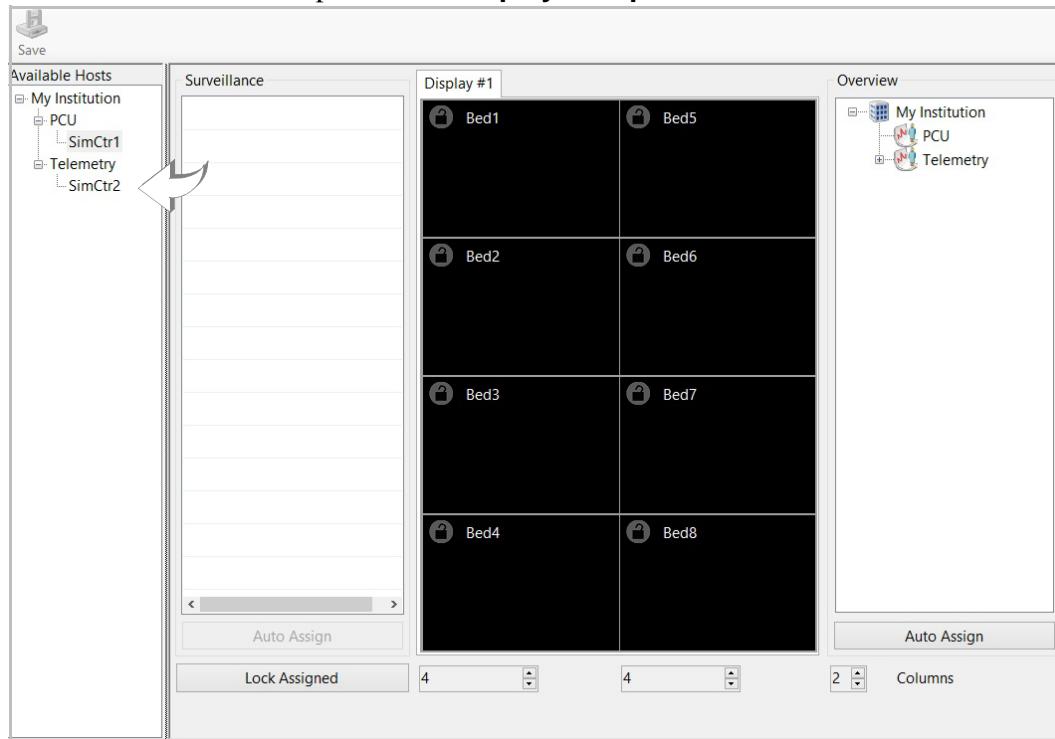


The maximum number of sectors per column is 8 for all screen resolutions. See **Table 3-1, Display Sectors**, for additional details.

Important If you are using two displays you must configure the columns and rows for each.

Assigning Bed Labels to Sectors

Lists of available **Surveillance** and **Overview** bed labels appear when you select an **Available Host** in the left pane of the **Display Setup** screen.



- If you want to manually assign a bed label, select the desired bed label from the **Surveillance** or **Overview** list then click the desired sector location.



or

Click **Auto Assign** at the bottom of the **Surveillance** or **Overview** panes to automatically populate your sectors. Available beds fill the first column in listed order, then begin filling the next column.

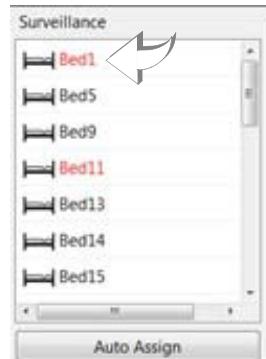
- Select the **Lock Assigned** button to lock all bed labels to their assigned sectors.

NOTE If a bed label is locked to a sector, it cannot be cleared with discharge or transfer. This does not depend on whether equipment is locked to a bed label.

- If you want to lock a specific bed label, select the lock icon in the desired sector.

CAUTION If you are using Switch Port Mapping you MUST lock bed labels to the sector.

- 4 If you want to remove a Bed Label from a sector or move it to a new location, select the **X** in the desired sector. The Bed Label will appear in its Host list in red text until it is re-assigned.



- 5 After desired changes are made to the **Display Setup** screen click **Save**.

WARNING If a patient is currently being monitored in a sector in which you un-assign the bed label and Save/Apply those changes, the patient will be discharged and a confirmation warning will appear.

If you must remove a failed Host from the topology that has sectors assigned, you can clear the sectors of that Host ([Page 6-9](#)). After the host is repaired and ready to be added to the monitoring network be sure to follow necessary steps in **Returning a Repaired Host to Monitoring**.

Reports

Important For East Asian languages, reports that are initiated at the Bedside and sent to the PIIC iX printers require special font handling described in **Table 5-7**. You may have to change System Locale properties in order for your Reports to print properly (**Page 5-72**).

When an underscore is used in the patient bed label (bed_01, for example), MRN, or Encounter ID, Electronic reports will not print.

The **Reports** configuration feature permits setting up printed reports.

- ▶ In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **Reports** icon. The **Reports** configuration feature can include the following tabs.

Layouts
Destinations
Scheduled
Monitor Reports
Monitor Queues
Electronic Reports
Strip Settings

Important The following Reports ALWAYS print in landscape format even when you try to configure them otherwise.

I2 Lead Capture Report
QT Report
ST Snippets Report
Review Report (Cardiac only--if ST Snippets tile is included in the report)

Layouts

Use the settings in the **Layouts** tab to design report appearance.

- ▶ Select the **Layouts** tab in the **Reports** screen.
Refer to **Table 6-7** for a description of the **Layouts** tab settings

Table 6-7 Layouts Tab Settings of Reports

Section/Selection	Setting/Description	Action
Configure Layout Type	Portrait Landscape	<ul style="list-style-type: none"> ■ Click the down arrow and select desired setting.
Header	Selections in the Header section allow adding a Report Name , Bed Label , and including an Addressograph imprint area. You can select up to six <i>Patient Identifiers</i> to appear at the top of each printed report.	<ul style="list-style-type: none"> ■ Entered desired Report Name in the Custom Text box. ■ If desired click the Addressograph check box.

Table 6-7 Layouts Tab Settings of Reports

Section/Selection	Setting/Description	Action
Patient Identifier Selections	Patient Name Lifetime ID Bed Unit Name Institution Name Encounter ID Alternative ID DOB None	■ Click the down arrow and select desired setting for up to six patient identifiers to appear on each report.
Footer	Selections in the Footer section allow adding Custom Text to title the report and selecting up to three <i>Patient Identifiers</i> to appear in the footer area of each printed report.	■ Enter desired text in Custom Text box.
Patient Identifier Selections	Patient Name Lifetime ID Bed Unit Name Institution Name Encounter ID Alternative ID DOB None	■ Click the down arrow and select desired setting for up to three patient identifiers to appear in the footer of each report.
Print Time	Automatically records Print Time	
Page Number	Automatically records Page Number	
Margins		
Top (mm) Left (mm) Bottom (mm) Right (mm)	0 - 100	■ Click the up/down arrows to select desired setting.

Destinations

Use the settings in the **Destinations** tab to set up the printing location of reports.

- 1 In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **Reports** icon.
 - 2 Select the **Destinations** tab in the **Reports** screen.
- Refer to **Table 6-8** for a description of the **Destinations** tab settings.

Table 6-8 Destination Tab Settings of Reports

Section/Selection	Setting	Action
Reports	12-Lead Capture¹ Alarm Alarm Summary ECG Statistics Multi Lead Patient Summary QT¹ Review¹ ST ST Snippets¹ Strip Tabular Trend Clinical Settings Unit Summary	■ Click the desired report to select it.
Layout Type	Portrait Landscape	■ Click the down arrow to select desired setting.
Default Print Action	Paper Electronic Document Paper and Electronic Do Not Print	■ Click the down arrow to select desired setting from the list.
Prompt User for Print Action		■ Click the check box to select.
Print Settings		
Printers	<i>Configured Printers are added to list (Page 5-69).</i>	■ Click the down arrow to select desired printer.
Max # of Pages²	1, 2, 3, 4, 5, 10	■ Click the down arrow to select desired setting from the list.
Color		■ Click the check box to select.
Duplex		■ Click the check box to select.

¹ Printout is always in Landscape format.

² Available on Alarm, ECG Statistics, and Tabular Trend reports

Scheduled

Use the settings in the **Scheduled** tab to set up automatic printing of reports.

- 1 In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **Reports** icon.
- 2 Select the **Scheduled** tab in the **Reports** screen.

Refer to **Table 6-9** for a description of the **Scheduled** tab settings

Table 6-9 Scheduled Tab Settings of Reports

Section/Setting		Action
Reports		
Unit Summary		■ Click the desired report to select it.
Alarm		
Alarm Summary		
Patient Summary		
Tabular Trend		
ECG Statistics		
Start Time	24 Hour Range	■ Click the up/down arrows to set desired start time.
Frequency	None Every Hour Every 2 Hours Every 4 Hours Every 6 Hours Every 8 Hours Every 12 Hours Every 24 Hours	■ Click the down arrow to select desired setting.
Alarm Types (included in Alarm Report)	Red Alarms Yellow Alarms ECG Alarms Non-ECG Alarms Saved Strips	■ Click the down arrow to select desired setting.
Tabular Interval (included in Tabular Trend Report)	NBP Interval 1 Minute 5 Minutes 10 Minutes 15 Minutes 30 Minutes 1 Hour 2 Hours	■ Click the down arrow to select desired setting.
Tabular Interval (included in ECG Statistics Report)	Algorithm Interval 1 Minute 5 Minutes 10 Minutes 15 Minutes 30 Minutes 1 Hour 2 Hours	■ Click the down arrow to select desired setting.

Monitor Reports

If a host is licensed for patient connections, the **Monitor Reports** tab appears and permits configuration of wireless device reports.

- 1 In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **Reports** icon.
- 2 Select the **Monitor Reports** tab.

Refer to **Table 6-10** for a description of the **Monitor Reports** tab settings.

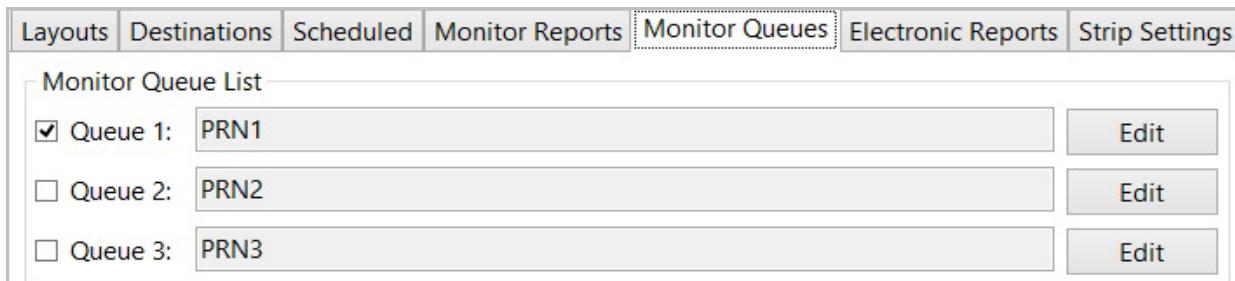
Table 6-10 Monitor Reports Tab Settings of Reports

Section/Setting		Action
Reports		
Central Report A		■ Click the desired report to select it.
Central Report B		
Central Report C		
Report Configuration		
Report Type	Alarm (Default Central Report A) Alarm Summary Patient Summary (Default Central Report B) Tabular Trend (Default Central Report C)	■ Click the down arrow to select desired setting.
Max # of Pages	1 - 5, 10	■ Click the down arrow to select desired setting.
Alarm Types (included in Alarm Report)	Red Alarms Yellow Alarms ECG Alarms Non-ECG Alarms Saved Strips	■ Click the down arrow to select desired setting.
Tabular Interval (included in Tabular Trend Report)	NBP Interval 1 Minute 5 Minutes 10 Minutes 15 Minutes 30 Minutes 1 Hour 2 Hours	■ Click the down arrow to select desired setting.

Monitor Queues

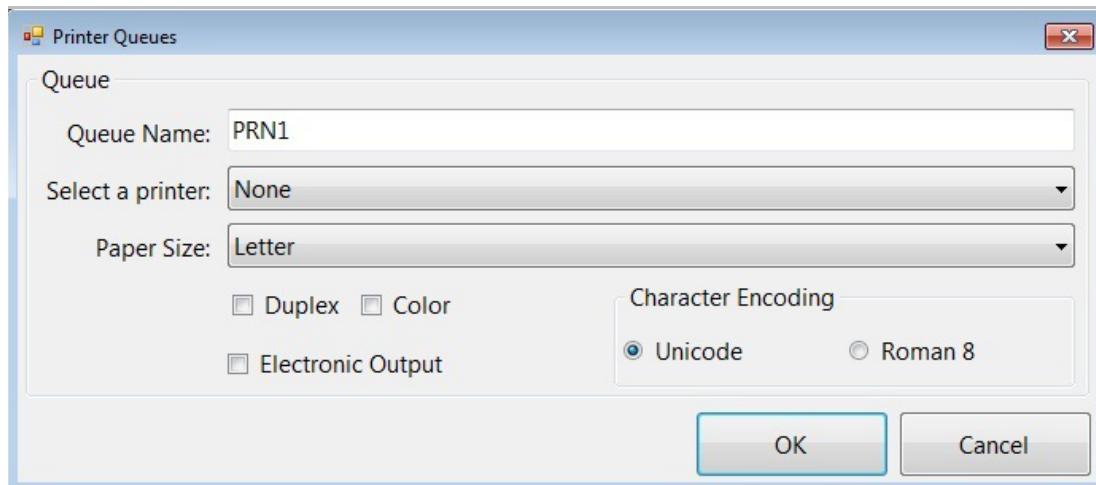
The **Monitor Queues** tab of the **Reports** screen permits configuring queues in the **Bedside Queue List**. Configured print Queues are available at the Bedside after the configuration is saved or when the PIIC iX starts up.

- 1 In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **Reports** icon.
- 2 Select the **Monitor** tab.



Edit a desired Queue as follows:

- 1 Three print Queues can be configured. With desired Queue in the **Monitor Queue List** selected click **Edit** to open the **Printer Queues** dialog.



2 Enter or select desired information in the dialog.

Setting	Description/Selections
Queue Name	Automatically populates with PRNI You can customize this name. It is the alias that a bedside monitor uses to queue reports.
Select a printer	Permits selection of a desired Printer or setting from the list Selection list populates with devices in the Printers list of the Destinations tab as well as the default setting, None . For printed output: You must select a printer in the drop-down list if you want to print hard copy reports. For Electronic Reports: If you want to print electronic reports you must select None , which is the default setting.
Paper Size	Permits selection of paper A3, Ledger, A4, Letter
Duplex	Permits dual sided printing when you click the check box
Color	Permits color printing when you click the check box
Electronic Output	Available as a licensed feature and permits pdf output when accurately configured Refer to Electronic Reports .
Character Encoding	Unicode Roman 8

3 Click **OK** or **Cancel** when **Printer Queue** dialog is complete.

Important Reports at the Bedside Monitor must be configured to the proper Queue by name in order for printing to be successful. For example, If the Queue Name at the PIIC iX is PRNI and is configured for output to a working printer, then the bedside would select PRNI for report output. It is also important that a printer is defined. Although the Queue is set by default the **Select a Printer** setting **None** as the default, which is will cause no hard copy reports to be printed from the bedside.

Electronic Reports

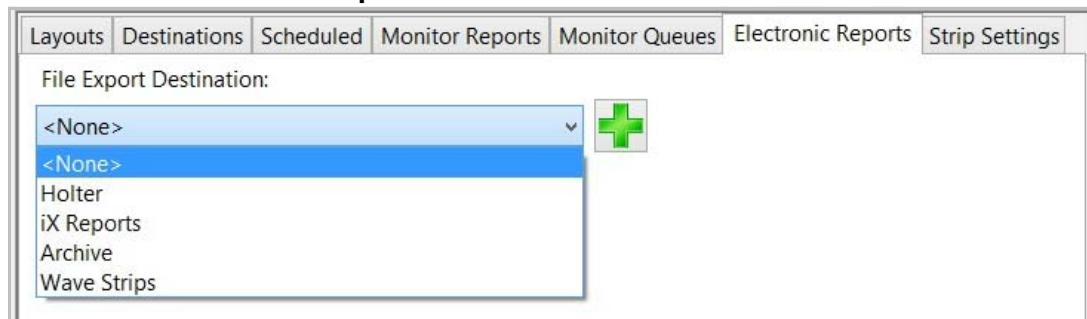
The **Electronic Reports** tab of the **Reports** screen permits configuring electronic distribution of reports to EMR members.

Important The computer from which you/open view your pdf report must have the Adobe Reader Font Packs-Asian and Extended Language Pack installed to display special characters although the report is English. Otherwise, an attempt to open the report will produce errors and data will be missing.

When and underscore is used in the patient bed label, MRN, or Encounter ID, Electronic reports will not print.

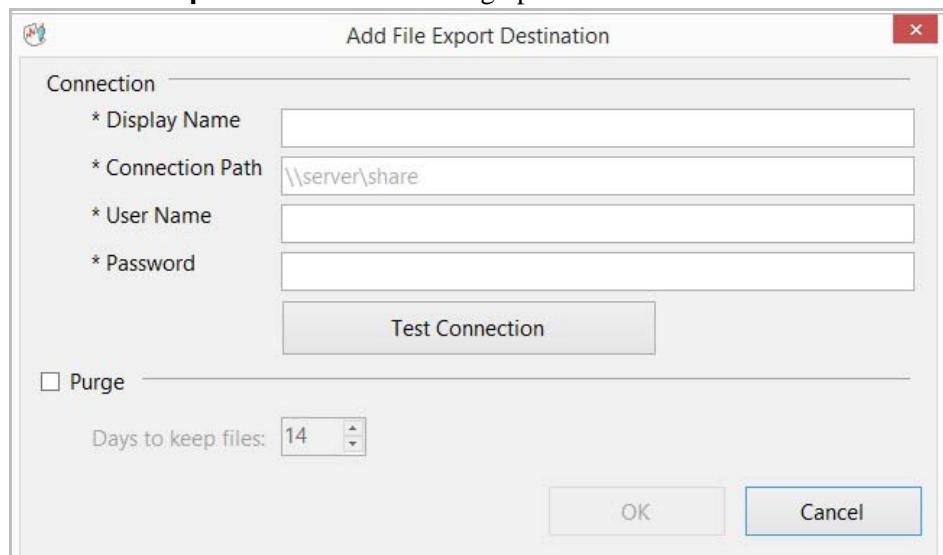
- I In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **Reports** icon.

2 Select the **Electronic Reports** tab



Important If a shared output location is configured ([Page 6-4](#)) and added using **File Export Destinations** ([Page 6-106](#)) that location appears as a selection in the drop-down list for the electronic report.

- 3 Click the **File Export Destination** down-arrow and select the desired location from the list.
- 4 If you want to add a File Export Destination, double-click the icon. The **Add File Export Destination** dialog opens.



Important Be sure that the **Connection Path** text box entry is a configured, shared folder location with access permission. Refer to [Setting File Sharing Locations](#).

- a In the **Connection** section of the dialog add the following:

***Display Name**
***Connection Path**
***User Name**
***Password**

- b Click the **Test Connection** button.

If a file can be written to the destination a *Connection Successful* message appears, otherwise a *Connection Failed* message appears. If necessary refer to [Setting File Sharing Locations](#).

- c If you want to purge the file share after a specific time click the **Purge** check box, then use the up/down arrows to choose the **Days to keep files** setting.
- d When dialog entries are complete click **OK**.

Important You must enter/select the configured network share on each Overview station in your topology. Although the Overview station inherits the capability to generate an electronic report from the System licensing, the share configured on the PIIC iX host must be entered. Before entering the Connection Path on the Overview station be sure that you clear the **Filter by License** selection in the **System Configuration View** menu.

Printing Copies of Electronic Reports

If you want to print a copy of your electronic (pdf) report, be aware of the following.

- Default left and right margins for PIIC iX Reports are 0 mm but can be configured.
- A pdf printed with 0 mm margins will extend to the edge of the image, but when you print that pdf to the same size paper on a printer that will insert margins, one of the following things will happen.
 - *No scaling* causes the edge of document to be cut off by the printer.
 - *Scale to fit* changes the original document scale so that it is no longer 25 mm/sec.
- Because the generated Reports documents have no margins you must crop or scale in the pdf **Print** setup in order for the printed output to display accurately.

Strip Settings

The **Strip Settings** tab permits setting e pre- and run times of a printed strip, similar to Recording.

- 1 In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **Reports** icon.
- 2 Select the **Strip Settings** tab

Layouts	Destinations	Scheduled	Monitor Reports	Monitor Queues	Electronic Reports	Strip Settings
Alarm Pre Time: 4 seconds Duration: 6 seconds			Review Pre Time: 10 seconds Duration: 30 seconds			

Setting	Description/Selections
Alarm	
Pre Time	Permits setting the amount of time before the time focus of the strip 4 Seconds, 6 Seconds, 8 Seconds, 10 Seconds
Duration	Permits setting the recording duration, which includes set Pre Time 4 Seconds, 6 Seconds, 8 Seconds, 10 Seconds, 15 Seconds, 20 Seconds
Review	
Pre Time	Permits setting the amount of time before the time focus of the strip 4 Seconds, 6 Seconds, 8 Seconds, 10 Seconds
Duration	Permits setting the recording duration, which includes set Pre Time 4 Seconds, 6 Seconds, 8 Seconds, 10 Seconds, 15 Seconds, 20 Seconds

Recording

The **Recording** feature permits assignment of recorders to Clinical Unit Hosts and configuration of recording settings.

- ▶ In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **Recording** icon.

The **Recording Configuration Feature** includes **Recording Settings** and **Recorder Assignments** tabs.

Recording Settings

The **Recording Settings** tab of the **Recording** feature permits setup of recording strips.

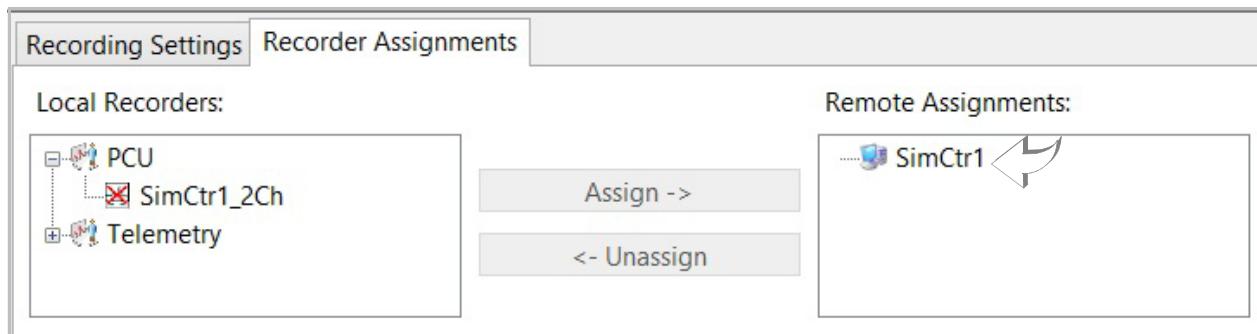
Recording Settings	Recorder Assignments
Delayed/Alarm	
Pre Time:	4 seconds
Run Time:	6 seconds
Speed:	25.0 mm/s
<input checked="" type="checkbox"/> Extend recording duration to record all vital signs	
 <input checked="" type="checkbox"/> Alarm Recorder Status Message	
Review	
Pre Time:	10 seconds
Run Time:	30 seconds

Table 6-11 Recording Settings

Section/Setting	Action
Real time/Alarm	
Pre Time	4 seconds 6 seconds 8 seconds 10 seconds
Run Time	4 seconds 6 seconds 8 seconds 10 seconds 15 seconds 20 seconds
Speed	6.25 mm/s 12.5 mm/s 25.0 mm/s 50.0 mm/s
Extend recording duration to record all vital signs	<ul style="list-style-type: none">■ Click the check box to select.
Review	
Pre Time	4 seconds 6 seconds 8 seconds 10 seconds
Run Time	4 seconds 6 seconds 8 seconds 10 seconds 15 seconds 20 seconds 30 seconds
Alarm Recorder Status Message	<ul style="list-style-type: none">■ Click the check box to select.

Recorder Assignments

The **Recorder Assignments** tab of the **Recording** feature accommodates assignment of Recorders to each PIIC iX or Small Server iX.



At installation each host is assigned one USB Recorder icon. For example, in the illustration Host *SimCtr1* in the *PCU* Clinical Unit is assigned *SimCtr1_2Ch*. A small **X** appears beside the recorder if there is no physical hardware connection configured. You can assign any recorder as a recording destination, however, before it is physically installed.

Important PIIC iX does not support recording to a local and remote recorder concurrently.

- 1 With Host selected in **Recorder Assignments** list click the desired Recorder in the **Local Recorders** list. Then click **Assign**.
- 2 If you want to remove the recorder from assignment click **Unassign**.

ECG 12 Lead

The **ECG 12 Lead** interface permits analysis and storage of 12-lead data capture performed at the bedside.

During a capture a 12-lead is transferred from the bedside to the PIIC iX, where the wave data is formatted and passed to the DXL algorithm for analysis. After it is analyzed, the 12-lead is stored in the database.

Important If you are using DatamedFT™ to convert EKG data to another format you must select the Processing Option, **Add a statement when the EKG contains derived leads** when you configure Datamed. This action produces a printed statement on the 12-lead report that identifies derived leads.

- ▶ In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **ECG 12 Lead** icon.

The **ECG 12 Lead** Configuration Feature includes **Setup, Analyze, Export, and Order Reasons** tabs.

Setup

Setup	Analyze	Export	Order Reasons
Filter Adult 0.15 Hz ▾ 100 Hz ▾	Filter Pedi 0.15 Hz ▾ 150 Hz ▾	Format 3x4 1R ▾	
Gain 10 mm/mV ▾	Chest Gain Full ▾	Rhythm Lead 1 II ▾	
Paper Speed 25.0 mm/s ▾		Rhythm Lead 2 aVF ▾	
Time Sequential ▾		Rhythm Lead 3 V5 ▾	
		Lead Sequence Standard ▾	

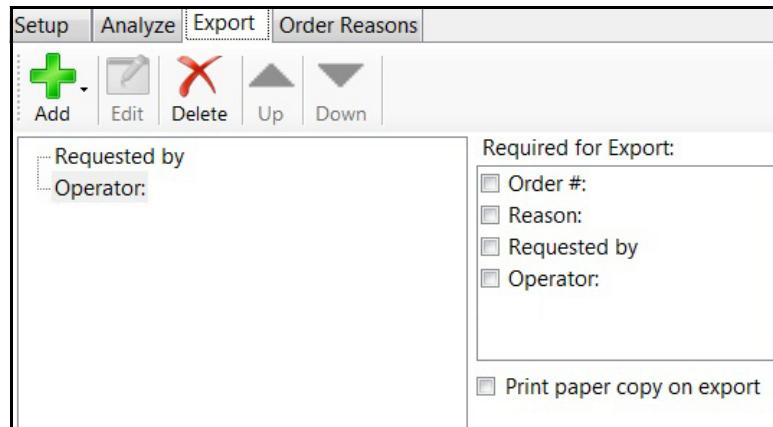
Setting	Description/Selections	Action
Filter Adult	Low Range: 0.05 Hz 0.15 Hz 0.5 Hz High Range: 40 Hz 100 Hz 150 Hz	■ Click the down arrow adjacent to each range to select desired setting.
Filter Pedi		
Gain	2.5 mm/mV 5 mm/mV 10 mm/mV 20 mm/mV	■ Click the down arrow to select desired setting.

Setting	Description/Selections	Action
Chest Gain	Full Half	■ Click the down arrow to select desired setting.
Paper Speed	25.0 mm/s 50.0 mm/s	■ Click the down arrow to select desired setting.
Time	Sequential Simultaneous	■ Click the down arrow to select desired setting.
Format	I2 x I 6 x 2 3 x 4 3 x 4 IR 3 x 4 3 R 3 x 4 STMap 3 x 4 IR STMap	■ Click the down arrow to select desired setting.
Rhythm Lead 1	I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6	■ Click the down arrow to select desired setting.
Rhythm Lead 2		
Rhythm Lead 3		
Lead Sequence	Standard Cabrera	■ Click the down arrow to select desired setting.

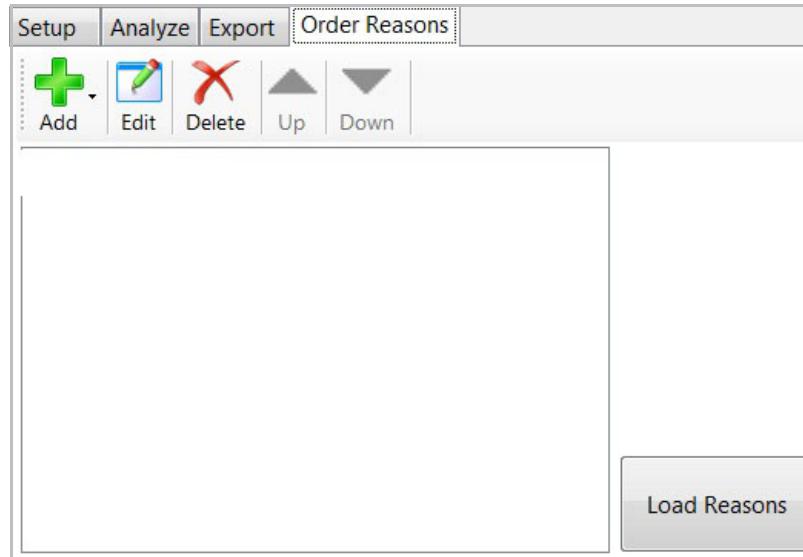
Analyze

Setup	Analyze	Export	Order Reasons
Algorithm PH100B	Interpretive Statements Show Interpretations Only	<input checked="" type="checkbox"/> ECG <input checked="" type="checkbox"/> Critical Values	
QTc Formula Bazett	Borderline Statement Suppression Include All	<input checked="" type="checkbox"/> STEMI-CA <input type="checkbox"/> Estimated MI	
Additional QTc <None>	Adult Bradycardia ... 50 BPM	Acute MI Sensitivity Standard	
<input type="checkbox"/> Print paper copy			

Setting	Description/Selections	Action
Algorithm	PH100B PH110C	■ Click the down arrow to select desired setting.
Interpretive Statements	Show Interpretations and Reasons Show Interpretations Only Hide Interpretations and Reasons	■ Click the down arrow to select desired setting.
QTc Formula	Bazett	Formula appears and cannot be changed. Bazett is the default.
Borderline Statement Suppression	Include All Exclude Low Certainty Exclude All	■ Click the down arrow to select desired setting.
Additional QTc	None Fridericia Hodges Framingham	<p>■ Click the down arrow to select desired setting. When the algorithm setting is Sedici, Hodges and Fridericia choices are not available.</p> <p>The selected formula is used to calculate and report a second QTc value.</p>
Adult Bradycardia Limit	50 BPM 60 BPM	■ Click the down arrow to select desired setting.
Acute MI Sensitivity	Standard Low Sensitivity/High Sensitivity	■ Click the down arrow to select desired setting.
ECG Measurements	Show ECG Measurements	■ Click the check box to select.
Critical Values	Show Critical Values	■ Click the check box to select.
STEMI-CA	Show STEMI Culprit Artery	■ Click the check box to select.
Estimated MI Size	Show Estimated MI Size	■ Click the check box to select. Not used by Sedici algorithm
Print paper copy immediately		■ Click the check box to select.

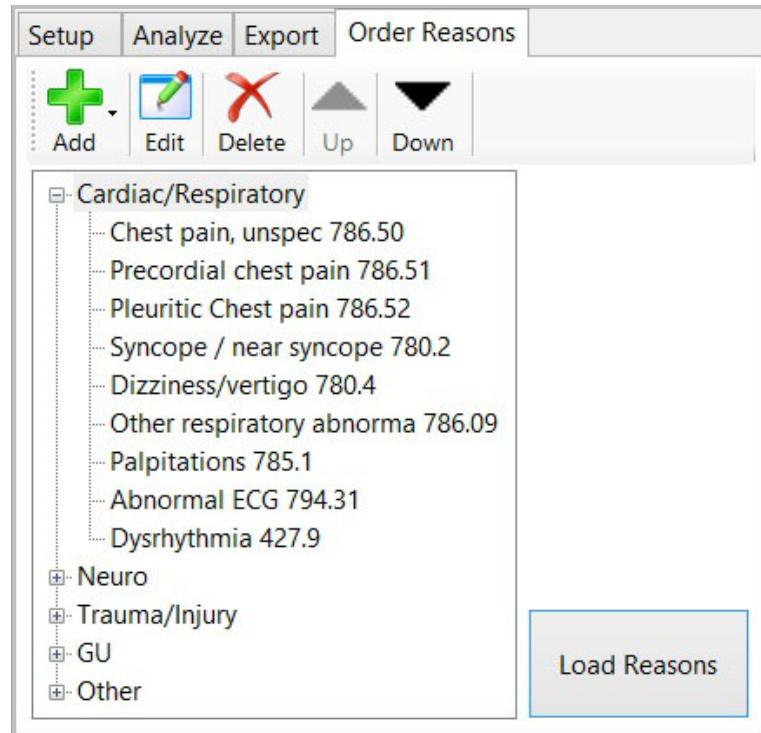
Export

- **Add/Edit/Delete** icons permit adding, editing, or deleting individuals as members of **Requested by**, or **Operator** list.
- **Up/Down** arrows permit changing position of **Requested by** or **Operator** list members.
- **Required for Export** check boxes permit selecting items that must be included in the Export: **Order #**, **Reason**, **Requested by**, or **Operator**.
- **Print paper copy on export** check box generates a printed copy of the export.

Order Reasons

- **Add/Edit/Delete** icons permit adding, editing, or deleting categories or reasons within those categories to the **Load Reasons** list.
- **Up/Down** arrows permit changing position of specific Load Reasons within a Category.

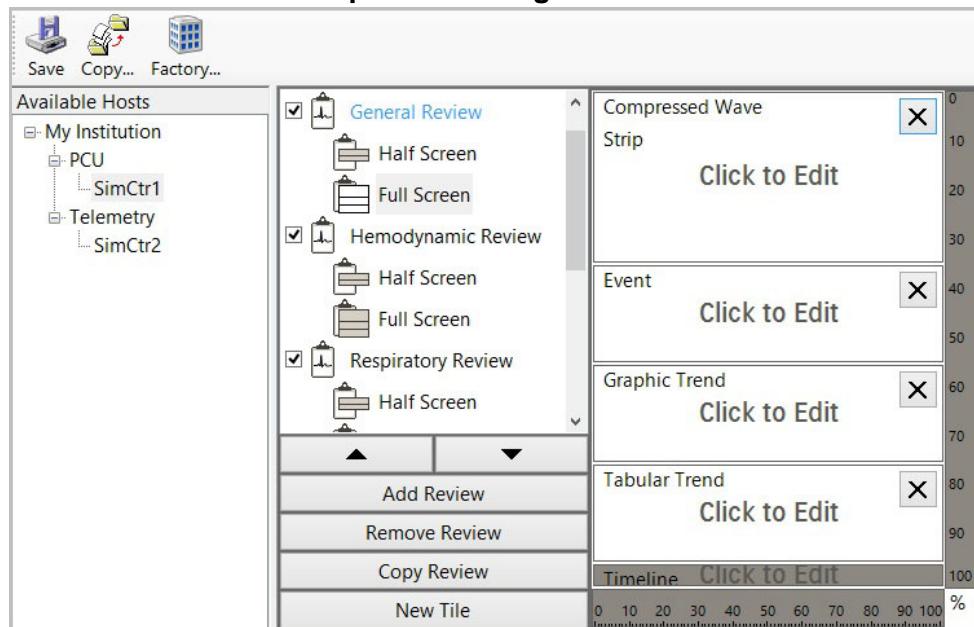
- **Load Reason** button populates the list with default categories and reasons. These categories are US categories and reasons for US billing systems.



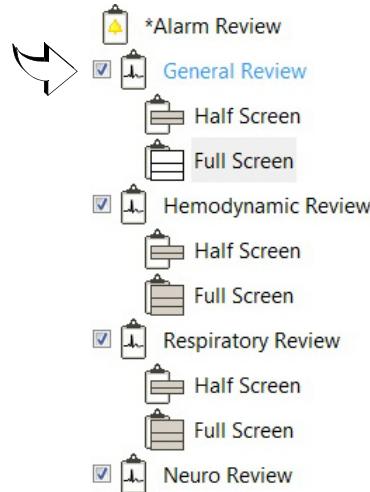
Retrospective Configuration

The **Retrospective Configuration** feature permits customized configuration of clinical information layouts for retrospective applications. The Retrospective Configuration feature is fully described in a separate **System Clinical Configuration Guide**.

- I In the left pane of the **System Configuration** screen expand the **Clinical Settings** folder and double-click the **Retrospective Configuration** icon.



- 2 Select the desired host, then check the Review applications you want to display per unit. You can display up to 12 applications including **Alarm Review** which is always visible. Default selections are **Alarm Review, General Review, Hemodynamic Review, Respiratory Review, Neuro Review, Cardiac Review, and 12-Lead Review**.



- 3 Select **Half Screen** or **Full Screen** for each selected application. You must configure both screen modes because configurations do not transfer or copy from one screen mode to the other.

- 4 Select desired waves in each Tile by clicking the **Click to Edit** text in the selected tile. Tile Setup dialogs are unique to the Review application; default settings are in **Table 6-12**.

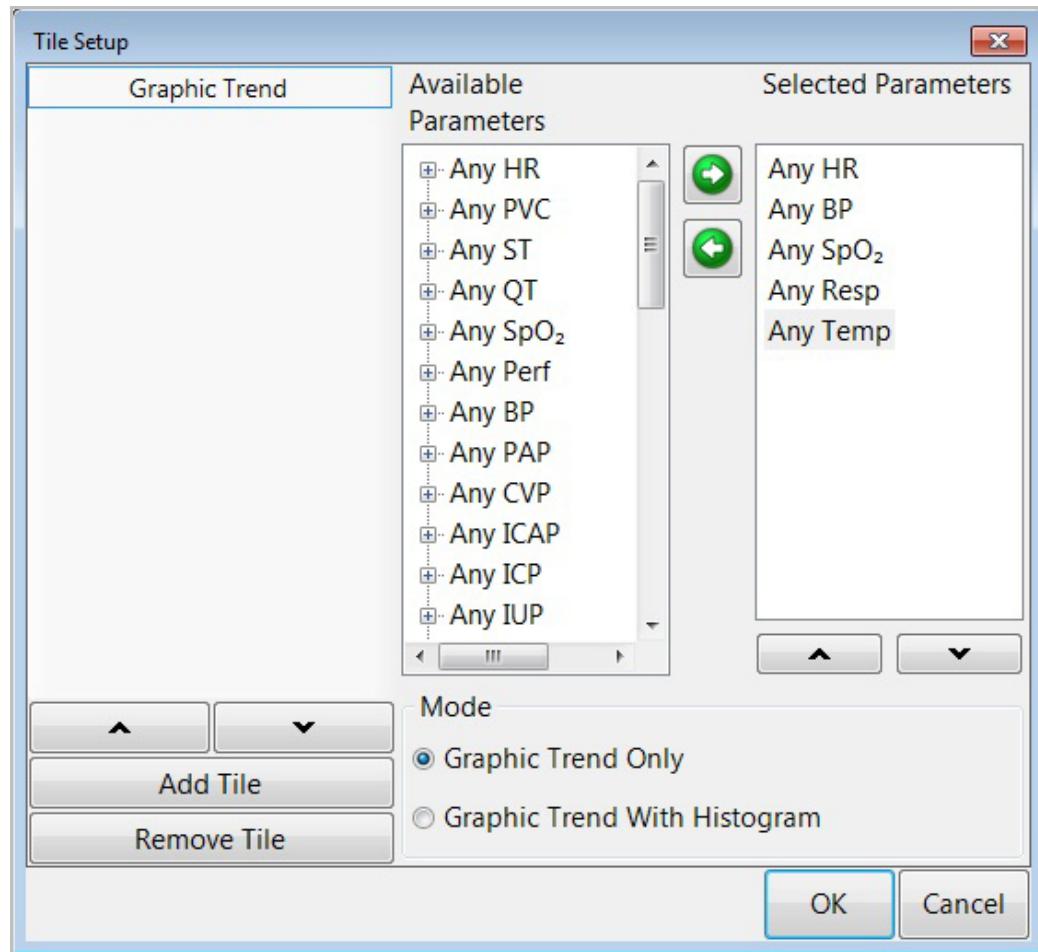
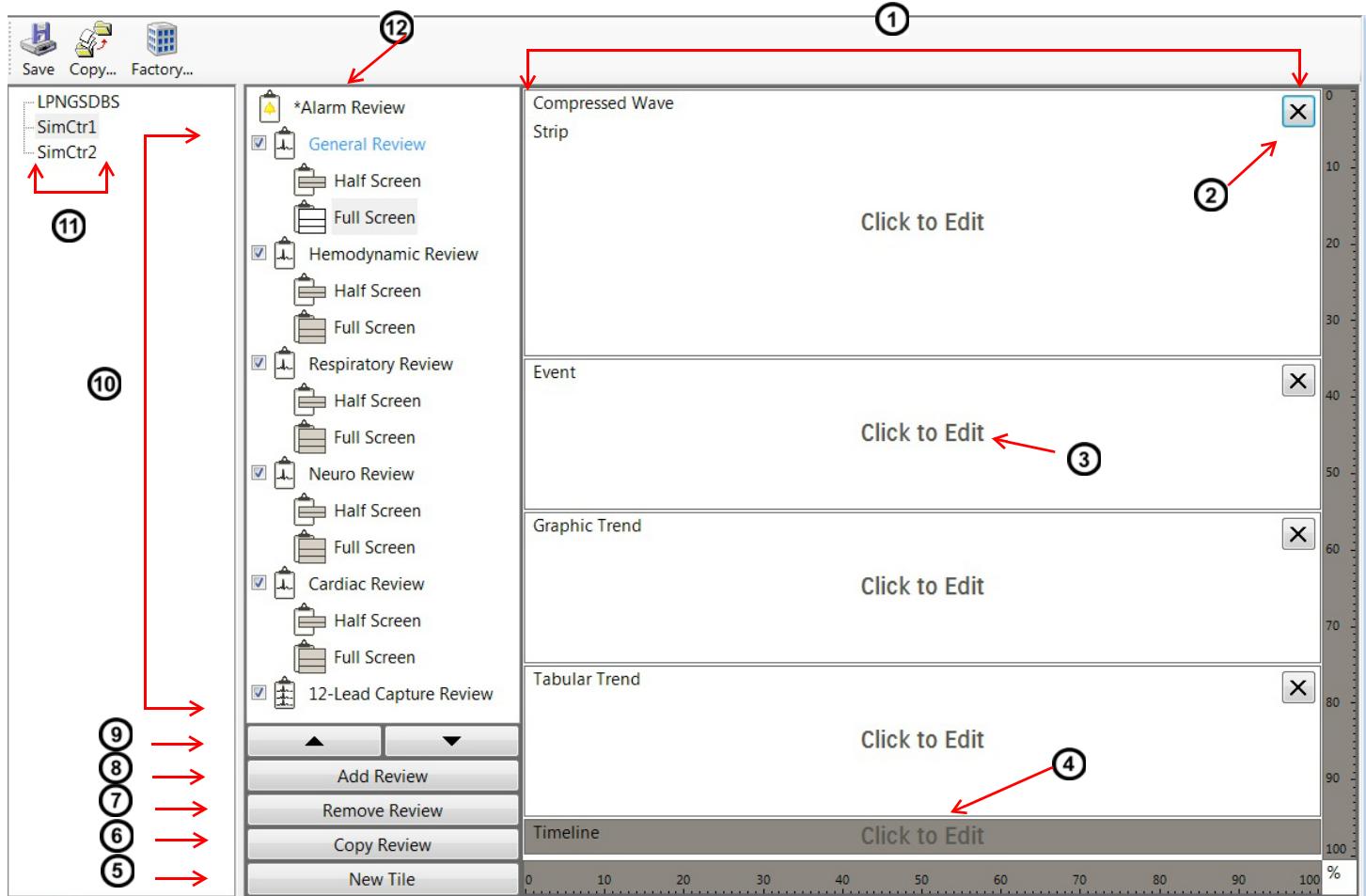


Figure 6-1 Tile Setup Dialog Example



1	Review application configuration workspace	Provides a template area where you can configure the display of selected Review applications	
2	X	Permits deleting an individual tile	<ul style="list-style-type: none"> ■ Click to remove the tile from the workspace.
3	Click to Edit	Opens a Tile Setup dialog that permits customizing the tile	<ul style="list-style-type: none"> ■ Click to open the Tile Setup dialog.
4	Timeline	Permits setting View Duration and Timeline Duration for any Review application except Alarm Review <p>Notes: Changes to timeline settings will not display in a PIIC iX Express. Changes to the Timeline settings in any Review application will change all Review application, including Alarm Review.</p>	<ol style="list-style-type: none"> 1 Click the Click to Edit text in the Timeline to open the Tile Setup dialog. 2 In the Tile Setup dialog click the View Duration down arrow and select a duration in the list. 1, 2, 3, 4, 6, 8, or 12 Hours 3 Click the Timeline Duration down arrow and select a duration in the list. 1, 2, 4, 6, 8, 12, 24, and 48 Hours 4 Click OK in the dialog.

5	New Tile	<p>Permits adding a new tile to an existing or copied Review application</p> <p>Graphic Trend, Tabular Trend, Compressed Wave, Strip, Event, ST Map, ST Snippets, Multi-Lead, ECG Statistics</p> <p>Note: New tiles can be situated horizontally or vertically.</p>	<ol style="list-style-type: none"> 1 With the desired application selected click New Tile. The cursor changes to +. 2 Drag the + to the desired place on the workspace, then click in the highlighted area. 3 Click a selection in the Choose a Tile Type dialog then click OK.
6	Copy Review	<p>Permits copying an existing Review configuration to create a new application</p> <p>Alarm Review and 12 Lead Capture Review cannot be copied.</p>	<ol style="list-style-type: none"> 1 Select an existing Review application then click Copy Review. 2 Enter the desired name for the new application.
7	Remove Review	<p>Permits deleting created or copied applications</p> <p>Factory default Review applications cannot be removed; if the Review application check box is clear the application will not appear in Monitoring mode at run time.</p>	<ul style="list-style-type: none"> ■ With the application selected click Remove Review.
8	Add Review	<p>Permits creating a blank Review for a customized application</p> <p>There are no configured tiles in the blank Review application.</p>	<ul style="list-style-type: none"> ■ With the desired host selected click Add Review.
9	Up/ Down arrows	<p>Permit sorting the Review application order in the list</p>	<ul style="list-style-type: none"> ■ With the application selected click the up or down arrow to move it to the desired location in the list.
10	Review List	<p>Shows all available Review applications that you can configure for display at run time</p> <p>Alarm Review is always visible, but other applications that you want available during monitoring must be checked.</p>	<ul style="list-style-type: none"> ■ Click the check box to select the desired review Maximum selected applications is 12.
11	Host List	<p>Shows Overview and Surveillance Hosts in the topology</p>	<ul style="list-style-type: none"> ■ Click the desired host to configure Review application appearance.
12	Alarm Review	<p>Permits setting a default view for Alarm Review</p> <p>Compressed, Strip Window, Tabular</p> <p>Alarm Review always displays, cannot be removed and cannot be copied.</p>	<ol style="list-style-type: none"> 1 Click Alarm Review in the list. 2 In the workspace select the desired view. Compressed, Strip Window, and Tabular 3 Click the down arrow to select the Timeline Duration.

Table 6-12 Default Review Application Tiles, Waves, and Settings

Tile Type	General Review	Hemodynamic Review	Respiratory Review	Neurological Review	Cardiac Review
Compressed Wave	Any ECG	Any ECG	Any ECG	Any ECG	Any ECG
Strip	Any ECG Any ECG Any BP Any PAP Any Pleth Any ECG	Any ECG Any BP Any PAP Any CVP Any ICAP Any Resp	Any ECG Any BP Any Pleth Any Gas Any Resp Any Pulm Function Any Pulm Function Any Pulm Function	Any ECG Any BP Any ICP Any ICP Any CVP Any EEG Any EEG Any EEG Any Resp Any Pleth	Any ECG Any ECG Any ECG Any ECG Any BP Any Pleth
Event	Arrhythmia Pressure Respiratory Alarms Off Technical	Cardiac Output Pressure Alarms Oxygenation Alarms Off	Respiratory Ventilator Sedation Hyperthermia	Pressure Respiratory Neuro ICP Sedation Hyperthermia Alarms Off	Arrhythmia ST QT Alarms Off Technical
Graphic Trend	Any HR Any BP Any SpO2 Any Resp Any Temp	Any HR Any BP Any CVP Any PAP Any PAWP	Any HR Any BP Any SpO2 Any Gas Any Resp	Any HR Any BP Any ICP Any CPP Any CVP	Any HR Any PVC Any BP Any ST Any QT
Graphic Trend	N/A	Any ICAP Any PPV Any CO Any CO Any SvO2	Any Pulm Function Any Pulm Function Any Pulm Function Any Pulm Function Any Pulm Function	Any LOC Any EEG Any EEG Any ICP Any ICP	N/A
Tabular Trend	All*	All*	All*	All*	All*
Multi-Lead	N/A	N/A	N/A	N/A	Gain = x1 Speed = 250 mm/s Format = 3x4 IR
ST Snippets	N/A	N/A	N/A	N/A	Speed = 250 mm/s Show Measurement Points = not selected

Table 6-12 Default Review Application Tiles, Waves, and Settings

Tile Type	General Review	Hemodynamic Review	Respiratory Review	Neurological Review	Cardiac Review
ST Map	N/A	N/A	N/A	N/A	Scale (\pm) = 2 Show Baseline = selected Trend On/Off = not selected Interval = 1 Minute
ECG Statistics	N/A	N/A	N/A	N/A	Trend Interval = Algorithm Interval

Wave Strip Export

Wave Strip Export is a licensed feature that permits sending a wave strip image to a shared folder for import into electronic medical records.

When a wave strip export occurs two files are sent to the export destination.

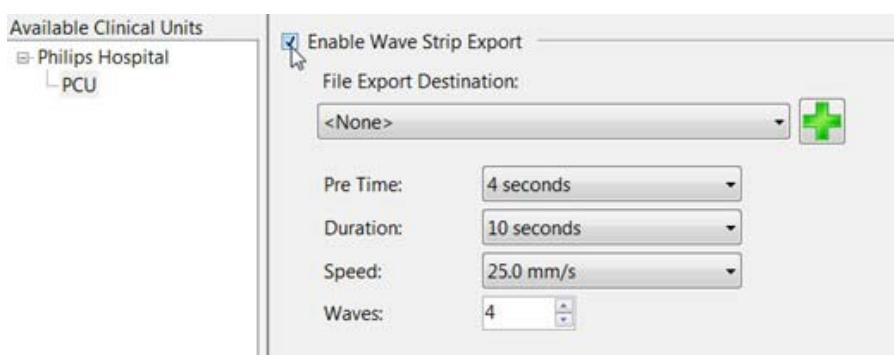
LifetimeId_EncounterId_BedLabel_WaveStripType_DateTime.png

The Portable Network Graphics (png) file is a graphics file that contains the image of the strip.

LifetimeId_EncounterId_BedLabel_WaveStripType_DateTime.mdm

The Metadata (mdm) file is an xml file that contains patient and strip data; it is an xml version of an HL7 MDM message. The HL7 MDM message helps manage medical records by transmitting new or updated documents, or by transmitting important status information and/or updates for the record. Detailed information about HL7 MDM Message segments is available in Heath Level Seven® documentation.

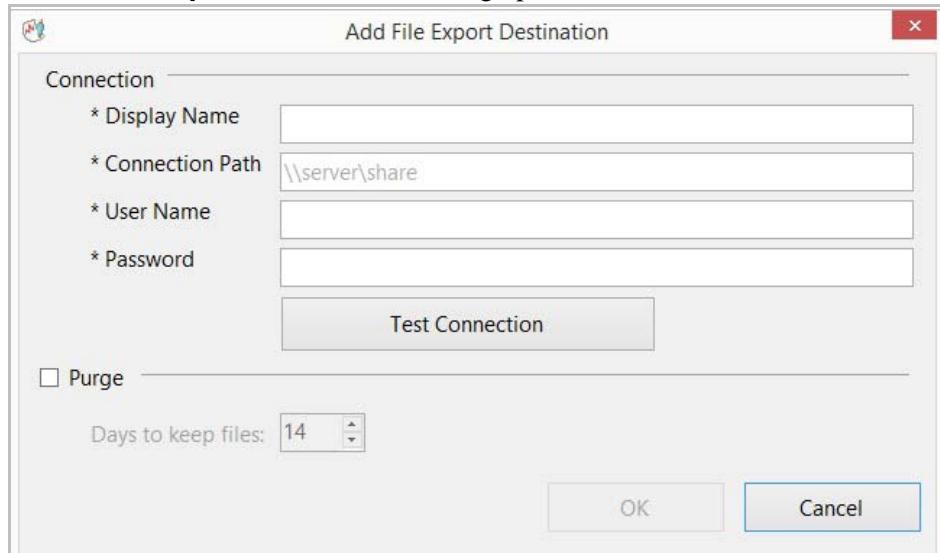
- I In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click **Wave Strip Export**.
The **Wave Strip Export** dialog opens. The default dialog has the **Enable Wave Strip Export** check box selected.



- 2 Select or clear the **Enable Wave Strip Export** check box.

- 3 If you choose to enable the wave strip export feature select a configured network share from the **File Export Destination** list. The list is populated if a shared destination was configured using the **File Export Destinations** feature.
- 4 If you want to add a destination that is accurately configured ([Page 6-4](#)), double-click the  icon.

The **Add File Export Destination** dialog opens.



Important Be sure that the **Connection Path** text box entry is a configured, shared folder location with access permission. Refer to [Setting File Sharing Locations](#).

- a In the **Connection** section of the dialog add the following:

***Display Name**
***Connection Path**
***User Name**
***Password**

- b Click the **Test Connection** button.
 Connection status will appear.
- c If you want to purge the file share after a specific time click the **Purge** check box, then use the up/down arrows to choose the **Days to keep files** setting.
- d When dialog entries are complete click **OK**.

- 5** In the **Wave Strip Export** dialog click the up/down arrows to set **Pre Time**, **Duration**, **Speed**, and **Waves**.

Setting	Selections	Action
Pre Time	2 Seconds 4 Seconds 6 Seconds 8 Seconds 10 Seconds	■ Click the down arrow adjacent to each range to select desired setting.
Duration	2 Seconds 4 Seconds 6 Seconds 8 Seconds 10 Seconds	■ Click the down arrow adjacent to each range to select desired setting.
Speed	25.0 mm/s 50.0 mm/s	■ Click the down arrow to select desired setting.
Waves	1 - 20	■ Click the up/down arrows to select desired setting.

- 6** When **Wave Strip Export** dialog entries are complete click **OK**.

Interfaces

- ▶ From the **Configure** pane expand the **Interfaces** folder then double-click desired selection. The **Interfaces** feature includes **Hospital Inbound ADT**, **Hospital Inbound LAB**, **Hospital Inbound Order**, **Order Requests**, **Lab Result Mapping**, **Unit of Measure Mapping**, **Outbound HL7 Data**, **Outbound HL7 ADT**, **Time Synchronization**, **Alarm Notification**, **Web Browser**, **Archive Export**, **Application Performance Monitor**, **Mobility Settings**, **Data Warehouse Connect**, **Philips Holter Export**, **KaVoom Setup**, **IntelliBridge LAN Devices**, **IntelliBridge Driver Deploy**, and **IntelliBridge Firmware Deploy** icons.

Hospital Inbound ADT

The **Hospital Inbound ADT** feature permits configuring an interface from which patient Admit, Discharge, and Transfer information is exchanged.

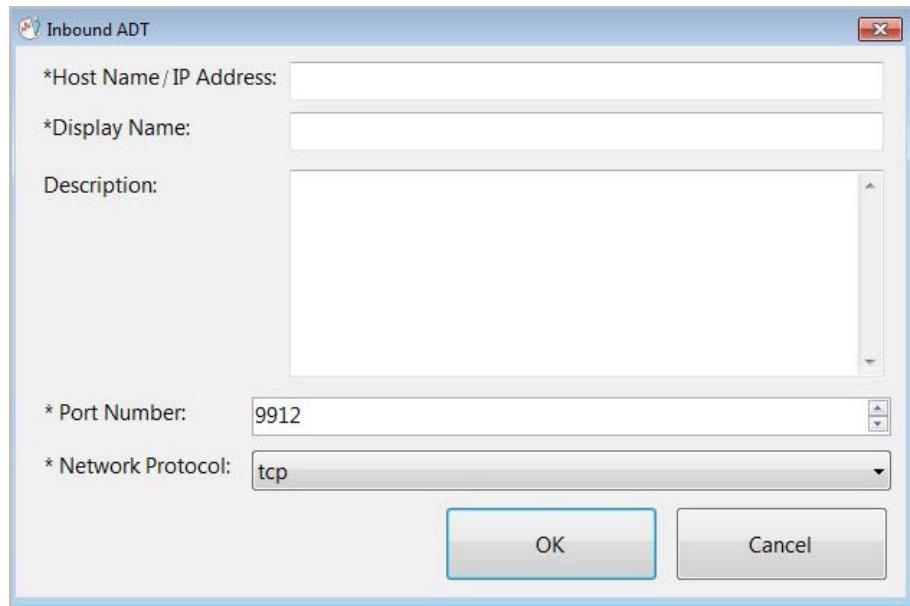
Important The Hospital Inbound ADT feature requires that Connected Care Platform (CCP) is installed and configured and that the appropriate service is running. When the appropriate interface engine is installed and configured (CCP, for example), Philips Patient Identity Service (PPIS) provides Philips systems with a common interface to ADT systems and enables the communication of patient information (patient attributes, identification numbers, and location) between Philips systems.

- ▶ In the left pane of the **System Configuration** screen expand the **Interfaces** folder and double-click the **Hospital Inbound ADT** icon.
The **Inbound ADT** table populates.

The **Inbound ADT** table includes column headings: **Host Name**, **Display Name**, **Port Number**, **Network Protocol**, and **Service Name**.

Adding or Editing an Inbound ADT Interface

- Important** If you change/edit the Inbound ADT IP Address, the change will not take effect unless you stop and restart the monitoring application. But if you wait approximately 1 minute following the edit, then change the Inbound ADT Display Name, changes will take effect without an application restart.
- I If you want to add a Hospital Inbound ADT device click the **Add** icon above the table. If you want to edit a device, select it and click the **Edit** icon.
The **Inbound ADT** dialog opens.



Section/Selection	Action
*Host Name/IP Address	■ Type the host name or IP Address of the server on which CCP runs.
*Display Name	■ Text box automatically populates with entered Host Name.
Description	■ Enter a description if desired in the text box.
*Port Number	■ Type the desired Port Number or use the arrows. Default Port Number is 9912.
*Network Protocol	■ Select the desired protocol from the drop-down list.

- 2 Verify Inbound ADT interface configuration.
 - a Click the **Validate** icon to verify configuration and connection.
A **Validation** dialog opens showing the status of the Inbound ADT rule (**Appendix F**).
When configuration validation is unsuccessful, the **Detailed Information** text box contains a detailed problem description and an Error or Warning icon appears.
 - b If the configuration is successful, close the **Validation** dialog.

Hospital Inbound LAB

The **Hospital Inbound LAB** interface permits configuring your system to perform a set of lab-related functions. The Lab Data Service (LDS) on the PIIC iX processes incoming observations that are broadcast from the Philips Lab Service (PLS). The data is then converted to lab results that are stored in the PIIC iX Physiologic Database or sent to a bedside monitor. LDS can run on any PIIC iX licensed with the appropriate **Feature Option (Page 5-25)**.

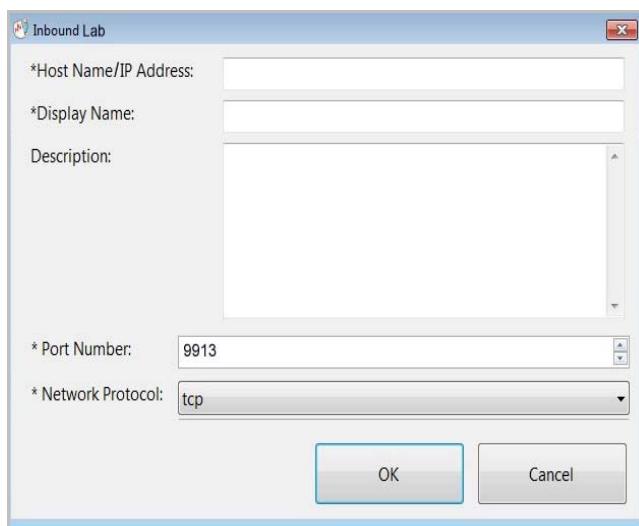
Important The Hospital Inbound LAB feature requires that Connected Care Platform (CCP) is installed and configured and that the appropriate service is running.

- ▶ From the **Configure** pane expand the **Interfaces** folder then double-click **Hospital Inbound LAB**.

The **Inbound Lab** list appears.

Adding or Editing Inbound Lab Interface

- I If you want to add an Inbound Lab Interface click the **Add** icon above the table. If you want to edit a device, select it in the list and click the **Edit** icon.



Section/Selection	Action
*Host Name/IP Address	<ul style="list-style-type: none"> ■ Type the host name or IP Address of the server on which CCP runs.
*Display Name	<ul style="list-style-type: none"> ■ Text box automatically populates with entered Host Name. This must be a unique name on the network, an alias of the primary server. For example, if ADTServ is the desired server, the new host name could be ADTServ_LABS.
Description	<ul style="list-style-type: none"> ■ Enter a description if desired in the text box.
*Port Number	<ul style="list-style-type: none"> ■ Type the desired Port Number or use the arrows. Default Port Number is 9913.
*Network Protocol	<ul style="list-style-type: none"> ■ Select the desired protocol from the drop-down list.

2 Verify Inbound Lab interface configuration.

- a** Click the **Validate** icon to verify configuration and connection.
A **Validation** dialog opens showing the status of the Inbound Lab rule (**Appendix F**).
When configuration validation is unsuccessful, the **Detailed Information** text box contains a detailed problem description and an Error or Warning icon appears.
- b** If the configuration is successful, close the **Validation** dialog.

Hospital Inbound Order

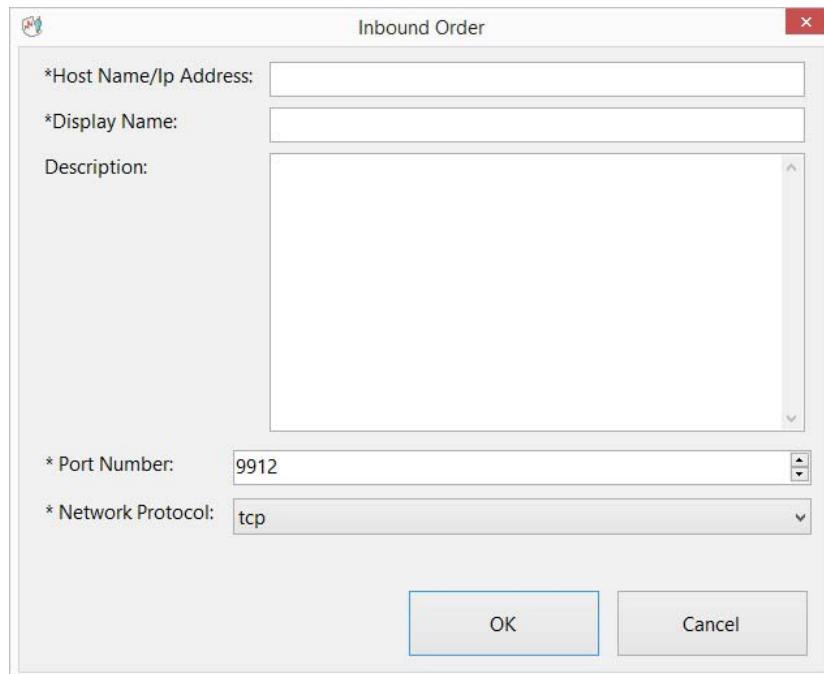
The **Hospital Inbound Order** interface permits configuring your system to receive incoming 12-Lead orders by way of the Connected Care Platform (CCP) Order Service. the Orders Service forwards 12 lead order matched by patient ID to the PIIC iX.

Important The Hospital Inbound Order feature requires that Connected Care Platform (CCP) is installed and configured and that the appropriate service is running.

- From the **Configure** pane expand the **Interfaces** folder then double-click **Hospital Inbound Order**.
The **Inbound Order** list appears.

Adding or Editing Hospital Inbound Order Interface

- I If you want to add a Hospital Inbound Order interface click the **Add** icon  above the table. If you want to edit a device, select the desired interface in the list and click the **Edit** icon .



Section/Selection	Action
* Host Name/IP Address	■ Type the host name or IP Address of the server on which CCP runs.
* Display Name	■ Text box automatically populates with entered Host Name. This must be a unique name on the network, an alias of the primary server. For example, if CCPServ is the desired server, the new host name could be CCPServ_Orders.
Description	■ Enter a description if desired in the text box.
* Port Number	■ Type the desired Port Number or use the arrows. Default Port Number is 9912.
* Network Protocol	■ Select the desired protocol from the drop-down list.

- 2 When dialog input is complete click **OK**.
- 3 Verify interface configuration.
 - a Click the **Validate** icon to verify configuration and connection. A **Validation** dialog opens showing the status of the Inbound Lab rule (**Appendix F**). When configuration validation is unsuccessful, the **Detailed Information** text box contains a detailed problem description and an Error or Warning icon appears.
 - b If the configuration is successful, close the **Validation** dialog.

Order Requests

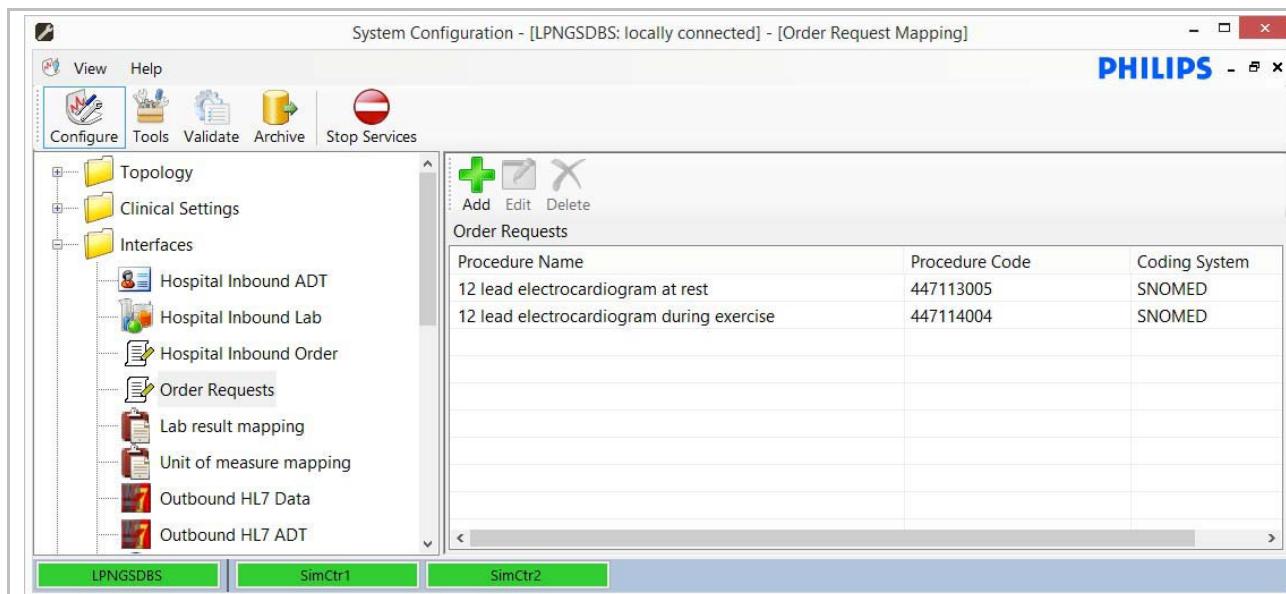
The **Order Requests** interface permits configuring which order requests will be processed by the 12-lead service.

- In the left pane of the **System Configuration** screen expand the **Interfaces** folder and double-click the **Order Requests** icon.

The **Order Request Mapping Screen** populates with the defaults.

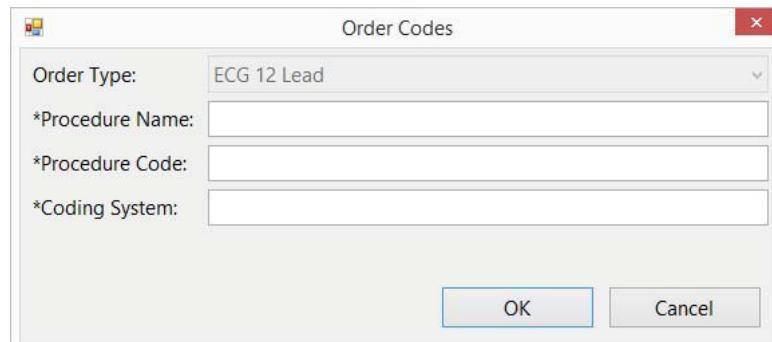
12 lead electrocardiogram at rest

12 lead electrocardiogram during exercise



If you want to add a custom order request

- Double-click the **Add** icon ECG 12 Lead populates the **Order Type** text box.



- Enter the **Procedure Name**, **Procedure Code**, and **Coding System** values in the appropriate text boxes.

- Then click **OK**.

The new order request appears in the screen.

If you want to edit an existing custom order request

- Select the desired order request from the list then click the **Edit** icon.
- Make appropriate changes in the **Order Codes** dialog text boxes, then click **OK**.

If you want to delete an existing custom order request

- ▶ Select the desired order request from the list then click the **Delete**  icon.

Lab Result Mapping

- ▶ In the **System Configuration** screen double-click the **Configure** Icon. Then expand the **Interfaces** folder and double-click the **Lab Result Mapping** icon.
The **Lab Result to MDIL Mapping** table populates.

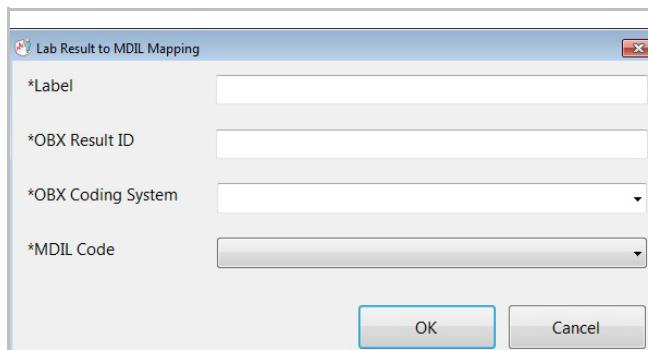


Label	OBX Result ID	OBX Coding System	MDIL Code
White Blood Count	1766-5	LOINC	NLS_NOM_WB_CNT
Lactate	32693-4	LOINC	NLS_NOM_CONC_LACT
Glucose	52041-1	LOINC	NLS_NOM_CONC_GLU_GEN

The table includes the column headings **Label**, **OBX Result ID**, **OBX Coding System**, **MDIL Code**, and populates as Lab results are mapped to MDIL Codes.

If you want to add or edit a Lab Result to MDIL Mapping entry

- 1 Click the **Add** or **Edit** icon.
- 2 In the **Lab Results to MDIL Mapping** dialog enter or change desired information in text boxes for **Label** and **OBX Result ID**.



The dialog box has a title bar "Lab Result to MDIL Mapping". It contains four text input fields with validation markers (*):
 - *Label
 - *OBX Result ID
 - *OBX Coding System (with a dropdown arrow)
 - *MDIL Code (with a dropdown arrow)
 At the bottom are two buttons: "OK" and "Cancel".

- 3 Click the down arrow to select an **OBX Coding System** type from the list.

4 Click the down-arrow to select the desired **MDIL Code** (**Table 6-13**). Then click **OK**.

Table 6-13 MDIL Code Selections

NLS_HIF_NAMES_ANY_GRP_LABEL_LAB_DATA	NLS_NOM_CONC_HB_CO_GEN	NLS_NOM_CONC_PO2_VEN
NLS_NOM_BASE_EXCESS_BLD_ART	NLS_NOM_CONC_HB_FETAL	NLS_NOM_CONC_PRO_URINE
NLS_NOM_CARDIAC_TROPONIN_I	NLS_NOM_CONC_HB_MET_GEN	NLS_NOM_CONC_PROT_SER
NLS_NOM_CONC_ALB_SER	NLS_NOM_CONC_HB_O2_VEN	NLS_NOM_CONC_HB_O2_ART
NLS_NOM_CONC_ALPHA_AMYLASE	NLS_NOM_CONC_HB_URINE	NLS_NOM_CONC_PROT_TOT
NLS_NOM_CONC_AN_GAP_CALC	NLS_NOM_CONC_HCO3_GEN	NLS_NOM_CONC_tCA_SER
NLS_NOM_CONC_AP	NLS_NOM_CONC_HCT_GEN	NLS_NOM_CONC_TGL
NLS_NOM_CONC_AST	NLS_NOM_CONC_HDL	NLS_NOM_CONC_UREA_GEN
NLS_NOM_CONC_BILI_DIRECT	NLS_NOM_CONC_K_GEN	NLS_NOM_CONC_UREA_URINE
NLS_NOM_CONC_BILI_TOT	NLS_NOM_CONC_K_URINE	NLS_NOM_ES_RATE
NLS_NOM_CONC_BLD_UREA_NITROGEN	NLS_NOM_CONC_K_URINE_EXCR	NLS_NOM_FRACT_EXCR_NA
NLS_NOM_CONC_CA_GEN	NLS_NOM_CONC_LACT	NLS_NOM_NSLOSS
NLS_NOM_CONC_CA_URINE	NLS_NOM_CONC_LDH	NLS_NOM_PLASMA_OSM
NLS_NOM_CONC_CHE	NLS_NOM_CONC_LDL	NLS_NOM_PLTS_CNT
NLS_NOM_CONC_CHLOR_SER	NLS_NOM_CONC_MG_ION	NLS_NOM_PT_INTL_NOM_RATIO
NLS_NOM_CONC_CHLOR_URINE	NLS_NOM_CONC_MG_SER	NLS_NOM_RB_CNT
NLS_NOM_CONC_CHLORIDE_GEN	NLS_NOM_CONC_NA_GEN	NLS_NOM_RET_CNT
NLS_NOM_CONC_CHOLESTEROL	NLS_NOM_CONC_NA_URINE	NLS_NOM_SAT_O2_ART
NLS_NOM_CONC_CREA	NLS_NOM_CONC_OSM_URINE	NLS_NOM_SAT_O2_ART_CALC
NLS_NOM_CONC_CREA_CLR	NLS_NOM_CONC_P_SER	NLS_NOM_SAT_O2_CAP_CALC
NLS_NOM_CONC_CREA_KIN_MB	NLS_NOM_CONC_PCOT_ART	NLS_NOM_SAT_O2_VEN_CALC
NLS_NOM_CONC_CREA_KIN_MM	NLS_NOM_CONC_PCOT_CAP	NLS_NOM_TIME_PD_ACT
NLS_NOM_CONC_CREA_KIN_SER	NLS_NOM_CONC_PCOT_GEN	NLS_NOM_TIME_PD_aPTT_BE
NLS_NOM_CONC_CREA_URINE	NLS_NOM_CONC_PCOT_VEN	NLS_NOM_TIME_PD_aPTT_WB
NLS_NOM_CONC_CRP	NLS_NOM_CONC_PCT	NLS_NOM_TIME_PD_COAGULATION
NLS_NOM_CONC_DIFF_HB_O2_ATR_VEN	NLS_NOM_CONC_PH_ART	NLS_NOM_TIME_PD_PT
NLS_NOM_CONC_FE_GEN	NLS_NOM_CONC_PH_CAP	NLS_NOM_TIME_PD_PT_BE
NLS_NOM_CONC_GGT	NLS_NOM_CONC_PH_GEN	NLS_NOM_TIME_PD_PT_WB
NLS_NOM_CONC_GLU_GEN	NLS_NOM_CONC_PH_VEN	NLS_NOM_TIME_PD_THROMBIN
NLS_NOM_CONC_GLU_URINE	NLS_NOM_CONC_PO2_ART	NLS_NOM_TIME_PD_THROMBOPLAS
NLS_NOM_CONC_GPT	NLS_NOM_CONC_PO2_CAP	NLS_NOM_WB_CNT
NLS_NOM_CONC_HB_ART	NLS_NOM_CONC_PO2_GEN	

Unit of Measure Mapping

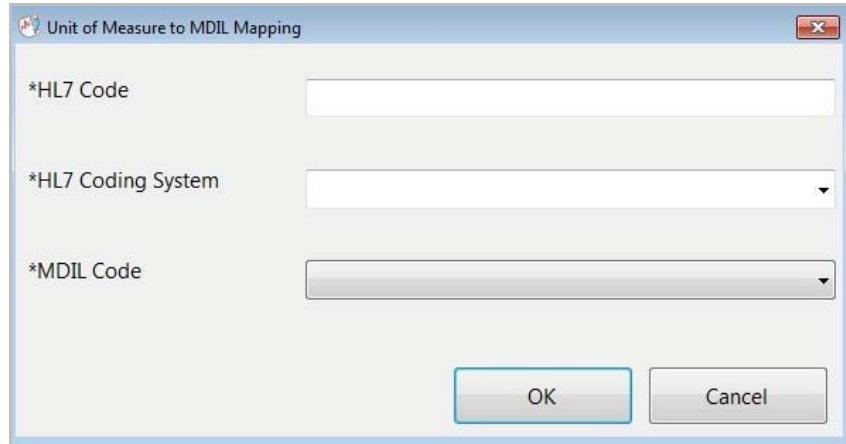
This **Interface** feature permits Unit of Measure to MDIL Mapping.

- In the left pane of the **System Configuration** screen expand the **Interfaces** folder and double-click the **Unit of Measure Mapping** icon.

The **Unit of Measure to MDIL Mapping** table populates.

HL7 Code	HL7 Coding System	MDIL Code
%	ISO	NLS_NOM_DIM_PERCENT
/min	ISO	NLS_NOM_DIM_BEAT_PER_MIN
/min/ml	ISO	NLS_NOM_DIM_BEAT_PER_MIN_PER_MILLI_L
/mm3	ISO	NLS_NOM_DIM_PER_CUBIC_MILLI_M
/nl	ISO	NLS_NOM_DIM_PER_NANO_LITER
/ul	ISO	NLS_NOM_DIM_PER_MICRO_LITER
cm	ISO	NLS_NOM_DIM_CM

- If you want to enter a new Unit of Measure click the **Add** icon.



HL7 Code	MDIL Code
%	NLS_NOM_DIM_PERCENT
/min	NLS_NOM_DIM_BEAT_PER_MIN
/min/ml	NLS_NOM_DIM_BEAT_PER_MIN_PER_MILLI_L
/mm3	NLS_NOM_DIM_BEAT_PER_CUBIC_MILLI_M
/nl	NLS_NOM_DIM_BEAT_PER_NANO_LITER
/ul	NLS_NOM_DIM_BEAT_PER_MICRO_LITER
cm	NLS_NOM_DIM_CM
cm.h2o	NLS_NOM_DIM_CM_H2O
cm.h2o/%	NLS_NOM_DIM_CM_H2O_PER_PERCENT
cm.h2o/l	NLS_NOM_DIM_CM_H2O_PER_L
cm.h2o/l/sec	NLS_NOM_DIM_CM_H2O_PER_L_PER_SEC
cm/min	NLS_NOM_DIM_CENTI_M_PER_MIN
d	NLS_NOM_DIM_DAY
db	NLS_NOM_DIM_DECIBEL
degf	NLS_NOM_DIM_DEGF
g	NLS_NOM_DIM_GRAM
g.dl	NLS_NOM_DIM_G_DL
g.m	NLS_NOM_DIM_GRAM_M
g.m/m2	NLS_NOM_DIM_G_METER_PER_METER_SQ

HL7 Code	MDIL Code
g/hr	NLS_NOM_DIM_G_PER_HR
g/kg/min	NLS_NOM_DIM_G_PER_KG_PER_MIN
g/l	NLS_NOM_DIM_GRAM_PER_LITER
g/min	NLS_NOM_DIM_G_PER_MIN
g/ml	NLS_NOM_DIM_G_PER_ML
hr	NLS_NOM_DIM_HR
hz	NLS_NOM_DIM_HZ
in	NLS_NOM_DIM_IN
in2	NLS_NOM_DIM_IN_SQ
iu	NLS_NOM_DIM_UNIT
iu/hr	NLS_NOM_DIM_U_PER_HR
iu/kg/hr	NLS_NOM_DIM_U_PER_KG_PER_HR
iu/kg/min	NLS_NOM_DIM_U_PER_KG_PER_MIN
iu/l	NLS_NOM_DIM_X_INTL_UNIT_PER_L
iu/min	NLS_NOM_DIM_X_INTL_UNIT_PER_MIN
iu/ml	NLS_NOM_DIM_UNIT_PER_ML
kg	NLS_NOM_DIM_KG
kg.m	NLS_NOM_DIM_KILO_G_M
kg.m/m2	NLS_NOM_DIM_KILO_G_M_PER_M_SQ
kg/m2	NLS_NOM_DIM_KG_PER_M_SQ
l	NLS_NOM_DIM_LITER
l/d	NLS_NOM_DIM_LITER_PER_DAY
l/min	NLS_NOM_DIM_LITER_PER_MIN
l/min/m2	NLS_NOM_DIM_L_PER_MIN_PER_MIN_SQ
l/sec	NLS_NOM_DIM_LITER_PER_SEC
lb	NLS_NOM_DIM_LB
lb/in2	NLS_NOM_DIM_LB_PER_IN_SQ
m	NLS_NOM_DIM_METER
m2	NLS_NOM_DIM_M_SQ
ma	NLS_NOM_DIM_MILLI_AMP
ma.hr	NLS_NOM_DIM_MILLI_AMP_HR
maiul	NLS_NOM_DIM_MEGA_INTL_UNIT_PER_L
mbar	NLS_NOM_DIM_MBAR
meq	NLS_NOM_DIM_MILLI_EQUIV
meq/d	NLS_NOM_DIM_MILLI_EQUIV_PER_DAY
meq/l	NLS_NOM_DIM_MILLI_EQUIV_PER_L
mg	NLS_NOM_DIM_MILLI_G
mg/cm3	NLS_NOM_DIM_MILLI_G_PER_CM_CUBE
mg/dl	NLS_NOM_DIM_MILLI_G_PER_DL
mg/hr	NLS_NOM_DIM_MILLI_G_PER_HR
mg/kg/hr	NLS_NOM_DIM_MG_PER_KG_PER_HR
mg/l	NLS_NOM_DIM_MILLI_G_PER_L
mg/mg	NLS_NOM_DIM_MILLI_G_PER_MILLI_G
mg/min	NLS_NOM_DIM_MG_PER_MIN
mg/ml	NLS_NOM_DIM_MG_PER_ML
min	NLS_NOM_DIM_MIN
miu	NLS_NOM_DIM_MU
miu/hr	NLS_NOM_DIM_MU_PER_HR
miu/kg/hr	NLS_NOM_DIM_MU_PER_KG_HR
miu/kg/min	NLS_NOM_DIM_MU_PER_KG_MIN
miu/min	NLS_NOM_DIM_MU_PER_MIN
miu/ml	NLS_NOM_DIM_MU_PER_ML
ml	NLS_NOM_DIM_MILLI_L
ml/cm.h2o	NLS_NOM_DIM_MILLI_L_PER_CM_H2O

HL7 Code	MDIL Code
ml/d	NLS_NOM_DIM_MILLI_L_PER_DAY
ml/dl	NLS_NOM_DIM_MILLI_L_PER_DL
ml/hr	NLS_NOM_DIM_MILLI_L_PER_HR
ml/kg	NLS_NOM_DIM_MILLI_L_PER_KG
ml/m2	NLS_NOM_DIM_MILLI_L_PER_M_SQ
ml/min	NLS_NOM_DIM_MILLI_L_PER_MIN
ml/min/m2	NLS_NOM_DIM_MILLI_L_PER_MIN_PER_M_SQ
ml/sec	NLS_NOM_DIM_ML_PER_SEC
ml2/sec	NLS_NOM_DIM_MILLI_L_SQ_PER_SEC
mm	NLS_NOM_DIM_MM
mm.hg	NLS_NOM_DIM_MMHG
mm.hg/%	NLS_NOM_DIM_MM_HG_PER_PERCENT
mm.hg/sec	NLS_NOM_DIM_MM_HG_PER_SEC
mm/hr	NLS_NOM_DIM_PRIV_MILLI_M_PER_HR
mm/sec	NLS_NOM_DIMV_MILLI_M_PER_SEC
mmol	NLS_NOM_DIM_MILLI_MOLE
mmol/kg	NLS_NOM_DIM_MILLI_MOLE_PER_KG
mmol/l	NLS_NOM_DIM_MILLI_MOLE_PER_L
mo	NLS_NOM_DIM_MON
mol/mol	NLS_NOM_DIM_MOLE_PER_MOL
mosmol	NLS_NOM_DIM_MILLI_OSM
mosmol/l	NLS_NOM_DIM_MILLI_OSM_PER_L
msec	NLS_NOM_DIM_MILLI_SEC
mv	NLS_NOM_DIM_MILLI_VOLT
mw	NLS_NOM_DIM_MILLI_WATT
ng	NLS_NOM_DIM_NG
ng/hr	NLS_NOM_DIM_NG_PER_HR
ng/kg/hr	NLS_NOM_DIM_NG_PER_KG_PER_HR
ng/kg/min	NLS_NOM_DIM_NG_PER_KG_PER_MIN
ng/l	NLS_NOM_DIM_NG_PER_L
ng/min	NLS_NOM_DIM_NG_PER_MIN
ng/ml	NLS_NOM_DIM_NG_PER_ML
nw	NLS_NOM_DIM_NANO_WATT
ohm	NLS_NOM_DIM_OHMS
oz	NLS_NOM_DIM_OZ
pg/ml	NLS_NOM_DIM_PICO_G_PER_ML
pw	NLS_NOM_DIM_PICO_Watt
sec	NLS_NOM_DIM_SEC
uc	NLS_NOM_DIM_MICRO_COULOMB
ug	NLS_NOM_DIM_MCG
ug/dl	NLS_NOM_DIM_MICRO_C_PER_DL
ug/hr	NLS_NOM_DIM_MCG_PER_HR
ug/kg/hr	NLS_NOM_DIM_MCG_PER_KG_PER_HR
ug/kg/min	NLS_NOM_DIM_MCG_PER_KG_PER_MIN
ug/l	NLS_NOM_DIM_MCG_PER_L
ug/min	NLS_NOM_DIM_MCG_PER_MIN
ug/ml	NLS_NOM_DIM_MCG_PER_ML
umol/l	NLS_NOM_DIM_MICRO_MOLE_PER_L
usec	NLS_NOM_DIM_MICRO_SEC
uv	NLS_NOM_DIM_MICRO_VOLT
v	NLS_NOM_DIM_VOLT
wk	NLS_NOM_DIM_WEEKS
yr	NLS_NOM_DIM_YEAR

Outbound HL7 Data

NOTE If ICCA is in the topology, PIIC iX HL7 must be configured for ReporterServer (**Page A-5**) for any connection feeding data to ICCA, even through IBE. Other settings that must be configured if HL7 connection includes ICCA follow.

Attribute	Configuration
Connection	ReporterServer
Processing ID	P
Port	(site specific)
Send Alerts	Yes
Send Multiple Patients per Message	No
Sending Interval	60
Send Time Sync	No
Send Pre-Admit Data	No
Numeric Value	(site specific)
Message Mapping	Defaults Classic

The System Configuration **Outbound HL7 Data** feature provides outbound patient physiological parameters and alarms through polled, solicited, or broadcast messages over TCP/IP to a list of recipient ICCA machines. For detailed information refer to *ICCA to PIIC iX Configuration*.

For detailed information about Configuring Outbound HL7 Data Interfaces on an IntelliBridge System refer to the *IntelliBridge SC 50 Device Interfacing Engine Installation and Configuration Guide*.

- ▶ From the *System Configuration Configure* pane expand the **Interfaces** folder then double-click **Outbound HL7 Data**.

The **HL7 Configuration** screen opens, which shows a summary of all HL7 Client configuration. The screen includes the sections: **HL7 Observation Clients**, **Connections**, and **Bed Assignments**.

The screenshot displays the **HL7 Configuration** screen with the following sections:

- HL7 Observation Clients:** A table with columns: Host Name, DisplayName, Send Time Sync, Send Pre Admit Data, Numeric Value, and Message Mapping. It currently has one row entry.
- Connections:** A table with columns: Connection, Processing Id, Port, Send Alerts, Send Multiple Patients per Message, Process..., and Store an... It currently has one row entry.
- Bed Assignments:** An empty table.

At the top of the screen, there are icons for adding a client (+), editing, deleting, and validating, along with a note: "Distributed at each PIIC iX".

HL7 Observation clients are all the HL7 clients that will connect to the PIIC iX system to collect patient parameter and alert data (for Hospital Information Systems, for example).

With PIIC iX B.02 you can have unlimited connections when operating in Service Location of Distributed Configure an HL7 Observation Client

I Select HL7 Service Location.

- a To change the Service Location click the  in the application window of the **HL7 Configuration** screen.

The **Service Location** dialog opens.

- b Click the down-arrow in the **Service Location** dialog and select the desired setting. You can configure the service to be distributed or centralized.

Distributed at each PIIC iX

The HL7 Service runs on each PIIC iX and each PIIC iX connects directly to the configured clients.

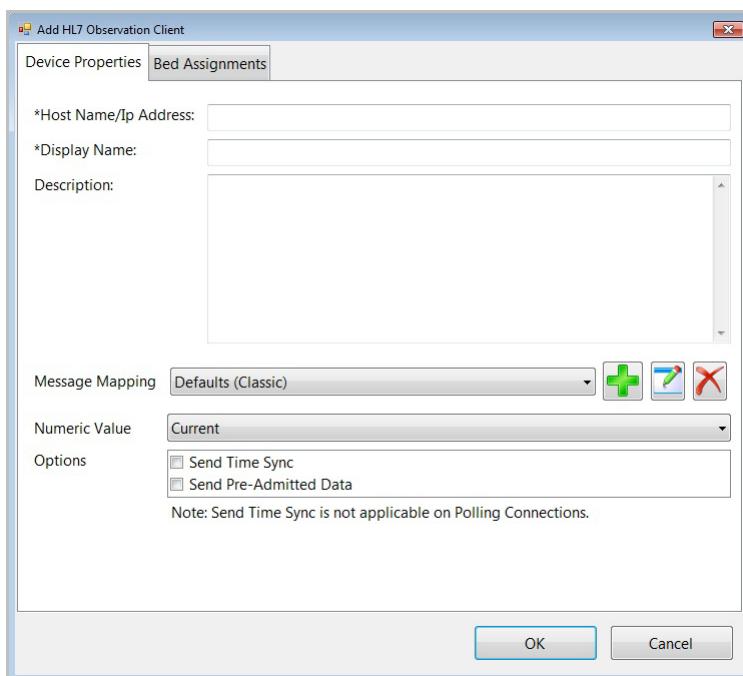
Centralized at Primary Server

The HL7 Service runs on the gateway server, and the PIIC iX sends information to that server which sends the information to the configured clients.

- c Then click **OK** in the dialog and **Yes** in the confirmation message.

2 If you want to add an HL7 Observation Client double-click the **Add HL7 Client icon .**

The **Add HL7 Observation Client** dialog opens.



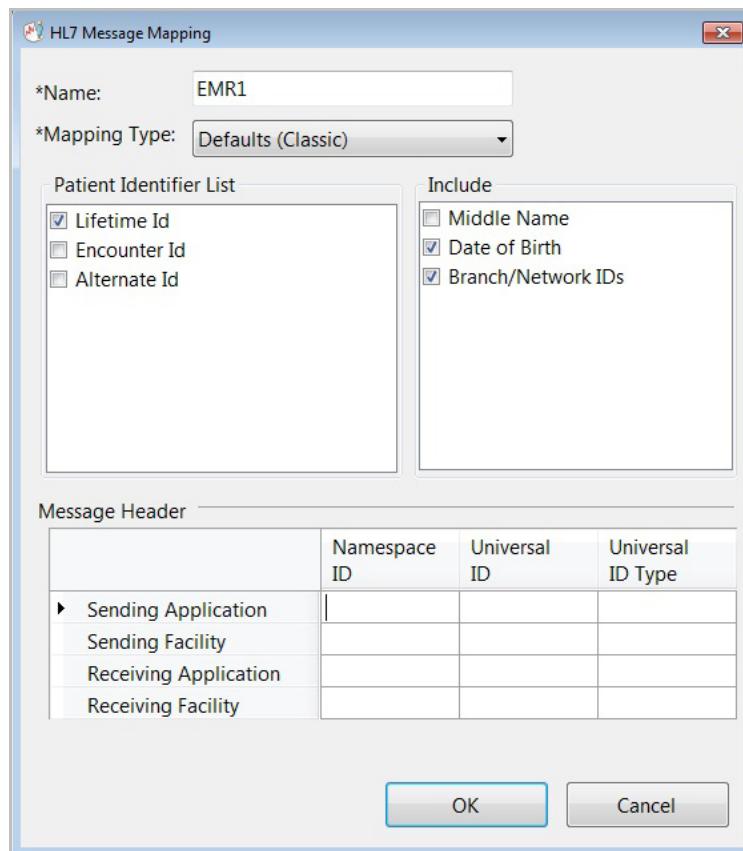
Important Text boxes in both **Device Properties** and **Bed Assignments** tabs must be completed for each HL7 Observation Client.

- 3** Complete required text information on the **Device Properties** tab, which opens initially by default. Selections preceded by an asterisk must be entered.

*Host Name/IP Address	Enter the customer-supplied host name or IP Address of the device/PC on which the client application/system (EMR System) resides.
*Display Name	Text box automatically populates with the entered Host Name. This must be a unique name on the network, an alias of the primary server. For example, if ADTServ is the desired server, the new host name could be ADTServ_LABS.
Description	Enter information that describes the client.

- 4** If you want to edit or update the default settings select a **Message Mapping** type from the drop-down list and do the following. The **Message Mapping** type is a list of formats HL7 will use when sending data.

- a** On the **Device Properties** tab of the **Add HL7 Observation Client** dialog click the **Edit** icon  to change the current selection or **Add**  to create a new type. The **HL7 Message Mapping** dialog opens.



- b** Enter **Name** in appropriate text box and select **Mapping Type** from drop-down list.

- c Select a **Mapping Type** from the drop-down list.
- Defaults (Classic)** - backward compatible mapping with Philips IntelliVue Information Center (PIIC) systems
- Defaults (VistA)** - backward compatible mapping with Philips IntelliVue Information Center (PIIC) systems that support Vista
- Defaults (IHE)** - compatible mapping with Philips IntelliVue Information Center (PIIC) systems that support IHE

Important If you select the mapping type, Defaults (IHE), UNICODE or 8859/1 support is available in the Mapping Edit dialog. Also Alerts support is not available and QueryServer mode is not allowed for IHE clients.

- d Click the desired items in the **Patient Identifier** list and **Include** list check boxes.

Patient Identifier List	Include
Lifetime Id	Middle Name
Encounter Id	Date of Birth
Alternate Id	Branch/Network IDs

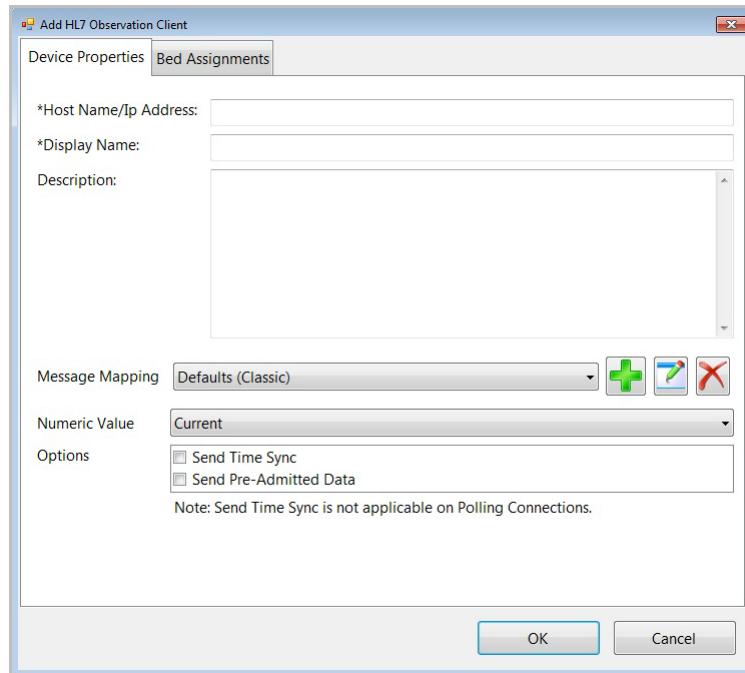
CAUTION It is important that all Hospital units select consistent **Labels** for **Lifetime Id** and **Encounter Id** and that those **Labels** are not changed after initial configuration. For example, if one unit set **Lifetime Id** as **MRN** and another sets **Lifetime Id** as **SSN**, patient selection and output accuracy is compromised/mismatched.

- e If desired you can modify where messages are coming from and going to in the HL7 message header (MSH). Edit the **Message Header** section by entering **Namespace ID**, **Universal ID** and **Universal ID Type** for the following.

Sending Application
Receiving Application
Sending Facility
Receiving Facility

- f Click **OK** in the **HL7 Message Mapping** dialog when information is complete or **Cancel**.

- 5 On the **Device Properties** tab of the **Add HL7 Observation Client** dialog click the drop-down arrow to select the **Numeric Value Options** setting.



Current - Sends exact value/alert at the HL7 client interval time

Median - Sends representative midpoint value within the last HL7 client interval time

Important You will not see HL7 data in the HL7 tool or EMRs if you do not have the patient admitted on the PIIC iX or you select **Send Pre-Admitted Data** and the check box is clear. When you select the **Send Pre-Admitted Data** check box HL7 messaging is identified by bed only if no patient is admitted.

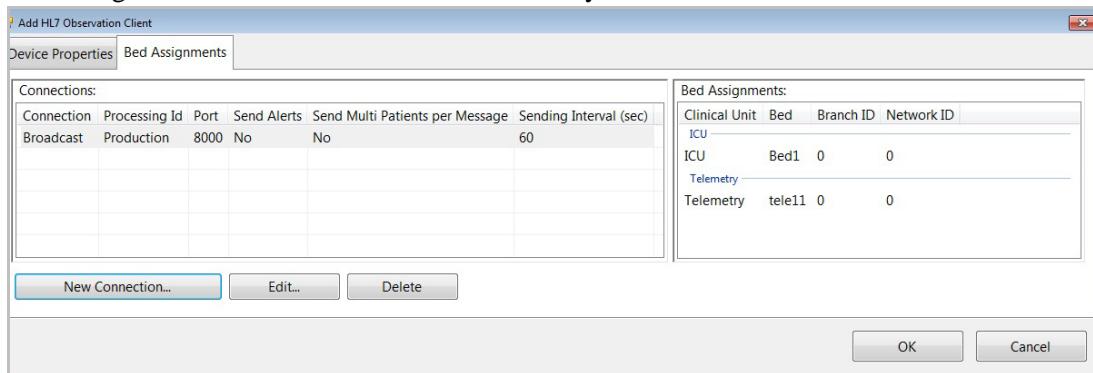
- 6 Click desired check boxes in the **Add HL7 Observation Client** dialog.

Send Time Sync - Sends Network time message to HL7 client once per minute

Send Pre-Admitted Data - Sends data for a bed whether or not a patient is admitted

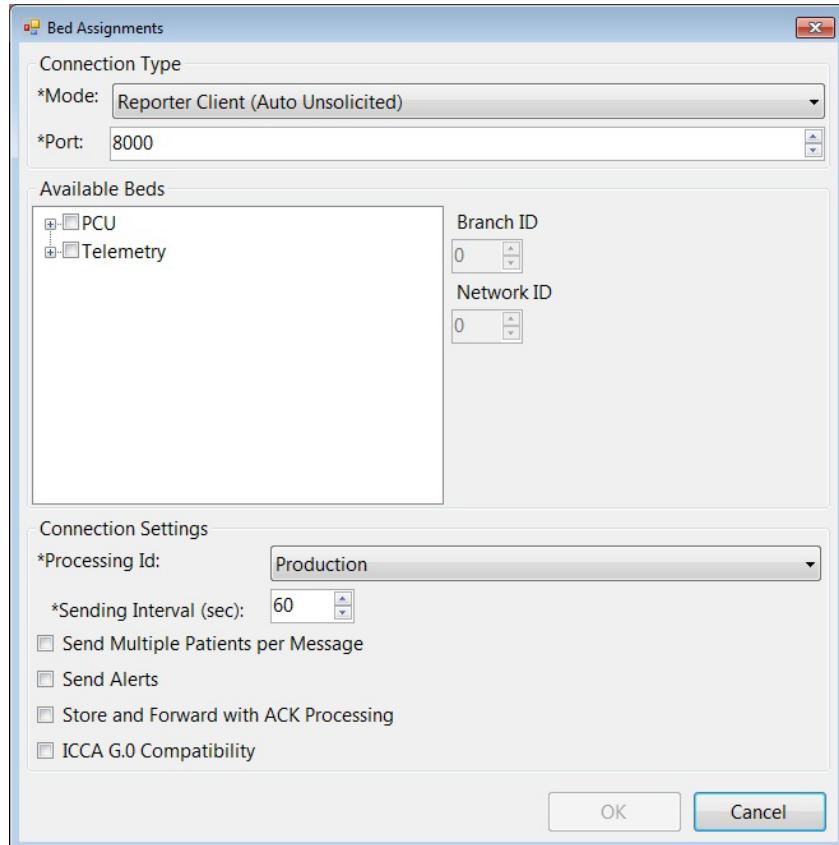
- 7 Click on the **Bed Assignments** tab.

In the **Bed Assignments** tab of the **Add HL7 Observation Client** dialog you can configure how data will be sent to the client system.



8 Add or edit **Connections** as follows.

- a If you want to edit an exiting connection select it and click **Edit**. If you want to add a new connection click **New Connection** in the **Bed Assignments** tab.
The **Bed Assignments** dialog opens which includes the sections: **Connection Type**, **Available Beds**, and **Connection Settings**



Connections Type		
Mode	Reporter Server (Unsolicited) Reporter Client (Auto Unsolicited) Query (Query) Trend Client Trend Server	Reporter Server and Reporter Client configure parametric real-time data output. Reporter is the HL7 mode and Server/Client is the tcp mode. Trend Client and Trend Server configure historical trend data from the bedside. Trend is the HL7 mode kind of data and Client / Server is the tcp mode. <ul style="list-style-type: none"> ■ Click down arrow and select desired setting from list.
*Port	8000	<ul style="list-style-type: none"> ■ Click the up/down arrow. Enter the port number with which you will establish the HL7 connection. Port range is 0 - 65536.

Available Beds		
Available Beds list	List of available beds	<ul style="list-style-type: none"> ■ Click the desired beds in the Available Beds list to select. <p>You can select beds from multiple units if desired.</p> <p>NOTE</p> <p>When you click the Unit check box all beds currently in the unit are selected. All beds added to that unit at a later date will appear in the Available Bed List for this connection.</p>
Branch ID	0 - 99	<ul style="list-style-type: none"> ■ Click down arrow and select desired setting from list.
Network ID	0 - 100	
Connection Settings		
*Processing IDs	Production Test Debug	<ul style="list-style-type: none"> ■ Click down arrow and select desired setting from list. This produces a text string identifier of P or T in the HL7 message that indicates type. <p>If a bedside is in Demo mode, the outgoing HL7 message is automatically set to Debug data.</p>
*Sending Interval (sec) ¹	5 - 60 (5 second increments)	<ul style="list-style-type: none"> ■ Click down arrow and select desired setting from list.
Send Multiple patients per Message ^{1,2}	Check box selection	<ul style="list-style-type: none"> ■ Click the check box to select. <p>For ReporterClient and ReporterServer clients configurations are provided to support either single patient per message and multiple patients per message. There is a 128 bed configuration maximum per connection port when multiple patients per message is selected. QueryServer clients only support multiple patients per response message.</p>
Send Alerts ¹	Check box selection	<ul style="list-style-type: none"> ■ Click the check box to select.
Send and Forward with ACK Processing ¹	Check box selection	<ul style="list-style-type: none"> ■ Click the check box to select. <p>This mode is the only one supporting ACK processing. An ACK received from the EMR/HIS system for each message ends that particular message cycle. For each NAK received from connected client HL7Service resends the message up to 3 times.</p> <p>If no ACK or NAK is received in 3 seconds, the current message being sent is abandoned and the next is taken up at the next interval.</p> <p>A status message appears and log entry is made reporting no response.</p>
ICCA G.0 Compatibility ^{1,3}	Check box selection	<ul style="list-style-type: none"> ■ Click the check box to select. <p>Selection permits ICCA G.0 to receive and chart PIIC iX device data.</p>

¹ Selection does not appear on Query mode dialog since client configures desired interval.

² Do not to select **Send Multiple patient per message** when interfacing to ICCA.

³ Selection is only available in Reporter Client and Reporter Server modes.

- b** Complete all required information in the **Bed Assignments** dialog. Then click **OK** in the **Bed Assignments** dialog when complete or **Cancel**.
- 9** If you want to delete a bed assignment connection click **Delete** in the **Bed Assignments** tab of the **Add HL7 Observation Client** dialog.

- 10 Click **OK** in the **Add HL7 Observation Client** dialog when complete.
- 11 Verify HL7 Observation Client configuration.
 - a Click the **Validate** icon to verify configuration and connection. A **Validation** dialog opens showing the status of the HL7 System Validation rule ([Page F-9](#)). When configuration validation is unsuccessful, the **Detailed Information** text box contains a detailed problem description and an Error or Warning icon appears.
 - b If the configuration is successful, close the **Validation** dialog.

About the Send and Forward Feature

Important QueryServer mode is not supported for the Store/Forward feature. Also Time sync messages are not stored.

When HL7Service is running, messages for each device connection type are stored when TCP connection with the HIS target client is lost. If a NAK is received from the connected client, the message currently being processed is resent. This will occur a maximum of three times (for NAKs received). If connected client does not send ACK or NAK in 3 consecutive seconds, a system status message displays and log entries are made indicating the client failed to respond. Messages are stored for up to 4 hours, after which the oldest message is deleted first.

Stored messages are sent when a TCP connection is successfully re-established with the HIS target client. Stored data is then sent in the order it was received. Trend connections can also be configured for store and forward; the same rules apply for trend data.

Outbound HL7 ADT

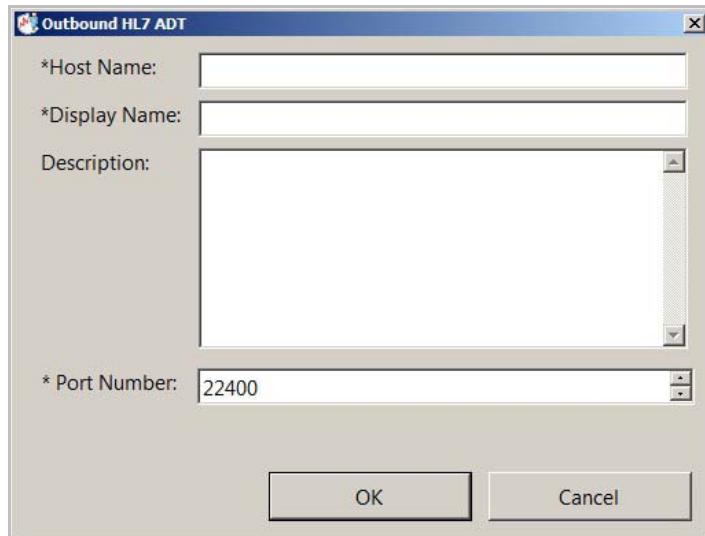
The *System Configuration Outbound HL7 ADT* feature provides outbound patient Admit/Transfer/Discharge messages over TCP/IP to a list of recipient machines.

- From the **Configure** pane expand the **Interfaces** folder then double-click **Outbound HL7 ADT**.

The **Outbound HL7 ADT Configuration** screen opens. The application screen includes the headings: **Host Name**, **Display Name**, and **Port Number**.

Adding an Outbound HL7 ADT Client

- I In the **Outbound HL7 ADT Configuration** screen double-click the **Add** icon . The **Outbound HL7 ADT** dialog opens.



- 2 Complete required text information; selections preceded by an asterisk must be entered.

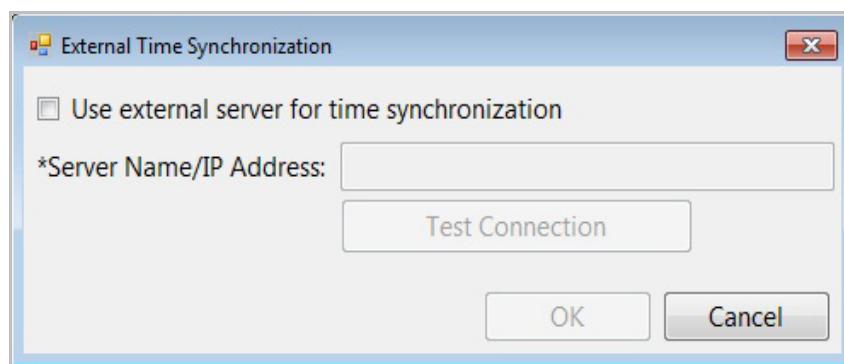
*Host Name/IP Address	Enter the host name or IP Address of the device/PC on which the client application/system resides.
*Display Name	Text box automatically populates with the entered Host Name.
Description	Enter information that describes the client.
*Port Number	Enter the desired port number or use the up/down arrows.

Time Synchronization

You can select an external server for time synchronization. If you want to select an external server for time synchronization do the following.

Important If your system must interface with ICCA, PIIC iX must be configured to use the external time source.

- I From **Configure** pane expand the **Interfaces** folder then double-click **Time Synchronization**. The **External Time Synchronization** dialog opens.



- 2 Click the **Use external server for time synchronization** check box and enter the Server Name in the text box.
- 3 Click **Test Connection** to be sure that you can communicate with the Server.
- 4 When information in dialog is complete click **OK**.

Alarm Notification

Alarm Notification permits setup of real-time alert information export to various devices (Vocera badges, Pagers, Cisco phones, Marquees, Dome lights, for example) providing the caregiver ability to receive alert information wherever they are. Alert information is gathered for every patient in a configured unit, then filtered and exported to an application (such as Philips Emergin or Philips CareEvent) that sends it to the appropriate device.

Important The **Institution** name in the PIIC iX topology ([Page 6-5](#)) must match the **Institution** name in Philips CareEvent, Part Number 866435, for paging to work successfully.

You can configure the ADI service to be Distributed or Centralized.

Distributed (*Default*) The ADI Service runs on each PIIC iX and each PIIC iX connects directly to the configured clients.

Centralized The ADI Service runs on the Primary server. The PIIC iX sends information to the Primary server which send the information to the configured clients.

WARNING **The paging system is a secondary alarm notification system not intended for primary notification of alarms, physiological, or demographic data. Receipt of alerts is not confirmed and delivery to the end device is not guaranteed. Also, time data and alarms may be delayed.**

If you are using the paging system you must remain within monitoring distance of the primary alarm notification device, the bedside monitor or the PIIC iX.

- ▶ From the **Configure** pane expand the **Interfaces** folder then double-click **Alarm Notification**.

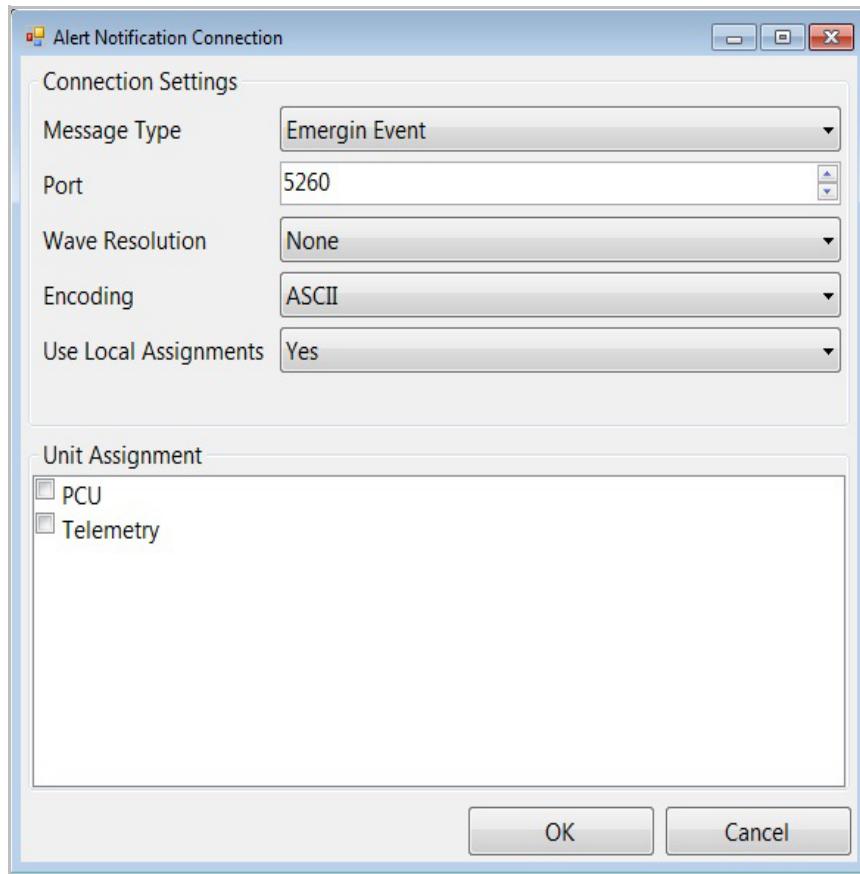
Add or Edit a Client as follows.

- 1 Click the **Add Client**  or **Edit** icon  at the top of the screen. The **Alert Notification Client** dialog opens.
- 2 On the **Client Settings** tab, enter or change required information in the appropriate text boxes.

*Host Name/IP Address	Name of host (Client, for example) or IP Address that PIIC iX System uses for communication
*Display Name	Auto populates Defaults to Host Name entry
Description	Text entry that describes the ADI client

- 3 Add a new connection.

- a Click the **New Connection** button in the **Alert Notification Client** dialog.
 An **Alert Notification Connection** dialog opens.

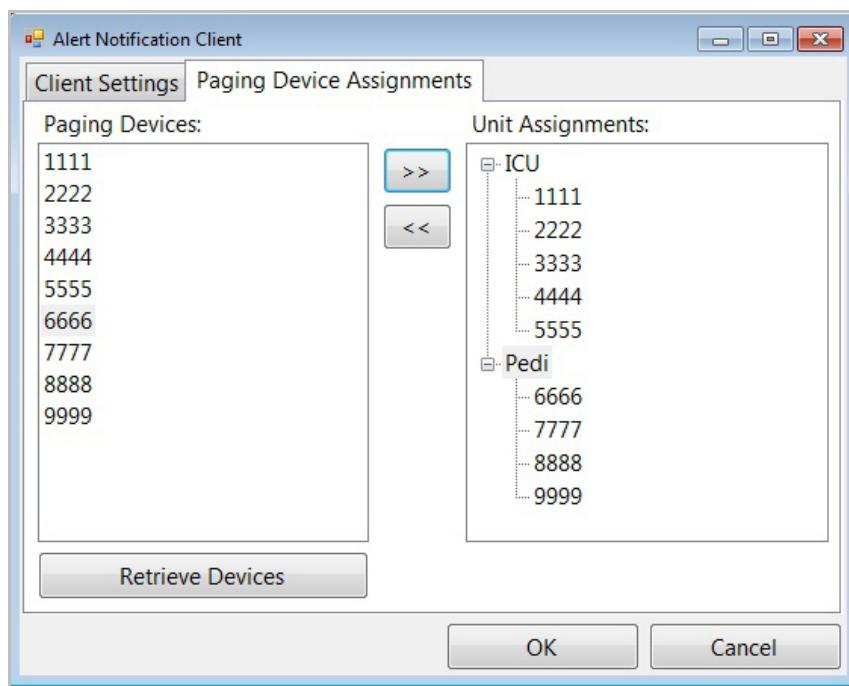


- b Enter required information in appropriate text boxes.

Message Type	Emergin Event Philips Event
Port	Default port value is 5260
Wave Resolution	High Resolution sends images compatible with the Cisco 7921 phone Low Resolution sends images compatible with other Cisco phones None (Default) does not send wave image with messages
Encoding	ASCII (Default) ADI service sends messages to the paging client in ASCII format. Unicode ADI service sends messages to the paging client in Unicode format.
Use Local Assignments	If selected the Caregiver Assignment application drives paging assignments. The system sends alert notifications targeted to the Caregivers according to the current Caregiver assignments. If not selected configured alerts are sent to ADI Client and ADI Client is responsible for device assignment.

- c Select desired units in the **Unit Assignment** section, then **click OK**.

- 4** On the **Paging Device Assignments** tab click **Retrieve Devices** to populate the **Paging Devices** list. These devices are available for Unit assignment.



Important Patient Monitoring Services must be running on the Primary Server in order to retrieve the Alert Notification Client configured devices.

- a** With desired unit selected in the **Unit Assignments** list click the device that you want to assign. Then click the right-arrow icon **>>**.
- b** If you want to remove a device from assignment, select it and click the left-arrow icon **<<**.
- c** Once all desired assignments are complete click **OK**.

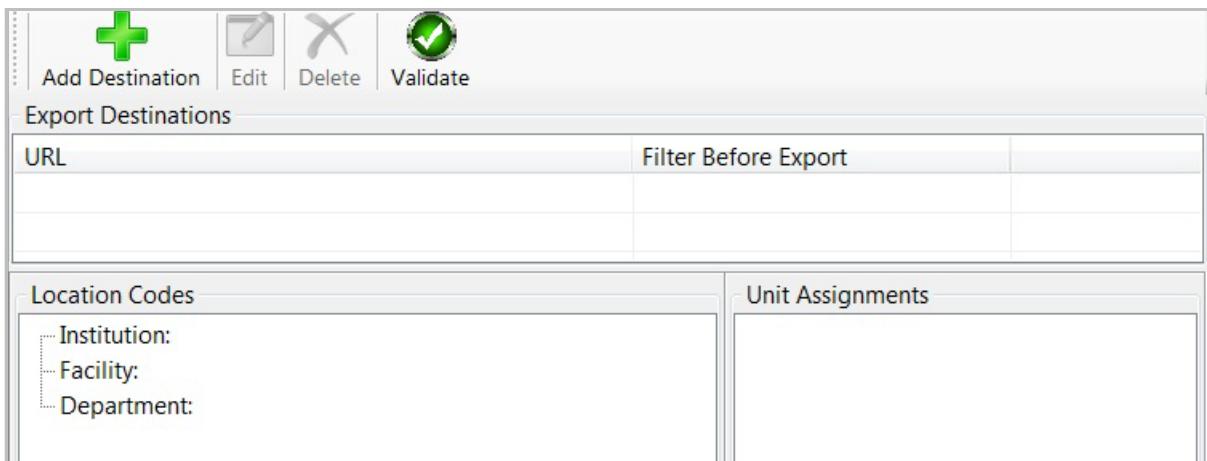
The system logs all error codes returned from a Alert Notification Client and messages sent to Emergin (except Patient Name and Waveform).

ECG 12 Lead

The **ECG 12 Lead** interface permits configuring ECG 12 Lead export destinations.

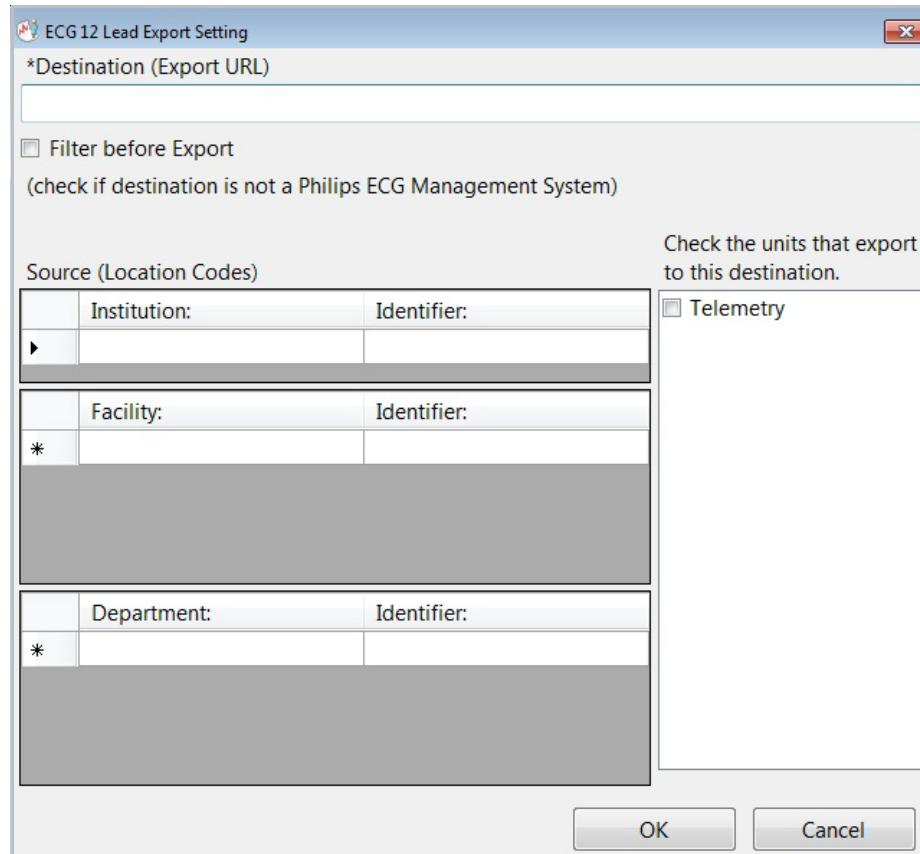
NOTE ECG 12 Lead export destinations are configured per unit, where hosts in that unit export only to one destination. Multiple export destinations can be configured, however.

- From the **Configure** pane expand the **Interfaces** folder then double-click **ECG 12 Lead**.



If you want to add an Export Destination:

- Click the **Add Destination** icon in the **ECG 12 Lead** screen.



- In the **ECG 12 Lead Export Setting** dialog enter the URL for the desired destination in the **Destination (Export URL)** text box.
The **Destination (Export URL)** selection in the **ECG 12 Lead Export Setting** dialog permits entry of the destination system fully qualified URL.

For TracemasterVue and DatamedFT enter the URL as follows:

http://xxx.xxx.xxx.xxx/EMSCOMM/

where

xxx.xx.xxx.xxx is the unique IP Address of the TraceMasterVue or DataMedFT Server

Important The wave data exported to Philips devices (TraceMaste4rVue, IECG, for example) should **not** be display-filtered before export. The wave data that is exported to non-Philips devices **should** be display-filtered once before export.

- 3 Click the check box for each unit that exports to this destination. For each unit you can configure **Institution**, **Facility**, **Department** and **Filter Before Export** settings.
- 4 Enter appropriate data in text box for **Institution**, **Facility**, or **Department** and an **Identifier** for each.
Text entry permits up to 32 alpha-numeric characters.
- 5 If desired click the **Filter before Export** check box.
The **Filter Before Export** check box permits appropriate filtering if the destination is **not** a Philips ECG Management System.
- 6 When information is complete click **OK**.

If you want to add an Edit a Destination:

- 1 Select the desired configured destination from the list in the **ECG 12 Lead** screen.
- 2 Modify appropriate data in text boxes that require change.
- 3 When information is complete click **OK**.

If you want to delete an Export Destination:

- 1 Select the desired configured destination from the list in the **ECG 12 Lead** screen.
- 2 Click the **Delete** icon at the top of the screen.
A dialog opens requesting confirmation that you want to delete the destination.
- 3 Click **Yes** in the dialog.

Web Browser

The **Web Browser** feature permits adding Internet Explorer capability and customizing a defined set of URLs for browser access at PIIC iX hosts. This feature is available with appropriate licensing (**Page 5-25**).

- ▶ To open the feature expand the **Interfaces** folder in the **Configure** pane then double-click **Web Browser**.
The **Current URLs** list opens.

Setting	Action
Current URLs	<ul style="list-style-type: none"> ▶ With host selected enter the desired URLs in the Current URLs text box. Add URLs that should be available to the user on the resident machine, such as key institution intranet sites or commonly used search engines.
Limited Web Access	<ul style="list-style-type: none"> ▶ With host selected click the check box to limit access to designated URLs. If check box is selected only the URLs specified in the Current URLs list are available in the browser. By default the browser navigates to the first entry in the Current URLs list. The same behavior occurs when you select Home page . If check box is clear the browser will navigate to any of the Institution's permitted Internet sites.
Visible	<ul style="list-style-type: none"> ▶ With host selected click the check box to add a Web Browser menu selection in the Main Setup application button.

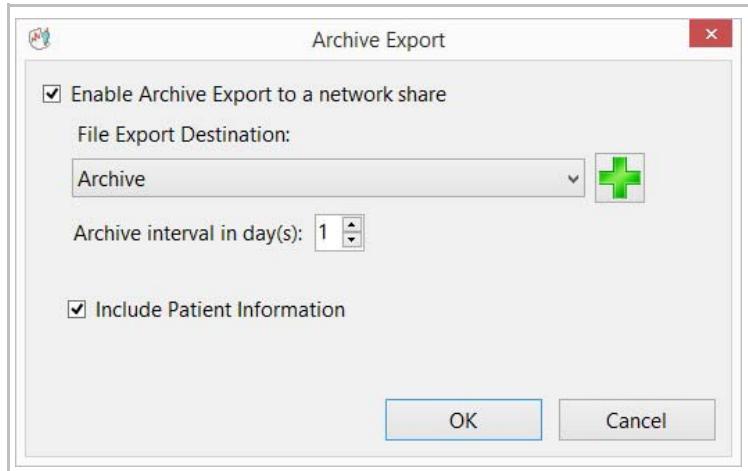
Configure browser capability at your PIIC iX hosts as follows.

- 1 With desired host selected enter the URL of the desired site.
- 2 With host selected click the **Limited Web Access** check box to permit navigation to the designated URL.
- 3 With host selected click the **Visible** check box to add a **Web Browser** menu selection in the **Main Setup** application button at the PIIC iX host.

Archive Export

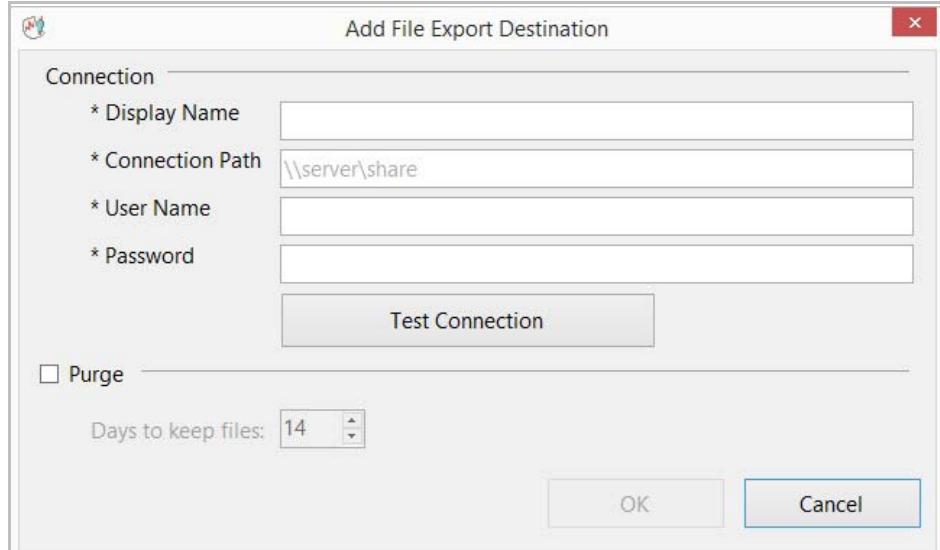
The **Archive Export** feature permits exporting the archive to a shared location on the network.

- I In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click **Archive Export**.
The **Archive Export** dialog opens. The Default dialog has the **Enable Archive Export to a network share** check box clear.



- 2 Click the **Enable Archive Export to a network share** check box.
- 3 Select a configured network share from the **File Export Destination** list if one was configured using the **File Export Destinations** feature.
- 4 If you want to add a destination that is accurately configured (**Page 6-4**), double-click the icon.

The **Add File Export Destination** dialog opens.



Important Be sure that the **Connection Path** text box entry is a configured, shared folder location with access permission. Refer to **Setting File Sharing Locations**.

- a** In the **Connection** section of the dialog add the following:

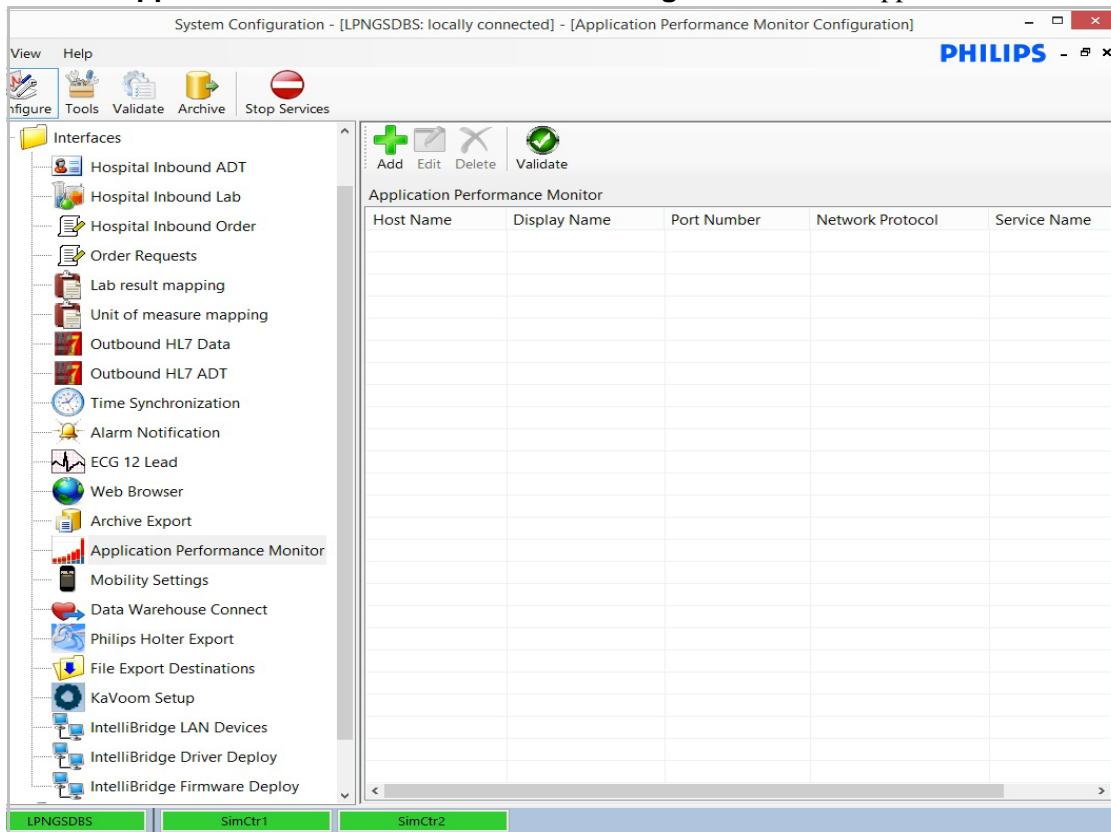
***Display Name**
***Connection Path**
***User Name**
***Password**

- b** Click the **Test Connection** button.
Connection status will appear. If connection fails refer to **Setting File Sharing Locations**.
- c** If you want to purge the file share after a specific time click the **Purge** check box, then use the up/down arrows to choose the **Days to keep files** setting.
- d** When dialog entries are complete click **OK**.
- 5** In the **Archive Export** dialog click the up/down arrows to set the **Archive Interval in day(s)**.
- 6** Click the **Include Patient Information** check box if you want to select it.
- 7** When **Archive Export** dialog entries are complete click **OK**.

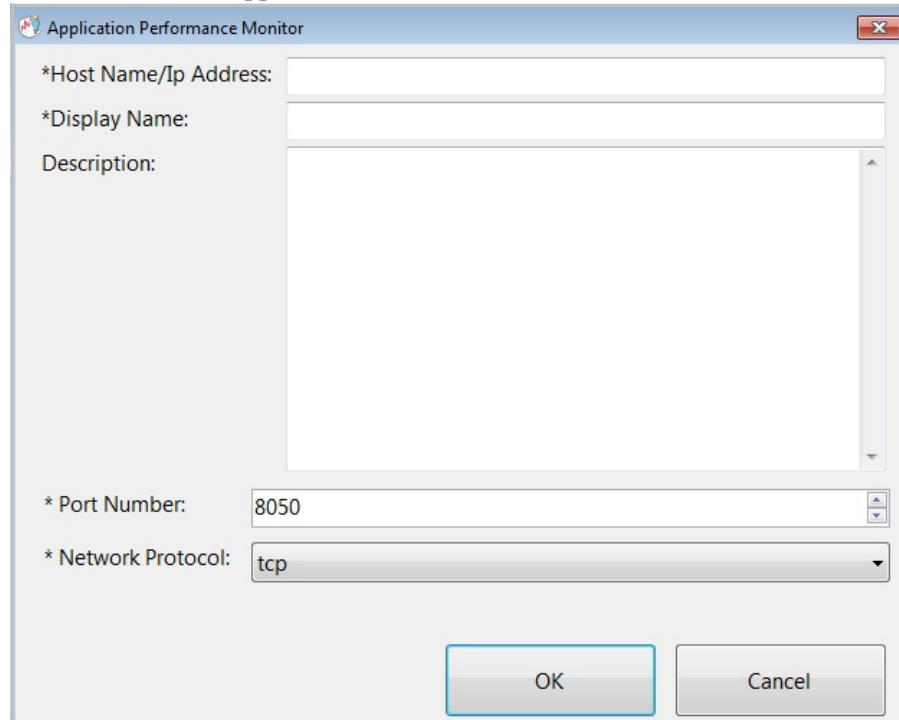
Application Performance Monitor

The Application Performance Monitoring feature provides Philips Support and Field Service Personnel a mechanism for near-real-time application performance monitoring of one or more PIIC iX installations. It provides information about the current state of the PIIC iX network devices available through an SNMP interface and a long-term storage of the application performance data. The purpose of this long-term storage is to allow analysis of a past state of the PIIC iX installation.

- I In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click **Application Performance Monitor**. The **Application Performance Monitor Configuration** screen appears.



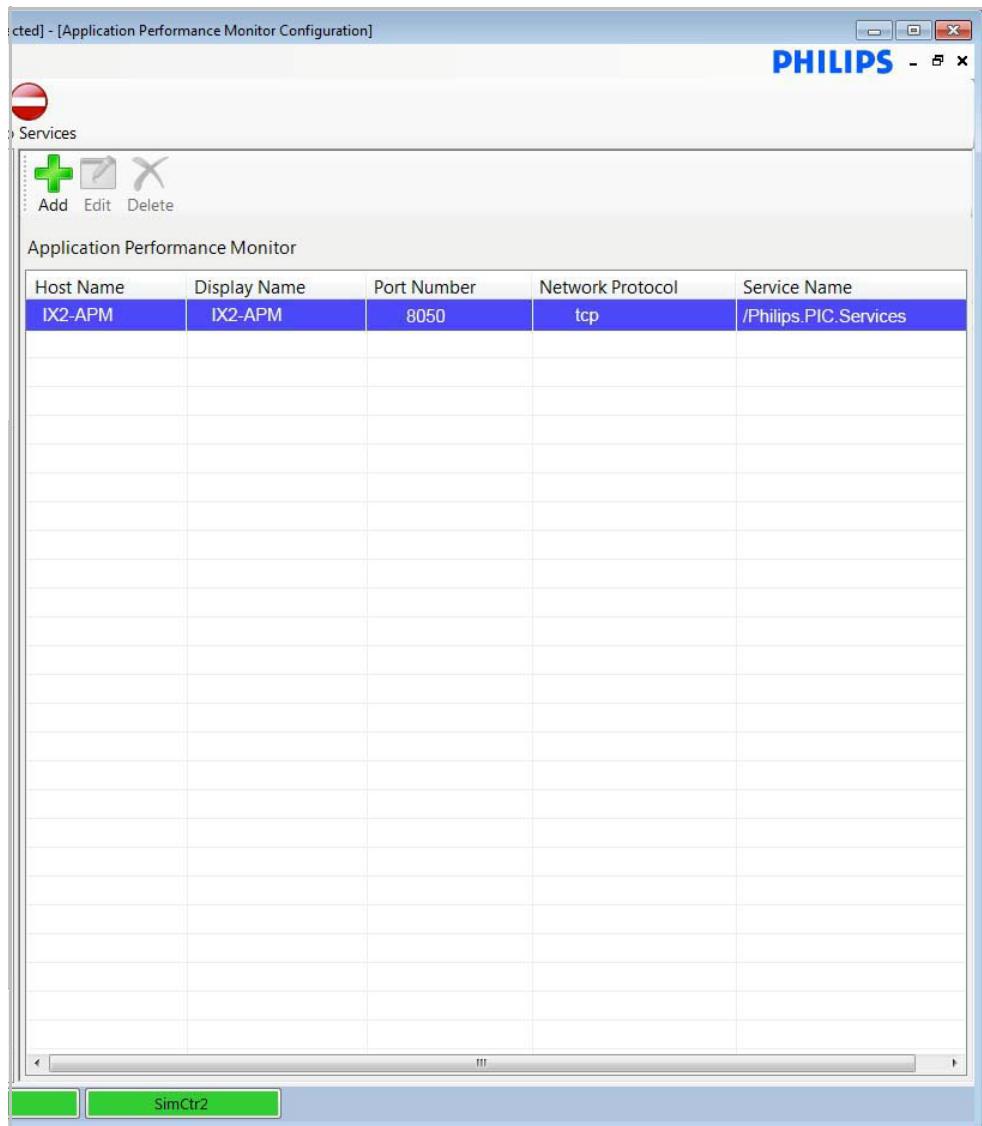
- 2 If you want to add the Application Performance Monitor Server location click **Add**



- 3** Complete the text boxes in the **Application Performance Monitor** dialog.

Section/Selection	Action
*Host Name/IP Address	■ Enter valid information in text box.
*Display Name	■ Automatically populates with Host Name/IP Address data
Description	■ Enter descriptive information if desired.
*Port Number	■ Click up/down arrows to make desired selection or enter numeric value.
*Network Protocol	■ Click up/down arrows to make desired selection.

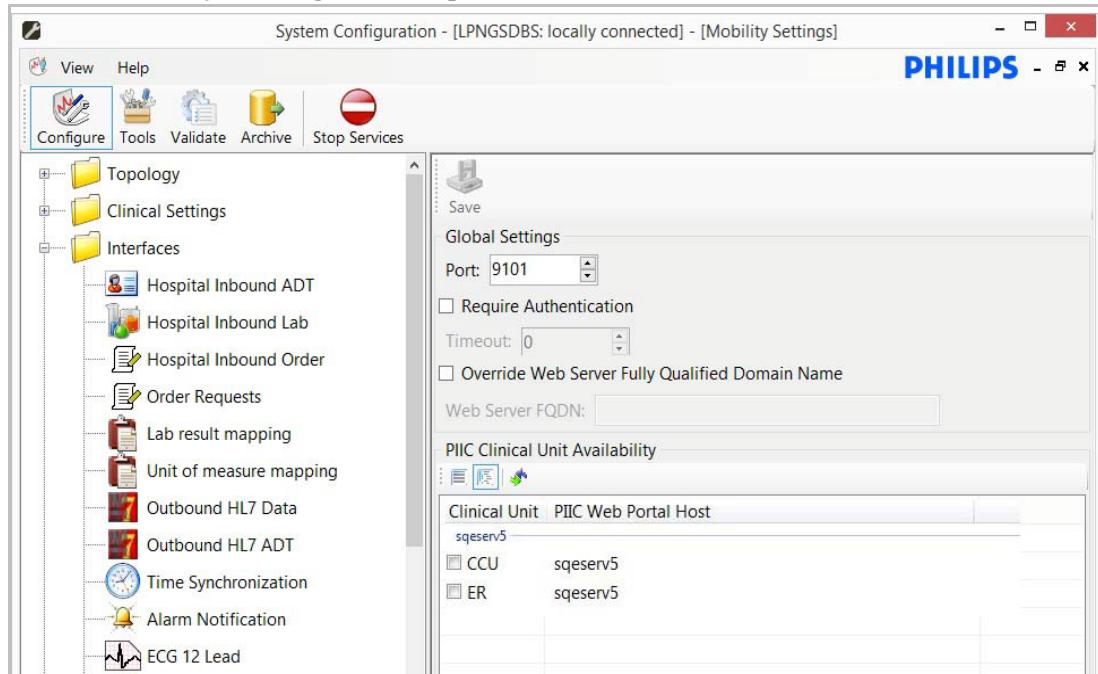
- 4** When text box entries are complete click **OK**.
- 5** Verify that the correct values for the APM appear.



Mobility Settings

The **Mobility Settings** feature permits configuration of the host in the topology that is appropriately licensed for Mobile Access clients. This can be a dedicated Mobility Server or a dedicated Mobility/Web Server combination.

- I In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click the **Mobility Settings** icon.
- The **Mobility Settings** screen opens.

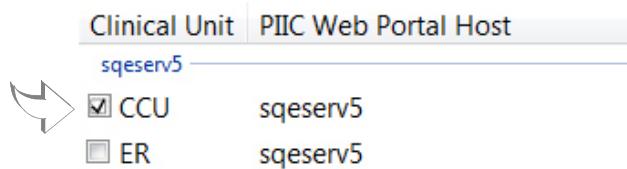


Important If no host in the topology is a licensed Mobility Server a message dialog appears, **None of the hosts in the topology are licensed as a Mobility Server. These settings will only take effect once a Mobility Server has been licensed.**

Click **OK** in the dialog to continue with configuration.

- 2 If you require all users to log on with *User Name* and *Password* each time they launch Mobile Caregiver, check the **Require Authentication** check box. If the check box is clear each user is required to enter a user name once.
When the **Require Authentication** check box is clear, the **Timeout** setting is active.
- 3 If the **Require Authentication** check box is checked enter the desired **Timeout** setting. Use the arrows to select the required time-out period ranging from 0 to 60. A setting of 0 represents no time-out period.
- 4 Use the arrows to populate the **Port** text box. (9101, for example).
- 5 If your configuration requires that you override the internal Web Server host name so that your mobile users can access retrospective data easily off site, you can add the fully qualified domain name of the Web Server in the **Override Web Server Fully Qualified Domain Name** text box.
By default the **Override Web Server Fully Qualified Domain Name** check box is clear.

- 6** Select the PIIC Clinical Units that you want to be available for Mobile Access.



Important If you change the Display Name (**Page 6-24**) of a PIIC Web Portal Host you must return to the **Mobility Settings** screen and reselect the desired clinical unit(s).

- 7** When Mobility Settings are complete click the **Save** icon.

Data Warehouse Connect

The **Data Warehouse Connect** (DWC) feature permits export of patient data directly from surveillance hosts to a DWC storage destination for longer than the typical physiological short-term storage. Stored information can be used for post-discharge sentinel event review, for which a review application permits navigation and data viewing, or research.

You can use the **Data Warehouse Connect** interface to select the DWC Server that is network accessible to your system. For more complete description of the DWC Server refer to the *PIIC iX Data Warehouse Connect Installation and Use Guide*.

- ▶ In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click the **Data Warehouse Connect** icon.
The **Data Warehouse Connect Configuration** screen appears.

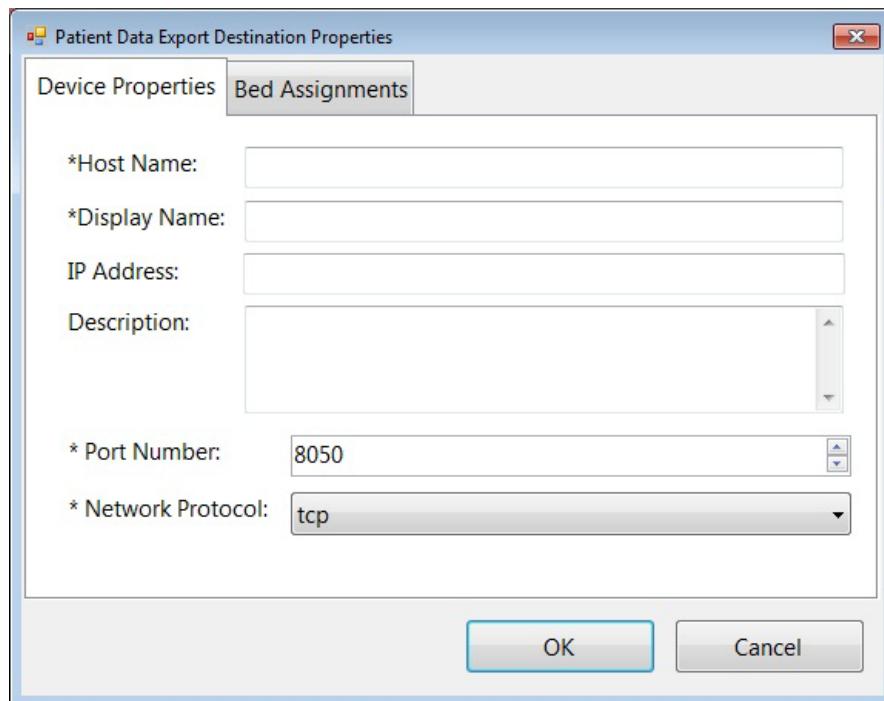
The screenshot shows the "Data Warehouse Connect Configuration" screen. At the top, there are four icons: a green plus sign for "Add Export Destination", a pencil for "Edit", a delete symbol for "Delete", and a checkmark for "Validate". Below these are two sections: "Data Warehouse Connect Destinations:" and "Bed Assignments:". The "Data Warehouse Connect Destinations:" section contains a table with columns: Host Name, Display Name, Port Number, Network Protocol, and Service Name. The "Bed Assignments:" section contains a table with columns: Clinical Unit, Bed, Data, and Notes. At the bottom of the screen, there is a green footer bar with the text "SimCtr2".

Adding or Editing a Data Warehouse Connect Destination

Important All Physiological data enabled for export per bed assignments along with Patient demographics and Trend uploads are stored in the DWC Server. Data is associated with the patient using the patient's unique identifier.

- I If you want to add a Data Warehouse Connect export destination double-click the **Add Export Destination**  icon.

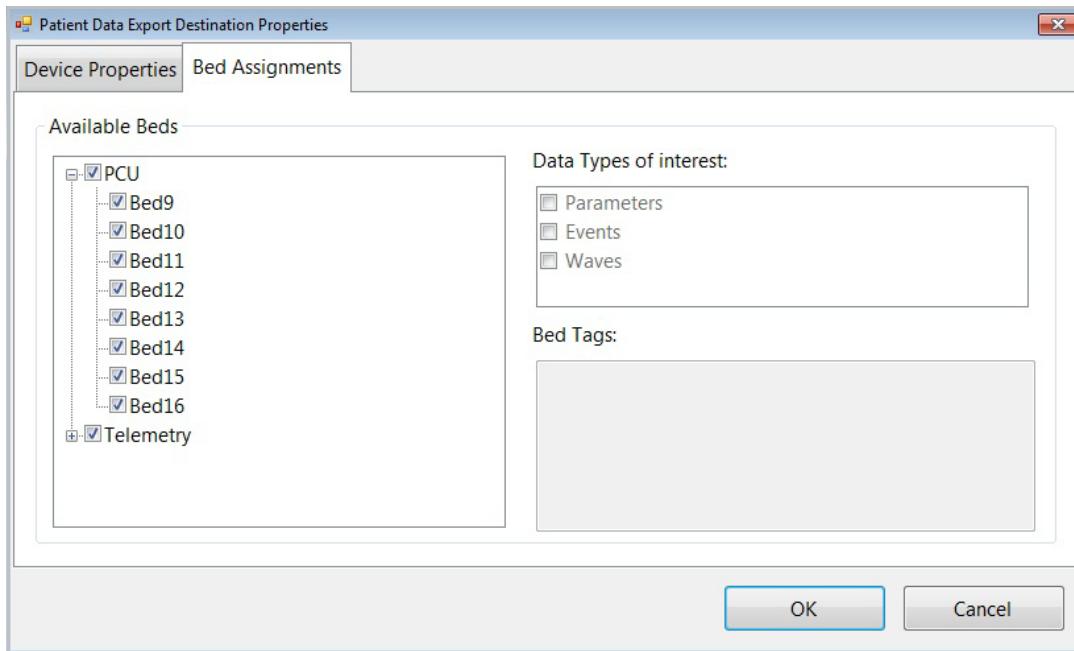
The **Patient Data Export Destination Properties** dialog opens.



- 2 Complete the information in the **Device Properties** tab of the **Patient Data Export Destination Properties** dialog..

Section/Selection	Action
*Host Name	■ Enter the host name of the server
*Display Name	■ Text box automatically populates with entered Host Name.
IP Address	■ Enter the IP Address of the server
Description	■ Enter a description if desired in the text box.
*Port Number	■ Type the desired Port Number or use the arrows. Default Port Number is 9912.
*Network Protocol	■ Select the desired protocol from the drop-down list.

- 3** On the **Bed Assignments** tab complete the required information.



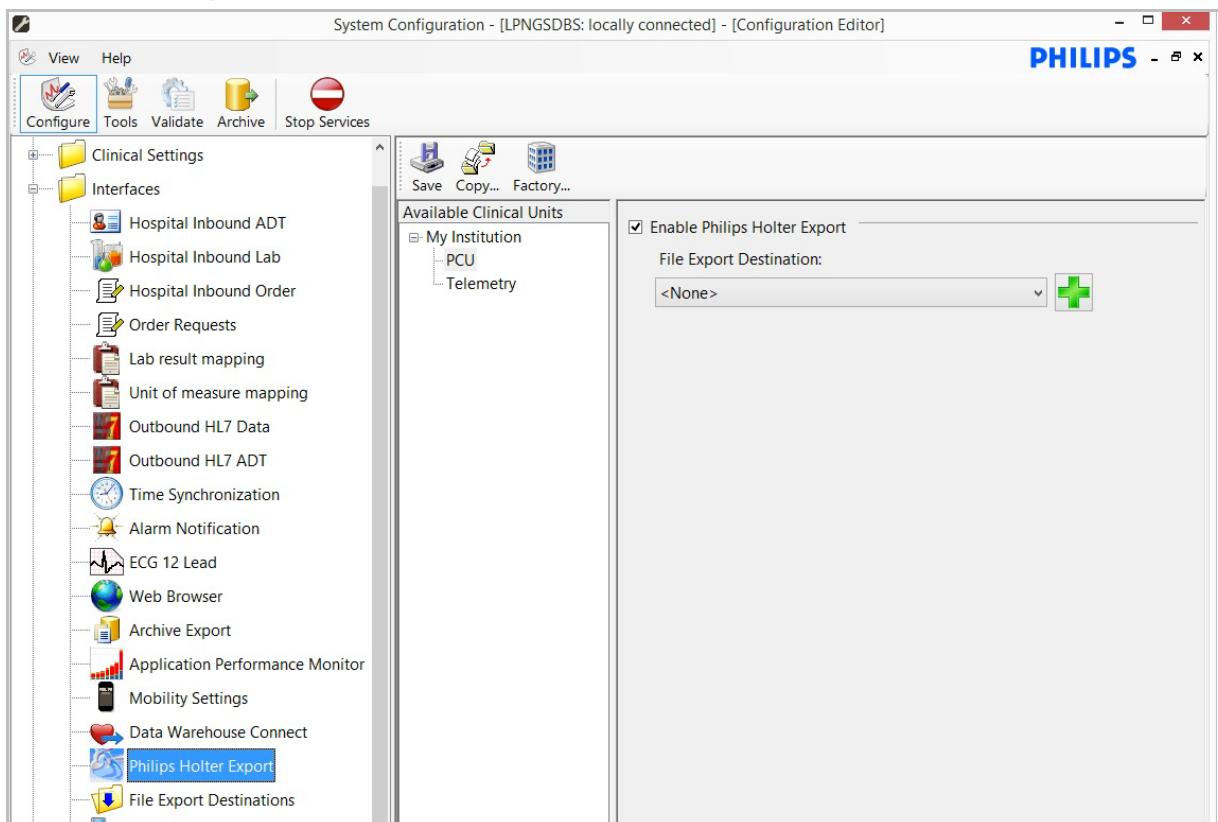
- a** Expand the Clinical Units to view beds in each unit. Then select the desired beds or entire Clinical Unit that you want to export.
 - b** In the **Default Export Setting for Unit** section select the desired data type to export. Selections include **Parameters**, **Events**, and **Waves**.
 - c** Enter applicable **Notes**.
 - d** When you select the entire Clinical Unit a **Future Bed Labels** section appears that has an **Automatically assigning for export using Default Export Settings** check box. This selection permits application of a Default configuration to all future bed labels in the unit (**Default Export Setting for Unit** and **Notes** selections).
 - e** When you select individual beds in the unit(s) you can configure custom settings and click **Apply to assigned beds**.
- 4** When dialog information is complete click **OK**.
The DWC Destination and configured Bed Assignments populate the **Data Warehouse Connect Configuration** screen.
- 5** With the DWC destination selected in the PIIC iX the **Data Warehouse Connect Configuration** screen, click **Validate**.

Philips Holter Export

The **Philips Holter Export** feature permits export of ECG files that are compatible with the Philips Holter Monitoring application versions 2.9.4 through 3.0.1. You can pre-configure the destination share using **File Export Destinations** or you can add a shared file location in the Philips Holter Export screen. The PIIC iX B.02 **Philips Holter Export** feature generates .rfv files and EASI ECG files which have a .rfe format.

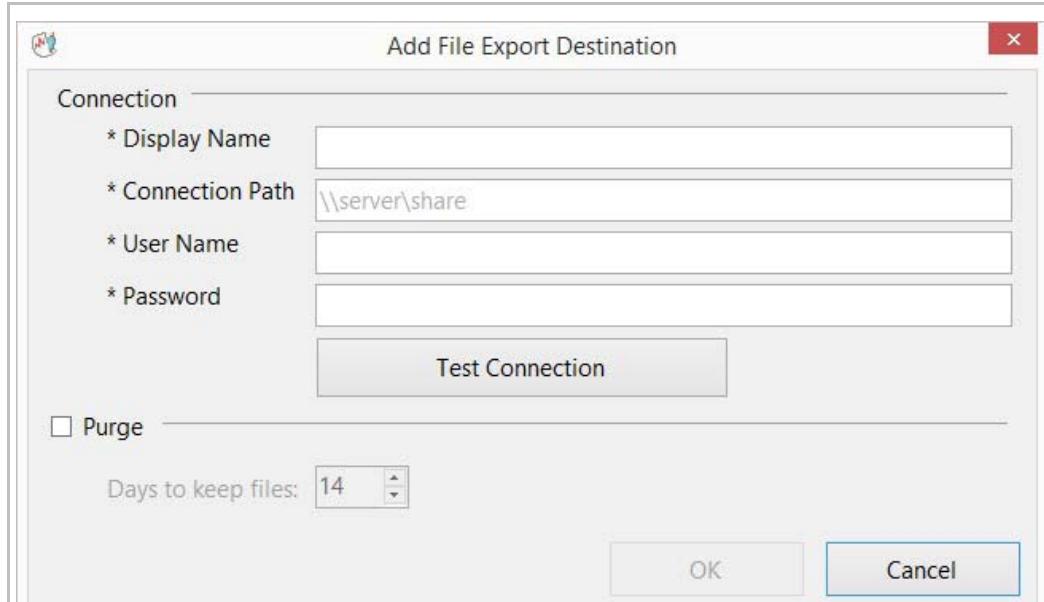
A file share must be created that is accessible to PIIC iX and the Holter Export System user. Refer to **Setting File Sharing Locations**.

- I To configure the feature go to **System Configuration** on the desired machine. In the **Configure** pane expand the **Interfaces** folder and double-click the **Philips Holter Export** icon.



- 2 With the desired Host select in the **Available Clinical Units** pane click the **Enable Philips Holter Export** check box.
- 3 If a file share has been created using **File Export Destinations** feature you can select it in the **File Export Destination** drop down-list.

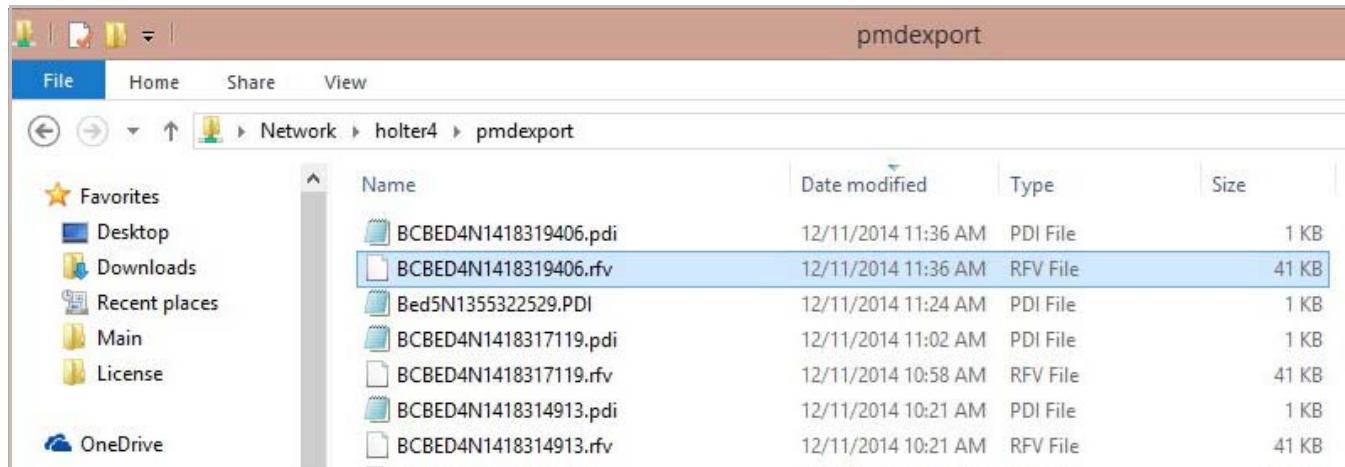
- 4 If you want to add a File Export Destination, double-click the  icon.
The **Add File Export Destination** dialog opens.



Important Be sure that the **Connection Path** text box entry is a configured, shared folder location with access permission. Refer to **Setting File Sharing Locations**.

- a In the **Connection** section of the dialog add the following:
 - ***Display Name**
 - ***Connection Path**
 - ***User Name**
 - ***Password**
- b Click the **Test Connection** button.
Connection status will appear. If connection fails refer to **Setting File Sharing Locations**.
- c If you want to purge the file share after a specific time click the **Purge** check box, then use the up/down arrows to choose the **Days to keep files** setting.
- d When dialog entries are complete click **OK**.

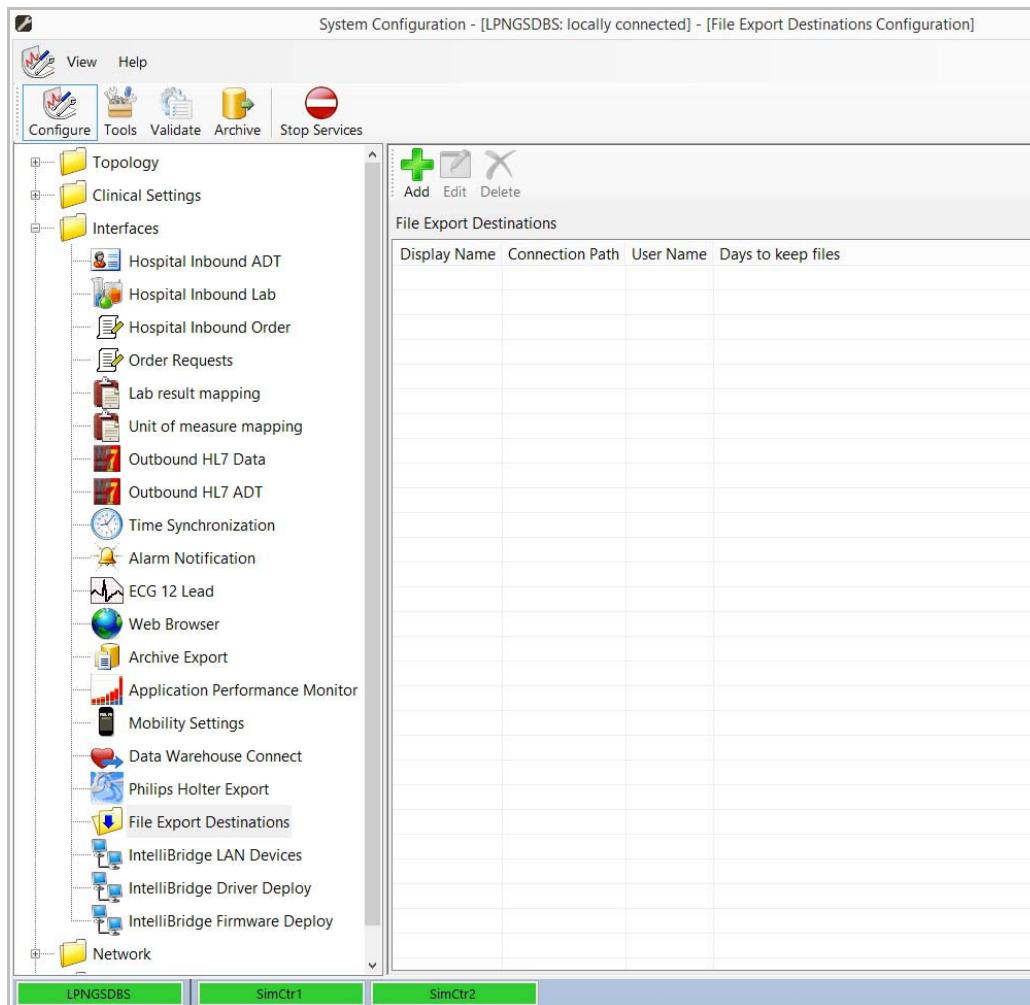
The example illustration shows a patient's ECG exported to the configured file share, **\holter4\pmlexport**. The Philips Holter Export user with appropriate access privilege can browse to the share location and open the desired file for viewing.



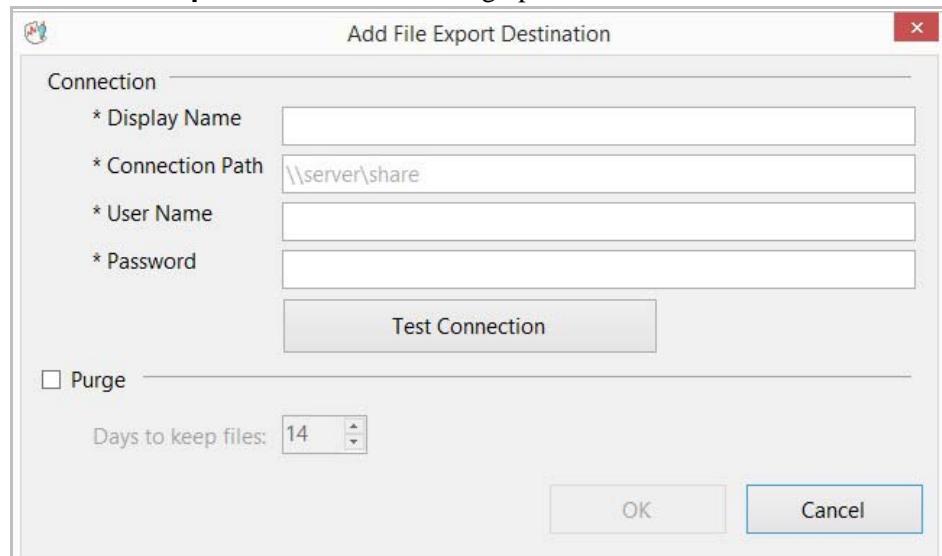
File Export Destinations

The **File Export Destinations** feature permits configuration of destination locations for several other interfaces. With PIIC iX B.⁰² these include **Electronic Reports**, **Wave Strip Export**, **Archive Export**, and **Philips Holter Export**.

- ▶ To configure the feature go to **System Configuration** on the desired machine. In the **Configure** pane expand the **Interfaces** folder and double-click the **File Export Destinations** icon.



- 5 If you want to add a File Export Destination, double-click the  icon.
The **Add File Export Destination** dialog opens.



Important Be sure that the **Connection Path** text box entry is a configured, shared folder location with access permission. Refer to [Setting File Sharing Locations](#).

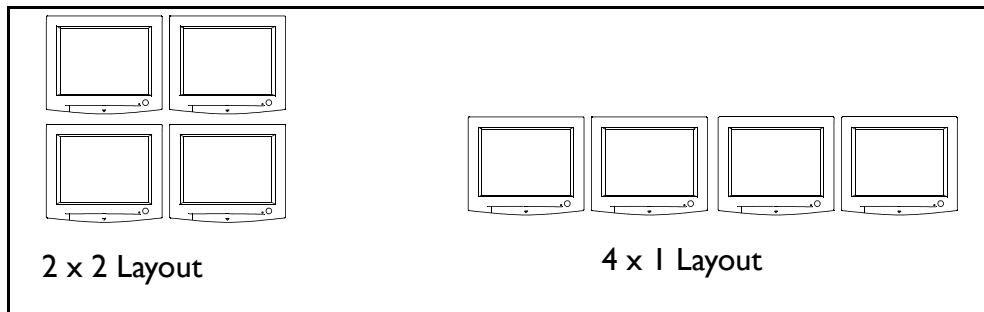
- a In the **Connection** section of the dialog add the following:

***Display Name**
***Connection Path**
***User Name**
***Password**

- b Click the **Test Connection** button.
- c If you want to purge the file share after a specific time click the **Purge** check box, then use the up/down arrows to choose the **Days to keep files** setting.
- d When dialog entries are complete click **OK**.

KaVoom Setup

- Important** KaVoom is not supported with a switched display. Touch screen displays are also not supported. Philips KaVoom Software accommodates sharing a single keyboard and mouse between four or fewer PIIC iX machines.
- NOTE** It is required that a hardware keyboard-video-mouse (KVM) switch is installed. This reduces the risk if the PC (where the KM switch is connected) or connection to the IntelliVue Clinical Network is lost. Up to four displays can be used with the KM Software. These illustrations show four displays, but two or three displays are also supported



If you want to connect other PIIC iX machines,

You must run KaVoom on each machine you want to connect.

- 1 In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click the **KaVoom Setup** icon.
The **KaVoom! KM for Philips** dialog opens.
- 2 Click **Change** in the **KaVoom! KM for Philips** dialog.
On the initial machine the **Change Configuration** screen **Other Computers** list is blank. Leave this dialog open and repeat Step 1 on each device that you want to connect.
- 3 As you open KaVoom on each device the **Other Computers** list populates with the appropriate host names. When all desired host names appear in the **Change Configuration** screen, click **Next >**.
- 4 On the selected device **Change Configuration** screen drag and drop the display icons so that the configuration matches the actual location of the physical displays.
- 5 Click **Finish**.
- 6 Be sure that each connected device resumes monitoring. If not, restart it.

- NOTE** **KaVoom! KM!** for Philips v 3.65 is only supported on configurations with PIIC iX or PIIC Classic N.01 or later.

If you want to connect other PIIC machines,

You must run KaVoom on each machine you want to connect to work across multiple networks.

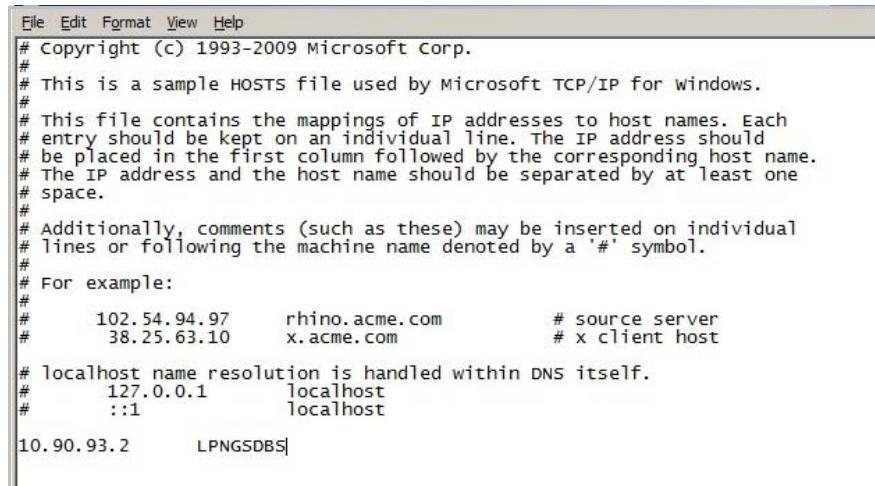
- 1 Make sure that each host can ping other hosts by hostname and IP.
- 2 Document/write the IP address of each device that you want to configure for KaVoom.

3 If necessary, modify the hosts file on each desired host.

a Open Windows Explorer and browse to
|Windows\System32\drivers\etc\hosts

b Use Notepad to open the hosts file.

Enter each IP address and name of desired hosts



```

File Edit Format View Help
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#      102.54.94.97    rhino.acme.com        # source server
#      38.25.63.10    x.acme.com            # x client host
#
# localhost name resolution is handled within DNS itself.
#      127.0.0.1    localhost
#      ::1          localhost
10.90.93.2      LPNGSDBS|

```

c Go to **File > Save** to save changes.

If you want to disconnect machines,

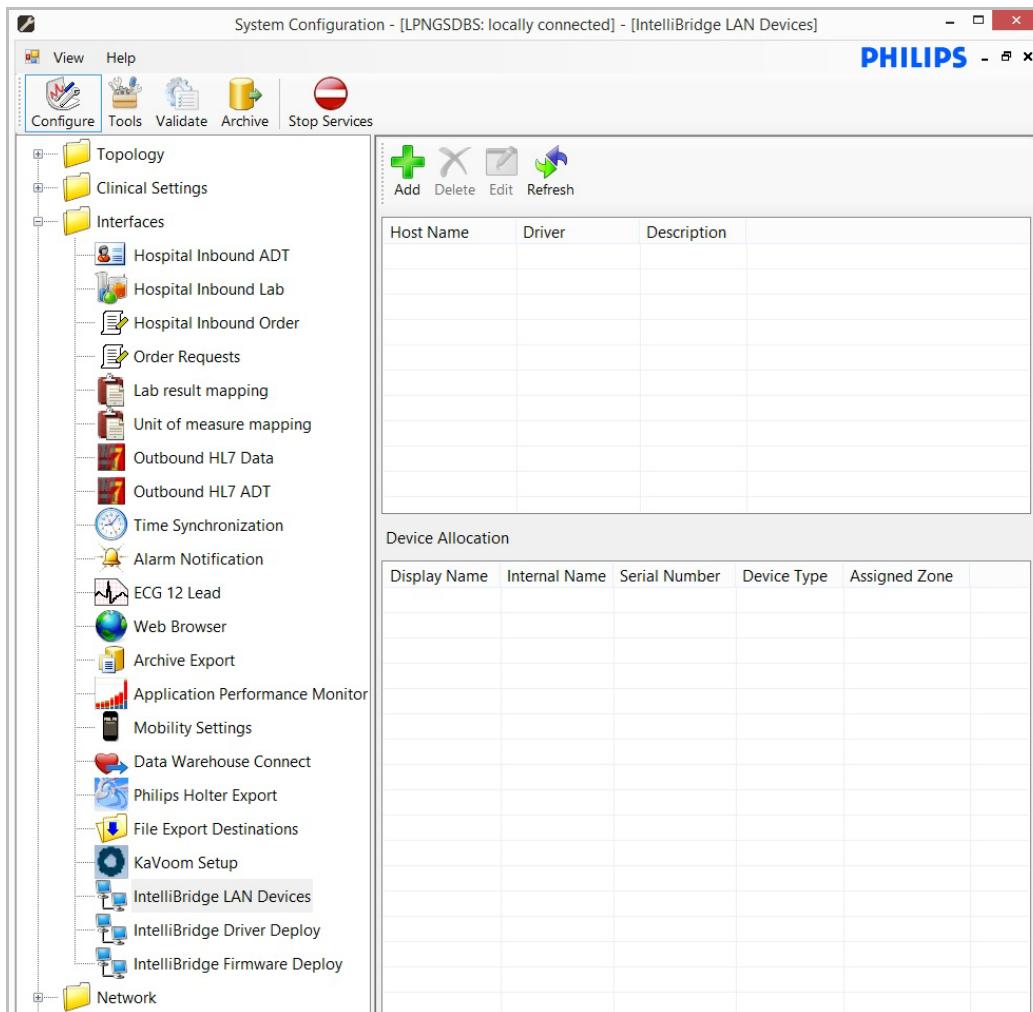
- ▶ In the **Other Computers** list of the **Change Configuration** screen select the host you want to disconnect. Then click **Remove**. For multiple devices repeat this step for each device.

IntelliBridge LAN Devices

IntelliBridge System is a data acquisition device that supports third party connectivity which enables the system to receive data from bedside devices by way of EC40/80 hubs or third party host servers. You must have the IP Address or Host Name of the IntelliBridge System device and network connection to retrieve and assign the appropriate drivers.

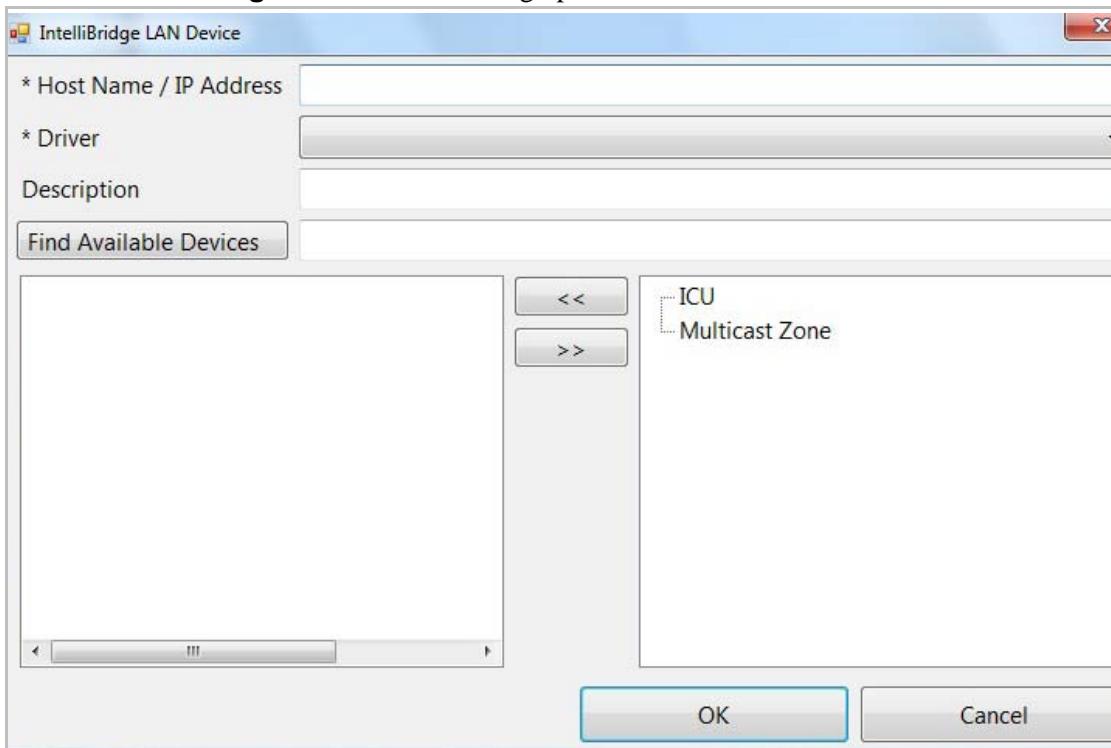
Detailed information about configuring IntelliBridge LAN devices is included in the *IntelliBridge SC 50 Device Interfacing Engine Installation and Configuration Guide*.

- I In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click the **IntelliBridge LAN Devices** icon.
The **IntelliBridge LAN Devices** screen opens.



- 2** Click the **Add** icon in the menu bar.

The **IntelliBridge LAN Device** dialog opens.



- 3** Enter the LAN device host name or IP address in the **Host Name/IP Address** text box.

- 4** Select the device driver you want to use to communicate with the LAN device from the Driver drop-down menu.

The Driver menu is populated with all LAN-data-output device drivers that are installed in the IntelliBridge SC 50 database.

- 5** Enter a description for the LAN-data-output device in the **Description** text box.

- 6** Click **Find Available Devices**.

If you do not enter any text in the associated text box, all devices for the given configuration are listed in the available devices list.

If you enter characters in the associated text box, only the available devices that include the entered text in their description appear in the available devices list. For most types of LAN-data-output devices (Anesthesia Machines or Patient Monitors, for example), a single device will be associated with the entered Host Name/IP address. For some devices (multi-pump infusion pump racks, for example), multiple devices will be associated with the Host Name/IP address.

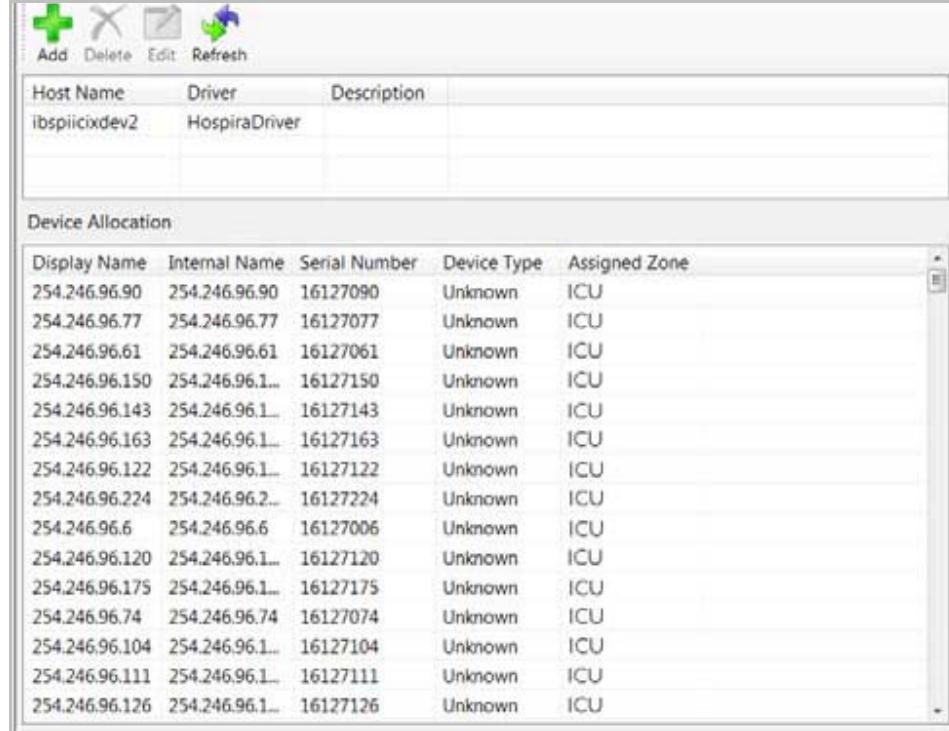
- 7** Assign the available LAN devices to a Zone.

- a** Select the device or devices to assign from the list of available devices, then select the zone to which the selected devices are to be assigned.

- b** Click the right-arrow icon .

- c If you want to remove a device from assignment, select it and click the left-arrow icon <<.
- 8 Once all desired assignments are complete click **OK**.

The selected LAN-data-output devices are assigned to the selected zone.



The screenshot shows a software interface for managing LAN devices. At the top, there are four icons: a green plus sign for 'Add', a red X for 'Delete', a blue edit symbol for 'Edit', and a blue circular arrow for 'Refresh'. Below this is a table with three columns: 'Host Name', 'Driver', and 'Description'. A single row is visible, showing 'ibspiicixdev2' in the Host Name column and 'HospiraDriver' in the Driver column. Below this table is a section titled 'Device Allocation' containing a larger table. This table has columns for 'Display Name', 'Internal Name', 'Serial Number', 'Device Type', and 'Assigned Zone'. It lists 18 rows of data, all of which have 'ICU' assigned in the 'Assigned Zone' column. The 'Display Name' column contains various IP addresses like 254.246.96.90 through 254.246.96.126.

Host Name	Driver	Description
ibspiicixdev2	HospiraDriver	

Display Name	Internal Name	Serial Number	Device Type	Assigned Zone
254.246.96.90	254.246.96.90	16127090	Unknown	ICU
254.246.96.77	254.246.96.77	16127077	Unknown	ICU
254.246.96.61	254.246.96.61	16127061	Unknown	ICU
254.246.96.150	254.246.96.1...	16127150	Unknown	ICU
254.246.96.143	254.246.96.1...	16127143	Unknown	ICU
254.246.96.163	254.246.96.1...	16127163	Unknown	ICU
254.246.96.122	254.246.96.1...	16127122	Unknown	ICU
254.246.96.224	254.246.96.2...	16127224	Unknown	ICU
254.246.96.6	254.246.96.6	16127006	Unknown	ICU
254.246.96.120	254.246.96.1...	16127120	Unknown	ICU
254.246.96.175	254.246.96.1...	16127175	Unknown	ICU
254.246.96.74	254.246.96.74	16127074	Unknown	ICU
254.246.96.104	254.246.96.1...	16127104	Unknown	ICU
254.246.96.111	254.246.96.1...	16127111	Unknown	ICU
254.246.96.126	254.246.96.1...	16127126	Unknown	ICU

The added LAN-data-output patient-care device configuration populates the IntelliBridge LAN Device screen with the headings:

Host Name - Host name or IP address of LAN device.

Driver - The IntelliBridge System device driver used for communication to LAN device.

Description - User-supplied connection description and the status of the connection.

The **Device Allocation** section lists the available LAN devices for the added configuration and includes the headings:

Display Name - User-assigned name for the LAN device

Internal Name - Name provided by the LAN device

Serial Number - Serial number of the LAN device

Device Type - Type of LAN device (Infusion Pump, Ventilator, Dialysis Machine)

Assigned Zone - Zone to which LAN device is allocated

- 9 If you want to edit or delete a LAN-data-output device configuration, select the configuration in the IntelliBridge LAN Devices screen and click **Edit** or **Delete**.

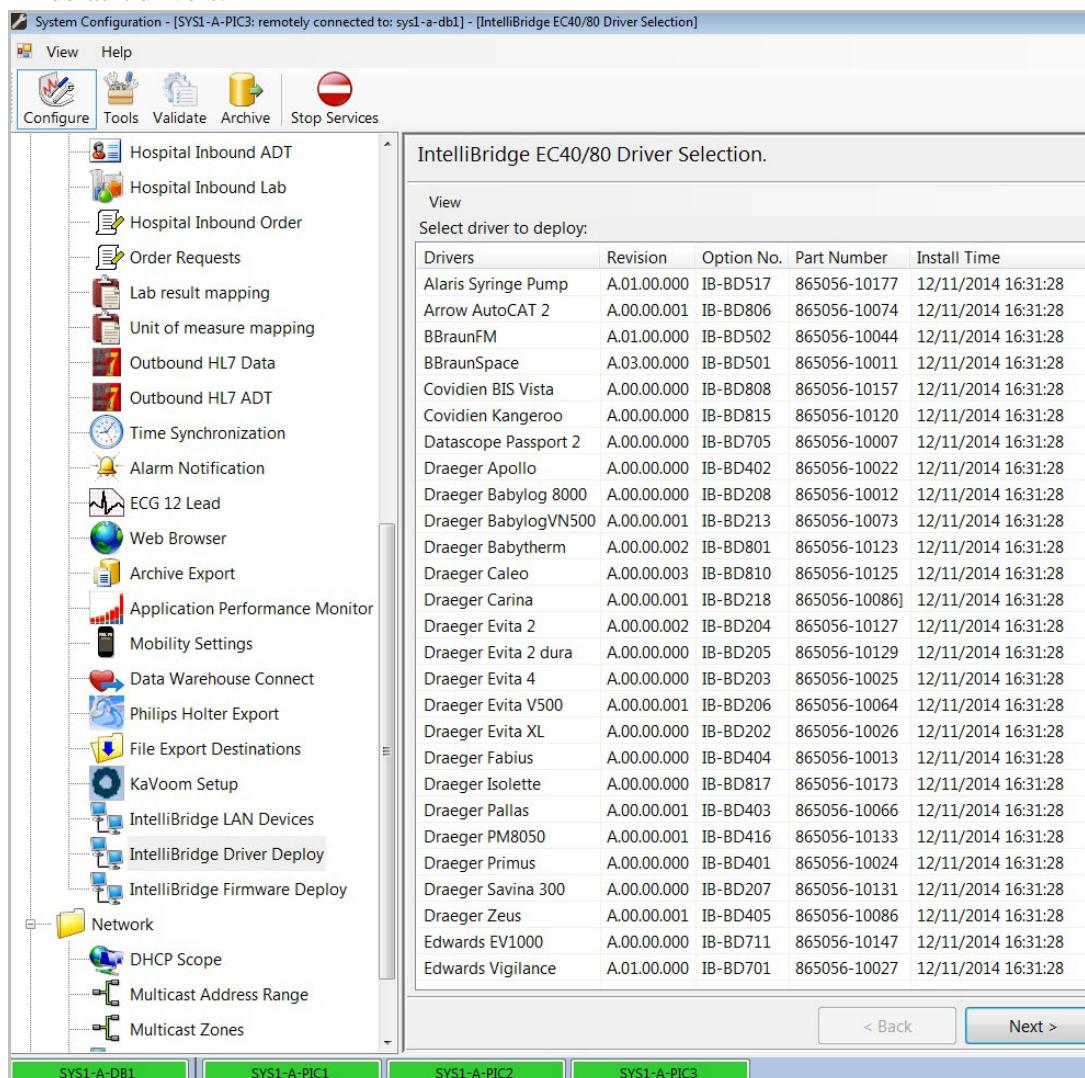
IntelliBridge Driver Deploy

The **IntelliBridge Driver Deploy** interface permits deploying IntelliBridge EC40/80 Hub Device Drivers to Hubs. PIIC iX B.02 includes the current version of device drivers to support patient care devices that connect to IntelliBridge EC40/80 Hubs by way of IntelliBridge EC5 ID Modules. With each software patch, however, the most current EC40/80 Hub Device Drivers are included and installed during PIIC iX application updates. Hub re-boot is **not** required to update device drivers.

- Important** For PIIC iX B.01 and later you must successfully and completely deploy the latest Hub Firmware before you can deploy the Hub Device Drivers. Although the status, *Upload Complete*, displays immediately when you deploy the firmware, it takes approximately 5 minutes for the hub/drivers to process and physically update.

Deploy a device driver file to one or more IntelliBridge EC40/80 Hubs installed on the Hospital LAN or ICN

- I In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click the **IntelliBridge Driver Deploy** icon.
- The **IntelliBridge EC40/80 Driver Selection** screen appears populated with the default drivers.



- 2** Select a single device driver you want to deploy. Then click **Next**.

A list of IntelliBridge EC40/80 Hubs installed on the Hospital LAN or ICN appears.

IntelliBridge EC40/80 Hub Selection						
	Display Name	Bed	Zone	Status	IP Address	Product Software Release
<input checked="" type="checkbox"/>	BC41		CCU	Offline	10.1.201.125	B.01.00.000
<input checked="" type="checkbox"/>	BC42		CCU	Offline	10.1.201.122	B.01.00.000
<input checked="" type="checkbox"/>	BC43		CCU	Offline	10.1.201.123	B.01.00.000
<input checked="" type="checkbox"/>	BC44		CCU	Offline	10.1.201.124	B.01.00.000
<input checked="" type="checkbox"/>	BC45		Equipment	Offline	172.30.1.38	B.01.00.000
<input checked="" type="checkbox"/>	BC46		Equipment	Unknown	172.30.1.31	B.01.00.000
<input checked="" type="checkbox"/>	BC47		Equipment	Unknown	172.30.1.32	B.01.00.000
<input checked="" type="checkbox"/>	BC48		Equipment	Offline	172.30.1.35	B.01.00.000
<input checked="" type="checkbox"/>	BC49		Equipment	Unknown	172.30.1.36	B.01.00.000

- 3** Select a single or multiple Hubs on which you want to deploy the selected driver. To select more than one Hub press **Ctrl** key each time you click, or to select a series of Hubs click the first in the series and press **Shift** key when you click on the last in the series.

- 4** Click **Next**.

Deployment of the selected Device Driver to the selected Hub(s) begins. As the deployment proceeds, the state of the deployment appears in the **Status** column.

IntelliBridge EC40/80 Hub Update Status. File to be deployed: Datascope Passport 2 A.00.00.000							
View							
File Deployment Status							
Hub	Bed	Zone	Status	IP Address	Product Software Revision	Serial Number	Deployment Status
 BC46		Equipment	Unknown	172.30.1.31	B.01.00.000	SG95200050	Awaiting Install

IntelliBridge EC40/80 Hub Update Status. File to be deployed: Datascope Passport 2 A.00.00.000							
View							
File Deployment Status							
Hub	Bed	Zone	Status	IP Address	Product Software Revision	Serial Number	Deployment Status
 BC46		Equipment	Unknown	172.30.1.31	B.01.00.000	SG95200050	Upload Complete

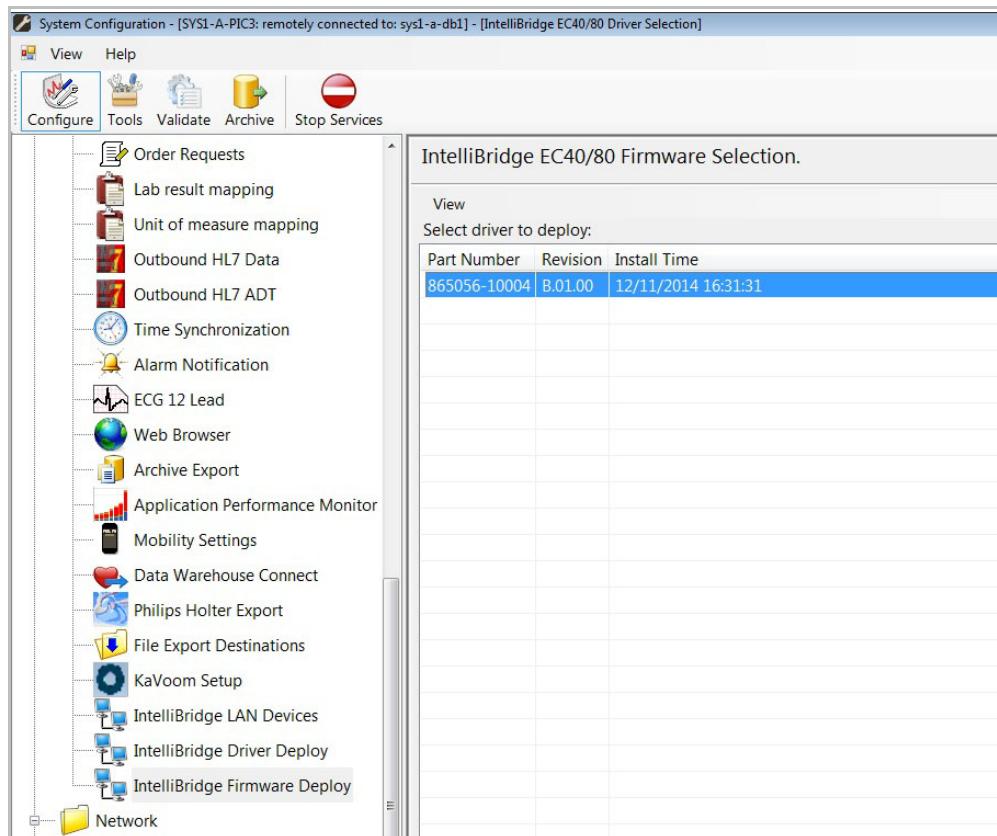
- 5** When *Upload Complete* appears in the **Deployment Status** column, click **Finish**.

IntelliBridge Firmware Deploy

The **IntelliBridge Firmware Deploy** interface permits deploying IntelliBridge EC40/80 Hub firmware to Hubs. PIIC iX B.02 includes the most recent version of EC40/80 Hub firmware available at software release. With each software patch updated EC40/80 Hub firmware is included.

NOTE The EC40/80 Hub re-boots automatically after you load a new firmware image on it.

- I In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click the **IntelliBridge Firmware Deploy** icon. The **IntelliBridge EC40/80 Firmware** screen appears populated with the IntelliBridge EC40/80 firmware file(s).



The **IntelliBridge EC40/80 Firmware** screen lists the firmware file(s) installed in the PIIC iX B.02 database and available for deployment to Hubs. The screen includes the headings:

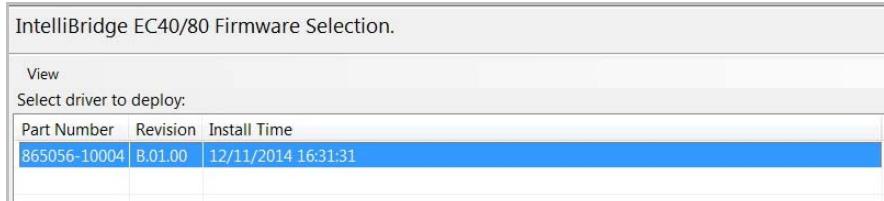
Part Number - Philips part number for the Hub firmware file

Firmware Revision - Revision number of the Hub firmware

Install Time - Time the firmware file was installed in the database.

Deploy a firmware file to one or more IntelliBridge EC40/80 Hubs installed on the Hospital LAN or ICN

- 1 Select the firmware file you want to deploy, then click **Next**.



A list of IntelliBridge Hubs installed on the Hospital LAN or ICN appears.

Display Name	Bed	Zone	Status	IP Address	Product Software Release	Serial Nu
BC41		CCU	Offline	10.1.201.125	B.01.00.000	SG850001
BC42		CCU	Offline	10.1.201.122	B.01.00.000	SG850001
BC43		CCU	Offline	10.1.201.123	B.01.00.000	SG850001
BC44		CCU	Offline	10.1.201.124	B.01.00.000	SG850001
BC45		Equipment	Offline	172.30.1.38	B.01.00.000	SG952001
BC46		Equipment	Unknown	172.30.1.31	B.01.00.000	SG952001
BC47		Equipment	Unknown	172.30.1.32	B.01.00.000	SG952001
BC48		Equipment	Offline	172.30.1.35	B.01.00.000	SG952001
BC49		Equipment	Unknown	172.30.1.36	B.01.00.000	SG850001

- 2 Select each Hub you want to receive the firmware deployment. To select more than 1 Hub press **Ctrl** key each time you click, or to select a series of Hubs click the first in the series and press **Shift** key when you click on the last in the series.

3 Click Next.

The deployment of the selected firmware file to the selected Hubs begins. As the deployment proceeds, the status of the firmware file deployment appears in the **Status** column.

IntelliBridge EC40/80 Hub Update Status. File to be deployed: 865056-10004 B.01.00								3 of 3
File Deployment Status								
Hub	Bed	Zone	Status	IP Address	Product Software Revision	Serial Number	Deployment Status	
BC47	Equipment	Unknown	172.30.1.32	B.01.00.000		SG95200059	Awaiting Install	

When the Hub firmware file deployment begins, the status updates to *Upload Complete*. It takes approximately 5 minutes, however, for the physical update to complete.

Important Be sure that the latest Firmware deployment is complete before deploying Hub Device Drivers.

IntelliBridge EC40/80 Hub Update Status. File to be deployed: 865056-10004 B.01.00								3 of 3
File Deployment Status								
Hub	Bed	Zone	Status	IP Address	Product Software Revision	Serial Number	Deployment Status	
BC47	Equipment	Unknown	172.30.1.32	B.01.00.000		SG95200059	Upload Complete	

4 Click Finish.

Network

- ▶ From **Configure** pane expand the **Network** folder then double-click desired selection. these include **DHCP Scope**, **Multicast Address Range**, **Multicast Address Range**, and **Short Range Radio Channels**.

DHCP Scope

DHCP is an industry standard protocol that permits client communication over the IP network. DHCP provides a framework for passing configuration parameters to clients (hosts).

You can use the **DHCP Scope** feature to configure multiple DHCP scopes in your System. If multiple subnets are used in the network BOOTP helper must be configured in the infrastructure to direct to the Server.

Important If your system has external DHCP enabled you must remove all DHCP scopes in the PIIC iX System.

- ▶ In the left pane of the **System Configuration** screen expand the **Network** folder and double-click the **DHCP Scope** icon.

New - permits adding a DHCP Scope

Save - permits saving a DHCP Scope definition

Delete - permits removing a DHCP Scope definition

Important All settings that have an asterisk are mandatory entries.

Table 6-14 DHCP Scope Configuration Settings

Section/Selection	Setting	Action
*Range Start		■ Enter range start IP Address.
*Range End		■ Enter range end IP Address.
*Subnet		■ Enter Network Subnet IP Address.
*Subnet Mask		■ Enter Subnet Mask
Default Gateway		■ Enter Default Gateway IP Address.
Lease Period	0-xxxx	■ Click arrow or enter numeric value
	Hours	■ Click the down arrow to make desired selection.
	Days Weeks	
WINS Servers		
	Up Down	■ With desired Server selected click the Up or Down button to change the Server location in the list.
	Add	<ol style="list-style-type: none">1 Click the Add Button2 Select desired *Zone from the drop-down list.3 Enter *Display Name, *IP Address and Description in the adjacent text boxes.4 Click OK.
	Edit	<ol style="list-style-type: none">1 With desired Server selected click the Edit Button2 In the Edit dialog change necessary information.3 Click OK.
	Delete	<ol style="list-style-type: none">1 With desired Server selected click the Delete Button2 Click Yes in the warning dialog.
DNS Servers		

Table 6-14 DHCP Scope Configuration Settings (continued)

	Up Down	■ With desired Server selected click the Up or Down button to change the Server location in the list.
	Add	1 Click the Add Button 2 Select desired *Zone from the drop-down list. 3 Enter *Display Name, *IP Address and Description in the adjacent text boxes. 4 Click OK .
	Edit	1 With desired Server selected click the Edit Button 2 In the Edit dialog change necessary information. 3 Click OK .
	Delete	1 With desired Server selected click the Delete Button 2 Click Yes in the warning dialog.
DNS Suffix		■ Enter appropriate data in text box.

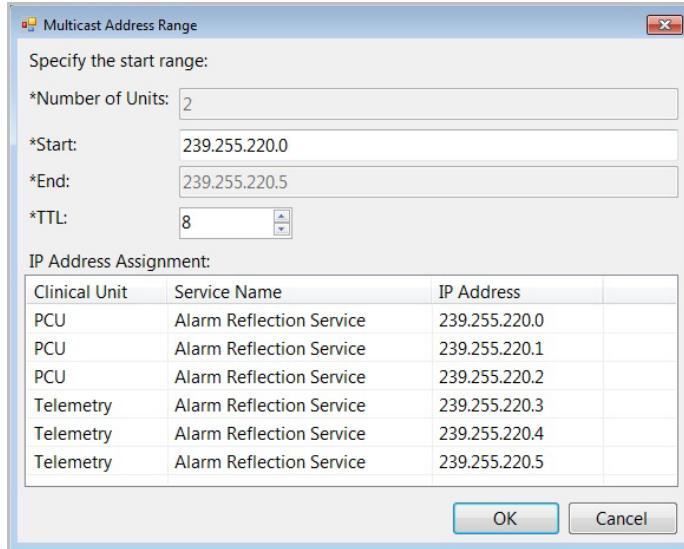
Multicast Address Range

The **Multicast Address Range** feature allows the support user to define the multicast addresses the PIIC iX uses for **alarm reflector**.

WARNING All monitor equipment labels and multicast address ranges must be unique on the network. Failure to create unique equipment labels for patient monitoring devices or assign unique multicast address ranges may cause invalid network communications resulting in the delay, corruption, or loss of critical patient data or alarms without warning, which can delay diagnosis or treatment and result in patient death.

- I In the left pane of the **System Configuration** screen expand the **Network** folder and double-click the **Multicast Address Range** icon.

The **Multicast Address Range** dialog opens. The **Number of Units** text box automatically populates with the number of Units in your topology. The **IP Address Assignment** section lists the **Clinical Unit**, **Service Name**, and **IP Address** of each Service reserved for the Clinical Units in the topology.



- 1 Enter the **Start** IP Address in the appropriate text box. The **End** IP Address will automatically populate according to the **Number of Units** setting.
- 2 Use the Up/Down arrows to configure **TTL** (Time To Live) hops permitted for each message. The default is **8** but permits up to **64**.
- 3 Then click **OK**.
Use a unique range on each PIIC iX system so that multicast address ranges will not overlap.

Important Failure to select a unique range will result in the inop, *Check Network Config*, at the IPM monitors.

Multicast Zones

With PIIC iX B.00 and later the Primary Server runs a *Master Selection Service* to select *Master* hosts as needed for the Connection Indication (CI) and/or Alarm Reflection (AR) Services. By default each Institution has one Multicast Zone that contains all of the Clinical Units in the Institution.

The **Multicast Zones** feature permits configuring multicast zones for networks. The intention is to define the multicast zones so that Wide Area LANs, VPNs, and ISPs are not within a multicast zone. Typically, this means one multicast zone per building, or group of buildings.

Important The multicast zone should not be used to divide up a building into zones for convenience. The device sharing and device roaming are not optimized for use across multicast zones.

If you are upgrading from PIIC iX A.xx to PIIC iX B.xx a default multicast zone is added to the existing Institution, and all clinical units are assigned to the default multicast zone.

Connection Indication (CI) Service Host Selection

CI Service, which discovers devices seeking central monitoring, runs on one Surveillance PIIC iX in each Multicast Zone. Assignment goes to the **first** responding PIIC iX. The Primary Server monitors the assigned *Master* host, and if the host fails the Primary Server selects a new *Master* in the zone to run CI Service.

In *Local Mode* every PIIC iX in the Multicast Zone runs CI Service and responds to its assigned devices primarily. Other devices are responded to infrequently.

Alarm Reflection (AR) Service Host Selection

AR Service, which provides Care Group membership, alarm status of the beds within the group, and alarm pop-ups on the monitors runs on one Surveillance PIIC iX in each Clinical Unit. Assignment goes to the **Second** responding PIIC iX in each Clinical Unit for load balancing, although CI and AR services both may run on the same host.

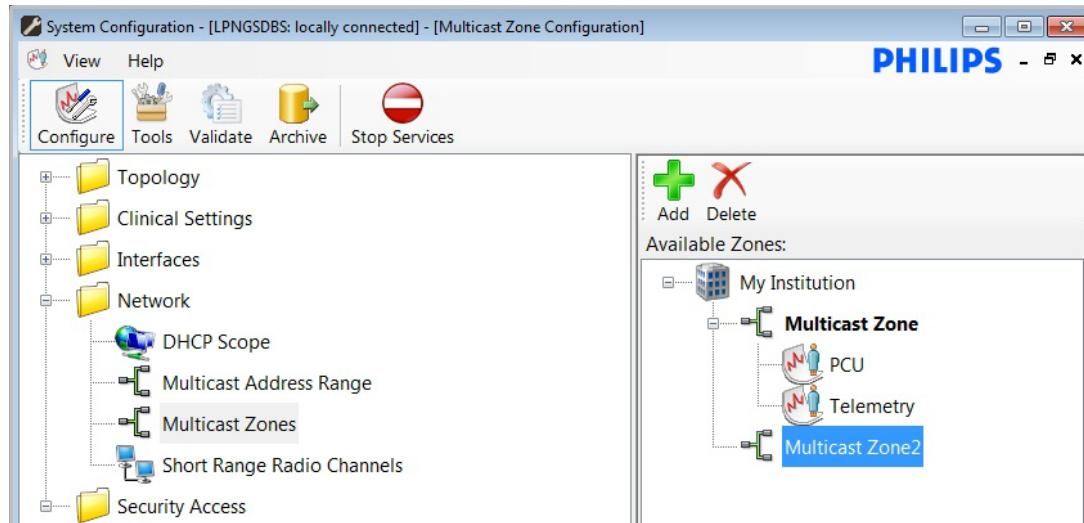
In *Local Mode* AR Service does not run.

Logging

Master selection is logged at the Primary Server in the Network Service log. Each host logs its own *Master* state also to the Network Service log.

Configuring Multicast Zones

- 1 In the left pane of the **System Configuration** screen expand the **Network** folder and double-click the **Multicast Zones** icon.



- 2 If you want to **add** a zone click the **Add** icon.

Important You cannot delete a Multicast Zone unless there are no Clinical Units in it.

- 3 If you want to **delete** a zone select it and click the **Delete** icon.

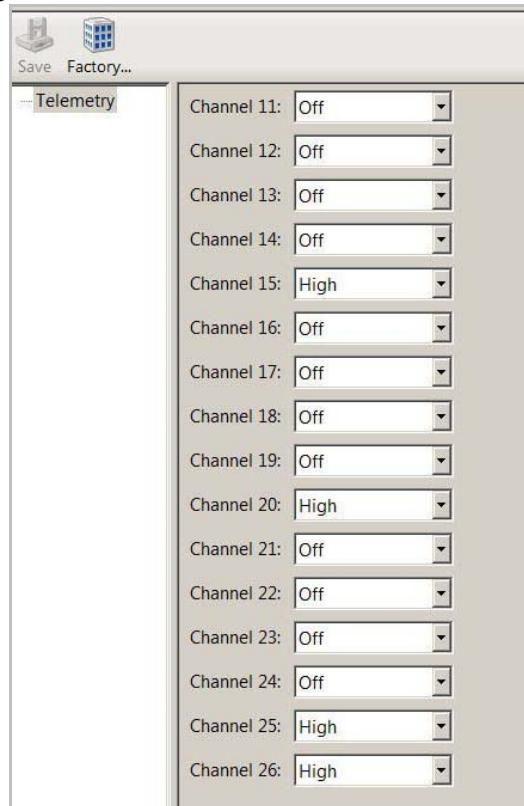
Important All new clinical units are automatically assigned to the default multicast zone in their institution.

- 4 If you want to set a zone as the default right-click it and select **Set Default** from the list.
- 5 If you want to rename a zone right-click it, select **Rename** from the list, and enter the desired zone name.

- 6** If you want to reassign a clinical unit to a different zone right click the clinical unit, move the cursor over the **Move to** selection, then click the desired zone in the list.

Short Range Radio Channels

- I** In the left pane of the **System Configuration** screen expand the **Network** folder and double-click the **Short Range Radio Channels** icon. A list of Short Range Radio (SRR) Channels appears that permits setting preference. Available Channels for SRR are **Channel 11** through **Channel 26**.



- 2** For each channel click the down arrow and select the desired setting from the list. Available settings are **Off**, **Low**, **Medium**, and **High**.

Security Access

- Important** Only Users authorized to perform System Configuration and Security Configuration actions can access this feature.
- ▶ From **Configure** pane expand the **Security Access** folder then double-click **Users and Roles**.

Users and Roles

The **Users and Roles** feature in **System Configuration** permits identification of users and authorizing tasks they are allowed to perform within the system.

With PIIC iX A.01 and later you can have Local Directory (LD) users and/or Active Directory (AD) users. The PIIC iX Active Directory interface permits import and synchronization of users from the Active Directory domain to the PIIC iX. PIIC iX B.00 and later also support Active Directory Lightweight Directory Services (ADLDS).

- NOTE** PIIC iX uses Lightweight Directory Access Protocol (LDAP) within PIIC iX and PIIC iX Web to authenticate and authorize users against a Microsoft Active Directory.

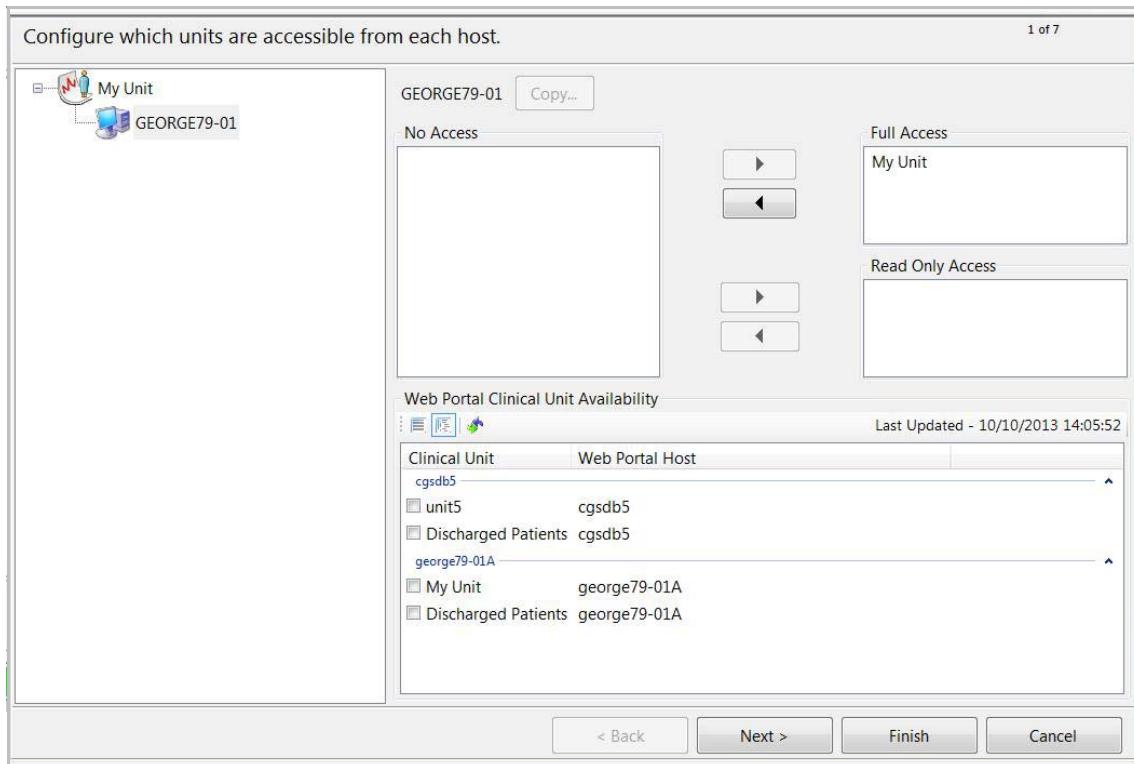
Default settings for PIIC iX Action, Permissions, Roles, and User are provided with the initial installation. Following PIIC iX installation, an authorized user can create additional Users and assign Permissions and Actions to them. The **Philips Support** role permits Support Engineers to perform actions for all units.

The **Users and Roles** feature includes the screens:

- Configure which units are accessible from each host (Host Access)**
- Configure the unit permissions (Unit Permissions Assignment)**
- Configure override permissions for selected hosts (Host Permissions)**
- Configure the Active Directory (Active Directory)**
- Configure the user roles (Manage Roles)**
- Configure the role permissions (Role Permitted Actions Assignment)**
- Configure users to roles (User Roles Assignment)**

Configure which units are accessible from each host

The initial **Users and Roles** screen permits configuring which Clinical Unit's Actions are accessible from each host (**Patient Transfer**, for example). The initial default setting permits **Full Access** to patient data and controls on hosts in the same unit, and **No Access** to other units



If your system has Web Portal hosts configured the screen also includes a **Web Portal Clinical Unit Availability** section that permits configuring access to Clinical Units or Discharged Patients in the Clinical Units you can access. Patients can be found using the Patient search feature in **Patient Management** across servers.

I Configure Unit Access.

Important With PIIC iX B.01 and later if you have a host that must clear and re-add bed labels it requires **Full Access** to the unit in which it resides. If the desired host access is **Read Only** to other hosts in the unit, the host must first be placed in a different unit in Topology in order to make it **Full Access** to itself, but **Read Only** to the other hosts in the actual unit.

- Select a host in the list to see which clinical units it can access.

- b** If you want to change clinical unit access permission for a host, select the clinical unit in the **No Access** list then click the appropriate arrow to move the unit to the desired permission box.

No Access	Prevents access to patient data by another PIIC iX or Server iX
Full Access (Default)	Permits another PIIC iX or Server iX to view patient data, change monitoring settings, and silence alarms.
Read Only	Permits another PIIC iX or Server iX to view patient data but not change monitoring settings. When choosing Read Only access to the same host carefully consider the consequences. If a host is Read Only to itself, no functions are available. You might consider locking beds to a host which is Read Only to itself. In order to clear or assign sectors, access to Display Setup permission would be required.

- 2** Set **Web Portal Clinical Unit Availability** by clicking the desired *Unit* or *Discharged Patients* check box. Check boxes are clear by default.

Web Portal Clinical Unit Availability		Last Updated - 10/10/2013 14:05:52
Clinical Unit	Web Portal Host	
<input type="checkbox"/> cgsdb5	cgsdb5	
<input type="checkbox"/> unit5	cgsdb5	
<input type="checkbox"/> Discharged Patients	cgsdb5	
george79-01A		
<input type="checkbox"/> My Unit	george79-01A	
<input type="checkbox"/> Discharged Patients	george79-01A	



Permits listing by Clinical Unit



Permits categorizing list by Web Portal Host



Permits refreshing the screen

Last Updated

Shows Web Portal query date/time

If blank EnterprisePortalService is not running and cannot be reached.

- 3** If you have another host in the same clinical unit that you want to copy this configuration to, then click copy and select the desired host in the dialog.
- 4** Click **Next >** to continue or **Finish** to save changes and exit screen.

Configure the unit permissions

Select items to change Permission using Permission buttons at bottom:

Unit	Action	Permission
PCU	Apply Caregiver Assignment	Allow All
PCU	Label Assignment	Password Protect
PCU	Pause Alarms	Allow All
PCU	Display Setup	Password Protect
PCU	Clinical Settings	Password Protect
PCU	Silence Red Alarms	Allow All
PCU	Remote Access To Patient Data	Password Protect
PCU	IntelliBridge Device Monitoring	Password Protect
PCU	Remote Equipment Assignment	Password Protect
PCU	Export Audit Trail	Password Protect
Telemetry	Apply Caregiver Assignment	Allow All
Telemetry	Label Assignment	Password Protect
Telemetry	Pause Alarms	Allow All
Telemetry	Display Setup	Password Protect
Telemetry	Clinical Settings	Password Protect
Telemetry	Silence Red Alarms	Allow All
Telemetry	Remote Access To Patient Data	Password Protect
Telemetry	IntelliBridge Device Monitoring	Password Protect
Telemetry	Remote Equipment Assignment	Password Protect

The *Unit Permissions Assignment* screen permits changing **Action** permission. Actions and default permissions at installation follow.

Action	Description	Default Permission
Apply Caregiver Assignment	Permits Paging and Care group assignments	Allow All
Label Assignment	Permits replacing labels on existing monitoring devices	Password Protect
Pause Alarms	Permits pausing all alarms for a patient within the configured time (see Global Settings)	Allow All
Display Setup	Permits editing/changing configured PIIC iX Display settings	Password Protect
Clinical Settings	Permits configuration of unit settings	Password Protect
Silence Red Alarms	When Password Protected, yellow and Inop alarms may be silenced at the PIIC iX from the sector, but red alarms may only be silenced in the Patient Window pending authentication. When set as Deny All, Users must silence Red Alarms at the device.	Allow All
Remote Access To Patient Data¹	Sets PIIC iX Web permission requirement to view patients within the unit	Password Protect
IntelliBridge Device Monitoring¹	Permits Web access to monitor devices connected to EC40/80 Hubs	Password Protect
Remote IntelliBridge Device Assignment¹	Permits assigning bed labels to remote IBS devices using Web access	Password Protect
Export Audit Trail	Permits ability to export audit trail logs	Password Protect

¹ Permission for this Action is changed at Unit level only. Other Actions can be changed at Unit/Host level.

- I If you want to change the default permission security level, select the desired *Action* from the list. Then select **Password Protect**, **Allow All**, or **Deny All**.

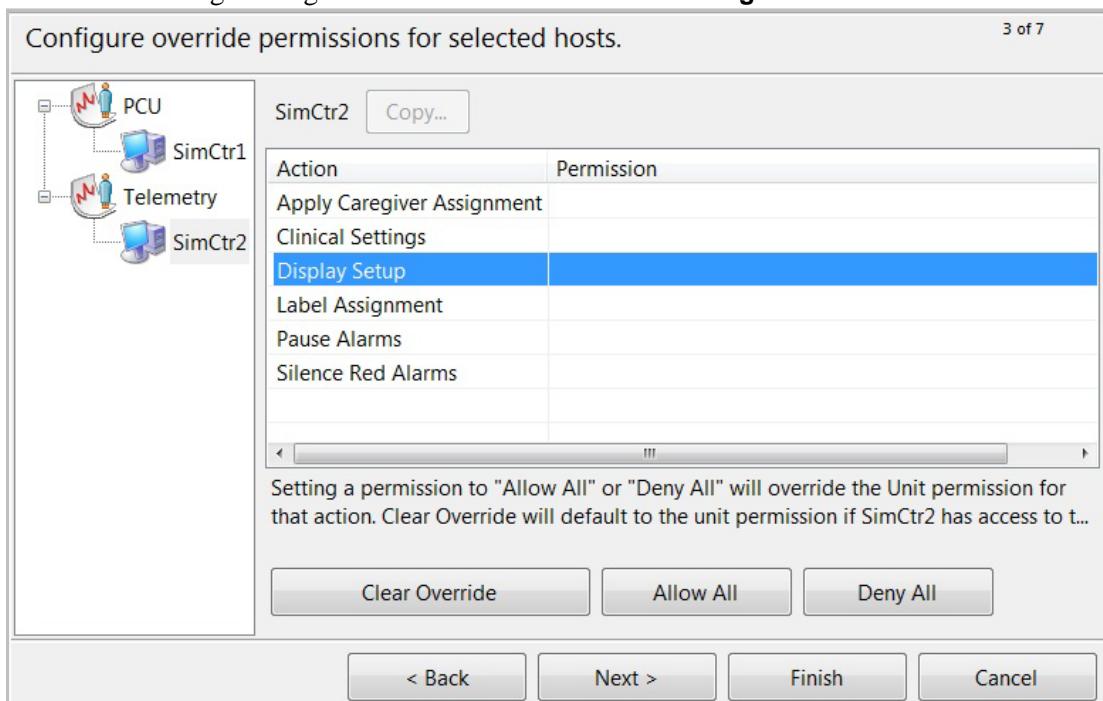
Password Protect	Requires authentication
Allow All	No password required to access this function
Deny All	No user has access to this function

Important Any Action accessed through the Patient Monitoring application and is password protected has a 30 minute maximum time out after logging on. If the application times out you must log on again.

- 2 Click or **Next >** to continue or **Finish** to save changes and exit screen.

Configure override permissions for selected hosts

Configure override permissions for selected hosts permits setting overrides of Action and Permission settings configured on the **Unit Permissions Assignment** screen.



- 1 If you want to change the default Action permission for a particular host, select the desired host in the pane. Then select an Action from the list.
- 2 With host and Action selected click **Allow All** or **Deny All**.
- 3 If you want to remove an override click **Clear Override**.

Clear Override	Removes override and reverts to default Unit permission
Allow All	No password required to access this function
Deny All	No user has access to this function

Important Setting a permission to allow All or Deny All will override the Unit permission (**Page 6-126**) for that action. Clear Override will default to the unit permission if the selected host has access to the unit.

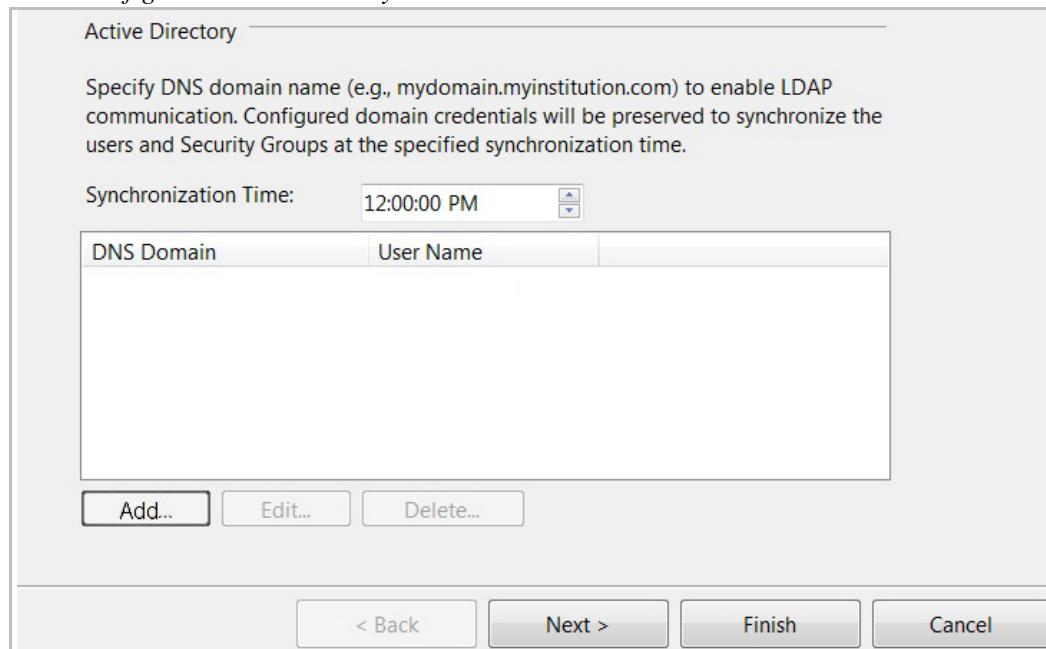
- 4 Click or **Next >** to continue or **Finish** to save changes and exit screen.

Configure the Active Directory

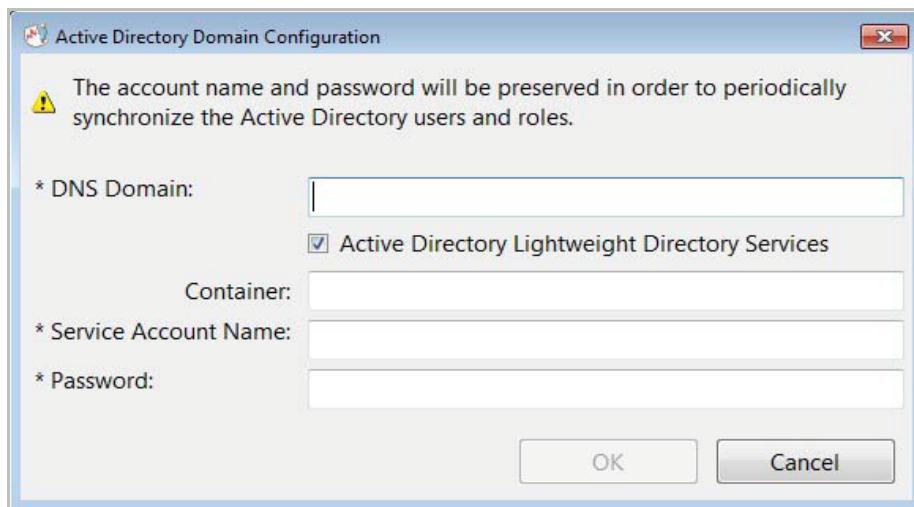
Important Philips recommends the following AD configuration requirements:

- Create a dedicated Organizational Unit (OU) for Philips PIIC iX Servers.
- **Block Inherited Policies** must be enabled for the Philips Server OU.
- Philips recommends creating a Global Security Group for the PIIC iX Server Administrators.

- I If you are using Active Directory Domain Controllers for user authentication click **Add** in the *Configure Active Directory* screen.



The **Active Directory Domain Configuration** dialog opens.

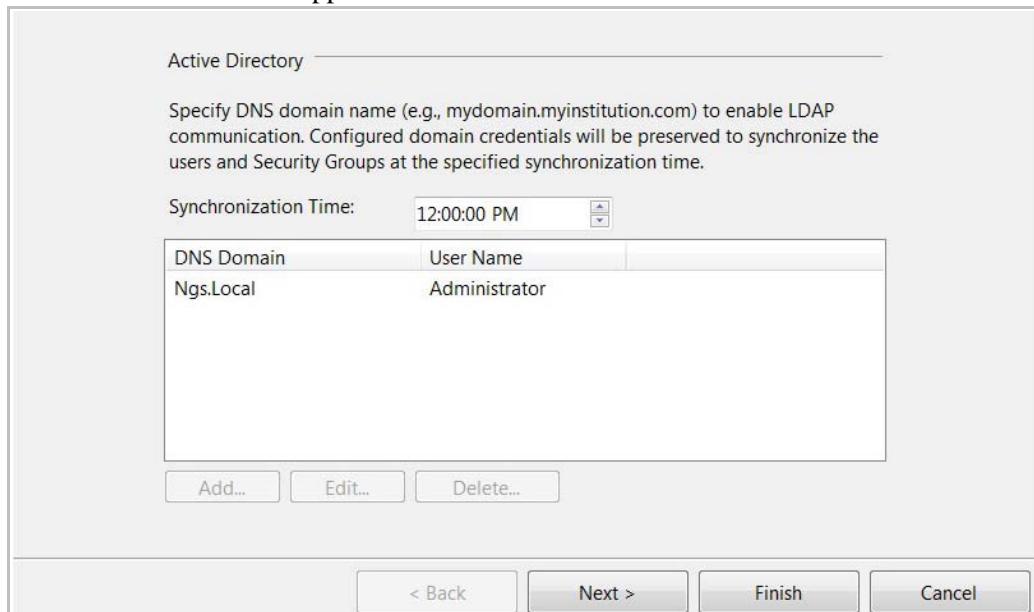


- 2** Enter appropriate information in the **Active Directory Domain Configuration** dialog.

DNS Domain	Enter name of DNS Domain.
Active Directory Lightweight	Click check box to enable.
Directory Services	
Container	Enter name of the AD LDS container. Only available if AD LDS is selected.
Service Account Name	Enter user account name authorized to access the Active Directory Domain.
Password	Enter password for Service Account User.

- 3** When information in dialog is complete click **OK**.

Each added DNS Domain appears in the list.



If you select **Active Directory Lightweight Directory Services** a warning appears in the *Configure Active Directory* screen.

The passwords will be transmitted in clear text at the time of user authentication.

- 4** Set desired **Synchronization Time**, the time that you want to synchronize the PIIC iX with the AD Domain controller (**Page 6-138**). Philips recommends that you check with the Hospital IT Department.

Important Be sure user accounts are set for the **Password Never Expires** Policy in the AD domain. Otherwise future synchronization will fail once password expires.

- 5** Click **Finish** to save changes and exit screen or **Next >** to continue.

Configure the user roles

The *Manage Roles* screen permits a user who has permission to access Security Configuration to add, edit, or delete user roles. Default LD roles are illustrated.

Important The **Philips Support** role, added in PIIC iX B.00 and later, is read-only and cannot be edited or deleted. This role performs installation and support activities in the product. Roles that do not permit editing are dimmed.

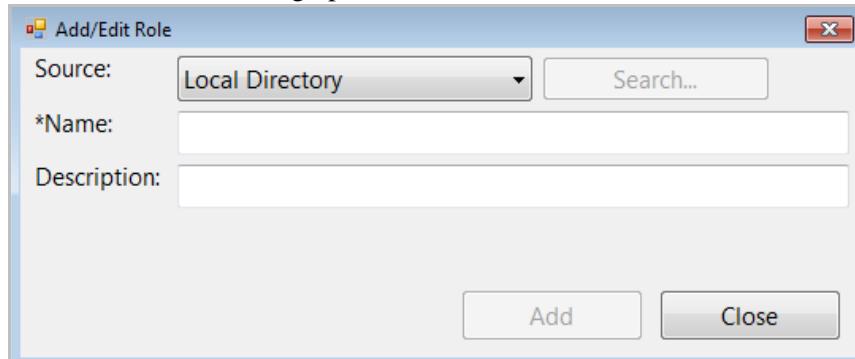
Configure the user roles.			5 of 7
Name	Source	Description	
<i>Local Directory</i>			
Biomed	Local Directory	This role often includes system configuration, implementation and troubleshooting of medical devices.	
Care Tech	Local Directory	This role assists nurses with basic care of multiple patients.	
Charge Nurse	Local Directory	Nurse with management responsibility for a shift.	
Nurse	Local Directory	Clinician responsible for nursing care of a patient or group of patients.	
Nurse Manager	Local Directory	Nurse with 24 -hour management responsibility for a unit or group of units.	
Philips Support	Local Directory	This role is to perform installation and support services on the product.	
Unit Secretary	Local Directory	Role with administrative responsibility for a department or unit.	

Local Directory Role	Default Actions
Nurse	None
Nurse Manager	Clinical Settings, Display Setup, Label Assignment, Remote IntelliBridge Device Assignment, Export Audit Trail
Care Tech	None
Unit Secretary	None
Biomed	None
Charge Nurse	None
Philips Support	All Actions

I Add LD roles as follows.

a Click **Add**.

The **Add/Edit Role** dialog opens.



b Select **Local Directory** in the **Source** drop-down list. Then enter the **Name** and **Description** in appropriate text boxes.

c Click **Add** in the dialog when information is complete.

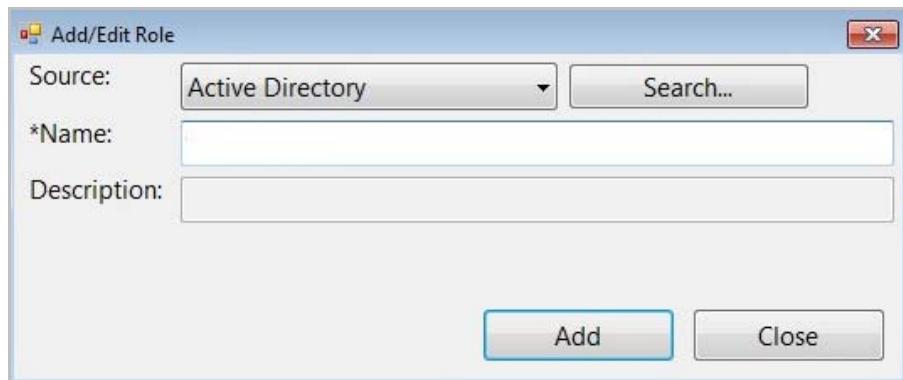
d Click **Finish** in the *Manage Roles* screen.

2 Add AD roles as follows.

Important Every user assigned to an AD role chosen for paging or Care groups appears in each unit that chooses the role. If you only want certain users to appear in particular units, your IT department (responsible for creating AD objects) must create different roles for each unit. Then these unit-specific roles should be used for Alarm Notification in that unit.

a Click **Add**.

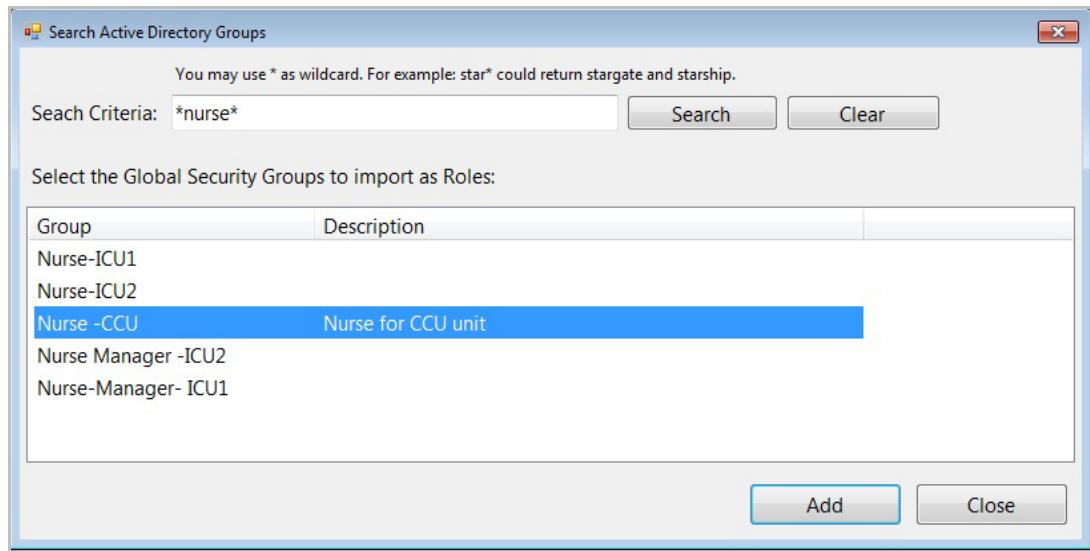
The **Add/Edit Role** dialog opens.



b Select **Active Directory** in the **Source** drop-down list.

c If you know the role enter it in the **Name** text box. If you do not know the role name click **Search** and type some known text of the role in the **Search Criteria** text box. You can use an asterisk (*) as a wildcard.

A list of matching Global Security Groups appears from which you can choose the desired role to import.



Important

- d When selection is complete click **Add**.

Users associated with the selected roles are imported as the Active Directory Role is added.

Important

Active Directory Role Assignments for the users cannot be added or edited at the PIIC iX. Roles from AD are auto assigned with the user as they are imported and cannot be unassigned.

Name	Source	Description
<i>Active Directory</i>		
Nurse PIC IX	Active Directory	Nurse Group for PIIC iX
Nurse -CCU	Active Directory	Nurse for CCU unit
Nurse Manager -ICU2	Active Directory	
Nurse-Manager- ICU1	Active Directory	
<i>Local Directory</i>		
Biomed	Local Directory	This role often includes system configuration, implementation and troublesh...
Care Tech	Local Directory	This role assists nurses with basic care of multiple patients.
Charge Nurse	Local Directory	Nurse with management responsibility for a shift.
Initializer	Local Directory	This role is to perform initial Unit Settings.
Nurse	Local Directory	Clinician responsible for nursing care of a patient or group of patients.
Nurse Manager	Local Directory	Nurse with 24 -hour management responsibility for a unit or group of units.
Unit Secretary	Local Directory	Role with administrative responsibility for a department or unit.

Buttons at the bottom include Add..., Edit..., Delete..., < Back, Next >, Finish, and Cancel.

- 3 Click **Next >** to continue or **Finish** to save changes and exit screen.

Configure the role permissions

The *Role Permitted Actions Assignment* screen permits role assignment to permissions. Only permissions that are password protected appear

Configure the role permissions. 6 of 7

Select Role and then Permitted Actions to Assign:

Role	Source
Local Directory	
Biomed	Local Directory
Care Tech	Local Directory
Charge Nurse	Local Directory
Nurse	Local Directory
Nurse Manager	Local Directory
Philips Support	Local Directory
Unit Secretary	Local Directory

Clinical Actions Support Actions

View By: Units

PCU

- Clinical Settings
- Display Setup
- Export Audit Trail
- IntelliBridge Device Monitoring
- Label Assignment
- Remote Access To Patient Data
- Remote Equipment Assignment

Telemetry

- Clinical Settings
- Display Setup
- Export Audit Trail
- IntelliBridge Device Monitoring
- Label Assignment
- Remote Access To Patient Data
- Remote Equipment Assignment

Role	Unit	Permitted Action	Source
Nurse Manager	PCU	Export Audit Trail	Local Directory
Nurse Manager	PCU	Remote Equipment Assignment	Local Directory
Nurse Manager	PCU	Clinical Settings	Local Directory
Nurse Manager	PCU	Display Setup	Local Directory
Nurse Manager	PCU	Label Assignment	Local Directory
Nurse Manager	Telemetry	Export Audit Trail	Local Directory
Nurse Manager	Telemetry	Remote Equipment Assignment	Local Directory
Nurse Manager	Telemetry	Clinical Settings	Local Directory
Nurse Manager	Telemetry	Display Setup	Local Directory
Nurse Manager	Telemetry	Label Assignment	Local Directory

Remove

< Back Next > Finish Cancel

- I If you want to assign Actions to Roles select the desired *Role* then click the desired *Action* from the lists in the **Clinical Actions** or **Support Actions** tabs.

Clinical Actions¹	Support Actions²
Clinical Settings	Clinical Settings Configuration³
Display Setup	Interfaces Configuration³
Export Audit Trail	Network Configuration³
IntelliBridge Device Monitoring	Reboot Machine
Label Assignment	Security Configuration³
Remote Access to Patient Data	Software Update
Remote Equipment Assignment	Start/Stop Patient Monitoring
	System Configuration Access³
	System Setup Access⁴
	Topology Configuration³
	Windows Desktop Access

¹ All Role to Clinical Action assignments are Unit level.

² All Role to Support Action assignments are Topology level.

³ System Configuration access is necessary to perform this action.

⁴ System Setup access will permit resetting factory default users and passwords as long as there is a Philips Support user who can access the system (page 6-140). If you lose password information for all Philips Support users you must reinstall your system (page 5-2).

In the **Clinical Actions** tab you can organize the *Action* view to appear by **Units** or **Permitted Actions** when you click the down arrow next to **View By**.

A table including **Role**, **Unit**, **Permitted Action**, and **Source** appears in the bottom section of the screen. You can sort each column by clicking the column title.

- 2 If you want to delete an assigned action from a role, select the entry in the table at the bottom of the screen, then click **Remove**. In the message dialog click **Yes** if you are certain you want to remove the select item.
- 3 Click **Next >** to continue.

Configure users to roles

The *User Roles Assignment* screen permits adding, editing, and deleting users and their role assignments.

The screenshot shows the 'Configure users to roles' interface. At the top left is a table titled 'Select Users and then Roles to Assign:' containing user information. To the right is a tree view of 'Clinical Roles' and 'Support Roles' under 'Units'. Below this is another table showing the current assignments. Buttons at the bottom include 'Synchronize', 'Add...', 'Edit...', 'Delete...', 'Remove', and navigation buttons ('< Back', 'Next >', 'Finish', 'Cancel').

User Name	Full Name	Status	Source
ahenry	Henry, Ardie	Assigned	Local Directory
BiomedEngr	Biomedical Engineering	Assigned	Local Directory
bwarren	Warren, Brian	Assigned	Local Directory
bzengo	Zengo, Beth	Assigned	Local Directory
kbeauchamp	Beauchamp, Kim	Assigned	Local Directory
klee	Lee, Kathy	Assigned	Local Directory
mmessina	Messina, Marianne	Assigned	Local Directory

User Name	Full Name	Unit	Role
ahenry	Henry, Ardie	PCU	Nurse
ahenry	Henry, Ardie	PCU	Care Tech
BiomedEngr	Biomedical Engineering	PCU	Philips Support
BiomedEngr	Biomedical Engineering	Telemetry	Philips Support
BiomedEngr	Biomedical Engineering	All Units	Philips Support

Important At installation Philips includes users with configured passwords and who are assigned to the Philips Support Role, which permits installation and support services on the PIIC iX product. When you change the passwords for users who have the Philips Support Role be sure to carefully document the changes and save them. If you lose the passwords for Philips Support Users you will not have access to Philips Support and may have to reinstall your system.

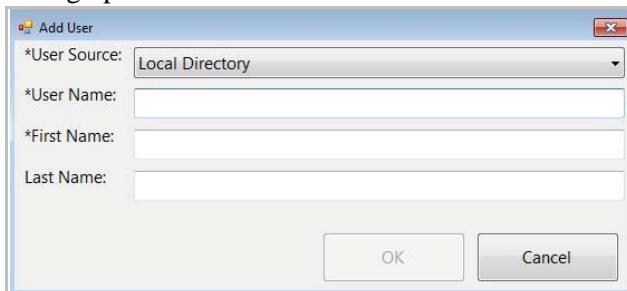
Adding, Editing, and Deleting Users

Important AD Users cannot be added, edited, or deleted from PIIC iX manually.

Users can be manually added in LD. Add new LD users as follows.

I Click **Add**.

The **Add User** dialog opens.



2 Enter required information in the dialog.

***User Name**

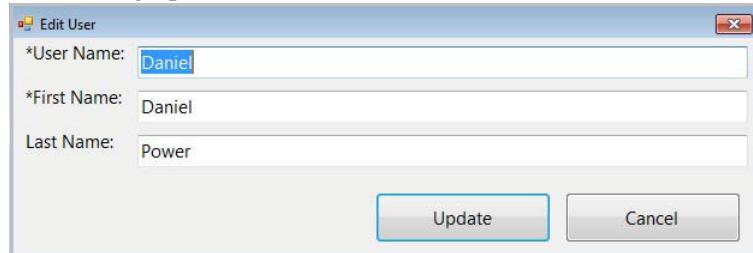
First Name**Last Name**

Important Initially, the new LD user password is same as the user name (case insensitive) and no security answer is set. When a new LD user first successfully logs on the application, a **Change Password** dialog opens which permits changing password and Security Question.

e Click **OK** when all information is complete.

3 If you want to edit an existing LD user select the user then click **Edit**.

The **Edit User** dialog opens.



a Enter required information in the dialog.

User Name**First Name*****Last Name**

b Click **Update** when all information is complete or **Cancel**.

4 Select desired LD user in the list, then click the check boxes for the roles you want to assign to that user. You can also assign AD users to LD Roles.

Select Users and then Roles to Assign:				
User Name	Full Name	Status	Source	
ahenry	Henry, Ardie	Assigned	Local Directory	
BiomedEngr	Biomedical Engineering	Assigned	Local Directory	
bwarren	Warren, Brian	Assigned	Local Directory	
bzengo	Zengo, Beth	Assigned	Local Directory	
kbeauchamp	Beauchamp, Kim	Assigned	Local Directory	
klee	Lee, Kathy	Assigned	Local Directory	
mmercina	Mercina, Marianne	Assigned	Local Directory	

Synchronize Add... Edit... Delete...

Clinical Roles Support Roles
View By: Units

- PCU
 - Biomed
 - Care Tech
 - Charge Nurse
 - Nurse
 - Nurse Manager
 - Philips Support
 - Unit Secretary
- Telemetry

A table including **User Name**, **Full Name**, **Unit**, and **Role** appears in the bottom

section of the *User Roles Assignment* screen. You can sort each column by clicking the column title.

User Name	Full Name	Unit	Role
ahenry	Henry, Ardie	PCU	Nurse
ahenry	Henry, Ardie	PCU	Care Tech
BiomedEngr	Biomedical Engineering	PCU	Philips Support
BiomedEngr	Biomedical Engineering	Telemetry	Philips Support
BiomedEngr	Biomedical Engineering	All Units	Philips Support

Remove

- 5** If you want to delete a LD Role Assignment select the entry in the bottom section of the screen then click **Remove**.

If you are sure you want to remove selected entry click **Yes** in the dialog.

You cannot delete a LD Roles Assignment that is being used in Caregiver Assignments.

Important AD User Role Assignments cannot be removed or edited. Only users who do **not** have current Caregiver Assignments can be deleted.

- 6** Click **Finish**.

Synchronizing Active Directory Users

If you are using AD you can set synchronization between the PIIC iX and the AD to occur in a configured time frame (**Page 6-130**). At synchronization AD Users and their Role Assignments (that were previously imported to the PIIC iX) are added, deleted, or edited.

If you want to manually synchronize the AD and PIIC iX click **Synchronize** in the *User Roles Assignment* screen, then click **Yes** in the message dialog.

Support Roles Set as Factory Defaults

Philips includes default Local Directory Users to the **Philips Support** role at initial installation. These users are **Biomedical Engineering**, **Philips Administrator**, **Clinical Specialist**, **Philips Field Service Engineer**, and **Philips Support Engineer** and are considered *Super Users*. Default passwords are also assigned that can be changed.

Once you change default password for any **Philips Support** role user and you lose your password it could be necessary to re-install the system. The **Philips Support** role is necessary if you require external support.

User	User Name	Password	Role
Biomedical Engineer	BiomedEngr	Refer to your PIIC iX Media Kits	Philips Support
Philips Field Service Engineer	PhilipsFieldEngr		Philips Support
Philips Support Engineer	PhilipsSuppEngr		Philips Support
Philips Administrator	PhilipsBD		Philips Support
Clinical Specialist	PhilipsCS		Philips Support

Changing Passwords

If you right-click a user on the **User Roles Assignment** page and select **Change Password** you can change the password of Local Directory or Philips Users.

- I If you want to change an LD user password do the following.
 - a Right-click the desired user and select **Change Password**. The **Change Password** dialog opens.
 - b Enter the required information in the **Change Password** dialog.

*User Name	Automatically populates with selected User
*Old Password	(visible only if user is not a super user)
*New Password	32 character maximum
*Confirm Password	32 character maximum
*Security Question	<ul style="list-style-type: none"> ■ Select desired security question from the list. (Default) In what city where you born? Visible only if the selected user is not a super user
*Security Answer	32 character maximum, case insensitive Visible only if the selected user is not a super user

- c Click **OK** in the dialog.

- 2 If you want to change a Philips User password do the following.

Important It is important to document, archive, and manage all factory default password changes in System Configuration. Failure to do so would mean that all Philips Service personnel including the Customer Care Service Center would be locked out of your system and unable to provide assistance should you need it. Without the changed passwords an archive would be necessary to restore and re-initialize the system.

- a Right-click the desired user and select **Change Password**.

A Philips User password a confirmation warning appears:

You are about to change the password for Philips users. Please document the changed password to avoid complete lockout of support by Philips support personnel for your PIIC iX patient monitoring system.

- b If you want to continue click **Yes** in the dialog.
The **Change Password** dialog opens.
- c Enter the required information in the **Change Password** dialog.

*User Name	Automatically populates with selected User
*New Password	32 character maximum, No limit if strong password is applied
*Confirm Password	32 character maximum

- d Click **OK** in the dialog.

Password Recovery

Password recovery options are **not** available for AD users or for the Philips factory default LD users. But if your added LD user forgets a password you can recover as follows.

- 1 In the **User Roles Assignment** window right-click the desired user and click **Reset Password**.
A dialog shows the message that the password is reset to user name.
- 2 Click **OK** in the dialog.

On the user's next successful Log on, a **Change Password** dialog appears which permits changing Password and Security Question. (See **Changing Passwords**).

If the user chooses not to reset the password, access to the feature is allowed but the **Change Password** dialog persists until password and security question changes are completed.

Resetting Philips Factory Default Passwords

The **Restore Archive** feature in System Setup permits resetting the Philips User passwords to the factory defaults when you check the **Reset the Philips User Password** check box. By default the check box is clear.

If you want to reset the Philips User Password:

- 1 At the desktop of your Primary Server double click the **PIIC iX System Setup** screen.
- 2 Progress through the System Setup screens to the **Restore Archive** screen, then restore the archive as described on **page 5-21** and be sure to check the **Reset the Philips User Password** check box.
When your archive is restored the default Philips passwords will be active.
- 3 Click **Next >** in the **Restore Archive** screen to continue to the final screen, and select the option **Start Patient Monitoring Service**.

Validate

The **Validate** icon in the Menu bar provides a post installation assessment of a customized configuration of hardware and software. (Refer to **Appendix F**.)

- ▶ In the **System Configuration** menu icons click the **Validate** icon.
The **System Validation** screen opens.

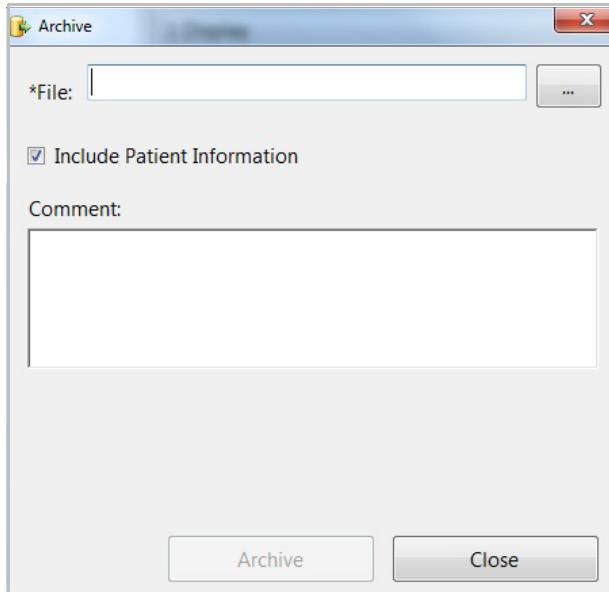
Verify	
Rules:	
Name	Description
Hardware	
<input checked="" type="checkbox"/>	Alert Sounds Determines if the system can play audible alerts.
<input checked="" type="checkbox"/>	Displays Determines if the system display monitors are satisfactory.
<input checked="" type="checkbox"/>	Reporting Printers Determines if all printers selected for reporting are installed.

Archive

CAUTION You must wait at least 15 minutes to shut down the system after initiating an archive so that the archive creation completes.

Creating an Archive

- I In **System Configuration** click the top menu **Archive** icon to open the **Archive** dialog.



- 2 Enter the desired file name in the **File** text box.
Maximum length of the file name is 260 characters, including the path. A message appears if you exceed the character limit.
- 3 Click the Ellipsis button [...] to open a **Browse** window. Then navigate to the location you wish to save the file, and click **OK**.
- 4 If you want to archive patients' demographic settings at the time of the archive, click the **Include Patient Information** check box.
- 5 Enter desired information in the **Comment** box Then click **Archive**.

Important The following rules apply regarding Archive files:

Archives can be generated during the normal operation of the system.

With the exception of logs, audit trails, performance counter metrics, printer settings, and optional patient information, all data is included in the archive.

The specified path and file name in the Archive dialog cannot be longer than 260 characters.

Restoring an Archive

You must run **System Setup** as a user assigned the appropriate role permission (**Page 6-134**) to restore an archive (**Page 5-21**).

Start/Stop Services

Start/Stop Services starts or stops Monitoring Services and Application Host if the license contains the Surveillance option.

- 1 From the Windows desktop double-click **PIIC iX System Configuration**  or
From the PIIC iX application go to **Main Setup > System Configuration**.
The **Login to access System Configuration** screen opens.
 - 2 Enter your **User Name** and **Password** in the appropriate text boxes of the **Login to access System Configuration** dialog. Then click **OK**.
The **System Configuration** screen opens.
The **System Configuration** screen icons are **Configure**, **Validate**, **Archive**, and **Start/Stop Services**.
- Start Services** starts Monitoring Services and Application Host if your license contains the Surveillance option. If the system requires restart, a confirmation message reports that the machine will restart before services can be started.
- Stop Services** stops the services and/or application.
- 3 In **System Configuration** click the top menu **Start Services** icon to start Monitoring Services or the **Stop Services** icon to stop Monitoring Services.

Important If the application has unsaved changes, an error appears and Monitoring Services will not start.

Interfacing with ICCA

You must do the following so that ICCA and PIIC iX interface properly.

- Use an external time source at PIIC iX, which should be the Domain Controller.
- All ICCA Servers must use the Domain Controller as a time source and be synchronized.
- Configure PIIC iX as a Reporter Server or Reporter Client to send data to ICCA.
- Configure ICCA as a Server or Client to receive data from PIIC iX.
- If you want to export wave strips to ICCA, use the Xlink method.

Using Field Service Laptop to Configure PIIC iX Systems

Offline configuration of whole system topology and unit settings can be done by a Support person on a non-dedicated system running off line. For detailed information about installing PIIC iX Support Systems refer to the *System Administrator Guide*.

Using System Configuration Tools & Diagnostics

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Overview

System Configuration not only permits setting up system topology and configuring clinical and non-clinical features, but also provides tools for the PIIC iX System.

Important Access to the System Configuration tools, HL7 Tool and Philips Service Agent, is only available to a the user, *SupportUser* with the appropriate password. Although you can run System Configuration on a Surveillance host using the PatientMonitoring20 account, you will not be able to use HL7 Tool and Philips Service Agent unless you log on the feature as a different user ([page 9-5](#)).

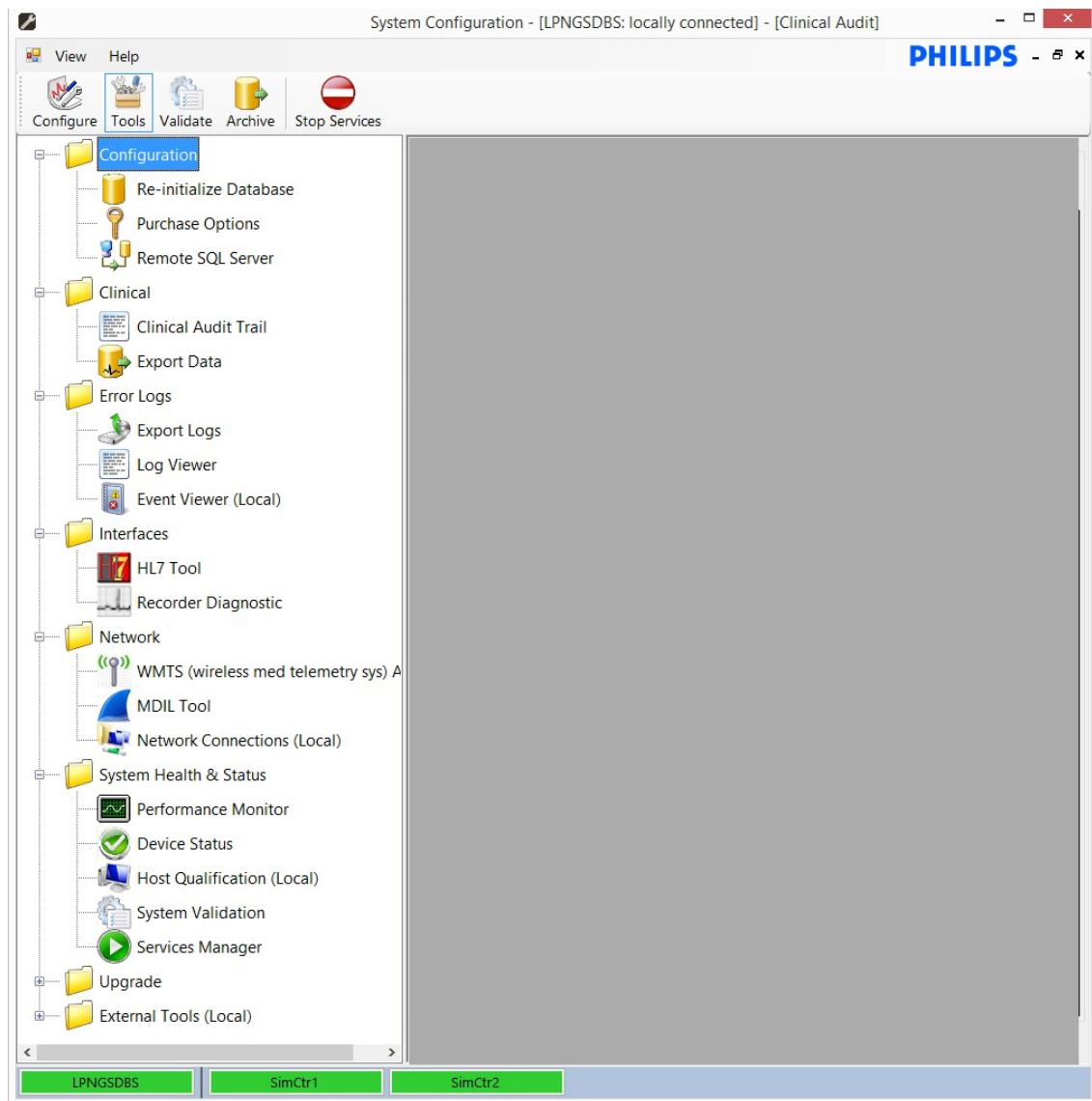
If you want to open System Configuration

- 1 If Patient Monitoring (Surveillance) is running, stop the application by pressing **Alt + F4** keys simultaneously. Then enter appropriate **User Name** and **Password** in the dialog.
- 2 At the Windows desktop press and hold the **Shift** key and right-click the **PIIC iX System Configuration** shortcut on the desktop. 
- 3 Select **Run as different user** in the list.
- 4 Enter *SupportUser* as the **User Name** and the appropriate **Password** in the **Windows Security** dialog. Then click **OK**.
- 5 Enter the local **User Name** and the appropriate **Password** in the **Login to access System Configuration** dialog. Then click **OK**.
The **System Configuration** screen opens.

Tools

The **Tools** icon opens a left pane in the **System Configuration** screen which includes folders: **Configuration**, **Clinical**, **Error Logs**, **Interfaces**, **Network**, **System Health & Status**, **Upgrade**, and **External Tools (Local)**.

- ▶ Click the **Tools** menu icon on the **System Configuration** screen.
The left pane populates.
If you want to hide the folder pane click the icon again.



Configuration

The **Configuration** folder includes the folders: **Re-initialize Database** and **Purchase Options**.

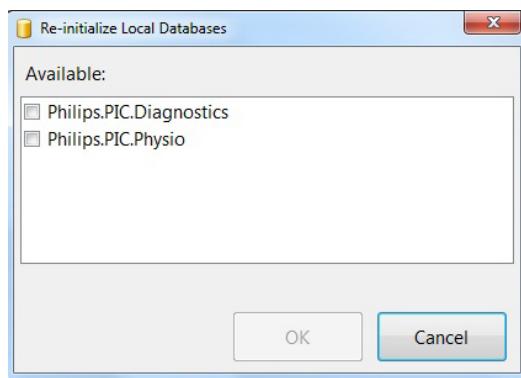
Re-initialize Database

Re-initialize Database permits re-initialization of *Philips.PIC.Diagnostics* and *Philips.PIC.Physio* local databases.

Important If you must re-initialize the entire Primary Server database you must run **System Setup** and perform the re-initialization on the System Setup screen ([page 5-20](#)).

If you want to re-initialize local databases,

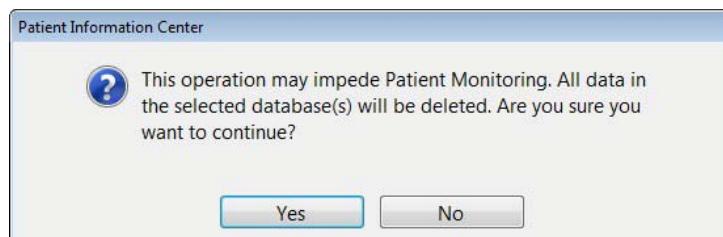
- 1 In the **System Configuration** screen select the **Tools** menu icon to populate the left pane with the Diagnostic tools.
- 2 Expand the **Configuration** folder and double-click **Re-initialize Database**



Philips.PIC.Diagnostics database contains Diagnostics used by **Log Viewer**, performance values used by **System Performance Monitor**, and device statistics.

Philips.PIC.Physio database contains physiological data.

- 3 Click the desired **Available** database selection, then click **OK**.
A message appears.



- 4 Click **Yes** or **No** in the dialog. If you click **Yes**, a progress bar appears.
A message indicates success or failure of the process.

Purchase Options

Purchase Options permits viewing **Feature Option Assignment** and **Feature Option Details** included in the Servers and Hosts. Refer to [page 5-27](#) for tables that list the PIIC iX feature options.

If you want to view the Purchased Options,

- 1 In the **System Configuration** screen select the **Tools** menu icon to populate the left pane.
- 2 Expand the **Configuration** folder and double-click the **Purchase Options** icon.

Remote SQL Server

Remote SQL Server permits viewing configured remote SQL Server details (*Host Display Name, Offloaded Database(s), SQL Server Name, SQL Server Instance Name, Authentication Type, SQL User Name*). Refer to [page 5-18](#) for details about configuring a **Remote SQL Server**.

If you want to view Remote SQL Server details,

- 1 In the **System Configuration** screen select the **Tools** menu icon to populate the left pane.
- 2 Expand the **Configuration** folder and double-click the **Remote SQL Server** icon.

Clinical

The **Clinical** folder includes the folders: **Clinical Audit Trail**, and **Export Data**.

Clinical Audit Trail

Clinical Audit Trail provides search options to produce a chronological record of alerts and actions performed within a unit regarding patient management. It also provides a secure read-only mechanism for reviewing and reporting the audit trail.

Searchable options can include alerts initiated for the patient, where the alerts went, and what actions the staff took as a result of the alerts. The PIIC iX System stores Audit data for 90 days.

- In the **Tools** pane expand the **Clinical** folder and double-click the **Clinical Audit Trail** icon.

The **Clinical Audit** screen appears.

Table 7-1 Clinical Audit Trail Search Settings

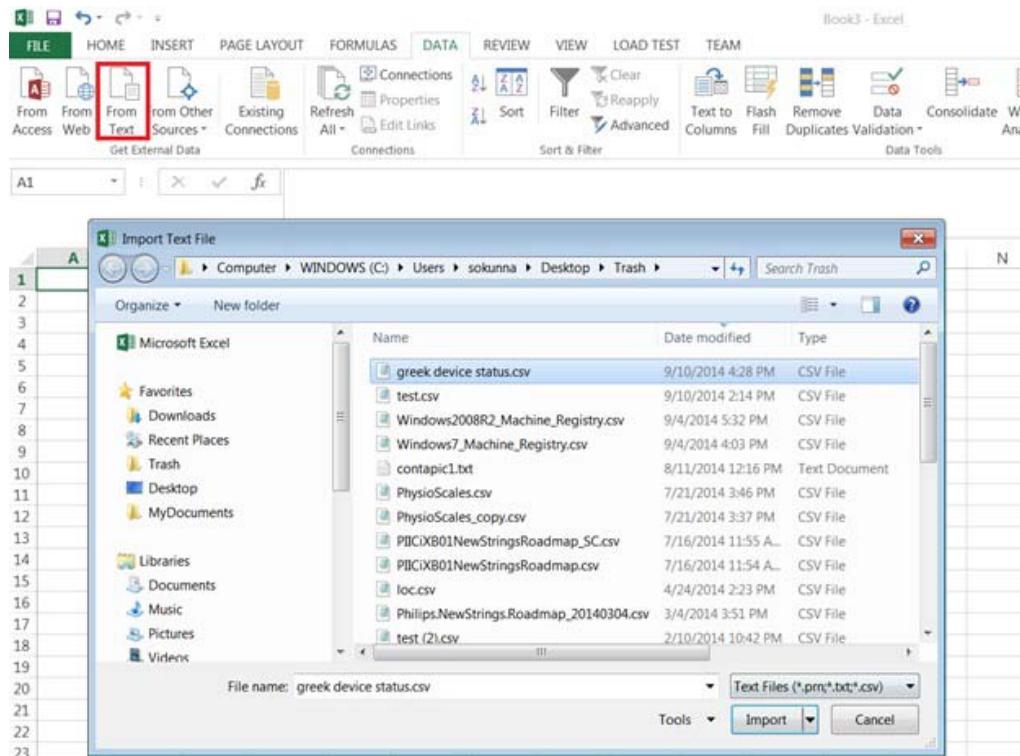
Section/Selection	Action/Description
Search Options	
* Search By	<ul style="list-style-type: none"> Select desired Host or Patient from the drop down list.
Search Patient By	<ul style="list-style-type: none"> Select desired search criteria from the drop down list. Last Name, First Name, MRN, Bed Label Only active when you select Search By Patient
Search text	<ul style="list-style-type: none"> Enter search data in the text box.
Date Selection Box	<ul style="list-style-type: none"> Click the down arrow, then select the desired date on the calendar.
Start time/date	<ul style="list-style-type: none"> Enter the desired start time.
*Duration	<ul style="list-style-type: none"> Click the down arrow and select the desired duration from the list. Last 15 Minutes (15 Minute increments to 60 Minutes), Last 2 Hours, 4 Hours, 6 Hours, 8 Hours 12 Hours, 24 Hours, Last 7 Days, 14 Days, 30 Days, 50 Days
Search Filters	
Alerts	
Red Alarm Yellow Alarm Logged Inop Alert Sound	<ul style="list-style-type: none"> Click the check box next to the desired Alert.

Table 7-1 Clinical Audit Trail Search Settings (continued)

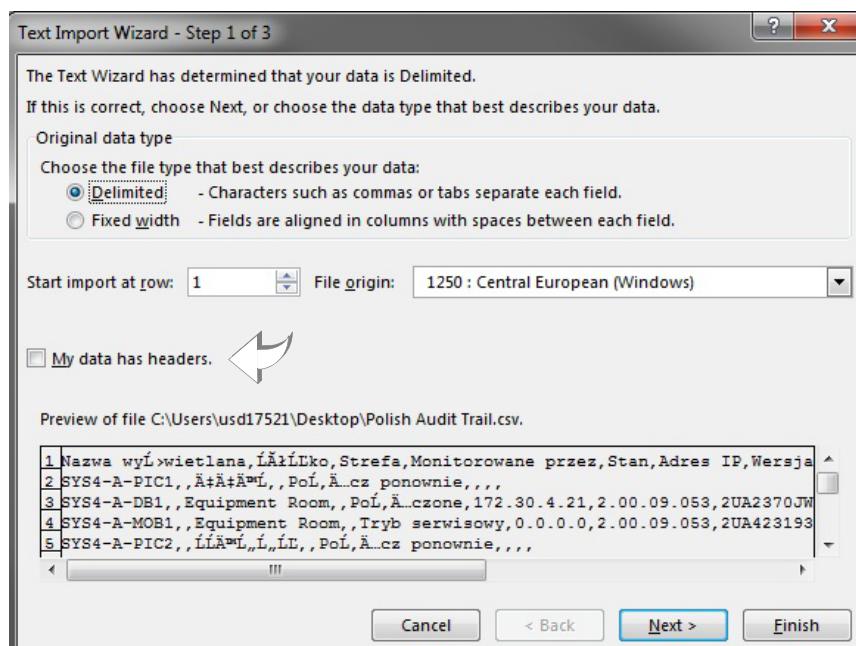
Actions	<ul style="list-style-type: none"> Click the check box next to the desired Action Filters.
Silence Pause/Resume Measurement On/Off Alarm On/Off Alarm Limit Change 12 Lead Export Standby On/Off Notification Assignment Changed Patient Data Accessed Patient Data Annotated ADT Sector Locked/Unlocked Caregiver Assignment Changed Equipment Added/Removed 12 Lead ECGCapture Physio Data Loss Equipment Online/Offline Patient Category Changed Pace State Changed Telemetry Profile Changed Bed Cleared/Assigned Overview Sector Cleared/Assigned System Time Changed Resuscitation Changed Alarm Discarded Arrhythmia Analysis Mode ST Points	<ul style="list-style-type: none"> Click the check box next to the desired Action Filters.
Search	<ul style="list-style-type: none"> Click the button to generate Search Results.
Export	<p>1 Click the button to export Search Results (in .csv format).</p>  <p>Local drives and mapped drives will appear in the Browse For Folder window.</p> <p>2 Select the desired location in the window then click OK.</p>
Search Results	Area that shows Audit Log for Search criteria

Opening UTF-8 Character Encoded Files in Excel

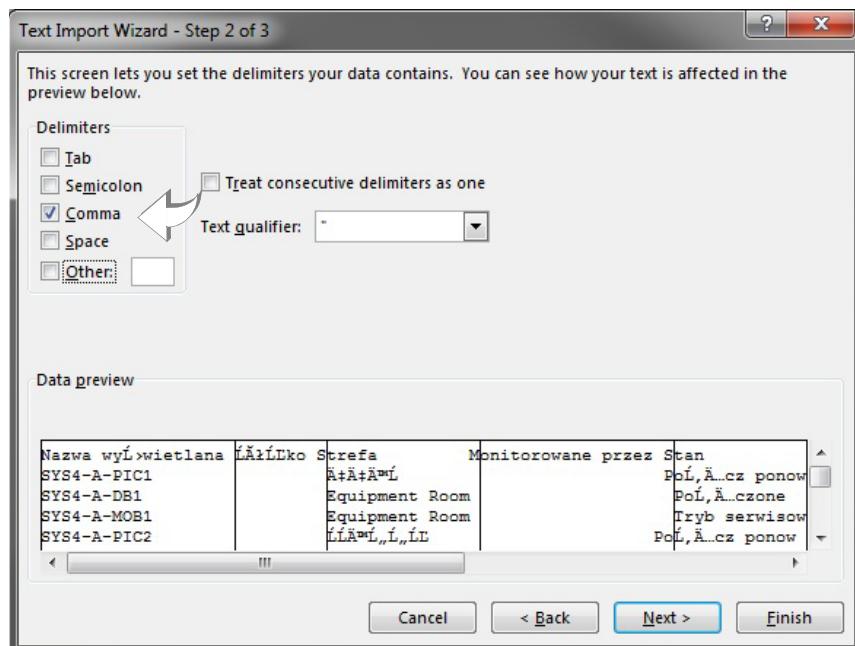
- 1 Open Excel.
- 2 In the **Data** tab go to **From Text** in the **Get External Data** section.
- 3 Browse to the location of the desired exported .csv file, then click **Import**.



- 4 In the **Text Import Wizard** screen select **My data has headers**, then click **Next >**.



- 5 In the **Delimiters** section select the **Comma** option, then click **Finish**.



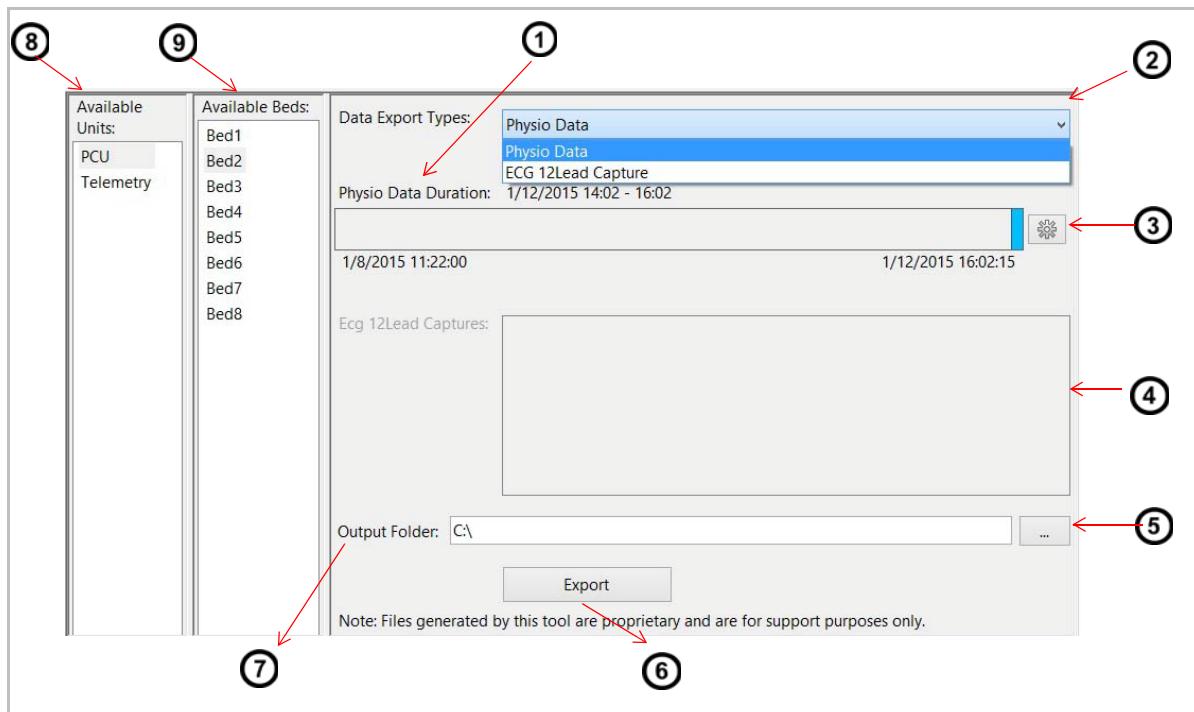
- 6 Click **OK** in the **Import Data** dialog.

Export Data

The **Export Data** tool shows Clinical Units and Bed Labels in the system and permits export of the Physio or ECG 12Lead Capture data for a selected bed.

If you want to export data,

- I In the **Tools** pane expand the **Clinical** folder and double-click the **Export Data** icon.
The **Export Data** screen appears.



1	Physio Data Duration	When Physio Data export is selected shows a time span selector of Physiologic Data collected for selected Bed. Default duration is 120 minutes; the maximum duration is 2 hours or the maximum range of available physio data, whichever is less.
2	Data Export Types	<ul style="list-style-type: none">▪ Physio Data▪ ECG 12 Lead Capture
3		Opens a Range & Selection dialog that permits selection of start and end time during which data exists for the Patient
4	ECG 12 Lead Captures	When ECG 12 Lead Capture is selected available ECG 12 Lead Captures appear.
5		Ellipsis button permits navigation to export location
6	Export	Executes output file creation

7	Output Folder	Shows location for output file(s)
8	Available Units	Lists Clinical Units in Server Domain
9	Available Beds	Lists Beds assigned to selected Clinical Unit

- 2** Select desired Unit and Bed, then click the down-arrow to select the **Data Export Type**.
- 3** Do the following to export **Physio Data**.
 - a** Drag the slider to adjust desired **Physio Data Duration**.
 - b** Click the  icon to open the **Range & Selection** dialog.
 - c** Set the desired **Range** and **Selection** values, then click **OK** in the dialog.
 - d** Enter a desired location for file in **Output Folder** text box or click ellipsis button  to browse to a file location The default location is C:\
 - e** Click **Export**.
A message confirms successful export of physio data output file. Filename format is [unit]_[bed]_[starttime]_[endtime].ppd (postscript printer definition file)
 - f** Click **OK** in the confirmation dialog.
- 4** Do the following to export an **ECG Lead Capture**.
 - a** With the desired bed selected click the available capture listed in the **Ecg 12lead Captures** section.
 - b** Enter a desired location for file in **Output Folder** text box or click ellipsis button  to browse to a file location The default location is C:\
 - c** Click **Export**.
A message confirms successful export of output file. Filename format is [unit]_[bed]_[month]_[day]_[year]_[hour]_[minute]_[second].xml
 - d** Click **OK** in the confirmation dialog.

Error Logs

The **Error Logs** folder includes the folders: **Export Logs**, **Log Viewer**, and **Event Viewer (Local)**.

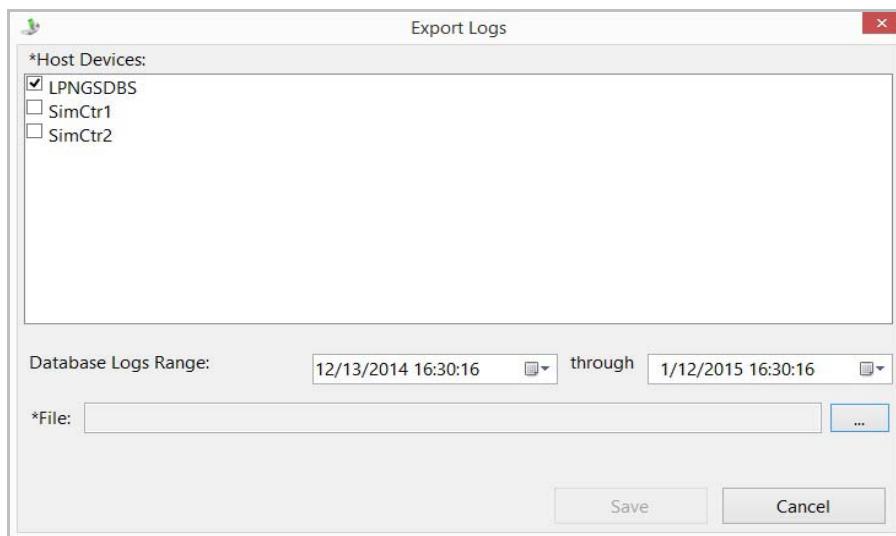
Export Logs

The **Export Logs** tool permits saving logs for a selected systems. The tool collects and saves the following for all selected systems.

- All PIIC iX logs including System Validation results
- Application and System event Logs
- Philips PIC Setup Logs
- Operating System Network Settings
- PIIC iX Archive
- Network Statistics Alerts (Most recent 5000)
- All log files in C:\Stardate (rfda.log, recorder.zip, for example)
- KAVOOM logs
- Windows update

To open the Export Logs Tool

- 1 In the **System Configuration** screen select the **Tools** menu icon to populate the left pane.
- 2 Expand the **Error Logs** folder and double-click **Export Logs**.
The **Export Logs** dialog opens.



- 3 Select the desired **Host Device** from the list.
- 4 Click the down-arrows to select the **Database Logs Range** dates.
- 5 Click the ellipsis button [...] next to **File**, and select a location for the compressed logs file.
- 6 Click **Save**.

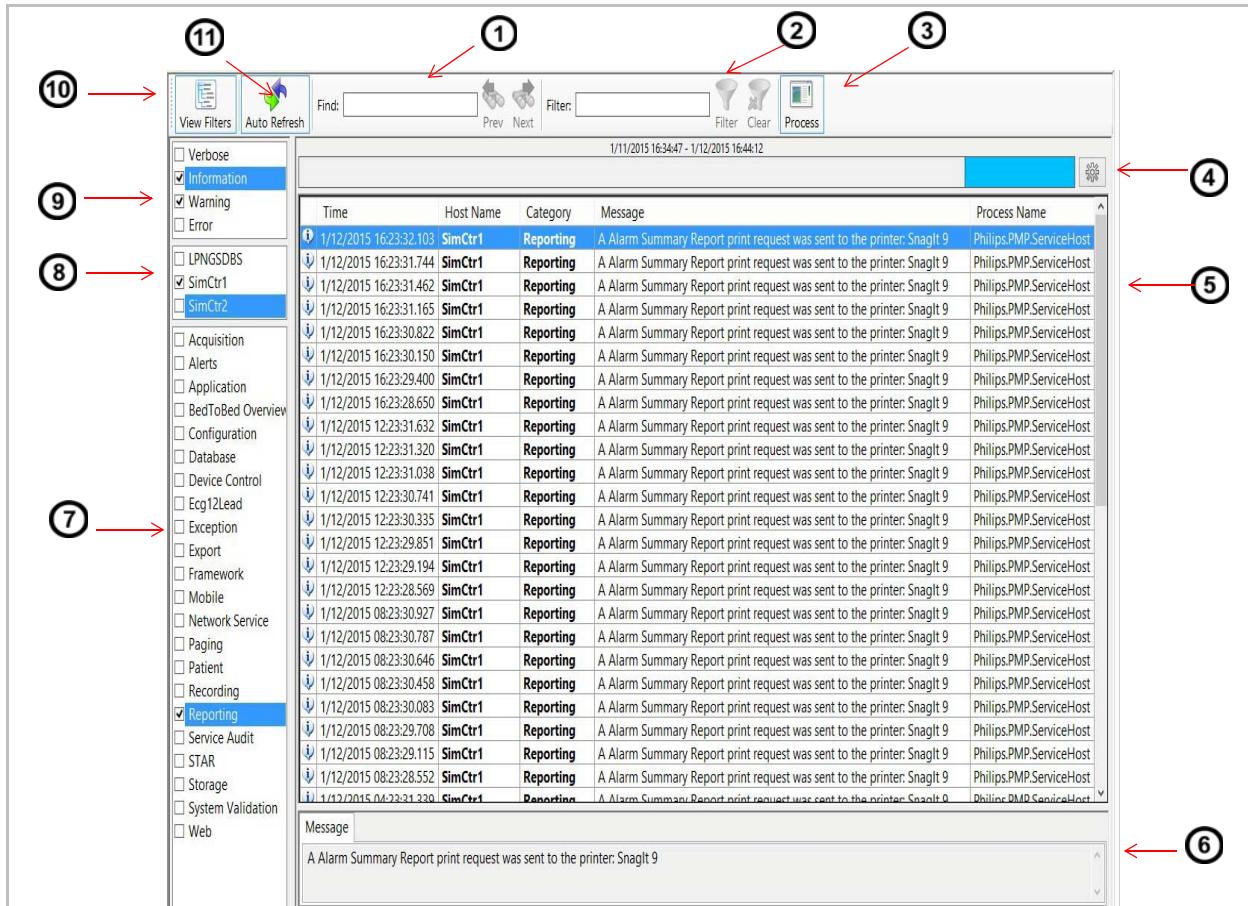
Log Viewer

Log Viewer provides a troubleshooting and helps expose problems within the system.

The Log Viewer tool permits review of specific types of log entries by filtering messages for logging. Logs are stored in the local database.

Important Logs are not included in an archive.

- In the **Tools** pane expand the **Error Logs** folder and double-click the **Log Viewer** icon.



1	Find	Permits text-entry of search keyword 1 Enter desired search text in Find text box. 2 Click the Next icon to move forward in the log. click the Prev icon to move back. The log entry with the searched text is highlighted.
2	Filter	Permits entry of Filtering criteria 1 Enter desired text in Filter text box. 2 Click the Filter icon to activate the filter; click the Clear icon to remove the filter.
3	Process	Permits the Process Name column to populate with affected process

4	Range Selector	Appears above the Log entry list and permits changing the date range of the query. 1 Click the Gear Icon to open a range selection dialog. 2 Set the desired range by moving the slide bar. Total available range is 6 months (default is the last 7 days).
5	Log Entry List	Includes Log Entries for selected PIIC iX Systems based on Filters (7) and Categories selected
6	Message	Displays Message describing the selected log entry in the Log list
7	Logging Category Filter	Permits selecting Logging categories describing the subsystem Acquisition Alerts Application Bed To Bed Overview Database Device Control Ecg12 LEAD Exception Export Framework Mobile Network Service Paging Patient Recording Reporting Service Audit STAR Storage System Validation Web
8	Host Selection Filter	Permits selecting logs of a particular Host Only hosts assigned to the primary server appear. By default the current host is selected. Logs are stored locally at each host) The selected hosts must be accessible and properly functioning in order to see the logs.
9	Log Entry Type Filters	Permits setting types of logging entries Verbose log entries in category are stored. Setting is clear by default. Information log entries in category are stored. Set by default. Warning log entries in category are stored. Set by default. Error log entries in category are stored. Set by default
10	View Filters	Toggles the appearance (or not) of the Filters selections
11	Auto Refresh	Permits updating screen to its most current state The screen automatically updates every 30 seconds.

NOTE An Import function which permits import of a log file is available on un-licensed systems.

If you want to configure log entries,

- ▶ For each host click the desired category for the desired range.

Event Viewer (Local)

Event Viewer is a Windows application that permits view of monitoring and troubleshooting messages.

- 1 In the **System Configuration** screen select the **Tools** menu icon to populate the left pane.
- 2 Expand the **Error Logs** folder and double-click **Event Viewer (Local)**.
The Windows **Event Viewer** application opens.

Interfaces

The **Interfaces** folder includes the folders: **HL7 Tool** and **Recorder Diagnostic**.

HL7 Tool

The HL7 Tool permits data capture from various HL7 sources for troubleshooting. It integrates with PIIC iX HL7Service to obtain real time configuration and messaging. Access to this tool requires that you are logged on **System Configuration** as *SupportUser* with the appropriate password.

- 1 In the **System Configuration** screen select the **Tools** menu icon to populate the left pane with the Diagnostic tools.
- 2 Expand the **Interfaces** folder and double-click **HL7 Tool**. Refer to **Appendix A** for description and use instructions for the HL7 Tool; refer to and **page 6-80** for description about creating Observation Clients.

Recorder Diagnostic

The **Recorder Diagnostic** tool permits testing a recorder that is locally connected to the Central.

Conditions necessary for testing the recorder follow.

- ServiceHost must be running on the local PIIC iX.
- No recording jobs are in the Queue.
- *Paper Out, Door Open, USB Unplugged, and Power Unplugged* conditions may not exist. Any of these conditions will fail the Diagnostic Recording.

Recorder command logs are enabled by default and written to *c:\|stardate\logs*.

NOTE When the Recorder Diagnostic tool is running, recording from monitored beds is suspended.

- 1 In the **System Configuration** screen select the **Tools** menu icon to populate the left pane with the Diagnostic tools.
- 2 Expand the **Interfaces** folder and double-click **Recorder Diagnostic Tool**.
The **Recorder Diagnostic Tool** opens.

Network

The **Network** folder includes **WMTS (Wireless Med Telemetry System)**, **MDIL Tool**, and **Network Connections (Local)** icons.

WMTS (Wireless Med Telemetry System)

The **WMTS** tool permits configuration and view of alert data received from WMTS/ROW Access Points and Access Point Controllers. These alerts are sent when problems occur on the infrastructure. The alerts are collected and turned into statistics by the service.

Important You must configure the APCs with the PIIC iX Server IP Address so that alerts can be received and displayed.

- ▶ From the **Tools** pane expand the **Network** folder and double-click the **WMTS** icon.
The **WMTS** table populates.

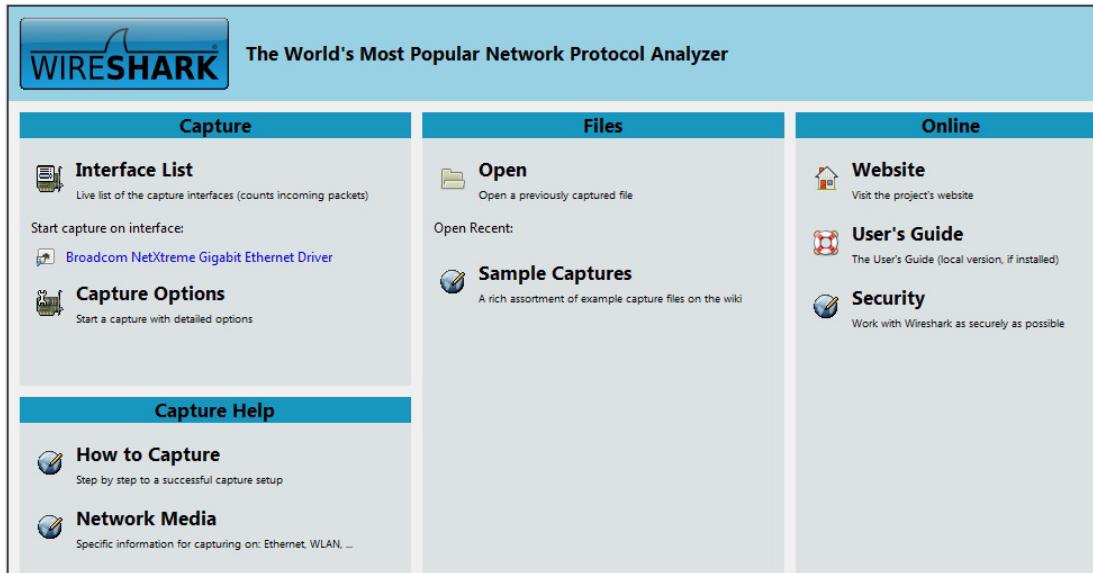
Columns in the **WMTS** table include **Urgency**, **Time**, **Condition**, **Flag**, **Device**, and **Data**.

Refresh	Refresh button permits restoring the table to the most current state.
Acknowledge	Acknowledge button permits an acknowledgement response to an alert.
Show Informational Alerts	Show Informational Alerts check box permits selection of these alerts.
Alerts Categories	Yellow (Urgency) Yellow alerts generate the message, <i>Wireless Monitoring Loss – Call Service</i> . Green (Info only)
Flag	Set (Alert state is active) Cleared (Problem corrected itself).

MDIL Tool

MDIL Tool provides access to *Wireshark*, a network packet analyzer. *Wireshark* provides a type of measuring device to examine the activity inside a network cable; the tool permits filtering, searching, and generating statistics from network packet activity.

- ▶ From the **Tools** pane expand the **Network tools** folder and double-click the **MDIL Tool** icon.



Network Connections (Local)

The **Network Connections (Local)** tool opens the *Control Panel Network Connections* Window which permits configuration of Network Interface Connection properties.

NOTE DHCP is enabled and can be used.

- 1 From the **Tools** pane expand the **Network** folder and double-click the **Network Connections (Local)** icon.
- 2 Right-click the **Local Area Connection** icon and select **Properties** from the list. The **Local Area Connection Properties** sheet opens.

Important If you want to add more than one IPvx connection you must include **Monitor** in the name of the adapter.

- 3 To set the Ethernet connection **Speed & Duplex** click **Configure**.
 - a On the **Advanced** tab select **Speed & Duplex** in the **Properties** list.
 - b In the **Value** drop-down list make desired selection. Then click **OK**.

Important The network adapter Speed & Duplex setting must match the settings of the connected network switch.

- 4 Close the **Properties** sheet when changes are completed and saved.

System Health & Status

The **System Health & Status** folder includes **Performance Monitor**, **Device Status**, **Host Qualification (Local)**, **System Validation**, and **Services Manager** icons.

Performance Monitor

Performance Monitor is a distributed service and a suite of Applications that examines retrospective system and software performance counters and metrics. It uses rules and algorithms to measure overall system performance, health, and reliability and generates alerts.

The *Performance Service* measures software and hardware-specific counters.

An example of software counters is application specific private bytes, which indicates the level of memory consumption of a process.

Examples of hardware-specific counters would be memory, disk space, CPU, network utilization, and other similar resources.

- ▶ From the **Tools** pane expand the **System Health & Status** folder then double-click **Performance Monitor**.
- The **Performance Monitor** screen opens which has tabs for **Overview**, **Up Time**, **Alerts**, **Chart**, **CPU**, **Memory**, **Disk**, **Physio Storage**, **Reviews**, **Database**, **Paging**, **HL7**, **Equipment**, **APM**, **MultiPatient View**, **Mobility**, **PDX** and **Physio Purge**.

Overview

The **Overview** tab Performance Monitor has a System snapshot section with **Snapshot** and **Alert Trends** tabs and a System Performance Area table with **Watched Performance Counters** and **Availability Details** tabs.

In the **Overview** tab Performance Monitor you can produce a **Snapshot** view of the state of the system over a period of specified time.

- 1 Click the gear icon and enter the desired **Range** and **Selection** dates in the dialog. Then click **OK**.
- 2 Click **Analyze**.

The **Snapshot** window populates with performance data.

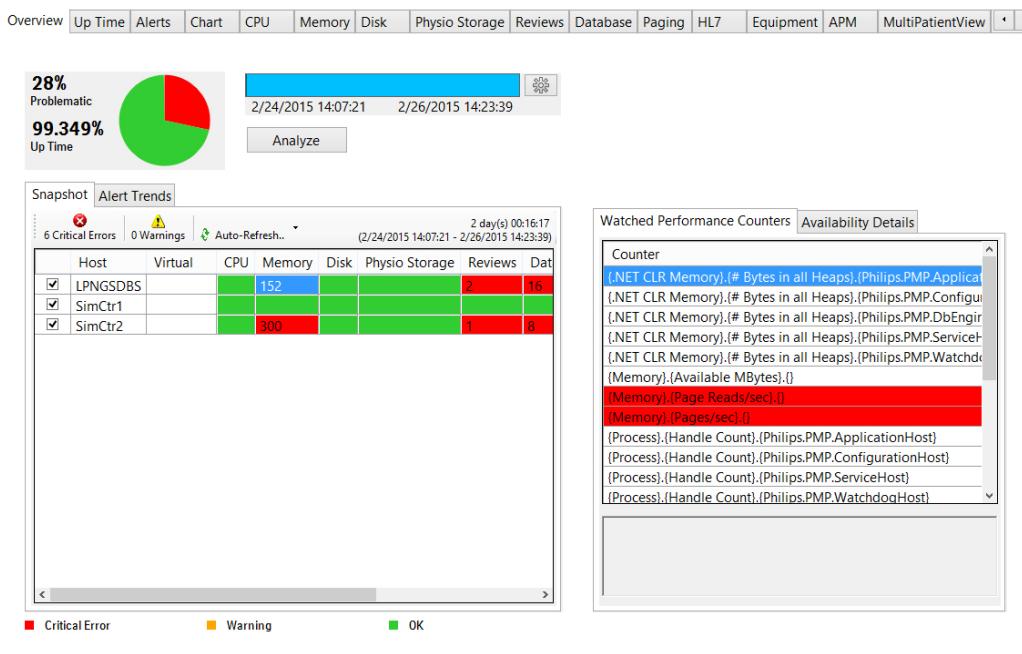
The following columns represent aggregated results for the time span selected for analysis:

CPU
Memory
Disk
Physio Storage
Reviews
Database
Paging
% Up Time (indicates a percentage of host availability during the selected time)

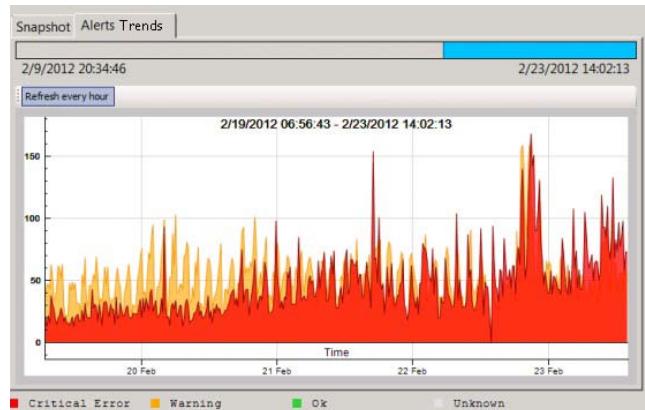
- 3 Click any cell in the Snapshot table to populate the **Watched Performance Counters** table.

The following columns are illustrated:

Counter
Average
Min
Max
Threshold
Sustained for (sec)
Limit

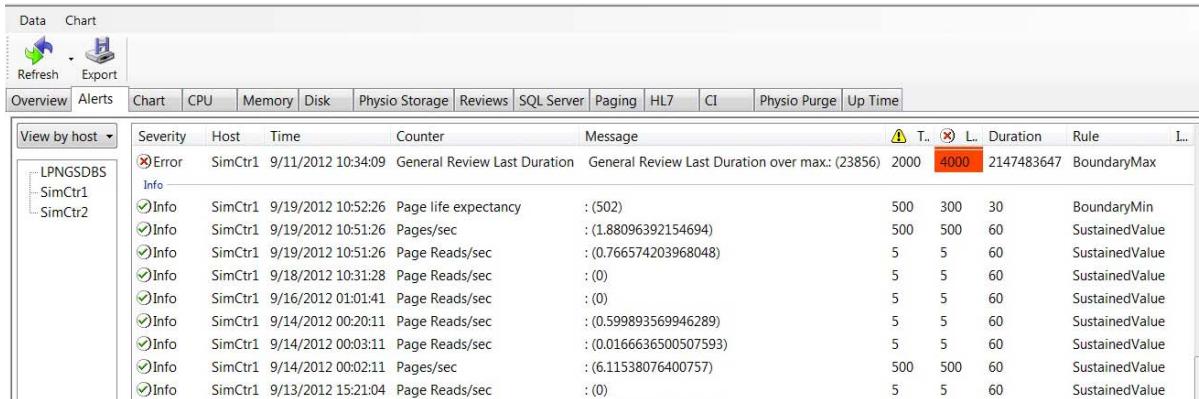


The **Alerts Trends** tab shows a histogram of the number of alerts (critical alerts or warnings) triggered in the entire topology over time. Orange areas represent topology warnings; red areas represent alerts.



Alerts

The **Alerts** tab on the **Performance Monitor** screen permits viewing all of the system alerts within a time period for selected counters within a category. If you double-click any alert, the **Chart** view opens.



The screenshot shows the Windows Performance Monitor interface with the 'Alerts' tab selected. The left pane displays hosts: LPNGSDBS, SimCtr1, and SimCtr2. The main pane lists alerts for SimCtr1, ordered by severity. The first alert is an Error: General Review Last Duration over max., with a threshold of 2000 and a limit of 4000. Subsequent alerts are Info entries related to Page life expectancy, Page Reads/sec, and Page Reads/Sec.

Severity	Host	Time	Counter	Message	Threshold	Limit	Duration	Rule	Category
>Error	SimCtr1	9/11/2012 10:34:09	General Review Last Duration	General Review Last Duration over max.: (23856)	2000	4000	2147483647	BoundaryMax	
Info	SimCtr1	9/19/2012 10:52:26	Page life expectancy	: (502)	500	300	30	BoundaryMin	
Info	SimCtr1	9/19/2012 10:51:26	Pages/sec	: (1.88096392154694)	500	500	60	SustainedValue	
Info	SimCtr1	9/19/2012 10:51:26	Page Reads/sec	: (0.766574203968048)	5	5	60	SustainedValue	
Info	SimCtr1	9/18/2012 10:31:28	Page Reads/sec	: (0)	5	5	60	SustainedValue	
Info	SimCtr1	9/16/2012 01:01:41	Page Reads/sec	: (0)	5	5	60	SustainedValue	
Info	SimCtr1	9/14/2012 00:20:11	Page Reads/sec	: (0.599893569946289)	5	5	60	SustainedValue	
Info	SimCtr1	9/14/2012 00:03:11	Page Reads/sec	: (0.0166636500507593)	5	5	60	SustainedValue	
Info	SimCtr1	9/14/2012 00:02:11	Pages/sec	: (6.11538076400757)	500	500	60	SustainedValue	
Info	SimCtr1	9/13/2012 15:21:04	Page Reads/sec	: (0)	5	5	60	SustainedValue	

Description	
Refresh	Permits update of screen to latest information
Export	Permits export of data in xml format
View by Host	Permits selecting Host to sort alert entry list
View by Week	Permits selecting Week to sort alert entry list
Column Headings	Severity Warning indicates that the counter has violated a warning boundary Error indicates that the counter has violated an error boundary
	Host Identifies host on which alert occurred
	Time Date and time of the alert
	Counter Performance counter that caused the alert
	Message Description of alert including the current counter value
	Threshold Defined counter value when Severity changed to Warning, which is indicated by yellow highlight
	Limit Defined counter value when Severity changes to, which is indicated by red highlight
	Duration Defined value that measures how long a counter value remains outside of the normal range before change of severity occurs
	Rule Type of rule being applied to the counter
	Instance Process in which alert was raised
	Category Category in which the alert belongs

Chart

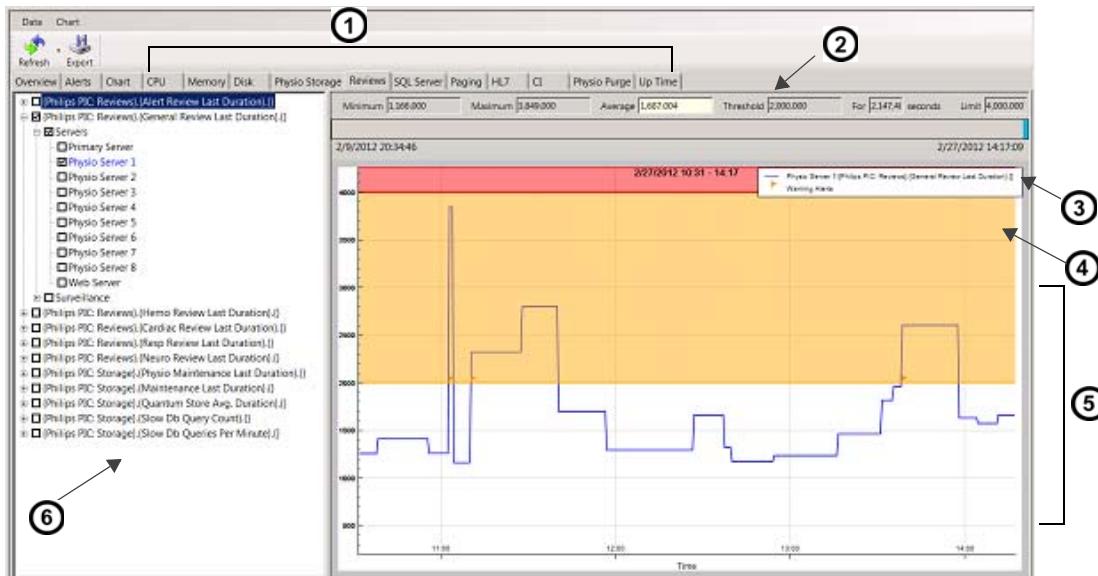
The **Chart** tab on the **Performance Monitor** screen permits graphic viewing of the selected performance counters.



1	Refresh permits selection of Refresh every minute option.	6	You can click and drag the solid data section in the Time Bar to any location in the time range, or you can click and drag the start or end edge of the data bar to change start time or end time.
2	Export opens Save As dialog. You can save the graph as a jpg, gif, or png.	7	End Time indicates end of data collection
3	Counter Selection panel permits selection of counters to display in the chart.	8	The timeline shows the total system performance counter data available in the system.
4	Start Time indicates beginning of data collection.	9	Cursor shows popup showing value at cursor time
5	Total Time Range	10	Chart displays the start time and end time of the data as selected in the timeline and all data for the selected counters that falls in that category.

Performance Area Viewers

Performance area viewing appears for performance counters **CPU, Memory, Disk, Physio Storage, Reviews, Database, Paging, HL7, Equipment, APM, MultiPatient View, Mobility, and PDX**. Each view can be selected by choosing the desired tab.



1	Performance Area Viewer selection tabs CPU, Memory, Disk, Physio Storage, Reviews, Database, Paging, HL7, Equipment, APM, MultiPatient View, Mobility, PDX	4	Alert boundary regions orange: warning area red: critical error area
2	Counter statistics for a selected host Minimum, Maximum, Average Counter alert definitions for a selected host Threshold, Duration (if rule is Sustained or Processor, Limit (if rule is Sustained))	5	Chart displays the start time and end time of the data as selected in the timeline and all data for the selected counters that falls in that category.
3	Alert Flags orange: warning alert red: critical error alert	6	Counter Selection panel permits selection of counters to display in the chart. Each counter expands to Servers (primary, physio and web) and Surveillance (surveillance and overview).

Figure 7-1 Performance Area Viewer Example

Device Status

The **Device Status** tool permits on-site or remote identification of the state of hosts, bedsides, telemetry and network infrastructure devices connected to the system.

- ▶ From the **Tools** pane expand the **System Health & Status** folder then double-click **Device Status**.

The **Device Status** screen opens.

The screenshot shows the 'Device Status' screen. At the top left are 'Export' and 'Refresh' buttons. Below them is a 'Filter By:' sidebar with two sections: 'Zone' (selected) and 'Device Type'. Under 'Zone', '<None>' and 'My Unit' are checked. Under 'Device Type', 'Host' and 'Equipment' are checked. The main area is a table with columns: Display Name, Bed, Zone, Device Type, Status, IP Address, and MAC Address. The table lists several devices:

Display Name	Bed	Zone	Device Type	Status	IP Address	MAC Address
LPNGS3	My Unit	Host	Connected	10.90.93.11	000FFFFF4876	
		Equipment		172.31.249.82	0009fb4600c5	
MON1	Bed1	My Unit	Equipment			
MON2	Bed2	My Unit	Equipment			
MON3	Bed3	My Unit	Equipment			
MON4	Bed4	My Unit	Equipment			
MON5	Bed5	My Unit	Equipment	10.49.0.30	000000000005	

- ▶ Right-click any line item in the **System Device Status** list to show a list of possible menu selections.

Depending on the device these selections may include:

Reboot Machine - schedules a device restart

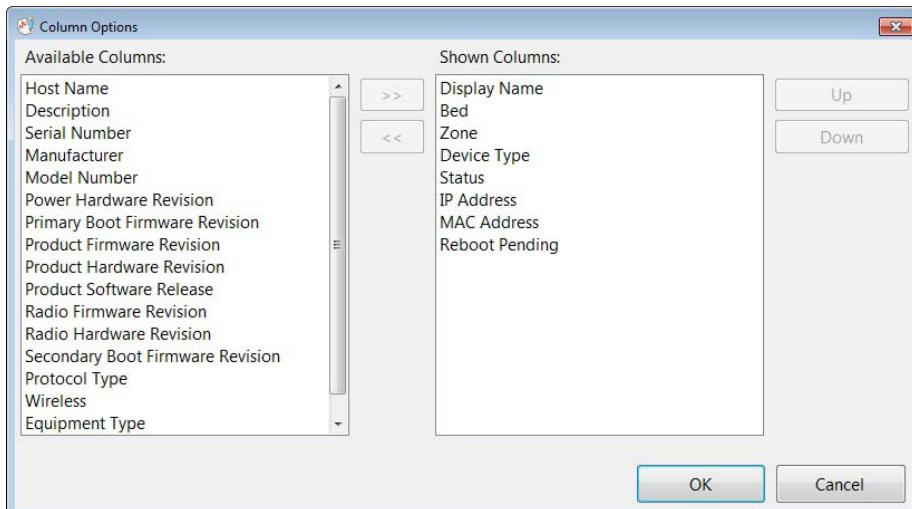
Copy - permits copy of device status information to a text file

Export - opens a **Save As** window that permits saving table to a .csv file.

Important For languages that use UTF-8 character coding, refer to [page 7-8](#) for instructions to open excel files so that data appears accurately.

Select All - permits selection of entire table

Choose Columns - opens **Column Options** dialog that permits selection of column headings



Host Qualification (Local)

The Host Qualification feature provides a post-installation assessment of **Rules**. Each item in the list references a rule that must be satisfied. The feature permits verification of each **Rule** and an opportunity to correct a rule failure if possible.

- ▶ From the **Tools** pane expand the **System Health & Status** folder then double-click **Host Qualification (Local)**.
- The **Host Qualification** screen opens.

System Validation

System Validation provides a post installation assessment of a customized configuration of hardware and software.

- 1 From the **Tools** pane expand the **System Health & Status** folder then double-click **System Validation**.
- 2 Click the check box of each item you want to verify.
- 3 Click the **Verify** icon.

After an item is tested, its status is either **Success**, **Warning**, or **Failure**. Refer to **Appendix F** for **System Validation** screen **Rules** description.

Services Manager

Services Manager provides a read-only list of all **Available Services** running on the Server and Hosts in the system. A green icon appears for running services; a red icon signifies that a service is stopped. If a selected host is not connected, there are no **Available Services** listed.

- ▶ From the **Tools** pane expand the **System Health & Status** folder then double-click **Services Manager**.

The **Services Manager** screen opens.

The screenshot shows a software interface with two main sections. On the left, under 'Available Hosts:', there are three entries: LPNGS1, LPNGS2, and LPNGS3. On the right, under 'Available Services:', a list of services is displayed, each preceded by a green circular icon indicating they are running. The services listed are: Database Engine Service (External Connections), Utilities Service, System Status Service, Custom Performance Counters Service, Db Availability Service, Db Sync Service, Database FIFO Service, Performance Service, Scheduler Service, Patient Service, Control Service, Physio Data Service, Device Service, Physio Data Store Service, CI Service, Alert Filter Service, HL7 Outbound Service (red icon, stopped), Dhcp Service, Alert Notification Service, TimeService, StarService, Alarm Reflection Service, Recording Service, CdsProtocolService (red icon, stopped), Ecg12Lead Service, System Control Service, ReportingService, and AlertGeneratorService.

Starting Services

- ▶ If you must restart all services click the top menu **Start Services** icon in **System Configuration**. Click the **Stop Services** icon to stop Monitoring Services.



Starting XDS Services

Services that manage bedside printing and export of pdf files are not included in **Services Manager** list. If you must restart the XDS services do the following.

- 1 At the Windows desktop right-click the task bar and select **Start Task Manager** from the list.
- 2 Click the **Services** tab and make sure that the **Status** of the following XDS services is **Running**.

<i>Intellivue Infrastructure Service</i>	<i>Running</i>
<i>Philips IPM.DA.Rdist.Service</i>	<i>Running</i>
<i>BedPcStS</i>	<i>Running</i>

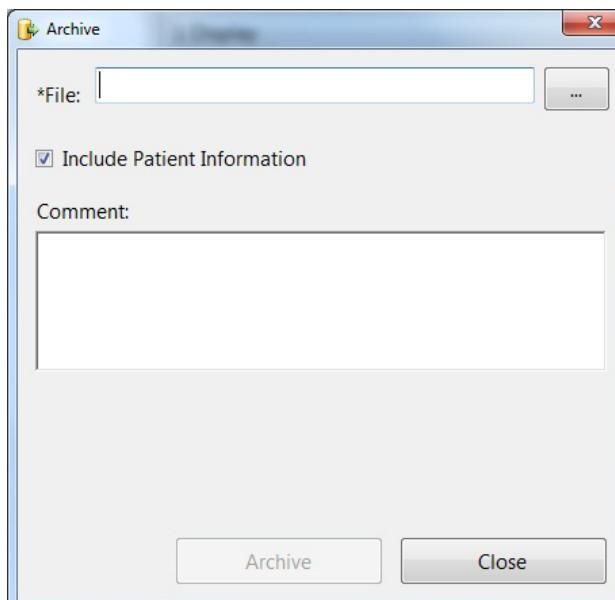
- 3 If any of these services are stopped, restart the service by right-clicking the service and selecting **Start Service**.

Upgrade

The **Upgrade** folder includes the tools, **Archive**, **Software Update**, and **Windows Update (Local)**.

Archive

- 1 From the **Tools** pane expand the **Upgrade** folder then double-click **Archive**.
The **Archive** screen opens.



- 2 Enter the desired file name in the **File** text box.
Maximum length of the file name is 260 characters, including the path. A message appears if you exceed the character limit.

- 3 Click the Ellipsis button  to open a **Browse** window. Then navigate to the location you wish to save the file, and click **OK**.
- 4 If you want to archive patients' demographic settings at the time of the archive, click the **Include Patient Information** check box.
- 5 Enter desired information in the **Comment** box Then click **Archive**.

Important The following rules apply regarding Archive files:

Archives can be generated during the normal operation of the system.

With the exception of logs, audit trails, performance counter metrics, printer settings, and optional patient information, all data is included in the archive.

If the specified path and file name in the Archive dialog is longer than 260 characters an error appears, *The file path cannot exceed 260 characters*.

If the specified file extension is not .rvk an error appears, *The specified file extension is invalid*.

If the folder does not exist on the system an error appears, *The specified directory does not exist*.

If the file/folder is not specified an error appears, *A file was not specified*.

If you want to restore an Archive

- You must run System Setup to restore an archive. Refer to [page 5-21](#).

Software Update

The **Software Update** tool permits patch installation.

- Open **System Configuration** then click the **Tools** icon. Expand the **Upgrade** folder and double-click the **Software Update** icon.

The **Latest Available Software Revision V.U.F** appears in the **Software Update** screen as well as all Servers' and Hosts' **Display Name**, **Host Name**, **Zone Name**, current **Software Revision**, **Build**, and **Patch Status**.

Patch Status can be one of the following:

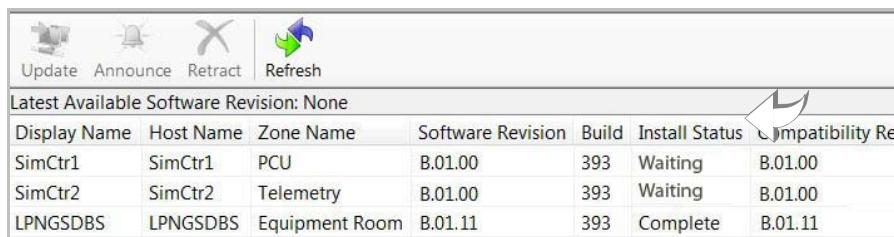
Waiting

In Progress

Complete

Failed

Blank



Display Name	Host Name	Zone Name	Software Revision	Build	Install Status	Compatibility Rev
SimCtr1	SimCtr1	PCU	B.01.00	393	Waiting	B.01.00
SimCtr2	SimCtr2	Telemetry	B.01.00	393	Waiting	B.01.00
LPNGSDBS	LPNGSDBS	Equipment Room	B.01.11	393	Complete	B.01.11

Refer to [Installing Patches on PIIC iX Systems, page 5-63](#), for a complete description of suggested patch update process.

Windows Update (Local)

Windows Update (Local) permits checking for and installing Windows Operating System updates.

- I From the **Tools** pane expand the **Upgrade** folder and double-click the **Windows Update (Local)** icon.

A **Windows Update** dialog opens and checks for the latest updates to enhance your computer's security and performance. The dialog also records when the most recent check for updates occurred, when updates were installed, and what Microsoft products you receive updates for.

- 2 If you want to search for available Windows updates click **Check for updates**.

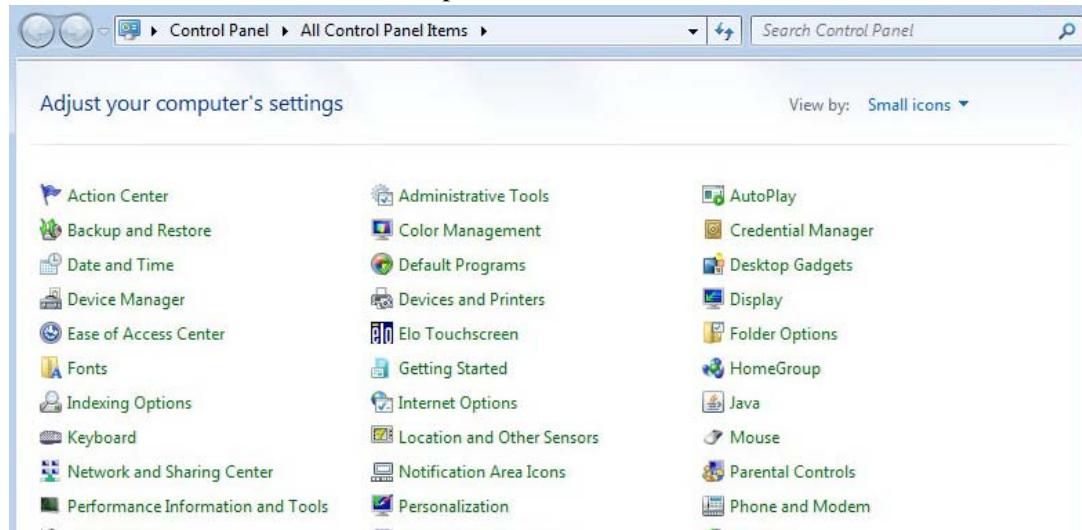
External Tools (Local)

The **External Tools (Local)** folder includes **Control Panel**, **Problem Steps Recorder**, **System Information**, and **Date and Time** icons. It is also possible to add a third party tool to this folder.

Control Panel

- From the **Tools** pane expand the **External Tools (Local)** folder and double-click the **Control Panel** icon.

The Windows **Control Panel** opens.



Problem Steps Recorder

You can use **Problem Steps Recorder (PSR)** to automatically capture the steps you take on your computer, including a text description of where you clicked and a screen shot during each click. Once you capture these steps, you can save them to a file that can be used identify and solve a problem.

- I From the **Tools** pane expand the **External Tools (Local)** folder and double-click the **Problem Steps Recorder** icon.
The **Problem Steps Recorder** tool opens.



- 2 Click **Start Record** to begin testing. After you start a recording you can pause the recording at any time if you click **Pause Record**.
- 3 If desired add a comment to the test recording.
 - a Click **Add Comment**.
 - b In the **Highlight Problem and Comment** dialog select the desired area on the recording, then enter a comment.
 - c Click **OK**.
- 4 Click **Stop Record** after desired recording time.
The **Save As** Window opens and permits selection of desired file location. The MHTML file is saved in zipped format.
- 5 Close the **Problem Steps Recorder** tool.
- 6 If you want to view the record of the steps you recorded, open the saved.zip file and double-click the file. The document opens in your browser.
- 7 If you want to change **PSR** settings or need help with the tool click the  down-arrow.

System Information

- ▶ From the **Tools** pane expand the **External Tools (Local)** folder and double-click the **System Information** icon.
A **System Information** screen opens.

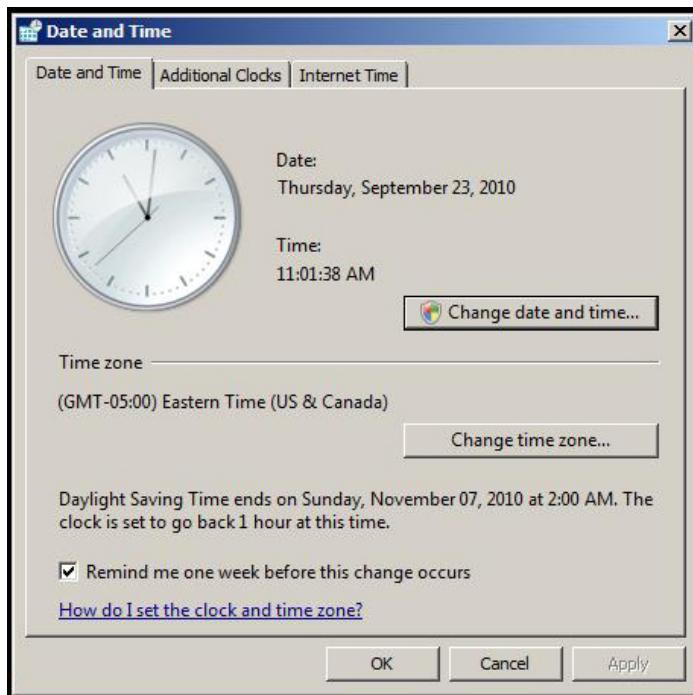
The screenshot shows the 'System Information' window with the title bar 'System Information'. The menu bar includes File, Edit, View, and Help. On the left, there's a tree view with 'System Summary' selected, showing categories like Hardware Resources, Components, and Software Environment. The main area is a table with columns 'Item' and 'Value', listing various system parameters. At the bottom, there are search and filter options: 'Find what:' with two checkboxes: 'Search selected category only' and 'Search category names only', and buttons 'Find' and 'Close Find'.

Item	Value
OS Name	Microsoft Windows Embedded 8.1 Industry Pro
Version	6.3.9600 Build 9600
Other OS Description	Not Available
OS Manufacturer	Microsoft Corporation
System Name	LPNGSDBS
System Manufacturer	Hewlett-Packard
System Model	Philips rp5800 Desktop
System Type	x64-based PC
System SKU	SP978UC#ABA
Processor	Intel(R) Core(TM) i5-2400 CPU @ 3.10GHz, 3100 Mhz, 4 Core(s), 4 Logical Pro...
BIOS Version/Date	Hewlett-Packard J20 vA.02.10, 11/14/2011
SMBIOS Version	2.7
Embedded Controller Version	255.255
BIOS Mode	Legacy
BaseBoard Manufacturer	Hewlett-Packard
BaseBoard Model	Not Available
BaseBoard Name	Base Board
Platform Role	Workstation
Secure Boot State	Unsupported
PCR7 Configuration	Not Available
Windows Directory	C:\windows
System Directory	C:\windows\system32
Boot Device	\Device\HarddiskVolume1
Locale	United States
Hardware Abstraction Layer	Version = "6.3.9600.17196"
User Name	LPNGSDBS\SupportUser
Time Zone	Eastern Standard Time
Installed Physical Memory (RAM)	4.00 GB
Total Physical Memory	3.89 GB
Available Physical Memory	1.51 GB
Total Virtual Memory	8.14 GB
Available Virtual Memory	5.13 GB
Page File Space	4.25 GB
Page File	C:\pagefile.sys
Hyper-V - VM Monitor Mode E...	Yes
Hyper-V - Second Level Address...	Yes
Hyper-V - Virtualization Enable...	No
Hyper-V - Data Execution Prote...	Yes

Date and Time

From the Tools pane expand the **External Tools (Local)** folder and double-click the **Date and Time** icon.

The Windows **Date and Time** dialog opens.



Date and Time tab	Permits changing date and time and time zone.
Additional Clocks tab	Permits configuration of up to three clocks, one for local time and two in other desired time zones
Internet Time	Permits synchronizing local computer clock with an Internet time server

Command Prompt

- ▶ From the Tools pane expand the **External Tools (Local)** folder and double-click the **Command Prompt** icon.
Windows **Cmd.exe** application opens.

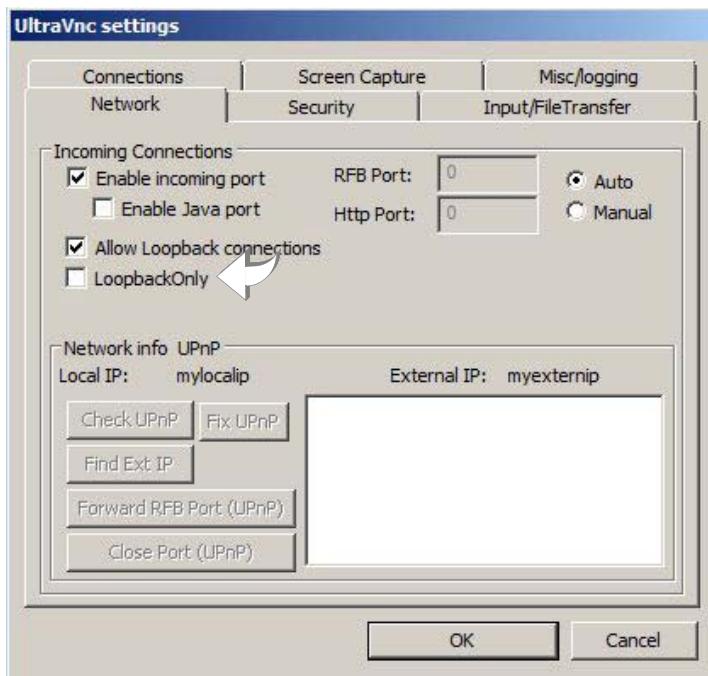
Ultra VNC Viewer

This tool provides a link to the UltraVNC Viewer, which is an application that you can use for remote support of your PIIC iX hosts. Additional UltraVNC Viewer configuration information is available at <http://www.uvnc.com/install/viewerconfig.html>.

If UltraVNC is not working properly, check the following.

Important Philips PIIC iX configures certain default UltraVNC settings during product installation. One of the default settings is (selecting or clearing) **LoopbackOnly** in the **Incoming Connections** section of **UltraVNC settings**. In order to connect to a PIIC iX with PSA from within the customer site the **LoopbackOnly** check box must be clear. In this scenario the customer is solely responsible for meeting facility security, privacy, and auditing policies for internal remote access.

During PIIC iX System installation the **LoopbackOnly** check box for Ultra VNC **Incoming Connections** is cleared by default.

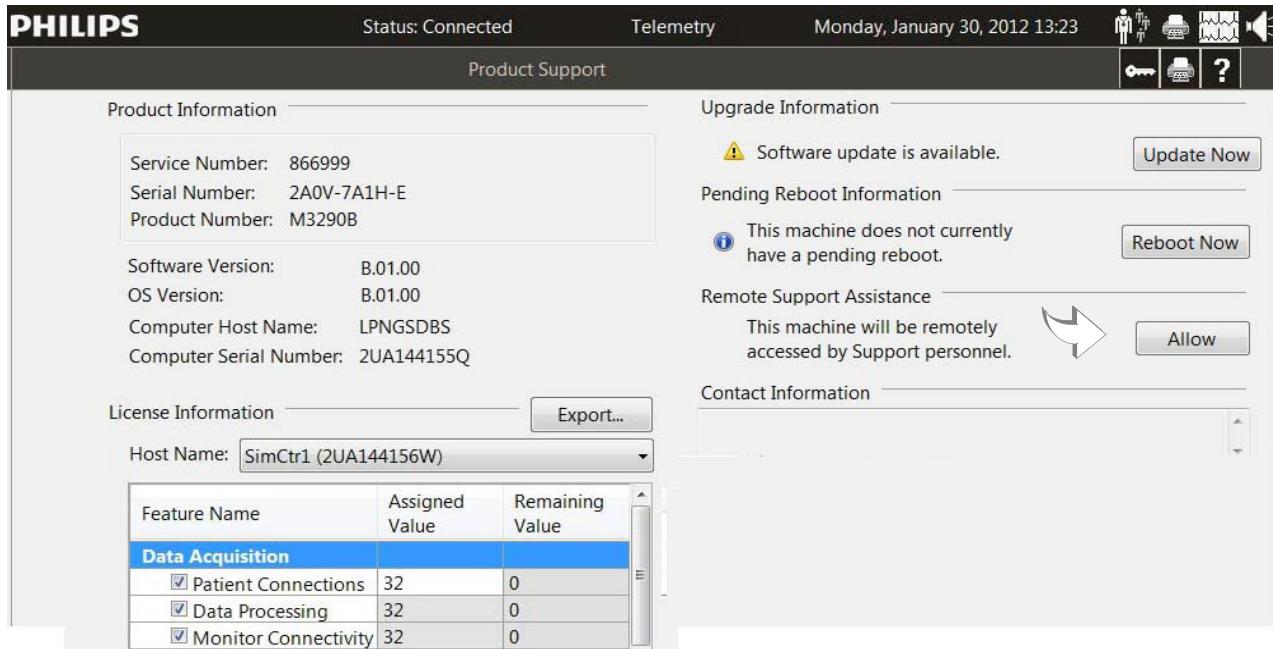


- ▶ To view the Ultra VNC default settings go to **C:\Program Files\UltraVNC** and double-click **uvnc_settings.exe**.

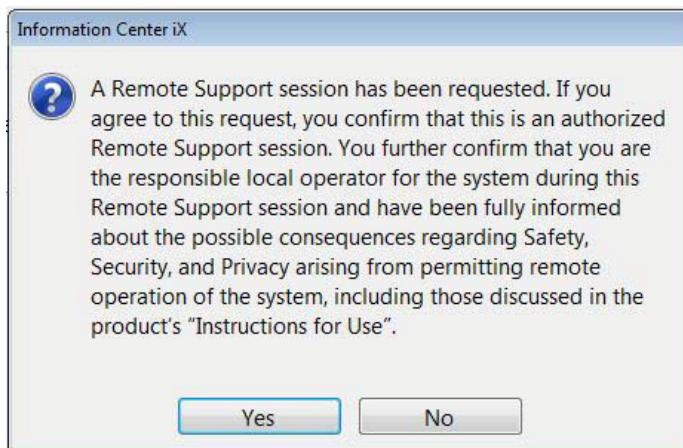
If you want to access a PIIC iX host from your Server,

Before you can remotely access a host PIIC iX remotely the clinical user must permit the remote connection at the PIIC iX.

- I At the PIIC iX the user must open the **Product Support** screen by clicking the **Philips** logo at the top of the PIIC iX Main Screen or from a selection on the Main Screen task bar. The **Product Support** screen opens.

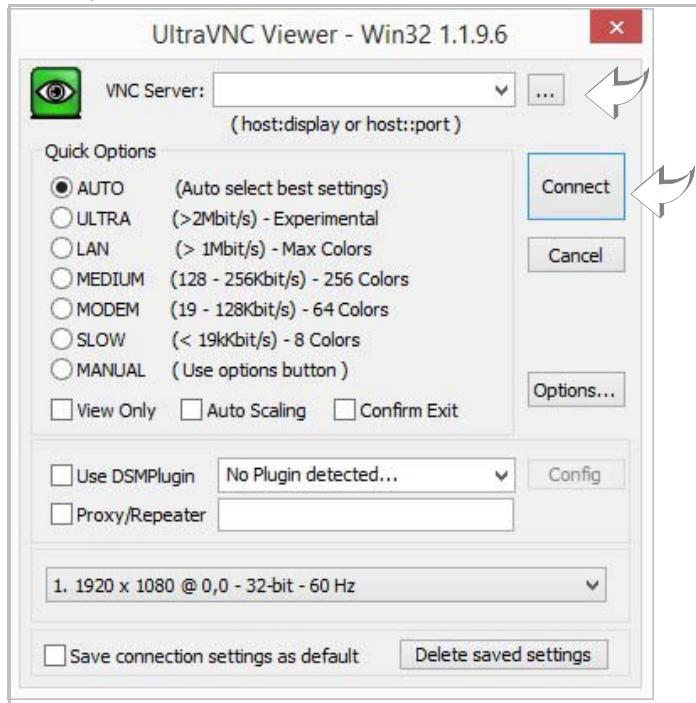


- 2 Click **Allow** in the **Remote Support Assistance** section of the screen.
A message dialog opens.

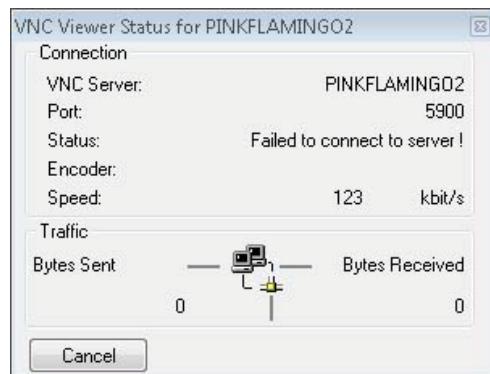


- 3 Click **Yes** in the dialog to permit remote access to the System.
- 4 At the Server **System Configuration** screen click the **Tools** menu icon.
- 5 Expand the **External Tools (Local)** folder and double-click **UltraVNC Viewer**.

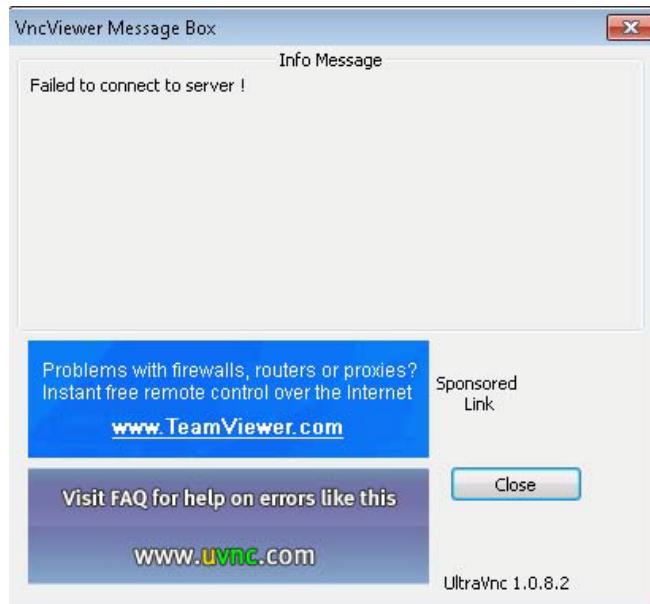
- 6 In the The **UltraVNC Viewer** screen enter the Hostname or IP Address of the PIIC iX you want to remotely access in the **VNC Server** text box. Then click **Connect**.



A **VNC Viewer Status** dialog appears.



Important If the clinical user has not permitted access to the PIIC iX or if there is a network problem a failure screen appears. You must resolve this issue before you can remotely access the host PIIC iX.



When the connection is successful a **VNC Authentication** dialog opens.



- 7** Enter your password in the text box, then click **Log On**.

The PIIC iX screen appears.

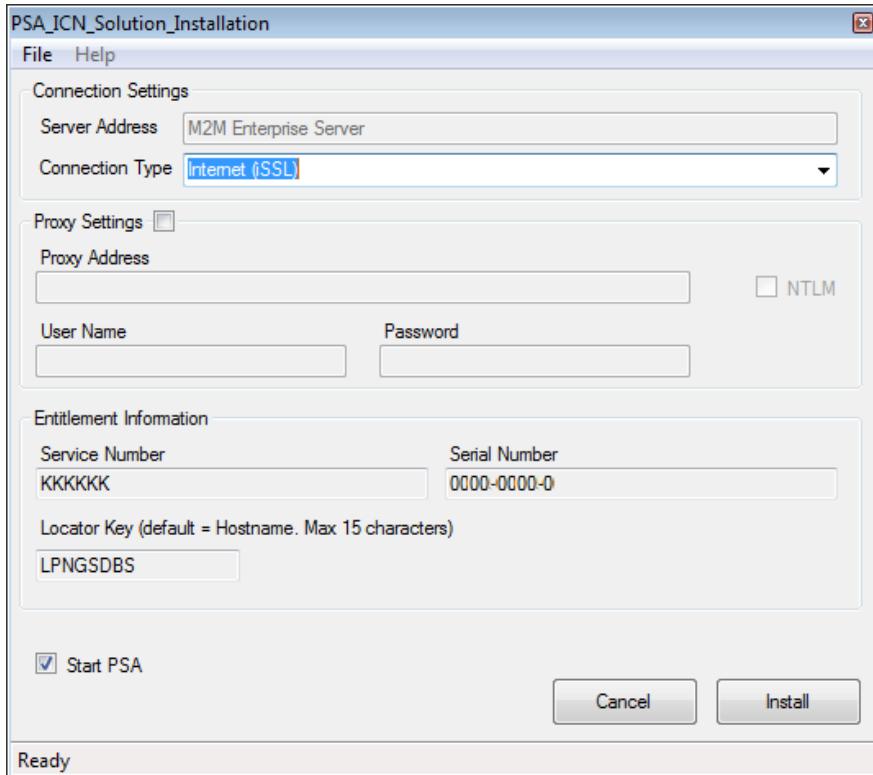


- 8** If the PIIC iX uses Dual Displays you can toggle between the Surveillance and Application displays. Click the **Select Full Desktop/Switch Monitor** icon  in the top menu bar.
- 9** To end the remote session click the Philips icon to open the **Product Support** screen and click **Disconnect**. After 60 minutes the system automatically disconnects the remote session.

Philips Service Agent

Philips Service Agent (PSA) must be installed on all monitoring devices that will be accessed remotely from the M2M Enterprise Server Web interface. If you did not install Philips Service Agent using the **System Setup** application install the Philips Service Agent as follows. Access to this feature requires that the user is logged on with appropriate roles and actions.

- I In the **System Configuration** menu expand **External Tools (Local)** folder and double-click **Philips Service Agent**.



- 2 Click the down arrow in the dialog to select the **Connection Type**. Select **Internet (iSSL)** or **IPSEC VPN**.
- Internet (iSSL)**
IPSEC VPN
- 3 If a proxy server is required for internet access click the **Proxy Settings** check box and enter the **Proxy Address** in the text box. The Proxy Address is the IP Address or Host Name of the proxy server followed by a colon and the port number 8080 (**192.168.100.1:8080**, for example).

NOTE If the **Proxy Settings** check box is clear all associated text boxes are dimmed. You must click the check box if you want to add Proxy Server information.

- 4 If necessary enter Proxy Server **User Name** and **Password** in appropriate text boxes, and select **NTLM** if required.

Service Number, **Serial Number**, and **Locator Key** values in the **Entitlement Information** automatically populate on a product that is licensed. If you try to install PSA on a host that is not licensed an error appears.

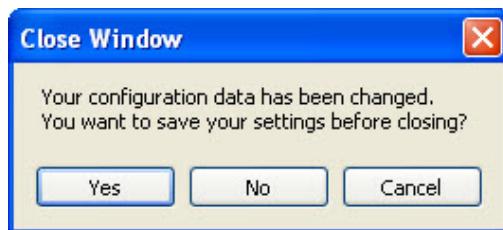
- 5 Confirm that the **Start PSA** check box is checked, then click **Install**. PSA installation begins and displays several installation windows and a command line configuration window.

When the installation is complete a message appears in the bottom section of the dialog.

Installation completed successfully. Please close the application.

6 Close the dialog.

When you close the dialog, a **Close Window** message appears.



7 Click **Yes** in the dialog.

Philips recommends that you save the values entered during the Installation for future reference. All values entered, except the Password value, are saved to:

C:\Program files\Philips\PIIC iX\B.00\Product\PSA\PSA_ICN_Solution_Installation\configuration.xml.

C:\Program files (x86)\Philips\PIIC iX\B.00\Product\PSA\PSA_ICN_Solution_Installation\configuration.xml.

If you experience problems during installation of the Philips Service Agent or you want to remove it refer to **Philips Remote Service, Chapter 8**.

Adding New Tools to the External Tools (Local) Folder

- ▶ From the **Tools** pane expand the **External Tools (Local)**

If you want to add a tool to the External Tools (Local) folder,

- 1 Right-click the **External Tools (Local)** icon and select **Add**.
The **Tool** dialog opens.
- 2 Click the ellipsis button  next to the **Command** text box. Then locate the executable file for the new tool in the **Open** window.
- 3 Enter a **Display Name** in the text box.
- 4 If necessary, add appropriate **Arguments** for the tool.
- 5 Click **OK**.

If you want to delete a tool to the External Tools (Local) folder,

- 1 Right-click the desired tool and select **Delete** from the drop-down list.
- 2 Click **Yes** in the dialog.

Philips Remote Service

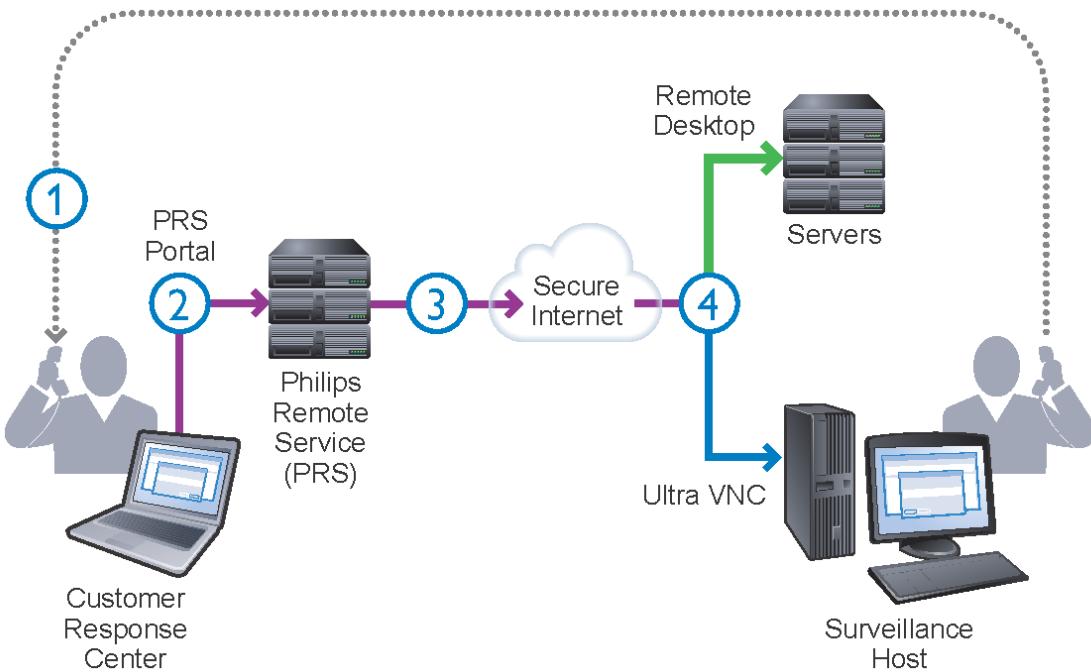
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Overview

Remote Support is available using the Global Customer Services (GCS) Philips Remote Service (PRS) infrastructure which extends connectivity to devices. PIIC iX Systems with Philips Service Agent (PSA) can be accessed remotely from the PRS Portal.

PRS support includes but is not limited to:

- Over-the-shoulder connection sessions to PIIC iX Surveillance Systems using the PIIC iX UltraVNC feature,
- Remote access to PIIC iX Primary Servers using the Microsoft Windows Remote Desktop application,
- File transfers to and from PIIC iX Systems (log file sharing with Philips Research and Development Engineers for analysis, for example), and
- Ability to remotely access PIIC iX System-specific information (disk size, free disk space, Operating System, hostname, domain name, and so on)..



1	Customer has a problem and phones Customer Response Center.
2	Customer Response Center representative logs on the PRS portal on which the customer device is registered.
3	Depending on the hospital secure connection (IPSEC VPN or iSSLINK) the Customer Response representative accesses the customer device securely.
4	PSA installed and configured on PIIC iX. If the device is a Server, Remote desktop is the interface application; If the device is a surveillance host, Ultra VNC is the interface application.

IntelliVue Clinical Network Remote Service Platform

On systems where the IntelliVue Clinical Network Remote Service Platform is installed, Philips resources may view product specific information, remotely connect to a system to review system operation, troubleshoot problems, and transfer files for analysis. Access to the systems is available via Microsoft Remote Desktop Protocol (RDP) to Primary Servers or UltraVNC to PIIC iX Surveillance Systems.

Installation and Configuration

The IntelliVue Clinical Network Remote Service platform is installed and configured with an installation package containing an installation interface, the Philips Service Agent, and the product specific configuration.

Prerequisites

In order for the PSA to communicate with the PRS Enterprise, the following prerequisites must be met before you install PSA.

Internet (iSSL) Connectivity Prerequisite Requirements

With Internet (iSSL), the PSA communicates with the Enterprise using the Health Care Facility internet connection. In order to effectively use that connection verify the following with the IT department.

■ The PIIC iX on which PSA is installed has internet connectivity	
■ The Internet connection has TCP port 443 outbound open to enable PSA/Philips Remote Service Enterprise communication to the following destinations: https://ws-m2m.prss.healthcare.philips.com https://ta-m2m.prss.healthcare.philips.com https://car-m2m.prss.healthcare.philips.com	
■ Device can resolve internet domain names (using DNS) and successfully communicate with M2M Servers	
■ If a Proxy Server is used for Internet Access, document the following	
Proxy Server Address/Port Number	
Proxy User name (if applicable)	
Proxy Password (if applicable)	
Is NTLM authentication used in the proxy configuration?	

IPSEC VPN (RSN) Connectivity Prerequisite Requirements

With IPSEC VPN, the PSA communicates with the Enterprise using an established IPSEC VPN between the Healthcare Facility and the Philips Remote Service Enterprise. In order to effectively establish an IPSEC VPN connection to the device, work with your RSN zone lead to do the following.

■ Document information required to update Philips Remote Services site survey form to add the device on which PSA is being installed.	
IP Address	
Subnet Mask	
Default Gateway	
Host Name	
■ Verify that the facility has an established IPSEC VPN connection with the Philips Remote Service infrastructure.	
■ Verify that TCP port 443 outbound is open on the VPN connection to enable PSA/Philips Remote Service Enterprise communication.	
■ Verify that device was added to the Philips Online Site Survey Form for the associated Health Care Facility and is listed as an RSN-connected device in PRS Portal.	
■ Verify that all firewall/security devices between the PSA-enabled device and the IPSEC VPN router at the Health Care Facility allow HTTPS/Port 443 outbound traffic.	

Verify Existence of Matching Installed Base Record

The PRS environment contains all installed base records *entitled* to be remotely connected by way of PSA to PRS. Verify that there is a matching Installed Base Record in PRS for the **Service Number** and **Serial Number** referenced in the PIIC iX **Product Support** page as follows.

- 1 Log on to the **Philips Remote Services – Data Administration Website**.
<https://pww.portal.rs.healthcare.philips.com/RsnDataAdmin/login.aspx>
- 2 Go to **M2M > M2M Registration Tools**.



- 3 Select **Search By serial/material number**.
 - a Enter the **Service Number** value in the PIIC iX **Product Support** page in the **Material Number** text box.
 - b Enter the **Serial Number** value in the PIIC iX **Product Support** page in the **Serial Number** text box.

4 Click Test M2M Registration.

Valid results similar to the following illustration confirm a matching installed base record for the **Service Number** and **Serial Number** entries in the PRS back end environment.

Important You must have PRS access to the geography of the System you are searching for in order to view Results.

Results	
Property	Value
Equipment Number	ABC123
Modality Type	CMS
Customer Name	Philips
City	Andover
Country	UNITED STATES
Region	Philips
Key Market	Training-NA

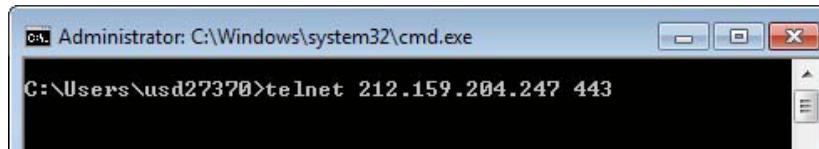
If **Results** report, **No matching data is found in the installed base**, contact the GCS Help Desk for assistance ([page 8-21](#)).

Installing the PSA

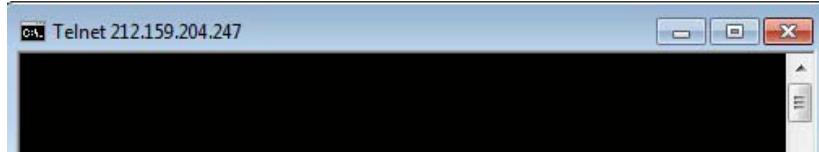
You can install the Philips Service Agent using **PIIC iX System Setup** or while you are actively monitoring using the **Philips Service Agent** link location in the **System Configuration > Tools** pane.

Important In some configurations it is possible to verify that you have internet connection and that port 443 is open. You can use Telnet from your PIIC iX Server to the M2M site to check the port status.

For example:

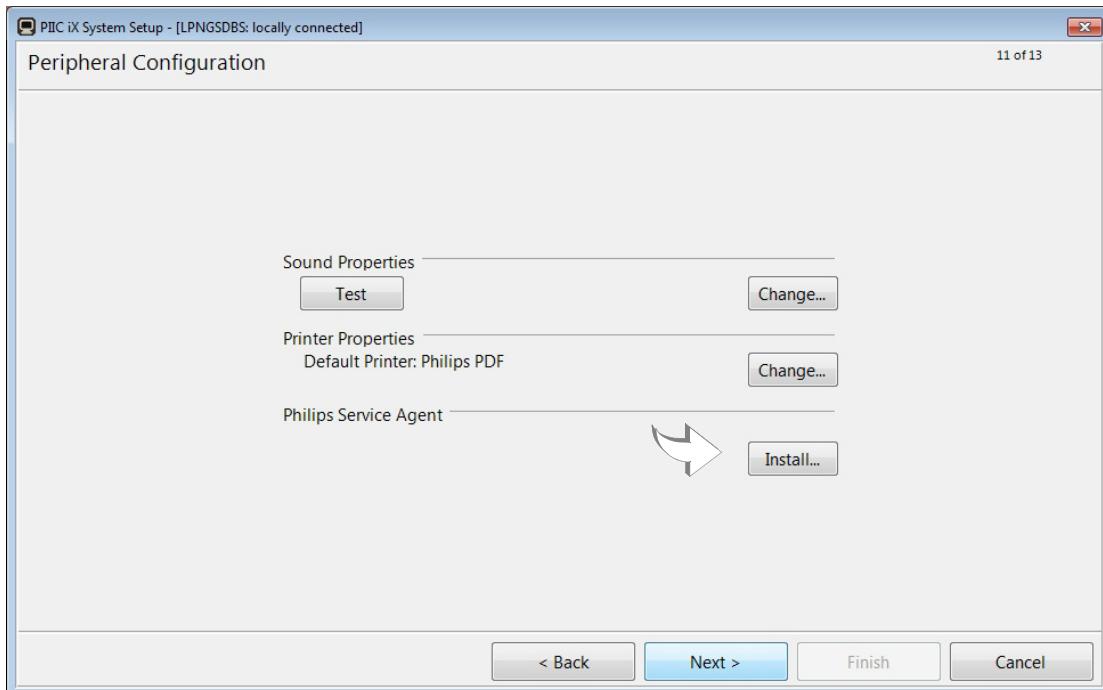


Open Port:



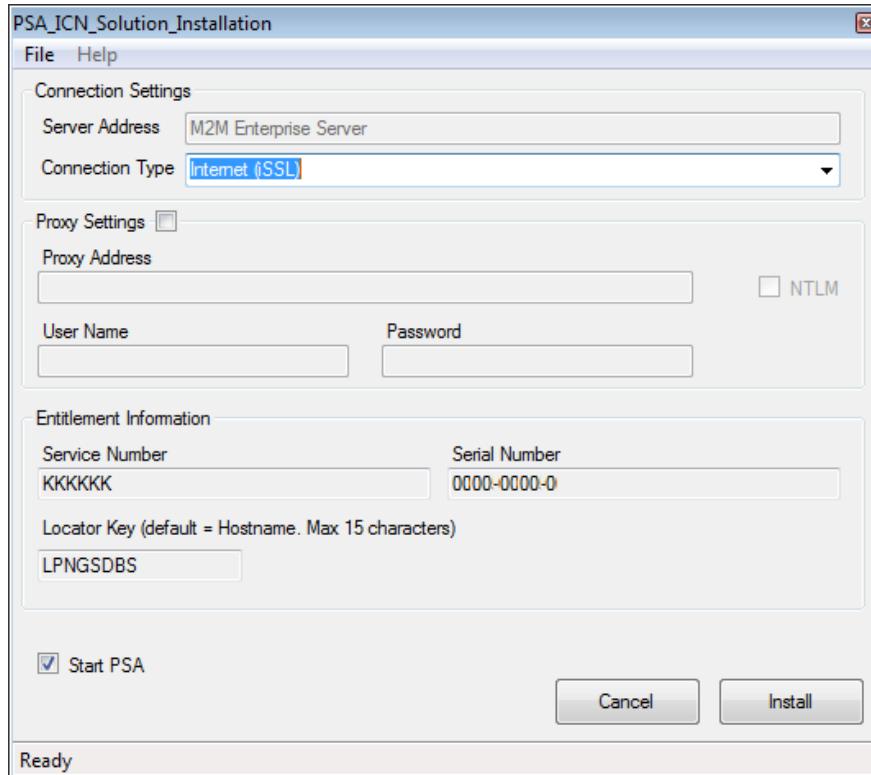
PSA Installation Using System Setup

- 1 From the desktop of the PIIC iX on which you want to add PSA double-click the **PIIC iX System Setup** icon.
- 2 Progress through the **System Setup** pages until the **Peripheral Configuration** screen opens.



- 3 On the **Peripheral Configuration** screen click the adjacent **Install** button to initiate **Philips Service Agent** installation. The **PSA_ICN_Solution_Installation** dialog opens.

In the **Connection Settings** section the **Server Address** automatically populates with the **PRS Enterprise Server**.



- 4 Click the down arrow to select the **Connection Type**.
Internet (iSSL)
IPSEC VPN
- 5 If a proxy server is required for internet access click the **Proxy Settings** check box and enter the **Proxy Address** in the text box. The Proxy Address is the IP Address or Host Name of the proxy server followed by a colon and the port number 8080 (**192.168.100.1:8080**, for example).

NOTE If the **Proxy Settings** check box is clear all associated text boxes are dimmed. You must click the check box if you want to add Proxy Server information.

- 6 If necessary enter Proxy Server **User Name** and **Password** in appropriate text boxes, and select **NTLM** if required.

Service Number, **Serial Number**, and **Locator Key** values in the **Entitlement Information** automatically populate on a product that is licensed. If you try to install PSA on a host that is not licensed an error appears.

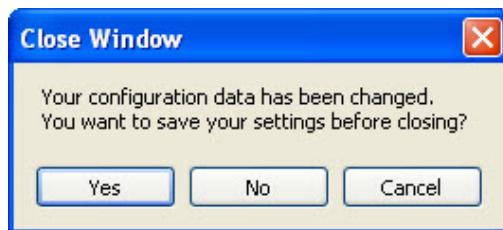
- 7 Confirm that the **Start PSA** check box is checked, then click **Install**. PSA installation begins and displays several installation windows and a command line configuration window.

When the installation is complete a message appears in the bottom section of the dialog.

Installation completed successfully. Please close the application.

8 Close the dialog.

When you close the dialog, a **Close Window** message appears.



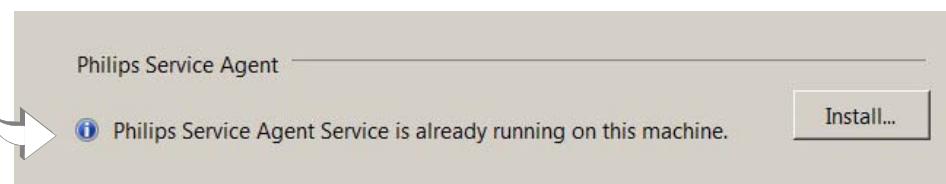
9 Click **Yes** in the dialog.

Philips recommends that you save the values entered during the Installation for future reference. All values entered, except the Password value, are saved to:

C:\Program files\Philips\PIIC iX\B.00\Product\PSA\PSA_ICN_Solution_Installation\configuration.xml.

C:\Program files (x86)\Philips\PIIC iX\B.00\Product\PSA\PSA_ICN_Solution_Installation\configuration.xml.

An icon precedes **Philips Service Agent** on the **Peripheral Configuration** screen which determines that the service is installed.



10 Click **Next >** in the **Peripheral Configuration** screen to continue. Then click **Next >** to progress through the remaining **System Setup** screens.

11 When the final **System Setup** page opens select the desired option, then click **Finish**.

PSA Installation Using Philips Service Agent Tool

Important Before you can run PIIC iX System Configuration you must log on as **SupportUser** with appropriate password.

1 If you are using a Surveillance Host press and hold the Shift key and right-click the **PIIC iX System Configuration** shortcut on the desktop.



2 Select **Run as different user** in the list.

3 Enter *SupportUser* as the **User Name** and the appropriate **Password** in the dialog. Then click **OK**.

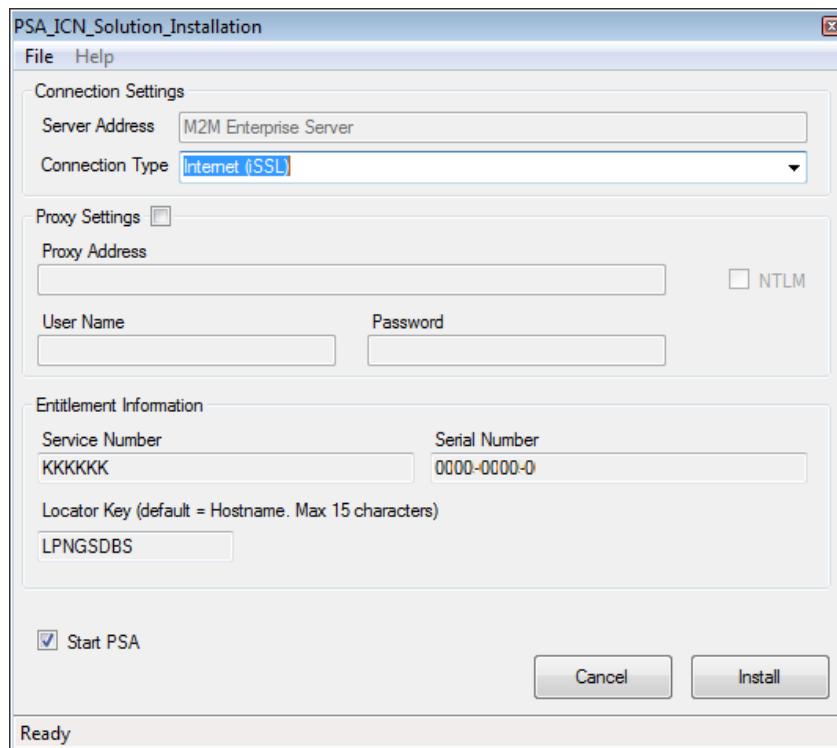
The **System Configuration** screen opens.

4 Click the **Tools** menu icon on the **System Configuration** screen.
The left pane populates.

- 5 From the **Tools** pane expand the **External Tools (Local)** folder and double-click the **Philips Service Agent** icon.

The **PSA_ICN_Solution_Installation** dialog opens.

In the **Connection Settings** section the **Server Address** automatically populates with the **PRS Enterprise Server**.



- 6 Click the down arrow to select the **Connection Type**. Select **Internet (iSSL)** or **IPSEC VPN**.
Internet (iSSL)
IPSEC VPN
- 7 If a proxy server is required for internet access click the **Proxy Settings** check box and enter the **Proxy Address** in the text box. The Proxy Address is the IP Address or Host Name of the proxy server followed by a colon and the port number 8080 (**192.168.100.1:8080**, for example).

NOTE If the **Proxy Settings** check box is clear all associated text boxes are dimmed. You must click the check box if you want to add Proxy Server information.

- 8 If necessary enter Proxy Server **User Name** and **Password** in appropriate text boxes, and select **NTLM** if required.

Service Number, **Serial Number**, and **Locator Key** values in the **Entitlement Information** automatically populate on a product that is licensed. If you try to install PSA on a host that is not licensed an error appears.

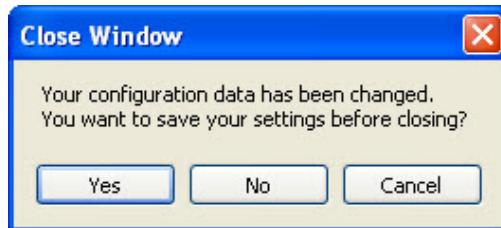
- 9** Confirm that the **Start PSA** check box is checked, then click **Install**.
 PSA installation begins and displays several installation windows and a command line configuration window.

When the installation is complete a message appears in the bottom section of the dialog.

Installation completed successfully. Please close the application.

- 10** Close the dialog.

When you close the dialog, a **Close Window** message appears.



- 11** Click **Yes** in the dialog.

Philips recommends that you save the values entered during the Installation for future reference. All values entered, except the Password value, are saved to:

C:\Program Files\Philips\PIIC iX\B.00\Product\Tools\PSA\PSA_ICN_Solution_Installation\configuration.xml

C:\Program files(x86)\Philips\PIIC iX\B.00\Product\Tools\PSA\PSA_ICN_Solution_Installation\configuration.xml

Post Installation Verification

Refer to **Table 8-1 PSA Post Installation Check List** to be sure PSA is installed and correctly registered in the PRS back end. If the result of any item in the checklist is **No** refer to **Troubleshooting PSA**.

NOTE Philips Service Agent log files are located in one of the following locations.

64 Bit Operating System - *C:\Program Files (x86)\Philips\PSA\4.2\logs*

32 Bit Operating System - *C:\Program Files\Philips\PSA\4.2\logs*

Table 8-1 PSA Post Installation Check List

Step	Result
<p>I Verify the PSA Service remains <i>Started</i> after installation. Wait approximately 2 - 3 minutes following PSA installation to confirm.</p> <p>a In the Windows Start menu enter Run, then enter Services.msc in the text box.</p> <p>b Scroll the list to be sure that Philips Service Agent has the Status, Started.</p>	Yes/No

Table 8-1 PSA Post Installation Check List

Step	Result
<p>2 Check PSA.log for the Initialization complete sequence.</p> <p>For Example: 05/25/11 10:37:04 [3108] FORCE - ***qaMain.exe: Initialization complete***</p>	Yes/No
<p>3 Verify that PSAS.log exists. (iSSL connections only)</p>	Yes/No
<p>4 Verify that the device appears as registered in the PRS Portal approximately 10 minutes after PSA installation.</p> <ul style="list-style-type: none"> a Log on the PRS Enterprise; <i>or contact your Customer Care Solution Center and have them log on.</i> b Search the PRS Portal for the device (by Serial Number and Host Name) on which you installed PSA. The PIIC iX Serial Number and Host Name is available in the <i>Product Information</i> section of the PIIC iX Product Support screen. <p>For Example:</p>  <p>If the device is listed in PRS, it is successfully added and registered to the PRS Enterprise.</p> <ul style="list-style-type: none"> c Verify connectivity to the device. <p>For Example: Select/highlight the device in the PRS Portal, select the Properties tab, and update one or more of the Read properties.</p>	Yes/No

Remove Previous PSA installation

If a mistake was made during installation you will not be able to edit the existing **Proxy** or **Connection Type** settings, and must remove the previous PSA installation. If this is necessary remove the previous PSA installation as follows.

Important **Do not** try to remove **Philips Service Agent (PSA) 4.2**. It is removed during the **Philips Service Agent (PCCI)** un-install. **Philips Service Agent (PSA) 4.2** may remain on the list after until you refresh the window. To verify successful removal close the **Add or Remove Programs** window, then reopen it.

- I From the Windows Desktop task bar open **Control Panel** and double-click **Add/Remove Programs**.



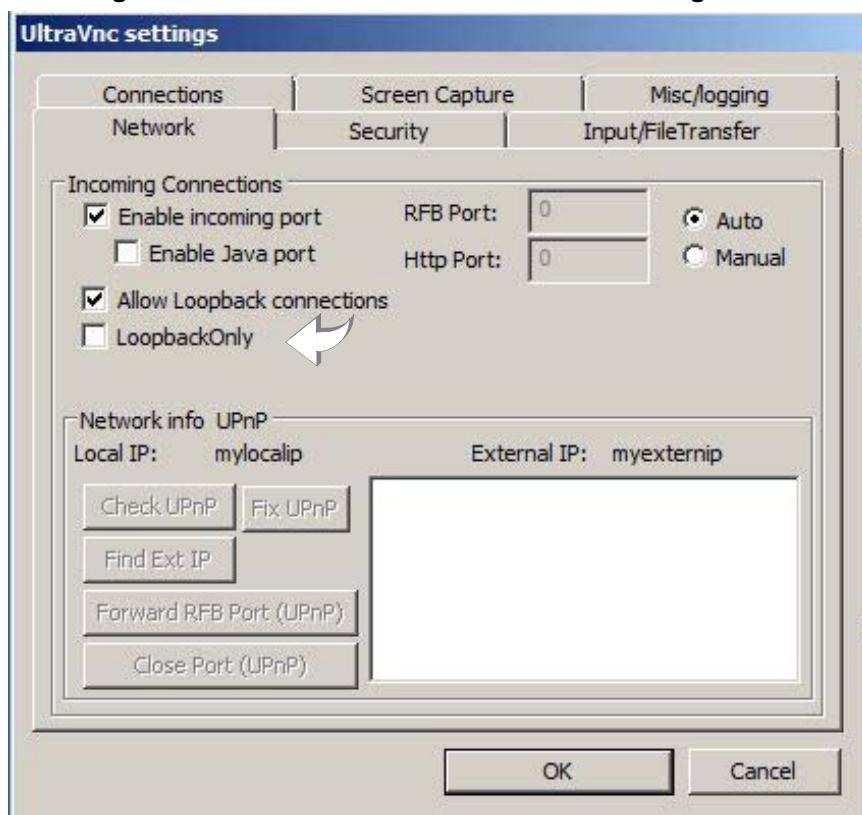
- 2 In the **Add or Remove Programs** window scroll down to **Philips Service Agent (PCCI)**, then click **Change/Remove**.

Troubleshooting PSA

UltraVNC enables remote access to the PIIC iX Surveillance systems. It is configured at installation to limit UltraVNC remote access to Philips Remote Services users.

If a customer is doing a repair using UltraVNC to connect to a host from the IT clinical engineering department they must be using a compatible UltraVNC client version to 1.1.9.6 Server Version installed on PIIC iX.

- Important** Philips PIIC iX configures certain default UltraVNC settings during product installation. One of the default settings is (selecting or clearing) **LoopbackOnly** in the **Incoming Connections** section of **UltraVNC settings**. In order to connect to a PIIC iX with PSA from within the customer site the **LoopbackOnly** check box must be clear. In this scenario the customer is solely responsible for meeting facility security, privacy, and auditing policies for internal remote access To view the default settings go to **C:\Program Files\UltraVNC**, then double-click **uvnc_settings..**



The following sections describe troubleshooting required if the Philips Service Agent Service stops automatically.

Initial Checks

Verifying Remote Connectivity Installation Criteria

The PSA must be able to successfully communicate with the PRS back end so it can properly register in the M2M Enterprise/PRS Portal.

Although the information in **Table 8-2** should be verified prior to PSA installation, it is possible that something was overlooked. If that is the case Philips recommends that you re-confirm each item in **Table 8-2** with the Health Care Facility or the RSN Zone Lead (as applicable).

If any item in **Table 8-2** is not met take the necessary steps to resolve the issue(s), restart the PSA service, and return to **Table 8-1, PSA Post Installation Check List** to confirm registration of the device in PRS.

Table 8-2 Remote Connectivity Installation Criteria

PSA Connectivity over iSSLink	PSA Connectivity over IPSEC VPN (RSN)
Device has Internet access. (HTTPS/Port 443 outbound open.)	Philips RSN has an IPSEC VPN tunnel established with the Health Care Facility.
Proxy information (if available) provided by IT is valid and was entered correctly during PSA installation.	Device was added to the Philips Online Site Survey Form for the associated Health Care Facility and is listed as an RSN-connected device in PRS Portal.
Device can resolve internet domain names (using DNS) and successfully communicate with the M2M Servers. Important: Static mappings of host names to M2M Server IP Addresses is not supported (Hosts file entries, for example).	Outbound VPN connection from Health Care Facility to RSN allows HTTPS/Port 443 traffic.
Check that PSAS.log contains PKI Certificate related information. Important: Certificates are only used for iSSLink; PKI negotiation with Enterprise happens prior to PSA initialization activities. Refer to iSSLink Troubleshooting .	
	All firewall/security devices between the PSA-enabled device and the IPSEC VPN router at the Health Care Facility allow HTTPS/Port 443 outbound traffic.
Check PSA.log for the Initialization complete sequence. For Example: 05/25/11 10:37:04 [3108] FORCE - ***qsaMain.exe: Initialization complete***	Check PSA.log for the Initialization complete sequence. For Example: 05/25/11 10:37:04 [3108] FORCE - ***qsaMain.exe: Initialization complete***

Using the Agent Diagnostic Tool

The Agent Diagnostic Tool that is included with PSA permits identifying connectivity issues between the PSA-enabled device and the PRS back end.

Before you run the Agent Diagnostic Tool verify that there are no LAN settings configured in Internet Explorer on the device.

- 1 Open Internet Explorer.
- 2 Go to **Tools > Internet Options**.
- 3 Select the **Connections** tab in the **Internet Options** dialog and click **LAN Settings**.
- 4 Document current **Automatic configuration** and **Proxy server** settings in the **Local Area Network (LAN) Settings** dialog.
- 5 Temporarily clear all settings if enabled.
- 6 Click **OK** in the **Local Area Network (LAN) Settings** dialog then close the **Internet Options** dialog.

Important You must restore your LAN Settings after you complete the test.

ADT - Agent Connectivity Test

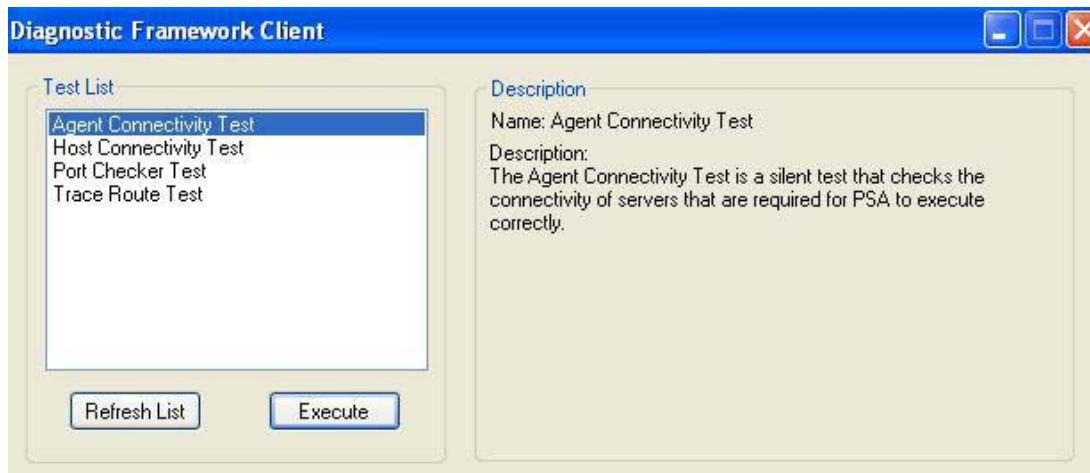
- 1 From the PIIC iX desktop browse to the location of the Agent Diagnostic Tool.

32 Bit OS C:\Program Files\Philips\ADT\bin\Philips.PH.GCS.M2M.ADT.DFC.exe

64 Bit OS C:\Program Files (x86)\Philips\ADT\bin\Philips.PH.GCS.M2M.ADT.DFC.exe

- 2 Right-click the *Philips.PH.GCS.M2M.ADT.DFC.exe* file and select **Run as administrator** from the list.

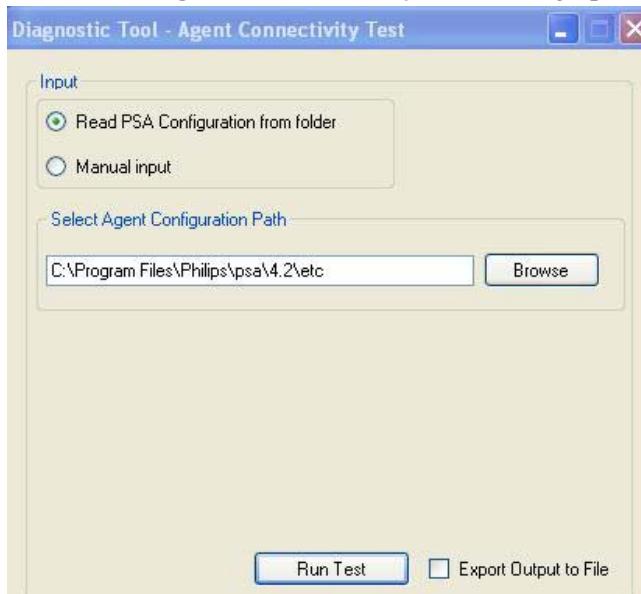
The **Diagnostic Framework Client** window opens.



- 3 Select **Agent Connectivity Test** in the **Test List** section, then click **Refresh List**.

- 4 Click **OK** in the **Information** dialog, then click **Execute** in the **Diagnostic Framework Client** window.

The **Diagnostic Tool - Agent Connectivity Test** dialog opens.



- 5 Select the **Read PSA Configuration from folder** option in the **Input** section.
6 Verify that the location entry in the **Select Agent Configuration Path** is valid. If necessary click **Browse** and navigate to the location.

32 Bit OS C:\Program Files\Philips\psa\4.2\etc

64 Bit OS C:\Program Files (x86)\Philips\psa\4.2\etc

- 7 Click **Run Test**.

The **Output** section of the **Diagnostic Tool - Agent Connectivity Test** dialog shows PSA configuration connectivity results based on the connectivity scheme selected during the installation.

NOTE If you click **Run Test** more than once in a session, you must stop the **Diagnostic Tool-Agent Connectivity Test** and restart it to ensure accurate **Output**.



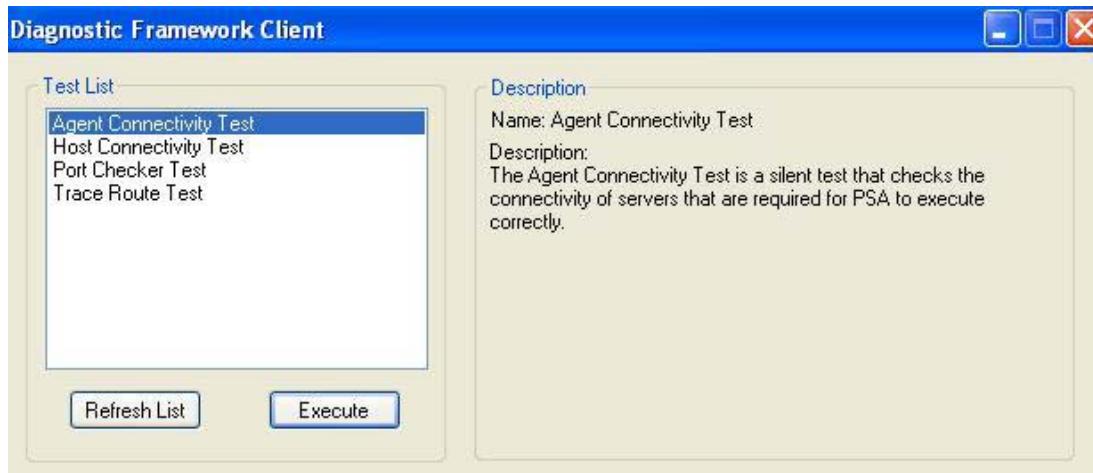
If the **Output** reports that the M2M servers *are not Reachable*, there could be a Network connectivity issue or PSA configuration issue which requires further investigation. Go to **Agent Connectivity Test - Manual Input Mode**.

If the **Output** reports that the M2M servers *are Reachable*, you have confirmed the Network connectivity between PSA and the M2M Enterprise.

- 8 Enable the Internet Explorer Lan Settings if necessary.

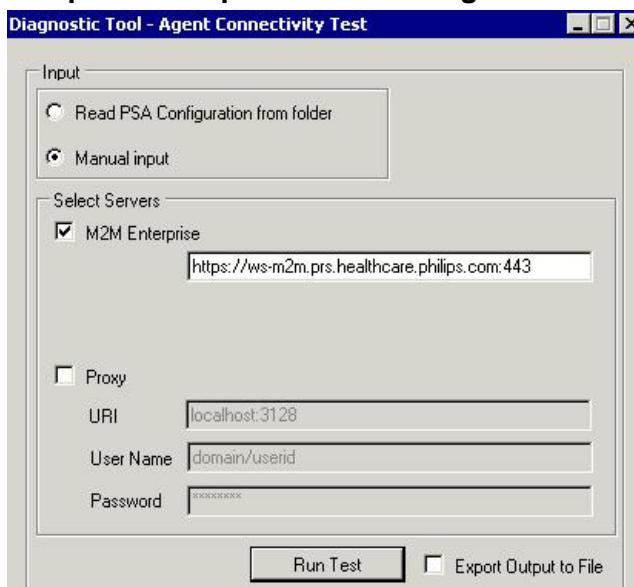
Agent Connectivity Test - Manual Input Mode

- 1 If the **Diagnostic Tool-Agent Connectivity Test** is open, close it.
The tool **must** be closed and re-opened each time you use it to clear any cached results.
- 2 Open the Agent Diagnostic Tool ([page 8-15](#)).
- 3 Click **Refresh List** in the **Diagnostic Framework Client** window, then click **OK** in the **Information** dialog.



- 4 With **Agent Connectivity Test** selected in the **Test List** section of the dialog click **Execute**.

- 5 Select **Manual Input** in the **Input** section of the **Agent Connectivity Test** window.



- 6 In the **Select Servers** section confirm that **M2M Enterprise** is checked, then enter the correct URL Address and Port in the text box.

iSSLLink **https://ws-m2m.prs.healthcare.philips.com:443**

IPSEC VPN **https://192.68.49.50:443**

- 7 Confirm proxy setting information with the Health Care Facility IT Staff, and enter the information (if applicable).

URI Proxy Server address and port
 192.168.100.1:8080 (For example)

User Name

Password

- 8 Click **Run Test**.

NOTE If you click **Run Test** more than once in a session, you must stop the **Diagnostic Tool-Agent Connectivity Test** and restart it to ensure accurate **Output** results.

- 9 If the **Output** reports that the M2M servers *are Reachable*, connectivity between the PSA and the M2M Enterprise is confirmed with the entered settings. Confirm the following.

a Values entered in the ADT match those used during **PSA Installation**.

b If settings entered were different than what was entered during the PSA installation, you must un-install PSA (**page 8-11**) and reinstall it (**page 8-5**) using correct information.

- 10 If connectivity using the **Diagnostic Tool-Agent Connectivity Test** continues to show servers listed as *Not Reachable* refer to **iSSLLink Troubleshooting**, **IPSEC VPN Troubleshooting**, or **Contacting the GCS Help Desk**.

- 11 Re-enable LAN settings in Internet Explorer, if applicable.

Troubleshooting Tables

iSSLLink Troubleshooting

Symptom	Problem	Possible Solution
PSA.log or PSAS.log not available PSAS.log included warning(s) or error(s): 2011-05-25 15:49:15,366 [5] ERROR - SubmitCertificateRequestPostProcessing: Communication to the RA failed. Last exception message was: The remote name could not be resolved: 'car-m2m-qa.prs.healthcare.philips.com' 2011-05-25 15:49:15,569 [5] INFO - InvokeSubmittalActionCompleted: Invoking call to client. 2011-05-25 15:49:15,569 [5] INFO - InvokeSubmittalActionCompleted: result was Default. 2011-05-25 15:49:15,569 [5] ERROR - A certificate is not installed; starting the shutdown sequence. 2011-05-25 15:49:15,600 [1] INFO - PKI Service stopping. 2011-05-25 15:49:15,600 [1] INFO - Pki Automatic Service Mode stopping. 2011-05-25 15:49:15,600 [1] INFO - Pki Automatic Service Mode stopped. 2011-05-25 15:49:15,600 [1] INFO - PKI Service stopped.	No connection available (Port not open, Wrong Proxy, no DNS configured, for example)	Confirm internet access from the PSA device. Confirm TCP port 443 outbound is open. Confirm proxy information (if applicable) was configured properly during installation. If proxy server information was not entered properly, Remove (page 8-11) and reinstall PSA (page 8-5). Confirm DNS network settings.
PSA.log or PSAS.log not available PSAS.log included warning(s) or error(s): 2011-05-25 11:36:33,678 [5] ERROR - SubmitCertificateRequestPostProcessing: Certificate was not issued. An error occurred while processing the request. 2011-05-25 11:36:33,881 [5] INFO - InvokeSubmittalActionCompleted: Invoking call to client. 2011-05-25 11:36:33,881 [5] INFO - InvokeSubmittalActionCompleted: result was Default. 2011-05-25 11:36:33,881 [5] ERROR - A certificate is not installed; starting the shutdown sequence. 2011-05-25 11:36:33,896 [1] INFO - PKI Service stopping. 2011-05-25 11:36:33,896 [1] INFO - Pki Automatic Service Mode stopping. 2011-05-25 11:36:33,912 [1] INFO - Pki Automatic Service Mode stopped. 2011-05-25 11:36:33,912 [1] INFO - PKI Service stopped.	Incorrect Entitlement Information	Verify Existence of Matching Installed Base Record (page 8-4).

IPSEC VPN Troubleshooting

Symptom	Problem	Possible Solution
<p>PSA.log not available</p> <p>PSA.log contains multiple errors and shutdown sequence:</p> <p>05/25/11 12:16:00 [2392] ERROR - ServiceAgent::RegisterAssets Unable to auto-reg service agent.</p> <p>05/25/11 12:16:00 [2392] ERROR - qsaMain.exe: Unable to register assets.</p> <p>05/25/11 12:16:00 [2392] FORCE - *** Failed initialization, reverting to "C:\Program Files\Philips\psa\4.2\etc\qsaconfig.xml.booted" ***</p> <p>05/25/11 12:16:00 [2392] FORCE - *** qsaMain.exe: Beginning shutdown sequence ***</p> <p>05/25/11 12:16:00 [2392] FORCE - *** qsaMain.exe: Shutting down brokers... ***</p> <p>05/25/11 12:16:00 [2392] FORCE - *** qsaMain.exe: Broker shutdown complete ***</p>	No connection available (port not open, wrong Proxy information, IPSEC VPN tunnel not in place, or configured properly, for example)	Contact RSN zone lead to confirm IPSEC VPN connectivity to the device Confirm with RSN zone lead TCP port 443 outbound is open on the IPSEC VPN
<p>PSA.log not available</p> <p>PSA.log file shows:</p> <p>05/25/11 10:37:04 [3108] FORCE - *** qsaMain.exe: Initialization complete ***</p> <p>(This case can only be identified at Enterprise side--Remote Service Engineer)</p>	Wrong Entitlement Information	Verify Existence of Matching Installed Base Record (page 8-4).

Contacting the GCS Help Desk

If after following all steps in this chapter you still have PSA registration or connectivity problems contact the GCS Help Desk for assistance.

If PSA does not register in PRS although it is installed/configured properly and connectivity is verified between the device and PRS/M2M, there may be a problem with M2M server availability on the PRS back end. If this is the case please contact the GCS Help Desk.

Before contacting the GCS Help Desk, please record and collect the following information:

Device Operating System	
PSA connectivity method to M2M	iSSLlink RSN IPSec VPN
PSA log files 64 Bit OS 32 Bit OS	C:\Program Files (x86)\Philips\PSA\4.2\logs\ C:\Program Files\Philips\PSA\4.2\logs\
PSA folders/configuration files 64 Bit OS 32 Bit OS	C:\Program Files (x86)\Philips\PSA\4.2\etc\ C:\Program Files\Philips\PSA\4.2\etc\
PIIC iX PSA SIDS configuration file	C:\PSA\CMS_ICN_Solution_sids.xml
Detailed Problem Description	
Troubleshooting Steps Taken	

Important For Time-Critical issues contact the GCS Help Desk by phone for the quickest response. After GCS assigns a case number to your issue you can include that number in the Subject line of all e-mail you send with pertinent files/folders and additional detail.

GCS Help Desk Contact Information

For North America support:

Global Customer Services (GCS) Helpdesk

Phone: +1-866-767-7822 Option 6, 2

Email: gcs.helpdesk@philips.com

Operating hours: Monday 9:00 AM Hong Kong (1:00 AM GMT) to Friday 8:00 PM US Eastern (1:00 AM GMT Sat)

For APAC support:

APAC Philips Remote Service Helpdesk

Email only: APAC_PRS_Helpdesk@philips.com

Operating hours: Monday - Friday, 9:00 AM - 5:00 PM China Standard Time.

Operating hours: Monday - Friday, 9:00 AM - 5:00 PM India Standard Time.

For international support:

EMEA Philips Remote Service Helpdesk

Phone: +31 40 27 86300

Email: EMEA_PRS_Helpdesk@philips.com

Operating hours: Monday - Friday, 8:30 - 17:00 Central European Time.

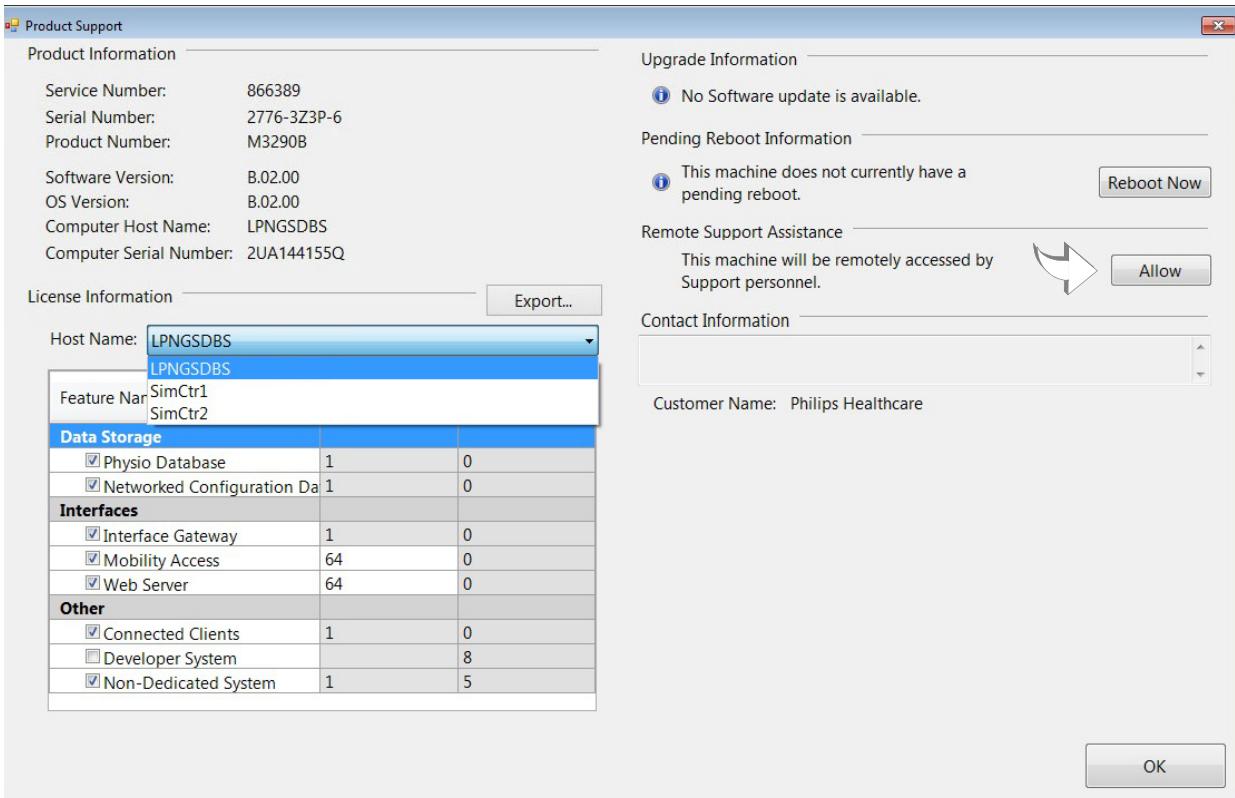
Live RSN help is available 24 hours Monday to Friday

Allowing Remote Assistance on Surveillance Systems

You can access the **Product Support** screen by clicking the Philips icon at the top of the PIIC iX Main Screen or from a selection on the Main Screen task bar. Read-only Product and License Information on this page includes **Service Number**, **Serial Number**, **Computer Name**, **Software Version**, **Customer Name**, and **Feature Options**. Philips Contact Information also appears on this page.

You can allow or disconnect a remote assistance session by clicking the **Allow** button in the **Remote Support Assistance** section of the screen. When you click **Allow** a support person can initiate remote connection to your machine through the Philips Remote Support

Network if Philips Service Agent (PSA) is installed on your system. Once allowed a remote access session remains active for **1 hour** unless it is terminated or you **Disconnect** it earlier.



- 1** When you want the remote access session to start click **Allow**.
A dialog opens with the message, *A Remote Support session has been requested.*



- 2** If you agree to this request, confirm that this is an authorized Remote Support session.
You further confirm that you are the responsible local operator for the system during this Remote Support session and have been fully informed about the possible consequences regarding Safety, Security, and Privacy arising from permitting remote operation of the system, including those discussed in the PIIC iX Instructions for Use.
- 3** Click **Yes** in the dialog to begin the remote access session.

During the Remote Assistance Session both you and the support specialist have full access to the keyboard and mouse. Any changes performed by the support specialist are visible because you also share the desktop screen. Log entries for the start and stop times of a remote Assistance session appear in the Event log.

Protecting Personal Information

Philips recommends that customers have policies and procedures for the proper handling of personal or sensitive information, ePHI (electronic protected health information) and PHI (protected health information), which will maintain the confidentiality, integrity, and the availability of these types of data. Any organization using this product should implement the required protective means necessary to safeguard personal information consistent with each applicable country law, code and regulation; and consistent with their developed and maintained internal policies and procedures.

While handling personal information is outside the scope of this document; in general, each organization is responsible for identifying:

- Who has access to personal data and under what conditions an individual has authorization to use that data.
- What security controls are in place to protect personal and sensitive data.
- How the data is stored and the conditions by which it is stored.
- How the data is transmitted and the conditions under which that data is transmitted.

Protecting personal health information is a primary component of a security strategy. Personal and sensitive information should be protected according to the applicable laws, regulations and directives, such as HIPAA, PIPEDA and/or Council of the European Union security and privacy rules.

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Maintenance

PIIC iX equipment should be kept clean and dry, and maintained within environmental specifications. There are also several routine maintenance procedures that should be followed at regular intervals.

Cleaning PIIC iX Components

The exterior surfaces of PIIC iX components should be free of dust, lint, and dirt. To clean equipment surfaces, use a lint-free cloth or sponge moistened with soap and water or dilute, non-caustic, detergent solution.

For comprehensive details about cleaning agents and their efficacy, refer to the NIOSH Safety and Health Topic Page for Health Care Workers. It is available at:

<http://www.cdc.gov/niosh/topics/healthcare/>

A searchable bibliographic database of occupational safety and health publications, documents, abstracts, grant reports, and journal articles supported in whole or in part by NIOSH is available at:

<http://www2a.cdc.gov/nioshtic-2/3>

CAUTION To avoid damage to the equipment:

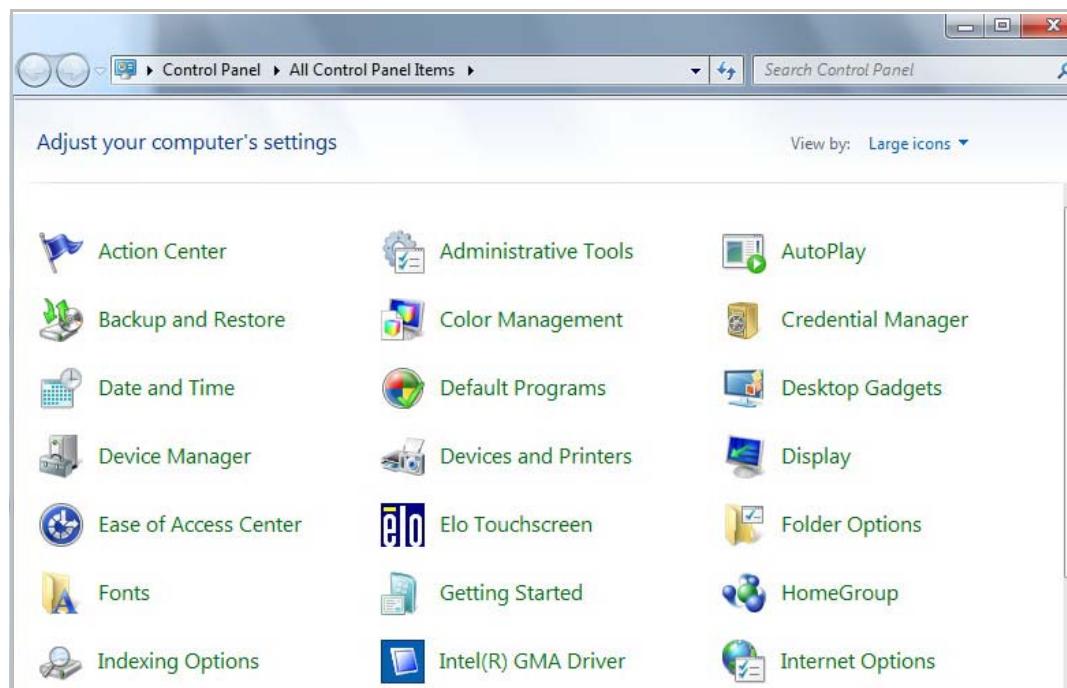
- Do NOT use abrasive material, such as steel wool or silver polish.
 - Do NOT use Povidine, Sagrotan, or Mucocit cleaning agents or strong solvents, such as acetone.
 - Do NOT submerge any part of the equipment in water or other liquid.
 - Do NOT pour liquid onto the system during cleaning.
 - Do NOT allow liquid to enter the equipment case.
 - Do NOT allow any cleaner to remain on any of the equipment surfaces, wipe it off immediately.
-

Cleaning the Touch Display

Disabling Touch for Cleaning Touch Display

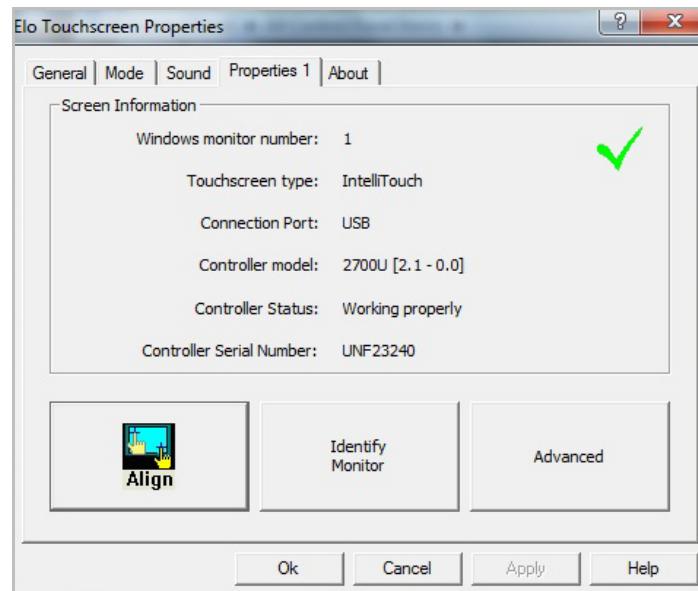
If you are using a Philips-provided Touch Display, disable touch for cleaning as follows.

- 1 Open **System Configuration** and click the **Tools** Icon in the Menu bar.
- 2 Go to **External Tools > Control Panel**.

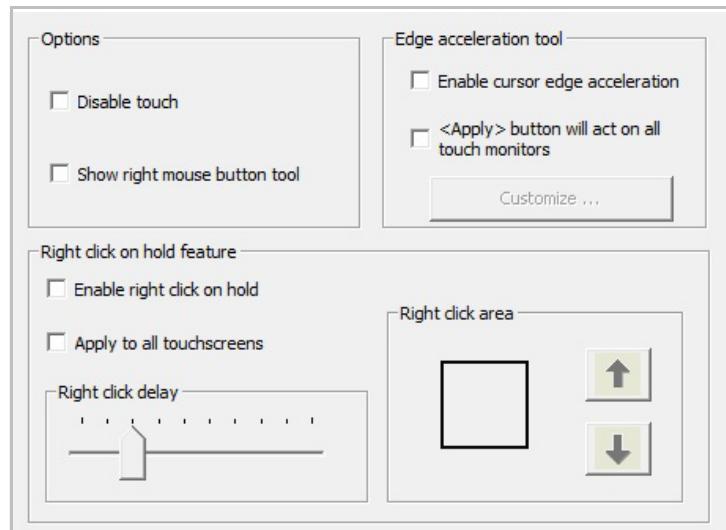


3 Select Elo Touchscreen.

The **Elo Touchscreen Properties** dialog opens.



- 4 In the **Elo Touchscreen Properties** dialog select the **Properties 1** or **Properties 2** tab then click **Advanced**.



- 5 In the **Options** section of the dialog click the **Disable touch** check box. Then click **Ok** in the **Elo Touchscreen Properties** dialog.
- 6 After you clean the Display repeat **Step 1** through **4** then clear the **Disable touch** check box to turn on touch.

Repair

Changing Password to Access Features

With PIIC iX B.00 and later the **PatientMonitoring20** User account does not have privilege to access some applications, but automatically logs on Surveillance and Overview systems to begin monitoring with no user interaction.

Although the **PatientMonitoring20** User account permits access to **System Configuration** you must log on **System Configuration** with the **SupportUser Account** to install **Philips Service Agent**, to use the **HL7 Tool**, or to use **Control Panel** applications. If you must make any network configuration changes, you must log on the system with the **SupportUser Account**, however.

If you must run System Configuration to install PSA, to use the HL7 Tool, or to access Control Panel,

- 1 If Patient Monitoring (Surveillance) is running, stop the application by pressing **Alt + F4** keys simultaneously. Then enter appropriate **User Name** and **Password** in the dialog.
- 2 At the Windows desktop press and hold the **Shift** key and right-click the **PIIC iX System Configuration** shortcut on the desktop.
- 3 Select **Run as different user** in the list.
- 4 Enter *SupportUser* as the **User Name** and the appropriate **Password** in the **Windows Security** dialog. Then click **OK**.
- 5 Enter the local **User Name** and the appropriate **Password** to the login dialog, then click **OK**.
PIIC iX System Configuration opens and permits access to the HL7Tool (page 7-15), PSA installation (page 7-36), or Control Panel (page 7-28).

If you must change network configuration settings log on the system as SupportUser,

- 1 If Patient Monitoring (Surveillance) is running, stop the application by pressing **Alt + F4** keys simultaneously. Then enter appropriate **User Name** and **Password** in the dialog.
- 2 At the Windows desktop open the **Shortcuts** folder and log out.
- 3 Log on the system with *SupportUser* credentials. Refer to your Philips Media kit.

System Software Re-Installation Procedure

Philips systems, other than Customer Supplied Hardware (CSH), are shipped with software properly installed. If you lose software functionality, software can be re-installed. This section describes the procedure for installing/re-installing the Operating System and Application software. If you want to re-install only the application refer to **Re-Installing Application Only**.

PIIC iX B.02.xx media kit includes Microsoft Windows Server 2012 R2 and Windows Embedded 8.1 Industry Pro (64-bit).

- I Before you start the installation** put the media that contains the Philips software into the appropriate USB port. Then restart the PC/Server. Be sure to install software on the Primary Server first, then install software on member Hosts.

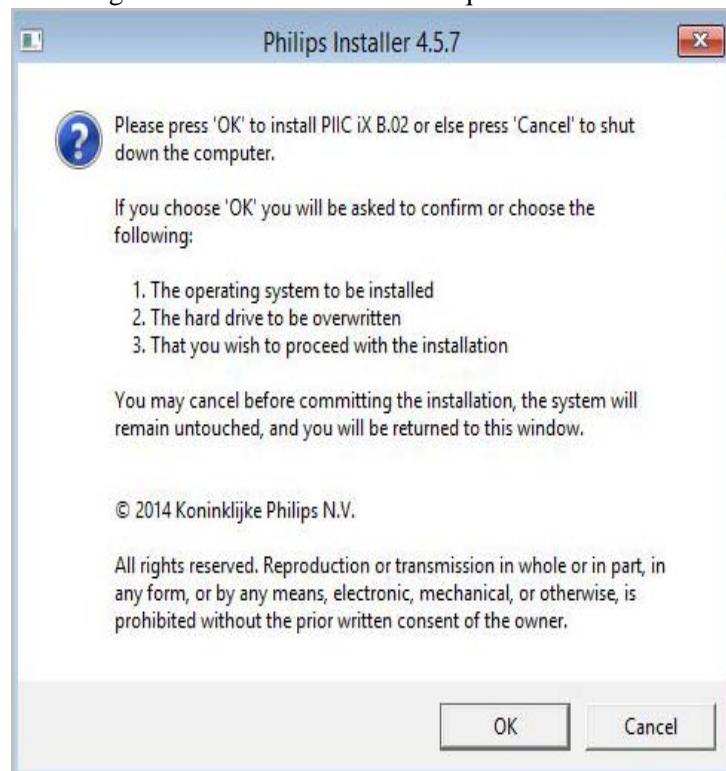
Important Be sure that you have no other USB flash drives in other ports or an error appears during installation. You must remove the additional device(s) and click **OK** in the error dialog to restart the machine.

- 2** After the HP banner appears, press **F9** to open the **Boot Menu** on client-class hardware or **F11** to open the **Boot Menu** on Enterprise Server hardware.
- 3** Use the keyboard up/down arrow keys to select **USB Device**. Then press **Enter**.

A non-interactive powershell screen appears while the Installer attempts to identify and classify the platform as client- or server-class so that the correct operating system image is applied. During this process status information appears periodically.

Important If the destination platform is not supported an error appears, and the installation will fail.

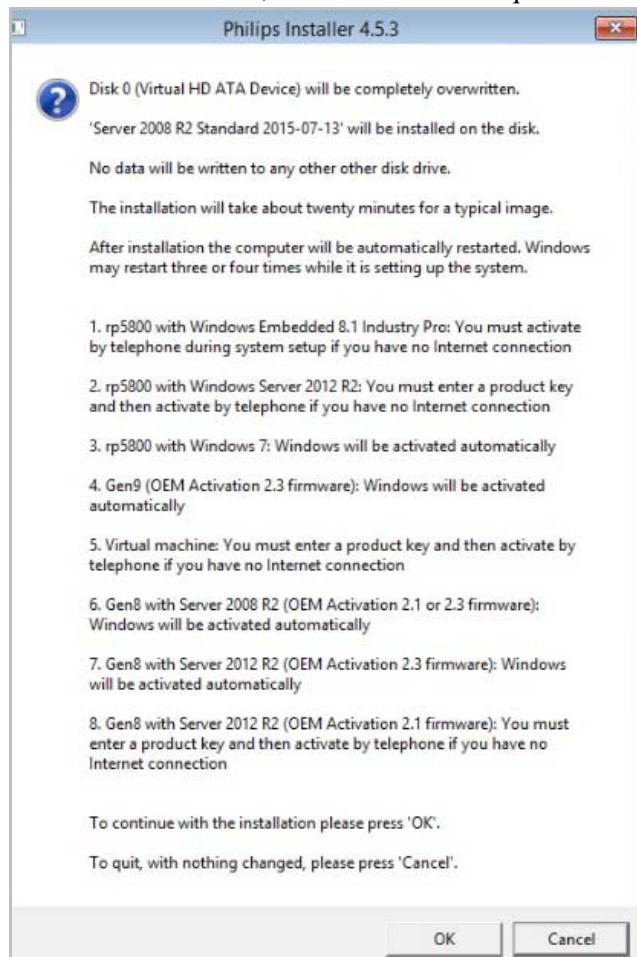
- 4** A Windows Installer dialog opens and describes the actions that will occur if you click **OK**. Click **OK** to begin Installation or **Cancel** to quit..



- 5 Once the destination Disk is discovered, the installer reports the approximate installation time and alerts you that operating system activation requires Internet Connection.

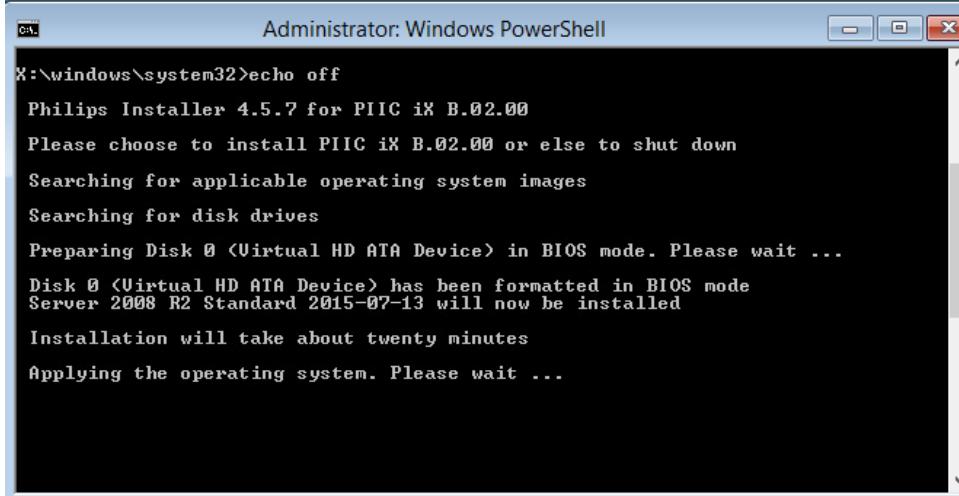
Otherwise you must activate by phone at another time.

To continue the installation click **OK**, or click **Cancel** to quit



Important If you want to discontinue the installation you can select **Cancel** and remove the installation media. PIIC iX installation will not continue.

If you selected **OK** in the Windows Installer screen the *Installer* formats the drive and exports and applies the appropriate Operating System image. Remaining progress percentage and time displays.

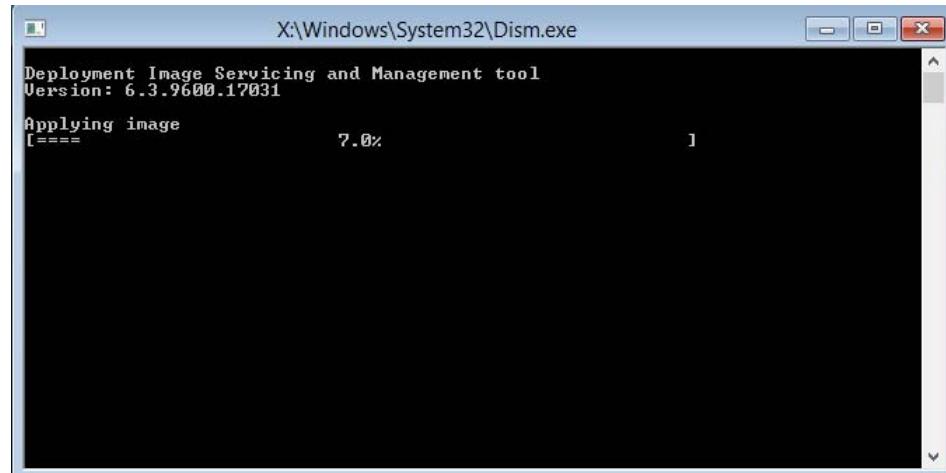


```
X:\windows\system32>echo off
Philips Installer 4.5.7 for PIIC iX B.02.00
Please choose to install PIIC iX B.02.00 or else to shut down
Searching for applicable operating system images
Searching for disk drives
Preparing Disk 0 <Virtual HD ATA Device> in BIOS mode. Please wait ...
Disk 0 <Virtual HD ATA Device> has been formatted in BIOS mode
Server 2008 R2 Standard 2015-07-13 will now be installed
Installation will take about twenty minutes
Applying the operating system. Please wait ...
```

Windows Embedded 8.1 Industry Pro (64-bit) for client-class platform

Windows Server 2012 R2 for server-class platform

A **Deployment Image Servicing and Management tool** shows the image application progress percentage



```
X:\Windows\System32\DISM.exe
Deployment Image Servicing and Management tool
Version: 6.3.9600.17031
Applying image
[====] 7.0%
```

When PIIC iX B.02 installation completes the status appears in the Powershell screen. An alert that the system will reboot in 10 seconds appears.

```

Administrator: Windows PowerShell

x:\windows\system32>echo off
Philips Installer 4.5.7 for PIIC iX B.02.00
Please choose to install PIIC iX B.02.00 or else to shut down
Searching for applicable operating system images
Searching for disk drives
Preparing Disk 0 <Virtual HD ATA Device> in BIOS mode. Please wait ...
Disk 0 <Virtual HD ATA Device> has been formatted in BIOS mode
Embedded 8.1 Industry Pro 2015-01-16 will now be installed
Installation will take about twenty minutes
Applying the operating system. Please wait ...
The operating system image has been installed
The boot environment will now be set up
Boot files successfully created.
Setting up the Windows Recovery Environment
REAGENTC.EXE: Operation Successful.
Copying the PIIC iX B.02.00 application. Please wait ...
PIIC iX B.02.00 has been installed
Model: Virtual Machine
System name: PH7657916237509
Windows: Embedded 8.1 Industry Pro 2015-01-16
Hard Drive: Virtual HD ATA Device
Boot mode: BIOS

Please remove the flash boot drive
You will boot from it again and not the installed operating system if the
USB drive is higher priority than the hard drive in the firmware boot menu
The system will SHUTDOWN in 10 seconds
... 8

```

6 Remove the USB flash drive containing the Philips Software.

After PIIC iX application software files are installed the initial PIIC iX System Setup screen opens ([page 5-9](#)).

Re-Installing Application Only

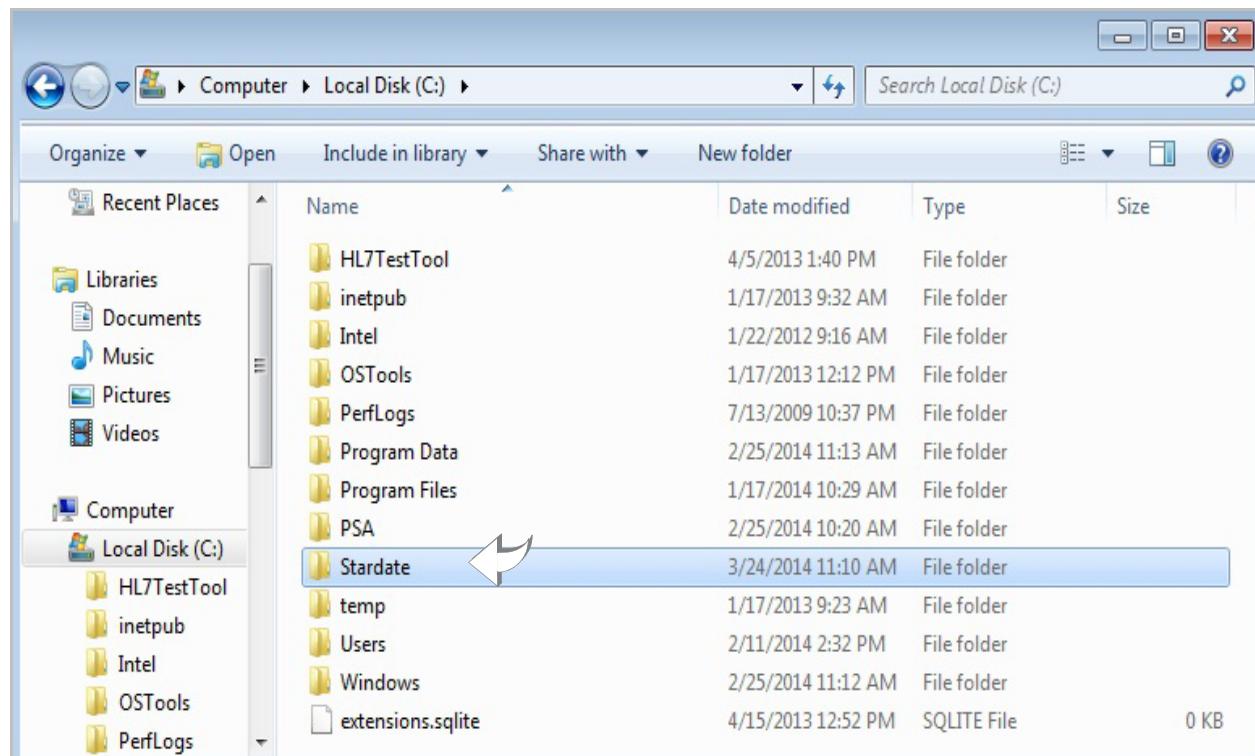
If you want to re-install the PIIC iX Application on a PIIC iX Local System

- 1 Create an Archive of the configuration on the PIIC iX Local System. Refer to [Creating an Archive](#). Be sure to save Patient Information if appropriate.
- 2 Remove earlier release application.
Prior to installation you must remove any earlier version of the **PIIC iX** application as follows.

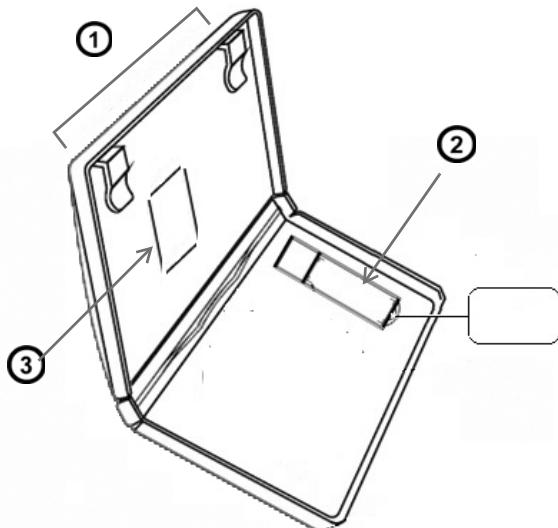
- a** If the PIIC iX surveillance application is running, press **Alt + F4** keys simultaneously to shut down the application to the desktop.
- b** Enter **User Name** and **Password** in the login dialog.

Important While PIIC iX surveillance monitoring is running on your machine you are logged on as user, PatientMonitoring20, which does not have Administrative privilege. You must log off and log on as SupportUser with appropriate password to access Control Panel.

- c** From the **Control Panel** click the **Programs and Features** icon.
- d** Once the list populates, right-click **Patient Information Center** and select **Uninstall**. Then select **Yes** in the dialog.
- e** *If it exists* remove the hard drive folder, **Stardate**.



3 Run the Application executable file.



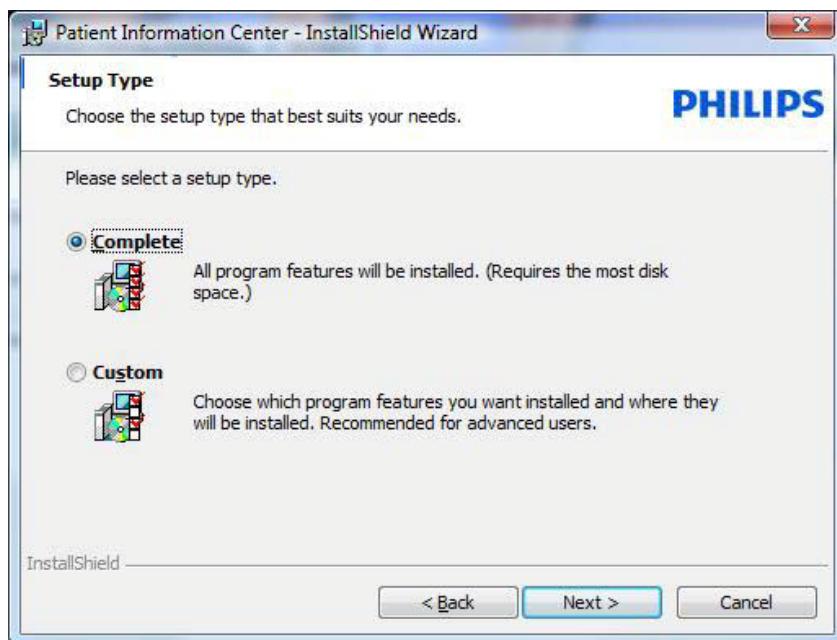
1	PIIC iX B.02 Media Kit 4535 645 86811
2	PIIC iX Software USB Flash Drive
3	Service Password Label

- a** Put the PIIC iX Software USB Flash Drive into the appropriate port of your PC/Server. Be sure to install software on the Primary Server first, then install software on member hosts.
- b** Browse the USB drive to **App\Install32\setup.exe**. Then double-click the executable file to begin the installation.

Important if an earlier version of the product is on the device an error appears. You must remove the earlier version.

- c** In the **Open File - Security Warning** dialog click **Run**.
- d** If additional items are required on a PIIC iX or Server iX the InstallShield Wizard opens a dialog permitting installation of additional requirements. Click **Install** in the dialog to continue.
- e** In the Patient Information Center - InstallShield Wizard **Welcome** screen click **Next >** to progress through the screens.
- f** If you want to change the application location, click **Change** In the **Destination Folder** screen and set a custom destination. When desired destination is set, click **Next >** in the **Destination Folder** screen to continue.

- g Select **Complete** on the **Setup Type** screen, then click **Next >** to continue.



- h Click **Install** in the **Ready to Install the Program** screen.

A status bar shows the installation progress on the **Installing Patient Information Center** screen.

The Philips IntelliVue XDS Application will update if required. If you experience an error with XDS and must restart those services after software installation refer to [page 7-26](#).

- i On the Patient Information Center - InstallShield Wizard **Completed** screen, click **Finish**.

The **System Setup - [System Information]** screen opens which is the initial System Setup screen. To continue System Setup refer to [page 5-8](#). It will be necessary to restore the archive created in step **Step 1**. Refer to **Restoring an Archive**.

If you want to re-install the PIIC iX Application on a Small Primary Server PIIC iX or Enterprise Server iX

- 1 Create an Archive of the configuration of the configuration at the Primary Server. Refer to **Creating an Archive**. Be sure to save Patient Information if appropriate.
- 2 Disable Monitoring Services in **System Configuration** ([page 6-143](#)), then close System Configuration.
- 3 Remove earlier release application.

Important Every host that is a member of a Domain must be upgraded to the same software version as that on the Domain Primary Server.

Prior to installation you must remove any earlier version of the **PIIC iX** application as follows.

- a Press **Alt + F4** keys simultaneously to shut down the application to the desktop.
- b Enter **User Name** and **Password** in the login dialog.

- c From the **Control Panel** click the **Programs and Features** icon.
 - d Once the list populates, right-click **Patient Information Center** and select **Uninstall**. Then select **Yes** in the dialog.
 - e If it exists remove the hard drive folder, **Stardate**.
- 4** Run the Application executable file.
- a Put the PIIC iX Software USB Flash Drive into the appropriate port of your PC/Server.
 - b Browse the USB drive to **App\Install32\setup.exe**. Then double-click the executable file to begin the installation.

Important if an earlier version of the product is on the device an error appears. You must remove the earlier version.

- c In the **Open File - Security Warning** dialog click **Run**.
 - d In the Patient Information Center - InstallShield Wizard **Welcome** screen click **Next >** to progress through the screens.
 - e If you want to change the application location, click **Change In the Destination Folder** screen and set a custom destination. When desired destination is set, click **Next >** in the **Destination Folder** screen to continue.
 - f Select **Complete** on the **Setup Type** screen, then click **Next >** to continue.
 - g Click **Install** in the **Ready to Install the Program** screen.
A status bar shows the installation progress on the **Installing Patient Information Center** screen.
The Philips IntelliVue XDS Application will update if required. If you experience an error with XDS and must restart those services after software installation refer to [page 7-26](#).
 - h On the Patient Information Center - InstallShield Wizard **Completed** screen, click **Finish**.
The **System Setup - [System Information]** screen opens which is the initial System Setup screen. To continue System Setup refer to [page 5-8](#). It will be necessary to restore the archive created in step **Step 1**. Refer to **Restoring an Archive**.
- 5** At each Server in the topology repeat **Steps 2 through 4**.
- 6** At each PIIC iX Surveillance and Overview host in the Server topology close the Monitoring application by pressing **Alt + F4** keys simultaneously and entering Log on credentials. Then repeat **Steps 2 through 4**.

Activating Windows Operating System

Internet Activation

If you must re-activate your operating system after a repair and you have an internet connection, you can re-activate as follows.

Windows 8.1

If you have an internet connection your Windows 8.1 operating system will automatically reactivate during product installation.

If you do **not** have an internet connection you will fail a system qualifier while running System Setup, then will be required to activate Windows by telephone.

Windows Server 2012 R2

Important You can only install Window Server 2012 R2 on HP DL380 Gen8 or HP DL180 Gen9 hardware for PIIC iX B.02.

If the HP DL380 Gen8 or DL180 Gen9 Server on which you are re-installing PIIC iX B.02 originally shipped with Windows Server 2012 R2 installed and the motherboard is not changed, the operating system will activate automatically after being installed whether or not there is an internet connection.

If the Server on which you are re-installing PIIC iX B.02 originally shipped with Windows Server 2008 R2 or the motherboard is changed, you must manually enter the Windows 5 x 5 product key on the Server 2012 R2 Certificate of Authenticity using the Windows activation interface.

If you have an internet connection Windows will automatically activate. If you do **not** have an internet connection refer to **Telephone Activation**.

Philips recommends that you manually activate your Server 2012 Operating System before you attempt to run **PIIC iX System Setup**, otherwise an activation failure during Host Qualification will prevent you from initializing successfully.

Telephone Activation

Important You must have the original 5 x 5 Product Key that shipped with your system. It is available on the COA that shipped with your system and it appears on your shipping packaging.

If you must re-activate your operating system after a repair or replacement and do not have an internet connection, you can re-activate by phone.

- 1 At the **Desktop**, open file explorer by pressing **Windows + E** keys concurrently. then right-click **This PC** and select **Properties**.

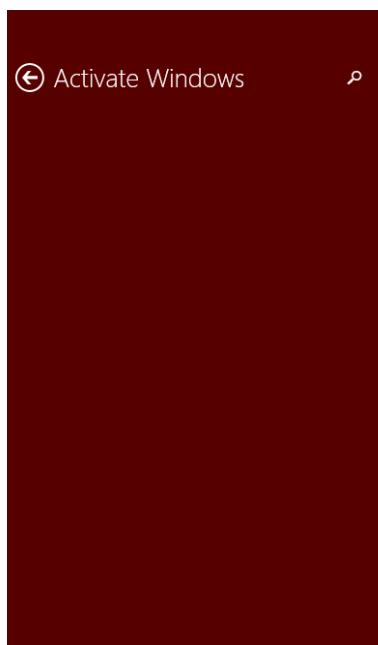
or

Go to **Control Panel > System**.

The **System** screen of **Control Panel** opens.

- 2 Click the **Activate Windows** hypertext link.

- 3 Click **Enter key** then enter the 5 x 5 product key included in your purchased software.



Activate Windows

Windows can't activate right now. Try activating again later. If that doesn't work, contact support.

[See support info online](#)

Activate Windows online

[Activate](#)

Enter a new product key

[Enter key](#)

[Error details](#)

Your product key info

Current product key: *****-C36PB

Your product key should be on the box that the Windows DVD came in or in an email that shows you bought Windows.

The product key looks similar to this:

PRODUCT KEY: XXXXX-XXXXX-XXXXX-XXXXX-XXXXX

Important You can also access the product key entry dialog by opening a command window and typing `slui 3` at the command line.

- 4 After entering the product key click **Activate**. In the next **Activate Windows** screen click **Activate by phone**.



Activate Windows

To activate Windows, connect to the Internet. If you can't get online, call us.

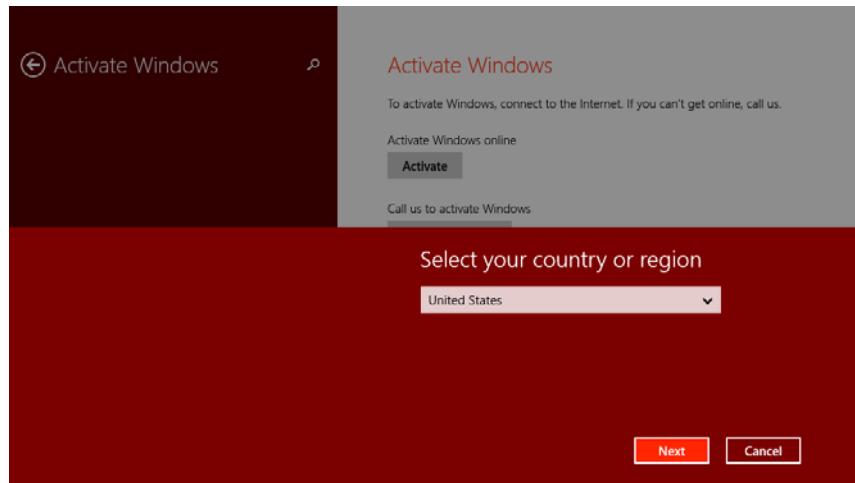
Activate Windows online

[Activate](#)

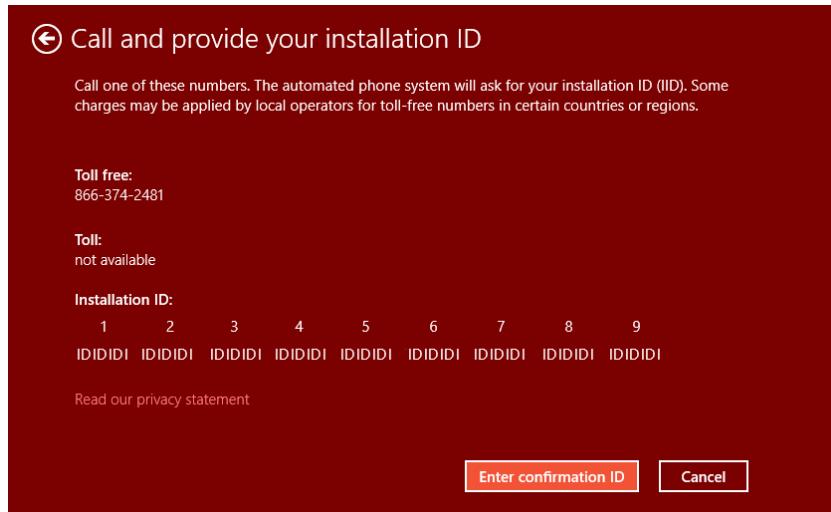
Call us to activate Windows

[Activate by phone](#)

- 5** In the **Select your Country or Region** screen click the down-arrow and select the desired location. Then click **Next**.



The local Product Activation Center telephone number(s) appears on the screen.



Important You can also access the local Product Activation Center telephone number(s) by opening a command window and typing *slui 4* in the command line.

- 6** Telephone the Product Activation Center.
- 7** When you are asked, provide the **Installation ID** numbers that appear on the screen. Then click **Enter confirmation ID**.

- 8 Enter the **confirmation ID** values that you hear over the phone in the **A** through **H** text boxes. Then click **Activate Windows**.



A Success dialog appears.

Changing Computer Names

With PIIC iX it is not necessary to access Control Panel to make computer name changes. PIIC iX software permits changing computer names using **System Setup**. The software communicates with the Operating System and permits renaming the device.

This section describes changing computer names for a networked System--the servers and hosts in its domain.

Before you begin

- Make an archive of your system (**page 6-142**),
- Be sure not to re-install databases on the Server or the PIIC iX, and
- Be aware that no Operating System Control Panel interaction is required.

Changing System Computer Names

Change the computer name of the Primary Server iX by running System Setup at the Primary Server.

Important If you are currently logged on as a user that does not have the role privilege you will not be able to run System Setup unless you run it as a different user.

- 1 If you must change to a different user do the following.
 - a If surveillance is running on your server, stop surveillance by pressing the **Alt + F4** keys concurrently. Then enter the appropriate **User Name** and **Password** in the dialog
 - b At the Windows Desktop press and hold the **Shift** key and right-click the **PIIC iX System Setup** shortcut, then select **Run as different user** in the list.
 - c Enter *SupportUser* as the **User Name** and the appropriate **Password** in the dialog. Then click **OK**.
 - d Enter your local service **User Name** and the appropriate **Password** in the dialog. Then click **OK**.
The initial **System Setup** screen opens.
- 2 At the **System Information** screen click the **Change** button next to **Computer Name**.



A dialog opens.

- e Enter the desired name in the text box, then click **OK**.
A message appears.
- f Click **Yes** in the message dialog.

Important Any change to computer name requires a system restart. When the server restarts the connected Hosts will go into *Local Mode*.

- g Click **Next >** to progress through the **System Setup** screens and *do not* install the Database.
- h Verify on the **Feature Option** page that the new Server name is assigned to the appropriate license.
- i On the last **System Setup** screen select the **Start Patient Monitoring Services** option. Then click **Finish**.
The Server restarts and monitoring services begin on the server. Former Surveillance hosts remain in *Local Mode*.

Important You must wait until the Server restarts before you begin changing the host names on the PIIC iX and Overview machines.

- 3 Connect each desired Host to the Primary Server.
 - a At each Host progress through **System Setup** screens. Do *not* reinstall the Database.
 - b In the **Connect to Server** page select the **Other host** option and enter the *new* Primary Server name in the text box.



- c Then click **Next >**. The Host will connect to the Primary Server.
- 4 To change the computer Host name click **< Back** in the current **System Setup** page until you get to the **System Information** page.



- a Click the **Change** button adjacent to **Computer Name**.
- b Type the *new* Host name in the dialog text box, then click **OK**.
- c In the message dialog, click **Yes**.
- 5 Click **Next >** to progress through **System Setup** screens.
- 6 In the **Database Installation** screen do *not* install databases. Click **Next >** to continue.

- 7** On the final **System Setup** screen select the **Start Patient Monitoring Services** option. Then click **Finish**.
The System restarts and when Patient Monitoring begins the host reconnects to the Server.
- 8** Repeat **Steps 3** through **7** for each Surveillance Host in the monitoring network that requires a Computer Name change.
- 9** At the Primary Server check the connection status of the Hosts.

To open **System Configuration** double-click the shortcut on the desktop and enter appropriate credentials in the **Login to System Configuration Access** dialog.

By default **System Configuration** is in **Quick Unit Status** view. If not go to **View > Quick Unit Status**.

Host connection status appears along the bottom of the **System Configuration** screen. Surveillance Hosts in *Service Mode* appear yellow, in *Local Mode* appear orange, and in *Connected Mode* appear green. Unreachable Hosts appear grey.

Important Any change to computer name requires a system restart. Do this immediately rather than progress through System Setup if your system relies on DNS. You must immediately restart your host so that you can connect to the primary server.

Modifying Licenses Post Installation

With PIIC iX B.00 and later licenses can be re-allocated between hosts and Servers after software installation. This workflow can be done on a Primary Server or on each Surveillance machine depending on the situation and customer requirements. See the following workflow recommendations.

Changing License Allocation at the Primary Server

Important You **must** change License allocation at the Primary Server if your changes include adding Web to a Primary Server with less than 256 beds.

License re-allocation at the Primary Server is recommended when clinical down time must be minimized (when telemetry units are present, for example). When you stop services on the Primary Server and run System Setup, all surveillance and overview hosts in the topology restart in Local Mode. When the Primary Server returns to normal operation, the surveillance and overview hosts automatically connect and patient settings data is synchronized as long as the **Reconnect** settings are enabled ([page 6-33](#)).

- 1** At the Primary Server run System Setup.
All connected hosts go into Local Mode but continue monitoring.
- 2** Reassign the licenses as required ([page 5-24](#)).
- 3** Progress through System Setup to the final page then select the **Start Patient Monitoring Service** option to restart monitoring service.
When the Primary Server returns to normal operation, the surveillance and overview stations automatically reconnect and patient settings data is synchronized.

Changing License Allocation at a Surveillance Host

You can also change License allocation on each Surveillance or Overview host that requires license changes. This workflow is recommended when bedsides are available because only the hosts that need license modifications experience clinical down time. All other clinical units continue to monitor patients without disruption. The affected surveillance hosts go offline while System Setup is run on each, which can take a few minutes to complete. When the updated hosts reconnect to Primary Server, patient settings data is synchronized as long as the **Reconnect** settings are enabled (**6-33**).

- 1 At the desired Surveillance or Overview host run System Setup.
- 2 Reassign the licenses as required (**5-24**).
- 3 Progress through System Setup to the final page then select the **Start Patient Monitoring Service** option to restart monitoring service at the host.
When the updated host reconnects to Primary Server, patient settings data is synchronized.

Returning a Repaired Host to Monitoring

If you want to return a host to the monitoring network after a repair which required clearing the host sectors, you must not permit it to reconnect to the original primary server immediately.

- 1 You must first run **System Setup** locally on the host while it is **not** connected to the monitoring network. On the **Connect to Server** page select **This Host** as the primary server.
- 2 After **System Setup** is complete you can reconnect the host to the monitoring network.
- 3 Rerun **System Setup** and select **Other Host** in the **Connect to Server** page, then enter the original Primary Server name in the text box.
The host will reconnect to the primary server.

Biomed Remote Access Tools

If you want to remotely configure or diagnose a PIIC iX system, you can do one of the following.

- Remote desktop to the Primary Server using Remote Desktop Protocol.
- Request desktop sharing to the PIIC iX using UltraVNC.
- Remote to Server or Surveillance Host using **System Setup**.

Remote Access Using Remote Desktop Protocol

Open the Remote Desktop Connection (RDC) on your machine to access the desired Primary Server as follows.

- 1 Go to **Start > All Programs > Accessories > Remote Desktop Connection**.
The **Remote Desktop Connection** dialog opens.

- Important** Remote Desktop Connection Display settings may need to be set to highest quality when you remotely access some PIIC iX screens.
- 2 In the **Remote Desktop Connection** dialog, click the **Options** button, then go to the **Display** tab.
 - 3 In the **Colors** section of the dialog click the down arrow and select the **Highest Quality (32 bit)** setting.
 - 4 Go to the **General** tab and type the desired hostname or IP Address (149.59.189.35, for example) in the **Computer** text box then click **Connect**.
 - 5 In the **Log in** dialog, enter appropriate **User name** and **Password**.
 - 6 Click **OK** in the **Log in** dialog to connect.

Once you have logged into the desired System the desktop appears.

Remote Access Using UltraVNC

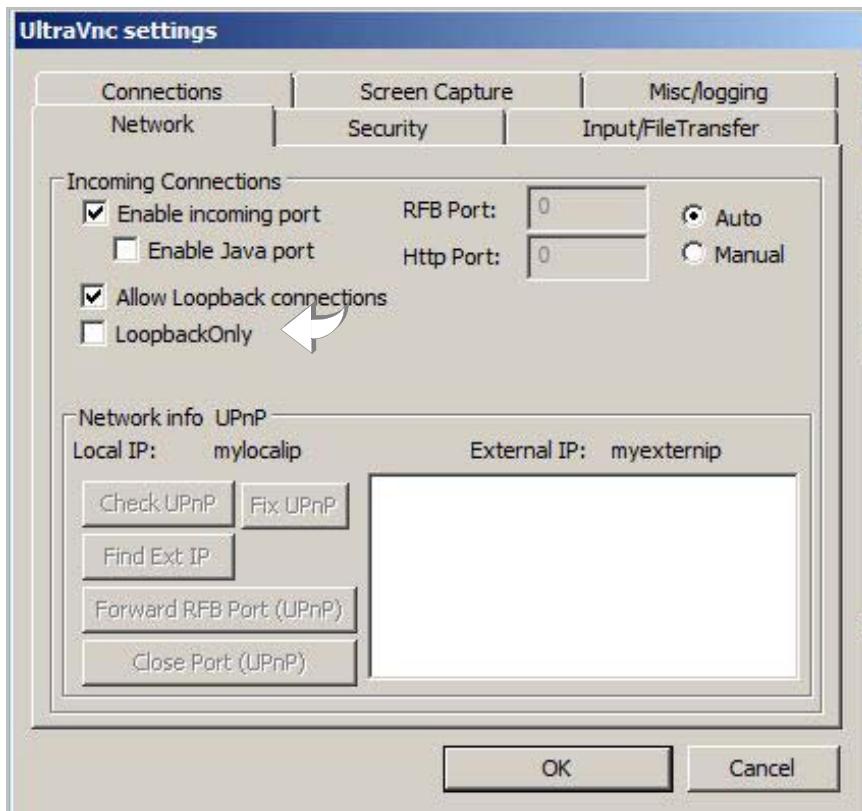
UltraVNC is an open source application for the Microsoft Windows operating system that uses the VNC protocol to control another computer's screen remotely. It allows to use a remote computer as if you were in front of it, by moving the mouse, using the keyboard and displaying everything that happens on your desktop in real time.

If you are doing a repair using UltraVNC to connect to a host from the IT clinical engineering department you must be using a compatible UltraVNC client version to 1.1.9.6 Server Version installed on PIIC iX.

- 1 Install and configure a compatible version of UltraVNC on your computer.
- 2 Once you install and configure a compatible version of UltraVNC on your computer you must disable the **LoopbackOnly** Network setting on the PIIC iX Systems that you want to remotely access.

Important Philips PIIC iX configures certain default UltraVNC settings during product installation. One of the default settings is (selecting or clearing) **LoopbackOnly** in the **Incoming Connections** section of **UltraVNC settings**. In order to connect to a PIIC iX with Philips Remote Support from within the customer site the **LoopbackOnly** check box must be clear. In this scenario the customer is solely responsible for meeting facility security, privacy, and auditing policies for internal remote access.

To view the PIIC iX default settings go to **C:\Program Files\UltraVNC** on the PIIC iX, then double-click **uvnc_settings..**



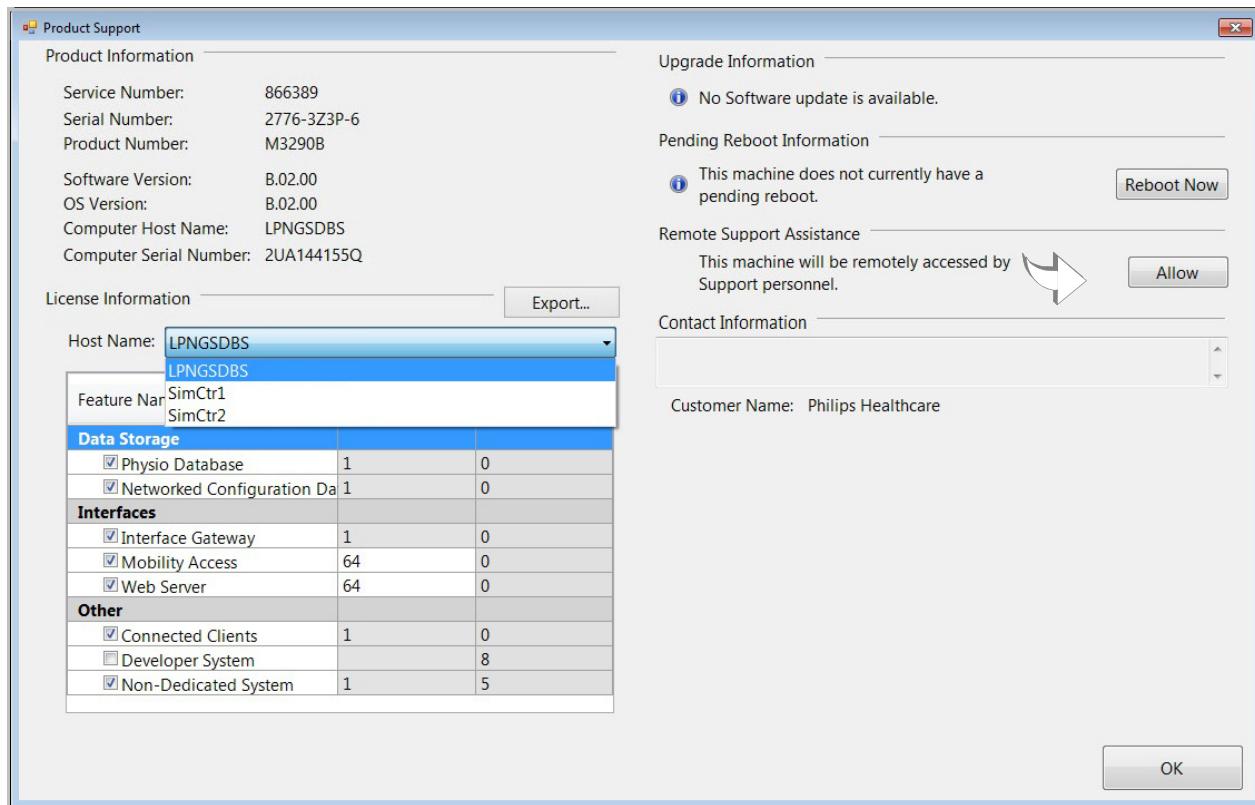
Allowing a Remote Assistance Session

Opening the Product Support Screen

- ▶ Access the **Product Support** screen on the desired PIIC iX host by clicking the Philips icon at the top of the PIIC iX Main Screen or from a selection on the Main Screen task bar.

Allowing Remote Access at the PIIC iX

The **Product Support** screen permits you to can allow or disconnect a remote assistance session by clicking the **Allow** button in the **Remote Support Assistance** section of the screen. When you click **Allow** a support person can initiate remote connection to your machine through the Philips Remote Support Network if Philips Service Agent (PSA) is installed on your system. Once allowed a remote access session remains active for **1 hour** unless it is terminated or you **Disconnect** it earlier.



- 1 When you want the remote access session to start click **Allow**.

A dialog opens with the message, *A Remote Support session has been requested.*



- 2 If you agree to this request, confirm that this is an authorized Remote Support session. You further confirm that you are the responsible local operator for the system during this Remote Support session and have been fully informed about the possible consequences regarding Safety, Security, and Privacy arising from permitting remote operation of the system, including those discussed in the PIIC iX Instructions for Use.

- 3 Click **Yes** in the dialog to begin the remote access session.

During the Remote Assistance Session both the PIIC iX user and the Biomed who is accessing the machine have full access to the keyboard and mouse. Any changes performed by the Biomed are visible because you also share the desktop screen.

Log entries for the start and stop times of a remote Assistance session appear in the Event log.

Remote Access Using System Setup

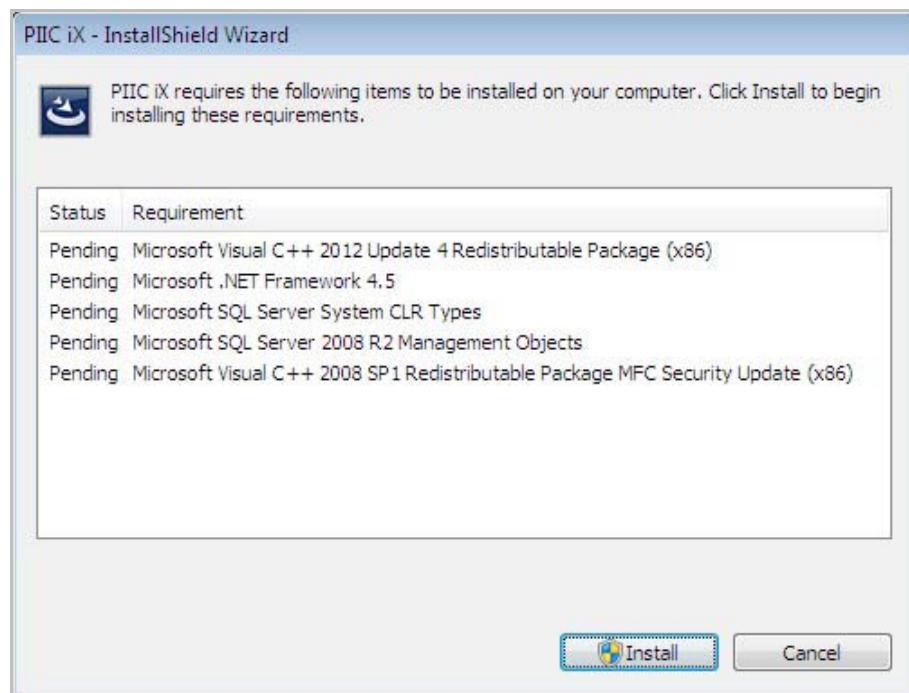
NOTE SQL Express can be included using a **custom** PIIC iX application install.

Configuration and changes to the PIIC iX system topology and unit settings can be done remotely on a BIOMED machine that has PIIC iX software installed.

Important The BIOMED machine must be able to connect to the desired PIIC iX in the topology.

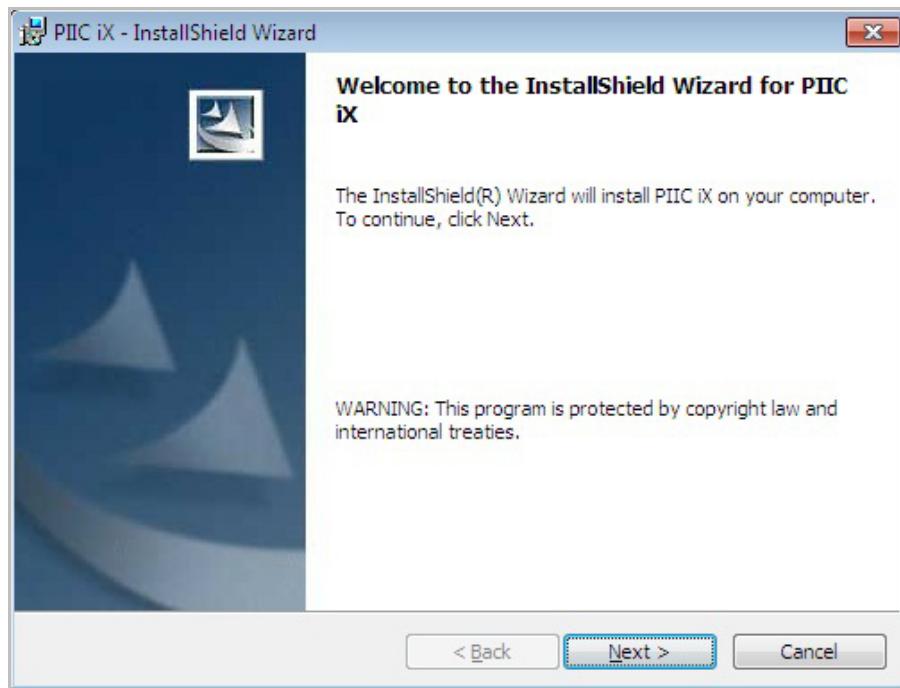
In order to install PIIC iX you must have Windows 7 and SQL Server on your laptop.

- I If you do not have SQL Server on your laptop be sure to include SQL Server during software installation.
 - a Put the PIIC iX USB media in the appropriate drive of your device, then browse to **App\Install32\setup.exe**. Then double-click the executable file to begin the installation.
 - b In the initial **PIIC iX - InstallShield Wizard** screen that identifies additional items that must be installed click **Install**.

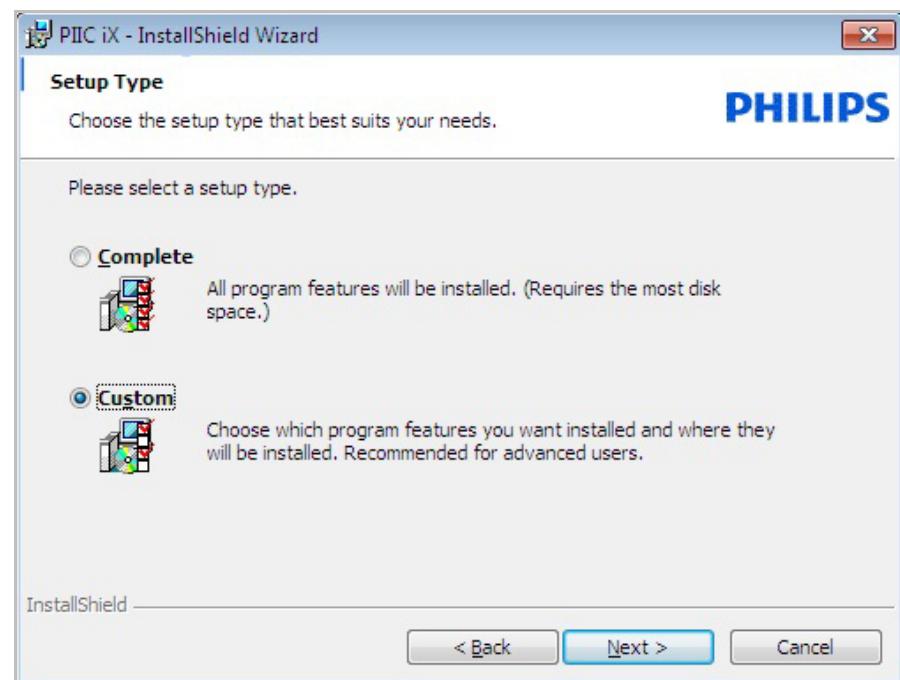


If a **User Account Control** warning appears, click **Yes** in the dialog.
Dialogs with progress bars show the status of the installation.

- c When the Wizard *Welcome* screen opens click **Next >** to begin the application installation.



- d In the Wizard *Destination Folder* screen you can change the software location or click **Next >** to continue.
- e Select **Custom** on the **Setup Type** screen, then click **Next >** to continue.



- f Expand the folders in the dialog to show the elements that are not installed as a default.
- Microsoft SQL Server 2012 Express LocalDB
- g Select the desired option from the list.
Installation on the hard drive is suggested for PIIC iX software use.
 - h Click **Install** in the dialog to begin the installation.
If a **User Account Control** warning appears, click **Yes** in the dialog to continue the application installation.
- 2 On the Wizard *Completed* screen click **Finish**.
 - 3 Once the PIIC iX software is installed run **System Setup** by clicking the **PIIC iX System Setup** desktop icon and do the following.
 - a Click **Next >** to progress through the **System Setup** screens until the **Database Installation** screen, and click **Install**. Then click **Next >** to continue.
 - b On the **Server Connection** screen click the **Other Host** option and enter the hostname of the PIIC iX Primary Server then click **Next >**. When the Login dialog opens enter **User Name** and **Password**, then click **OK**.
 - c Click **Next >** in the **Topology Configuration** screen.
Because your machine is not part of the present topology a dialog opens which states, *This host is not yet configured. Would you like to add this host to your topology?* Click **OK** in the dialog.
An **Edit** dialog opens in which you can modify your device settings. When the dialog entries are complete click **OK**. Once your machine is added to the topology click **Next >** to continue.
 - d In the **Licensing** screen click **Next >** to continue.
 - e In the **Feature Assignment** screen click **Next >**.
Because your machine is not licensed a dialog opens which states, *This host has not been licensed. Are you sure you want to continue?* Click **Yes** in the dialog.
 - f Continue to progress through the System Setup screens. When the PIIC iX **Setup Complete** screen opens select the **Configure system topology and clinical unit settings** option, and click **Finish**.
 - 4 In the **Login to System Configuration Access** dialog enter **User Name** and **Password**. When **System Configuration** opens configure the system according to Hospital requirements.

Using An Unlicensed PIIC iX To View An Archive

PIIC iX System Configuration is typically performed directly on the monitoring client or server at the customer site. However, System Configuration can also be installed on other hardware (a Philips laptop, for example) and a PIIC iX license is not required. When used this way the PIIC iX is does not require a license because it is a tool only and not used for patient monitoring.

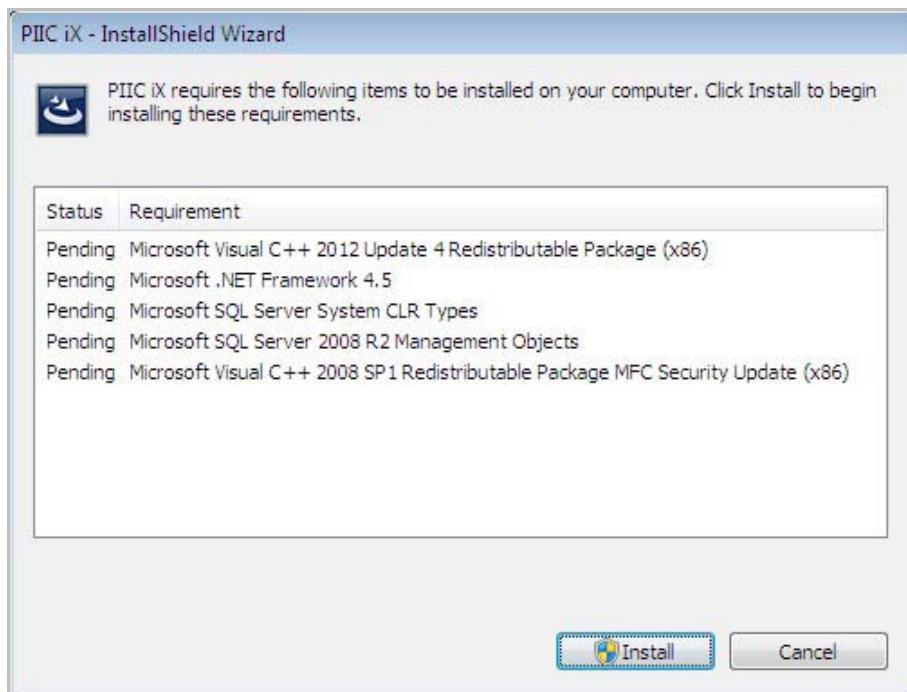
You can use the unlicensed PIIC iX:

- to view existing customer system archives in order to gather information about licensing, features, logs, system configuration, and so on,
- to pre-configure a system, save the archive, and use that archive for actual customer site installation.

Important In order to install PIIC iX on a device it must have Windows 7, SP1 or higher, 32- or 64-bit or Windows Embedded 8.1 Industry Pro, 64-bit Operating System.

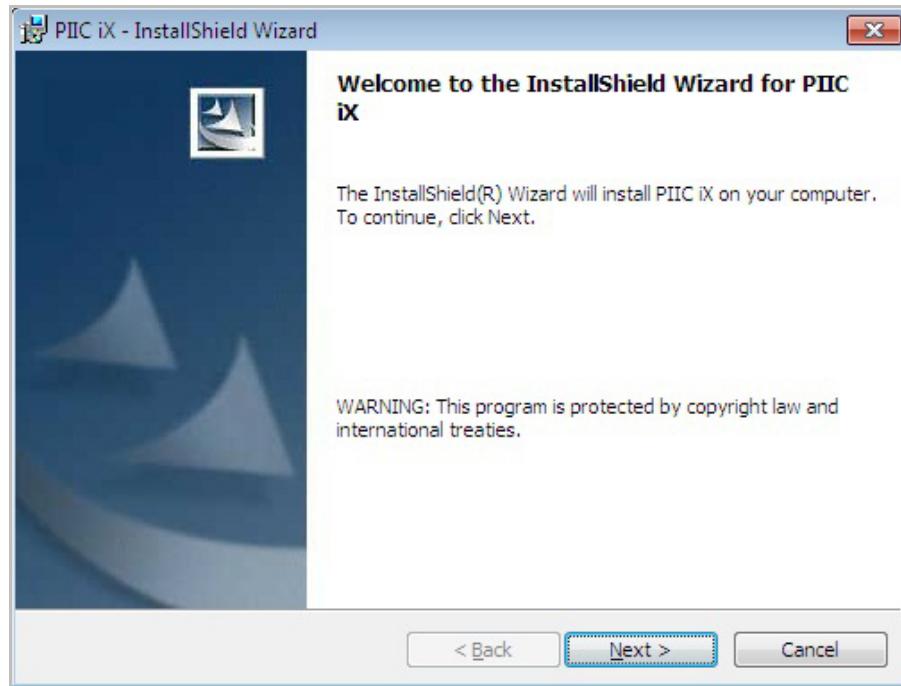
Administrator rights are required to install PIIC iX software.

- I Perform a custom installation of PIIC iX software on your device.
 - a Put the PIIC iX USB media in the appropriate drive of your device, then browse to **App\Install32\setup.exe**. Double-click the executable file to begin the installation.
 - b In the initial **PIIC iX - InstallShield Wizard** screen that identifies additional items that must be installed click **Install**.

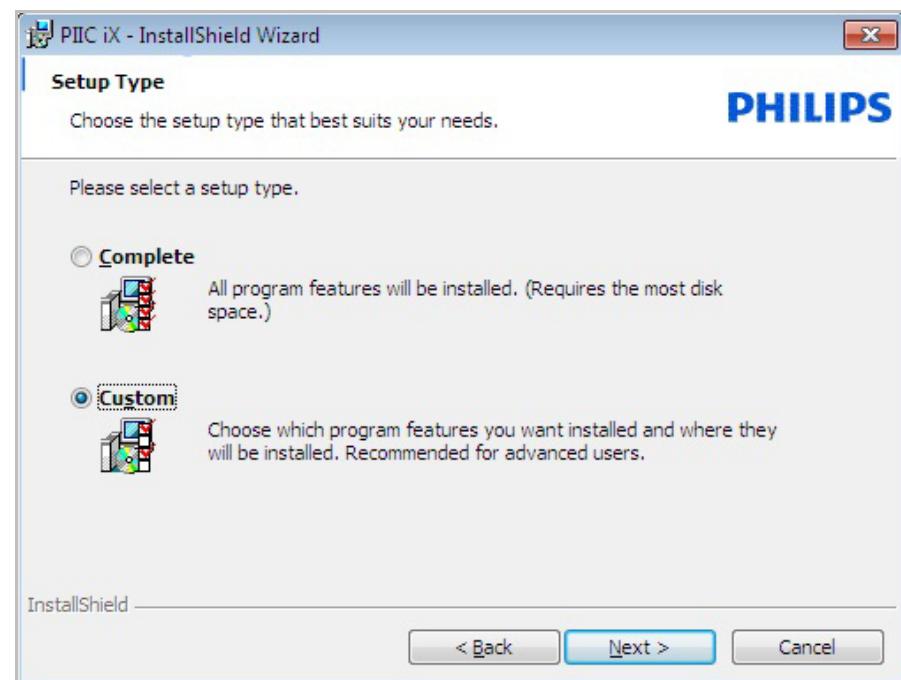


If a **User Account Control** warning appears, click **Yes** in the dialog.
Dialogs with progress bars show the status of the installation.

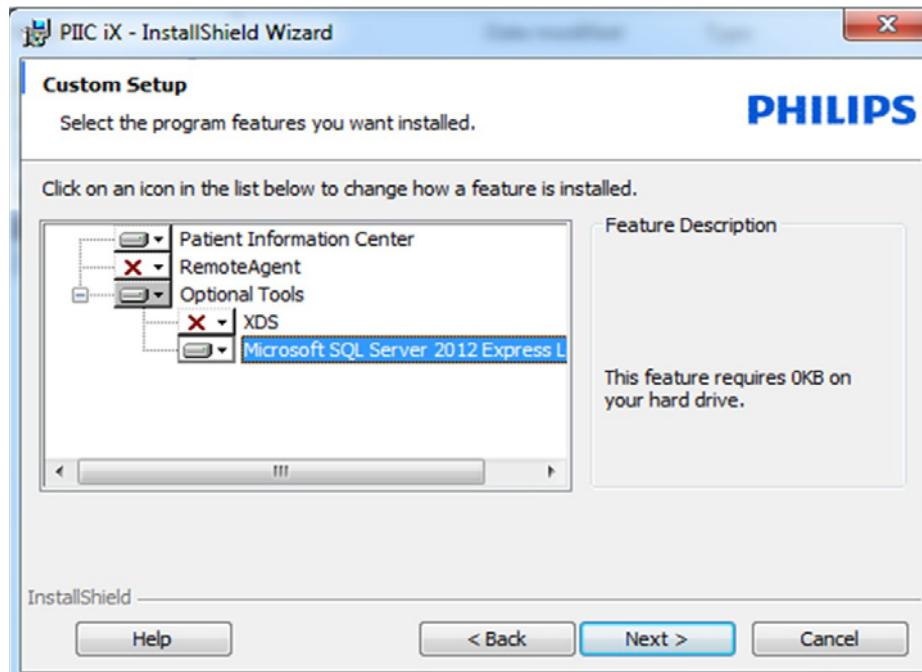
- c When the Wizard *Welcome* screen opens click **Next >** to begin the application installation.



- d In the Wizard *Destination Folder* screen you can change the software location or click **Next >** to continue.
- e Select **Custom** on the **Setup Type** screen, then click **Next >** to continue.



- f Expand the folders in the dialog to show the elements that are installed/not installed as a default. Then make the following changes.



RemoteAgent

This feature will not be available

Optional Tools

XDS

This feature will not be available

Microsoft SQL Server 2012 Express LocalDB

This feature will be installed on local hard drive

- g Click **Next >** to continue.
- h Click **Install** in the dialog to begin the installation.
If a **User Account Control** warning appears, click **Yes** in the dialog to continue the application installation.
- 2 On the Wizard *Completed* screen click **Finish**.
- 3 Once the PIIC iX software is installed run **System Setup** by clicking the **PIIC iX System Setup** desktop icon and do the following.
- Click **Next >** to progress through the **System Setup** screens until the **Database Installation** screen, and click **Install**. Then click **Next >** to continue.
 - On the **Server Connection** screen click the **This Host** option then click **Next >**. When the Login dialog opens enter **User Name** and **Password**, then click **OK**.
 - On the **Archive Restoration** screen browse to the location of the customer archive and restore that archive on the unlicensed PIIC iX device.
 - Click **Next >** in the **Topology Configuration** screen.
Because your machine is not part of the present topology a dialog opens which states,

This host is not yet configured. Would you like to add this host to your topology?

Click **OK** in the dialog.

An **Edit** dialog opens in which you can modify your device settings. When the dialog entries are complete click **OK**. Once your machine is added to the topology click **Next >** to continue.

- e In the **Licensing** screen remove any existing license, then click **Next >** to continue.
 - f In the **Feature Assignment** screen click **Next >**.
Because your machine is not licensed a dialog opens which states,
This host has not been licensed. Are you sure you want to continue?
Click **Yes** in the dialog.
 - g Continue to progress through the System Setup screens. When the PIIC iX **Setup Complete** screen opens select the **Configure system topology and clinical unit settings** option, and click **Finish**.
- 4 In the **Login to System Configuration Access** dialog enter **User Name** and **Password**. When **System Configuration** opens you can view the configuration.

Updating/Replacing Hardware

HP DL180 Gen 9 Integrated Lights Out 4 (iLO 4) Management

On PIIC iX HP DL180 Gen9 servers with PIIC iX B.01.01 and later or A.02.13 and later, HP iLO 4 Management is enabled as a default. Some customers may prefer to disable iLO4, however. Both configuration instructions are included in this section.

Important Consult the **HP iLO 4 User Guide** included in the PIIC iX Service Documentation Portfolio on your product media for additional information.

To be sure that iLO 4 is enabled after repair, do the following

- 1 During the server boot sequence you will see function keys at the bottom of the screen. Press the **F9** key to access **System Utilities**.
- 2 On the **System Utilities** screen select **System Configuration** then press **Enter** to show the submenu selections.
- 3 Use the arrow keys to select **iLO 4 Configuration Utility** from the submenu list then press **Enter**.
- 4 Use the arrow keys to select **Setting Options** from the submenu list, then press **Enter**.

- For each option that you want to change select the option and press the Space bar to set iLO 4 functionality to enabled.

Selection	Setting
iLO 4 Functionality	Enabled
iLO 4 Configuration Utility Important: Do not disable this setting or you will have to physically reset the System board switch to view the iLO configuration menu.	Enabled
Require user login and configuration privilege for iLO 4 Configuration	Disabled
Show iLO 4 IP during POST	Enabled (Default)

- Press **F10** to **Save** and **Y** to save and close the message.
A message reports that iLO is resetting and requests that you wait 30 seconds for iLO reset to complete.
- Once iLO reset is complete press **Esc** to return to the **iLO 4 Configuration Utility** screen.
- Be sure **Network Interface Adapter** is enabled so that iLO uses a separate iLO Network Port.
 - Use the arrow keys to select **Network Options** from the submenu list, then press **Enter**.
 - Select **Network Interface Adapter** and press **Enter**,
 - Use arrow key to change the setting to **ON**, then press enter.
 - Set the desired Network parameters for the remaining menu items (IP Address, DHCP, Subnet Mask, and so on).
 - When **Network Options** settings are complete Press **F10** to **Save** then **Y** to save and close the message dialog.
 - Press **Esc** repeatedly until you return to the **System Utilities** screen.
- Select **Reboot the System**, then press **Enter**. When prompted to confirm the request, press **Enter**.

To disable iLO 4, do the following

- During the server boot sequence you will see function keys at the bottom of the screen. Press the **F9** key to access **System Utilities**.
- On the **System Utilities** screen select **System Configuration** then press **Enter** to show the submenu selections.
- Use the arrow keys to select **iLO 4 Configuration Utility** from the submenu list then press **Enter**.
- Use the arrow keys to select **Setting Options** from the submenu list, then press **Enter**.

- 5 For each option that you want to change select the option and press the Space bar to set iLO4 functionality to disabled.

Selection	Setting
iLO 4 Functionality	Disabled
iLO 4 Configuration Utility Important: Do not disable this setting or you will have to physically reset the System board switch to view the iLO configuration menu.	Enabled
Require user login and configuration privilege for iLO 4 Configuration	Disabled
Show iLO 4 IP during POST	Enabled (Default)

- 6 Press **F10** to **Save** and **Y** to save and close the message.
A message reports that iLO is resetting and requests that you wait 30 seconds for iLO reset to complete.
- 7 Once iLO reset is complete press **Esc** until you return to the **System Utilities** screen.
- 8 On the **System Utilities** screen menu list select **Reboot the System**, then press **Enter**. When prompted to confirm the request, press **Enter**.

HP DL380e Gen 8 Integrated Lights Out (iLO) Management

On PIIC iX HP DL380e Gen8 Servers HP iLO Management is disabled as a factory default in BIOS.

Customers using PIIC iX B.00 and later are authorized to enable iLO4 Standard as an English-only support utility for power cycling on an HP DL380e Gen8 Server, however. The iLO LAN port must be connected to a dedicated management network.

If the Customer requires **enabled iLO** on an HP DL380e Gen8 Server, refer to the Field Change Order describing PIIC iX with HP ProLiant DL380e Gen8 Server iLO4. The FCO is available on InCenter.

Important Consult the **HP iLO 4 User Guide**, which is included in the PIIC iX B.02 Service Documentation Portfolio, for complete iLO 4 configuration information.

If the Customer needs to disable iLO, do the following

- I During the Server boot sequence watch for one of the following messages. When you see the message press the **F8** key to access the iLO menu selections.

HP DL380e Gen8 ILO 4 Standard press [F8] to configure

- 2 Go to **Settings > Configure** and press **Enter**.

- 3** Use the Space bar to configure the following settings:

	Selection	Setting
DL380e Gen8 4535 643 8343I		
	iLO Functionality	Disabled
	iLO ROM-Based Setup Utility	Disabled
	Require iLO4 RBSU Login	Disabled
	Show iLO4 IP during Post	Enabled (Default)
DL380e Gen8 4535 644 8481I		
	iLO Functionality	Disabled
	iLO4 ROM-Based Setup Utility	Disabled
	Require iLO4 RBSU Login	Disabled
	Show iLO4 IP during Post	Enabled (Default)
	Local Users	Enabled (Default)

4 Press **F10** to **Save**.

5 Go to **File > Exit** and press **Enter** twice to confirm.

The Server continues the boot sequence.

Restoring Server iX RAID Configuration

HP DL180 Gen9 Servers

Important HP DL180 Gen9 Servers are configured with RAID 1 Array. If RAID configuration is lost or accidentally changed, it must be restored.

Verify Server iX RAID configuration

- 1 Restart the server.
During startup, the system recognizes devices.
- 2 Press **F10** to start Intelligent Provisioning. Then select **HP Smart Storage Administrator (SSA)** from the menu.
- 3 In the **HP Smart Storage Administrator (ACU/HP SSA) Welcome** screen *Available device(s)* appear in left pane. When you select a device the available actions, alerts, and summary for that device appear.
Select **Smart HBA H240** in the list, then click **Configure**.
- 4 In the **Controller Devices** list, click **Arrays**.
- 5 Verify the following:
Logical Drive 1, 279.37 GiB (299.97GB)
RAID 1
If correct, the Array is accurately configured.
- 6 Click the **X** icon at the top of the screen then click **OK** in the dialog to close the **HP Smart Storage Administrator (ACU/HP SSA)** application. Then click the  icon at the top of the **HP Intelligent Provisioning** screen to reboot the system.

If necessary, restore HP DL180 Gen9 RAID configuration

Important Restart the server. The following steps create a new array; everything on the drives will be lost.

- 1 Restart the server.
During startup, the system recognizes devices.
- 2 Press **F10** to start Intelligent Provisioning. Then select **HP Smart Storage Administrator (SSA)** from the menu.
- 3 In the **HP Smart Storage Administrator (ACU/HP SSA) Welcome** screen *Available device(s)* appear in left pane. When you select a device the available actions, alerts, and summary for that device appear.
Select **Smart HBA H240** in the list, then click **Configure**.
- 4 Click **Clear Configuration** in the **Actions** section of the screen. A **Smart HBA H240 (RAID MODE) Clear Configuration** dialog opens.
- 5 Click **Clear** in the dialog, then click **Finish**.
- 6 In the **HP Smart Storage Administrator (ACU/HP SSA)** screen click **Create Array** in the **Actions** section of the screen.

- 7 Select the physical drives for the new array by clicking the **Select All (2)** check box the **Create Array** section, then click **Create Array**.
- 8 In the **Create Logical Drive** section verify/set the following:

Selection	Setting
RAID Level	Raid 1
Stripe Size	256 KiB/256 KiB
Sectors/Track	32
Size	Maximum Size 286070 MiB (279.3 GiB)

- 9 Click **Create Logical Drive**.
- 10 Click **Finish**.

HP DL380e Gen8 Servers

Important HP DL380e Gen8 Servers are configured with RAID 1 Array. IF RAID configuration is lost or accidentally deleted, it must be restored.

If necessary restore RAID configuration as follows.

- 1 During the Boot sequence, watch for the message:
- 2 When you see one of the following messages press the appropriate key:

HP DL380e Gen8	<i>Press <F8> key to run the Option ROM Configuration for Arrays</i>
4535 643 83431	<i>Utility.</i>
HP DL380e Gen8	<i>Press <F5> key to run the HP Smart Storage Administrator (ACU/</i>
4535 644 84811	<i>HPSSA)</i>

If your Server has Option ROM Configuration for Arrays (ORCA) do the following:

- 1 Use the arrow key to select **Create Logical Drive** from the Option ROM Configuration for Arrays (ORCA) **Main Menu** and press **Enter**.
- 2 If you see the message **There are no available physical drives**, the drives may be configured already **or** there are no hot swap drives installed.
 - a To determine if the drives are already configured, press **Esc** to return to the **Create Logical Drive** menu.
 - b Select **View Logical Drive**, then press **Enter**.
If the logical drives **are configured**, you are ready to update BIOS (**page 9-40**); if the logical drives **must be configured**, return to the **Create Logical Drive** menu and continue.
- 3 In the **Available Physical Drives** section of the **Create Logical Drive** menu verify that the two available drives are selected.
(An **X** should appear in the brackets next to each drive).

- 4 In the **Raid Configuration** section verify the following.

HP DL380e Gen8 **RAID 1**
4535 643 83431

If necessary, select the appropriate **Raid Configuration** setting.

- 5 In the **Spare** section verify that **Use one drive as a spare** is *not* selected.
- 6 In the **Maximum Boot Partition** section verify that **Disable (4Gb) maximum** is selected.
- 7 Press **Enter** to create the Logical Drive.
- 8 When prompted to save the configuration, press **F8**. Then when **Configuration Saved** appears press **Enter**.
- 9 Press **Esc** to exit **Raid Configuration**. The system will restart.
- 10 If necessary, configure BIOS ([page 9-40](#)).

If your Server has HP Smart Storage Administrator (ACU/HPSSA) do the following:

- 1 Use the arrow key to select **Create Logical Drive** from In the *HP Smart Storage Administrator (ACU/HPSSA)* screen click **Dynamic Smart Array B320i RAID**.
- 2 Review the **Controller Configuration Summary** on the right side of the screen.
- 3 Determine if the array is configured.
 - a Configured array settings are:
1 Data Array
1 Data Logical Drive
2 Data Drive(s)
 - b Non configured array settings are:
0 Data Arrays
2 Unassigned Drive(s)
- 4 If your Server array is configured continue to **Updating BIOS/UEFI Firmware** if necessary. If your Server array is not configured you must configure it.
- 5 To configure the array click **Create Array** in the **Smart Storage Administrator** screen.
- 6 Click the **Select All** check box, then click **Create Array**.
- 7 Verify the selection:
RAID 1
- 8 Click **Create Logical Drive**.
A message appears, **Status OK, 1 Logical Drive**
- 9 Click **Finish**.

If error persists after RAID recovery

If you get a RAID drive failure message after successful RAID recovery, open **Event Viewer** and clear the **Applications** log, then restart RAID service.

Updating BIOS/UEFI Firmware

The correct BIOS (Basic Input/Output System)/UEFI firmware is installed and set up on Philips turnkey hardware prior to product shipment, but the revision changes occasionally.

Supported software for flashing BIOS/Firmware on Philips-provided hardware is available on the **InCenter System**. After a motherboard replacement you may have to download and install the correct BIOS/Firmware for your device before you can install PIIC iX software on your hardware (**Table 9-1**).

Table 9-1 PIIC iX Compatible BIOS

Model	Part Number	BIOS
HP rp5800 (1 Drive)	4535 644 50621	A2.13
	4535 644 50661	
HP rp5800 (2 Drives)	4535 644 68911	
	4535 644 68921	
HP DL380e Gen8	4535 643 83431	P73 2013.07.01
	4535 644 84811	P73 2013.12.20
HP DL180 Gen9	4535 645 52601	U20 2015.06.15

Refer to *PIIC iX Hardware Upgrade Guide*, for accurate upgrade instructions for PIIC hardware that you want to upgrade to PIIC iX.

WARNING Be sure to follow the *Test and Inspection Performance Assurance Procedures* after any installation or upgrade to a PIIC iX or Clinical Network/Server System before using the system with patients.

Installing BIOS on HP rp5800 PC

- 1 Before you access InCenter plug a USB Flash Drive into a USB port on your device. You must copy the BIOS file from InCenter to the connected flash drive.
- 2 Log on InCenter with **Email address** and **Password**.
- 3 Go to **Service/Software/Software Downloads/ Patient Monitoring/Central Monitoring Systems**.
- 4 Select **BIOS for HP PCs & Servers Qualified for PIIC & PIIC iX** in the **Title** list.
- 5 Click the appropriate URL.
When you click the link you are accepting the terms and conditions that are listed. A **Master Compound Document** screen opens with the link to the desired BIOS.
- 6 Click the **BIOS for rp5800 PC** link.
The **Download Manager** displays Software Download User Agreement details.
- 7 Click **I agree**.
A **Save As** dialog opens in which you can browse to a location on the USB Flash Drive where you want to save the file.

Install the BIOS on your HP rp5800 PC as follows

- 1 With the PC powered OFF, insert the USB drive into a USB port.
- 2 Restart the PC and press **F10** to open the BIOS Setup Screen.
- 3 Go to **FILE > Flash System ROM**.
- 4 From the **Flash System ROM** window select USB.
The USB drive should be detected and be shown on the menu.
- 5 Select the USB drive, then press **F10 to Accept**.
- 6 Select the BIOS file and press **F10 to Accept**.
Installation begins. Once the installation completes, follow the on-screen instructions.
- 7 Once you flash the BIOS you must change some of the default settings. These changes vary depending on the hardware. Refer to **HP rp5800 BIOS Settings** for changes to BIOS default settings.

Installing BIOS on HP DL380e Gen8 Server

- 1 Before you access InCenter plug a USB Flash Drive into a USB port on your device. You must copy the BIOS file from InCenter to the connected flash drive.
- 2 Log on InCenter with **Email address** and **Password**.
- 3 Go to **Service/Software/Software Downloads/ Patient Monitoring/Central Monitoring Systems**.
- 4 Select **BIOS for HP PCs & Servers Qualified for PIIC & PIIC iX** in the **Title** list.
- 5 Click the appropriate URL.
When you click the link you are accepting the terms and conditions that are listed. A **Master Compound Document** screen opens with the link to the desired BIOS.
- 6 Click the desired Server BIOS selection in the table.

BIOS for DL380e Gen8 Rack Server

The **Download Manager** displays Software Download User Agreement details.

- 7 Click **I agree**.
A **Save As** dialog opens in which you can browse to a location on the USB Flash Drive where you want to save the file.

Install the BIOS on your HP DL380e Gen 8 Server as follows

- 1 Put the media that contains the appropriate BIOS into the appropriate port of the Server.
- 2 Copy the BIOS file from the media to your hard drive, then double click to run it.
The **Open File - Security Warning** screen opens.
- 3 Click **Run** in the **Open File - Security Warning** screen to extract the file.
The **ProLiant ROMPAQ InstallShield** screen appears.
- 4 Click **Next >** in the **ProLiant ROMPAQ InstallShield** screen.

- 5** Read and accept the license agreement, then click **Next >**.
The **Location to Save Files** screen appears.
- 6** Click **Change**, specify the desired location for the BIOS files, then click **Next >**.
- 7** The **HP ProLiant Flash Update** screen opens.
If you have not installed a USB flash drive in your computer yet, put it in the USB port.
- 8** Click **Create a bootable USB Key**.
The **HP USB Key Setup Creation Utility** screen opens.
- 9** In the **HP USB Key Setup Creation Utility** screen click **Launch HP USB Key Setup Creation Utility**.
- 10** In the **File Download - Security Warning** dialog click **Run**.
- 11** Click **Run** in the **Internet Explorer - Security Warning** dialog.
The **HP USB Key Setup Creation Utility** screen opens.
- 12** Close all other applications before launching the **HP USB Key ROMPAQ Setup Utility**. Then click **Start**.
- 13** The utility locates the USB device and shows a warning.
Click **Yes** in the Warning dialog.
- 14** Click **OK** in the dialog once File Extraction to the USB flash drive is complete.
- 15** Place the newly created USB Flash Drive into the Server to be updated or restored and cycle system power to boot from the USB Flash Media Device.
- 16** Follow the on-screen instructions to flash the BIOS, then refer to **HP DL380e Gen8 BIOS Settings** to change default settings.

NOTE If you are having problems booting from the USB flash drive, restart your system and press **F11** on your server to immediately access your Boot Menu. Then select the USB device from the device boot list.

WARNING **Do not turn off power or attempt to restart the computer during the update process!**

Installing BIOS/UEFI Firmware on HP DL180 Gen9 Server

- 1** Before you access InCenter install a USB Flash Drive into a USB port on your laptop. You must copy the firmware file from InCenter to the connected flash drive.
- 2** Log on InCenter with **Email address** and **Password**.
- 3** Go to **Service/Software/Software Downloads/ Patient Monitoring/Central Monitoring Systems**.
- 4** Select **BIOS for HP PCs & Servers Qualified for PIIC & PIIC iX** in the **Title** list.
- 5** Click the appropriate URL.
When you click the link you are accepting the terms and conditions that are listed. A **Master Compound Document** screen opens with the link to the desired file.

- 6 Click the **BIOS for DL180 Gen9 Rack Server** selection in the table.
The **Download Manager** displays **Software Download User Agreement** details.
- 7 Click **I agree**.
A **Save As** dialog opens in which you can browse to a location on the USB Flash Drive where you want to save the file.

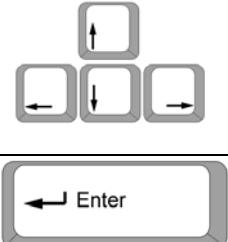
Install the UEFI Firmware on your HP DL180 Gen9 Server as follows

- 1 Put the media that contains the HP DL180 Gen9 firmware file into an appropriate port of the Server.
- 2 Restart server.
- 3 During the server boot sequence you will see function keys at the bottom of the screen. Press **F9** to access **System Utilities**.
- 4 From the **System Utilities** screen select **Embedded Applications**.
- 5 Select **Firmware Update** and then **System ROM**.
- 6 Choose **Select Firmware File**, and then select the flash file in the File Explorer list and press **Enter**.
The firmware file loads and the **Firmware Updates** screen lists file details in the **Selected Firmware File** section.
- 7 Select **Image Description** and press **Enter**, then select the firmware image and press **Enter** again.
- 8 Select **Start Firmware Update** to update the firmware components in the system.
- 9 When upgrade is complete reboot your system for changes to take effect.
- 10 Refer to **HP DL180 Gen9 UEFI Default Settings** to change default settings required to run PIIC iX software.

HP rp5800 BIOS Settings

Navigating the Setup Utility

Table 9-2 **Setup Utility Control Keys**

	Right/left Arrow keys select menus (move the cursor left or right). Up/down Arrow keys select menu items and change settings (move the cursor up or down).
	The <i>Enter</i> key executes a command or opens a submenu.
	The <i>Escape</i> key exits the menu or exits the Setup Utility without saving.

An overview of default setting changes appears in **Table 9-3**.

Table 9-3 **HP rp5800 BIOS Setting Changes**

Setup Utility Menus	Selection	Setting/Selection	Setting/Action
File Menu	Default Setup	Restore Factory Settings as Default	
	Apply Defaults and Exit		Restart PC
	Set Time and Date	Use tab key to move between hour and minute or day, month, and year fields; use right/left arrow keys to change settings; use up/down arrow keys to move between Time and Date .	
Storage Menu	Storage Options	SATA Emulation	AHCI Mode (1 Disk) RAID Mode (2 Discs)
	Boot Order	EFI Boot Sources	Disable
		Legacy Boot Sources	ATAPI CD/DVD Drive ¹ Hard Drive SATA0 USB Hard Drive USB Floppy / CD Network Controller
Security Menu ²	Network Boot		Disable
Power Menu	OS Power	Idle Power Saving	Normal

Table 9-3 HP rp5800 BIOS Setting Changes

Setup Utility Menus	Selection	Setting/Selection	Setting/Action
Advanced Menu	Power On Options	POST Mode	Full Boot
		POST Messages	Enable
		Option ROM Prompt	Disable
		POST Delay	5 Seconds
		After Power Loss	Power On
	Device Options	Num Lock at Power-On	On
		Cash Drawer Port	Disable
		NIC Option ROM Download:	
	AMT Configuration	AMT	Disable (if option appears)
File Menu	Default Setup	Save Current Settings as Default	

¹ Setting may not appear on 4535 644 68911

² Additional configuration required when system board is replaced.

The HP rp5800 Setup Utility, which you can access by pressing the **F10** key at start up, permits verifying system configuration or changing factory default BIOS settings (if necessary). If you have not replaced the PC mother board and software for the HP rp5800 PC was loaded at the Philips factory, you do **not** have to change BIOS settings in the Setup Utility.

If you must replace the rp5800 PC mother board, use the BIOS that is pre-installed on the board. Then make the changes to the factory default BIOS settings described in the following steps. All possible BIOS settings are not shown; only BIOS settings that require changes from defaults are described.

To make changes to the HP factory default BIOS settings, do the following.

- 1 Shut down and restart the PC. Then watch for the on-screen message *<F10 = Setup>*.

- NOTE** The message *<F10 = Setup>* appears only briefly. If you miss it, restart the PC.
- 2 When you see the message, *<F10 = Setup>*, press the **F10** key.
 - 3 Select English in the Language selection menu and press Enter. The Setup Utility opens.

File Menu

- 1 From the **Setup Utility**, select **File > Default Setup** and press **Enter**. A **Default Setup** dialog opens.
- 2 From the **Default Setup** dialog, select **Restore Factory Settings as Default** and press **Enter**. A **Success** dialog shows the message, **Restored Factory Settings as Default**.

- 3** Press **Enter** to execute **OK** in the dialog.
- 4** Press **Esc** key to return to the **Setup Utility**. Then go to **File > Apply Defaults and Exit** and press **Enter**. Press **Enter** in the dialog to **Accept**.
The PC will restart.
- 5** When the PC restarts press **F10**.
The **Setup Utility** appears.
- 6** From the **Setup Utility** select **File > Set Time and Date** and press **Enter**.
The **Set Time and Date** dialog opens.
- 7** Set the desired time and date.
 - a** Use up/down arrow keys to move between **Time** and **Date**.
 - b** Use the tab key to move between **Hour** and **Minute** or **Month**, **Day**, and **Year** selections.
 - c** Use right/left arrow keys to adjust settings.
 - d** When changes are complete, press **F10** to accept changes and return to the **Setup Utility**.

Storage Menu

- 1** From the **Setup Utility** select **Storage > Storage Options** and press **Enter**.
The **Storage Options** dialog opens.
- 2** From the **Storage Options** dialogue select **SATA Emulation** and press **Enter**.
- 3** Select or verify the appropriate **SATA Emulation** setting.
AHCI for a single Hard Drive PC (default)
RAID for a dual Hard Drive PC in RAID mode
- 4** From the **Setup Utility** select **Storage > Boot Order** and press **Enter**.
The **Boot Order** dialog opens.
- 5** In the **Boot Order** dialog use the down-arrow to select **EFI Boot Sources** and press **F5 Disabled**.
- 6** Press the **F10** key to **Accept**.

- 7** In the **Boot Order** dialog under **Legacy Boot Sources** select **Hard Drive**, and press **Enter**.

A highlighted selection permits moving it to the desired position. Use the **Up** or **Down Arrow** keys to move **Hard Drive** to the *second* position in the list.

On a 4535 644 68911 device you must move **Hard Drive** to the *first* position

NOTE **ATAPI CD/DVD Drive** does not appear in the list for models without CD/DVD drives (4535 644 68911 devices).

The final settings should be:

```
ATAPI CD/DVD Drive
Hard Drive
SATA0
USB Hard Drive
USB Floppy/CD
Network Controller
```

- 8** Press the **F10** key to **Accept**.

Security Menu

- 1** From **Setup Utility** go to **Security > Network Boot** and press **Enter**.
A **Network Boot** dialog appears.
- 2** In the **Network Boot** dialog use the right or left arrow keys to change the setting to **Disabled** and press **F10** to **Accept**.
- 3** If you did **not replace** the System Board, continue to **Power Menu**.
If you **replaced** the System Board you **must** update information stored on the System Board as follows.
 - a** Select **System IDs**, then press **Ctrl + A** keys simultaneously.
 - b** When you release the keys press **Enter**.
The expanded **System IDs** menu opens.
 - c** Go to **Chassis Serial Number** and enter the *PC Serial Number* from your PC label.
You **must** use the **Backspace** key to correct typing errors.
 - d** Select **Product Name** and type the following *case-sensitive text exactly*.
Philips rp5800 Desktop
 - e** Press **F10** to Accept changes and exit.
 - f** Go to **File > Save Changes and Exit**. In the **Save Changes and Exit** dialog press **Enter** to **Accept**.
The System restarts.
 - g** When the System restarts press the **F10** key.
 - h** To verify the changes you made to **System IDs**, go to **File > System Information** in the **Setup Utility**. Verify the changed information for accuracy. If you must make corrections, *repeat steps a. through f.*
 - i** If information is correct press any key.

Power Menu

- 1 From **Setup Utility** go to **Power > OS Power Management** and press **Enter**.
- 2 Change **Idle Power Savings** setting to **Normal**.
- 3 Press **F10** to accept.

Advanced Menu

- 1 From **Setup Utility** go to **Advanced > Power On Options** and press **Enter**.
The **Power- On Options** dialog opens.
- 2 Change the following **Power- On Options** settings:

POST Mode:	Full Boot
POST Messages:	Enabled
Option ROM Prompt:	Disabled
After Power Loss:	Power On
POST Delay:	5 Seconds

- 3 Press **F10** to **Accept**.
- 4 Go to **Advanced > Device Options** and press **Enter**.
The **Device Options** dialog opens.
- 5 Change the following **Device Options**.

Num Lock State at Power-On:	On
NIC Option ROM Download:	Disabled
Cash Drawer Port:	Disabled

- 6 Press **F10** to **Accept** and return to the **Advanced** menu.
- 7 Go to **Advanced > AMT Configuration** (if listed) and press **Enter**.
The **AMT Configuration** dialog opens.
- 8 Select **AMT** and change its setting to **Disabled**, then press **F10** to **Accept**.

File Menu

- 1 From the **Setup Utility** go to **File > Default Setup** and press **Enter**.
- 2 Select **Save Current Settings as Default** and press **Enter** to **Accept**. Press **Enter** again in the **Success** dialog
- 3 Pres **ESC** to exit the dialog.
- 4 From the **Setup Utility** go to **File > Save Changes and Exit** and press **Enter**.
- 5 When you see the message, *Are you sure you want to Save Changes and Exit?*, select **Yes** and press **Enter**.
The system restarts.

HP DL380e Gen8 BIOS Settings

The HP DL380e Gen8 *Setup Utility*, which you can access by pressing the **F9** key at start up, permits verifying system configuration or changing factory default BIOS settings (if necessary). If you have **not replaced** the Server mother board and software for the DL380e Gen 8 was loaded at the Philips factory, you do **not** have to change BIOS settings.

If you **must replace** the DL380e Gen8 mother board, use the BIOS that is pre-installed on the board. Then make the changes to the factory default **BIOS settings** described in the following steps. All possible BIOS settings are not shown; only BIOS settings that require changes from defaults are described. An overview of default setting changes appear in **Table 9-4** and **Table 9-5** for **4535 643 83431** and **4535 644 84811** respectively.

Table 9-4 HP DL380e Gen8 4535 643 83431 BIOS Default Setting Change Overview

Setup Utility Menus	Selection	Setting
System Default Options	Restore Default System Settings	
System Options	Serial Port Options	
	Virtual Serial Port	Disabled
	Embedded NICs	
	NIC1 Boot Options	Disabled
	NUMLOCK Power-On State	On
	SATA Controller Options	
	Embedded SATA Configuration	Enable SATA AHCI Support
Standard Boot Order (IPL)	USB DriveKey (C:)	Set the IPL Device Boot Order to 4
Boot Controller Order	Ctrl:1	Controller Order 2
Date and Time	Use number keys to enter desired values.	
Server Availability	ASR Timeout	5 Min
	Wake-On LAN	Disabled
	POST F1 Prompt	Enabled
	Automatic Power On	Always Power On
BIOS Serial Console & EMS	BIOS Serial Console Port	Disabled
Advanced Options	Video Options	Embedded Video Primary, Optional Video Secondary
System Default Options	User Default Options	Save User Defaults

To make changes to the HP factory default BIOS settings, do the following.

NOTE During the Boot sequence, watch for the message *Press any key to see option ROM messages*. When you see the message, press any key. This allows you to see additional ROM Messages needed for ILO, RAID Configuration, and BIOS Settings.

- 1 **Shut down and restart** the Server.
During the server Boot sequence watch for the F9 icon on the lower left of the screen.
- 2 **Press F9** to display the **ROM-Based Setup Utility** (RBSU).

NOTE You must press **F9** immediately after the icon appears or the Server will continue the boot sequence. If you miss the **F9** icon, restart the Server by pressing the **Ctrl-Alt-Delete** keys simultaneously.

System Default Options

- 1 From the **ROM-Based Setup Utility** menu use the keyboard down arrow to select **System Default Options** and press **Enter** to open its submenu.
- 2 Select **User Default Options** and press **Enter**.
- 3 Select **Erase User Defaults** and press **Enter** twice.
- 4 Select **Yes, Erase** and press **Enter**.
The Server will restart.
- 5 When you see the F9 icon, press **F9** to access the **ROM-Based Setup Utility** (RBSU) again.
- 6 From the **ROM-Based Setup Utility** menu use the keyboard down arrow to select **System Default Options** and press **Enter** to open its submenu.
- 7 Select **Restore Default System Settings** and press **Enter** twice.
- 8 Select **Yes, Select to Restore** and press **Enter**.
Default settings are restored and the server restarts.
- 9 When you see the F9 icon, press **F9** to access the **ROM-Based Setup Utility** (RBSU) again.

System Options

- 1 In the **ROM-Based Setup Utility Main Menu** select **System Options** and press **Enter**. Then change the following **System Options** settings.
 - a Select **Serial Port Options** and press **Enter**, select **Virtual Serial Port** and press **Enter**, then change its setting to **Disabled** and press **Enter**. Press **Esc** to return to the previous menu.
 - b Select **Embedded NICs** and press **Enter**, then select **NIC1 Boot Options** and press **Enter** twice.
Change its setting to **Disabled** and press **Enter**, then press **Esc** to return to the previous menu.
 - c Select **NUMLOCK Power-On State** and press **Enter**.
Change its setting to **On** and press **Enter**.
 - d Select **SATA Controller Options** and press **Enter**, then select **Embedded SATA Configuration** and press **Enter** twice.
Select **Enable SATA AHCI Support** and press **Enter**.
- 2 Press the **Esc** key to return to the **ROM-Based Setup Utility** Main screen.

Standard Boot Order (IPL)

- 1 Use the down arrow key to select **Standard Boot Order (IPL)** and press **Enter**.
- 2 Use the down arrow key to select **USB DriveKey (C:)** and press **Enter**.
- 3 Use the down arrow key to select **Set the IPL Device Boot Order to 4** and press **Enter**.

The final settings should be:

- a. **CD-ROM Drive**
 - b. **Floppy Drive (A:)**
 - c. **Hard Drive C:**
 - d. **USB Drive Key (C:)**
 - e. **PCI Embedded HP Ethernet 1 Gb 4-Port 366i Adapter Port 1**
- 4 Press the **Esc** key to return to the **ROM Based Setup Utility Main Menu**.

Boot Controller Order

- 1 Use the down arrow key to select **Boot Controller Order** and press **Enter**.
- 2 Select **Ctrl:1** and press **Enter**.
- 3 Use the down arrow key to select **Controller Order 2** and press **Enter**.
- 4 Press the **Esc** key to return to the **ROM Based Setup Utility Main Menu**.

Date and Time

- 1 Use the down arrow key to select **Date and Time** and press **Enter**.
- 2 Set the **Date and Time** to desired values using the number keys and press **Enter**.

Server Availability

- 1 In the **ROM-Based Setup Utility Main Menu** select **Server Availability** and press **Enter** to open its menu. Then change the **Server Availability** settings as follows.
 - a Select **ASR Timeout** and press **Enter**. Change its setting to **5 Min** and press **Enter**.
 - b Select **Wake-On LAN** and press **Enter** twice. Change its setting to **Disabled** and press **Enter**.
 - c Select **POST F1 Prompt** and press **Enter**. Change its setting to **Enabled** and press **Enter**.
 - d Select **Automatic Power On** and press **Enter**. Change its setting to **Always Power On** and press **Enter**.
- 2 Press the **Esc** key to return to the **ROM-Based Setup Utility Main Menu**.

BIOS Serial Console & EMS

- 1 In the **ROM-Based Setup Utility Main Menu** select **BIOS Serial Console & EMS** and press **Enter** to open its menu. Then change the **BIOS Serial Console & EMS** settings as follows.
 - a Select **BIOS Serial Console Port** and press **Enter**.
 - b Select **Disabled** and press **Enter**.
- 2 Press the **Esc** key to return to the **ROM-Based Setup Utility Main Menu**.

Advanced Options

- 1 In the **ROM-Based Setup Utility** menu select **Advanced Options** and press **Enter**. Select **Advanced System ROM Options** and press **Enter**, then change the following settings.
 - Select **Video Options** and press **Enter**.
Select **Embedded Video Primary, Optional Video Secondary**, then press **Enter**.
- 2 Press **Esc** to return to the **ROM Based Setup Utility Main Menu**.

System Default Options

- 1 From the **ROM-Based Setup Utility** menu use the keyboard down arrow to select **System Default Options** and press **Enter** to open its submenu.
- 2 Select **User Default Options** and press **Enter**.
- 3 Select **Save User Defaults** and press **Enter** twice. Then select **Yes, Save** and press **Enter**.

The Server restarts.

HP DL380e Gen8 (4535 644 84811) BIOS Default Settings Changes

Table 9-5 HP DL380e Gen8 4535 644 84811 BIOS Default Settings Change Overview

Setup Utility Menus	Selection	Setting
System Default Options	Restore Default System Settings	
System Options	Serial Port Options	
	Virtual Serial Port	Disabled
	Embedded NICs	
	NIC1 Boot Options	Disabled
	NUMLOCK Power-On State	On
Standard Boot Order (IPL)	USB DriveKey (C:)	Set the IPL Device Boot Order to 4
Date and Time	Use number keys to enter desired values.	
Server Availability	ASR Timeout	5 Min
	Wake-On LAN	Disabled
	POST F1 Prompt	Enabled
	Automatic Power On	Always Power On
BIOS Serial Console & EMS	BIOS Serial Console Port	Disabled
Advanced Options	Video Options	Embedded Video Primary, Optional Video Secondary
System Default Options	User Default Options	Save User Defaults

System Default Options

- 1 From the **ROM-Based Setup Utility** menu use the keyboard down arrow to select **System Default Options** and press **Enter** to open its submenu.
- 2 Select **User Default Options** and press **Enter**.
- 3 Select **Erase User Defaults** and press **Enter** twice.
- 4 Select **Yes, Erase** and press **Enter**.
The Server will restart.
- 5 When you see the **F9** icon, press **F9** to access the **ROM-Based Setup Utility** (RBSU) again.
- 6 From the **ROM-Based Setup Utility** menu use the keyboard down arrow to select **System Default Options** and press **Enter** to open its submenu.
- 7 Select **Restore Default System Settings** and press **Enter** twice.
- 8 Select **Yes, Select to Restore** and press **Enter**.
Default settings are restored and the server restarts.
- 9 When you see the **F9** icon, press **F9** to access the **ROM-Based Setup Utility** (RBSU) again.

System Options

- 1 In the **ROM-Based Setup Utility Main Menu** select **System Options** and press **Enter**. Then change the following **System Options** settings.
 - a Select **Serial Port Options** and press **Enter**, select **Virtual Serial Port** and press **Enter**, then change its setting to **Disabled** and press **Enter**. Press **Esc** to return to the previous menu.
 - b Select **Embedded NICs** and press **Enter**, then select **NIC1 Boot Options** and press **Enter** twice. Change its setting to **Disabled** and press **Enter**, then press **Esc** to return to the previous menu.
 - c Select **NUMLOCK Power-On State** and press **Enter**. Change its setting to **On** and press **Enter**.
- 2 Press the **Esc** key to return to the **ROM-Based Setup Utility Main screen**.

Standard Boot Order (IPL)

- 1 Use the down arrow key to select **Standard Boot Order (IPL)** and press **Enter**.
- 2 Use the down arrow key to select **USB DriveKey (C:)** and press **Enter**.
- 3 Use the down arrow key to select **Set the IPL Device Boot Order to 4** and press **Enter**.

The final settings should be:

- a. **CD-ROM Drive**
 - b. **Floppy Drive (A:)**
 - c. **Hard Drive C: (see Boot Controller order)**
 - d. **USB Drive Key (C:)**
 - e. **PCI Embedded HP Ethernet 1 Gb 4-Port 366i Adapter Port 1**
- 4 Press the **Esc** key to return to the **ROM Based Setup Utility Main Menu**.

Date and Time

- 1 Use the down arrow key to select **Date and Time** and press **Enter**.
- 2 Set the **Date and Time** to desired values using the number keys and press **Enter**.

Server Availability

- 1 In the **ROM-Based Setup Utility Main Menu** select **Server Availability** and press **Enter** to open its menu. Then change the **Server Availability** settings as follows.
 - a Select **ASR Timeout** and press **Enter**. Change its setting to **5 Min** and press **Enter**.
 - b Select **Wake-On LAN** and press **Enter** twice. Change its setting to **Disabled** and press **Enter**.
 - c Select **POST F1 Prompt** and press **Enter**. Change its setting to **Enabled** and press **Enter**.
 - d Select **Automatic Power On** and press **Enter**. Change its setting to **Always Power On** and press **Enter**.
- 2 Press the **Esc** key to return to the **ROM-Based Setup Utility Main Menu**.

BIOS Serial Console & EMS

- 1 In the **ROM-Based Setup Utility Main Menu** select **BIOS Serial Console & EMS** and press **Enter** to open its menu. Then change the **BIOS Serial Console & EMS** settings as follows.
 - a Select **BIOS Serial Console Port** and press **Enter**.
 - b Select **Disabled** and press **Enter**.
- 2 Press the **Esc** key to return to the **ROM-Based Setup Utility Main Menu**.

Advanced Options

- 1 In the **ROM-Based Setup Utility** menu select **Advanced Options** and press **Enter**. Select **Advanced System ROM Options** and press **Enter**, then change the following settings.
 - Select **Video Options** and press **Enter**. Select **Embedded Video Primary, Optional Video Secondary**, then press **Enter**.
- 2 Press **Esc** to return to the **ROM Based Setup Utility Main Menu**.

System Default Options

- 1 From the **ROM-Based Setup Utility** menu use the keyboard down arrow to select **System Default Options** and press **Enter** to open its submenu.
- 2 Select **User Default Options** and press **Enter**.
- 3 Select **Save User Defaults** and press **Enter** twice. Then select **Yes, Save** and press **Enter**.

HP DL180 Gen9 UEFI Default Settings

HP DL180 Gen9 servers have Unified Extensible Firmware Interface (UEFI) code embedded in the system ROM. The UEFI System Utilities function is similar to the RBSU of legacy BIOS. With UEFI, however, you can access all parameters—system and options—from the UEFI System Utilities menu.

The HP DL180 Gen9 *Setup Utility*, which you can access by pressing the **F9** key at server start up, permits verifying system configuration or changing factory default UEFI settings (if necessary). If you have **not replaced** the server motherboard and software for the HP DL180 Gen9 that was loaded at the Philips factory, you do **not** have to change these settings.

If you **must replace** the DL180 Gen9 motherboard, UEFI firmware is pre-installed on the replacement board with factory default settings. Before installing PIIC iX software you must make the changes to the factory default **settings** described in the following steps. All possible settings are not shown; only settings that require changes from defaults are described.

HP ROM-Based Setup Utility (RBSU) functionality is a configuration option available from HP Unified Extensible Firmware Interface (UEFI) System Utilities. An overview of default System Configuration setting changes appear in **Table 9-7**.

Table 9-6 System Utilities Navigation Keys

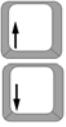
F9	During server POST or system reboot, displays the System Utilities screen.
F1	Opens a description of the selection
	Up/down Arrow keys select menu items and change settings (move the cursor up or down).
	Selects and entry or opens a submenu
	Returns to the previous screen
F10	Saves selection

Table 9-7 HP DL180 Gen9 BIOS/Platform Configuration (RBSU) Default Setting Changes

Setup Utility Menus	Selection	Setting
System Options	Serial Port Options	
	Virtual Serial Port	Disabled
	Boot Time Optimizations	
	Extended Memory Test	Enabled
Boot Options	UEFI Optimized Boot	Enabled
Network Options	Network Boot Options	
	Network Boot Retry Support	Disabled
Performance Options	Intel® Turbo Boost Technology	Disabled
Server Security	Secure Boot Configuration	Shows Secure Boot Enforcement status
	Secure Boot Enforcement	Enabled (PIIC iX B.01.01 and later)
PCI Device Enable/Disable	Embedded SATA Controllers #1	Disabled
	Embedded SATA Controllers #2	Disabled
Server Availability	ASR Timeout	[5]
	Wake-On LAN	Disabled
	Automatic Power On	Always Power On
BIOS Serial Console & EMS	BIOS Serial Console Port	Disabled
Date and Time	Use number keys to enter desired values for Date and Time . Use arrow keys to select desired Time Zone from the list.	
System Default Options	User Default Options	Save User Defaults

To restore HP factory default settings, do the following.

- 1 Restart the server, and during the server Boot sequence watch for the **F9** icon at the bottom of the screen. Then press **F9** to access **System Utilities**.
- 2 From the **System Utilities** screen go to **System Configuration > BIOS/Platform Configuration (RBSU)**.
- 3 From the **BIOS/Platform Configuration (RBSU)** screen go to **System Default Options** and press **Enter**.
- 4 Select **User Default Options** and press **Enter**.
- 5 Select **Erase User Defaults** and press **Enter** twice.
- 6 Select **Yes, erase the current settings** and press **Enter**.
- 7 Press **F10** and select **Y** in the message to save the setting.
A **Change Saved** message appears.
- 8 Press **Esc** twice.
- 9 Select **Restore Default Settings** and press **Enter** twice. Then select **Yes, Restore the Default Settings**.

- 10** When you see the message, **Do you want to Reboot the System?**, enter **Yes**. Then press **Enter**.

To make PIIC iX required changes to the HP factory default settings, do the following.

- 1** Restart the server.
- 2** During the server Boot sequence watch for the **F9** icon at the bottom of the screen, then press **F9** to access **System Utilities**.

Important If iLO is enabled be sure Network Interface Adapter is configured so that iLO uses a separate iLO Network Port ([page 9-34](#)).

- 3** From the **System Utilities** screen go to **System Configuration > BIOS/Platform Configuration (RBSU)**.

System Options

- 1** From the **BIOS/Platform Configuration (RBSU)** screen select **System Options** and press **Enter**.
- 2** Change the following **System Options** settings.
 - a** Select **Serial Port Options** and press **Enter**, select **Virtual Serial Port** and press **Enter**, then change its setting to **Disabled** and press **Enter**. Press **Esc** to return to the previous menu.
 - b** Select **Boot Time Optimizations** and press **Enter**, select **Extended Memory Test** and press **Enter**, then change its setting to **Enabled** and press **Enter**. Press **Esc** to return to the previous menu.
- 3** Press **Esc** to return to the **BIOS/Platform Configuration (RBSU)** screen.

Boot Options

- 1** From the **BIOS/Platform Configuration (RBSU)** screen select **Boot Options** and press **Enter**.
- 2** Select **UEFI Optimized Boot** and press **Enter**, then change its setting to **Enabled** and press **Enter**.
- 3** Press **Esc** until you return to the **BIOS/Platform Configuration (RBSU)** screen.

Network Options

- 1** From the **BIOS/Platform Configuration (RBSU)** screen select **Network Options** and press **Enter**.
- 2** Select **Network Boot Options** and press **Enter**. Then select **Network Boot Retry Support** and press **Enter**, and change its setting to **Disabled** and press **Enter**.
- 3** Press **Esc** twice to return to the **BIOS/Platform Configuration (RBSU)** screen.

Performance Options

- 1 From the **BIOS/Platform Configuration (RBSU)** screen select **Performance Options** and press **Enter**.
- 2 Select **Intel® Turbo Boost Technology** and press **Enter**. Then change its setting to **Disabled** and press **Enter**.
- 3 Press **Esc** to return to the previous menu.

Server Security

NOTE When enabled, Secure Boot ensures that each component launched during the boot process is digitally signed, and that the signature is validated against a set of trusted certificates embedded in the UEFI BIOS.

- 1 From the **BIOS/Platform Configuration (RBSU)** screen select **Server Security** and press **Enter**.
- 2 Select **Secure Boot Settings** and press **Enter**.
- 3 Select **Secure Boot Enforcement**, change its setting to **Enabled** and press **Enter**.
- 4 Press **Esc** until you return to the **BIOS/Platform Configuration (RBSU)** screen.

PCI Device Enable/Disable

- 1 In the **BIOS/Platform Configuration (RBSU)** screen select **PCI Device Enable/Disable** and press **Enter**.
- 2 Select **Embedded SATA Controllers #1 : Dynamic Smart Array B140i 6 Port** and press **Enter**. Then change its setting to **Disabled** and press **Enter**.
- 3 Select **Embedded SATA Controllers #2 : Dynamic Smart Array B140i 4 Port** and press **Enter**. Then change its setting to **Disabled** and press **Enter**.
- 4 Press **Esc** until you return to the **BIOS/Platform Configuration (RBSU)** screen.

Server Availability

- 1 In the **BIOS/Platform Configuration (RBSU)** screen select **Server Availability** and press **Enter**. Then change the **Server Availability** settings as follows.
 - a Select **ASR Timeout** and press **Enter**. Change its setting to **5 Min** and press **Enter**.
 - b Select **Wake-On LAN** and press **Enter**. Change its setting to **Disabled** and press **Enter**.
 - c Select **Automatic Power On** and press **Enter**. Change its setting to **Always Power On** and press **Enter**.
- 2 Press the **Esc** until you return to the **BIOS/Platform Configuration (RBSU)** screen.

BIOS Serial Console & EMS

- 1 In the **BIOS/Platform Configuration (RBSU)** screen select **BIOS Serial Console & EMS** and press **Enter** to open its menu.
- 2 Select **BIOS Serial Console Port** and press **Enter**. Change its setting to **Disabled** and press **Enter**.

- 3 Press **Esc** until you return to the **BIOS/Platform Configuration (RBSU)** screen.

Date and Time

- 1 In the **BIOS/Platform Configuration (RBSU)** screen use the down arrow key to select **Date and Time** and press **Enter**.
- 2 Set the **Date**, **Time**, and **Time Zone** to desired values.
 - a To set **Date** and **Time** use the arrow keys to progress through fields, the **Enter** key to select the desired field for change, and numeric keys to type values.
 - b To set **Time Zone** press **Enter** open the time zone list, use arrow keys to scroll the list to the desired time zone, and press **Enter**.
- 3 Press **Esc** until you return to the **BIOS/Platform Configuration (RBSU)** screen.

System Default Options

- 1 In the **BIOS/Platform Configuration (RBSU)** screen use the keyboard down arrow to select **System Default Options** and press **Enter** to open its submenu.
- 2 Select **User Default Options** and press **Enter**.
- 3 Select **Save User Defaults** and press **Enter** twice. Then select **Yes, Save** and press **Enter**.
- 4 Press **F10** to save, then in the following message press **Y** to save and exit.
A Change Saved message appears.
- 5 Press **Esc** until you return to the **System Utility** screen.

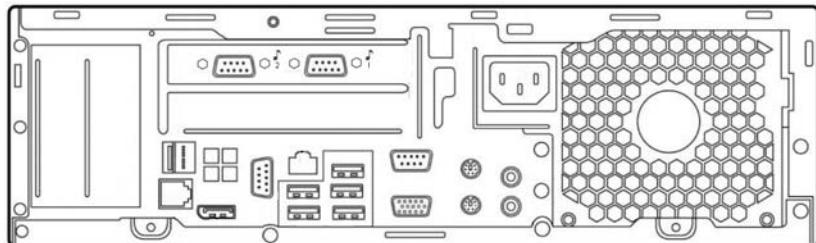
Reboot the System

- 1 From the **System Utility** screen, select **Reboot the System** and press **Enter**.
- 2 When the message appears, *Are you sure you want to reboot the system?*, press **Enter** to restart the system.

Replacing the HP rp5800 Audio Card

Some HP rp5800 PCs are shipped with a PCIe® Audio card that has two amplifiers and two D-Connectors so that two speakers can operate simultaneously.

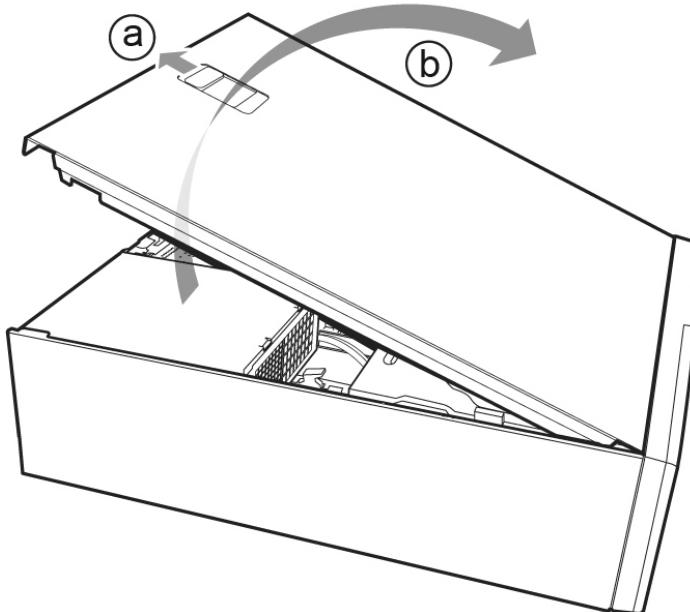
Important One speaker is normally attached to connector marked “I” on the audio card. A second speaker is available as a purchase option (866424 SPK).



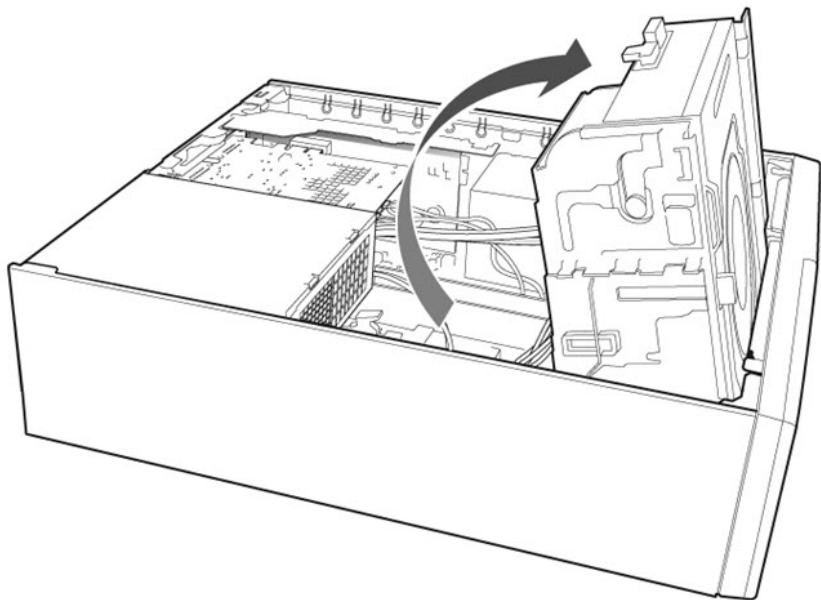
Removing a Defective Audio Card

If the Audio card in your HP rp5800 is non functional you must remove the defective card and replace it using ESD-safe methods.

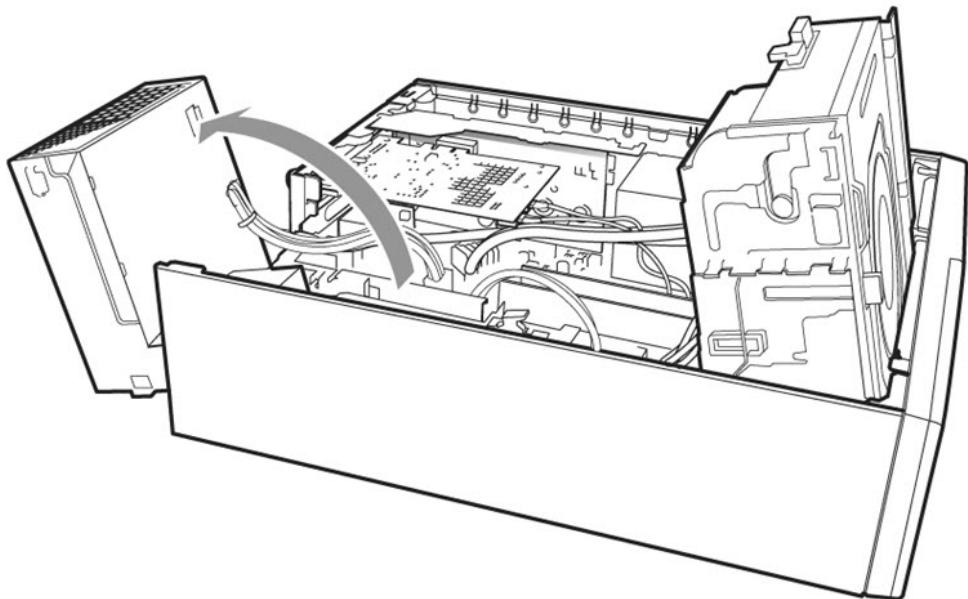
- 1 Turn off the computer and any peripheral devices that are connected to it.
- 2 Disconnect the power cord from the electrical outlet and then from the computer.
- 3 Disconnect all peripheral device cables from the computer.
- 4 Remove the PC cover.
 - a Slide the access panel handle toward the rear of the computer.
 - b Then lift the access panel up and off the computer.



5 Rotate the drive cage upright



6 Rotate the power supply upright so you can remove or install the Audio Card.



Some early Audio cards shipped with two connecting cables, but currently are shipped with a single connecting cable.

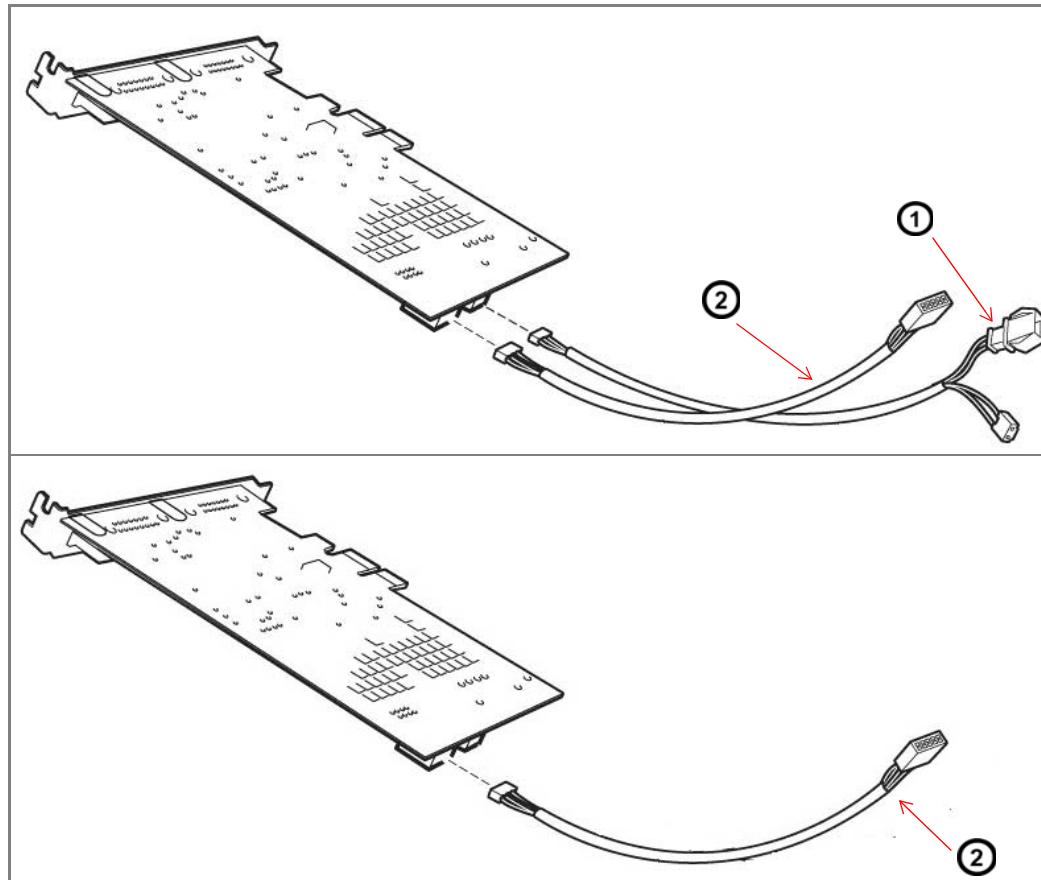
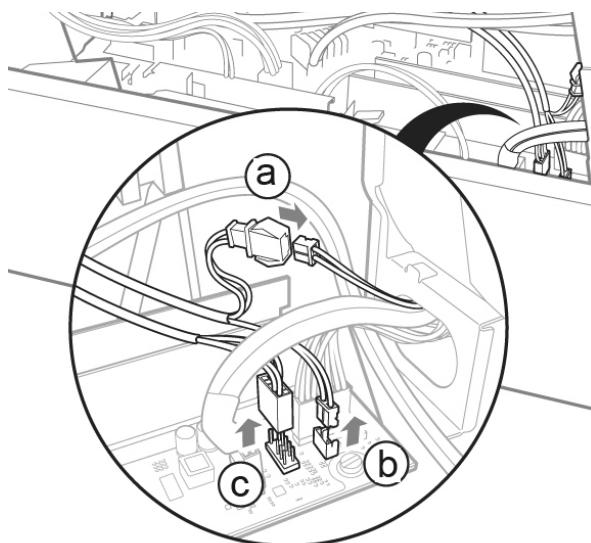


Figure 9-1 Audio Card Configurations

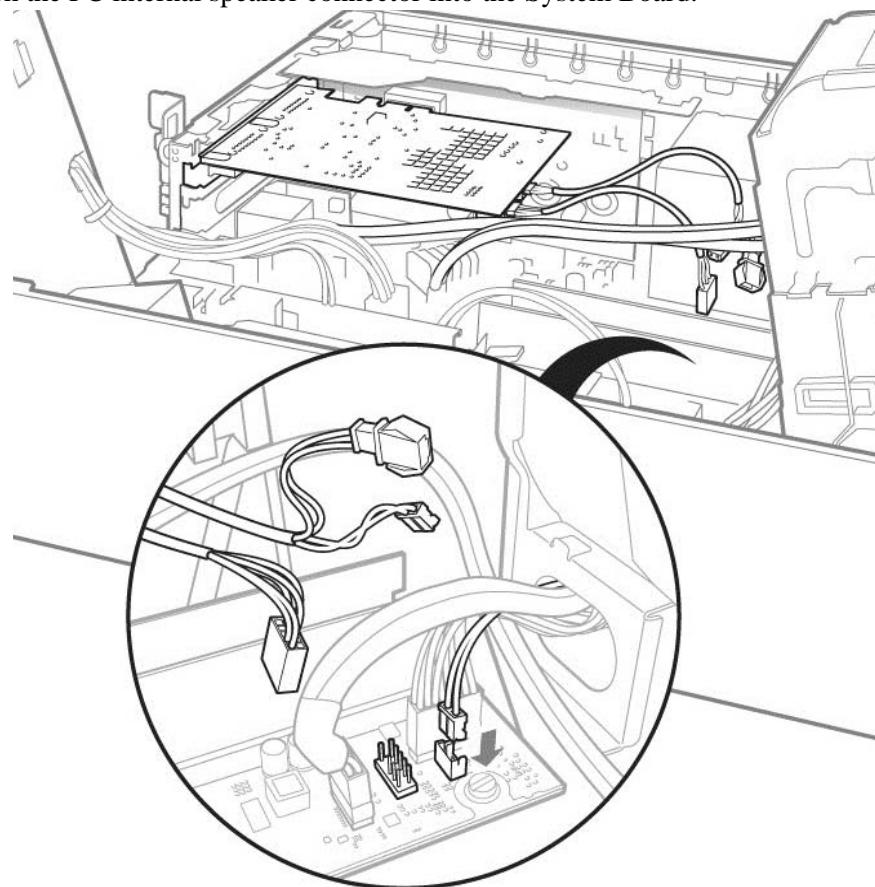
To remove a 2-Cable Audio card do the following.

Important You must attach the internal speaker connector into the System Board later because Cable 1 must be discarded.

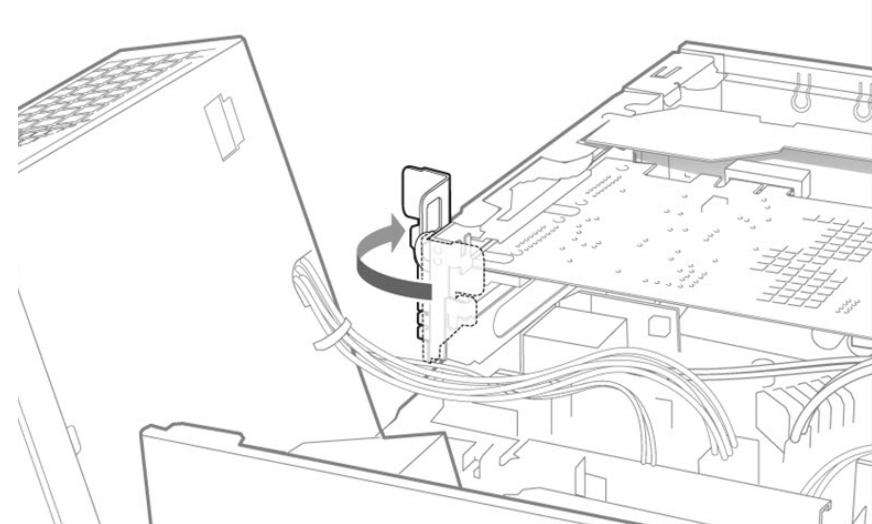
- I Disconnect both audio cables from the PC Board and internal speaker.
 - a Unplug audio cable ① (**Figure 9-1**) internal speaker connector.
 - b Unplug audio cable ① (**Figure 9-1**) System Board connector.
 - c Unplug audio cable ② (**Figure 9-1**) *Philips Audio* System Board connector.



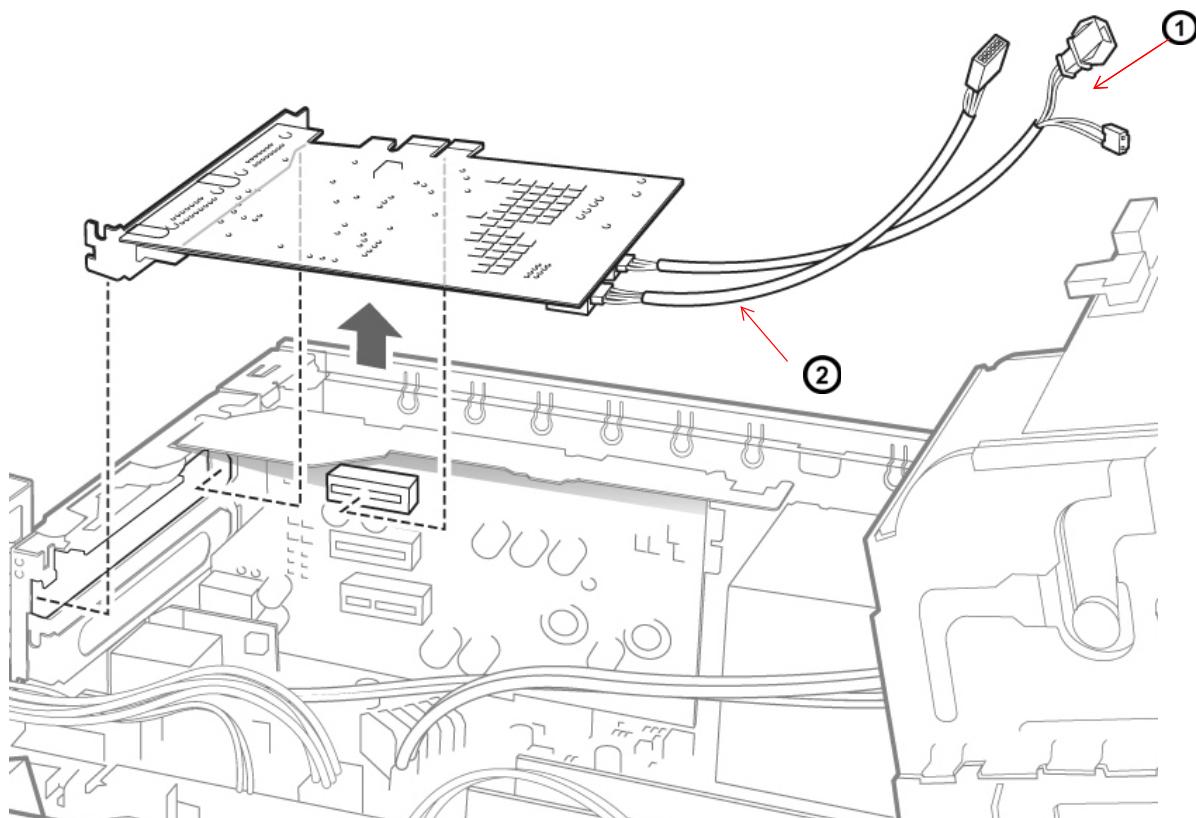
2 Attach the PC internal speaker connector into the System Board.



3 Release the Retainer that secures card.



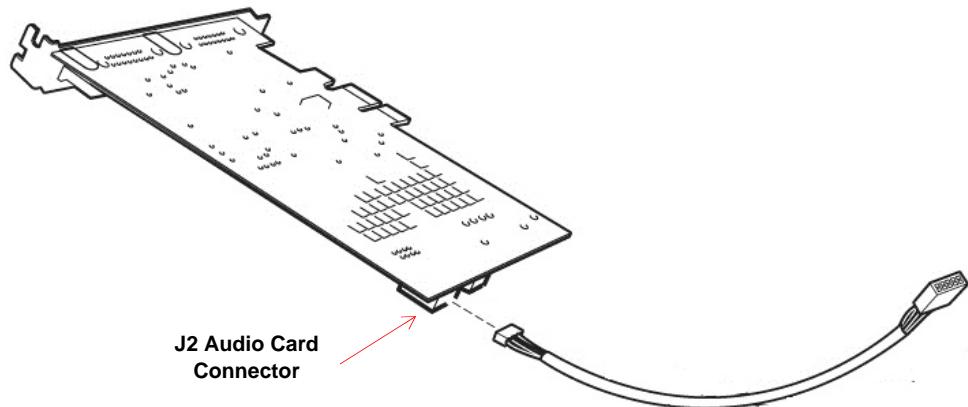
- 4 Remove the defective 2-Cable audio card from the unit.



- 5 Disconnect both connecting cables from the audio card and discard cable ① (4535 642 62701). It is not used any longer to connect the Audio Card to the PC System Board.

Installing the Replacement Audio Card

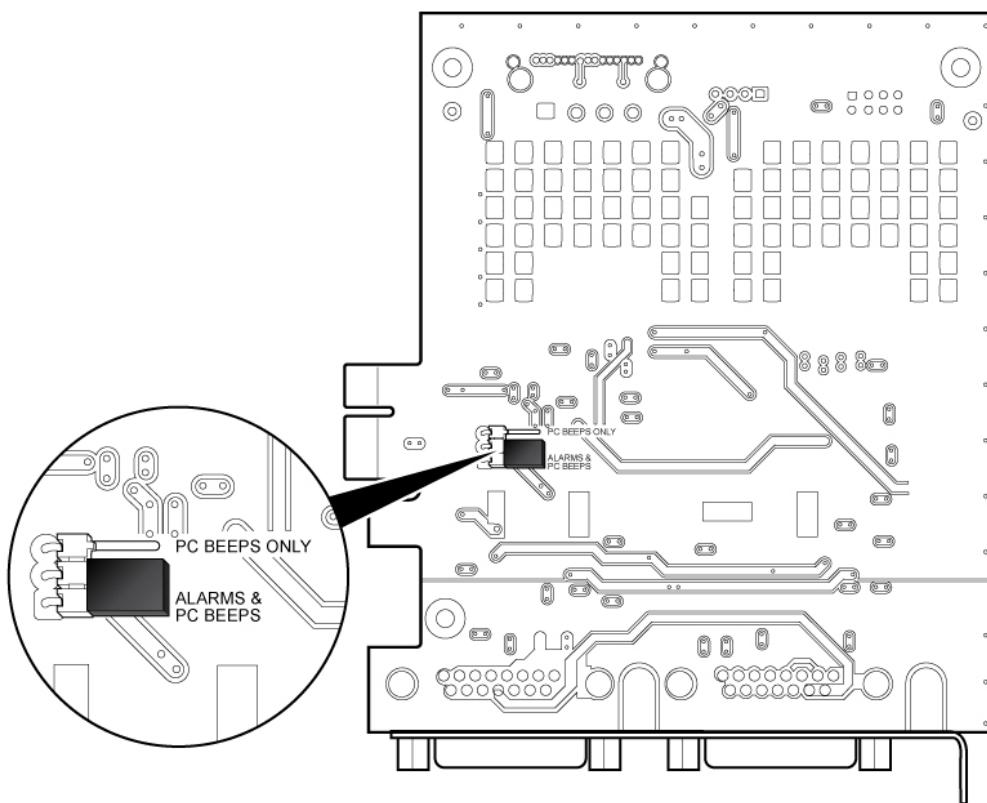
- 1 Before installing the new Audio Card, connect cable (4535 642 59361) to the **J2** Audio Card connection. A cable label shows which connector attaches to the Audio Card (**Amp Bd -->**). Each connector only mates with the appropriate interface.



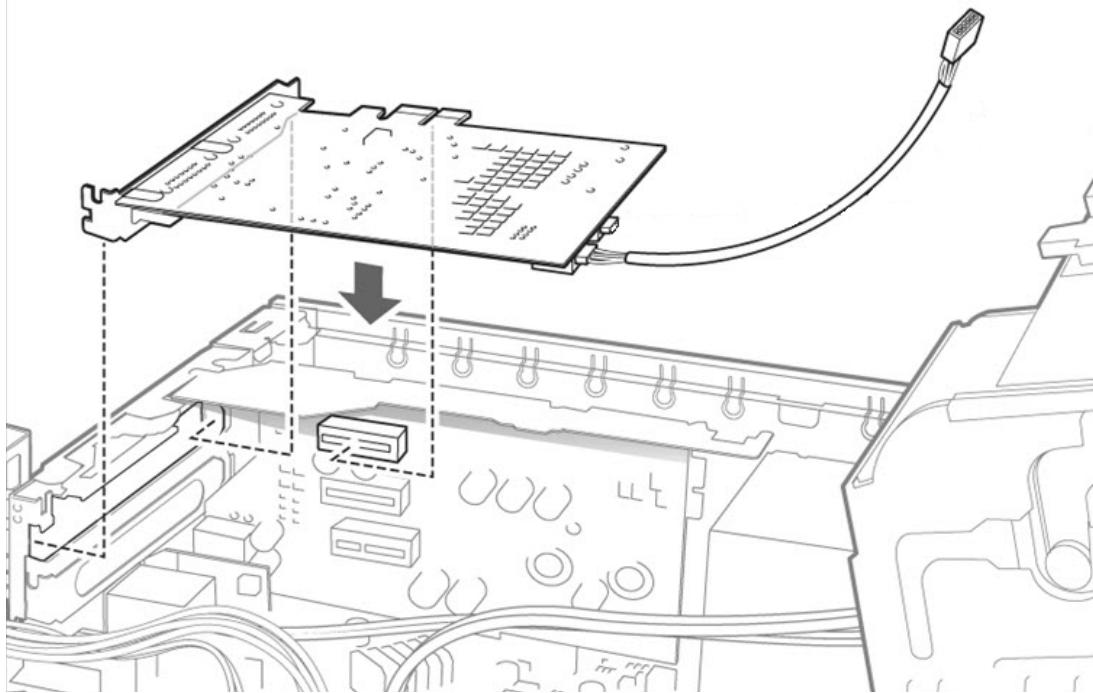
- 2 Check Audio Card Jumper position.

Be sure the Jumper **J11** on the back of the rp5800 Audio Amplifier Card is in the default **Alarms & PC Beeps** position (pins 1 and 2).

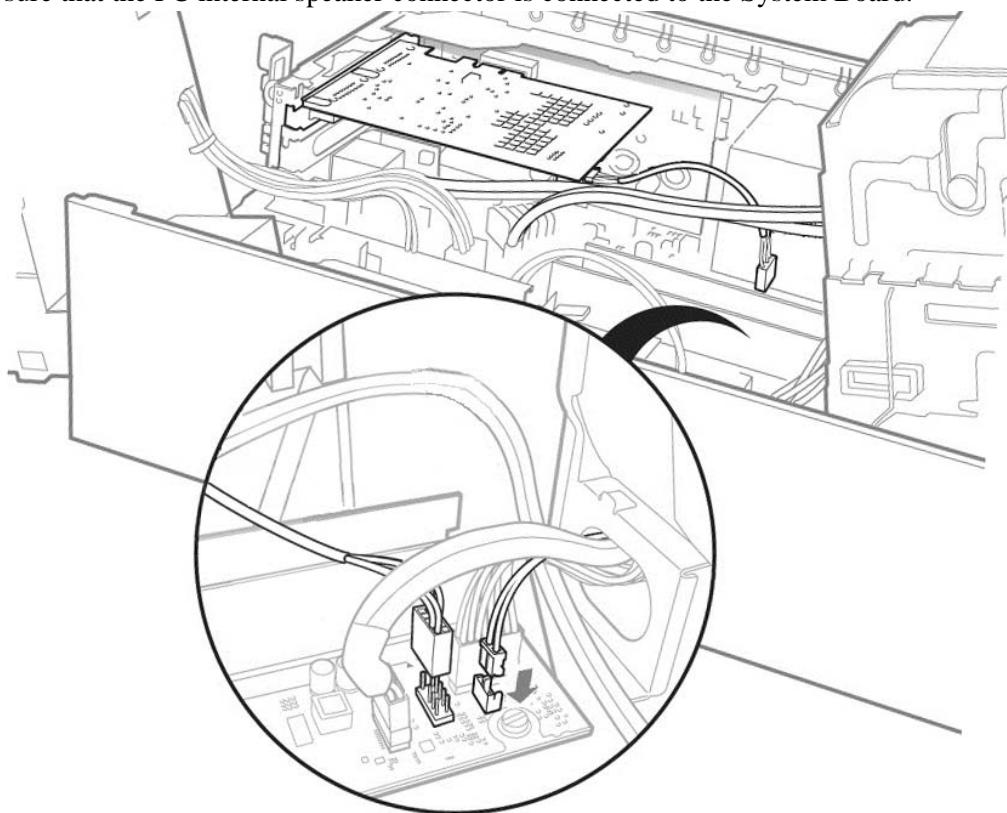
Disregard the labeling on the back of the card...



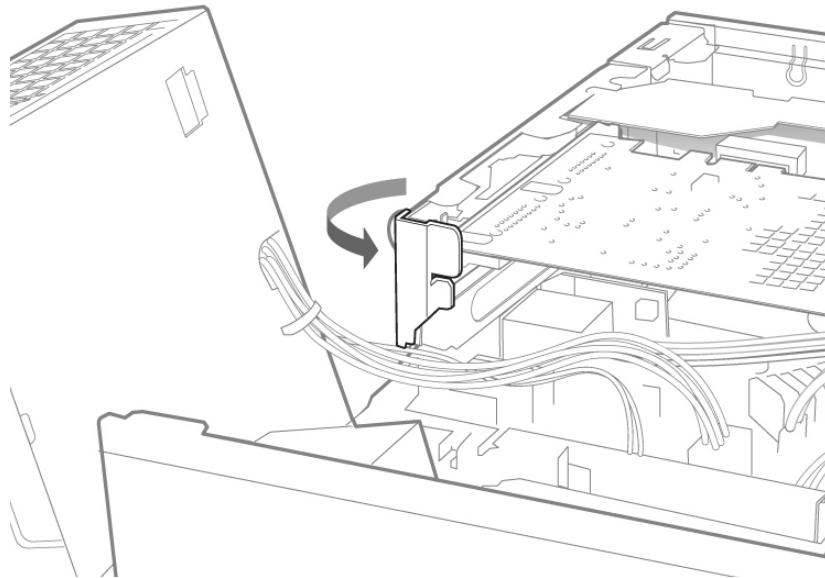
- 3 Press the new single cable Audio Card into the bay. Align the tabs with the slot.



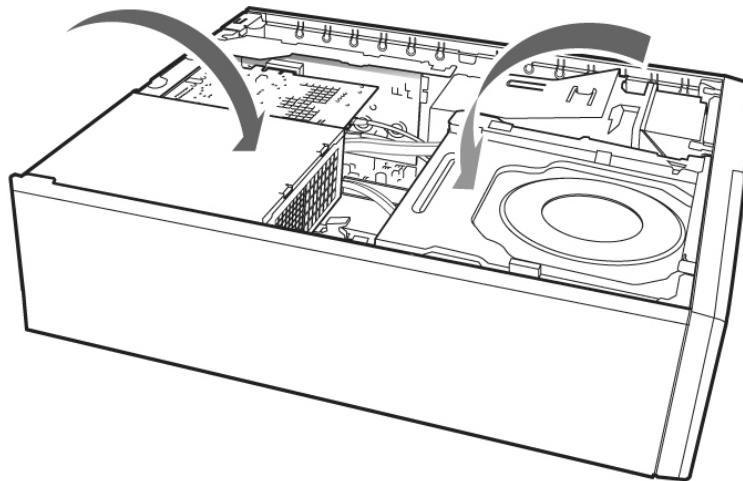
- 4 Plug the audio cable connector into the *Philips Audio* connector of the System Board. Be sure that the PC internal speaker connector is connected to the System Board.



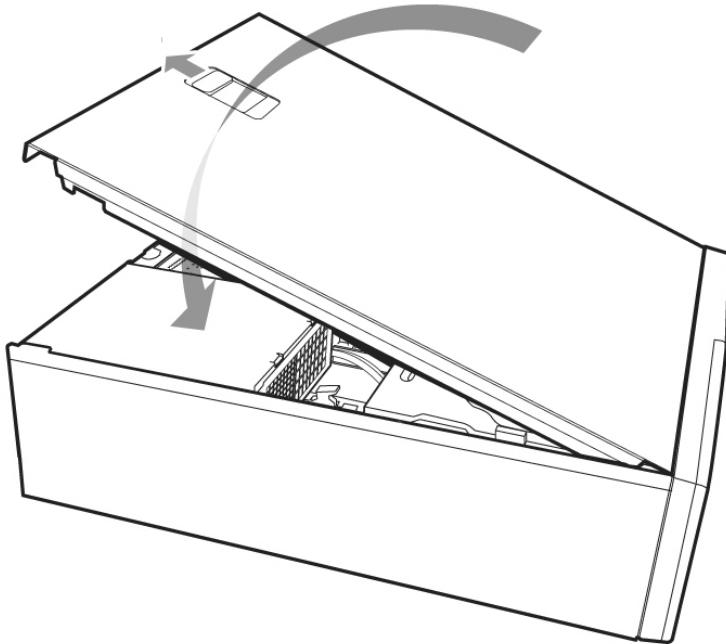
5 Use the Retainer to secure the Audio Card in the bay.



6 Rotate the Power Supply and Drive Cage back to initial orientation.



- 7 Replace the PC cover.



- 8 Refer to **Test and Inspection Procedures** to validate product operation.

Installing Second Power Supply in Server

In a system with two power supplies, if one power supply fails, the system will continue to operate. A failure is indicated by the front panel Health LED changing from green to flashing amber.

WARNING¹ This equipment must be installed by trained service personnel. This includes an understanding of equipotential grounding of separate power mains branches.

Power redundancy requires the presence of two Power Supplies in the Server iX.

CAUTION The default and redundant power supplies in the server must have the same output power capacity. Verify that all power supplies have the same part number and label color. The system becomes unstable and might shut down when it detects mismatched power supplies.

	HP DL380e Gen8	HP DL180 Gen9
	HP Gold Series 503296-B21	HP Gold Series 744689-B21
<i>Output</i>	460 W	800 W
<i>Label Color</i>	Blue	

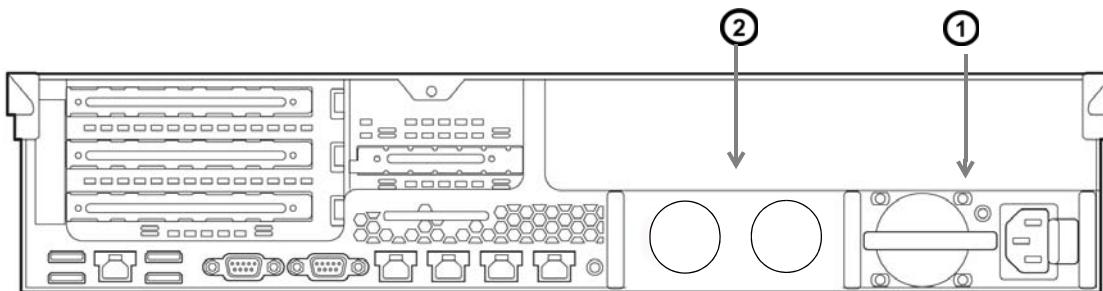
CAUTION To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Redundancy Considerations

- Each Server IX must be connected to a UPS that is powered by a backup emergency power system.
- To achieve full redundancy, each UPS must provide redundancy and be powered from separate mains branches. This means that a dead battery or an overloaded branch circuit breaker will not compromise the performance of the redundant power supplies.
- The separate mains branches must have equipotential grounds to avoid unacceptably high ground-loop and touch currents.

1. References: IEC 60364, IEC 60950-1 Second Edition, NFPA 70, NFPA 99

Replacing HP DL380 Gen8 Power Supply

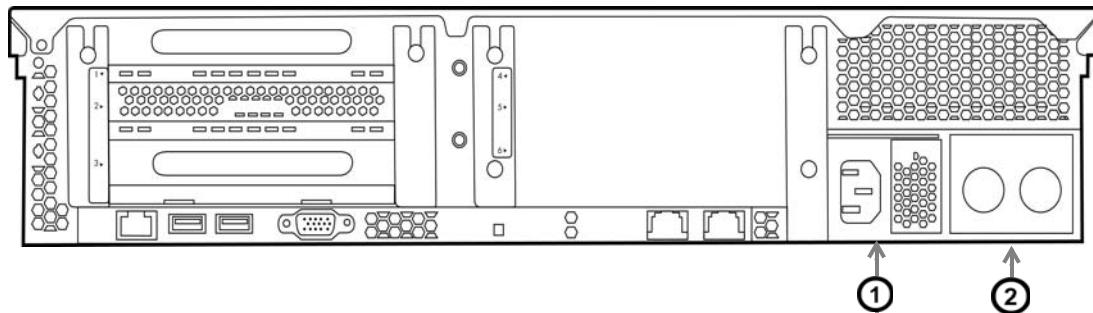


- 1 Remove EMI shield from power supply bay ②. Pinch the blank in the center and pull it out of the power supply bay.
- 2 Remove the protective cover from the connector pins on the power supply.

WARNING To reduce the risk of electric shock or damage to the equipment, do not connect the power cord to its UPS until the power supply is installed in the server power supply bay.

- 3 Slide the redundant power supply into the power supply bay until it is fully seated and clicks into place.
- 4 Connect a second power cord between the new power supply and its UPS.
- 5 After you power on the server confirm that both Power Supply LEDs are green.

Replacing HP DL180 Gen9 Power Supply



- 1 Remove EMI shield from power supply bay ②. Pinch the blank in the center and pull it out of the power supply bay.
- 2 Remove the protective cover from the connector pins on the power supply.

WARNING To reduce the risk of electric shock or damage to the equipment, do not connect the power cord to its UPS until the power supply is installed in the server power supply bay.

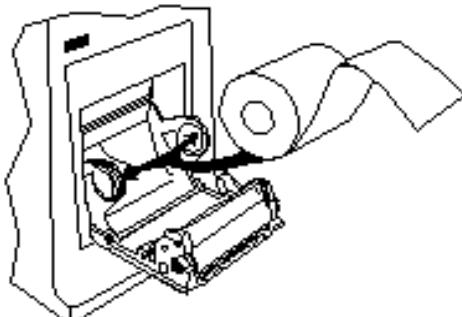
- 3** Slide the redundant power supply into the power supply bay until it is fully seated and clicks into place.
Be sure the redundant power supply is flush with the adjacent power supply.
- 4** Connect a second power cord between the new power supply and its UPS.
- 5** After you power on the server confirm that both Power Supply LEDs are lit green.

Loading USB 2-Channel Recorder Paper

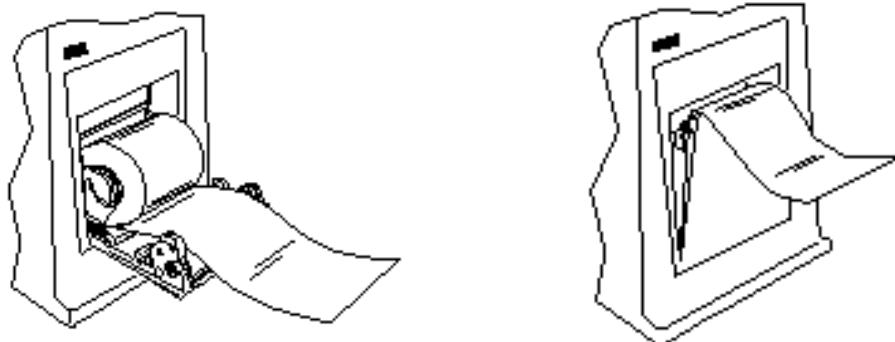
A message appears at the top of the screen when the recorder is out of paper. The USB 2-channel recorder requires M4816/17A paper to operate properly.

NOTE The only paper that can be used with the USB 2-Channel Recorder is M4816/17A. If the wrong paper is installed, recordings will not print.

- 1 Insert a new roll with paper feeding from the bottom.



- 2 Pull the paper so it extends beyond the edge of the door and close the recorder door.

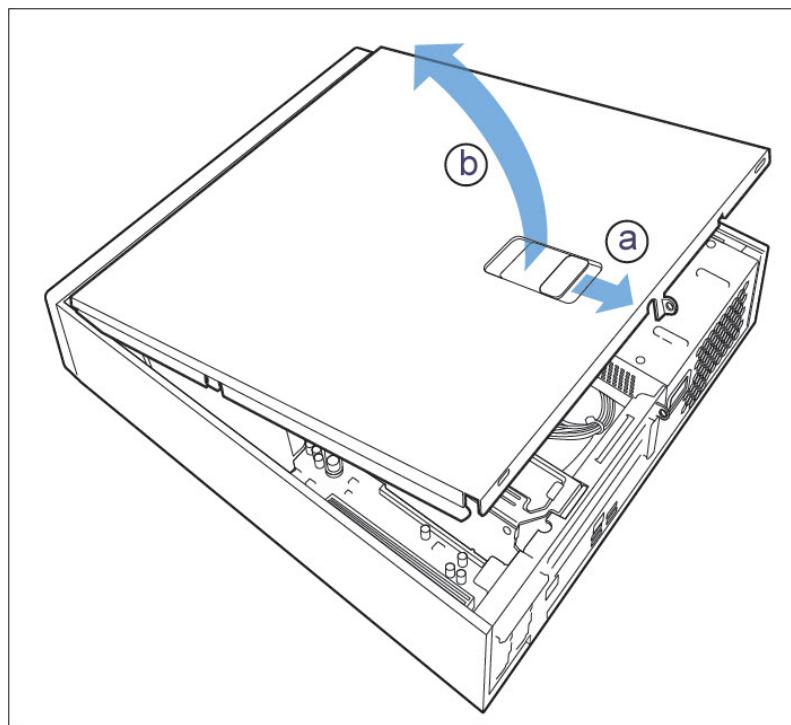


Responding to HP rp5800 Drive Failure

Replacing HP rp5800 Raid Drives

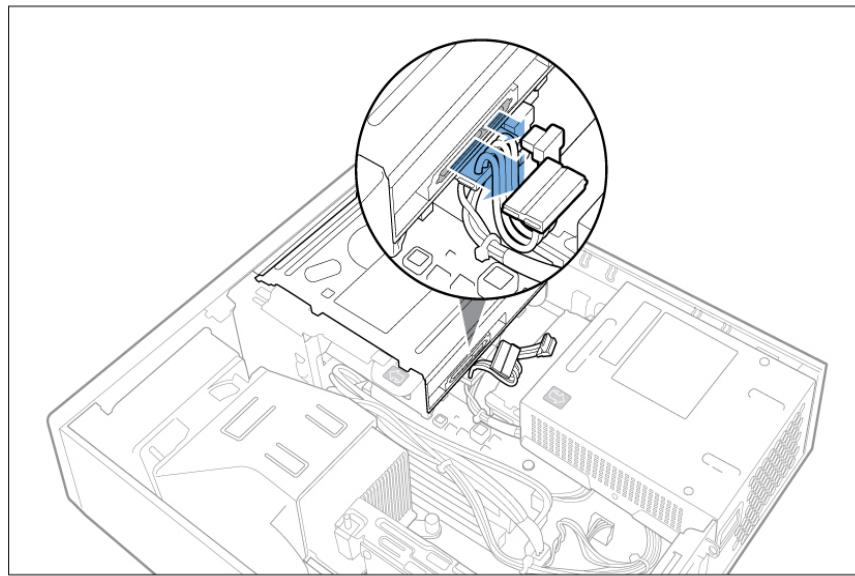
After a drive has failed remove the original RAID-1 disks and physically install two identical hard disks, Support Kit number 4535 643 83441, into the HP rp5800. To ensure error-free RAID performance on the HP rp5800, identical disk drives must be used.

- I With the PC unplugged and using ESD-safe methods, remove the access panel.
 - a Slide the access panel handle toward the rear of the computer.
 - b Lift the access panel up and off the computer

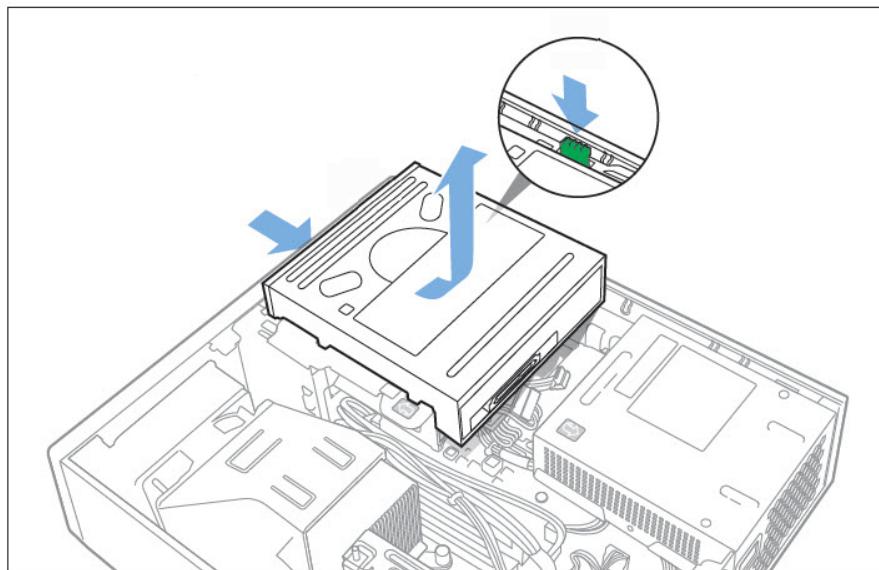


- 2 Remove the front bezel.

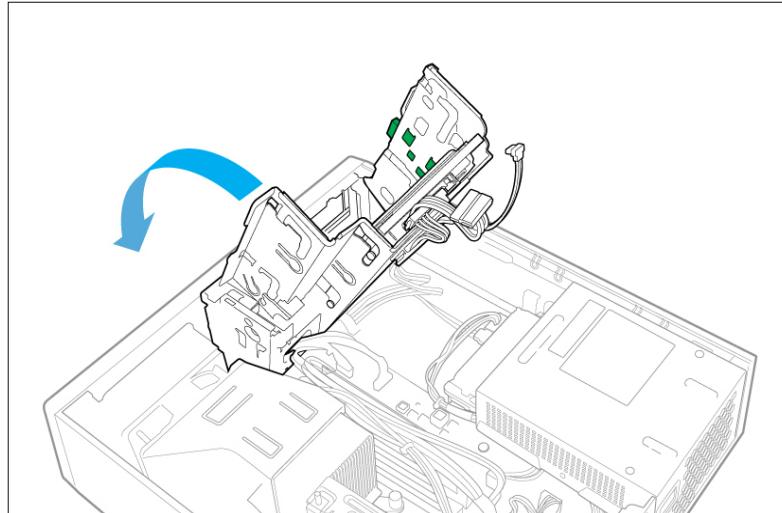
- 3** Disconnect the power cable and data cable connectors from the back of the Optical drive. Label the connectors for identification when you must re-install the Optical drive.



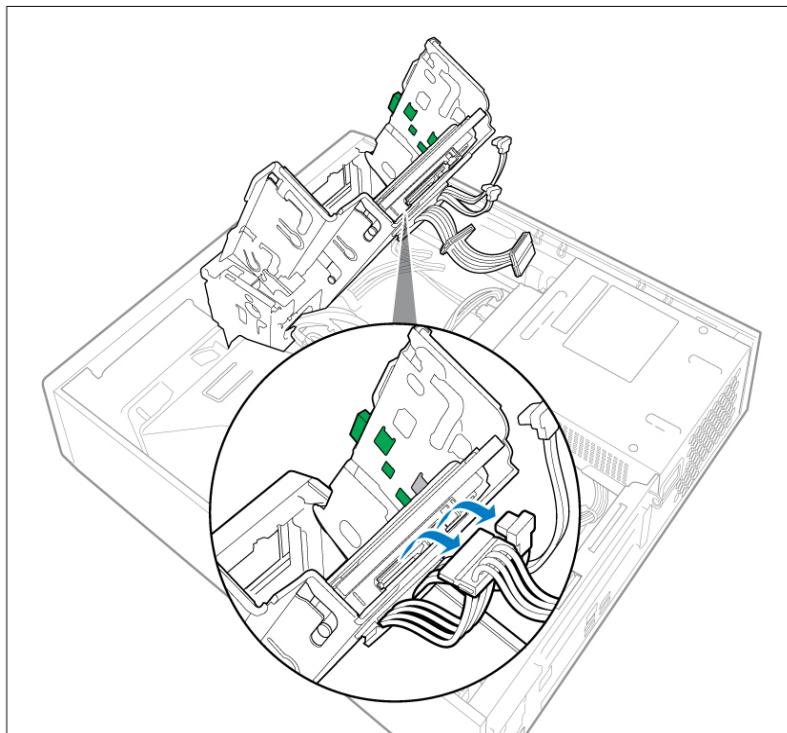
- 4** Press down on the green drive retainer button located on the left side of the drive to disengage the optical drive from the drive cage. While pressing the green drive retainer button, slide the drive back until it stops. Then lift the optical drive up and out of the drive cage.



5 Rotate the drive cage to its upright position.

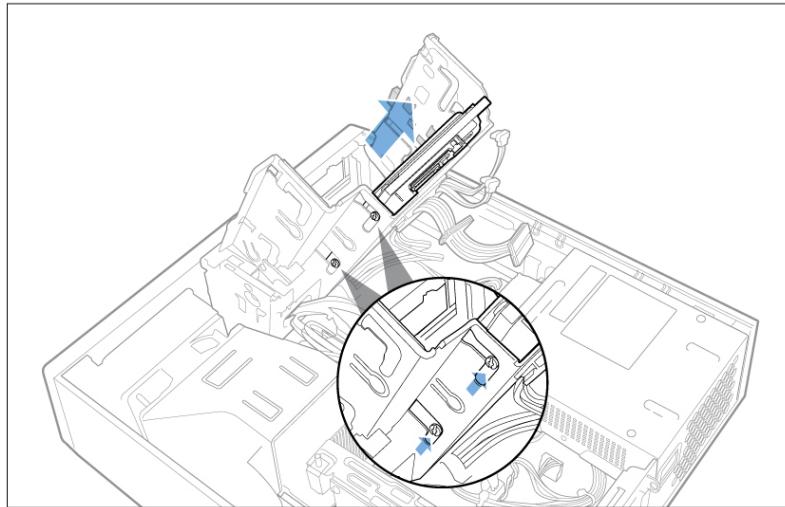


6 Disconnect the cable connectors from the drive as shown in the illustration.

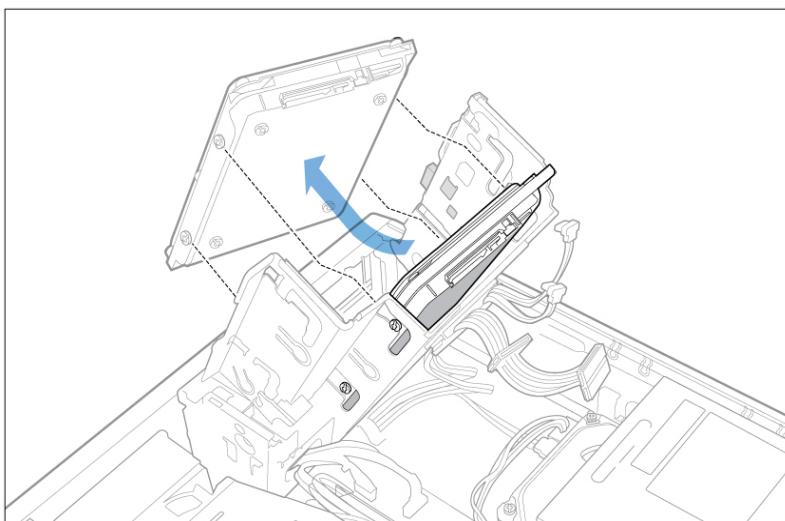


7 Remove the Drive.

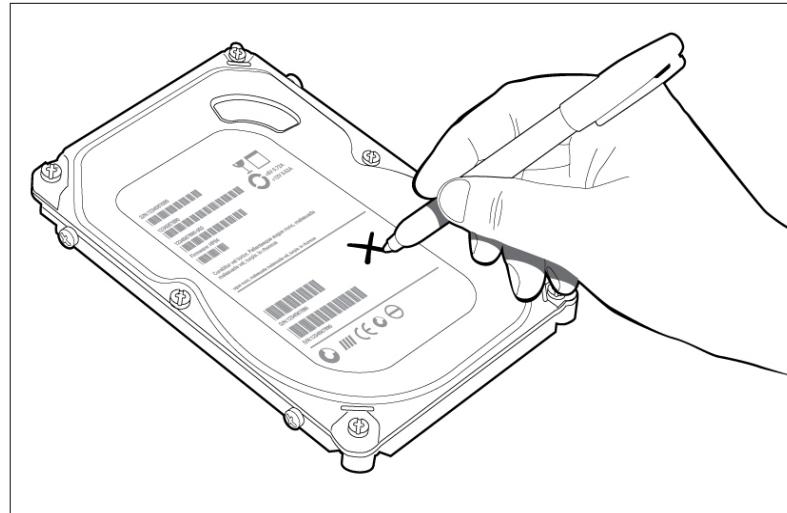
- a Slide the drive so that the mounting screws travel forward in the angled slots.



- b Lift the drive out of the cage when the guide screws align with the vertical side of the angled slot.



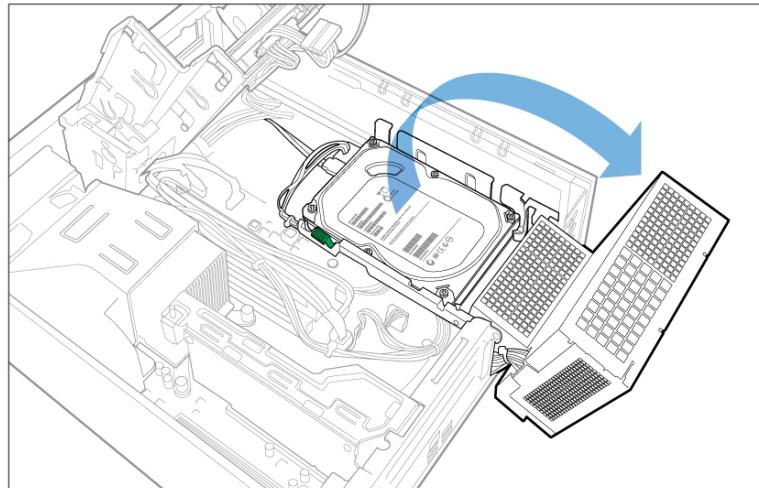
- c Be sure to mark the removed drive so you will not mistake it for one of the new kit - drives.



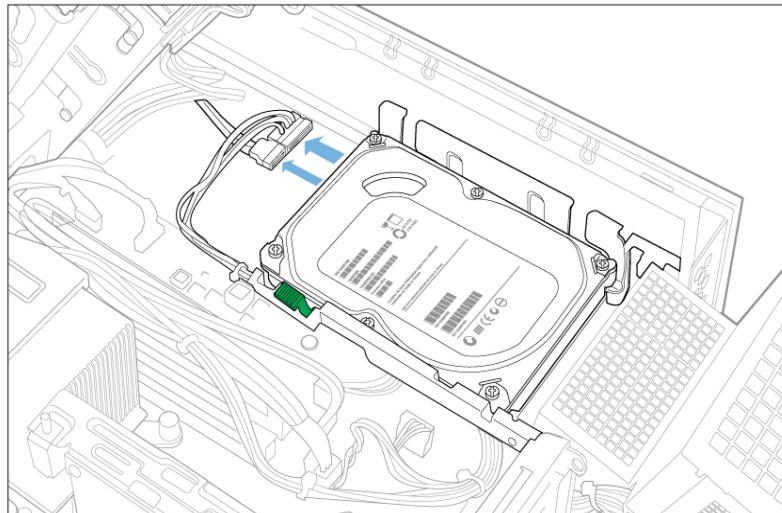
8 Remove the second Drive as illustrated.

CAUTION You must disconnect PS/2 devices before rotating the Power Supply so you do not damage the connectors.

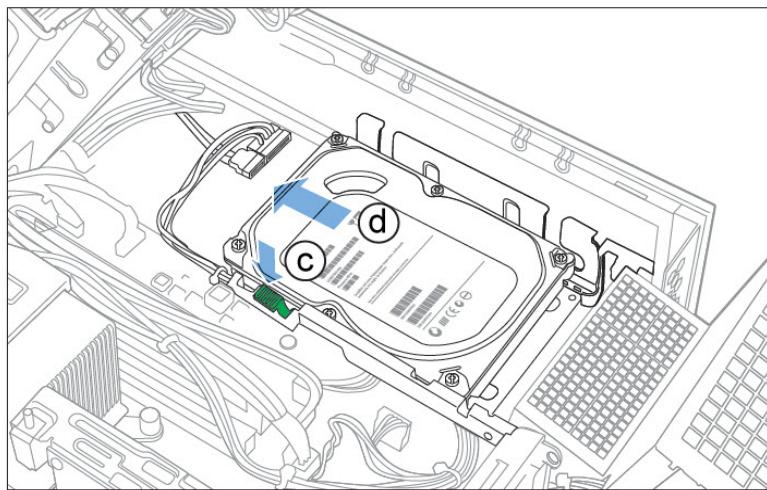
- a Rotate the power supply to its upright position.
The hard drive is located beneath the power supply.



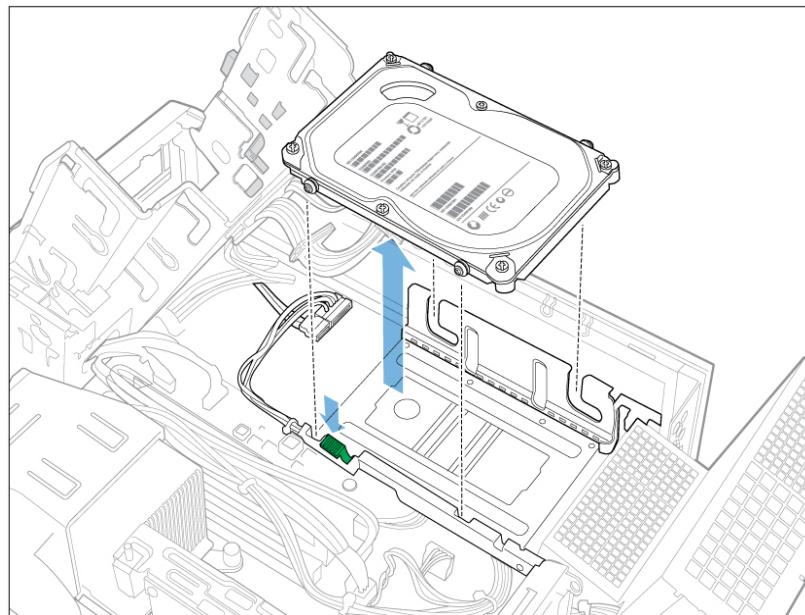
- b** Disconnect the power cable and data cable connectors from the back of the hard drive as illustrated.



- c** Press down on the green release latch next to the drive.
d While holding the latch down, slide the drive forward until it stops.

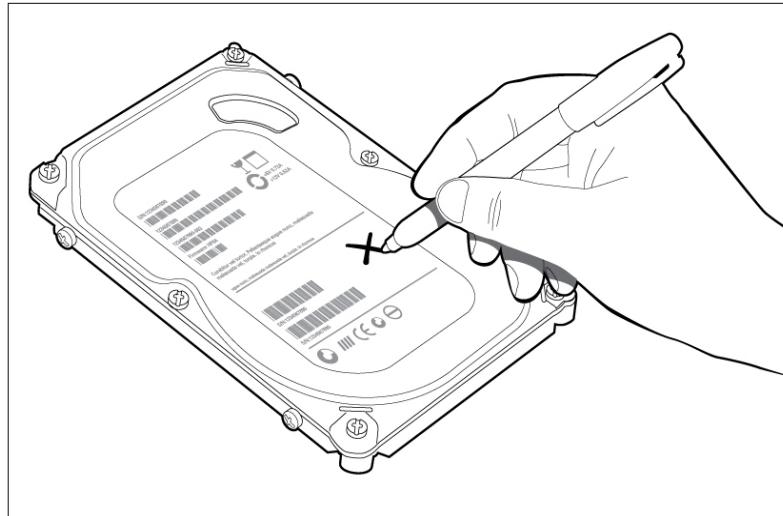


- e** Then lift the drive up and out of the bay

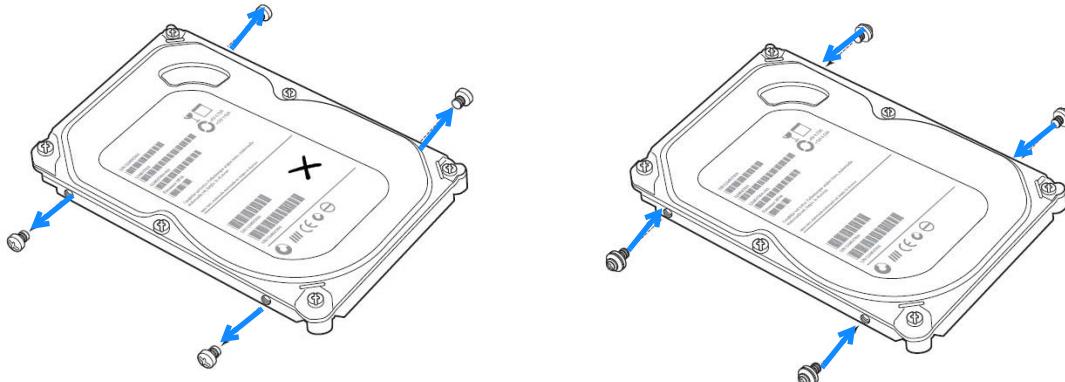


Important Be sure to mark the removed drive so you will not mistake it for one of the new kit drives.

- f** Mark the removed drive so you will not mistake it for one of the new kit drives.

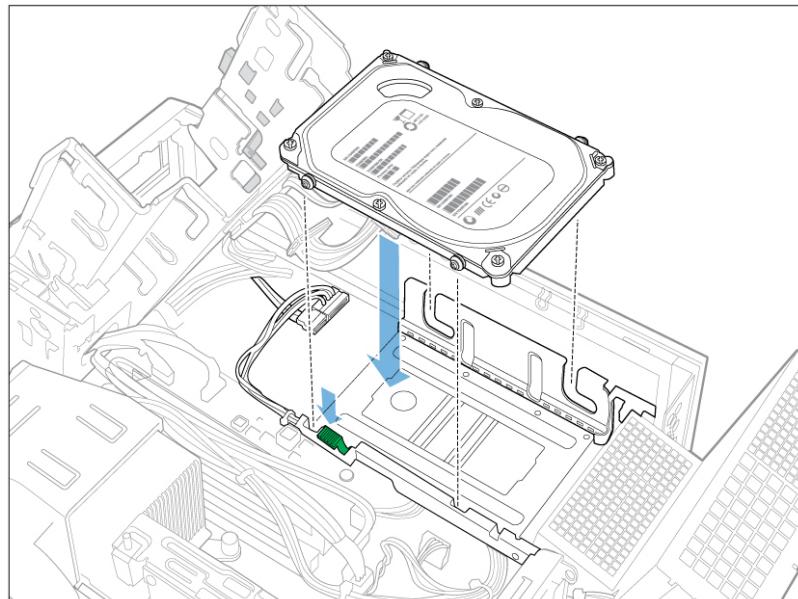


- 9** Transfer the mounting guide screws from the old hard drives to the new hard drives from the replacement kit.

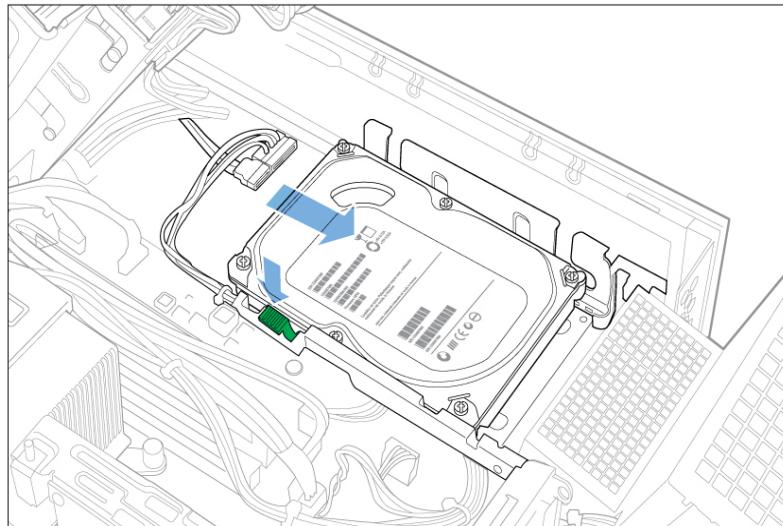


- 10** Install the new hard drive from the RAID kit.

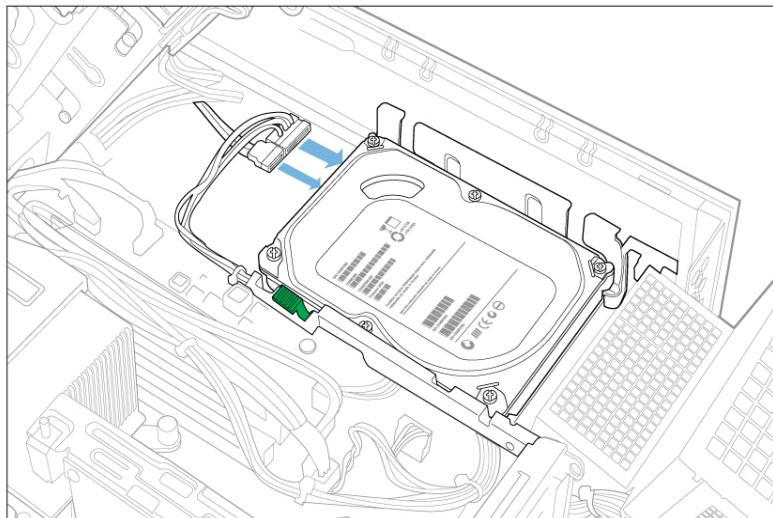
- a** Align the guide screws with the slots on the chassis drive cage, and press the hard drive down into the bay.



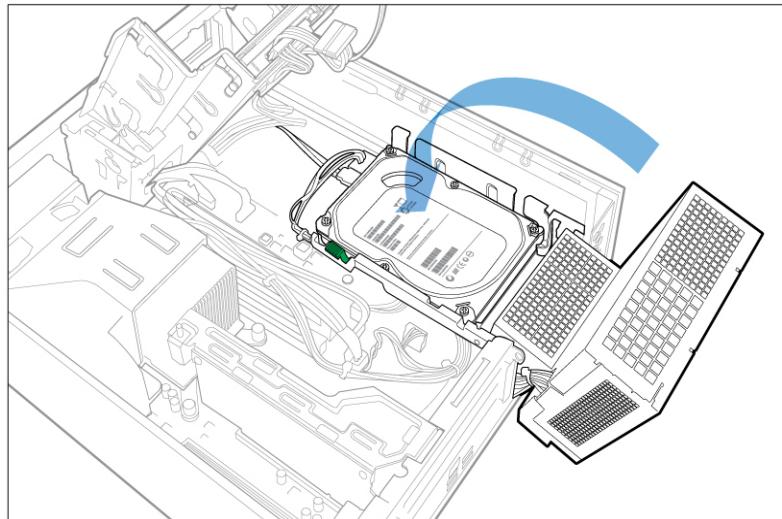
- b** While pressing down on the green latch slide the new drive back until it stops and then release the green latch making sure that it returns to its original position.



- c** Plug the power cable and data cable connectors to the back of the hard drive.

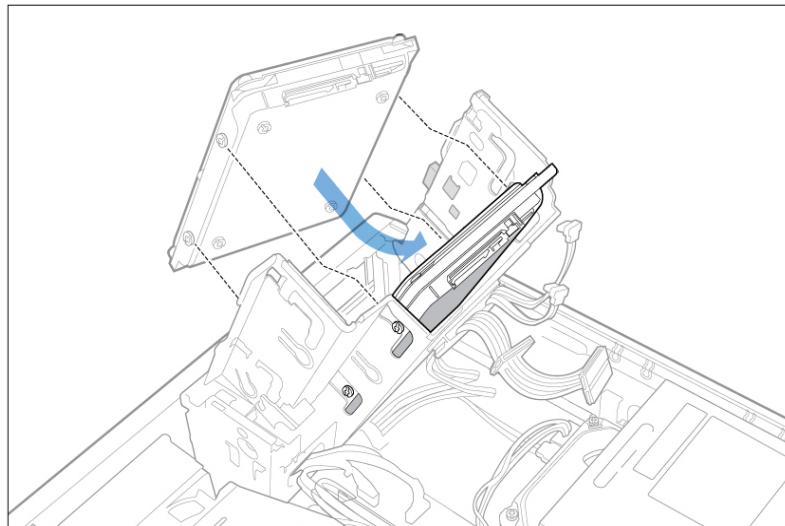


11 Rotate the power supply back into the chassis.

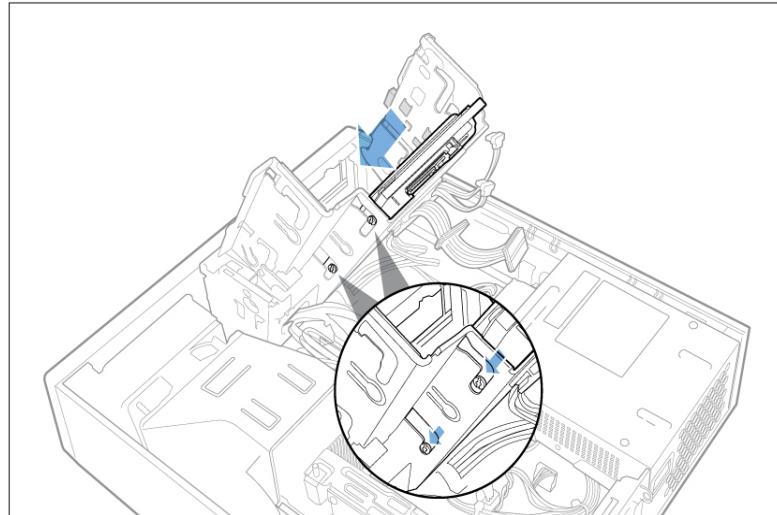


12 Install the new Drive from the Kit as illustrated.

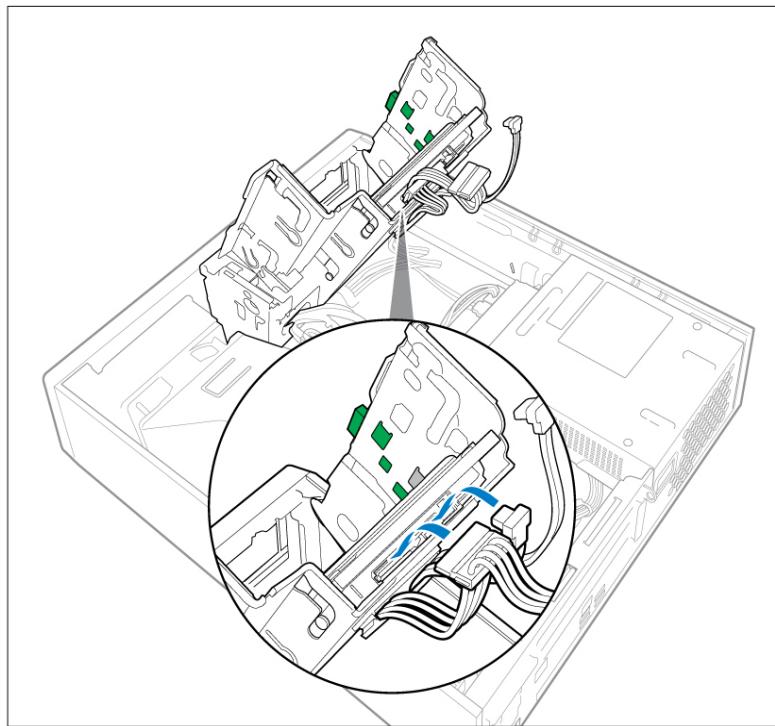
- a** Tilt the drive horizontally and align the drive mounting screws on one side, then fit the mounting screws on the other side into the angled slots

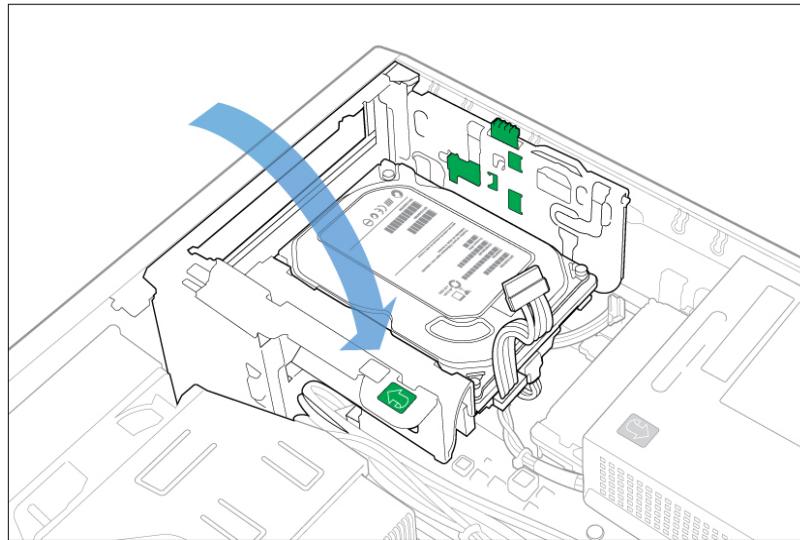


- b** While holding down the green latch, slide the drive into the drive cage and release the green latch making sure that it returns to its original position.

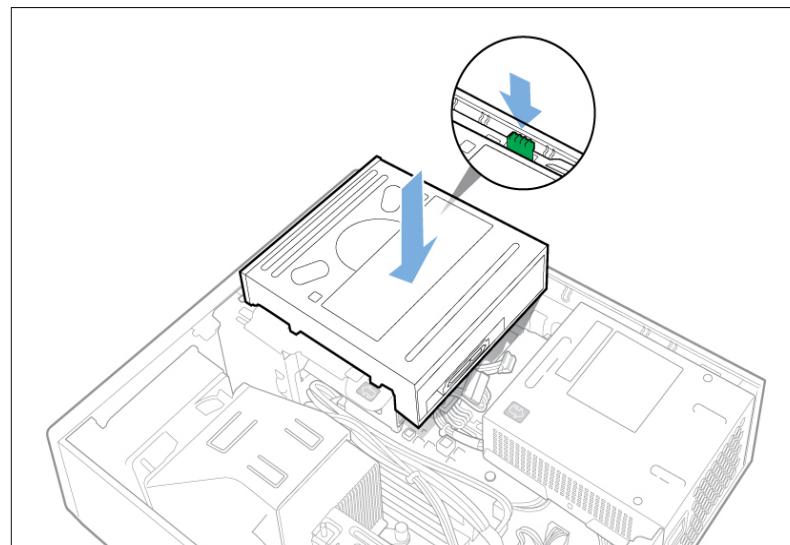


- c** Connect the cable connectors to the drive as illustrated

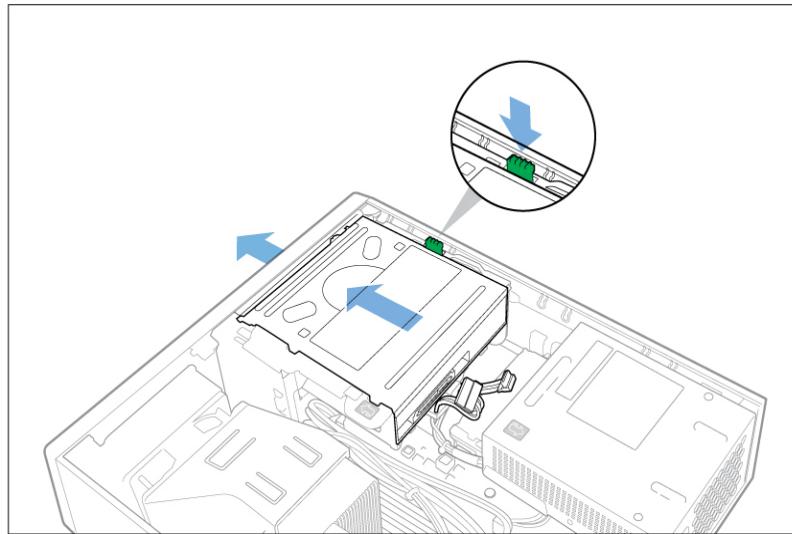


I3 Rotate the Drive cage into the chassis.**I4** Re-install the Optical Drive.

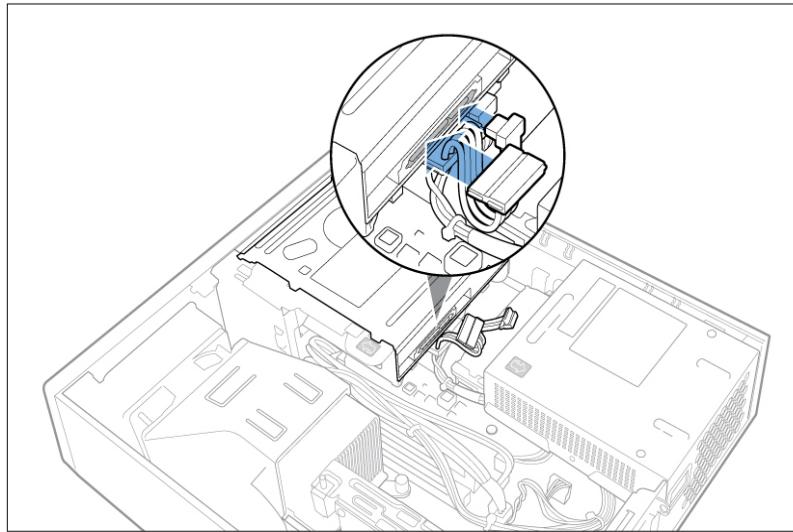
- a While pressing the green drive retainer button located on the left side of the drive, lower the drive down into the drive cage



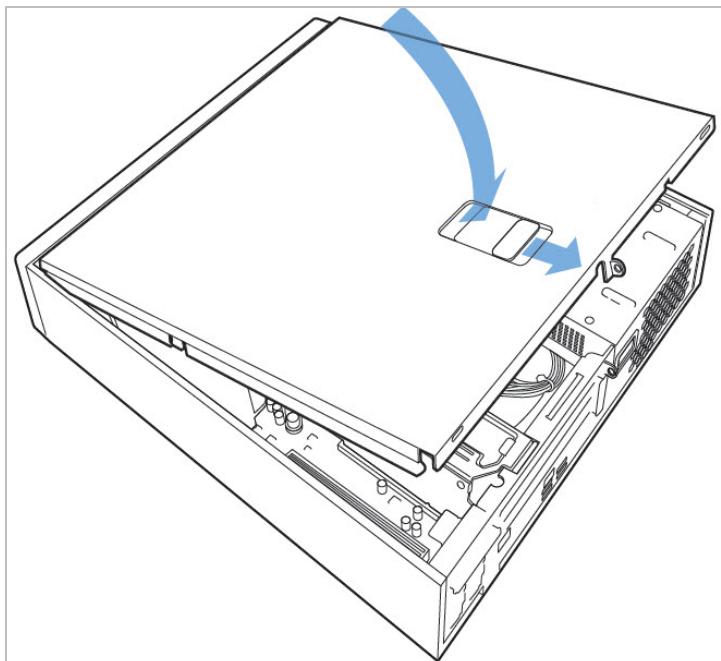
- b** While pressing the drive retainer button, slide the drive back until it stops. Then release the button making sure that it returns to its original position.



- c** Connect the power cable and data cable connectors to the back of the Optical drive. Be sure not to confuse the optical drive connectors with the hard drive connectors.



- 15** Cover the Chassis and re-attach the front Bezel.



- 16** Install your PIIC iX software ([page 5-3](#)).
17 Update your e-mail notification utility ([page 9-74](#)).
18 Continue to **Configuring RAID Volume After System Board Replacement**.

NOTE PIIC iX does not support drive to drive online rebuilding. After a single drive failure both drives must be replaced and PIIC iX operating system and application software must be re-installed manually.

Configuring RAID Volume After System Board Replacement

If you remove/replace the system board you must use the correct BIOS version and settings, then configure the RAID Volume. When you turn on your HP rp5800 after connecting drives, you are prompted to enter the **Intel Matrix Storage Manager Configuration Utility**.

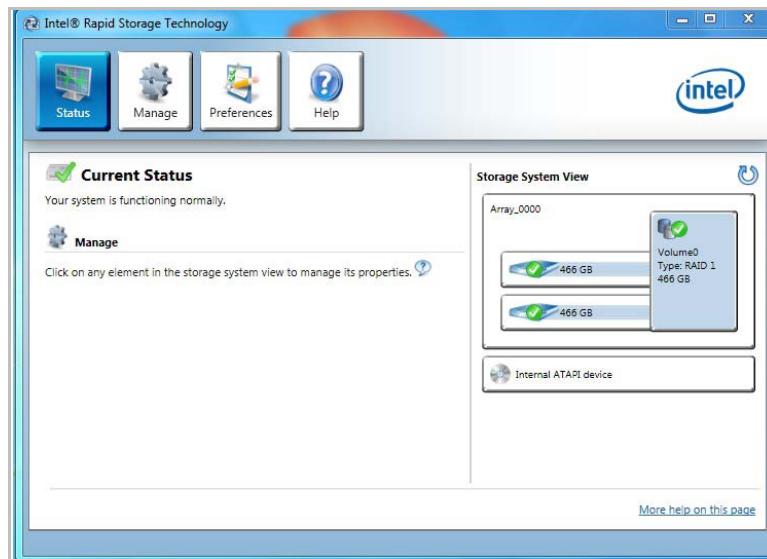
- 1** Press CTRL-I to enter the **Intel Matrix Storage Manager Configuration Utility**.
- 2** Verify that the Device Model numbers and Sizes match. Select **Create RAID Volume** then press **Enter**.
- 3** Enter a **Volume Name** for the RAID Volume (default is **Volume 0**).
- 4** Use the **Tab** key to select **RAID Level**, then use the Up and Down arrow keys to select **RAID 1**.
- 5** Press **Tab** key twice to **Create Volume**.
- 6** Press **Enter** then **Y** to create the RAID volume.
Note the RAID Volume status of Normal and the drives that are Members of the volume.
- 7** Press **Esc** to exit the **Intel Matrix Storage Manager Configuration Utility**.
- 8** With a PIIC iX Software installation USB Flash Drive connected into a USB port, restart the PC. Press **F9** at startup and select the USB media as the boot device.

Setting Up Email Notification

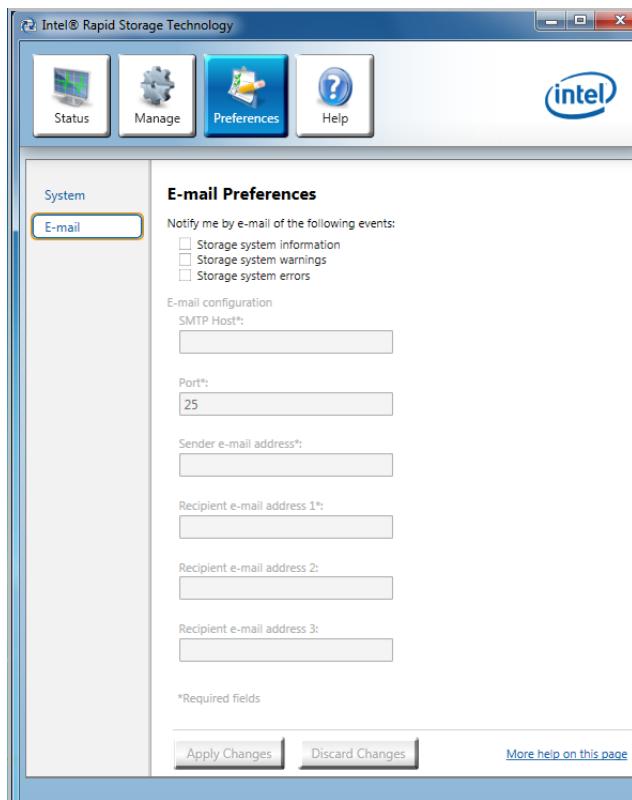
If you have an HP rp5800 with two drives, the PC RAID-1 option permits you to configure your device to automatically notify you by e-mail if one of the drives fails.

- I From Windows Desktop browse to *C:\Program Files\Intel\Intel® Rapid Storage Technology\IAStoreUI.exe*.

The **Intel® Rapid Storage Technology** (RST) feature opens.



- 2 Select the **Preferences** menu icon.



- 3 Then select **Email** in the left pane.
- 4 Click check boxes to select the type of notification you want to receive.

Storage system information

Storage system warnings

Storage system errors

- 5 Enter the required configuration information in the active text boxes.

Selection	Action
SMTP Host	■ Type the SMTP host name.
Port	■ Type the desired Port Number used for relaying outbound mail to a mail server. Typically port 25 is used for SMTP Servers.
Sender e-mail address	■ Enter the sender's e-mail address in the text box.
Recipient e-mail address 1	■ Enter the desired recipients' e-mail address in the appropriate text box. You can provide up to three e-mail addresses but only one is required.
Recipient e-mail address 2	
Recipient e-mail address 3	

- 6 Click **Apply Changes**, then click **Send a test e-mail** to verify.

Replaceable Parts

This section describes Philips-Supplied Hardware shipped with PIIC iX. For information about PIIC Hardware that can be upgraded to PIIC iX, refer to the *PIIC iX Hardware Upgrade Guide*.

HP DL180 Gen9

Table 10 HP DL180 Gen9 Replaceable Parts

Part Number	Exchange Part Number	Description
4535 645 78721		Server System Board (Philips Customized)
4535 645 66251 ¹		800W Gold (Redundant)/900W (Non-Redundant) AC Power Input Module
4535 645 81061		8 SFF Hot Plug Cable Kit
4535 645 81071		Hot Swap Fan
4535 634 64231		System Battery (CR2032 Lithium Coin Cell)
4535 645 81091		Intel Xeon E5-2623v3 Kit
4535 645 74781		300 GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise HDD
4535 645 81101		PCI-E X8 Riser Kit
4535 645 66281		4 GB (1 x 4 GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit
4535 645 74791		8 GB (1 x 8 GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit
4535 645 86531		Power Backplane
4535 645 86541		H240 Smart Host Bus Adapter

¹ HP Second Power Supply Kit is also available, 4535 645 89631.

HP DL380e Gen8

Table 9-1 HP DL380e Gen8 Replaceable Parts

Part Number	Exchange Part Number	Description
4535 644 16941		ASY Hot-Plug Power Supply - 460 watts
4535 644 16981		DRIVE 300 GB hot-plug disc
4535 644 16991		PCCRD 4 GB Memory DIMM
4535 644 17001	4535 644 17011	PCCRD System Board
4535 644 17021		CBL FL Capacitor Cable
4535 644 17041		HEATSINK
4535 644 17051		CBL SATA optical cable
4535 644 17061		EMCH Hot-plug Fan
4535 644 17071		CBL Power cable kit
4535 645 00121		PCCRD 2.4 GHz Intel Xeon E5-2407v2 4core
4535 645 00131		PCCRD PCIe Riser Board with SAS Support

HP rp5800

Table 9-2 HP rp5800 Replaceable Parts

Part Number	Exchange Part Number	Description
4535 645 01191		PERIPH PC Mouse USB Optical
4535 643 05281 ¹		PC SATA DVD Drive 16X
4535 643 05291		PC System Board for rp5800
4535 645 01181		PCCRD rp5800 4GB PC3-12800 CL=11 DI
4535 643 05311		PC Fan Duct for rp5800
4535 643 05321		PC Internal Speaker
4535 643 05331		PC DRIVE HDD 500GB 7.2K SATA-3 6Gb ²
4535 643 05341		PC Intel Core i5 2400 Processor 3.1 GHz
4535 643 05351		PC CBL 19.5 SATA Cable 2 Straight Ends
4535 643 05361		PC CBL 25.2 SATA Cable 1 Angled End
4535 643 05371		PC Exp Card (PCIe to PCIe Riser 24V)
4535 643 05381		PC Serial Port Comm Card
4535 643 05391		PC Heat Sink
4535 643 05401		PC CBL Powered Serial Cable
4535 643 05411		PC Chassis Fan for rp5800
4535 643 05421		PC Power Switch assy and Front I/O Cable
4535 643 05431		PC Power Supply for rp5800
4535 642 58521		PCA - PCIe Audio Amplifier Card
4535 642 59361		CBL Cable Internal Audio
4535 642 93721		PCACY HP Display Port to VGA Adapter Dongle
4535 642 67331		PC External Speaker
4535 643 83441 ³		PC Combo Disc Drive Kit (HP 2 x 500GB HDD SATA 6G)

¹ For HP rp5800 shipped with installed DVD only

² For Single HD PC only

³ For RAID PC only

HP Printers

Part Number	Geography
4535 644 54841	HP M401dne Laser Printer (US, Canada, Latin America)
4535 644 61631	HP M401dne Laser Printer (Western Europe)
4535 645 59631	HP Officejet Pro X451dn Printer (US, Canada, Latin America)
4535 645 59641	HP Officejet Pro X451dn Printer (EMEA)

Displays

Exchange Part Number	New Part Number	Description
	4535 641 80721	19 Inch Flat Panel Display Non-touch
	4535 641 80731	19 Inch Flat Panel Touch Display
	4535 634 94731	ELO Flat Panel Touch Display Stylus Kit
	4535 634 94751	Power Supply for ELO 19 Inch Flat Panel Displays
	4535 643 48881	24 Inch ELO LCD Touch
	4535 643 48871	24 Inch ELO LCD Non-Touch

Mouse and Trackball

Exchange Part Number	New Part Number	Description
	4535 640 46871	USB Optical Mouse
	M3167-60014	PS/2 Optical Mouse
	453564167971	USB Trackball (PS/2 adapter included)

Keyboards

Part Number	Exchange Part Number	Description
PS/2 Keyboards		
4535 640 11331	M3180-60357	Keyboard - US
4535 640 11321	M3180-60356	Keyboard - Portuguese
4535 640 11341	M3180-60358	Keyboard - French (Canada)
4535 640 11361	M3180-60360	Keyboard - Spanish (Spain)
4535 640 11381	M3180-60362	Keyboard - Dutch
4535 640 11401	M3180-60364	Keyboard - Spanish (Latin America)
4535 640 11411	M3180-60365	Keyboard - Norwegian
4535 640 11421	M3180-60366	Keyboard - German (Swiss)
4535 640 11431	M3180-60367	Keyboard - Swedish
4535 640 11351	M3180-60359	Keyboard - Germany
4535 640 11371	M3180-60361	Keyboard - French
4535 640 11451	M3180-60369	Keyboard - English (UK)
4535 640 11461	M3180-60370	Keyboard - French (Belgium)
4535 640 11471	M3180-60371	Keyboard - Danish
4535 640 11481	M3180-60372	Keyboard - Italian
4535 640 11311	M3180-60355	Keyboard - Taiwan Chinese

Part Number	Exchange Part Number	Description
USB Keyboards		
4535 644 51361		KBD TRADITIONAL CHINESE
4535 644 51371		KBD US ENGLISH
4535 644 51381		KBD PORTUGUESE
4535 644 51391		KBD FRENCH CANADA
4535 644 51401		KBD GERMAN
4535 644 51411		KBD SPANISH
4535 644 51421		KBD FRENCH
4535 644 51431		KBD DUTCH
4535 644 51441		KBD JAPANESE
4535 644 51451		KBD SPANISH LATIN AMERICA
4535 644 51461		KBD NORWEGIAN
4535 644 51471		KBD SWISS GERMAN
4535 644 51481		KBD SWEDISH
4535 644 51501		KBD UK ENGLISH
4535 644 51511		KBD DUTCH/FLEMISH
4535 644 51521		KBD DANISH
4535 644 51531		KBD ITALIAN
4535 644 51541		KBD SIMPLIFIED CHINESE
4535 644 51551		KBD KOREAN
4535 644 51561		KBD HUNGARIAN

Video Splitter

A Video Splitter is required for Remote Displays.

Exchange Part Number	New Part Number	Description
	M3180-60612	6-Way Video Splitter
	I252-7356	Female to Female Adapter
	78599AI-#C62	75-ohm Video Coax Non-plenum Cable (500 ft. roll)
	78599AI-#J87	BNC Connector Kit for Non-plenum Cable (5 BNC Connectors)
M3181A - #A11	M3180-60230	1 m Video Cable VGA to 5 BNC Coax Adapter Cable
M3181A - #A12	D1191-80005	5 m Video Cable VGA to 5 BNC Coax Adapter Cable
M3181A - #A17	M3180-60273	5 BNC to 5 BNC Video Coax Adapter Cable 3.0 m (9.8 ft.)

2 Channel USB Recorder

Exchange Part Number	New Part Number	Description
	862120	2-Channel USB Recorder
	4535 640 08021	Cable, USB 5 meter
	4535 640 -08031	Cable, 12V UPC 5 meter
	4535 640 14371	Cable, 100 meter STP CAT5 USB Extender
	4535 643 48001	2-port USB Extender

UPS

Exchange Part Number	New Part Number	Description
M3157-60017	4535 642 98581	UPS TrippLite Watchdog Japan 120V 50/60Hz
	4535 642 98591	UPS TrippLite SMART500RTIU US 120V 50/60 Hz
M3158-60018	4535 642 98601	UPS TrippLite Europe 500VA 230V
	4535 640 10441	Replacement battery for TrippLite Smart500RTIU & SMX500RTIU (order quantity = 1)
	SMT1000RM2U 4535 643 32421	UPS APC Rack Mount 1000VA 120V
	SMT1500RMJ2UB 4535 643 32431	UPS APC Rack Mount 1500VA 100V
	SMT1000RMI2U 4535 643 32441	UPS APC Rack Mount 1000VA 230V
	4535 643 45181	APC RBC6 Replacement Battery (for SMT1000, SMT1000I, SMT1000J UPS)
	4535 643 45191	APC RBC132 Replacement Battery (for SMT1000RM2U and SMT1000RM12U))
	4535 643 45201	APC RBC133 Replacement Battery (for SSMT1500RMJ2U)

Power Distribution Module

Exchange Part Number	New Part Number	Description
M3166-60000	4535 634 02831	M3166A Power Distribution Module (PDM)
	4535 631 99391	0.2 m (0.66 ft.) NEMA/IEC Daisy Chain Power Cord
	4535 640 18491	2.5 m (8.2 ft.) 15A PDM Power Cord with Japanese Approvals

Cables and Connectors

Part Number	Description
4535 643 51781	6 m Cable SVGA HD15 M/F with ferrites (Blk)
4535 643 37001	Cable PS2 Keyboard Extender
4535 643 51781	6 m Cable SVGA HD15 M/F with ferrites (Blk)
4535 643 37001	4 m Keyboard/Mouse/Trackball Cable PS/2 extension
4535 640 22211	STP CAT 5SE Cable 15.2 m (50 ft)
4535 640 22201	STP CAT 5SE Cable 100 m (328 ft)
4535 640 13151	1.8 m (6 ft) Power Cable U.S.A.

Remote Solution Components

Part Number	Description
4535 640 44521	Remote IIC Speaker Kit (for use with standard PIIC speaker)
4535 643 48011	USB REX/LEX 2-port USB Extender
4535 641 80721	19 Inch Flat Panel Display Non-touch
4535 641 80731	19 Inch Flat Panel Touch Display
4535 643 48871	24 Inch Flat Panel Display Non-touch
4535 643 48881	24 Inch Flat Panel Touch Display
4535 644 20591	Multi Speaker Distribution Rack
4535 644 20581	Remote Speaker with volume switch

Product Software

Part Number	Description
4535 645 86811	LP PIIC iX M3290B B.02.xx USB Media Kit

Product Documentation

Part Number	Description
4535 645 39431	Information Center iX IFU Release B.01 Bulgarian
4535 645 39441	Information Center iX IFU Release B.01 Czech
4535 645 39451	Information Center iX IFU Release B.01 Danish
4535 645 39461	Information Center iX IFU Release B.01 Dutch
4535 645 39421	Information Center iX IFU Release B.01 English
4535 645 39471	Information Center iX IFU Release B.01 Estonian
4535 645 39481	Information Center iX IFU Release B.01 Finnish
4535 645 39491	Information Center iX IFU Release B.01 French
4535 645 39501	Information Center iX IFU Release B.01 German
4535 645 39511	Information Center iX IFU Release B.01 Greek
4535 645 39521	Information Center iX IFU Release B.01 Hungarian
4535 645 39531	Information Center iX IFU Release B.01 Indonesian
4535 645 39541	Information Center iX IFU Release B.01 Italian
4535 645 39551	Information Center iX IFU Release B.01 Japanese
4535 645 39561	Information Center iX IFU Release B.01 Kasakh
4535 645 39571	Information Center iX IFU Release B.01 Korean
4535 645 39581	Information Center iX IFU Release B.01 Latvian
4535 645 39591	Information Center iX IFU Release B.01 Lithuanian
4535 645 39601	Information Center iX IFU Release B.01 Norwegian
4535 645 39611	Information Center iX IFU Release B.01 Polish
4535 645 39621	Information Center iX IFU Release B.01 Portuguese
4535 645 39631	Information Center iX IFU Release B.01 Romanian
4535 645 39641	Information Center iX IFU Release B.01 Russian
4535 645 39651	Information Center iX IFU Release B.01 Simplified Chinese
4535 645 39661	Information Center iX IFU Release B.01 Slovak
4535 645 39671	Information Center iX IFU Release B.01 Spanish
4535 645 39681	Information Center iX IFU Release B.01 Swedish
4535 645 39691	Information Center iX IFU Release B.01 Traditional Chinese/Taiwan
4535 645 39701	Information Center iX IFU Release B.01 Turkish

Installing Antivirus Software

Introduction	G-1
Installing McAfee Virus Scan Enterprise	G-1
Installing Symantec Endpoint Protection	G-7
Upgrading Antivirus Signature Files	G-17

Introduction

Best practices for installation, support, and upgrade of Antivirus software used on machines running the PIIC iX Patient Monitoring application are described in this document. The document also enlists the prominent Antivirus features supported and specific recommendations for peak performance of PIIC iX.

The following Antivirus software packages are recommended and supported:

- McAfee Virus Scan Enterprise 8.7 i**
- McAfee Virus Scan Enterprise 8.8**
- Symantec Endpoint Protection 11.0.4**
- Symantec Endpoint Protection 12.1**

Important Antivirus software should be deployed before running the monitoring application on PIIC iX.

- Antivirus signatures can be updated automatically while monitoring patients
- Any necessary device restarts can be managed through the PIIC iX **Product Support** screen.

Installing McAfee Virus Scan Enterprise

Important Exclude the following folders from the scan:

C:\Program Files(x86)\Microsoft SQL Server\MSSQL12.MSSQLSERVER
C:\Program Files(x86)\Philips\PIIC iX
C:\Stardate
C:\Windows\System32\spool\PRINTERS

Enable **On Access Scan** (while a file is being read or modified).

Be sure that **Full Scan**, **On Demand Scan**, and **Scheduled Scan** are disabled.

Managed Client Installation

Policy Configuration

McAfee ePolicy Orchestrator

1 Open ePolicy Orchestrator 4.6.0 Console.

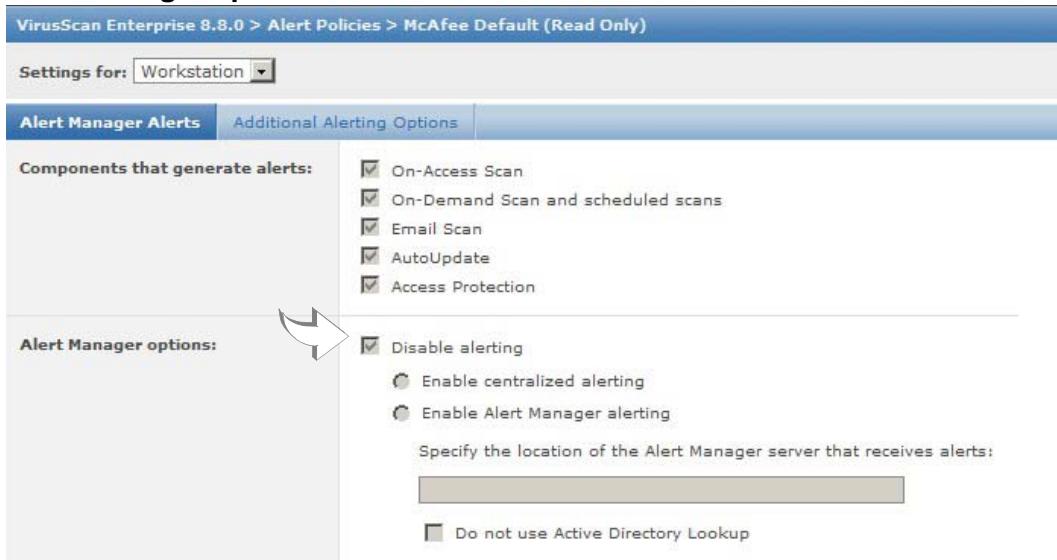
The screenshot shows the 'Guided Configuration' dashboard. At the top, it displays the server name (ROYALBLUE), time (5/9/12 2:40:56 PM EDT), and user (admin). Below the header are navigation links for Dashboards, System Tree, Queries & Reports, and Policy Catalog. The main content area is titled 'Guided Configuration' and contains a message about viewing progress. A 'Resume' button is present. Below this is a 'Your Progress:' section showing five completed steps: Software Selection, System Selection, Policy Configuration, Software Updating, and Software Deployment, each accompanied by an icon and a 'Complete' status.

2 Go to Menu > Policy > Policy Catalog.

3 In the **Policy Catalog** screen select the appropriate version of the VirusScan Enterprise policy in the **Product** drop down List, then select **Alert Policies** from the **Category** drop down list.

The screenshot shows the 'Policy Catalog' screen. The URL is https://localhost:8443/PolicyMgmt/PolicyCatalog.do. The header includes the server name (ROYALBLUE), time (5/14/12 3:26:22 PM EDT), and user (admin). The menu bar has 'Policy Catalog' selected. The main area shows a table of policies. The 'Product' dropdown is set to 'VirusScan Enterprise 8.8.0'. The 'Category' dropdown is set to 'Alert Policies'. The table columns are 'Name', 'Assignments', 'Rule Assignments', and 'Actions'. The table lists several policy categories: Buffer Overflow Protection Policies, General Options Policies, On-Access Default Processes Policies, On-Access General Policies, On-Access High-Risk Processes Policies, On-Access Low-Risk Processes Policies, On Delivery Email Scan Policies, Quarantine Manager Policies, and Unwanted Programs Policies. The 'Alert Policies' category is currently selected.

- a In the **Alert Manager Alerts** tab click the **Disable alerting** check box in the **Alert Manager options** section.



- b In the **Additional Alerting Options** tab, select **Suppress all alerts (Severities 0 to 4)** from the **Severity Filter** drop down list.



Important All alerts for PIIC iX systems must to be disabled.

- 4 In the **Policy Catalog** screen select **On-Access Default Processes Policies** from the **Category** drop down list.

- a In the **Scan Items** tab click the **When writing to disk**, **When reading from disk**, and **Opened for backup** check boxes in the **Scan Files** section.
- b In the **Exclusions** tab add the following folders and sub-folders.

C:\Program Files(x86)\Microsoft SQL Server\MSSQL12.MSSQLSERVER
C:\Program Files(x86)\Philips\PIIC iX
C:\Stardate
C:\Windows\System32\spool\PRINTERS

- 5 In the **Policy Catalog** screen select **On-Access General Policies** from the **Category** drop down list.

- a On the **General** tab click the check boxes, **Enable on-access scanning at system startups** and **Enable on-access scanning when the policy is enforced** in the **Enable on-access scanning** section.

The screenshot shows the 'VirusScan Enterprise 8.8.0 > On-Access General Policies > My Default- PIIC IX' interface. The 'General' tab is selected. The 'Scan:' section contains several checkboxes: 'Boot sectors' (checked), 'Floppy during shutdown' (unchecked), 'Processes on enable' (unchecked), and 'Trusted installers' (unchecked). The 'Enable on-access scanning:' section has two checked checkboxes: 'Enable on-access scanning at system startup' and 'Enable on-access scanning when the policy is enforced'. A small icon of a bird is visible next to the second checkbox. The 'Maximum scan time:' section has a checked checkbox 'Enforce a maximum scanning time for all files' and a 'Maximum scan time (seconds)' input field set to '45'. The 'Cookies:' section has a checked checkbox 'Scan cookie files'. The 'Artemis (Heuristic network check for suspicious files):' section has a dropdown menu set to 'Very low'.

- b In the **Messages** tab clear all **User Messages** options.

The screenshot shows the same interface but with the 'Messages' tab selected. The 'User message:' section contains two unchecked checkboxes: 'Show the messages dialog box when a threat is detected and display the specified text in the message.' and 'Notify the user when a cookie detection occurs.' The 'Message text:' section shows a default message 'VirusScan Alert!' in a text input field. The 'Actions available to user:' section has three checked checkboxes: 'Remove messages from the list', 'Clean files', and 'Delete files'.

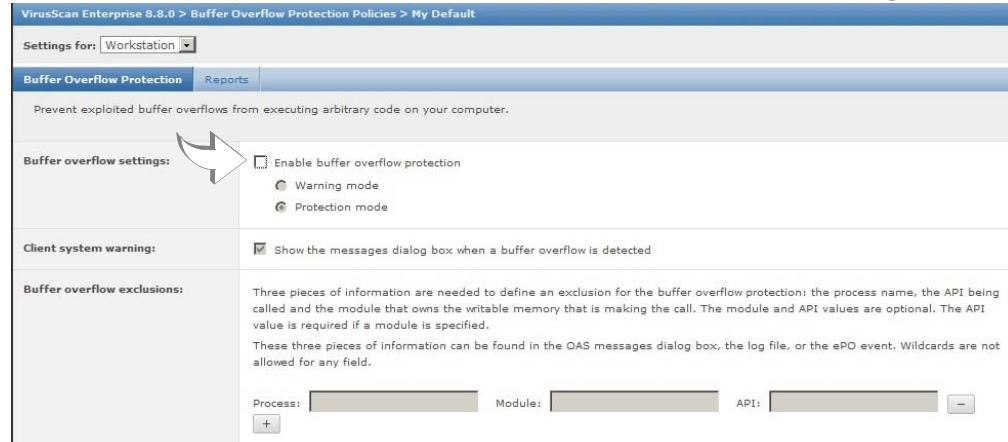
- 6 In the **Policy Catalog** screen select **General Options Policies** from the **Category** drop down list, and configure **Password Options**.

- a In the **Password Options** tab click the **Password Protection for the selected items** option in the **User interface password** section.

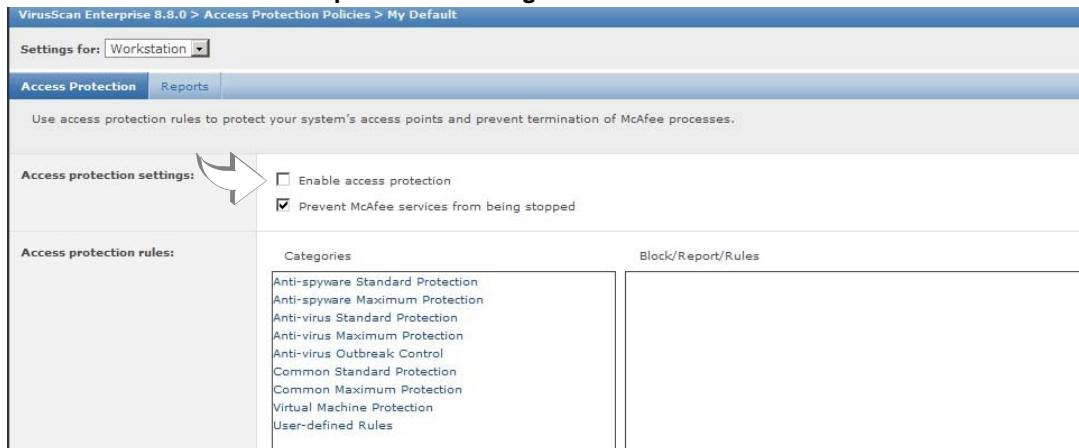
The screenshot shows the 'VirusScan Enterprise 8.8.0 > Policy Catalog > General Options Policies' interface with the 'Password Options' tab selected. Under 'User interface password:', there are four radio button options: 'No password' (unchecked), 'Password protection for all items listed' (unchecked), 'Password protection for the selected items' (checked), and 'Password protection for conformance to Common Criteria' (unchecked). Below these are 'Password' and 'Confirm password' fields, both containing a series of asterisks. Under 'User interface items to password protect:', there is a 'On-Access Scan' section with three checkboxes: 'On-Access Scan: General', 'On-Access Scan: ScriptScan', and 'On-Access Scan: Blocking'. To the right of these checkboxes are 'Select All' and 'Deselect All' buttons.

- b Then click the **On-Demand Scan: Schedule** check box in the **User interface items to password protect** section.

- 7 In the **Policy Catalog** screen select **Buffer Overflow Protection Policies** from the **Category** drop down list. On the **Buffer Overflow Protection** tab clear the **Enable buffer overflow-protection** check box in the **Buffer overflow settings** section.



- 8 In the **Policy Catalog** screen select **Access Protection Policies** from the **Category** drop down list. On the **Access Protection** tab, clear the **Enable access protection** check box in the **Access protection settings** section.



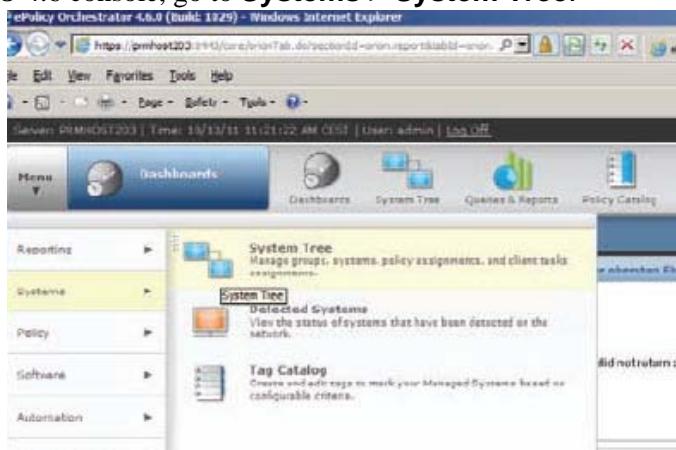
- 9 In the **Policy Catalog** screen select **Delivery Email Scan Policies** from the **Category** drop down list. On the **Delivery Email Scan Policies** tab, clear the **Enable on-delivery email scanning** check box.
- 10 In the **Policy Catalog** screen select **General Default Policy** from the **Category** drop down list. Then clear the **Prompt user when a reboot is required** check box.

Client Configuration

The System Tree is a hierarchical structure that allows you to group your systems within units called groups.

- I** Create a new group for PIIC iX systems in the System Tree.

- a** In the EPO 4.6 console, go to **Systems > System Tree**.



The **System Tree** screen opens.



- b** Click **System Tree Actions** and select **New Subgroup** from the list. Then create a new group for PIIC iX systems in the System Tree.
- c** Add PIIC iX systems to the new group.
- 2** Assign configured Policies to the group. Refer to **Policy Configuration**.
- 3** Deploy the VirusScan Enterprise and the McAfee agent to the PIIC iX group.

Unmanaged Client Installation

- I** Install McAfee Virus Scan Enterprise using the default configuration settings.

- 2** Run the McAfee software; then go to the **Exclusion** option.

Exclude the following folders from the scan:

```
C:\Program Files(x86)\Microsoft SQL Server\MSSQL12.MSSQLSERVER
C:\Program Files(x86)\Philips\PIIC iX
C:\Stardate
C:\Windows\System32\spool\PRINTERS
```

- 3** Enable **On Access** scan. Be sure to disable **Full Scan**, **On Demand**, and **Scheduled Scan**.

- 4 Go to **On Access scanner > Properties > All Process > Scan Items** and select the following options:

While reading from disk
When writing to disk

- 5 Disable all Notifications/ Alerts to ensures that no messages appear during threat/virus detection.
- 6 Disable **Buffer Overflow Protection**.
- 7 Disable **On-Delivery Email Scanner**.

Installing Symantec Endpoint Protection

Important Exclude the following folders from the scan:

*C:\Program Files(x86)\Microsoft SQL Server\MSSQL12.MSSQLSERVER\
C:\Program Files(x86)\Philips\PIIC iX\
C:\Windows\System32\spool\PRINTERS\
C:\Stardate*

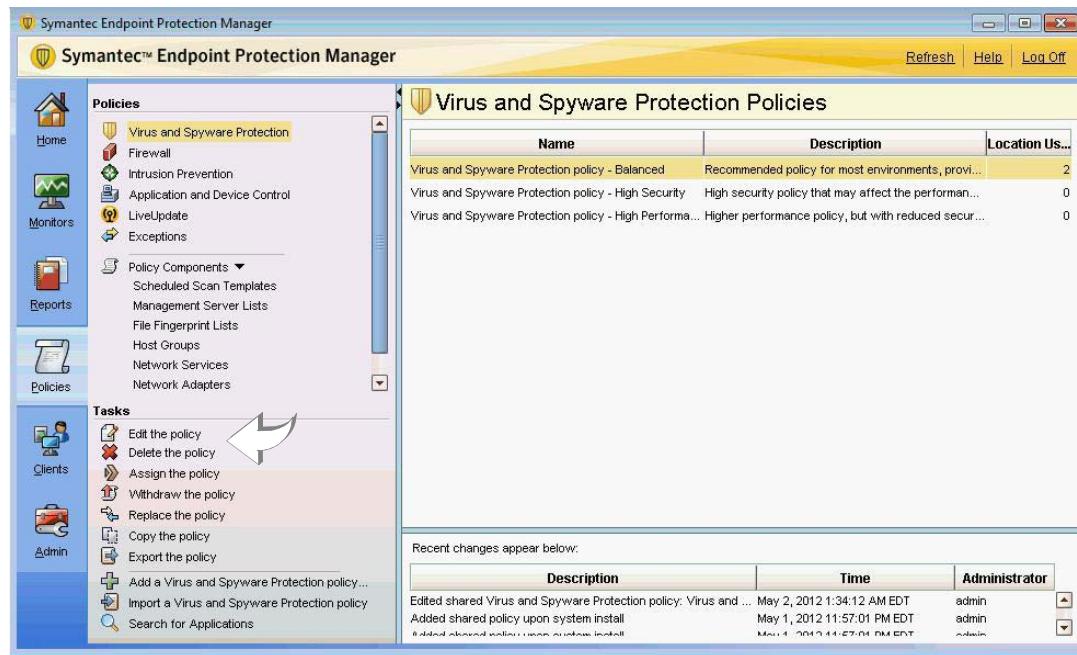
Enable scan on files being read or modified in the **Advanced Settings** option, **Auto-Protect**.

Do not run **Active Scan** or **Full Scan** on machines running patient monitoring.

Managed Client Installation

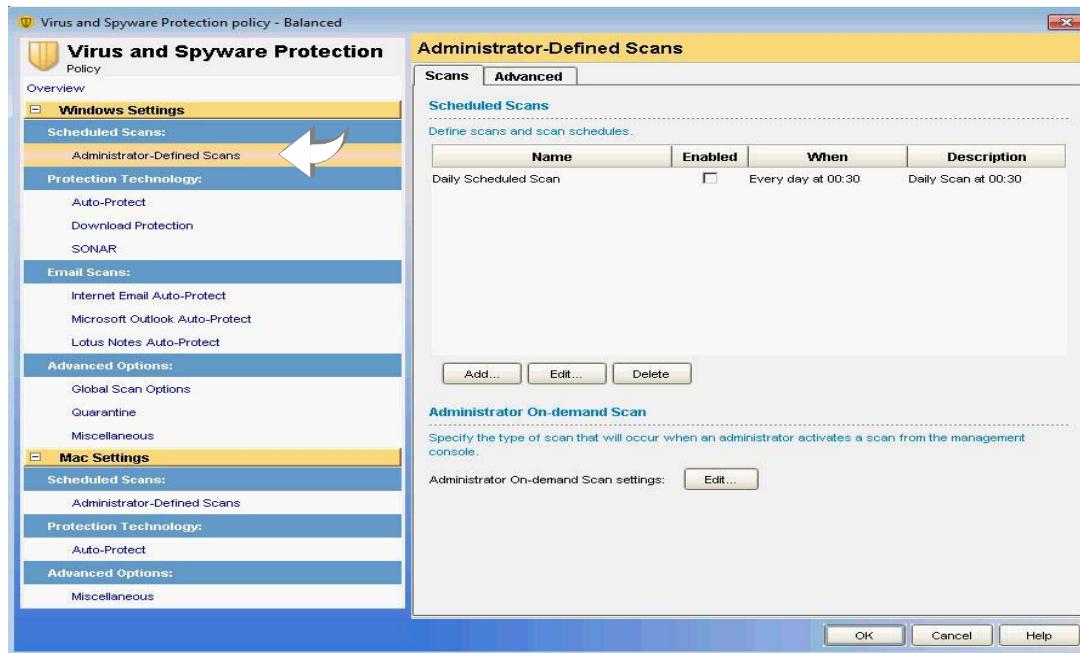
Policy Configuration

- 1 In the **Symantec Endpoint Protection Manager** screen click the **Policies** icon. Then open **Virus and Spyware Protection** in the **Policies** section.
- 2 Create a new policy for PIIC iX or select an existing policy. Then with the desired policy selected click **Edit the policy** in the **Tasks** section.

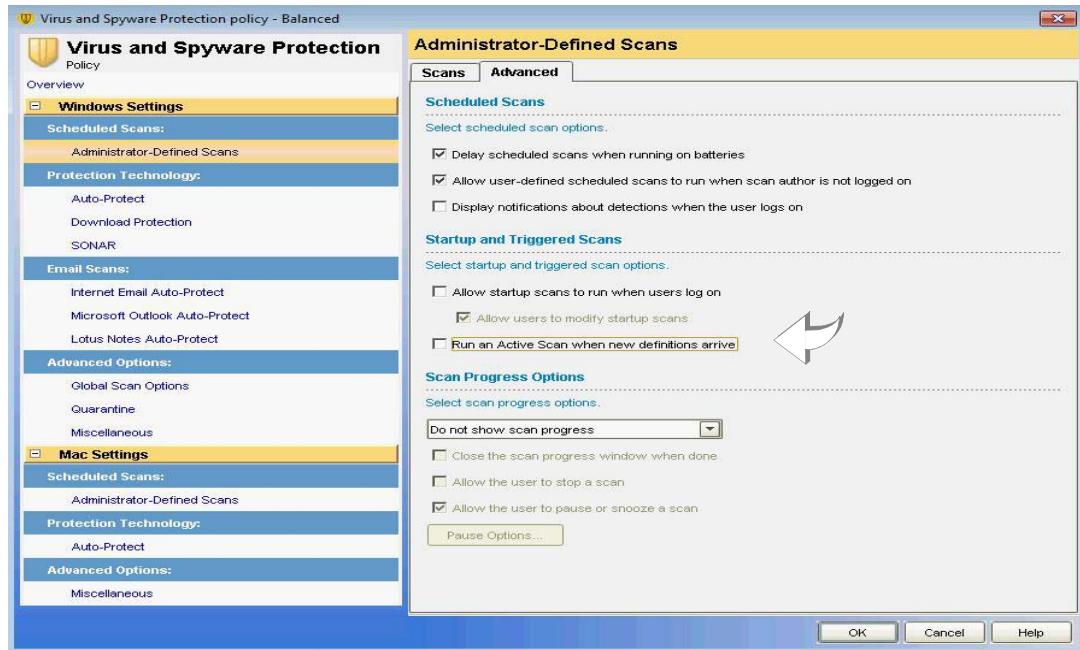


- 3** Select **Administrator- Defined Scans** in the **Windows Settings** section, then clear the **Daily Scheduled Scan** check box.

NOTE Active Scan or Full Scan is not supported on PIIC iX.

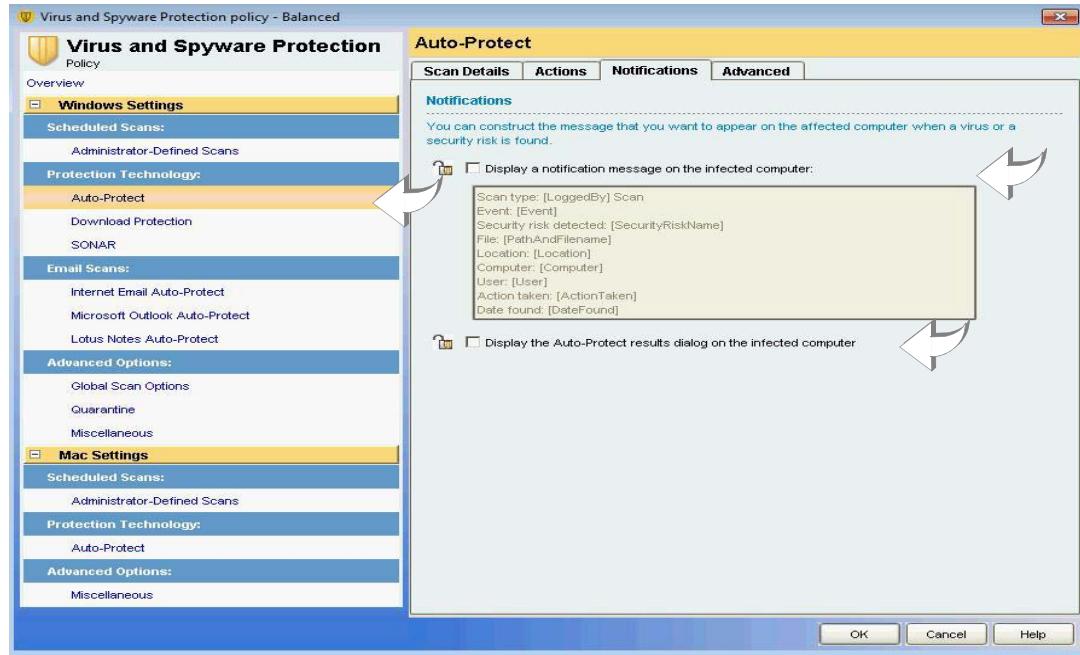


- 4** In the **Advanced** tab clear the **Run Active scan when new definitions arrive** check box in the **Startup and Triggered Scans** section.

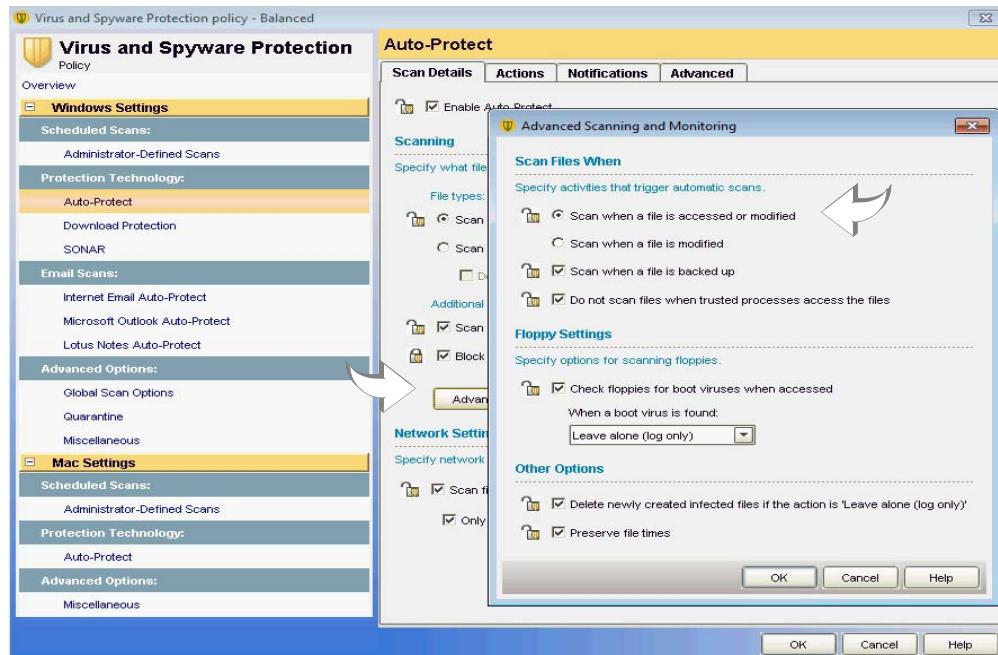


- 5** In the left pane under **Protection Technology** select **Auto Protect**.

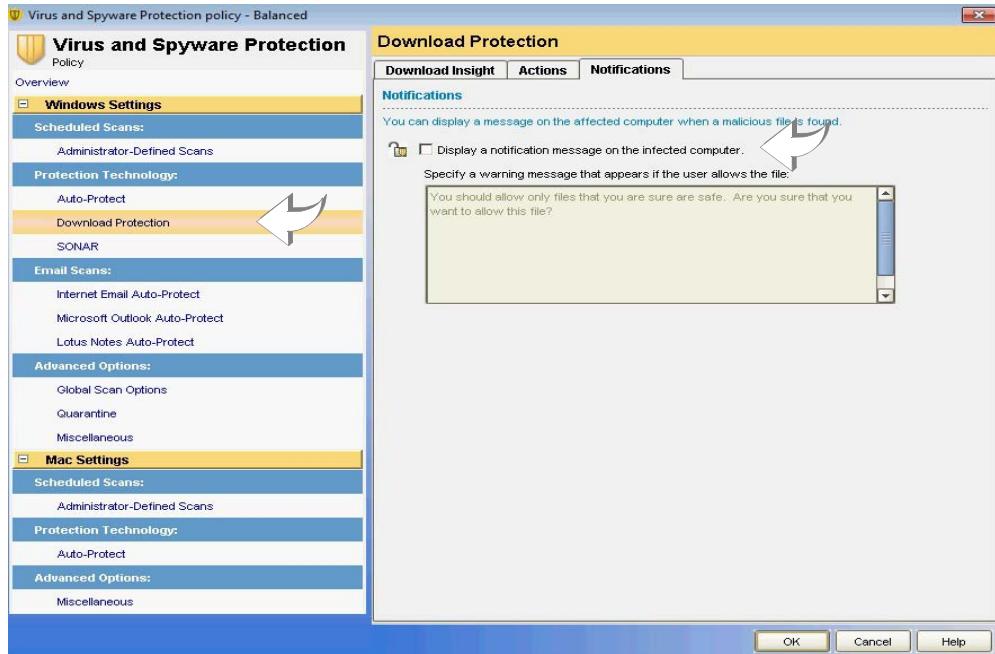
- a The in the **Notifications** tab clear the **Display a notification message on the infected computer** check box and the **Display the Auto-Protect results dialog on the infected computer** check box.



- b In the **Scan Details** tab click the **Advanced Scanning and Monitoring** button.
 c In the **Advanced Scanning and Monitoring** dialog select the **Scan when a file is accessed or modified** option.

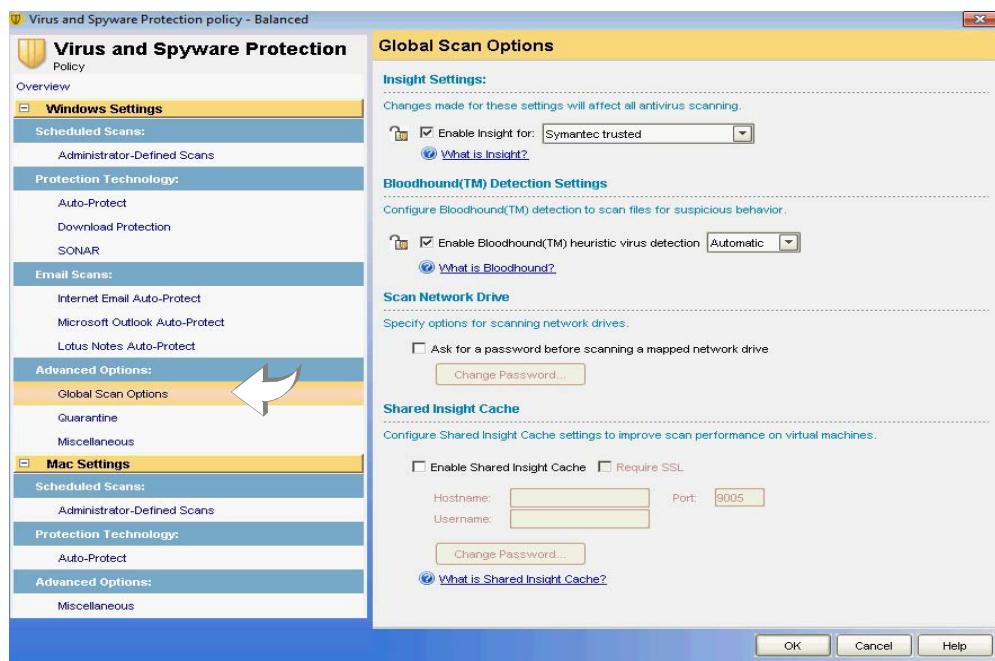


- 6** In the **Protection Technology** section of **Windows Settings** select **Download Protection**. Then in the **Notifications** tab, clear the **Display a notification message on the infected computer** check box.

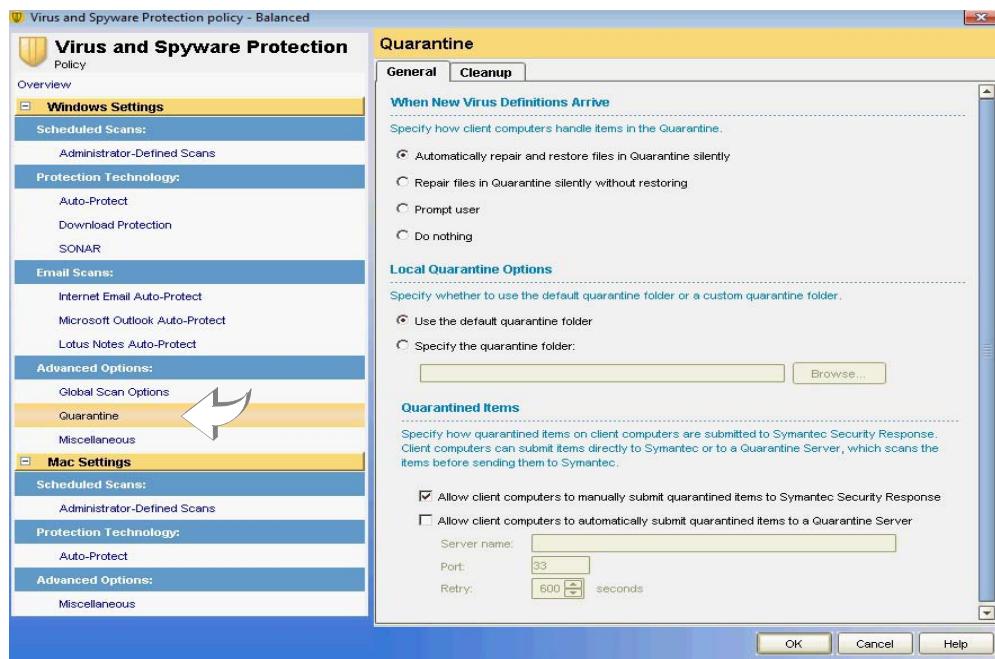


- 7** In the **SONAR** section of **Windows Settings** disable SONAR.
- 8** In the **Email Scans** section of **Windows Settings** disable all options.
- Select **Internet Email Auto-Protect** and clear the **Enable Internet Email Auto-Protect** check box.
 - Select **Microsoft Outlook Auto-Protect** and clear the **Enable Microsoft Outlook Auto-Protect** check box.
 - Select **Lotus Notes Auto-Protect** and clear the **Enable Lotus Notes Auto-Protect** check box.
- 9** In the **Advanced Options** section of **Windows Settings** keep all default options.

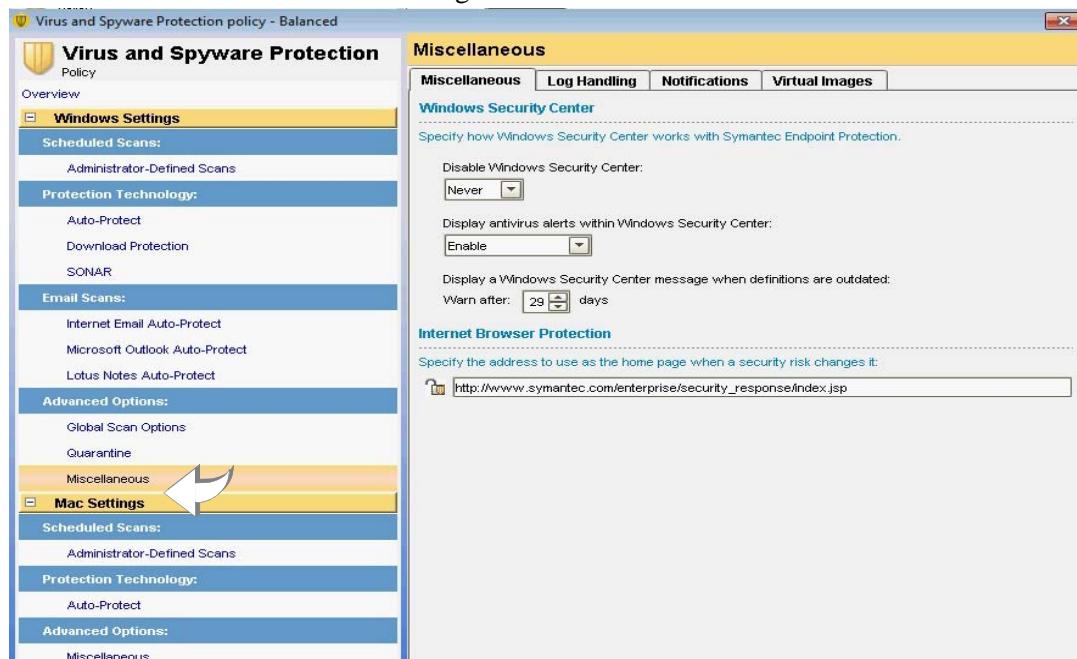
a Default Global Scan Options settings follow.



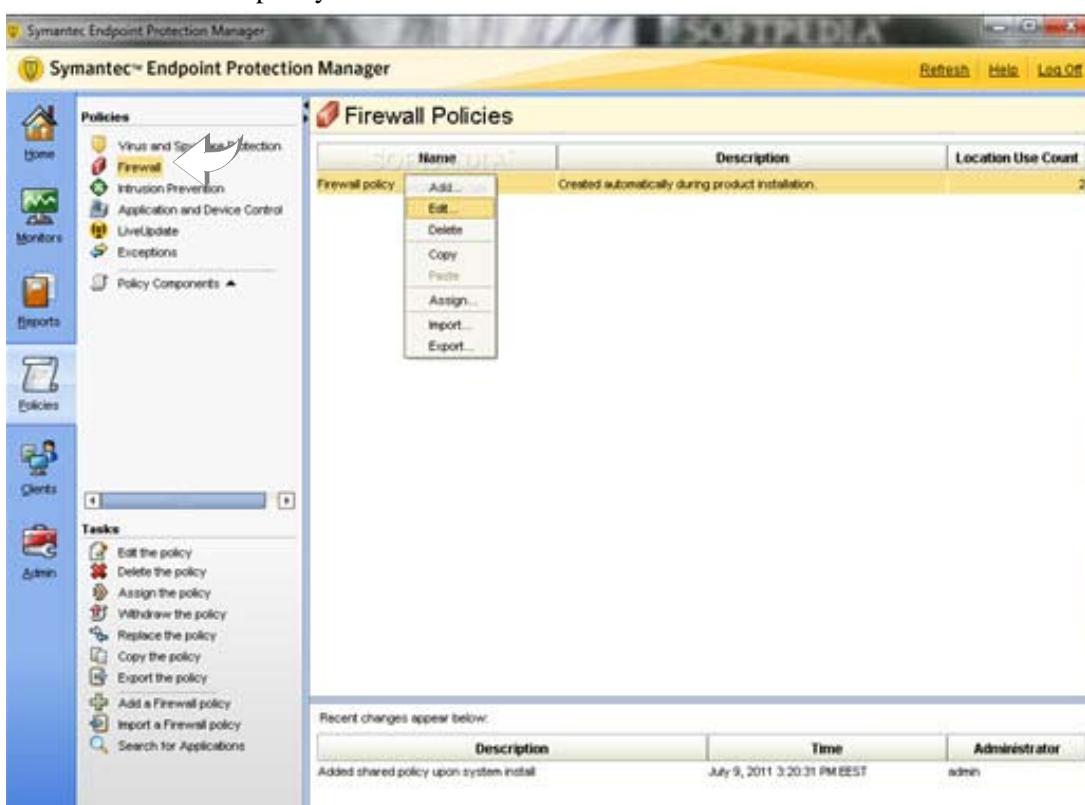
b Default Quarantine settings follow.



c Default **Miscellaneous** settings follow.



- 10 In the **Policies** Section of the **Symantec Endpoint Protection Manager** screen disable **Firewall** policy.



11 Disable **Intrusion Prevention** policy.

The screenshot shows the Symantec Endpoint Protection Manager interface. On the left, a sidebar titled 'Policies' lists several options: Home, Monitors, Reports, and Policies. Under Policies, 'Intrusion Prevention' is highlighted with a yellow arrow pointing to it. The main pane is titled 'Intrusion Prevention Policies' and contains a table with one row:

Name	Description	Group and Location Use Co...
Intrusion Prevention policy	Created automatically during product installation.	2

12 Disable **Application and Device Control** policy.

13 Define exceptions.

- Select **Exception** in the **Policies** section.

The screenshot shows the Symantec Endpoint Protection Manager interface. The sidebar 'Policies' has 'Exceptions' selected, indicated by a yellow arrow. The main pane is titled 'Exceptions Policies' and displays a table with one row:

Name	Description	Location Use Count
Exceptions policy	Created automatically during product installation.	2

- Then create a new policy for PIIC iX and add the following folders and sub folders in **Exceptions** tab.

C:\Program Files(x86)\Microsoft SQL Server\MSSQL12.MSSQLSERVER

C:\Program Files(x86)\Philips\PIIC iX

C:\Windows\System32\spool\PRINTERS

C:\Stardate

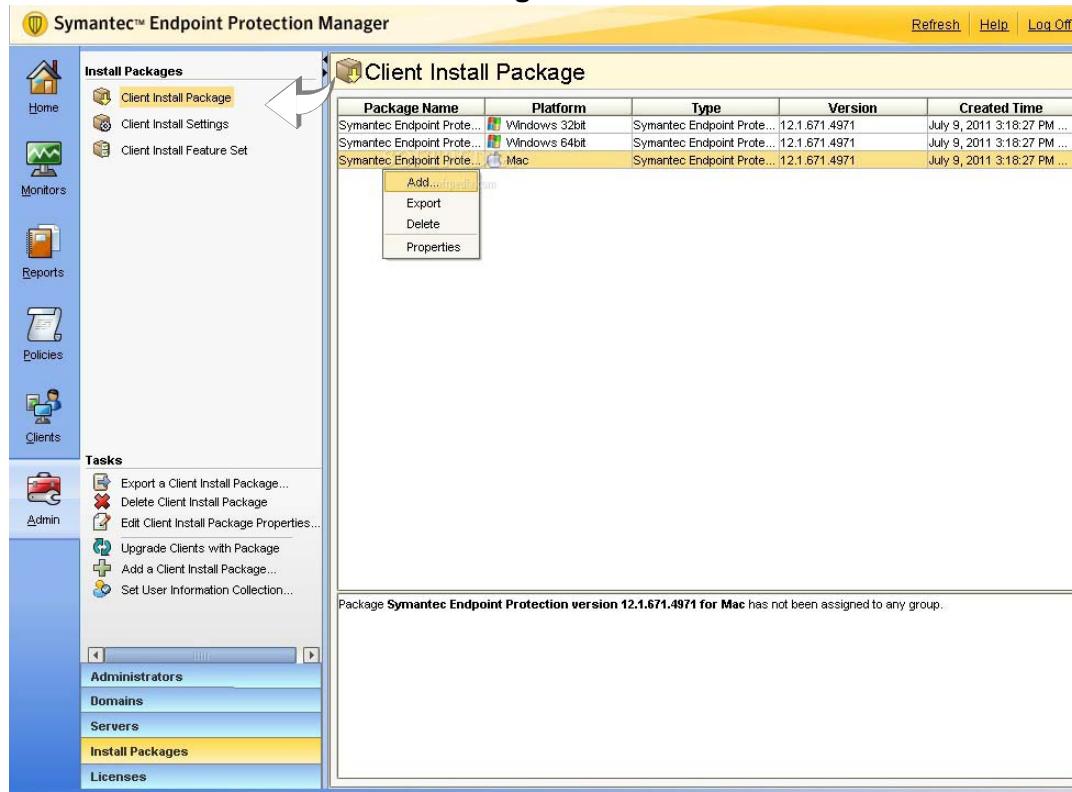
The screenshot shows the 'Exception Policy PIIC iX' interface. The left sidebar has 'Exceptions' selected. The main pane is titled 'Exceptions' and contains a table with five rows of exception items:

Exception Item	Platform	Applies To	Exception Type	Action
C:\Program Files\Microsoft SQL Server\	Windows	All clients	All Scan Folder	Ignore
c:\Program Files\Philips\PIIC iX	Windows	All clients	All Scan Folder	Ignore
C:\stardate	Windows	All clients	All Scan Folder	Ignore
c:\Windows\System32\spool\printers	Windows	All clients	All Scan Folder	Ignore

At the bottom right are buttons for 'Add...', 'Edit...', and 'Delete'.

Client Install Configuration

- I On the **Symantec Endpoint Protection Manager** screen select the **Admin** icon. Then select **Add Client Install Settings** in the **Tasks** section.



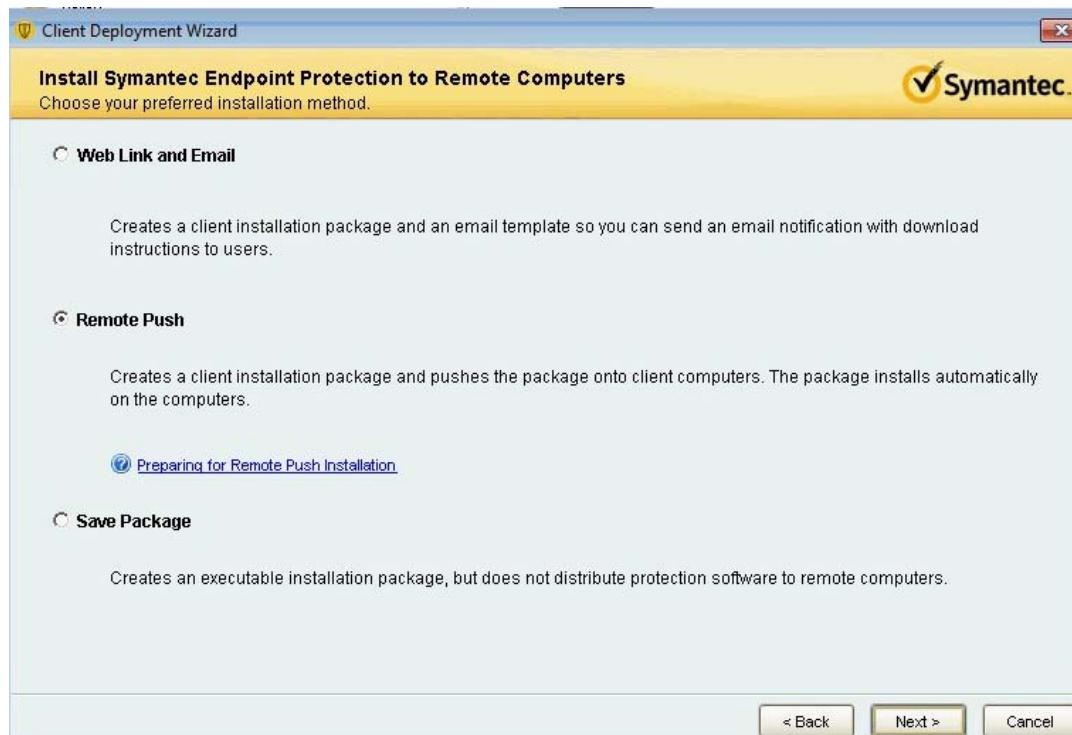
- 2 Edit Client Install Settings.

- a Enter a **Name** (PIIC iX Client, for example) and **Description** in appropriate text boxes.

The dialog box is titled 'Edit Client Install Settings'. It has two tabs: 'Install Tab' (selected) and 'Schedule Reboot'. The 'Install Tab' contains the following settings:

- Name:** PIIC iX Client
- Description:** (empty)
- Select an installation type:** Silent
- Install to the default installation folder** (radio button selected)
- Install to a custom installation folder** (radio button unselected)
- Folder:** (empty text field)
- Enable installation logging** (checkbox checked)
- Log file name (including path):** %TEMP%\SEP_INST.LOG
- Note:** The folder must already exist.
- Submit reputation information to Symantec Security Response** (checkbox unselected)
- Add the program to the Start Menu** (checkbox checked)
- Upgrade settings:**
 - Maintain all logs, policies, and client-server communications settings** (radio button selected)
 - Remove all previous logs and policies, and reset the client-server communications settings** (radio button unselected)

- b** Click the down arrow and select **Silent** as and installation type. Then leave all other default settings.
 - c** Open the **Schedule Reboot** tab and select **No Restart** as **Restart Method**. Then leave all other default settings.
 - d** Click **OK**.
- 3** On the **Symantec Endpoint Protection Manager** screen select the **Clients** icon. Then select **Add a client** in the **Tasks** section.
- a** Select **New Package Deployment**, then **Next**.
 - b** For **Install Settings** use client settings configured for PIIC iX in **Step 2**, then **Next**.
 - c** Select the **Remote Push** option, then click **Next**.



- d** In the **Search Network** tab click the **Find Computers** button to find all PIIC iX systems. Then provide login credentials as requested.
- e** Once computers are found, they are added to the **Install Protection Client on** box. Click **Next** to continue.
- f** Click **Send** to push the client software to the selected computers. Wait while the client software is pushed to the selected computers.
- g** Click **Finish**.

Unmanaged Client Installation

- 1** Install the Symantec Endpoint Protection Client software using the default configuration settings.
- 2** Run the software, then select **Change Settings**.

3 Go to **Centralized Exception > Configure Settings**.

4 Click **Add**, then enter the following folders to the list:

C:\Program Files(x86)\Microsoft SQL Server\MSSQL12.MSSQLSERVER

C:\Program Files(x86)\Philips\PIIC iX

C:\ Stardate

C:\ Windows\System32\Spool\PRINTERS

5 Close the screen and go to **Antivirus and Antispyware Protection > Configure Settings**.

6 On the **Antivirus and Antispyware Protection** screen select the **Advanced** option.

7 In the **Scan files when** section click the **Scan when a file is accessed or modified** option, then close the dialog.

8 On the **Antivirus and Antispyware Protection** screen select **Notification**.

9 On the **Scan Notification Options** screen, clear the following check boxes.

Display a notification message when a risk is detected

Display the Auto-Protect results dialog

CAUTION Do not run an *Active Scan* or a *Full Scan* on machines running the Patient Monitoring System.

10 Disable **SONAR, Firewall, and Intrusion Prevention**.

11 Disable all Email scan options (for example, **Internet Email Auto-Protect, Microsoft Outlook Auto Protect** and so on).

Upgrading Antivirus Signature Files

You must upgrade Antivirus software regularly to get current DAT files, scanning engine, Service Packs, and Patches.

Upgrades can be done by updating tasks, scheduling updates, manually updating, and by using login scripts or management tools. You should use *silent* schedule updates on machines running the Patient Monitoring application.

Antivirus updates are patches you can download from the antivirus software website that keep the system free from new potential threats/virus attacks. To ensure that a regular upgrade does not hamper the Patient Monitoring application performance, Philips recommends using scheduled *silent* updates. *Silent* update conceals any restart message following updates.

Most antivirus packages support network-wide upgrades. Only pre-tested updates are supported on any system running Philips software.

System running Philips software connected to Hospital LAN

In this scenario the Hospital IT Server is responsible for pushing the updates to connected systems.

System running McAfee Virus Scan Enterprise

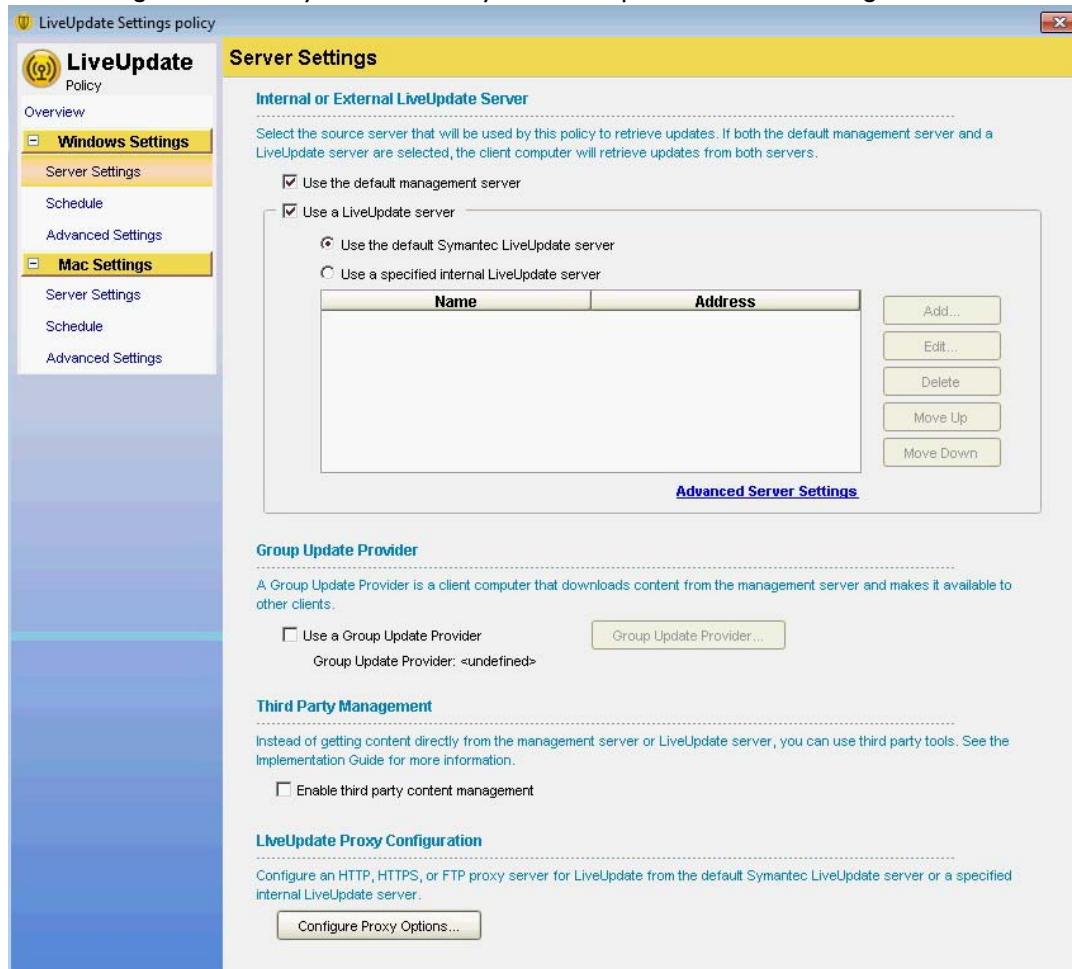
- 1 Configure the repository list to fetch the update from the hospital IT Server. Turn OFF the proxy settings for the repository list.
- 2 Configure the Update task using EPolicy Orchestrator (EPO) to deploy the updates.

Important Do not configure Primary Server as source of definition.

System running Symantec Endpoint Protection

Use **Symantec Endpoint Protection Manager** to deploy the definition files from the Hospital IT server in the network. Configure the **Live Update Policy** on the **Symantec Endpoint Protection Manager** as illustrated.

Important Do not configure the Primary server as the Symantec Endpoint Protection Manager.



System running Philips software not connected to Hospital LAN

In this scenario you must download a copy of the updated definition file from the antivirus software manufacture Website, then manually install the file into the system running Philips software.

Testing Product Assurance

Overview	10-1
Visual Tests	10-1
Power On Test	10-2
Database Storage Test	10-4
Power Failure Response Test	10-4
Test and Inspection Procedures	10-5

Overview

Before using the Philips system clinically with patients, proper performance of the system shall be verified. This section includes a series of Product Assurance Tests that shall be performed after system installation and any system repair or upgrade to verify system functionality.

Important These validation tests do not check all system specifications but are intended to verify performance of the primary features of PIIC iX functionality. However, successful completion of the performance tests shall yield a fully functioning system.

When performing product assurance tests, PIIC iX Systems must be connected to the Clinical Network.

Visual Tests

Prior to using the Philips system with patients, thoroughly inspect all system components, cables, and connectors.

System Components

- 1** Check all components of the PIIC iX system for signs of mechanical damage. If you find any damage to a component, assess the damage to determine if repair or replacement is required. Repair or replace the component as required before continuing the Product Assurance Tests.
- 2** Check all cables of the PIIC iX system for signs of abrasion, wear, or other damage. If any cable appears damaged, repair or replace the cable before you use the PIIC iX system for patient monitoring.
- 3** Check all cable connectors for signs of mechanical damage and each cable connection for connection integrity. If any cable connector appears damaged, replace the cable before you use the PIIC iX system for patient monitoring.
- 4** Check that all cable connectors are fully seated and secure.

WARNING **Verify that all video, speaker, keyboard, mouse and power cables are secure to avoid accidental disconnection.**

Power On Test

Turning On The Equipment

- 1** Turn on each Display, then the UPS. Verify that each unit turns on correctly and that status LEDs are correct.
- 2** Verify that all active Network devices (switches, repeaters, etc.) are on and that each On LED is illuminated.

Observing Software Startup

Important Before you start your PIIC iX PC or Server, be sure that all connected equipment is turned on (Printer or Recorder, for example).

The software boot process includes the Operating System boot process and the Philips application boot process. Follow the startup sequence and verify the following:

Operating System Boot Process

- 1 Turn on the PC or Server.

WARNING If any of the tests fail during POST, an Error Message displays and the POST is terminated. If an Error Message appears, record the error message(s) and contact the Response Center. DO NOT USE THE EQUIPMENT WITH PATIENTS!

The Power-On Self-Test (POST) checks each of the subsystems.

The OS Services are loaded.

The Windows subsystem is initiated and the Microsoft Windows logo appears.

The PIIC iX Boot Process begins.

PIIC iX **System Setup** opens.

- 2 Complete **System Setup** successfully.
- 3 Continue to **Performance Test**.

Performance Test

After the Philips system enters Monitoring Mode, fully test Philips patient monitoring software as follows:

- 1 Verify that the date and time display correctly.
- 2 Verify mouse or trackball functionality by moving the cursor across the display to see that it tracks normally. Open a Patient Window button to verify control and display(s) response.
- 3 Verify normal system operation by checking that:
 - Patient data appear for all configured Patient Sectors,
 - Patient numerics display normally,
 - Waveforms update smoothly,
 - For telemetry monitors, telemetry setup can be changed successfully, and no error messages display
- 4 After USB Recorder is installed (**page 5-62**) test the 2-channel Recorder(s) by requesting a recording from a Patient Sector, a bedside monitor, a telemetry device. Verify that annotated data and waveforms are recorded correctly.

- 5** Verify alarm annunciation, sound, and recording, by making an alarm limit adjustment or other means that does not interfere with patient care. Verify that the alarm sound and alarm recording activate correctly.
- 6** Test the printer by printing a text report or a graphical report with waveforms. Check that reports print correctly.
- 7** Test the keyboard by typing characters from all keys, (upper and lower case).
- 8** Select each PIIC iX using the KVM Switch and verify that the keyboard and mouse correctly control the PIIC iX Main Screen applications.
- 9** If the KVM Switch is being used to control a second Display, verify the following for each PIIC iX connected to the Switch that has Dual Display capability:
The proper applications open on the second display when selected on the PIIC iX Main Screen,
The mouse cursor moves freely between the Main Screen and the second Display for the selected PIIC iX,
The keyboard and mouse correctly control the applications in the second Display,
The connected second Display is not a touch display,
Kavoom is not enabled.

Database Storage Test

After at least 10 minutes of monitoring, check Review applications to verify that stored data are correctly displayed for all patient monitors.

Power Failure Response Test

Verify that the **UPS** will provide power in case of a loss of power to the PIIC iX system as follows:

- 1** Disconnect the power cord of the UPS from the wall outlet or Power Distribution Module for about **3 seconds**.
- 2** Verify that the PIIC iX system continues to operate and the UPS makes an audible tone.
- 3** Restore the power cord connection.

Test and Inspection Procedures

This section is intended for **Philips Cardiac and Monitoring Systems Service Providers**. It documents requirements for test, inspection, and results reporting for PIIC iX systems to help assure safe and reliable operation. The tests and inspections in **Table 10-5** through **Table 10-9 must be followed by Philips Service Providers** when the Philips system is installed and after any service event.

On all systems verify that the latest Operating System security patch is installed. Consult the most recent security Field Change Order (FCO) for the correct Operating System Security Update.

Table 10-1 describes tests which must be performed for Philips system components for each type of service event.

Table 10-1 PIIC iX Test and Inspection Requirements

Service Event When performing ...	Test Block(s) Required ... Complete these tests
Installation	Visual, Power On, Performance
Preventive Maintenance	Visual
Any component repair or replacement	Power On, Performance
Hardware Upgrade	Power On, Performance
Software Upgrade: Version	Power On, Performance
Software Upgrade: Update/Patch	Software Upgrade Patch
Software Upgrade: Fix/Patch	Software Upgrade Patch
All other Service Events	Visual, Performance

PIIC iX

Table 10-2 describes the test or inspection to perform on each PIIC iX for each type of test specified in **Table 10-1**. Detailed procedures for performing the tests in the tables are given in the previous sections of **Testing Product Assurance**.

Table 10-2 PIIC iX - Test and Inspection Matrix

Test Block Name	Test or Inspection to Perform	Expected Results	What to Record on Service Record
Visual	<ul style="list-style-type: none"> 1 For installation, perform visual inspection of shipping cartons and contents. All other cases, inspect installed device. 2 Is the speaker cable secure? 3 If a Keyboard-Video-Mouse Switch is installed, are keyboard and mouse cables secure? 	<p>No visible damage</p> <p>Expected answer is Yes for all steps. If so, Visual test passed.</p>	V:P or V:F <i>where</i> P = Pass F = Fail
Power On:	<ul style="list-style-type: none"> 1 Power on all devices. 2 Do any devices report errors during startup? 3 Do system startup audible speaker tones occur? 4 Do all configured PIIC iX hosts display green status in Quick Unit Status? 	<p>Devices power up into expected Main Screen display status.</p> <p>Expected answer is Yes for all steps. If so, Power On test passed.</p>	PO:P or PO:F P = Pass F = Fail
Performance:	<ul style="list-style-type: none"> 1 Are purchased options licensed and operational? 2 Do the devices respond to user inputs? 3 Verify there are no Failures reported when System Validation is run. 4 Do appropriate waveforms and parameters appear in Patient Sectors licensed and configured for? 5 If Location Mapping is configured, use the Location Mapping Validation Tool and confirm tool confirms connectivity with deployed network infrastructure.(Refer to <i>PIIC iX Installation Note - Using Location Mapping Validation Tool, 453564471851</i>.) 6 If Primary server is configured in topology, verify that all monitored beds continue be displayed and monitored when each surveillance host is put into Local Mode. 7 Verify if equipment is not moving with the patient on transfer or discharge, that the equipment label is assigned and locked. 	<p>Expected answer is Yes for all steps.</p> <p>If so Performance test passed</p>	P:P or P:F P = Pass F = Fail

Table 10-2 PIIC iX - Test and Inspection Matrix (continued)

Test Block Name	Test or Inspection to Perform	Expected Results	What to Record on Service Record
Software Upgrade Patch:	<p>1 Verify there are no reported errors during software patch installation process for all hosts.</p> <p>2 Do all configured PIIC iX Surveillance hosts (including Server(s)) display a green <i>Connected</i> status in Quick Unit Status after patch installation is complete and application restarts?</p> <p>3 For each Surveillance or Overview host: does Main Screen display after application restart?</p> <p>4 For each Surveillance or Overview host: do all configured patient sectors display appropriate patient waveforms and parameters, and does patient monitoring begin?</p> <p>5 Verify that Software Update Tool displays the proper Software Revision and that Patch Status is <i>Complete</i> for each host.</p> <p>6 Verify that there are no <i>Errors</i> reported when running System Validation.</p>	<p>No errors display during patch installation.</p> <p>Status icon is green/<i>Connected</i> for all configured hosts in topology.</p> <p>Main screen displays for each Surveillance and Overview host.</p> <p>Proper waves and parameters display in configured patient sectors.</p> <p>Software Update Tool (page 7-27) displays proper software revision and status.</p> <p>System Validation reports no errors (page F-7)</p>	SUP:P or SUP:F P = Pass F = Fail

Small Primary Server PIIC iX

Table 10-3 describes the test or inspection to perform for the **Small Primary Server** for each type of test specified in **Table 10-1**.

Table 10-3 Small Primary Server PIIC iX - Test and Inspection Matrix

Test Block Name	Test or Inspection to Perform	Expected Results	What to Record on Service Record
Visual	For installation, perform visual inspection of shipping cartons and contents.	No visible damage	V:P or V:F <i>where</i> P = Pass F = Fail
Power On:	<ol style="list-style-type: none"> 1 Power on all devices. 2 Observe software boot up. 3 After Self-Test, observe that Server Power/Diagnostics LED is solid green 	Expected answer is Yes for all steps. If so, Power On test passed.	PO:P or PO:F P = Pass F = Fail
Performance:	<ol style="list-style-type: none"> 1 Verify purchased options are enabled. 2 Observe that all Client Device names configured on the Server appear in Quick Unit Status in Connected mode. 	Expected answer is Yes for all steps. If so, Performance test passed.	P:P or P:F P = Pass F = Fail
Software Upgrade Patch:	<ol style="list-style-type: none"> 1 Verify there are no reported errors during software patch installation process for all hosts. 2 Do all configured PIIC iX Surveillance hosts (including Server(s)) display a green Connected status in Quick Unit Status after patch installation is complete and application restarts? 3 For each Surveillance or Overview host: does Main Screen display after application restart? 4 For each Surveillance or Overview host: do all configured patient sectors display appropriate patient waveforms and parameters, and does patient monitoring begin? 5 Verify that Software Update Tool displays the proper Software Revision and that Patch Status is Complete for each host. 6 Verify that there are no <i>Errors</i> reported when running System Validation. 	No errors display during patch installation. Status icon is green/ Connected for all configured hosts in topology. Main screen displays for each Surveillance and Overview host. Proper waves and parameters display in configured patient sectors. Software Update Tool (page 7-27) displays proper software revision and status. System Validation reports no errors (page F-7)	SUP:P or SUP:F P = Pass F = Fail

Enterprise Servers iX and Physiologic Data Servers

Table 10-4 describes the test or inspection to perform for a **Enterprise Primary or Physiologic Server** for each type of test specified in **Table 10-1**.

Table 10-4 Enterprise Server iX and Physiologic Server - Test and Inspection Matrix

Test Block Name	Test or Inspection to Perform	Expected Results	What to Record on Service Record
Visual	For installation, perform visual inspection of shipping cartons and contents.	No visible damage	V:P or V:F <i>where</i> P = Pass F = Fail
Power On:	<ol style="list-style-type: none"> 1 Power on all devices. 2 Do any devices report errors during startup? 3 Do all configured PIIC iX hosts and servers display green status in Quick Unit Status? 	Devices power up into expected Main Screen display status. Expected answer is Yes for all steps. If so, Power On test passed.	PO:P or PO:F P = Pass F = Fail
Performance:	<ol style="list-style-type: none"> 1 Are purchased options licensed and operational? 2 Verify there are no Failures reported when System Validation is run. 	Expected answer is Yes for both steps. If so, Performance test passed.	P:P or P:F P = Pass F = Fail
Software Upgrade Patch:	<ol style="list-style-type: none"> 1 Verify there are no reported errors during software patch installation process for all hosts. 2 Do all configured PIIC iX Surveillance hosts (including Server(s)) display a green Connected status in Quick Unit Status after patch installation is complete and application restarts? 3 For each Surveillance or Overview host: does Main Screen display after application restart? 4 For each Surveillance or Overview host: do all configured patient sectors display appropriate patient waveforms and parameters, and does patient monitoring begin? 5 Verify that Software Update Tool displays the proper Software Revision and that Patch Status is Complete for each host. 6 Verify that there are no Errors reported when running System Validation. 	No errors display during patch installation. Status icon is green/ Connected for all configured hosts in topology. Main screen displays for each Surveillance and Overview host. Proper waves and parameters display in configured patient sectors. Software Update Tool (7-27) displays proper software revision and status. System Validation reports no errors (F-7)	SUP:P or SUP:F P = Pass F = Fail

Clinical Network

Refer to Network documentation for Test and Inspection requirements for Clinical Network.

Troubleshooting the System

Troubleshooting Symptoms

There can be more than one cause that contributes to a problem. The following tables list possible symptoms, causes, and actions that can possibly resolve a particular problem.

Error and Status Messages

Symptom/Error	Possible Causes of Failure	Corrective Action
Printer Status Messages		
<i>Printer Jam message in Surveillance/Overview Station Status Area</i>	Printer Jam	<ol style="list-style-type: none"> 1 Physically clear Printer jam. 2 Restart System.
	Windows Print Spooler service requires stop and restart.	<ol style="list-style-type: none"> 1 Go to Control Panel > Administrative Tools > Services. 2 Select Print Spooler in the list. 3 Click Stop to stop the service, then Restart.
Recorder Status Messages		
<i>USB 2 -Channel Recorder out of paper</i>	Recorder is out of paper	<ul style="list-style-type: none"> • Replace paper.
<i>USB 2 -Channel Recorder door is open</i>	Recorder door is open	<ul style="list-style-type: none"> • Check paper supply and close Recorder door.
<i>USB 2-Channel Recorder Not Ready</i>	If Recorder LED is off, Power Supply has failed or has been disconnected	Verify AC power connection to power adapter and power cable connection to recorder. If power adapter LED is off, replace power.
	If Recorder LED is blinking, communication with the Information Center is lost	Verify the Information Center is running normally. Check all recorder cabling. If LED is still blinking, disconnect the power cable from the Recorder and wait 20 seconds. Reconnect power to the Recorder device.

Symptom/Error	Possible Causes of Failure	Corrective Action
<i>USB 2-Channel Recorder hardware fault</i>	Recorder has malfunctioned	<ul style="list-style-type: none"> Disconnect power cable from the Recorder and wait 20 seconds. Reconnect power. If LED is still blinking, replace the recorder device.
PIICWeb Access Error		
<i>Server Error in PIICWeb</i>	User name or password not typed correctly	<ul style="list-style-type: none"> Try to Log on again.
	Incorrect credentials used to access the Web site	<ol style="list-style-type: none"> Go to Control Panel > Administrative Tools >Computer Management. Expend System Tools, then expand Local Users and Groups. Be sure that user is a member of the PicWebUsers group.
	Web Site configuration error	<ol style="list-style-type: none"> Run System Configuration. In the Tools Pane expand System Health & Status folder and double click Host Qualification (Local). Select the Web site Rule then click the Correct icon.
12-Lead Error		
<i>Insufficient data for 12Lead</i> <i>Insufficient leads for 12Lead</i> <i>Unable to analyze 12Lead</i> <i>Patient conflict must be resolved</i>	12-lead analysis cannot be performed	<ul style="list-style-type: none"> The following leads are required for the DXL 12-lead algorithm: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
<i>12 Lead Capture Rejected</i>	Maximum number of concurrent 12 leads is reached	<ul style="list-style-type: none"> Reduce unnecessary captures and retry.

Symptom/Error	Possible Causes of Failure	Corrective Action
PSA Installation/Connection Error		
<i>A message reports that Philips Service Agent Service is not running on the machine</i>	Philips Service Agent Service is not running on the machine.	<ul style="list-style-type: none"> Refer to Troubleshooting PSA.
<i>A message reports that Philips Service Agent installation fails.</i>	PSA may not be licensed on the device.	<ol style="list-style-type: none"> Obtain PSA license. Re install PSA.
<i>A message reports failure to validate the Philips Service Agent configuration</i>	Serial number and product Id may not match the product license file .	<ol style="list-style-type: none"> Contact Customer Response Center to correct the information. Re install PSA.
Equipment Assigned to Failed Host Unavailable for Monitoring		
After PIIC iX fails you cannot monitor a patient that was on that PIIC iX on any other PIIC iX on the network.	Equipment Labels and Bed Labels are locked to sectors on a failed PIIC iX.	<ol style="list-style-type: none"> Open PIIC iX System Configuration In the left pane of the System Configuration screen expand the Topology folder and double-click the desired institution that houses the failed PIIC iX. Delete the defected PIIC iX. When you delete the host its beds are released to the available pool so that they can be assigned to a different host for monitoring.
Bedside Network Configuration Error		
Bed-to-bed overview feature (Alarm Reflector, Alarm Pop-up, Time Synch, for example) is not working properly. Error Message appears at bedside, <i>Check Network Configuration</i>	Possible Multicast addressing and Network design/configuration issue	<ul style="list-style-type: none"> Refer to IntelliVue Network Specification, <i>IntelliVue Multicast Processing and IGMP Support</i> section, for detailed instructions.

Symptom/Error	Possible Causes of Failure	Corrective Action
Equipment Association Error in PIIC iX Sector or IPM		
<i>Assigned Central not available.</i>	Device is recognized and assigned, but PIIC iX is offline.	<ul style="list-style-type: none"> Reconnect PIIC iX to monitoring.
<i>Central cannot identify bed.</i>	Device is not recognized. The label is blank or not in the system.	<ul style="list-style-type: none"> Add equipment label (page 6-11).
<i>No Central - check equipment.</i>	Although device is plugged into Location Mapped port, device limits are exceeded.	<ul style="list-style-type: none"> Remove devices to meet the limit for a bed: <ul style="list-style-type: none"> (2) bedside monitors (1) X2 monitor (1) Telemetry Device
<i>Device locked to other bed.</i>	Device is plugged into Location Mapped port, but is locked to another bed.	<ul style="list-style-type: none"> Unlock equipment (page 6-11).
<i>No Central assigned to bed.</i>	Device is recognized but not assigned to a bed.	<ul style="list-style-type: none"> Assign equipment to bed (page 6-11).
<i>No Central - check versions.</i>	Device cannot be monitored due to unsupported software version or device does not have the network option.	<ul style="list-style-type: none"> Use IPM with J.01.xx or later software. Check Feature Options (page 5-27)
<i>No Central - duplicate label.</i>	A device with the same equipment label is being monitored by the system.	<ul style="list-style-type: none"> Assign unique equipment label (page 6-11) Check Feature Options (page 5-27)
<i>No Central - network problem.</i>	Device has duplicate MAC or IP Address as another device.	<ul style="list-style-type: none"> Be sure all devices have unique MAC or IP Address.
<i>No Central - not supported.</i>	Device is not licensed.	<ul style="list-style-type: none"> Devices exceed licensing limits. Remove devices to meet licensing limits.
<i>Device belongs to other unit.</i>	Device plugged into Location Mapped port, but device does not belong to this unit	<ul style="list-style-type: none"> Assign equipment to correct unit (page 6-11).

Symptom/Error	Possible Causes of Failure	Corrective Action
IntelliVue Mobile Caregiver Error Codes		
<i>Refer to Mobile Caregiver Error Codes, Appendix E.</i>		
Loss of Surveillance PIIC iX Host		
PIIC iX Surveillance machine failure result in loss of central monitors. Bedside monitors continue to provide primary monitoring.	PIIC iX Surveillance machine failure	<p>1 If spare surveillance machine is available, configure the host name of the failed surveillance machine on that host and replace it.</p> <p>2 If other existing Surveillance machines have spare sectors, delete the failed host from the topology to free Equipment labels and their assignments. Then assign these labels and equipment to the free sectors on existing machines.</p>
Host Qualification fails when Primary Server is DNS Server		
With PIIC iX B.00 and later a qualification test will cause a DNS Server failure if your Primary Server is also the DNS Server.	Forward lookup zone for philipsixtest.com is not configured.	<ul style="list-style-type: none"> Refer to Configuring Primary as DNS Server.
SQL Database Offload Errors		
Test Connection feature of System Setup SQL Server Connection page fails. <i>Unable to connect to Server</i>	<p>SQL server name and instance are typed incorrectly.</p> <p>No network connection between server and remote SQL server</p>	<ul style="list-style-type: none"> Verify the SQL server name and instance are correct (SQL Server Connection). Try logging in to SQL Management Studio with the same login information. If it shows the same error, there may be an issue with network connection. Work with IT to ensure that the port and firewall settings are configured correctly.
<i>The user does not have sufficient SQL permissions</i>	<p>If using SQL authentication, SQL account may not have adequate privilege.</p> <p>If using Windows authentication, configuration may not be accurate.</p>	<ul style="list-style-type: none"> Verify with IT that the SQL account has <i>sysadmin</i> privilege. 1 Be sure AD user account is added to the Local Administrator group. 2 Confirm with IT that the AD user account is added to the SQL instance with <i>sysadmin</i> role. 3 Confirm with IT that the server iX name is added to the SQL instance with <i>sysadmin</i> role.

Symptom/Error	Possible Causes of Failure	Corrective Action
<i>The remote SQL server instance is already configured for another host</i>	SQL Server Instance is not unique.	<ul style="list-style-type: none"> Request another SQL instance from IT. Each server iX requires its own dedicated instance of SQL server.
<i>Services stop on Server iX and are unable to be restarted. System Configuration is not accessible.</i>	Server iX has lost connection to remote SQL Server host.	<ul style="list-style-type: none"> Contact customer IT for status and access to SQL Server. Once the connection is re-established, restart monitoring services. <ol style="list-style-type: none"> Run PIIC iX System Configuration. Enter Login credentials. Click Start Services icon.

HL7 System Interfacing Toolbox

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Introduction

The Philips IntelliVue Information Center (PIIC iX) HL7 System Interfacing Toolbox (which includes a Simulator and Diagnostic capabilities) is for use with the PIIC iX, PIIC and IntelliBridge System, and Healthcare Integration Foundation (HIF)/Connected Care Platform (CCP).

The tool when acting as a client permits receipt of HL7 messaging, from PIIC iX or PIIC. When used as a diagnostic tool it communicates directly with the HL7Service to obtain active configuration status, or you can configure the tool to receive exact copy or mirrored messages sent to EMR clients from PIIC iX in real time. The purpose of the HL7 Tool is to:

- Troubleshoot PIIC iX HL7 service installation(s),
- View HL7 service output data,
- Provide IntelliBridge Enterprise installations with canned data at a configurable periodic rate.

For additional HL7 programming documentation refer to the *HL7 Programmer's Guide*.

HL7 Features Added With PIIC iX B.00

- ICCA (formerly ICIP) connection requires IBE with HIF.
- Trend Client and Trend Server modes added, which provide bedside historical data that fills gaps when the bedside is not available to the PIIC iX.

HL7 Messaging / Configuration Additions	Description
Distributed or Centralized Configuration	Allows HL7Service to source HL7 messaging data from each PIIC iX in the networked system Current mode of operation (Centralized) continues to be supported. Configuration is either fully decentralized or centralized.
EC40/80 Device Hub Integration	Devices (Ventilators, Infusion pumps, Anesthesia devices) connected through EC40/80 hubs are fully integrated into HL7 messaging. Assigning hub to a sector is all that is necessary.
IHE Patient Care Device Profile Support	IHE (Integrating the Healthcare Environment) Technical Profile for PCD (Patient Care Devices) is supported. Profile is standards based and fully supports multiple device environment integration.
	IHE is required for infusion pump output as existing PIIC Classic profile cannot support multiple channel devices. MDC (Medical Device Codes): IHE supports MDC encoding.
Trend Upload	Universal codes which require no language translations
	Supports bedside disconnected scenarios: Numeric parametric data captured by bedside while disconnected is uploaded and issued out HL7. Supports transport scenario: Supports network disconnect issue between bedside and PIIC iX Historical data capture allows charting to fill gaps. Separate port is required by configuration which ensures EMR is aware all data on the port is historical (non-real time, for example).
Store and Forward	Supports disconnect scenario of PIIC iX HL7Service to EMR
	Stores messages to PIIC iX database when PIIC iX is disconnected Stored data is sent in correct time-order when reconnect is established.
	Store/Forward available for ReporterClient / TrendClient / ReporterServer /TrendServer modes.
	Four (4) hours of messages (maximum) stored.
	First in / First out model
ACK Processing	ACK processing is supported for Store/Fwd configurations only.
(Store/Fwd configurations only)	Allows receiving system to control rate of store/fwd messages sent by PIIC iX to avoid being flooded
	Reason: long disconnect time results in many messages stored.
	Communication model is one message/ACK at a time.
	Example: ACK must be received before next message is sent from PIIC iX.
	Up to three re-send of message for NAK from EMR.

HL7 Messaging / Configuration Additions	Description
Unicode UTF-8 support (IHE profile only)	Add UTF-8 Unicode support. IHE profile only Supports Asian and Eastern European language(s)
128-bed multi-bed-per-message maximum	128 multi-bed-per-message maximum limit Ensures reasonable size for multi-bed message configuration (not too large, for example)
Prioritize Bedside Parameters over EC10/Vuelink (in instances of bedside sourced duplicates)	Bedside parameter(s) prioritized over EC10/VueLink

HL7 Features Added With PIIC iX B.01

HL7 Messaging / Configuration Additions	Description
Alarm Limits out HL7	Alarm limits set for a measurement are issued in the ReferenceRange field within the OBX segment for Classic, Vista and IHE profiles.
Free Text update	Added free text support for devices to now include enumerations plus updated handling for numeric. Added messaging examples.
IHE Patient Care Device Profile Support	IHE (Integrating the Healthcare Environment) Technical Profile for PCD (Patient Care Devices) is supported. Profile is standards based and fully supports multiple device environment integration. IHE is required for infusion pump output as existing PIIC Classic profile cannot support multiple channel devices. MDC (Medical Device Codes): IHE supports MDC encoding. Universal codes which require no language translations

HL7 Features Added With PIIC iX B.02

HL7 Messaging / Configuration Additions	Description
Various improvements	MDS/VMD is not duplicated in IHE output within same message. Transport Control Protocol (tcp) Send Time compensated to ensure that each HL7 message is issued at the configured interval. ReporterClient and ReporterServer modes Ensures Store/Fwd data stores with correct timestamps Ten-connection configuration limit removed for Distributed systems. Connections are unlimited when Service Location is Distributed OBX.I2 and further fields adjusted to correct location.

About the HL7 Tool

The **HL7 Tool** selection is in the **Interfaces** folder of the *System Configuration Tools* menu. It opens a System Interfacing Toolbox that permits HL7 message capture from various HL7 sources for troubleshooting and testing customer HL7 connection issues. It specifically integrates with PIIC iX HL7Service to obtain real time configuration, connection status and mirrors messaging sent to HIS systems.

Some of the basic qualities of the tool are:

- Simple configuration to receive HL7 messaging from any iX HL7Service support all modes,
- Works with all PIIC iX HL7Service modes,
(Reporter Server, Reporter Client, Query Server, Trend Server, Trend Client)
- Can process messaging from Intellibrige and PIIC HL7 sources,
- Runs completely integrated within PIIC iX System Configuration or can be separately installed,
- Able to run multiple HL7 message captures on single instance of the tool,
- Able to capture and display any PIIC iX HL7Service configuration showing which device connections are connected or disconnected,
- Provides mirroring capability to view the exact copy of HL7 data being sent.
- Includes message library for simulation.

You can use the HL7 Tool to simulate an EMR system running as Reporter Server, Reporter Client, or Query Client. The tool must be run in the opposite mode of the connection type specified at the Primary server.

Important If an IP Address and Host Name are the same physical hardware, you must be sure that ports are unique; the software does not check for this condition.

Using localhost/127.0.0.1 as an example, you can configure localhost as ReporterClient to port 8000 with HL7 format IHE and 127.0.0.1 as ReporterClient to port 8000 with HL7 format Classic. The result in the HL7 viewer is that both formats are sent out on the same port.

HL7 Message Processing at the PIIC iX

Two concepts are supported in the PIIC iX **HL7Service**.

HL7Sender/HL7Receiver	These are HL7 definitions. This matches the HL7 specification in that one entity sends data and another receives. This is separate from the TCPClient/TCPServer definition.
TCPServer/TCPClient	These are pure TCP definitions. TCPServers wait for a TCP Connect (for example, wait for a TCP connection from a TCPClient before issuing data). TCPClients initiate the connection at the TCP level.

These concepts applied together completely describe PIIC iX HL7 modes of operation as follows.

NOTE ICCA is used as the client in this example.

When configuring HL7 clients, the following definitions apply as to how the service will operate with the configured client.

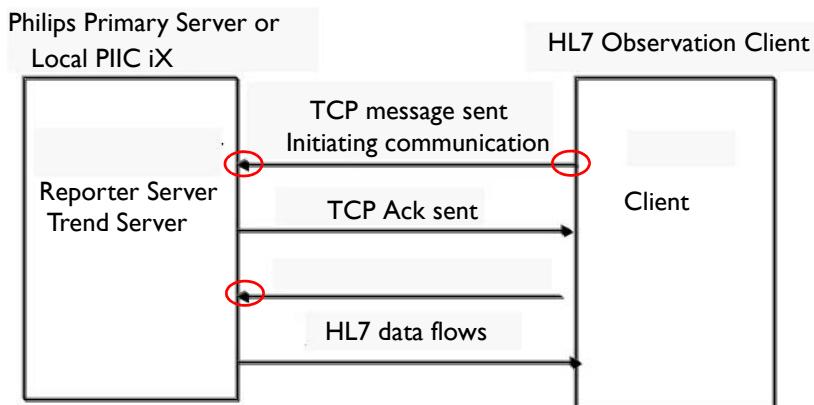
Mode	HL7Service Role	ICCA/EMR Role
Reporter Client (Auto-Unsolicited)	TCPClient	TCPServer
	HL7Sender	HL7Receiver
Reporter Server (Unsolicited)	TCPServer	TCPClient
	HL7Sender	HL7Receiver
Query Server (Query)	TCPServer	TCPClient
	HL7Sender	HL7Receiver
Trend Client	TCPClient	TCPServer
	HL7Sender	HL7Receiver
Trend Server	TCPServer	TCPClient
	HL7Sender	HL7Receiver

The PIIC iX HL7Service Mode names are of particular importance. Each Mode name is meant to describe the operation for the mode. Given that HL7Sender can operate in Reporter (periodically sent data) or Query (requested or solicited data) modes consider the following:

- ReporterClient means HL7 Reporter (HL7 mode) and TCP Client (TCP mode).
- QueryServer mode is HL7 Query (HL7 mode) followed by the TCP mode of TCP Server.

Each PIIC iX HL7Service mode name is intended to be self describing.

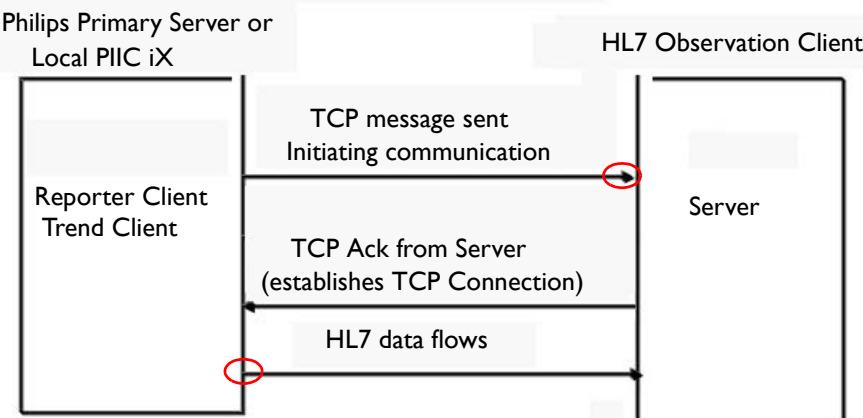
When Philips Primary Server or PIIC iX act as Reporter Server (formerly Unsolicited):



- For TCP Server to send back an Ack, it must recognize IP address from the TCP Client as one of the configured HL7 Observation Clients.
- All messages from TCP Client are sent to TCP Server port 8000 (Default, may be changed).

Sending Option	Description	Process/Steps	Behavior
Reporter Server Trend Server (Unsolicited or Broadcast) with Store and Forward with ACK Processing	In HL7 mode acts as HL7 Sender and TCP Server Once connection is established by client, all HL7 data is sent to configured clients at configured time intervals.	<p>Client connectivity is required before data is sent by source.</p> <ol style="list-style-type: none"> 1 HL7Service listens on socket. 2 Client tries to connect at application level. 3 HL7Service responds to connection (if configured). 4 HL7Service sends data to configured clients at configured client intervals. 	<p>The behavior described in this table assumes that TCP connection is established and operating properly.</p> <p>Summary Description of Reporter Server behavior is: Open Port and Send.</p> <p>Disconnect/Reconnect Behavior: If connection is lost or broken on either the source or client side, HL7Service closes socket and reopens another automatically waiting for client to reconnect.</p> <p>Client may reconnect at any time. Recommend client implement a keep-alive function for automatic reconnection.</p>
To determine successful output of HL7 data:			
<ul style="list-style-type: none"> ■ Review logs/test to confirm PIIC iX connectivity to Client. ■ Run HL7 Test Tool to confirm that data is flowing to Client. Recommend using mirroring capability to monitor actual messages sent to client. 			

When Philips Primary Server or PIIC iX act as Reporter Client (formerly auto-unsolicited):



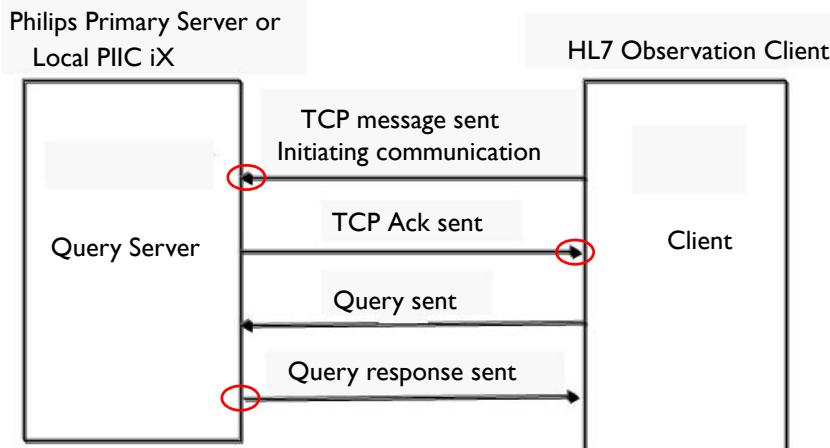
- All messages from TCP Client are sent to TCP Server port that is in HL7 configuration.
- Customer provides Philips FSE port # to be used in HL7 configuration.
- Customer is responsible for ensuring port is constantly open.
- If TCP Server port is closed, we will retry 'endlessly' to establish a connection.

Sending Option	Description	Process/Steps	Behavior
Reporter Client Trend Client <i>(Auto Unsolicited)</i> with Store and Forward with ACK Processing	In HL7 mode acts as HL7 Sender; in TCP mode acts as TCP Client. Traditional Auto- Unsolicited message interface, but does not require client TCP/IP connectivity before transmitting HL7 data by source to client.	Data is prepared and " send " is attempted to all configured clients automatically. Client only has to listen on socket for data/activity. 1 Client listens on socket. 2 HL7 Service connects and sends data to all configured clients. 3 If no connection exists, HL7Service will initiate connection before sending data.	Data is prepared and " send " is attempted to all configured clients automatically. Client only has to listen on socket for data/activity. 1 Client listens on socket. 2 HL7 Service connects and sends data to all configured clients. 3 If no connection exists, HL7Service will initiate connection before sending data.

To determine successful output of HL7 data:

- Review logs/test to confirm PIIC iX connectivity to Server.
- Run HL7 Test Tool on the Reporter Client to confirm that data is flowing to Server. Recommend using mirroring capability to monitor actual messages sent to client.

When Philips Primary Server or PIIC iX act as Query Server (formerly Query):



- All messages from TCP Client are sent to TCP Server port 9010 (Default, may be changed).

Sending Option	Description	Process/Steps	Behavior
Query Server (Query)	<p>In HL7 mode acts as HL7 Sender; in TCP mode acts as TCP Server.</p> <p>Traditional Polling message interface</p> <p>Client makes TCP connection and data is transmitted by source only on request through QRY message.</p> <p>Every query message generates exactly one response message.</p>	<p>Client connectivity required before data sent by source.</p> <ol style="list-style-type: none"> 1 HL7Service listens on socket. 2 Client tries to connect. 3 HL7Service responds to TCP connection. 4 Source waits for query (QRY message) request. 5 Source sends requested data. 	<p>Disconnect/Reconnect Behavior:</p> <p>If connection is lost or broken on either the source or client side HL7Service closes socket and reopens another automatically waiting for client to reconnect.</p> <p>Once HL7Service restarts, client must reconnect and initiate QRY message for data.</p>

To determine successful output of HL7 data:

- Review logs/test to confirm PIIC iX connectivity to Client.
- Confirm Network connection between Query Server and Client.
- Run HL7 Test Tool on the Query Server to confirm that response is sent to client. Recommend using mirroring capability to mirror messages sent in query response to connected client.

Opening the HL7 System Interfacing Toolbox

1 In the **System Configuration** screen select the **Tools** menu icon to populate the left pane with the Diagnostic tools.

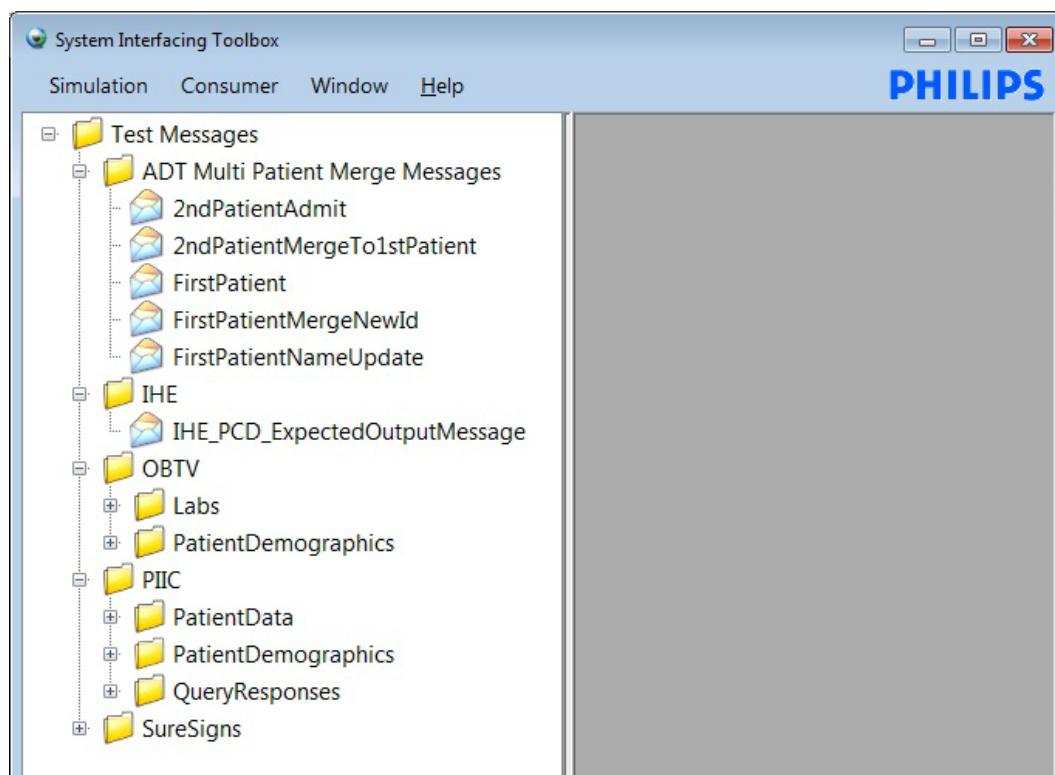
2 Expand the **Interfaces** folder and double-click **HL7 Tool**.

The **HL7 Diagnostics** dialog opens which permits deleting stored HL7 messages and launching the HL7 Toolbox.



3 If you want to delete previously stored HL7 messages click **Delete Stored HL7 Messages** in the dialog. If you want to open the HL7 Toolbox click **Launch HL7 Toolbox**.

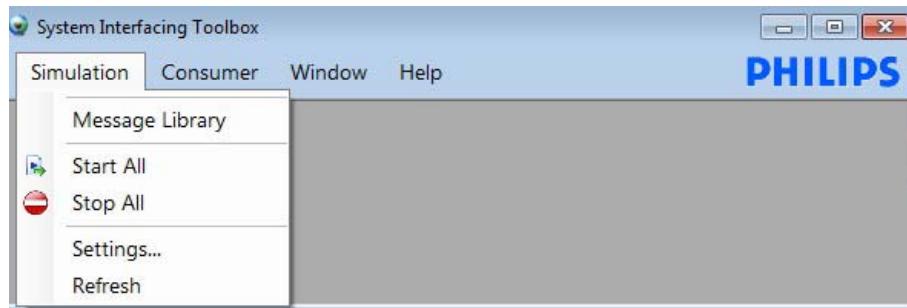
The **System Interfacing Toolbox** opens.



System Interfacing Toolbox Menu Selections

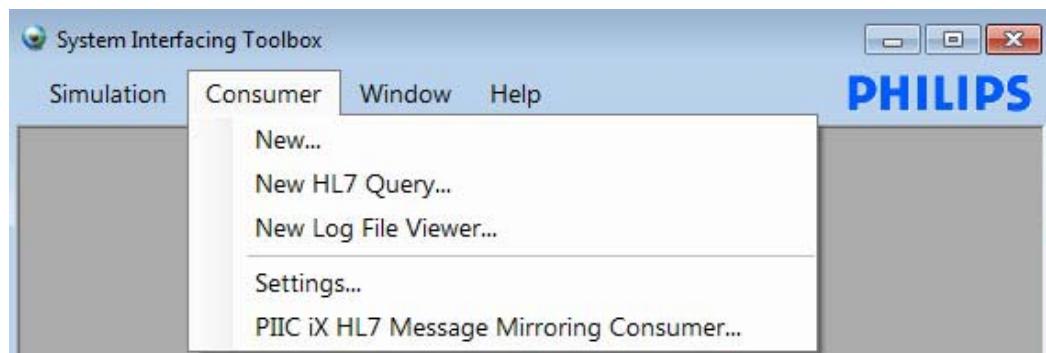
The **System Interfacing Toolbox** Menu bar selections are **Simulation**, **Consumer**, **Window**, and **Help**. A description of the selections within each menu follows.

Simulation Menu Selections



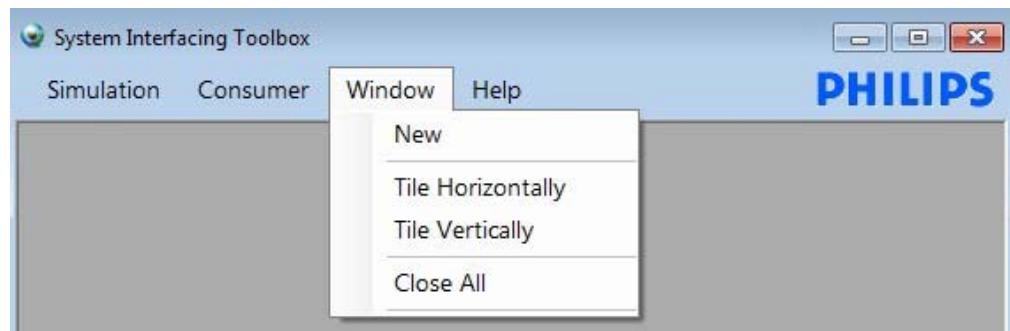
Message Library	Permits sending HL7 messaging and XML to target clients Refer to System Interfacing Toolbox Message Library .
Start All	Starts message sending in all active Simulation windows
Stop All	Stops message sending in all active Simulation windows
Settings	Opens the Preferences dialog (page A-26)
Refresh	Updates Window

Consumer Menu Selections



New (page A-18)	Permits configuring the HL7 Tool as a Server or Client PIIC iX HL7 Service must configure a ReporterServer or ReporterClient target client to the IP/Port entered to receive data. Intellibrige and PIIC must also do this in order to receive data.
New HL7 Query (page A-18)	Permits configuring the HL7 Tool as a Query Server PIIC iX HL7Service must configure a QueryServer target client to the IP/Port entered in order to receive messaging. Intellibrige and PIIC must also do this.
New Log File Viewer (page A-28)	Permits opening and analyzing previously stored message log files located in: C:\Program Files\Philips\PIIC iX\B.00\Product\HealthcareToolboxDiagnosticsLogs C:\Program Files (x86)\Philips\PIIC iX\B.00\Product\HealthcareToolboxDiagnosticsLogs
Settings	Permits configuring Max Messages Cached in HL7 Diagnostics Settings dialog
PIIC iX HL7 Message Mirroring Consumer (page A-14)	Permits configuring the HL7 Tool to receive HL7 messaging in <i>mirror</i> mode Target client does not need to be configured in HL7 Service

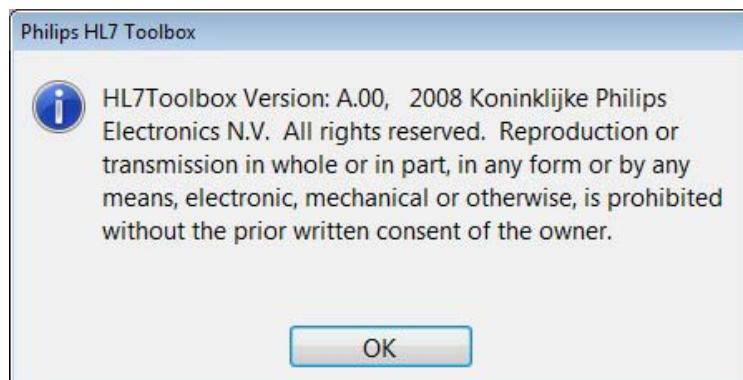
Window Menu Selections



New	Opens new window
Tile Horizontally	Organizes windows in horizontal tiles
Tile Vertically	Organizes windows in vertical tiles
Close All	Closes all windows

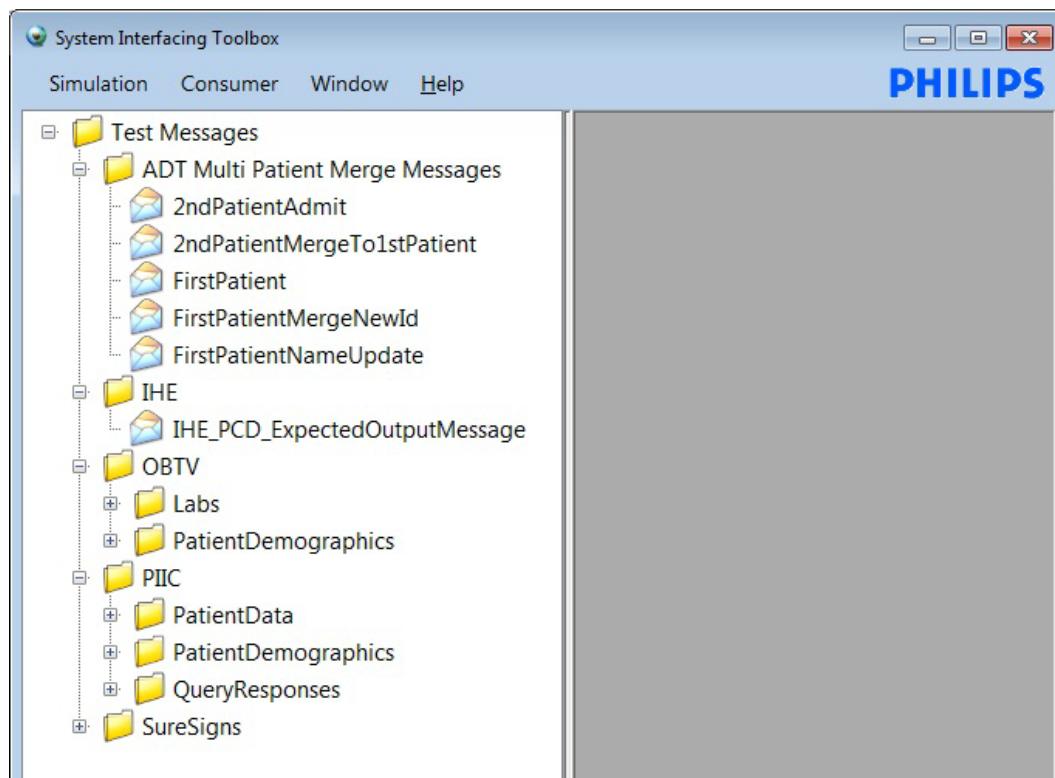
Help

- ▶ Go to **Help > About**.
The **Philips HL7 Toolbox** informational dialog opens.



System Interfacing Toolbox Message Library

NOTE The System Interfacing Toolbox can display multiple captures. Each window supports a separate HL7 data feed. Although there is no limit on the number of windows, Philips recommends that you open no more than five.

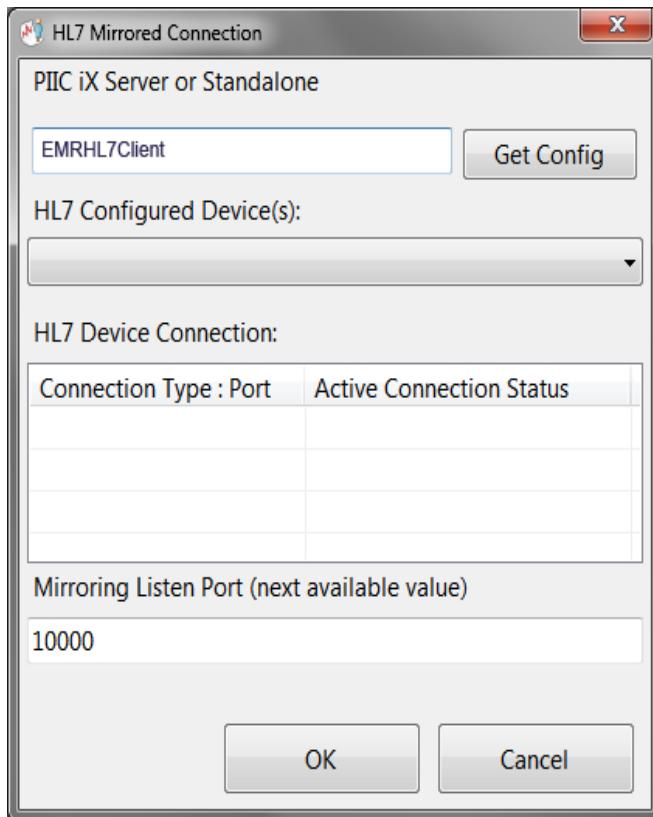


The PIIC iX B.xx HL7 Tool includes a set of preconfigured messages that can be edited to meet your system needs. Refer to **HL7 Simulation**.

HL7 Mirroring

Configure the tool as a PIIC iX HL7 Message Mirroring Consumer as follows.

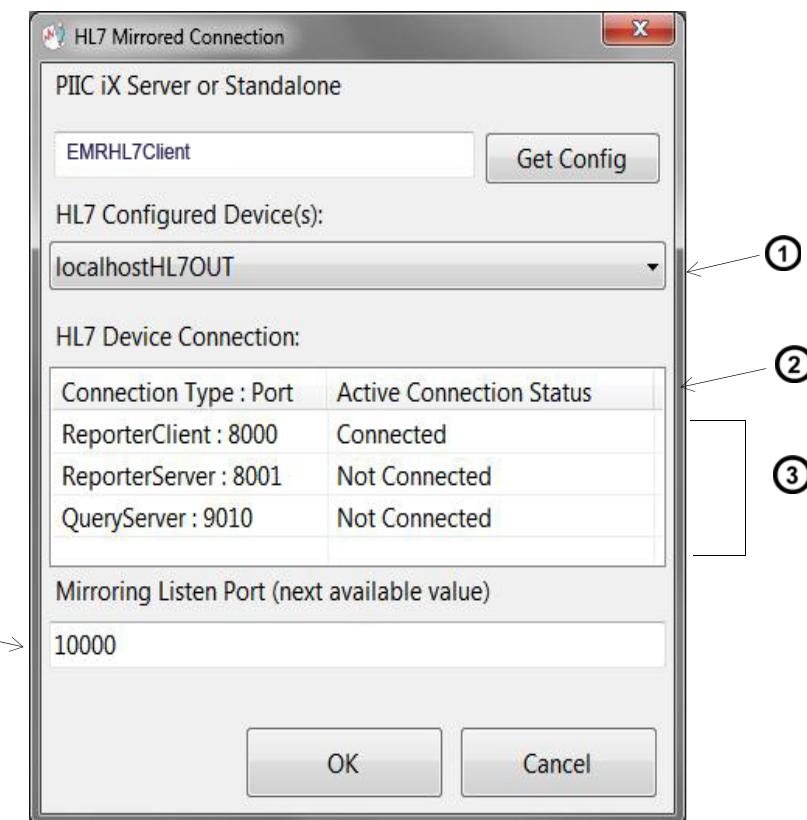
- 1 Go to **Consumer > PIIC iX HL7 Message Mirroring Consumer**.
The **HL7 Mirrored Connection** dialog opens.
- 2 In the text box enter the host name of the server at which you want to query/mirror HL7 data, then click **Get Config**.



Important If the HL7Server cannot be reached or is unavailable, a Message appears with a detailed system or connection error(s) to aid in troubleshooting.
A Ping is done as part of the connection process to the PIIC iX HL7Service so you do not need to Ping the HL7Server as part of troubleshooting.

If the HL7Server can be reached it appears in the **HL7 Configured Device(s)** list of the **HL7 Mirrored Connection** dialog.

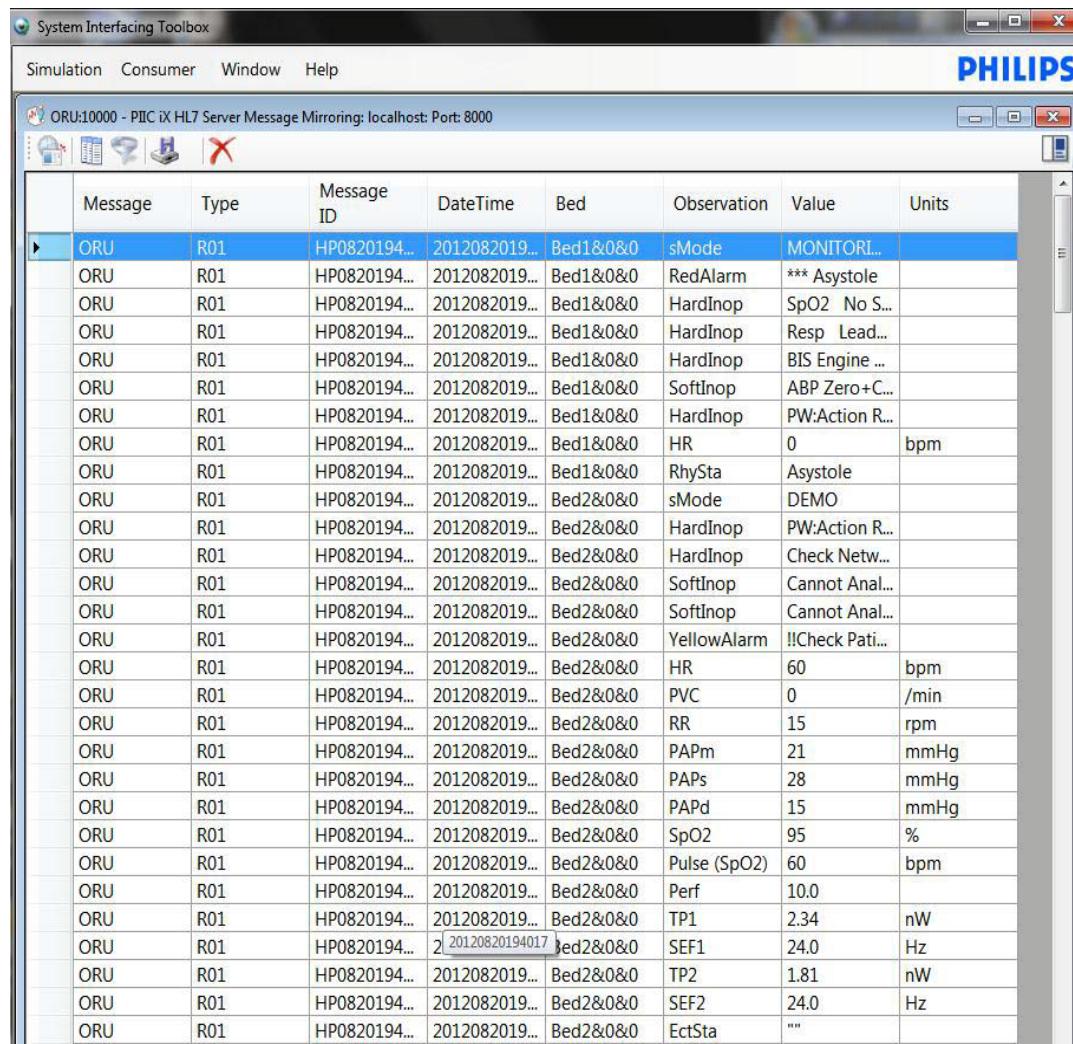
NOTE In the illustration an HL7Service is running on the same machine as the HL7Tool.



1	The HL7 Mirrored Connection dialog shows the selected HL7 Configured Device (or HIS/EMR), the Display Name of the HIS/EMR that was configured in the PIIC iX HL7 Server. HL7 Configured Device(s) (if configured) appear in this drop down list.
2	HL7 Device Connections for the configured device are listed with an Active Connection Status of each.
3	PIIC iX connections that appear as Not Connected do not currently have an active TCP connection. PIIC iX connections that appear as Connected currently have an active TCP connection.
4	Mirroring Listen Port is the default port that the PIIC iX HL7Server uses to send mirrored messaging to HL7Tool. Accept the default setting unless the HL7Tool generates an error that this port is already being used.

- Select the connection you wish to mirror in the **HL7 Device(s) Connection** section of the dialog, then click **OK**.

The *Connection Message Mirroring Window* appears in the **System Interfacing Toolbox** and populates with data. The illustration shows typical output from the **ReporterClient: 8000** device connection.



The screenshot shows a Windows application window titled "System Interfacing Toolbox". The menu bar includes "Simulation", "Consumer", "Window", and "Help". The title bar of the main window says "ORU:10000 - PIIC iX HL7 Server Message Mirroring: localhost: Port: 8000". The window contains a grid table with the following columns: Message, Type, Message ID, DateTime, Bed, Observation, Value, and Units. The data in the table represents HL7 ORU messages being mirrored from a PIIC iX HL7 Server. The "Message" column shows repeated entries of "ORU". The "Type" column shows "R01". The "Message ID" column contains various HL7 message identifiers. The "DateTime" column shows dates and times starting from 2012082019... The "Bed" column contains values like "Bed1&0&0", "Bed2&0&0", etc. The "Observation" column contains various HL7 observation types such as "sMode", "RedAlarm", "HardInop", "SoftInop", "HR", "RhySta", "sMode", "HardInop", "Check Netw...", "Cannot Anal...", "YellowAlarm", "PVC", "RR", "PAPm", "PAPs", "PAPd", "SpO2", "Perf", "TP1", "SEF1", "TP2", "SEF2", and "EctSta". The "Value" column contains numerical values like "0", "60", "15", "21", "28", "15", "95", "60", "10.0", "2.34", "nW", "24.0", "1.81", "24.0", and """". The "Units" column contains units like "bpm", "/min", "rpm", "mmHg", "mmHg", "mmHg", "%", "bpm", "Hz", "Hz", and """. The "PHILIPS" logo is visible in the top right corner of the application window.

	Message	Type	Message ID	DateTime	Bed	Observation	Value	Units
▶	ORU	R01	HP0820194...	2012082019...	Bed1&0&0	sMode	MONITORI...	
	ORU	R01	HP0820194...	2012082019...	Bed1&0&0	RedAlarm	*** Asystole	
	ORU	R01	HP0820194...	2012082019...	Bed1&0&0	HardInop	SpO2 No S...	
	ORU	R01	HP0820194...	2012082019...	Bed1&0&0	HardInop	Resp Lead...	
	ORU	R01	HP0820194...	2012082019...	Bed1&0&0	HardInop	BIS Engine ...	
	ORU	R01	HP0820194...	2012082019...	Bed1&0&0	SoftInop	ABP Zero+C...	
	ORU	R01	HP0820194...	2012082019...	Bed1&0&0	HardInop	PW:Action R...	
	ORU	R01	HP0820194...	2012082019...	Bed1&0&0	HR	0	bpm
	ORU	R01	HP0820194...	2012082019...	Bed1&0&0	RhySta	Asystole	
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	sMode	DEMO	
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	HardInop	PW:Action R...	
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	HardInop	Check Netw...	
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	SoftInop	Cannot Anal...	
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	YellowAlarm	!!Check Pati...	
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	HR	60	bpm
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	PVC	0	/min
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	RR	15	rpm
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	PAPm	21	mmHg
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	PAPs	28	mmHg
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	PAPd	15	mmHg
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	SpO2	95	%
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	Pulse (SpO2)	60	bpm
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	Perf	10.0	
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	TP1	2.34	nW
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	SEF1	24.0	Hz
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	TP2	1.81	nW
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	SEF2	24.0	Hz
	ORU	R01	HP0820194...	2012082019...	Bed2&0&0	EctSta	""	

Important The window title shows the type of messaging being mirrored (*ORU*), that the Mirror Listening Port (*10000*) is being used, that a *PIIC iX HL7 Server Message Mirroring* operation is occurring, that *HL7Server* (*localhost*) is being monitored, and that *Port:8000* of the *PIIC iX HL7Server* is being mirrored.

About Mirror output in the System Interfacing Toolbox

- If you want to update the status of Connected devices in the **HL7 Mirrored Connection** dialog press **Get Config** again.
- In ReporterClient device connection types the PIIC iX HL7Service in ReporterClient mode both connects to a receiving server and sends concurrently. This status requires a valid TCP connection. If the PIIC iX HL7Service is just starting up it will take up to 60 seconds (or the PIIC iX HL7Server configured send interval) for the ReporterClient device connection type to initiate a TCP connection, send a message, and appear in Connected status in the HL7Tool.

- In ReporterServer device connection types an HIS client has initiated a TCP connection to the PIIC iX HL7Server and a message will be sent in the next configured timer interval.
- In QueryServer device connection types an HIS client has initiated a TCP connection to the PIIC iX HL7Server. Messages are only sent to HIS clients when the HIS client initiates a specific query to the PIIC iX HL7Server. Patient data messages sent in response to QRY received messages are mirrored but the QRY messages from the HIS are not mirrored.
- When you select a device that is **Connected** immediate mirrored messaging appears. When you select a device connection that is **Not Connected** mirrored messaging will appear when that device connection becomes active within the PIIC iX HL7Service. This permits mirroring to be set up on the HL7Tool and the PIIC iX HL7Server messages will mirror those messages to the HL7Tool when it later successfully connects to the configured HIS/EMR system.

HL7Tool Mirroring - Theory of Operation

Important The HL7 System Interfacing Toolbox supports mirroring from PIIC iX HL7Service A.01 and later. Mirroring is not supported for PIIC iX HL7Server Version A.0 but HL7 messaging from that PIIC iX may be received by an HL7Tool HL7Consumer.

- The HL7Tool communicates directly with the PIIC iX HL7Service through a webserv calling interface while requesting configuration and while returning active status with configuration. Once that operation is complete and a mirroring receiving window opens, the PIIC iX HL7Service sends mirrored messages using the TCP port listed as **Mirroring Listen Port**.
- Active HL7 Tool mirroring connections are established while the PIIC iX HL7Service is running without having to interrupt, shut down, or interfere with the normal operation of PIIC iX HL7Service.
- Multiple HL7Tool installations may connect to the same PIIC iX HL7Service to receive mirrored messaging; multiple PIIC iX HL7Service installations may be monitored from one instance of the HL7Tool.
- Mirrored messages received are exactly what was sent to the HIS/EMR.
- If the TCP connection between PIIC iX HL7 Server and the HL7Tool is interrupted, it must be re-established (REF). The PIIC iX HL7 Server does not keep a history of previous HL7Tool connections.
- PIIC iX HL7Server Export logs permit tracking PIIC iX to HL7 Tool connections. Each HL7Tool connection established and lost is identified by machine name and port.

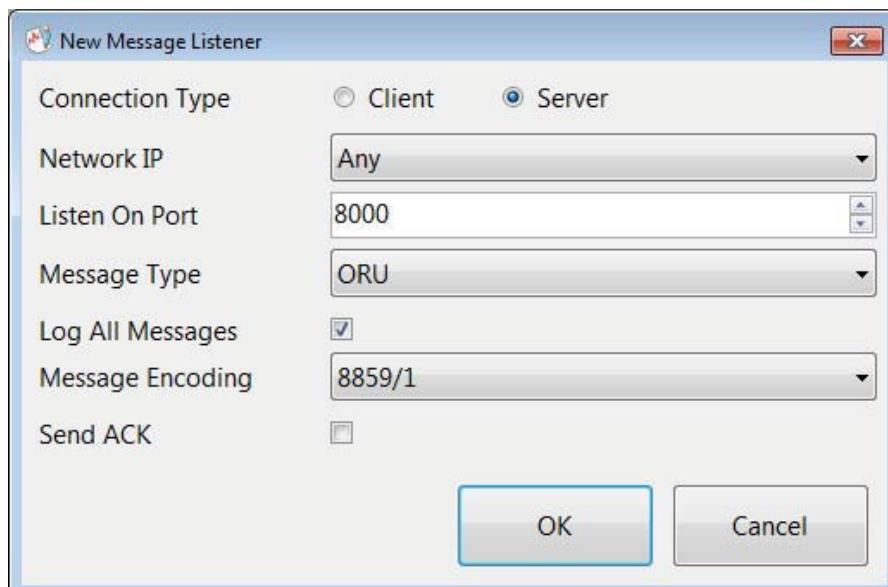
HL7 Data Receiver

As an HL7 Data Receiver you can use **Consumer** menu selection **New**.

If you want to configure the tool as a New HL7 Consumer,

- 1 Go to **Consumer > New**.

The **New Message Listener** dialog opens. Selections are dependent on whether the **Connection Type** is **Client** or **Server**. **Server** is the default.



- 2 Determine **Connection Type**.

Connection Type	Server	■ Select Server if the configured HL7 Observation Client is Reporter Client .
	Client	■ Select the opposite TCP Connection Type of the configured HL7 Observation Client. Select Client if the configured PIIC iX HL7 Observation Client is Reporter Server .

- 3 Complete the text boxes in the **New Message Listener** dialog.

Network IP (Server Connection Type only)	Enter Any (default) if the device is operating as a TCPServer. Enter the IP Address of the PC sourcing the HL7 data if the device is in TCPClient mode.	■ For the Connection Type of Server enter the desired value in the text box.
Server (Client Connection Type only)	localhost automatically populates the text box.	■ For the Connection Type of Client localhost automatically populates the text box.
Listen On Port	The port number must match that of the source device.	■ Click up/down arrow. Enter the port number with which you will establish the HL7 connection. For example, enter the port number set in PIIC iX System Configuration for that target client.

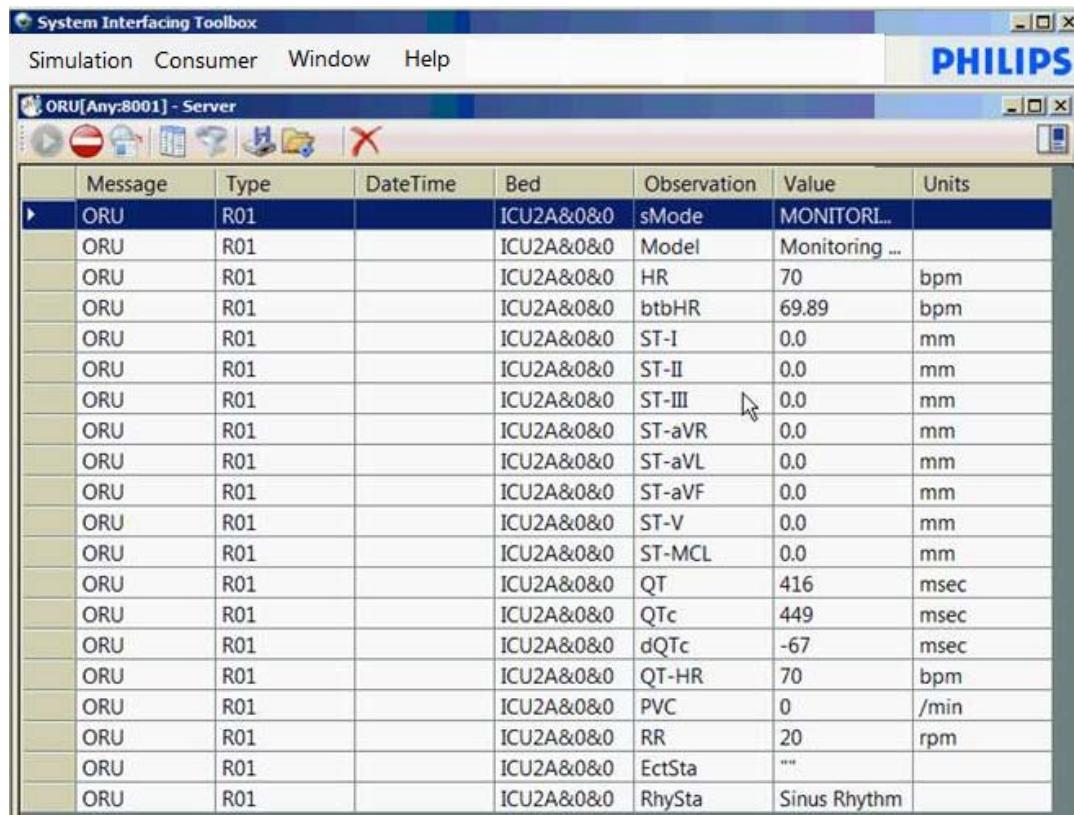
Message Type	ADT^A0x (ADT Outbound for PIIC iX), ORU^R01(ReporterServer and Reporter Client from PIIC iX Observation messages) ORF^R04 (Query Server responses from PIIC iX) ACK/NAK (Query response mode only)	<ul style="list-style-type: none"> ■ Click the down arrow to make the desired selection fro the list. <p>This selection configures the receiving window for the expected type of HL7 messaging.</p>
Log All Messages	<p>When selected messages are logged to: <i>C:\Program Files\Philips\PIIC iX\B.00\Product\HealthcareToolboxDiagnosticsLogs</i></p> <p><i>C:\Program Files (x86)\Philips\PIICiX\B.00\Product\HealthcareToolboxDiagnosticsLogs</i></p> <p>All messages received are logged and the log file which is identified by sending source configured device.</p> <p>Log files are kept for 48 hours.</p>	<ul style="list-style-type: none"> ■ Click the check box to select.
Message Encoding	8859/1 UNICODE UTF-8	<ul style="list-style-type: none"> ■ Click the down arrow to make the desired selection from the list.
Send ACK	When selected ACK signal is sent by the receiving station (destination) back to the sending station (source) after data receipt. ACK check box is required for Store and Forward Interfaces for either historical or real-time.	<ul style="list-style-type: none"> ■ Click the check box to select.

4 Click **OK**.

If the tool is simulating a *Reporter Server* the **System Interfacing Toolbox** launches a window that shows messages received almost immediately (**Figure A-1**).

If the tool is simulating a *Reporter Client* click the start icon . You must do this to make the TCP connection to the HL7 source.

Figure A-1 Server Consumer Data Feed Window Example



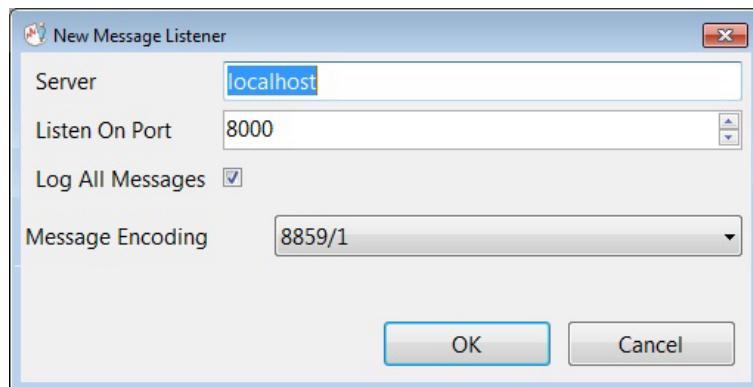
The screenshot shows a Windows application window titled "System Interfacing Toolbox". The menu bar includes "Simulation", "Consumer", "Window", and "Help". The title bar has a "PHILIPS" logo. The main window is titled "ORU[Any:8001] - Server". It contains a toolbar with icons for play, stop, refresh, and file operations. Below the toolbar is a table with columns: Message, Type, DateTime, Bed, Observation, Value, and Units. The table lists numerous ORU messages of type R01, primarily from ICU2A&0&0, detailing various vital signs and monitoring parameters.

	Message	Type	DateTime	Bed	Observation	Value	Units
▶	ORU	R01		ICU2A&0&0	sMode	MONITORI...	
	ORU	R01		ICU2A&0&0	Model	Monitoring ...	
	ORU	R01		ICU2A&0&0	HR	70	bpm
	ORU	R01		ICU2A&0&0	btbHR	69.89	bpm
	ORU	R01		ICU2A&0&0	ST-I	0.0	mm
	ORU	R01		ICU2A&0&0	ST-II	0.0	mm
	ORU	R01		ICU2A&0&0	ST-III	0.0	mm
	ORU	R01		ICU2A&0&0	ST-aVR	0.0	mm
	ORU	R01		ICU2A&0&0	ST-aVL	0.0	mm
	ORU	R01		ICU2A&0&0	ST-aVF	0.0	mm
	ORU	R01		ICU2A&0&0	ST-V	0.0	mm
	ORU	R01		ICU2A&0&0	ST-MCL	0.0	mm
	ORU	R01		ICU2A&0&0	QT	416	msec
	ORU	R01		ICU2A&0&0	QTc	449	msec
	ORU	R01		ICU2A&0&0	dQTc	-67	msec
	ORU	R01		ICU2A&0&0	QT-HR	70	bpm
	ORU	R01		ICU2A&0&0	PVC	0	/min
	ORU	R01		ICU2A&0&0	RR	20	rpm
	ORU	R01		ICU2A&0&0	EctSta	""	
	ORU	R01		ICU2A&0&0	RhySta	Sinus Rhythm	

If you want to configure a New HL7 Query,

- I Go to **Consumer > New HL7 Query**.

The **New Message Listener** dialog opens that is configured for a *Query Server*.



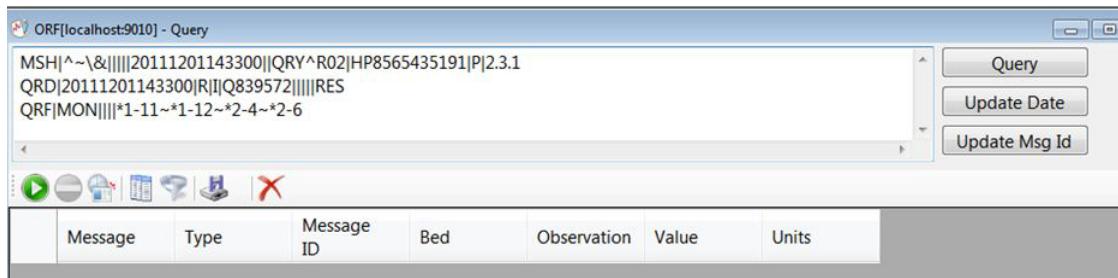
2 Complete the text boxes in the **New Message Listener** dialog.

Server	Localhost (default)	<ul style="list-style-type: none"> ■ Enter localhost (default) when System Interfacing Toolbox is running on the same machine as the PIIC iX HL7 Service or HL7 source, or Enter the host name or IP Address of the HL7 source.
Listen On Port	8000	<ul style="list-style-type: none"> ■ Click up/down arrow. Enter the configured port number of the PIIC iX HL7 Service.
Log All Messages	Check box	<ul style="list-style-type: none"> ■ Click the check box to select. <p>When selected messages are logged to: <i>C:\Program Files (x86)\Philips\PIIC iX\B.00\Product\HealthcareToolbox\DiagnosticsLogs</i></p> <p><i>C:\Program Files\Philips\PIIC iX\B.00\Product\HealthcareToolbox\DiagnosticsLogs</i></p> <p>All messages received are logged and the log file which is identified by sending source configured device. Log files are kept for 48 hours.</p>
Message Encoding	8859/1 UNICODE UTF-8	<ul style="list-style-type: none"> ■ Click the down arrow to make the desired selection from the list.

3 Click **OK**.

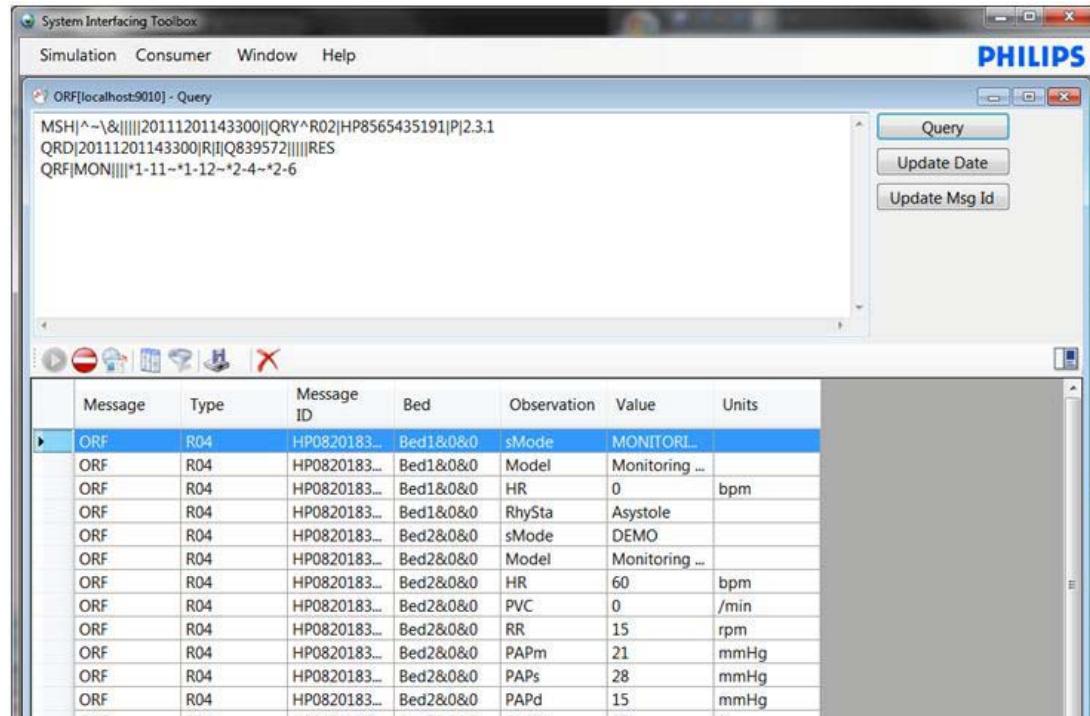
A default query message (QRY^R02) appears which you can edit (**Figure A-2**). The text you see is exactly what is sent to the PIIC iX HL7 service. The user is responsible for the accuracy and validity of the HL7 QRY message.

Figure A-2 HL7 Query Consumer Example



Query	■ Permits generating the Query output
Update Date	■ Permits updating date fields of displayed QRY message
Update Msg Id	■ Permits updating of MSH segment Message Control Id

- Once satisfied with the QRY message, click **Query**. If the QRY message is valid and specifies beds supported by the PIIC iX HL7 Service, output similar to the example appears.

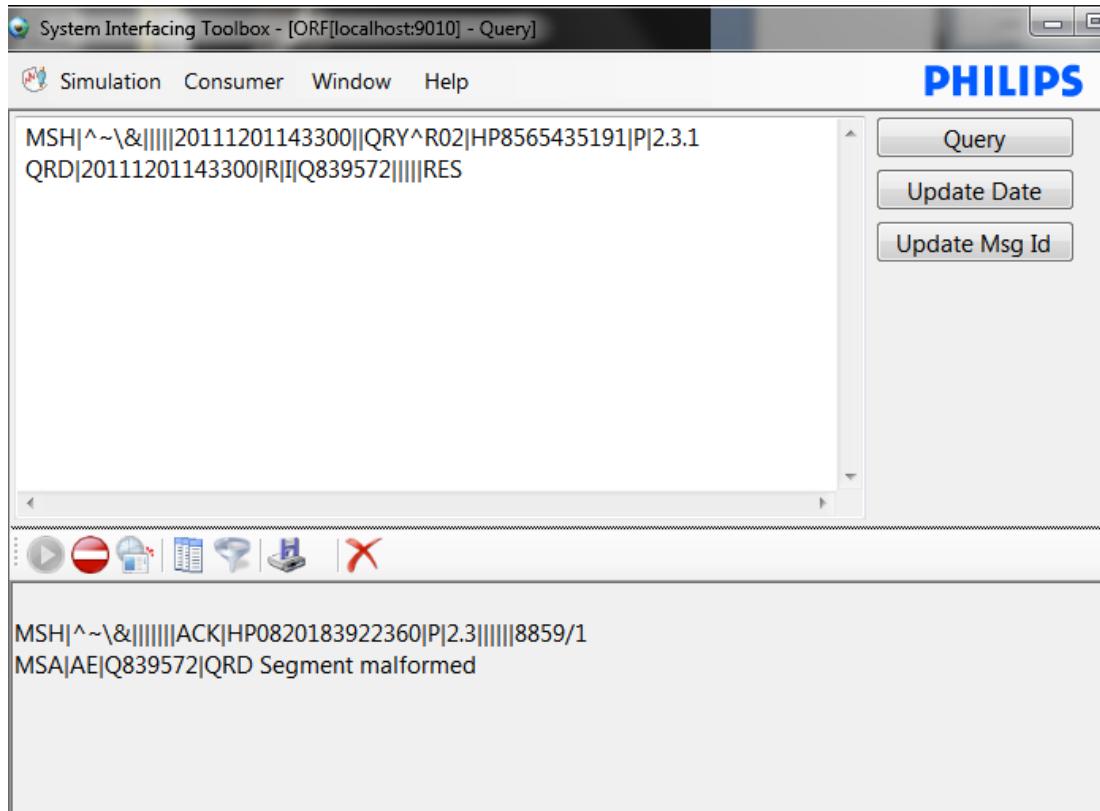


About New HL7 Consumer Output in the System Interfacing Toolbox

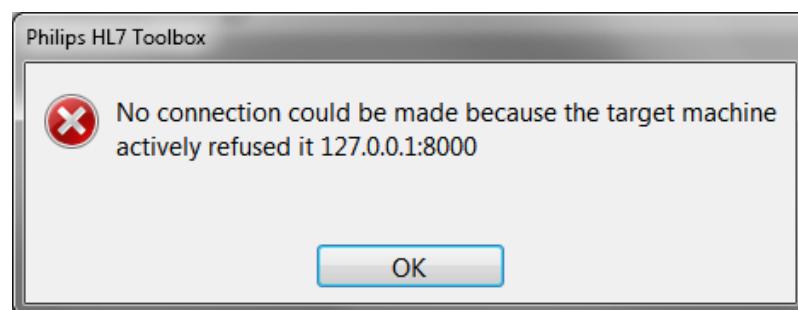
- Messages are received at the rate of the source configuration, which means that it may take up to 60 seconds for received messages to appear in the data feed window.
- If you must modify any original settings (**Log All Messages**, **Message Type**, **Listen On Port**, for example) you must configure a new receiving window and close the original window. Setup information must be fixed upon initialization.

About HL7 Query Consumer Output in the System Interfacing Toolbox

For troubleshooting click the toggle view icon  to change view from Chart mode to traditional Raw mode display to see a generated NAK which will be present if the QRY message is not formed correctly or the PIIC iX HL7Service does not have the requested bed(s) configured.



An example follows of error if the TCP connection cannot be made because of a Query Server invalid port or IP address.



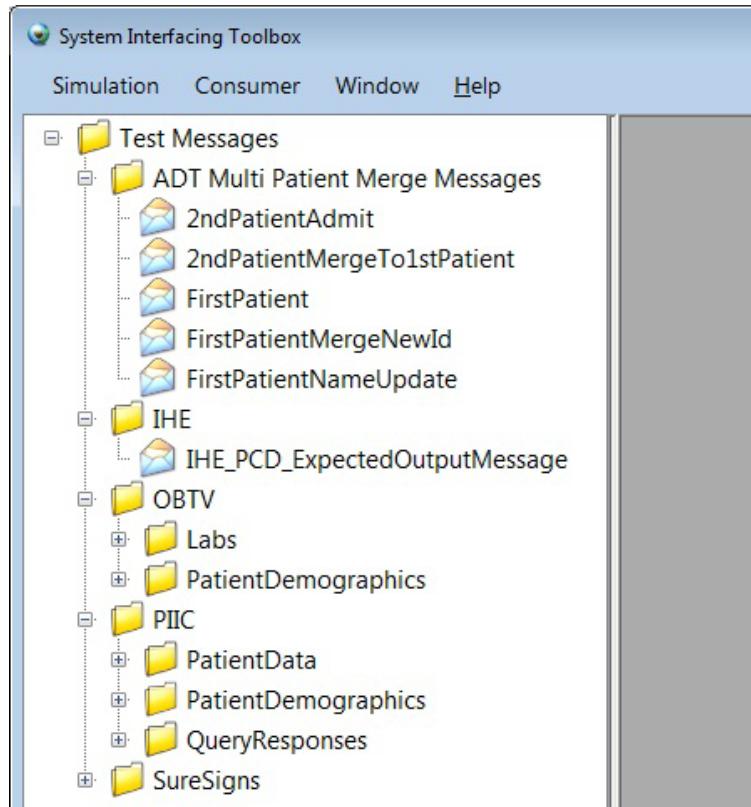
Refer to **page A-30** for information about viewing and processing received messages.

HL7 Simulation

The HL7 Tool includes Simulation capability that supports sending HL7 messaging and XML to target clients.

- I In the **System Interfacing Toolbox** Menu bar open the **Simulation** menu and select **Message Library**.

When you select **Message Library**, the file panel opens.



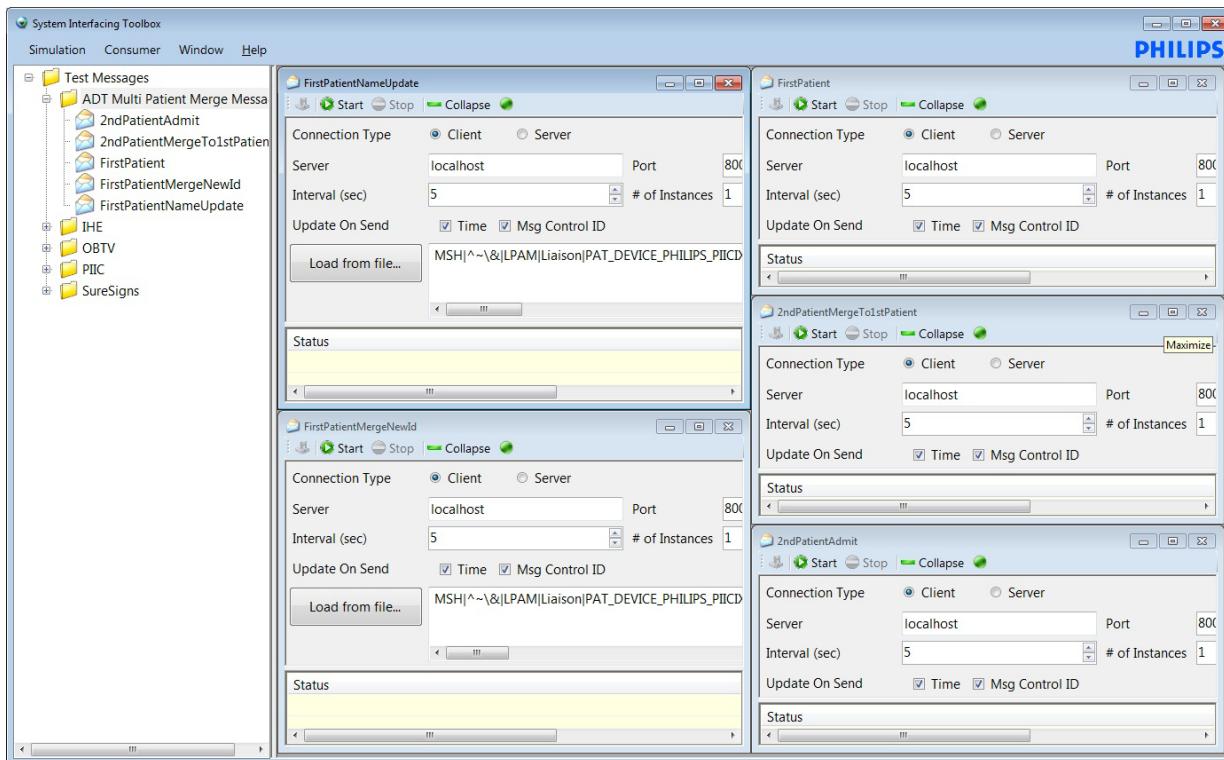
When you right-click any message folder in the Test Message pane a drop-down list appears with the following selections.

Add	Permits adding a New Message , New Folder , Existing Items , All Existing Items In...
Open All	Permits opening all the messages include in the selected folder
Configure All	Opens the HL7 Simulation Settings dialog permitting message configuration
Delete All	Deletes all of the messages in the selected folder A confirmation dialog will open in which you must confirm by selecting Yes or No .

When you right-click any message file in the Test Message pane a drop-down list appears with the following selections.

Open	Starts a simulation window for that file to send data
Duplicate	Permits copying the file in the selected folder
Configure	Permits configuring the HL7 Simulation Settings
Delete	Removes the message

- Right-click the desired item in the **Message Library**, then select **Open** from the list. In the example all messages in the **ADT Multi Patient Merge Messages** folder are open.



3 Complete configuration information.

Connection Type	Client	■ Specifies message sending as TCP Client
	Server	■ Specifies message sending as TCP Server
Server		■ Enter IP Address of Server to send this message.
Port		■ Enter TCP Port to send this message.
Interval		■ Enter periodic time to send the message.
# of Instances		■ Enter number of time that you will send this message within the time period.
Update on Send		■ Click Time or Msg Control ID check box to update the HL7 message time fields to current time before each message sent interval and/or the MSH segment MsgControlId to be unique before each message send.
Load from file		Permits loading a different file from disk to send

4 Then click **Start**.

The **Status** section of the message populates.

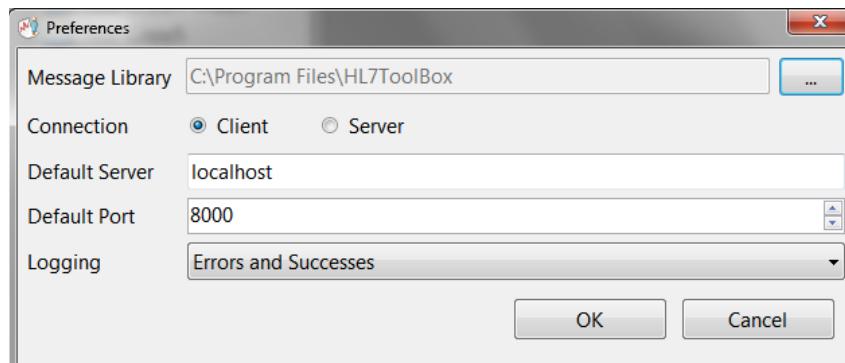
Simulation file menu bar icons include **Start**, **Stop**, and **Collapse**.

- | | |
|-----------------|--|
| Start | Starts a simulation window for that file to send data |
| Stop | Permits stopping the simulation from sending to the target |
| Collapse | Permits reducing the size of the Send Window |

NOTE If you close a receiving window before the max configured number of messages is received or if the HL7 source stops sending data, the last received message appears in time order.

5 If you want to reconfigure the Message Library at any time do the following.

- a Go to the **Simulation** menu and select **Settings** from the drop down list.
The **Preferences** dialog opens.
The **Preferences** dialog permits specifying a **Message Library** directory that will contain default messaging for the simulation part of the tool. You can supply and point ADT, ORU, or other HL7 messages that you might want to send to a receiving client.



- b** Complete information in **Preferences** dialog.

Message Library	Permits assigning location for HL7 message files	■ Click the ellipsis button and navigate to the location where you want your Message Library to reside. This is the location where simulation mode messages are stored, edited, or retrieved.
Connection	Client Server	■ Click the TCP mode of your device. Select either TCP Client or TCP Server.
Default Server	localhost (default)	■ Enter the name of the desired host in the text box. This is the name of the machine that you want to send simulation messaging. If you want to select the local machine select localhost .
Default Port	8000	■ Click the up/down arrow. Enter the port number with which you will establish the HL7 connection on the Default Server . Port range is 0 - 65536.
Logging	None Errors Only Errors and Successes	■ Click the down arrow and select desired setting from the list. This selection indicates logging level while simulating.

- c** Click **OK** when **Preference** dialog is complete.

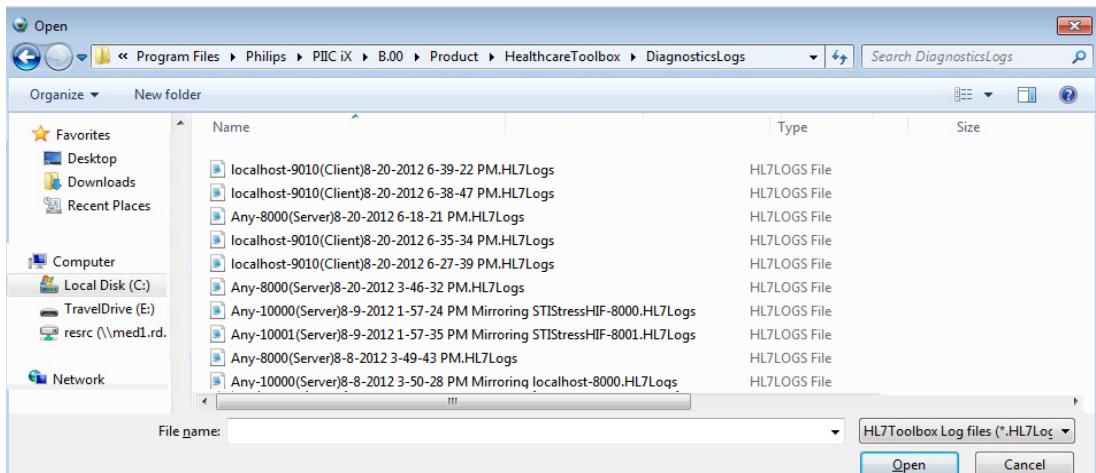
Working with HL7 Log Files

If you want to configure a New Log File Viewer,

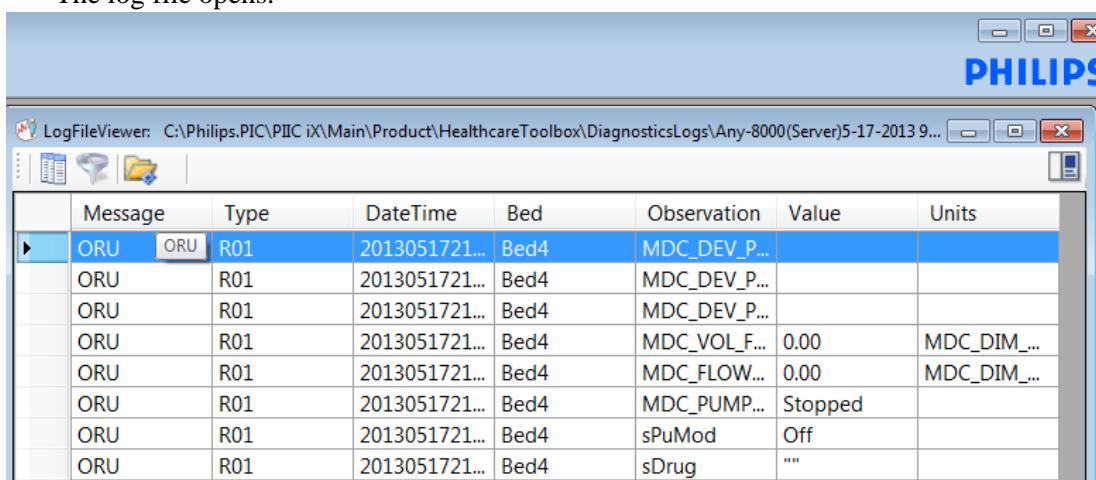
- I Go to **Consumer > New Log File Viewer**.
An empty **Log File Reader** window opens.



- 2 Click the open folder icon .
A list of all saved log files for the installation appears.



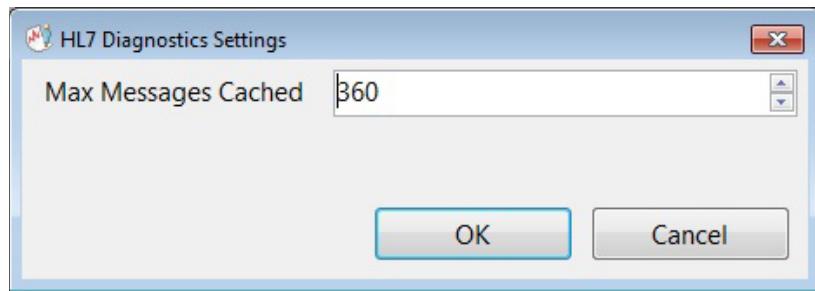
- 3 Select the desired file from the list and click **Open**.
The log file opens.



Refer to **page A-30** for information about viewing and processing received messages.

- 4 If you want to set the maximum number of messages in a consumer log file go to **Consumer > Settings**.

Then enter the desired number in the **Max Message Cached** text box of the **HL7 Diagnostics Settings** dialog.



About Log File output in the System Interfacing Toolbox

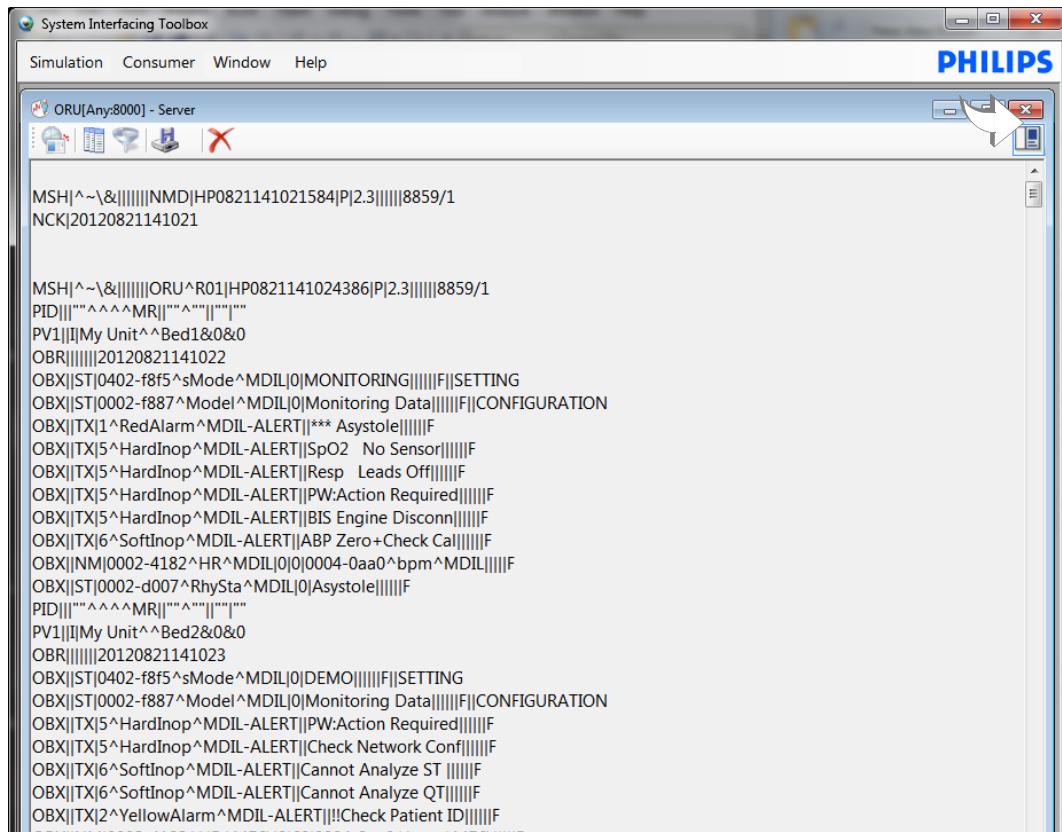
When you open a **Log File Reader** window, the log file name (which includes date and time of data received, server from which data was received, and start date of the file) appears at the top of the window.

Important Philips recommends that you use the Tool to view log files to be certain of accurate display of data.

Viewing and Processing Received Messages

All received messages and log viewer windows are similar. By default the messages appear in Chart mode and include column titles specific to the configured message type. Chart mode data unlike traditional HL7 Raw mode data only shows messages of the configured type. If you want to see everything received by the HL7 tool you can change the view to traditional HL7 Raw mode.

- ▶ Use the toggle view icon  to change view from Chart mode to traditional Raw mode.



Important Use Raw mode display when you must look for messaging outside of the configured message type.

Using Window Icons to Customize and Search Received Messaging

Description of Menu Bar icons that are present in the **System Interfacing Toolbox** Windows appears in the following table.

	When the tool is simulating a <i>Reporter Client</i> you must click the start icon to make the TCP connection to the HL7 source.
	Permits stopping the TCP connection to the HL7 source.
	Permits freezing the display; stops scroll

	Permits customizing columns within the HL7 message based on the configured message type being processed
	Opens a Column Filter dialog Permits filtering dat within the data feed Column Filter categories include Message, Type, Message ID, Date/Time, Bed, Observations, Value, and Units.
	Opens a standard Windows Save dialog to capture current messages in the view window and save that file to any desired location This is a separate capability from logging and it should be noted that logging continues un-interrupted if a save is performed
	Permits clearing the Chart or Raw mode window, but not the message logging
	Permits toggling display modes between chart mode and traditional raw HL7 message mode

- In Chart mode click the Column Filter icon to display data as desired. **Column Filter** categories include **Message, Type, Message ID, Date/Time, Bed, Observations, Value, and Units.**



HL7 Tool Security

The HL7 Tool is included in the PIIC iX software installation; you must use the PIIC iX **System Configuration** password to access it. This ensures security of the processed HL7 data messaging.

Important If you want to install the HL7 Tool independently on non PIIC iX devices, you are completely responsible for the security of all data both received and sent using the HL7Tool.



B

Demo

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Introduction

PIIC iX permits installation of a PIIC iX Demo version for training purposes. Once installed Demo plays pre-recorded monitor simulation waveforms and data. Demo is available during PIIC iX Software Installation while running **PIIC iX System Setup** or as a fully-installed application running on a USB flash drive.

4535 645 56181 PIIC iX B.01 Demo USB Flash Drive Demo Kit

This Appendix describes the PIIC iX full product installation of Demo. Refer to the *PIIC iX USB Demo Guide* (4535 645 40571) if you want to use the USB flash drive Demo product.

Once Demo is running a system message appears at the top of the Application window indicating that the application is in Demo mode.

Important Philips does not support installation of the PIIC iX B.0x full product Demo on a computer intended for purposes other than training.

Setting Up the PIIC iX Demo Application

Important Instructions in this section assume that you are using a system that already has PIIC iX software installed. In order to run the Demo Application you must re-run PIIC iX System Setup and configure the system as documented.

Adjusting Sound

Sound is available with PIIC iX Demo and can be adjusted or turned off using the speaker/volume icon in the notification area. You may want to mute the speaker before starting the PIIC iX demo monitoring application.

- ▶ Click the sound icon in the Windows notification area. You can mute the sound or set it at a low percent for presentations. You can increase the sound later if desired.

Using the English Language

Important You must be a user with Administrative privilege to open and run PIIC iX System Setup. Press Shift key and right-click the **PIIC iX System Setup** shortcut on the desktop. Then select **Run as different User** from the list. Enter SupportUser credentials in the Login dialog.

- 1 From the PIIC iX Desktop press the Shift key and right-click the **PIIC iX System Setup** icon
The Login Access dialog opens.
- 2 Select **Run as different User** from the list.
- 3 Enter appropriate User Name and Password in the dialog.
- 4 Click **Ok** in the Login dialog, and **Yes** if there is a Warning messages regarding stopping Patient Monitoring.
System Setup opens to the **System Information** screen.
- 5 Click **Next >** in the **System Information** screen to continue.
- 6 In the **Specify Languages** screen select English as the language for **Clinical Language, Service Language** and **Regional Settings**. Then click **Next >**.
- 7 In the **Database Installation** screen click **Install**. A progress bar appears. When databases are successfully installed the message, *Databases installed successfully* appears. Click **Next >** to continue.
- 8 In the **Connect to Server** page select **This host**.
Then click **Next >** to continue.
- 9 Restore the Demo archive from the **Archive Restoration** screen.
 - a Click the Ellipsis button  to open a **Browse** window. Then navigate to and double-click the demo archive file (DemoAdult.rkv). It is located in the directory:
C:\Program Files (x86)\Philips\PIIC iX\B.00\Product\Demo\FactoryData
C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\FactoryData
 - b Click **Restore** in the **Archive Restoration** screen.

- 10 Click **Next >** to progress through the **System Setup** screens.
The **License Configuration** and **Feature Assignment** screens automatically populate with the Demo license and options.
- 11 Click **Next >** to progress through the **System Setup** screens.
- 12 When the final **System Setup** page opens select **Start Patient Monitoring Services** and click **Finish**.

When the monitoring application launches Bed Simulator starts automatically with pre-configured simulation files. The PIIC iX Application caption bar shows a critical system status message stating that the system is in Demo mode.

About the Simulation Files

Seven simulation files are assigned to the Demo equipment. The simulation files are cyclic, repeating approximately every 100 minutes. Segment behavior and messages that occur at the end of each simulation file cycle vary depending on the monitoring equipment. The pre-configured simulation file can be changed by manually assigning a different one from the Demo product BedSim directory. The Simulation files contain:

- Arrhythmia Alarms
- Waves
- Events

Description of the Demo Simulation Files follows

Sector	Bed Label	Equipment Label	Device	Simulation Data/Parameters
1	iDemo1	DemoMONCard	IPM	Recorded using a 6 lead ECG cable, Va & Vb = V1 & V3, alternating with a 10 lead ECG cable, + 12 lead capture Simulated Cardiac Scenario: Patient experiencing an MI with STE which resolves
2	iDemo2	DemoMONResp	IPM	Recorded using a 10 lead ECG cable, ST, STE, QT, Microstream CO2 Simulated Respiratory Scenario #1: a Patient with respiratory distress who has rising respirations and dropping SpO2 and the Resp & SpO2 return to normal limits after interventions Simulated Respiratory Scenario #2: a Patient who goes back and forth between hyperventilation with high Resp and low CO2 and normal Resp and CO2
3	iDemo3	DemoMONHemo	IPM	Recorded using a 10 lead ECG cable, ST, STE, QT, PA, ABP, CVP, PCWP Simulated Hemodynamic Scenario: Patient admits to the ED with CHF, a PA catheter insertion is simulated which shows high PCWP/low BP/high PA then lower PCWP/PA and higher BP after diuresis
4	iDemo4	DemoMONNeuro	IPM	Recorded using a 10 lead ECG cable, ST, STE, QT, ICP Simulated Neuro Scenario: Patient with closed head injury experiences agitation and the ICP/ABP/Resp all rise, sedation is administered and the ICP/ABP/Resp all fall back to normal
5	pDemo5	DemoTelSTE	ITS Tele	Recorded with 6 lead ECG cable for Hexad, Va & Vb = V1 & V3, SpO2, Resp, Constant STE
6	pDemo6	DemoMx40MI	MX40	Recorded with a 6 lead ECG cable for Hexad, Va & Vb = V1 & V3, SpO2, ST, STE with alarms, QT, Resp
7	pDemo7	DemoMx40Afib	MX40	Recorded with 5 lead ECG cable, SpO2, Resp, Afib & Afib END alarms
8	pDemo8	BLANK		

Bedsim recordings introduced with PIIC iX B.00

File Name	Simulation Data/Parameters
PWDHexadV1-V3Paced	ECG recorded with pacing on, including pacer spikes.
IPMpediatricEVENTS.ngn	Recorded on an IntelliVue monitor with a pediatric profile. The file contains a few episodes of SpO2 desaturation followed by an elevated HR and Resp rate.
IPMneonatalEVENTS.ngn	Recorded on an IntelliVue monitor with a neonatal profile. The file contains an episode of oxygen desaturation, an episode of bradycardia and an episode of bradypnea.
IPMCardiacEVENTS.ngn	Recorded using an IntelliVue monitor with a 10 lead ECG cable, ST with alarms, STE with alarms, QT, ST changes, arrhythmias. Simulated Cardiac Scenario: patient experiencing an MI with STE and low NBP which resolves Note: 12 lead full disclosure not available.

Additional information about the Simulation Files

- IPM recordings should be used for viewing and reviewing only. Do not silence any IPM alarms or make any changes because any command that requires communication to the monitor will result in an interruption in the Demo playback.
- All changes in Manage Patient/Measurements/System Configuration, and so on, should be done using one of the telemetry devices.
- Aperiodic measurements such as NBP and PAWP have the time stamp applied by the IPM during recording, NOT the time stamp of PIIC iX during playback.
- Simulation files loop approximately every 100 minutes. When a simulation file completes the sector behavior or message varies depending on the type of monitoring device.
- Sector Buttons are not accessible on IPM and MX40 sectors that go into alarm.

Features Not Functional in Demo

- Changes that require feedback from the IPM or MX40 (silence, change alarm limits, alarm on/off, selection of primary or secondary wave for analysis, for example)
- Alarm Pause
- Standby/Resume

Using Non-English Languages

Non-English Language Demo is supported, but some configuration must be done manually.

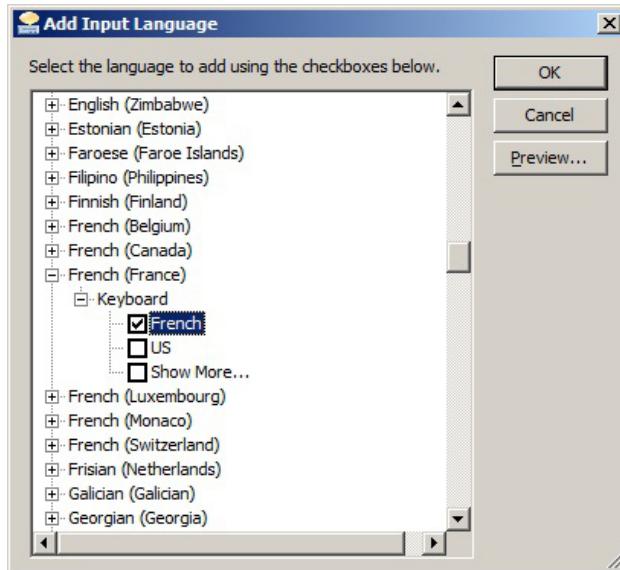
Changing Keyboard Language

- 1 From the Desktop double-click the **PIIC iX System Setup** icon.
- 2 Click **Next >** in the **System Information** screen to continue.
- 3 Choose desired language settings in the **Language Selections** screen.
 - a Select desired language from the drop-down list for **Clinical Language, Service Language** and **Regional Settings**.
 - b Click the **Change keyboard language** button to open the **Text Services and Input Languages** dialog, a Windows Operating System applet.

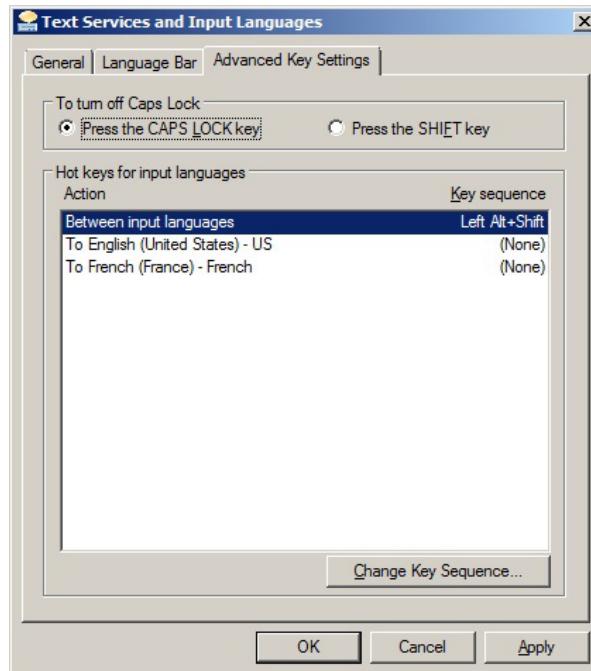


- c If you want to add a language keyboard click **Add**.

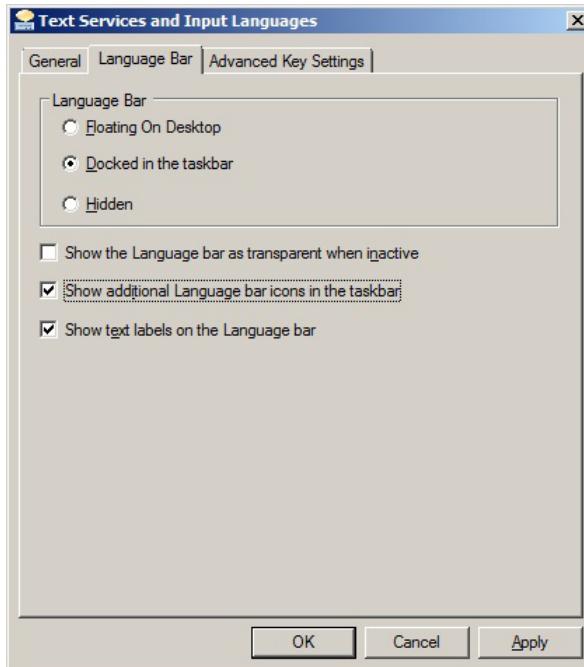
- d In the **Add Input Language** dialog select the desired language then click **OK**. You can view the selected keyboard layout if you click **Preview**.



- e In the **Advanced Key Settings** tab of the **Text Services and Input Languages** dialog you can customize hot keys for input languages if you click **Change Key Sequence..**



- f In the **Language Bar** tab of the **Text Services and Input Languages** dialog you can customize Language Bar settings appearance and location.



- g When desired changes are complete click **OK** in the **Text Services and Input Languages** dialog.
- 4 Click **Next >** to progress through the **System Setup** screens.
 - 5 In the **Database Installation** screen click **Install**. A progress bar appears. When databases are successfully installed the message, *Databases installed successfully* appears. Click **Next >** to continue.



- 6 In the **Connect to Server** page select **This host** (for Local Database PIIC iX), Then click **Next >** to continue.
- 7 Click **Next >** in the **Archive Restoration** screen to continue.
- 8 Click **Next >** in the **[Date & Time]** screen.
- 9 Configure topology as follows.
 - a On the **Topology Configuration** screen you must add beds (**6-10**).

Important For Non-English languages you must create Equipment Labels that match those included in the file, Demo.cfg. When the Demo Monitoring application starts up Bed Simulator automatically runs using Demo.cfg.

- b** Add equipment labels (**6-11**) using the specific labels included in the configuration file, *Demo.cfg*.

C:\Program Files (x86)\Philips\PIIC iX\B.00\Product\Demo\BedSim

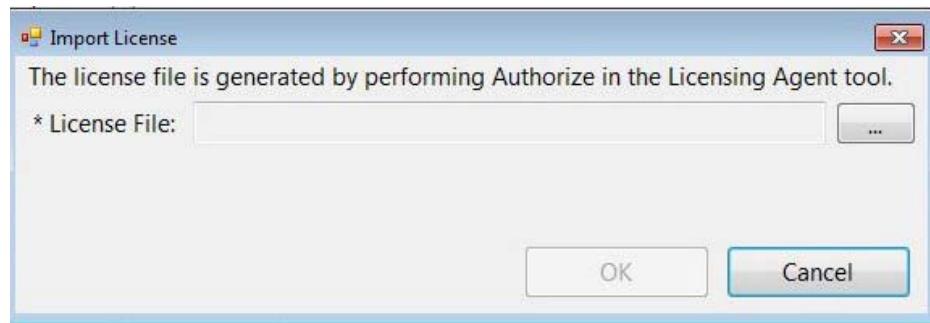
C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim

#	IP Address	Label	Data Source
1		DemoMO...	C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMHemodynamicEVENTS.nqn
2		DemoMO...	C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMRespEVENTS.nqn
3		DemoMO...	C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPM STE HEXADand12LdECG.nqn
4		DemoMO...	C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMNeuroEVENTS.nqn
5		DemoTelS...	C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\PWD Hexad V1-3 Paced.tel
6		DemoMx4...	C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\mx40 Hexad STE.tel
7		DemoMx4...	C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\mx40fib5Ld.tel
8		DemoTEL...	C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\PWD Hexad V1-V3 ConstantSTE SpO:
9	dMon1		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPM STE HEXADand12LdECG.nqn
10	dMon2		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMCardiacEVENTS.nqn
11	dMon3		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMHemodynamicEVENTS.nqn
12	dMon4		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMNeonatalEVENTS.nqn
13	dMon5		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMNeuroEVENTS.nqn
14	dMon6		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMPediatricEVENTS.nqn
15	dMon7		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMRespEVENTS.nqn
16	dMon8		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\mx40 Hexad STE.tel
17	dMon9		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\mx40fib5Ld.tel
18	dMon10		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\PWD Hexad V1-V3 ConstantSTE SpO:
19	dMon11		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\PWD Hexad V1-3 Paced.tel
20	dMon12		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPM STE HEXADand12LdECG.nqn
21	dMon13		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMCardiacEVENTS.nqn
22	dMon14		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMHemodynamicEVENTS.nqn
23	dMon15		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMNeonatalEVENTS.nqn
24	dMon16		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMPediatricEVENTS.nqn
25	dMon17		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMRespEVENTS.nqn
26	dMon18		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMRespEVENTS.nqn
27	dMon19		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\mx40 Hexad STE.tel
28	dMon20		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\PWD Hexad V1-V3 ConstantSTE SpO:
29	dMon21		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\PWD Hexad V1-3 Paced.tel
30	dMon22		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPM STE HEXADand12LdECG.nqn
31	dMon23		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMCardiacEVENTS.nqn
32	dMon24		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMHemodynamicEVENTS.nqn
33	dMon25		C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\BedSim\IPMRespEVENTS.nqn
34			

DemoMONCard	dMON1	dMON14
DemoMONResp	dMON2	dMON15
DemoMONHemo	dMON3	dMON16
DemoMONNeuro	dMON4	dMON17
DemoMONTelSTE	dMON5	dMON18
DemoMONMx40MI	dMON6	dMON19
DemoMONMx40Afib	dMON7	dMON20
DemoTELE3	dMON8	dMON21
	dMON9	dMON22
	dMON10	dMON23
	dMON11	dMON24
	dMON12	dMON25
	dMON13	

- c** Assign equipment labels to beds (**6-12**).
- d** When desired settings are complete click **Next >** in the **Topology Configuration** screen to continue.

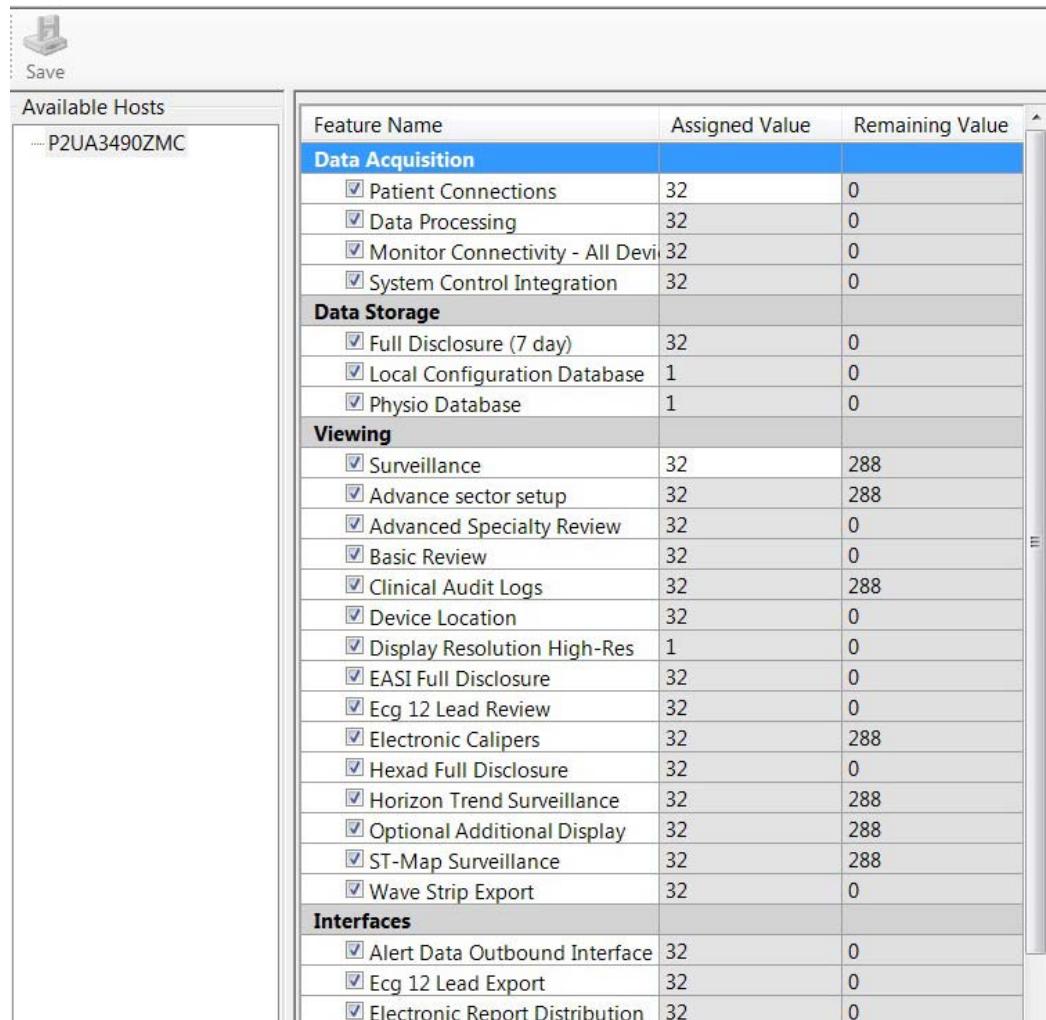
- 10** When the **License Configuration** screen appears, click **Import** in the menu bar.
The **Import License** dialog opens.



- 11** In the **Import License** dialog click the ***License file** ellipsis button and browse to:
C:\Program Files (x86)\Philips\PIIC iX\B.00\Product\Demo\DemoLicense.PhilipsLic
C:\Program Files\Philips\PIIC iX\B.00\Product\Demo\DemoLicense.PhilipsLic
- 12** Then click **OK** in the **Import License** dialog.

Feature Option Details appear in **Commercial Options** and **Software Capabilities** tabs in the lower part of the **License Configuration** screen. The **Software Capabilities** tab lists a **Description** and a **Value** for each purchased/licensed Feature Option (**Table 5-5**) for the system.

- 13** Click **Next >** to continue to the **Feature Assignment** screen which shows the options that can be configured in the Demo System.



The screenshot shows a software interface for feature assignment. On the left, a sidebar lists 'Available Hosts' with one item: 'P2UA3490ZMC'. At the top right, there are 'Save' and 'Cancel' buttons. The main area is a table titled 'Feature Assignment' with three columns: 'Feature Name', 'Assigned Value', and 'Remaining Value'. The table is organized into sections: 'Data Acquisition', 'Data Storage', 'Viewing', 'Interfaces', and 'Non-Dedicated'. Most features have a value of 32, except for a few in the 'Viewing' section which have values of 1 or 288. The 'Non-Dedicated' section is currently empty.

Feature Name	Assigned Value	Remaining Value
Data Acquisition		
<input checked="" type="checkbox"/> Patient Connections	32	0
<input checked="" type="checkbox"/> Data Processing	32	0
<input checked="" type="checkbox"/> Monitor Connectivity - All Devi	32	0
<input checked="" type="checkbox"/> System Control Integration	32	0
Data Storage		
<input checked="" type="checkbox"/> Full Disclosure (7 day)	32	0
<input checked="" type="checkbox"/> Local Configuration Database	1	0
<input checked="" type="checkbox"/> Physio Database	1	0
Viewing		
<input checked="" type="checkbox"/> Surveillance	32	288
<input checked="" type="checkbox"/> Advance sector setup	32	288
<input checked="" type="checkbox"/> Advanced Specialty Review	32	0
<input checked="" type="checkbox"/> Basic Review	32	0
<input checked="" type="checkbox"/> Clinical Audit Logs	32	288
<input checked="" type="checkbox"/> Device Location	32	0
<input checked="" type="checkbox"/> Display Resolution High-Res	1	0
<input checked="" type="checkbox"/> EASI Full Disclosure	32	0
<input checked="" type="checkbox"/> Ecg 12 Lead Review	32	0
<input checked="" type="checkbox"/> Electronic Calipers	32	288
<input checked="" type="checkbox"/> Hexad Full Disclosure	32	0
<input checked="" type="checkbox"/> Horizon Trend Surveillance	32	288
<input checked="" type="checkbox"/> Optional Additional Display	32	288
<input checked="" type="checkbox"/> ST-Map Surveillance	32	288
<input checked="" type="checkbox"/> Wave Strip Export	32	0
Interfaces		
<input checked="" type="checkbox"/> Alert Data Outbound Interface	32	0
<input checked="" type="checkbox"/> Ecg 12 Lead Export	32	0
<input checked="" type="checkbox"/> Electronic Report Distribution	32	0
Non-Dedicated		

- 14** Select desired Features for your Demo System.

- a Click each adjacent check box to select a desired feature. Then enter an **Assigned Value** for the selected host.
The **Remaining Value** amount automatically recalculates.

Important If you want to select all the features press **Ctrl + A** keys concurrently.

- b When all of your selections are complete for the selected host click **Save**.

Important Do not include the **Non-Dedicated** feature for the Demo system.

- c Once all desired features are assigned click **Next >** to continue to the next **System Setup** page.
- d Click **Yes** in the message dialog asking if you want to save modifications to settings.

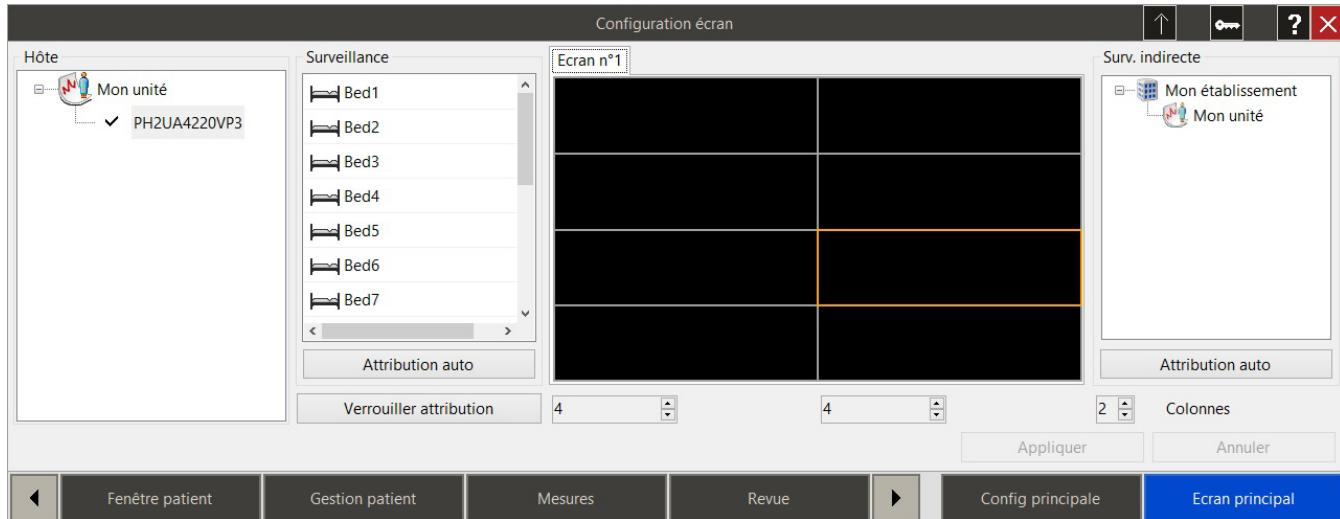
- 15** Progress through the **System Setup** pages, and on the final page select the **Start Patient Monitoring Services** option and click **Finish**.

Setting Up the Monitoring Application Display

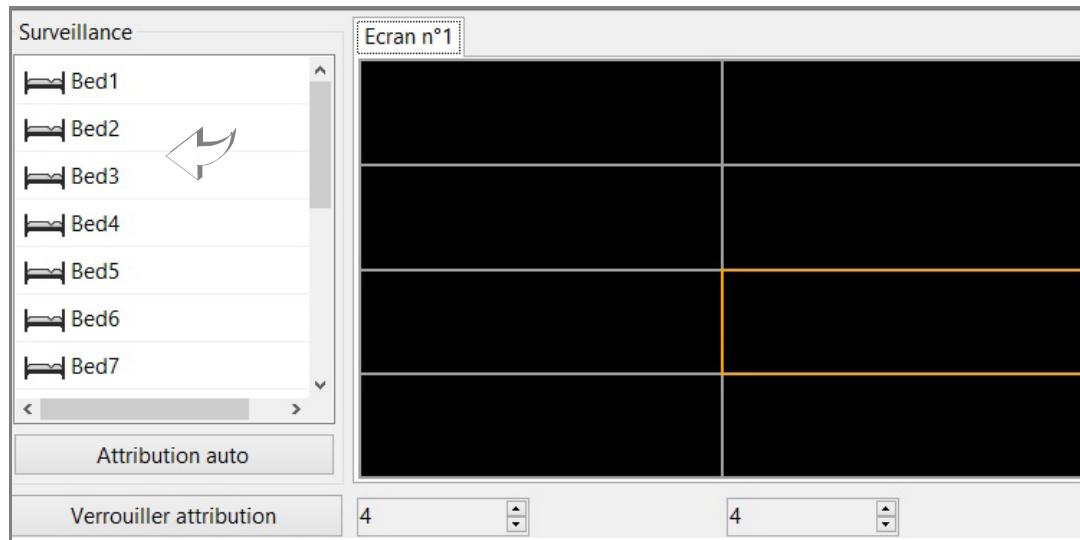
When the monitoring application starts up initially, a **Display Setup** screen appears.

- I Click **Ok** in the Login Access dialog which automatically populates with user name and password.

Important In Display Setup for Non-English languages you must assign equipment to the sectors (**page 6-11**) initially or the Demo sectors will remain blank.



A list of available bed labels appear in the **Available Bed** list of the **Display Setup** screen.



- 2 If you want to manually assign a bed label, select the desired bed label from the list then select the desired sector location.

or

Click **Auto Assign** to automatically populate your sectors. Available beds fill the first column in listed order, then begin filling the next column.
 - 3 After desired changes are made on **Display Setup** screen click **Apply** for changes to take effect immediately and open the Patient Monitoring **Main Screen**.
If the **Login to Access Clinical Settings** dialog opens it appears with the **User Name** and **Password** text boxes populated.
 - 4 If necessary click **OK** in the Login dialog.



Using the PIIC iX Demo Application

While you are using the PIIC iX Demo Monitoring application the login dialogs to access system configuration or to stop patient monitoring are pre-populated with User name, ***PhilipsBD***, and the appropriate password.

Refer to the *PIIC iX Instructions for Use* for information about operating and using the application.

Refer to *PIIC iX Web Installation, Configuration, and User Guide* for detailed instructions about PIIC iX Web.

Restoring the PIIC iX Application

Restoration from Demo Mode to the PIIC iX Patient Monitoring Application requires running System Setup and re-installing the product databases.

- 1 While Demo is running press **Alt + F4** keys simultaneously to stop the Monitoring application and open the Windows Desktop.
- 2 User name and Password populate the login dialog. Click **OK** to continue.
- 3 From the PIIC iX Desktop press the Shift key and right-click the **PIIC iX System Setup** icon .
The Login Access dialog opens.
- 4 Select **Run as different User** from the list.
- 5 Enter appropriate User Name and Password in the dialog.
- 6 Click **Ok** in the Login dialog
The **System Information** screen opens.
- 7 Refer to **PIIC iX System Setup Screens, page 5-8** to restore your PIIC iX to Patient Monitoring. If a full product installation is required refer to **Re-Installing Operating System and Application Software**.

PIIC iX Web

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Introduction

PIIC iX Web is an intranet application deployed by Internet Information Services (IIS) that provides secured access to retrospective and Near Real Time (NRT) patient data from a Web Client. It can be accessed by using a Web Client's browser, a mobile client, or by way of the Enterprise Portal. PIIC iX Web also allows ICCA and other third party applications to copy wave strips into a patient's chart. If you are using IntelliVue Mobile Caregiver to access retrospective data you must configure the Web Server IIS to operate using HTTPS ([page D-13](#)).

For details about Web Client access and use of PIIC iX Web refer to *PIIC iX Web Installation, Configuration, and User Guide*, 4535 645 40461, the companion documentation to this Appendix.

PIIC iX Single-Patient and Multi-Patient Views

PIIC iX Web can be licensed for Single-Patient and/or Multi-Patient View application access at client Web browsers. PIIC iX Single-Patient View (SPV) allows a user to select a patient in order to see all available near real-time data, review retrospective data, and perform strip workflow. PIIC iX Multi-Patient View (MPV) enables Near Real Time (NRT) review of physiological waves, parameters, and alerts for up to 32 patients. With PIIC iX B.02 Multi-Patient View allows a patient to be selected from any PIIC iX B.02 Web Host configured in the PIIC iX Enterprise Portal that has the proper host licensing and Remote Access to Patient Data settings.

Both Single-Patient and Multi-Patient View applications allow you to view a patient's strip tile, make caliper measurements, print and/or export the strip to the clip board, and permit viewing available NRT data. The Single-Patient and Multi-Patient NRT views show active alarms from the time the application is loaded for the selected bed. If you want to If you want to review retrospective alarm wave strips to print you can use the PIIC iX Web Alarm Review application.

Both Single-Patient and Multi-Patient View applications allow clinicians to view patients any IT PC/Laptop using Internet Explorer that has network access to the PIIC iX Web Server and is running:

Windows 7 SP1 32- or 64-bit with Internet Explorer 8, 9, or 10 (32-bit browser only)

Windows 8 64-bit with Internet Explorer 10 (32-bit browser only)

Windows 8.1 64-bit with Internet Explorer 11 (32-bit browser only)

To support the eICU Use Model, more than one instance of the SPV and/or MPV application can run concurrently on the same client PC. Configuration of a single MPV instance is stored--the MPV instance that has the most recent changes.

PIIC iX A.02.xx and B.02 Active X controls for PIIC iX Web MPV and SPV applications can co-exist on the same client PC. The CAB files for both PIIC iX A.02.xx and B.02 applications must be installed on the client. A separate instance of Internet Explorer is required to view patients on each PIIC iX A.02.xx Web host. All PIIC iX A.02.xx Web hosts must be at the same Product Compatibility Version. A separate instance of Internet Explorer is required to view patients from all PIIC iX B.02 Web hosts configured in the PIIC iX Enterprise Portal.

Enterprise Portal

The Enterprise Portal, a Web application that runs on the Web server PIIC iX (or Web Server iX), allows a user to navigate to any portal-configured (**page 6-7**) PIIC iX or PIIC Classic (Release N.01.12 or later) Clinical Units or discharge lists configured in the enterprise (**page 6-22**).

Although it runs on a PIIC iX host licensed for Web or Wave Strip Export, the Portal Web page is accessible from any supported Intranet browser. The Portal Web page can be used to access patients on a PIIC Classic or PIIC iX that is portal-configured and appropriately licensed (**page D-6**). With PIIC iX B.02 the Enterprise Portal can support multiple PIIC iX Web hosts (**page 6-22**).

If you want to integrate the PIIC iX Enterprise Portal with your hospital site Web Portal, you can add a link on your portal that accesses the PIIC iX Enterprise Portal page:

http://<WebServerName>|Logon.aspx?app=portal

where

<WebServerName> is the name of the server on which the Web Server is deployed.

If a user enters the Portal URL in a supported browser, a list of units appears for all configured PIIC iX and PIIC Classic Web Servers. When the user selects a unit from that list all available patients in that Unit appear. Selecting a patient redirects the user to the PIIC iX or PIIC Classic Web Server for the specified patient.

Once connected to the Enterprise Portal a user can:

- Click the Discharge List and access the PIIC iX or PIIC Classic Discharge Patient List Web Page for that System, or
- Click the Clinical Unit and access the PIIC iX or PIIC Classic Patient List Web Page for that Unit.

If the Topology . . .	then . . .
has Web servers	Enterprise Portal Service runs on the Web server.
has Web servers and Mobility service	Enterprise Portal Service runs on the Web server.
does not have Web servers, but has a Mobility server	Enterprise Portal Service runs on the Mobility server.

Web Integration Using a Well-Formed URL

Important Either HTTP GET or HTTP POST mechanisms can be used to access the PIIC iX Well-Formed URL feature. The most secure and recommended technique is to use HTTP POST with SSL configured on the PIIC iX Web Server.

If you have Web and Wave Strip Export licenses on your PIIC iX host your web client can pass through the Web a dynamic URL with an embedded query string containing plain text patient and location content, which will redirect you to the PIIC iX Web Page for that patient. This feature supports copying and pasting PIIC iX Alarm strips into ICCA or other third-party compatible applications.

Well Formed URLs

A Well Formed URL allows PIIC iX Web applications to be accessed through a customer-supplied port. It also allows the EMR to directly access a PIIC iX Web application with the current patient context.

Important A PIIC iX Web Portal must be configured ([page 6-22](#)) before you can use a well-formed URL without Patient ID.

A well-formed URL can allow access to the PIIC iX web pages:

- Patient View
- Web Portal
- Wave Strip Export
- Alarm Review Page
- General Review Page
- Cardiac Review Page
- ECG12 Lead Capture

NOTE All fields and values in the URL are case insensitive.

Example of configuration URL for a patient follows.

http://WebServer.hospital.com/Logon.aspx?Query_String

Examples of *Query_String* are:

UserName=User&Password=Pass&BedLabel=Bd1&PatientId=MRN&UnitLabel=Unit&Timeout=DURATION&App=WaveStripExport

UserName=WebUser&Password=WebPwd&BedLabel=Bd4&UnitLabel=ICU&Timeout=DURATION&App=Portal

where:

UserName PIIC iX User that has **Remote Access to Patient Data** allowed ([page 6-127](#))

Password User's PIIC iX **Users and Roles** password

BedLabel Patient's current PIIC or PIIC iX bed assignment¹

PatientId Patient's current Medical Record Number¹

UnitLabel Clinical Unit in which the bed resides

Timeout DURATION is the HTTP session (cookie) expiration duration in minutes.

Timeout=5 indicates that the cookie expires 5 minutes Website access

Timeout=0 indicates that the cookie never expires.

App Enter one of the following applications:

WaveStripExport opens Alarm Review, but no other PIIC iX Web pages²

Portal accesses PIIC iX Enterprise Portal

AlarmReview opens Alarm Review and permits access to other PIIC iX Web pages

GeneralReview opens General Review and permits access to other PIIC iX Web pages

CardiacReview opens Cardiac Review and permits access to other PIIC iX Web pages

ECG12LeadCaptureReview opens ECG 12 Lead Capture Review and permits access to all PIIC iX Web pages

PatientView opens Patient Window and permits access to other PIIC iX Web pages

IntegratedMode IntegratedMode=True indicates that no navigation away from the specified review app is desired.

This can be useful when you want to integrate review applications into an existing application.

TimeFocus TimeFocus=2014-10-13T15:09:10+00:00 is used to pass in a time that the review app should be focused on.
Value must be in ISO 8601 format (as in the example).

¹ Either **BED** or **MRN** are required in order to determine correct patient context.

² If the App is WaveStripExport, PIIC iX Web does not display navigation keys to all PIIC iX Web applications.

When you access *WaveStripExport* you can right-click the strip and select **Copy** if you want to save the strip to your clipboard.

Before you begin Wave Strip Export

- 1 License both Web and Wave Strip Export.
- 2 Provide ICCA installers the host name of the PIIC iX Web Server.

Client Web Browser Support

Web Browsing Clients accessing PIIC iX Web Applications must comply to the following.

If your Web Client the following is required for NRT... is running on ... the following is required for Retrospective...

Apple iPad	N/A	■ Safari iOS 7
Mac	N/A	■ Mac OS x 10.9 Safari 7 Browser
Windows PC	<ul style="list-style-type: none"> ■ Windows 7 SP1 32- or 64-bit with IE 8, 9, or 10 (32-bit browser only), ■ Windows 8 64-bit with IE 10 (32-bit browser only) ■ Windows 8.1 64-bit with IE 11 (32-bit browser only) 	<ul style="list-style-type: none"> ■ Windows 7 Windows 8.1 ■ IE 8, 9, 10, 11 Firefox 27 or later Chrome 32 or later
Android Tablet	N/A	■ Opera Mobile

Web Server Deployment

During PIIC iX Web installation **PIIC iX System Setup** installs the Web Server, then installs and configures the PIIC iX Web site. Possible deployments include:

Philips PIIC iX Product¹	Maximum Supported Beds	Web Integrated with Primary
Philips-Supplied Hardware (PSH) Local PIIC iX with Web option	32	Yes
PSH Small Server PIIC iX with Web option	64	Yes
PSH Small Server Dedicated Web Server PIIC iX	128	No
PSH Enterprise Server iX with Web option	256	Yes
Customer-Supplied Hardware (CSH) Enterprise Server iX with Web option	256	Yes
CSH Dedicated Web Server iX ²	1024	No
PSH Dedicated Web Server iX ²	1024	No

¹ PIIC iX Web Server requires 1 Gbps full-duplex networking. When Web Services run on the Primary Server, the Primary Server requires 1 Gbps full-duplex networking.

² Co-resident Mobility Server is optional

Checking PIIC iX Licenses

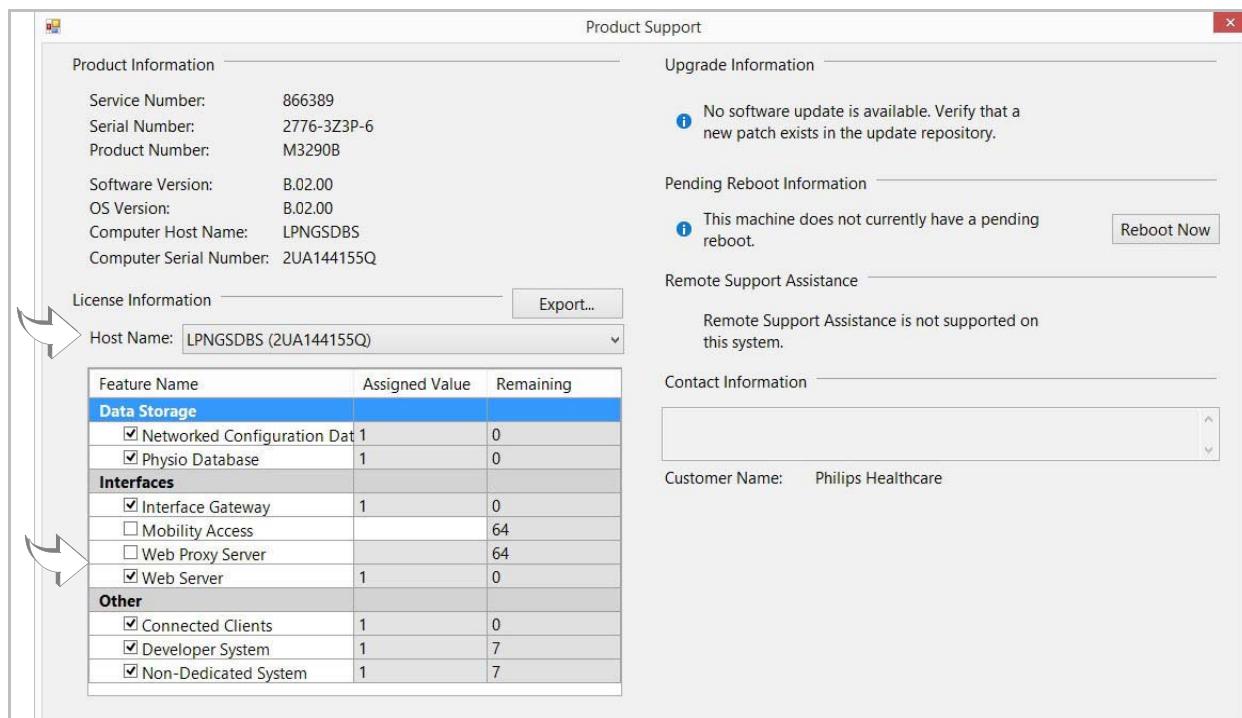
In order to make PIIC iX Web Applications available to Web clients appropriate licenses are required at the PIIC iX and/or Server iX.

PIIC iX License ¹	Description
Web Server	Provides Web Client access to view beds monitored on systems that are appropriately licensed
Wave Strip Export	Permits copying and pasting PIIC iX Alarm strips into ICCA (formerly ICIP) or other third-party compatible applications
Web Multi Patient (Near Real Time)	Permits Web Client access to NRT Multi-Patient Screen Similar to PIIC Enhanced Web Server functionality (Requires Web Server and Single-Patient Web)
Web Single Patient (Near Real Time)	NRT and retrospective single-patient Web Permits Web Client viewing of patients being monitored on the licensed PIIC iX

¹ Refer to **Product Options, page 1-14**.

You can verify that Web features are licensed by checking the PIIC iX **Product Support** screen.

- 1 From PIIC iX **System Configuration** go to **Help > About**.
- 2 If necessary select the desired machine in the **Host Name** drop down list.



PIIC iX Web Server Requirements

- Web Client must be able to connect to the PIIC iX Web Server.
- Appropriate licenses are required at the PIIC iX and/or Server iX. Refer to **Checking PIIC iX Licenses**.
- Web Portal Hosts must be configured on PIIC iX Web Server.
The PIIC iX Enterprise Portal runs on the PIIC iX Web Server, and once configured a user can navigate to any PIIC iX or PIIC (version N.01.12 or later) added to the Portal.
- Users must have access to the Action, **Remote Access to Patient data**, for the unit you want to access. Refer to **Users and Roles** configuration ([page 6-123](#)).

Bed/Patient and Subscription Limits

The maximum number of beds subscribed to concurrently across all connected Web or Mobile clients is determined by the license (Web Single Patient View, Web Multi Patient View). Maximum bed connection licenses allowed are based on PIIC iX system topology are shared between Mobility and Web (SPV and MPV) users.

Topology ¹	Local PIIC iX	Small Server PIIC iX	Enterprise Server IX
Web Server option on Primary Server	32	128	256
Dedicated Web Server	32	128	1024
Dedicated Web/Mobility Server iX	32	128	1024

¹ For Standalone PIIC iX Local and Small Server, Web deployment requires HP rp5800 (or later). Enterprise Web Server IX requires DL380 G7 (or later).

To ensure optimal performance, the Remote Data Service limits the number of subscriptions. A subscription is defined as one client looking at one bed.

Topology	Maximum Total Subscriptions
Client-Class Hardware	256
Server-Class Hardware	1024

For example:

- User **A** looking at bed numbers 1 through 5 uses 5 licenses and 5 subscriptions.
- User **A** and User **B** both looking at bed numbers 1 through 5 uses 5 licenses and 10 subscriptions.
- User **A** looking at bed numbers 1 through 5 and User **B** looking at bed numbers 6 through 10 uses 10 licenses and 10 subscriptions.

Hospital Intranet Connection Requirements

If you have the PIIC iX Web feature option the minimum connection to the Hospital Intranet is a 100 Mb unless you have a Dedicated Web Server (1024 patients) with or without Mobility. In that case you must have a 1 Gb connection.

Web Server Installation and Configuration

Using A CSH Web Server iX

If you have a Customer Supplied Hardware (CSH) Enterprise Web Server iX, virtual installation must be performed by customer using VMware. Refer to the *System Administrator Guide*. Once installed the Web Server iX must be configured (**Configuring the Web Server**).

Important PIIC iX software **must be installed by a Philips Support Representative**. Only a Philips Support Representative should continue with Product installation. (Refer to **Configuring the Web Server**.)

Using A PSH Web Server (PIIC iX or iX)

A Web Server on Philips-Supplied Hardware (PSH) has the Web Server Software and licensing installed at the factory. Once the Web Server is added to your Network you must configure it using *PIIC iX System Setup* and add users (**page 6-123**).

Configuring the Web Server

Important Be sure that you have network connectivity between the Web Server and Primary Server before you begin this configuration.

Initially when you start the PIIC iX Software the **System Information** screen opens which permits changing **Computer Name** and **Monitoring IP**. This is the opening screen of **PIIC iX System Setup**. The product cannot operate until **System Setup** runs successfully.

- 1 On the **System Information** screen click the adjacent **Change** button to enter the desired **Computer Name** and to configure the desired **IP Address** properties.
- 2 When information is complete click **Next >** in the **System Information** screen to continue.
- 3 In the **Language Selection** screen select English as the language for **Clinical Language**, **Service Language** and **Regional Settings**. Then click **Next >**.
- 4 In the **Database Installation** screen click **Install**. A progress bar appears. When databases are successfully installed the message, **Databases installed successfully!** appears. Click **Next >** to continue.

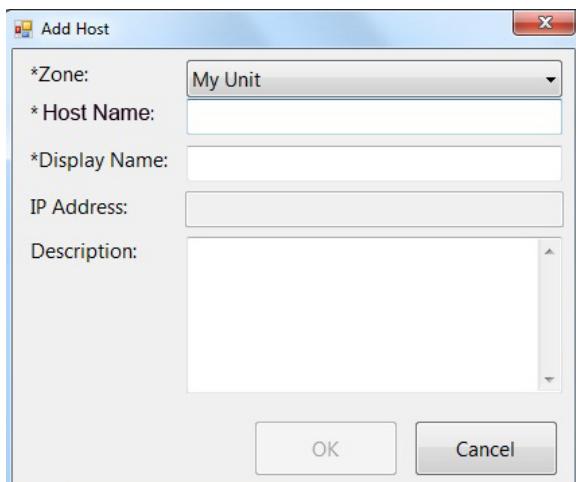


- 5 In the **Connect to Server** page select **Other Host**. Then enter the Primary Server host name in the text box. Click **Next >** to continue.
- 6 Click **Next >** in the **Archive Restoration** screen to continue.
- 7 When the **Topology Configuration** screen opens the System Configuration appears if you successfully connect to the Primary Server. If you click **Next >** a message appears,

This host is not yet configured. Would you like to add this host to the topology?

When you click **Yes** in the message, the **Add Host** dialog opens.

- a Click the down arrow to select the desired **Zone**.



- b Enter the desired information in the dialog, then click **OK**.
Settings/selections include:

***Host Name**
***Display Name**
IP Address
Description

NOTE You must enter information or make a selection for all labels with an asterisk.

- c If you are deploying Enterprise Web Portal add Web Portal Hosts ([page 6-22](#)) to the Web Portal Zone.
- d When Topology Configuration is complete, click **Next >** to continue.
- 8 If the Web Server feature is not yet appropriately licensed you must add the new feature. Refer to the *PIIC iX Licensing Activation Guide* for detailed information about adding or upgrading licensing and making feature assignments.
- 9 Once license import or upgrade is complete progress to the **Display Configuration** screen, complete display configuration ([page 5-38](#)), and click **Next >** to continue.
- 10 After changes are complete in the **Peripheral Configuration** screen ([page 5-42](#)) click **Next >** to continue.
- 11 When the **Platform Security** check completes, click **Next >** to continue.
The **Host Qualification** screen appears.

When the appropriate Web license is assigned, a qualifier runs automatically during **PIIC iX System Setup**. It installs the Web Server, then installs and configures the PIIC iX Web site.

- I2** Once Host Qualification rules complete successfully the PIIC iX **Setup Complete** screen opens. Select the **Configure system topology and clinical unit settings** option and click **Finish**.

Important System Configuration access requires **User Name** and **Password** authentication.

Adding Users

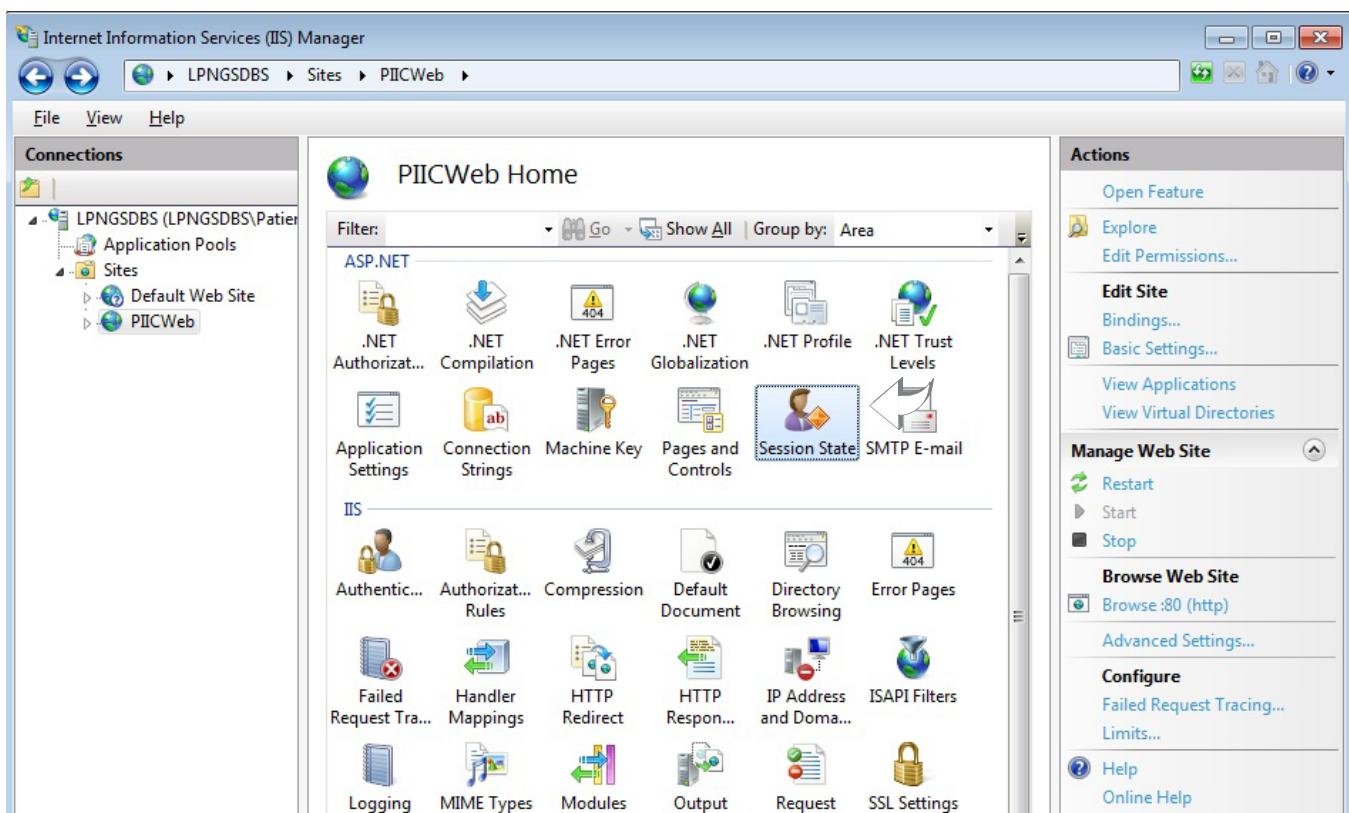
An Active Directory Interface enables the Administrator or the user with delegated permission to import configured Users and Roles directly from the Active Directory Domain Controller to PIIC iX.

Refer to **page 6-123** for information about connecting to the AD Domain controller and adding AD users.

Changing Idle Time

If you must change the Web Server time-out setting, do the following.

- 1 At the Web Server open **Control Panel > Administrative Tools > Internet Information Services (IIS) Manager**.
- 2 Expand the **Sites** folder, select **PIICWeb**, and click **Session State**.



- 3 In the **Cookie Settings** section of the **Session State** screen change the **Time-out (in minutes)** setting to 720.

Internet Information Services (IIS) Manager

File View Help

Connections

- LPNGSDBS (LPNGSDBS\Patient)
- Application Pools
- Sites
 - Default Web Site
 - PICWeb

Session State

Session State Mode Settings

- Not enabled
- In process
- Custom
- State Server
 - Connection string:
tcpip=loopback:42424
 - Time-out (in seconds):
10
- SQL Server
 - Connection string:
data source=localhost;Integrated Security=SSPI
 - Time-out (in seconds):
30
 - Enable custom database

Cookie Settings

Mode:

Name:
ASP.NET_SessionId

Time-out (in minutes):
720

Regenerate expired session ID

Use hosting identity for impersonation

Features View Content View

Configuration: 'PICWeb' web.config

Actions

Apply Cancel Help Online Help

This screenshot shows the 'Session State' configuration page within the Internet Information Services (IIS) Manager. The left sidebar displays the 'Connections' tree, which includes the 'PICWeb' site under 'Sites'. The main pane is titled 'Session State' and contains settings for session mode and cookie management. Under 'Session State Mode Settings', the 'In process' option is selected. It includes a connection string for 'tcpip=loopback:42424' with a timeout of 10 seconds. There is also a section for 'SQL Server' with a connection string 'data source=localhost;Integrated Security=SSPI', a timeout of 30 seconds, and an unchecked checkbox for 'Enable custom database'. The 'Cookie Settings' section shows 'Use Cookies' as the mode, with a cookie name of 'ASP.NET_SessionId' and a time-out of 720 minutes. A checked checkbox indicates 'Use hosting identity for impersonation'. At the bottom, there are 'Features View' and 'Content View' buttons, and a status bar showing 'Configuration: 'PICWeb' web.config'.

Accessing PIIC iX Web from a Web Client

Refer to the *PIIC iX Web Installation, Configuration, and User Guide* for details about Web Client access and use of PIIC iX Web Single-Patient View, Multi-Patient View, and Web Portal Connect.

Customer Site Responsibilities

Installing Secure Socket Layer (SSL)

If you are enabling SSL on your web site add the Customer's SSL Certificate to each device

Web Server PIIC iX or iX (Dedicated System or Primary Server)

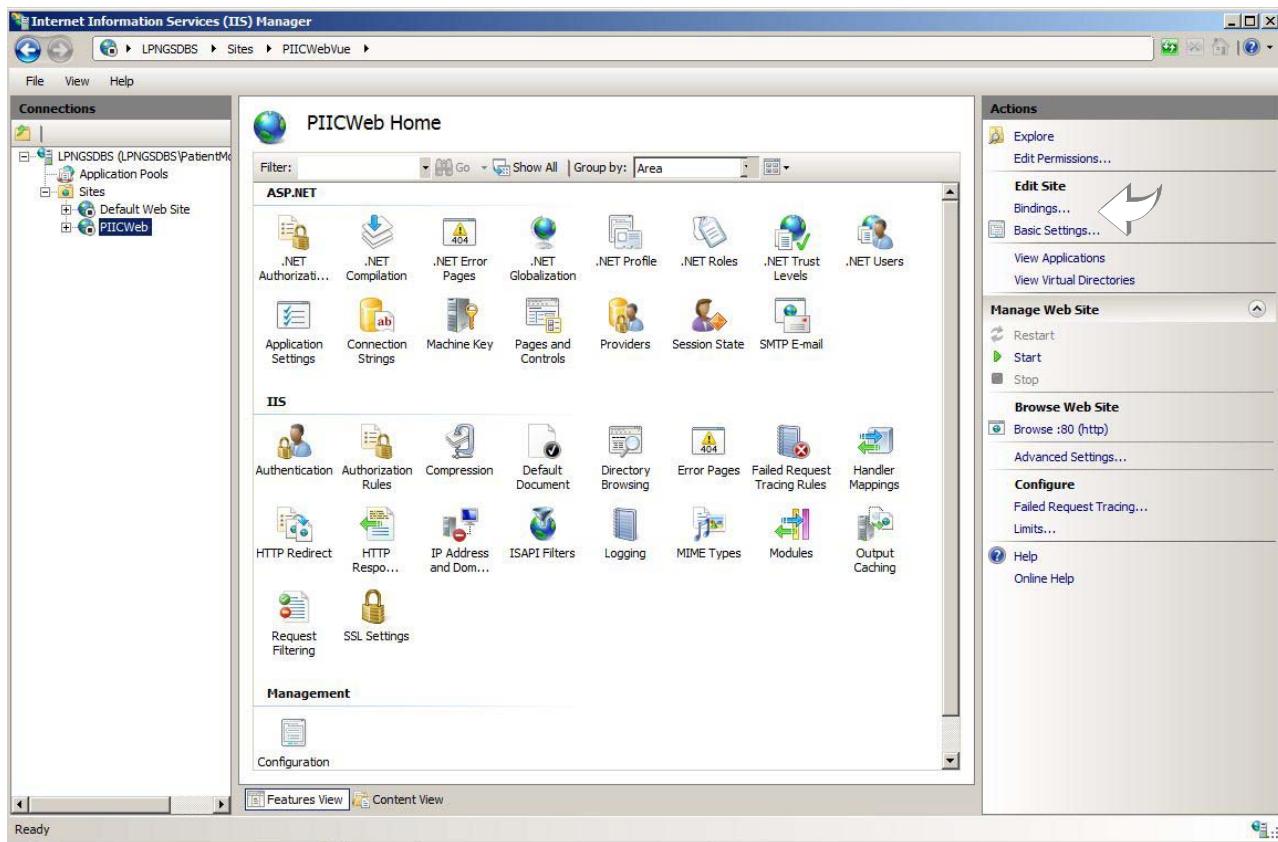
Each Surveillance PIIC iX System with Web enabled

Each Web Client

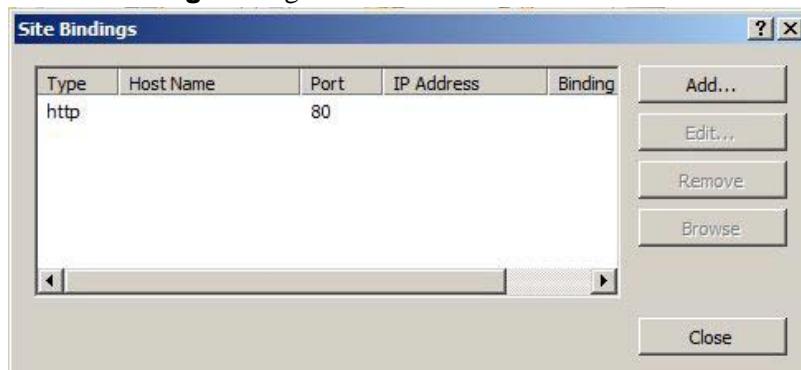
- 1 Add and install a newly created certificate (file extension is .cer) to each device. There are several ways to install your certificate, one of which follows.

 - a Open Internet Explorer and go to **Tools > Internet Options**.
 - b In the **Internet Options** dialog select the **Content** tab and click **Certificates**.
 - c In the **Certificates** dialog select the **Trusted Root Certification Authorities** tab, then click **Import**.
The **Certificate Import Wizard** opens.
 - d Click **Next >** in the **Certificate Import Wizard**.
 - e Click **Browse** and navigate to the SSL certificate file, and click **Next >**.
 - f Confirm that the **Place all certificates in the following store** option is set to **Trusted Root Certification Authorities**. Then click **Next >**.
 - g At the security warning click **Yes**, and click **Ok**.
- 2 Configure IIS on the PIIC iX Web Server.
 - a Open **Control Panel > Administrative Tools > Internet Information Services (IIS) Manager**.
 - b Select the PIICWeb site.

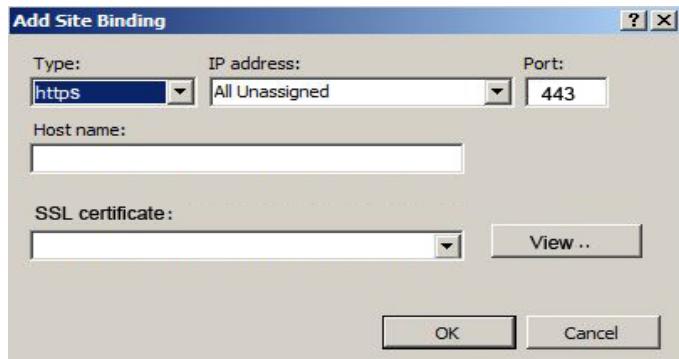
c Select **Bindings** in the **Actions** pane.



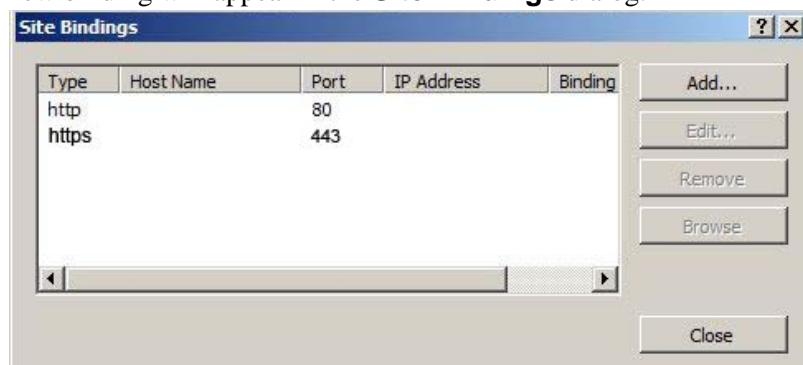
d In the **Site Bindings** dialog click **Add**.



- e In the **Add Site Binding** dialog click the down arrow next to **Type:** and select **https** from the list.

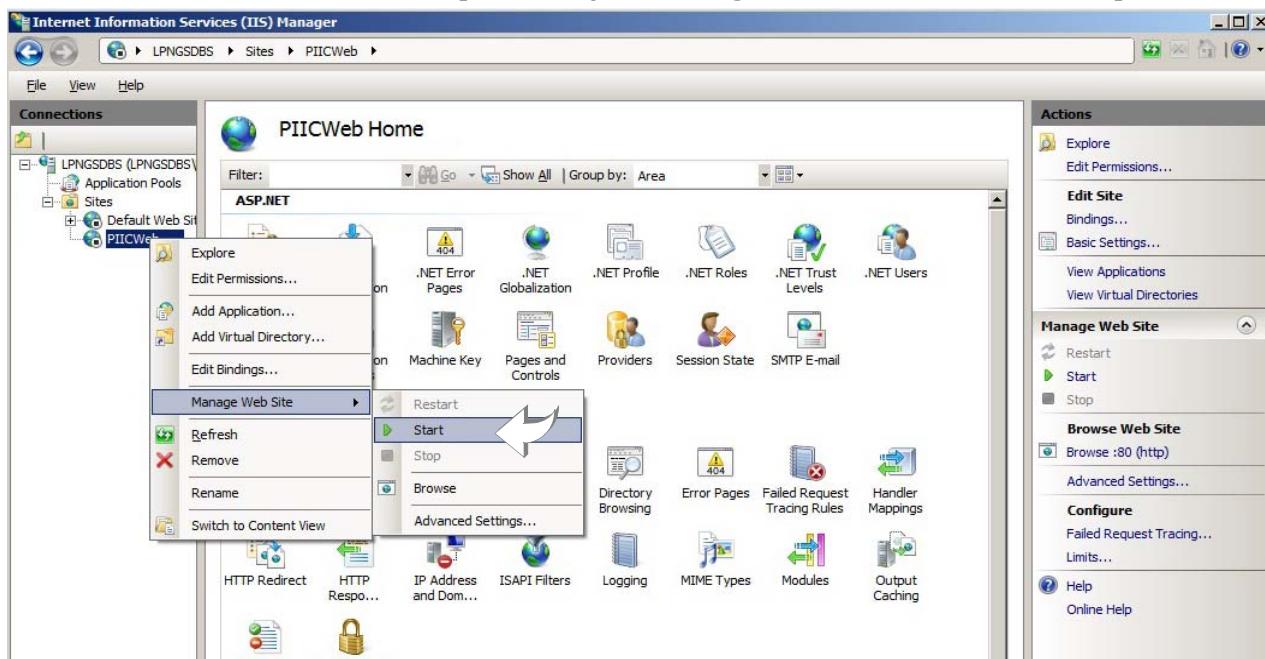


- f Click the down arrow under **SSL certificate:** and select the new certificate from the list. Then click **OK** in the **Add Site Binding** dialog.
- g The new binding will appear in the **Site Bindings** dialog.



- h Select the http site binding in the list, then click **Remove**.
- i Click **Yes** in the message dialog that asks if you are sure you want to remove the selected binding.
- j Click **Close** in the **Site Bindings** dialog.

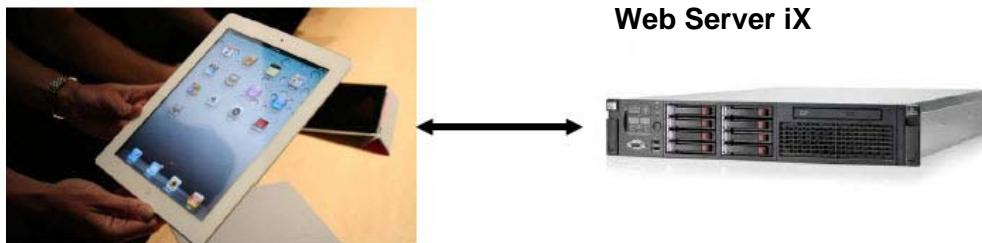
- k In the **Internet Information Services (IIS) Manager** right-click **PIICWeb** in the **Connections** pane, then go to **Manage Web Site > Start** in the drop-down list.



Web Access with iPad

PIIC iX Web Retrospective data can be accessed using the native iPad Web browser Safari with a supported version of iOS. Refer to **page D-5** for other iPad use requirements.

The iPad wireless access must be connected to the PIIC iX Web Server network.



PIIC iX Mobile Service

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Configuring the Mobility Server iX.....	E-7
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Introduction

WARNING **IntelliVue Mobile Caregiver is not intended for primary monitoring, there are no audible alarms and all data is delayed. Always refer to your primary monitoring source for current, real-time patient data and combine this data with personal clinical observation of the patient before administering interventions.**

IntelliVue Mobile Caregiver is an application available to licensed mobile clients that provides secured access to compatible PIIC iX and PIIC beds.

With the IntelliVue Mobile Caregiver application you can:

- Assign/Unassign beds on your compatible iOS or Android device from authorized units across licensed PIIC iX and PIIC systems,
- View physiological vitals and alarms for your assigned beds,
- Access near real-time physiological waves, vitals, and alarms for a single bed, and
- Acquire retrospective view of supported waves and physiological parameters.

Once a configured mobile client user with appropriate PIIC iX Clinical Unit access is authenticated by the PIIC iX Mobility Service, the user can view a list of all beds in the topology, view current Vitals for selected beds, and view near-real-time wave data for individual beds.

Important It is imperative that you refer and adhere to your facility's HIPAA policy for safe handling of patient data.

Although both PIIC and PIIC iX Systems are compatible with IntelliVue Mobile Caregiver, the PIIC iX server is required because it provides access to beds that are monitored on supported PIIC hosts. The Web Server for the PIIC enterprise is added to the PIIC iX Enterprise Portal as a PIIC Web host in order to provide this functionality.

Important PIIC Classic topologies integrated with the PIIC iX Mobility Service require software version N.01.12 (or later) with the Web Server option running on the PIIC Classic Server.

Requirements

- Appropriate licenses are required at the Web or Mobility Server iX (**E-5**).
- Web Portal Hosts (PIIC iX and PIIC Classic) must be configured on PIIC iX Web Server (**E-7**).
- PIIC Classic Portal Host must have network connection to Mobility Server iX, Web Server must be running on the PIIC Classic Portal Host, and Host Name of Portal Host must be its IP Address.
- You must add your Web Server IX to a Web Portal Zone. If you do not have a Web Server in your topology, you must add your Mobility Server to the Web Portal Zone.
- Your mobile device must have connectivity to the Mobility Server iX through Hospital LAN WiFi or Cellular 3G/4G/LTE and VPN to Hospital LAN.

- Mobile device user must have access to the action, **Remote access to patient data**, for the unit you want to access, both on the Web Server and the Mobility Server if they are separate. Refer to **page E-11** for detailed instructions about configuring user access.
- An aperiodic value timestamp is always shown in 24-hour format. Some iOS devices may require a 24-hour clock setting on the device to accurately display timestamp in some non-English languages.
- The Web Server iX must be configured for HTTPS if you want IntelliVue Mobile Caregiver to access retrospective data.

Before you Install

WARNING **IntelliVue Mobile Caregiver is not intended for primary monitoring, there are no audible alarms and all data is delayed. Always refer to your primary monitoring source for current, real-time patient data and combine this data with personal clinical observation of the patient before administering interventions.**

Important Refer and adhere to your facility's HIPAA policy for safe handling of patient data.

Bed Access and Subscription Limits

The maximum number of unique beds subscribed to concurrently across all connected devices is determined by the license.

Table E-1 Mobile/Web Client Bed Connection Limits

Topology	Maximum Beds Accessed Concurrently on Dedicated System
Client-Class Hardware	256
Server-Class Hardware	1024

To ensure optimal performance, the Mobility Service will limit the total number of data subscriptions, depending on the type of host that is running the Mobility Service. Other clients (Web Single-Patient View and Multi-Patient View users, for example) will draw from the same connection pool. A subscription is defined as one client looking at one bed.

Table E-2 Mobile/Web Data Subscription Limits

Topology	Maximum Total Subscriptions
Client-Class Hardware	256
Server-Class Hardware	1024

For example:

- Device **A** looking at bed numbers 1 through 5 uses 5 licenses and 5 subscriptions.
- Device **A** and Device **B** both looking at bed numbers 1 through 5 uses 5 licenses and 10 subscriptions.
- Device **A** looking at bed numbers 1 through 5 and Device **B** looking at bed numbers 6 through 10 uses 10 licenses and 10 subscriptions.

Mobile Device Support

Mobile device clients accessing IntelliVue Mobile Caregiver application must comply to the following.

Table E-3 Device Compatibility

If your device is . . .	the following Operating System is required . . .
Apple iPad 2, 3, 4, Mini 1 & 3, Air 1 & 2	■ iOS 8
Apple iPhone 4S, 5, 5S, 5C, 6, 6 Plus	
Apple iPod Touch	
Samsung S3, S4, S5	■ Android 4.x
HTC One	
Motorola Maxx	■ Android 5.x
Samsung S6, S6 Edge	
Google Nexus (7)" Tablet	
Samsung Galaxy 3 (7 or 10") Tablet	■ Android 4.x

Mobile Device Screen Display

IntelliVue Mobile Caregiver Screen display varies with device and orientation.

Table E-4 Mobile Device Display Capacity

Mobile Device	Landscape Orientation	Portrait Orientation
My Beds Screen Vitals View		
iOS or Android Phone	Up to 4 Numerics	Up to 4 Numerics
iOS or Android Tablet	Up to 6 Numerics	Up to 6 Numerics
Near Real Time (NRT) Full View		
iOS or Android Phone	3 Waves and up to 4 Numerics	4 Waves and up to 4 Numerics
iOS or Android Tablet	4 Waves and up to 6 Numerics	4 Waves and up to 6 Numerics

Checking PIIC iX Licenses and Options

In order to use IntelliVue Mobile Caregiver with PIIC iX and PIIC you must be sure that the required licenses and options are present on the Server iX.

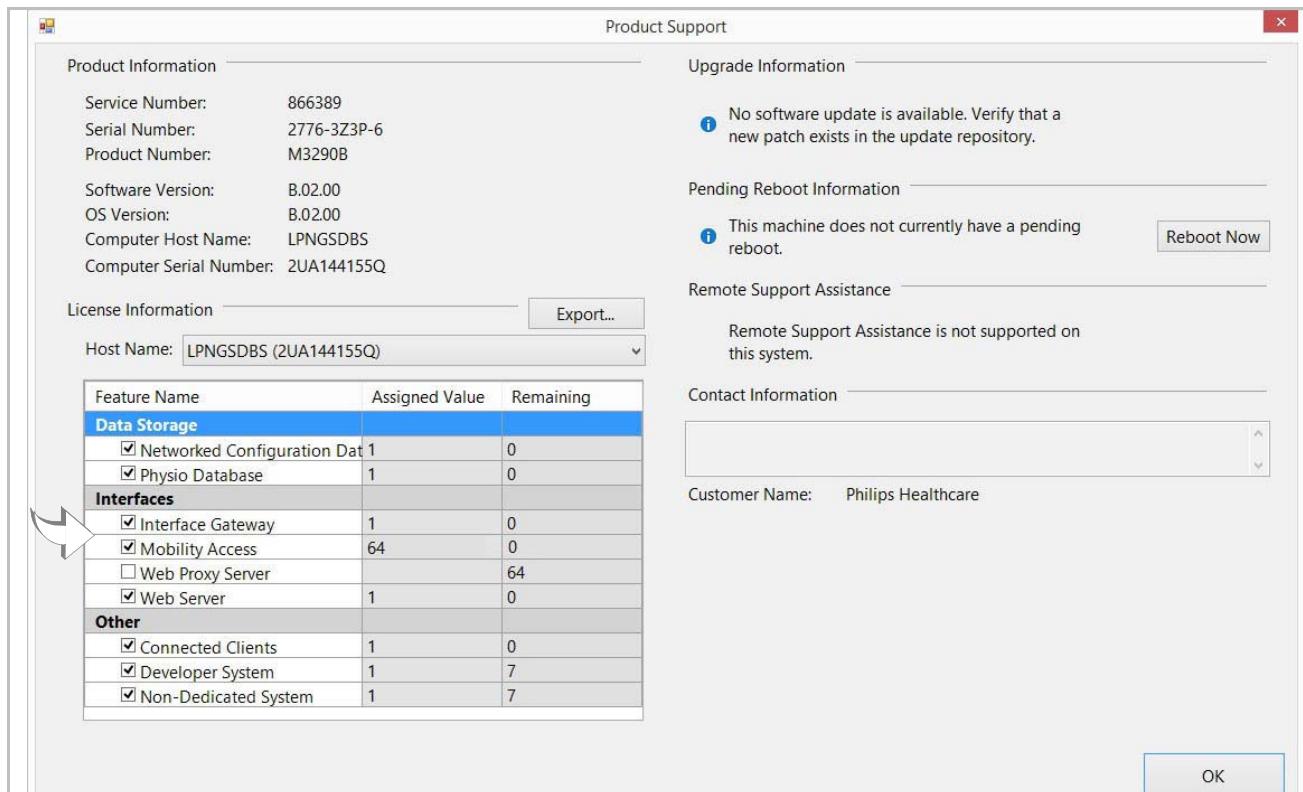
Options Available Under Product # 866389		
Web ¹	Web Server	Provides access to view beds monitored on systems that are appropriately licensed
M01 ²	Mobile Caregiver B	Determines Mobility Service Server iX The option value specifies the number of beds that can be accessed concurrently (4-1024).
M10 ²	Third-Party Mobility	Supports third party interface to Mobility Server (Air Strip or Bed master, for example)
Options Available Under Product # 866390		
Web ¹	Web Server	Provides access to view beds monitored on systems that are appropriately licensed The option value must be 2-1024.
M01 ²	Mobile Caregiver B	Determines Mobility Service Server iX The option value specifies the number of beds that can be accessed concurrently (2-1024).
M10 ²	Third Party Mobility	Supports third party interface to Mobility Server (Air Strip or Bed master, for example)

¹ Only required for access to retrospective data

² Only for capital purchase

You can verify that Mobility features are licensed by checking the PIIC iX **Product Support** screen.

- From PIIC iX **System Configuration** go to **Help > About**.



Refer to the *PIIC iX Licensing Activation Guide* for details about adding or upgrading licenses.

Important If you are using a phone to view the Mobile CareGiver Review application be aware that PIIC iX Web is not optimized for smart phone viewing. A compatible tablet will be a better device on which to view the Review application.

Configuring the Mobility Server iX

PIIC iX System Setup

In PIIC iX **System Setup** you must add Web Portal Zone(s) and Web Portal Hosts. You must also add the necessary licenses.

Configuring the Web Portal Zone

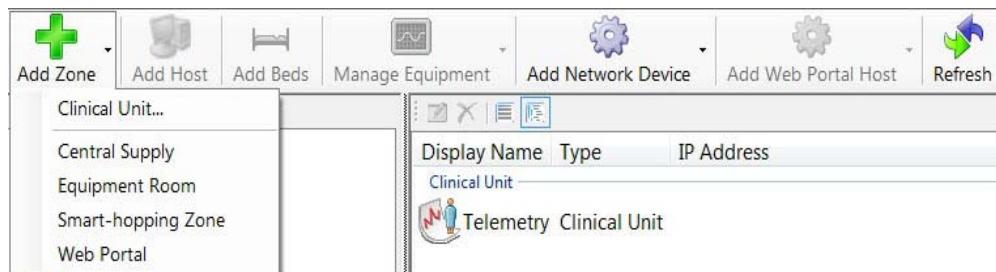
- 1 At the PIIC iX double-click the **PIIC iX System Setup** Desktop icon.
The **System Information** screen opens.

PIIC iX System Setup is a Wizard application; **System Information** is the first screen to appear.

- 2 Progress through the **PIIC iX System Setup** screens to the **Topology Configuration** screen and add desired Web Portal Zone and Web Portal Hosts as follows.

Important With PIIC iX B.02 you can configure multiple Web Servers that are available in the Enterprise Portal.

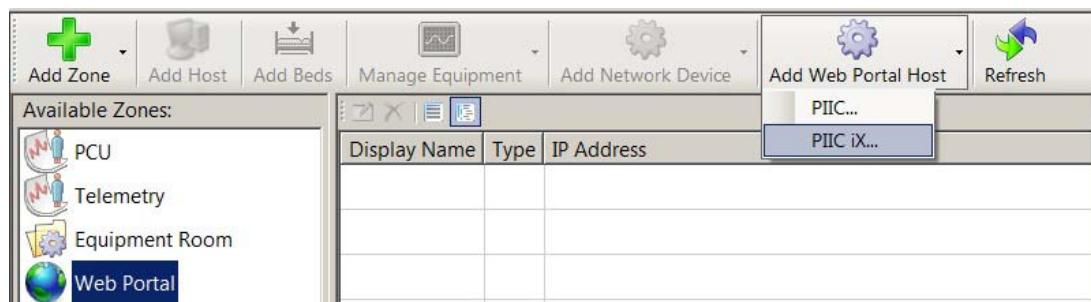
- a Double-click your *Institution* in the **Topology Configuration** screen, then click **Add Zone**.



- b Select **Web Portal** from the drop-down list.
The **Web Portal** is added to the **Available Zones** list. You must enter a name for the zone.

Important You must add **all** Web Servers you want to access as a Web Portal Host.

- c With the **Web Portal** zone selected click the **Add Web Portal Host** icon.



- d If the desired Host is part of a PIIC System select **PIIC** from the list. If the desired Host is part of a PIIC iX System select **PIIC iX**

The **Add PIIC Web Portal Host** dialog or **Add PIIC iX Web Portal Host** opens.

*Host Name:	<input type="text"/>
*Display Name:	<input type="text"/>
FQDN:	<input type="text"/>
IP Address:	<input type="text"/>
Description:	<input type="text"/>
* Port Number:	80
* Network Protocol:	http
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

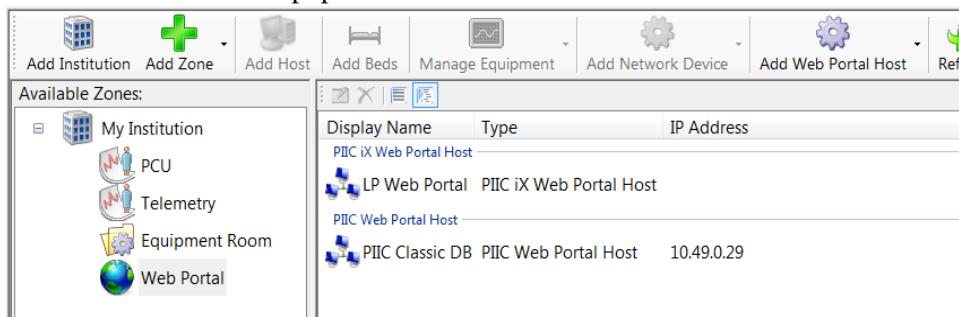
Selection	Steps
*Host Name	<ul style="list-style-type: none"> Enter the Host Name of a PIIC iX or PIIC that will be available to access. If Host Name cannot be resolved in DNS you can use IP Address for this entry.
*Display Name	<ul style="list-style-type: none"> Enter a user-friendly name for the accessible site. For a PIIC iX Web Server that is part of the current topology, use a modified Display Name because a redundant Display Name will not be allowed.
FQDN	<ul style="list-style-type: none"> Enter fully qualified domain name. <p>Important For communication with multiple PIIC iX Web servers that may exist on unconnected networks you must enter a Fully Qualified Domain Name (FQDN) of the Web Server. If you do not enter the FQDN of the remote Web Server(s) the MPV client will attempt to communicate using only the hostname which will be unsuccessful if both hosts are not on the same network.</p>

Selection	Steps
IP Address	■ Enter IP Address of Host.
Description	■ Enter desired descriptive information in text box.
*Port Number	■ Click the down arrow and select desired setting from the list. (Default is 80)
*Network Protocol	■ Click the down arrow and select desired setting from the list. (tcp, http, https)

Important For PIIC Classic Web portal host your PIIC Portal Host and Mobility Server iX must have network connection, and Web Server must be running on your PIIC Database Server Portal Host.

- e Enter required information in the dialog, then click **OK**.

The Web Portal Hosts populate the zone.



Adding Mobility Feature Option

Refer to the *PIIC iX Licensing Activation Guide* for details about adding or upgrading licenses.

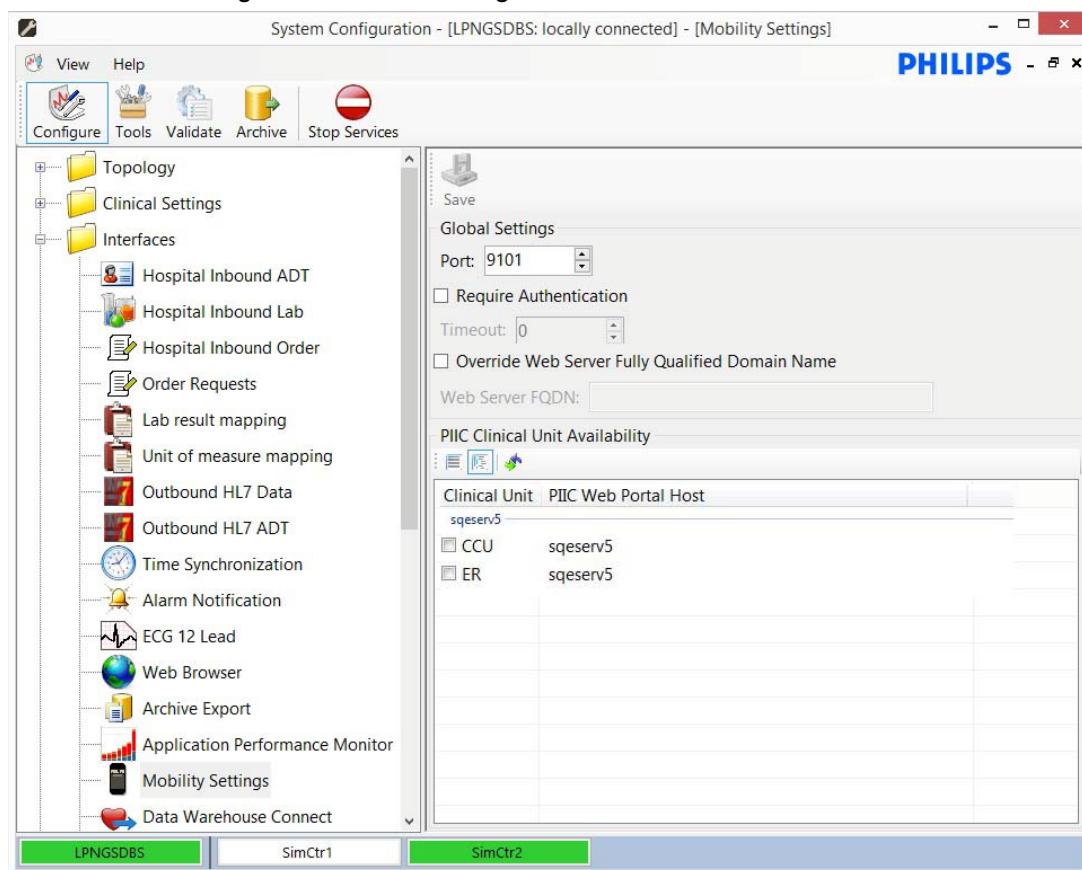
PIIC iX System Configuration

In PIIC iX **System Configuration** you must configure Mobility Settings and define Mobile Caregiver access Users and Roles.

The **Mobility Settings** feature permits configuration of the host in the topology that is appropriately licensed for Mobile Access. This can be a dedicated Mobility Server or a dedicated Mobility/Web Server combination.

- 1 From the Windows desktop double-click **PIIC iX System Configuration**.
The **Login to access System Configuration** dialog opens.
- 2 Enter your **User Name** and **Password** in the appropriate text boxes of the **Login to access System Configuration** dialog. Then click **OK**.
The **System Configuration** screen opens.
- 3 In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Interfaces** folder, and double-click the **Mobility Settings** icon.
The **Mobility Settings** screen opens.

Important If no host in the topology is a licensed Mobility Server a message dialog appears,
None of the hosts in the topology are licensed as a Mobility Server. These settings will only take effect once a Mobility Server has been licensed.
Click **OK** in the dialog to continue with configuration.



- 4 If you require all users to log on with *User Name* and *Password* each time they launch Mobile Caregiver, check the **Require Authentication** check box. If the check box is clear each user is required to enter a user name once.
When the **Require Authentication** check box is clear, the **Timeout** setting is active.
- 5 If the **Require Authentication** check box is checked enter the desired **Timeout** setting. Use the arrows to select the required timeout period ranging from 0 to 60. A setting of 0 represents no timeout period.
- 6 Use the arrows to populate the **Port** text box. (9101, for example).
- 7 If your configuration requires that you override the internal Web Server host name so that your mobile users can access retrospective data easily off site, you can add the fully qualified domain name of the Web Server in the **Override Web Server Fully Qualified Domain Name** text box.
By default the **Override Web Server Fully Qualified Domain Name** check box is clear.
- 8 Select the PIIC Clinical Units that you want to be available for Mobile Access.



Important If you change the Display Name (page E-8) of a PIIC Web Portal Host you must return to the **Mobility Settings** screen and reselect the desired clinical unit(s).

- 9 When Mobility Settings are complete click the **Save** icon.

Selecting Mobile Access Users and Roles

The **Users and Roles** feature in **System Configuration** permits identification of users and authorizing tasks they are allowed to perform within the system.

Mobile Caregiver users must have access to the *Action*, **Remote Access to Patient data**, for the unit you want to access.

Important Before you can run PIIC iX System Configuration you must log on as a user who has system configuration permission and with appropriate password.

- 1 From the Windows desktop double-click the **PIIC iX System Configuration** shortcut icon.
The **Login to access System Configuration** screen opens.
- 2 Enter your **User Name** and **Password** in the appropriate text boxes of the **Login to access System Configuration** dialog. Then click **OK**.
The **System Configuration** screen opens.

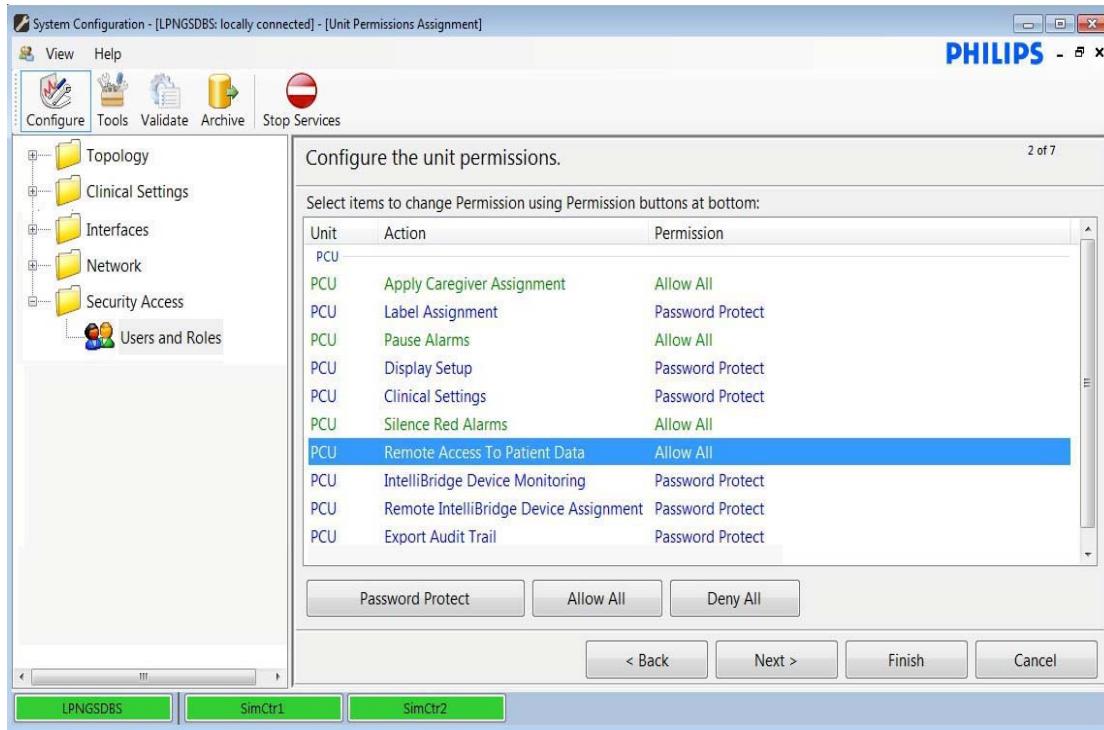
- 3 In **System Configuration** on the desired machine go to the **Configure** pane, expand the **Security Access** folder, and double-click the **Users and Roles** icon.

If you are using Active Directory, refer to **page 6-129** to add and configure your Active Directory.

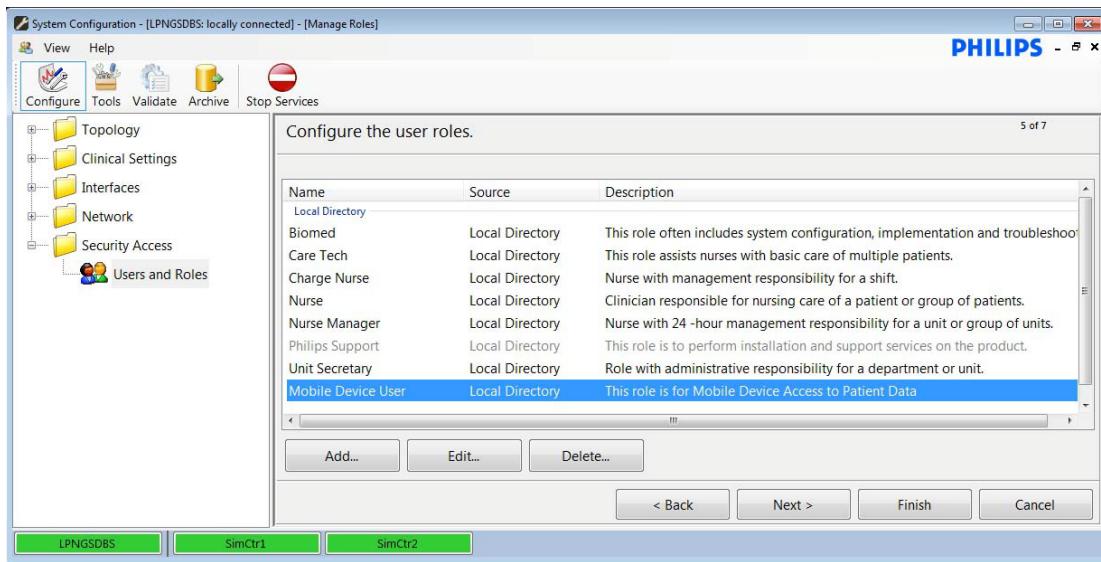
- 4 In the **Unit Permissions Assignment** screen set the **Remote Access to Patient Data** Action permission for applicable Units. Selections include **Password Protect**, **Allow All**, and **Deny All**. **Password Protect** is the default setting.

If you select **Allow All**, any configured User can view all beds in that unit.

If you select **Password Protect**, a configured User must be added to Roles and Actions that are permitted to view beds in that Unit.

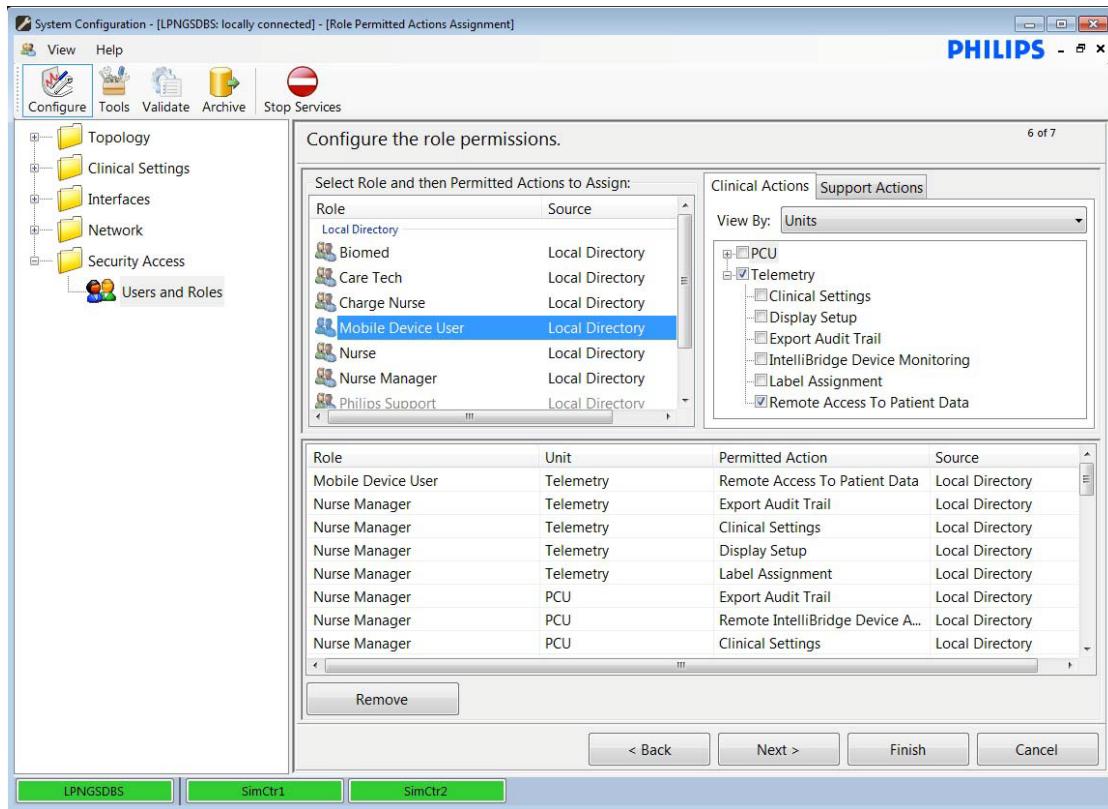


- 5** Continue to the *Manage Roles* screen. Then add or edit an existing role for the required Mobile Caregiver users (*Mobile Device User*, for example).



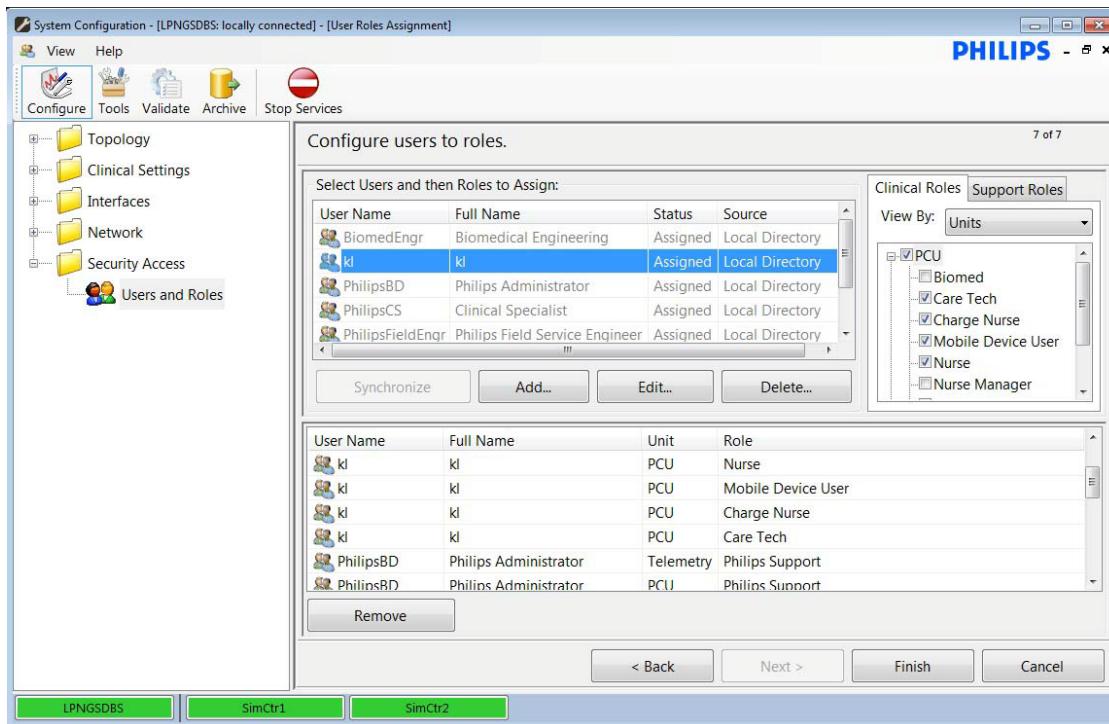
Important You must have a configured user on your Mobility Server and Web Server (if they are separate) who is permitted the action, **Remote access to patient data**, in order to access Mobile Caregiver retrospective data. A user must be configured at every server that must be accessed.

- 6** After the desired Mobile Access User role is added, continue to the *Role Permitted Actions Assignment* screen, which permits assigning which Clinical Units that the role has authorization to see.



- a** Select the desired **Role** (*Mobile Device User*, for example).
- b** Then in the **Clinical Actions** tab select the desired Unit and **Remote Access to Patient Data** Action.

- 7** Continue to the *User Roles Assignment* screen so that you can add your desired users to the Mobile Caregiver users role, then click **Finish**. For more detail about adding **Users and Roles** refer to **page 6-123**.



- 8** Be sure Patient Monitoring Services are started and close **System Configuration**.

NOTE All access to beds is audited on the Mobility Server. When a bed is selected the bed selection and user name information is logged in Audit Trail.

Installing and Using the Mobile Caregiver Application

For detailed information about installing and using your IntelliVue Mobile Caregiver Application on a compatible device, refer to *IntelliVue Mobile Caregiver Installation and Use Guide*, 4535 644 83101.

Mobile Caregiver Error Codes

Table E- 5 Mobility Troubleshooting Codes

Error Code	Description	User Action
Application Specific Error Codes		
305	Any unknown error that cannot be categorized	Restart Mobile Caregiver
306	TCP Connection is aborted during communication.	Connect again from Config.
307	No client/server communication for 30 seconds	Connect again from Config.
309	Application tries to use closed/broken TCP connection.	Connect again from Config.
310	User tries to access home screen before a connection occurs.	Connect again from Config.
311	User tries to access home screen without first accepting EULA.	Accept EULA agreement.
313	Client cannot resolve the host name.	Retry with IP address or configure DNS.
200	XML is not fully retrieved or malformed.	Try connecting again and if problem persists contact the administrator.
201	Mandatory details missing in the response XML.	Try connecting again and if problem persists contact the administrator.
202	Request/Response version mismatches	Contact administrator.
203	Request/Response session Id mismatch	Contact administrator.
204	Request XML could not be constructed.	Contact administrator.
205	No Settings response is retrieved.	Contact administrator.
400	Error in drawing waves	Try again. If problem persists contact the administrator.
401	Error in drawing waves	Try again. If problem persists contact the administrator.
507	Full subscription failure (Text from server appears.)	User action dependent on message.

Table E- 5 Mobility Troubleshooting Codes

Error Code	Description	User Action
Error Messages Without Error Codes		
500	Authentication failure	User action dependent on message.
501	Identification failure	User action dependent on message.
503	Assign/Unassign failure	User action dependent on message.
Apple Specific Error Codes Related to Network (TCP)		
50	Network is down.	Check connectivity availability, then try again.
51	Network is unreachable.	Check connectivity availability, then try again.
52	Network dropped connection on reset.	Check connectivity availability, then try again.
53	Software caused connection abort.	Connect again from Config.
54	Connection reset by peer.	Connect again from Config.
57	Socket is not connected.	Connect again from Config.
60	Operation timed out.	Connect again from Config.
61	Connection refused.	Check whether server is running and IP/port is correct.
64	Host is down.	Check whether server is running and IP/port is correct.
65	No route to host.	Check whether server is running and IP/port is correct.

Customer-Supplied Device Requirements

Customer-Supplied Display Requirements

Table E-1 lists requirements for displays and video cables connected to PIIC iX Systems.

For displays and video cables not supplied by Philips as part of a PIIC iX system:

- Customer is responsible for all aspects of Display selection, purchase, installation, repair, and disposal.
- Philips cannot assure system compatibility.

Table E-1 Specifications for PIIC iX

Specification	Native Resolution	Interface
Single Display	1280 x 1024	VGA HD15
	1920 x 1080	
	2560 x 1440	DisplayPort
	2560 x 1600	
Dual Display	1280 x 1024 with 1280 x 1024	VGA HD15
	1280 x 1024 with 1920 x 1080	
	1920 x 1080 with 1920 x 1080	
	2560 x 1440 with 1280 x 1024	
	2560 x 1600 with 1280 x 1024	DisplayPort VGA HD15
	2560 x 1440 with 1920 x 1080	DisplayPort VGA HD15
	2560 x 1600 with 1920 x 1080	DisplayPort VGA HD15

Important Some displays have visible and/or protruding menu keys that can interfere with the operation of the Application software. Verify when installing customer supplied displays that these buttons are protected from the possibility of interference.

Philips recommends that customer-supplied displays include several display-interface connectors for compatibility with a wider variety of products.

Customer-Supplied UPS Requirements

A variety of uninterruptible power sources are available. The most common configuration consists of a UPS (using battery backup) that is connected to a hospital's emergency power system (typically a generator).

A customer-supplied UPS in a PIIC iX system should, at least, be used to keep essential equipment operational during brief power outages. Philips does not support communications with customer-supplied UPSs; these may interfere with the proper operation of the system. Only use the power connections on customer-supplied UPSs.

With a new fully charged battery, the UPS must be capable of supporting its full load for at least ten minutes. This provides margin for several back-to-back power outages with little recharge time and for the effects of battery aging. The UPS must support hot swapping of batteries to avoid unnecessary down time. Customers must also assess the recharge rate as well as battery and UPS replacement schedules to confirm that their needs are met.

The Customer is also required to be sure that:

- The UPS is connected to a suitably-rated emergency power system. The UPS should only be operational while utility or emergency power is not available.
- UPS voltage and frequency specifications are consistent with local power sources.
- All equipment is properly grounded.

Customers must understand that for a UPS that is not supplied by Philips as part of an PIIC iX system, the following items apply.

- Philips cannot assure system compatibility.
- The customer is responsible for all aspects of UPS selection, purchase, installation, use, maintenance, repair, and disposal.
- Philips cannot assure compliance with any regulatory requirements.

NOTE Refer to **page 3-17** for examples of Philips-provided UPS models, **Physical Specifications**, **Environmental Requirements**, and **Electrical Specifications**.

Qualification/Validation Rules

Overview	F-1
Host Qualification Rules	F-2
System Validation Rules	F-7

Overview

Host Qualification and System Validation are tools that performs a post installation assessment of hardware and software on the local machine and System. The primary window of the user interface lists qualification items, a description, category, and a status.

Not Processed

Pending

Success

Warning

Failure

When an unsuccessful item is selected from the list, the **Detailed Information** text box will contain a detailed problem description.

Host Qualification Rules

A categorized table of Host Qualification Rules follows.

Table F-1 Host Qualification Rules

Rule	Description & Notes
Operating System	
Fonts	Philips Healthcare fonts are installed.
Performance Counters	Windows Performance Counter customizations Installed.
Desktop Shortcuts	<p>Desktop shortcuts are installed for PIIC iX System Setup and PIIC iX System Configuration.</p> <p>For licensed non-dedicated systems a shortcut is also created for the PIIC iX Application.</p> <p>For dedicated systems and unlicensed systems, any existing shortcut for the PIIC iX application is deleted.</p>
Network	<p>Requires at least one connected IPv4 network adapter¹</p> <p>If there is more than one connected IPv4 network adapter, the name includes the word, <i>Monitor</i> (adapter for monitoring network).¹</p> <p>For dedicated systems, the host keeps its DHCP address even if the DHCP server is not available (DontPingGateway is Enabled).</p> <p>For dedicated systems, operational network adapters are not using more than one set of gateway addresses.</p> <p>If not licensed for Demo, any network adapter named <i>Demo Monitor LAN</i> is disabled.</p>
Program Compatibility Assistant	Windows Program Compatibility Assistant disabled.
Windows Desktop Window Manager	Windows Desktop Window Manager service startup mode disabled.
Windows Error Reporting	Windows Error Reporting non-interactive.
Windows Power Scheme	Custom Power Scheme installed so that power is always on.
Windows Remote Registry Service	Windows Remote Registry Service startup mode is automatic.
NetTcpPortSharing	NetTcpPortSharing is available for the primary user account.
PowerShell	PowerShell execution policy is set to RemoteSigned.
Windows Automatic Update Service	<p>For Surveillance systems, Windows Automatic Update service startup mode is Disabled, for other systems Windows Automatic Update service startup mode is Automatic with Delayed Start.</p> <p>For Surveillance systems, Windows Updates is Disabled; for other systems, Updates are automatically downloaded, but not automatically installed</p>
Windows Screensaver	Windows Screensaver is disabled.
Windows Crash Dump	Enables capability to manually generate a BSOD
Windows Sounds	Windows sounds and sound enhancements disabled.
Java	Java JVM auto-updating Disabled
Removable Drives	Media insertion/removal does not open dialog.
Printers	Printing is non-interactive. Devices that interact with the user are removed: Fax, Microsoft XPS Document Writer, PDF Writer.
Display Magnification	Display magnification is set to 100% for all displays. (Font DPI is set to 96.)
Windows Activation	Windows is activated. ^{1,3}

Table F-1 Host Qualification Rules (continued)

Rule	Description & Notes
Remote Support	UltraVNC is installed ¹ and configured. If licensed for Surveillance, Remote Desktop is disabled; if not licensed for Surveillance, Remote Desktop is enabled. Philips Service Agent service is started if it is installed.
Demo Loopback Adapter	Windows Loopback Adapter, Demo Monitor LAN, is installed and enabled. All other network adapters are disabled.
Hardware	
Disk Space	The sum (in GB) of free disk space, the Philips.PIC folder, and the Microsoft SQL Server folder, is at least: 25 GB if licensed for Demo 150 GB for a Small Primary Server 150 GB for a Enterprise Primary or Physio Server (240 GB is recommended) 150 GB for unlicensed box running Windows Server 2008 or later (240 GB is recommended) 90 GB if licensed for Patient Connection Otherwise, 25 GB
Memory	Unlicensed systems - no requirement Licenced systems - available physical memory: 12 GB Enterprise Servers 2 GB if licensed for Demo 12 GB unlicensed host running Windows Server 2008 or later 12 GB if licensed for Data Warehouse Connect Storage and database is not off loaded Otherwise 3 GB
Link Speed & Duplex	Operational link speed and duplex values for the Patient monitoring network adapter can be programmatically determined. ¹ If the operational link speed and duplex values for Patient Monitoring Network Adapter can be determined, they must be at least: 100 Mb Full Duplex for any system 1 Gbps Full Duplex for a Enterprise Primary Server with > 512 beds 1 Gbps Full Duplex for unlicensed system running Windows Server 2008
Keyboard	Keyboard can be locked if CPU is pegged. Accessibility features are disabled, and no keys are stuck down. ¹
Reporting Printers	Reports that are assigned to installed printers are listed.
Software	
Monitoring Services Installation	Patient Monitoring Service is installed; startup mode is Manual.
Startup Application ²	If licensed for Monitoring, Application starts automatically; If not licensed for Monitoring, Application does not start automatically. If licensed for Surveillance, Intel Graphics Agent does not start automatically if it is installed.

Table F-1 Host Qualification Rules (continued)

Rule	Description & Notes
XDS	<p>XDS is installed.^{1,3}</p> <p>If licensed for Surveillance:</p> <p>XDS is Configured:</p> <ul style="list-style-type: none">Culture setting is the local cultureMAC address setting is MAC of the network adapter used for patient monitoring <p>The following services are Started Automatically</p> <ul style="list-style-type: none">Intellivue InfrastructureIntellivue XDS StabilityIPM Dist <p>If not licensed for Surveillance, services are Stopped, startup mode is Manual.</p>
Watchdog Installation	Watchdog service is installed, and startup mode is Manual.
Watchdog Settings	For dedicated systems, Watchdog service is automatic and will restart upon failure; for non-dedicated systems, Watchdog startup mode is Manual.
Web Site Installation	<p>If licensed for WEB, Web Site is installed:</p> <p>IIS is installed and its W3SVC Windows service will recover upon failure.</p> <p>A Web Site and application pool, PIICWeb, exist:</p> <ul style="list-style-type: none">- Source folder exists at Source folder exists at Philips.PIC\[release]\Product\Web¹- It is started on port 80 under app pool identity, LocalSystem, and any other web site using port 80 is stopped.- MPV*SPV is less than or equal to max licensed web connections or max web connections for topology. <p>If not licensed for Web Server PIICWeb does not exist.</p>
Mobility	Number of Mobile back end license is less than or equal to the max allowed Mobile Back end licenses for the host.
Third Party Applications	Third Party programs installed by default (but can be un-selected by user): <ul style="list-style-type: none">- XDS- KaVoom⁴- UltraVNC⁴- Debugging tools for Windows⁵- Wireshark⁴- Black Ice⁴
Data Warehouse Connect	If licensed as PDX be sure PDX performance counters are collected (assign PDX performance profile to host)
Data Warehouse Connect Storage	If licensed as PDXS: <ul style="list-style-type: none">- Verify that Data Warehouse Connect is installed- If database is installed be sure that relevant tables are partitioned properly within the current time range, otherwise create necessary table partitions.- Set database install state to high-end.- Be sure PDXS performance counters are collected (assign PDXS performance profile to host)

Table F-1 Host Qualification Rules (continued)

Rule	Description & Notes
Data Warehouse Connect Viewer	If licensed for PDX, Web Site is installed: IIS is installed and its W3SVC Windows service will recover upon failure. Web Site and application pool, PDXViewer exist: - Source folder exists at Source folder exists at WebPDXHost ¹ - It is started on port 80 under app pool identity, LocalSystem, and any other web site using port 80 is stopped. If not licensed for PDX PDXViewer does not exist.
Data Relay Service	A self-signed X509 certificate is installed on the host which is licensed for Web Server.
Security	
Keyboard Driver	If dedicated and licensed for Surveillance: Ctrl-Alt-Del, Mute and other Volume control keys, and Windows hot keys are disabled.
Windows User Access Control	Windows User Access Control disabled.
Local Security Policy	Local Security Policy Settings: System Events audited Password does not expire Account lockout threshold: 3 invalid logon attempts Account lockout duration: 5 minutes
Advanced Audit Policy	Setting: Other Logon/Logoff Events are audited.
Windows Fire wall	Windows Fire wall is Enabled. Following ports/ applications are added as exclusion based on the license assignment for the host: Remote Support applications: Remote Desktop and Ultra VNC server and viewer SQL server: port 1433 Microsoft .Net framework and WCF : SMSvcHost.exe File and Printer Sharing (port: 139 and 445) Windows Management Instrumentation WMI Windows Remote Management Bedside communication: UDP Ports 67,68, 24000-24100 If host is licensed for Mobility Access: Mobility Configuration: port 9101 (default) If host is licensed for Web Server: Web Server: port 80, 443
Windows Guest Account	Windows Guest Account is disabled.
Support Account	An Administrator Windows User Account exists for remote support (page 6-139). ⁶
Primary Account	A standard Windows User Account exists and is properly configured with a random password. - If licensed for Surveillance or Patient Connection, the operating system performs an automatic logon into the Primary Account. - If not licensed for either Surveillance or Patient Connection, the operating system does not perform any form of automatic logon.
Patient Monitoring External Users	A Windows User Group exists for external applications.

Table F-1 Host Qualification Rules (continued)

Rule	Description & Notes
Database	<p>SQL Server</p> <p>If SQL Server is on the local host, SQL Server Name matches computer name.</p> <p>For dedicated systems max server memory is at least 800 MB.</p> <p>For dedicated surveillance systems, the primary user account has sufficient permissions to the databases.</p> <p>For dedicated systems, the patient monitoring external user group has sufficient permissions to the databases. If licensed for PDXS/PDXSR, be sure SQL server (off loaded, otherwise local) is 2014 Enterprise or later.</p> <p>If All Databases are offloaded, the local SQL Service is stopped and disabled.</p> <p>Offloaded/remote SQL server instance cannot be configured by more than one server.</p>

1 Requires Manual fix

2 At least one: Surveillance, PatientConnection; and no: Configuration Database, Physio Database, Web feature

3 Correctable by Windows Installer

4 Not installed when DoD license is present.

5

6 Password only distributed to trained Philips personnel

System Validation Rules

System Validation provides a post installation assessment of a customized hardware and software configuration. A categorized table describing System Validation Rules follows.

Table F-2 System Validation Rules

Rule	
Database	
Database Connectivity	No host in the network is in local mode.
Physio Data Meter	Every Physiologic Server can store at least one quantum of Physio data per second.
Hardware	
Network Devices	Every router and switch added to the configuration is connected.
Wireless Devices	If at least one PWM exists there is at least one APC and AP. If no PWM exists there is at least one APC and AP (if not, warning). Every AP and APC is connected.
Reporting Printers	Printers assigned for reporting on each host in the network are installed.
Electronic Reports	The network share for electronic file output printers is configured; a test file can be copied to the share.
Software	
Electronic Reports	For each host licensed with electronic report distribution, a file share is configured. For each host not licensed with electronic report distribution, a file share is not configured. For each host licensed with electronic report distribution and configured with a file share, the share is accessible.
Configuration Server	Configuration server is connected and running Patient Monitoring Services. If qualifier fails, error states that details of subsequent rules may be stale or incorrect.
Monitoring Services	Every host in the network is connected and running Patient Monitoring Services. Failure on one or more hosts produces an error messages.
Host Topology	Every Surveillance host is assigned to a clinical unit.
Smart-Hopping Zone	Every Smart-Hopping zone has at least one clinical unit, APC, and AP.
Version Compatibility	Every host in the network is running a version of patient monitoring software that is compatible with the Configuration Server.
Licensing	Every host in the network is licensed.

Table F-2 System Validation Rules (continued)

Rule	
Host Qualification	Overall status is obtained from performing Host Qualification on every host.
Web site Access	Patient monitoring Web site is accessible from both the Web Server and the host performing System Validation.
Alert Notification	If there is at least one host in the network licensed for Alert Data Outbound Interface: <ul style="list-style-type: none">- There is at least one Alert Notification client,- Connection can be made to Alert Notification clients,- A test message can be sent to each Alert Notification client. If there are no hosts in the network licensed for Alert Data Outbound Interface, there are no Alert Notification clients.
HL7	If there is at least one host in the network licensed for HL7 Interface Connection: <ul style="list-style-type: none">- The gateway is the only HL7 interface connection host,- There is at least one HL7 export host,- There is at least one HL7 client device,- The number of host-to-device connections does not exceed the licensed connection limit,- Every acquisition host specified in a host-to-device connection is licensed for HL7 export,- Connection can be made to each HL7 client devices. If there are no hosts in the network licensed for HL7 Interface Connection, there are no HL7 export hosts or HL7 client devices.
ECG 12 Lead Export	If at least one host in the network is licensed for Ecg 12 Lead: <ul style="list-style-type: none">- There is at least one Ecg 12 Lead export box,- The Ecg 12 Lead export box is reachable from each licensed host. If there are no hosts in the network licensed for Ecg 12 Lead, there are no Ecg 12 Lead export boxes.
ECG 12 Lead Order	If at least one host in the network is licensed for Ecg 12 Lead orders an inbound order is configured in PIIC iX and available for viewing. If there are no hosts in the network licensed for Ecg 12 Lead orders, there is no inbound order configured in PIIC iX.
APM	If the topology has an APM there is no other APM configured as an external interface and the APM service is accessible. If the topology does not have APM but has it configured as an external interface the SNMP Agent settings are not customized and the remote APM is accessible.

Table F-2 System Validation Rules (continued)

Rule	
Data Acquisition	If there is at least one host in the network licensed with the Patient Connection feature: - If a host is licensed with Patient Connection and not with the Surveillance feature, its clinical unit cannot contain any hosts that are licensed with Surveillance.
External Time Server	The external time server, if configured, is reachable.
Inbound LAB	If there is at least one host in the network licensed for LAB: - There is LAB configured and reachable. If there are no hosts in the network licensed for LAB, there is no LAB configured.
Inbound ADT	If there is at least one host in the network licensed for Inbound ADT: - There is Inbound ADT configured and reachable. If there are no hosts in the network licensed for Inbound ADT, there is no Inbound ADT configured.
Archive Export	The network share configured for Archive Export is reachable.
Data Warehouse Connect	Warn if no external storage host is configured but there are licensed exporters, or if there is an external storage host configured but no licensed exporters. If there are exporters licensed and an export destination is configured, be sure that for each exporter the export service is running and that they can communicate with the configured destination service.
Data Warehouse Connect Storage	If licensed as PDXS be sure that no export destination is configured, Storage Service is running, and Viewer Service is running.
Wave Strip Export	For every unit with wave strip export enabled, at least one host in the unit is licensed for wave strip export. For every unit with wave strip export disabled, there are no hosts licensed for wave strip export. For every unit with wave strip export enabled, the configured network share is accessible.
Philips Holter Export	Warn if there is a Host licensed with HDX that does not have a Connection configured, or if there is a configured Connection for a Unit that does not contain a Host with the HDX license. Fail if a licensed Host cannot write a test file to its configured network share.
Operating System	
Pending Reboot	No host in the network has a pending reboot.

Hardware Installation

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Setting Host Names and IP Addresses	G-11
Testing Network Connectivity.....	G-12

Cable Plant Installation

Philips requires that a customer contracts with a certified CAT 5e (and greater) cable installer for cable plant installation and that the installer provides test documentation proving that the cable plant meets required specifications.

NOTE The hospital cable plant should be completely installed and tested before Philips Representatives and PIIC iX System equipment arrive.

Installation Materials

Philips supplies a variety of UTP CAT 5e (and greater) cable and installation materials, including bulk UTP CAT 6 plenum cable [in 305 m (1000 ft.) rolls], UTP patch panels, UTP and fiber optic patch cables, and UTP wall boxes. Available options are described in the **Philips IntelliVue Clinical Network** documentation.

NOTE Philips does not supply bulk fiber optic cable.

Noise Immunity

UTP CAT 5e (and greater) cable has excellent immunity from noise when installed correctly. To achieve this quality you must keep all UTP cables and active network components as far away as possible from all sources of electrical noise. These sources include all RF sources and AC powered devices and their power cables. Data signals on UTP cables that receive excessive electrical noise (e.g. line power surges or spikes) can become corrupt and may produce unpredictable results on the networks they support.

During cable plant installation all UTP cables, patch panels, wall boxes, and active network components should **not** be:

- in wiring closets where RF transmission sources are used, and
- within 1 m (3 ft.) of any AC device or AC power cord except where necessary to connect them to PIIC iX System or Server.

Fiber optic cable **should be used** for any 100 Mbit/s cable-runs over 100 m or for which RF or electrical noise is a potential problem.

UTP Cable Plant Installation

The UTP cable plant must adhere to the following criteria.

- **Patch panels for all switches** should be in the wiring closets where the switches will be installed.
- **RJ45 wall plates or patch panels for repeaters and extension switches** should be in closets where they will be installed. Repeaters and Extension Switches should **not** be located above a ceiling.
- **RJ45 Wall plates for PIIC iX, Printer, and Server iX**, should be within patch cable lengths of their devices.
- **Cables, patch panels, switches, repeaters, and media translators** should be more than 1 m (3 ft.) from all powered devices (Server, UPS, etc.).
- **Labels on all UTP cables and terminations** should identify the cable, patch panel, port number, and wall box termination.
- **Test Documentation** should demonstrate that the UTP cable plant meets appropriate standards for NEXT, attenuation, wire map, and length.

CAUTION UTP and fiber optic in-wall cables **must** be terminated at a patch panel or wall plate and not directly at an active Network device.

Inspecting Components

The PIIC iX System has been carefully packaged at the Philips factory so that no damage occurs in shipment. However, Philips has no control over shipping and handling damage. A thorough inspection of Philips components during removal from packaging is an essential step to ensure that no damage has occurred.

NOTE It may be necessary to document possible shipment damage in case hidden damage becomes apparent during testing and operation.

Packaging

Before removing the components from their packaging, the shipment container should be inspected for damage. External damage to shipping containers may indicate damage to its contents. Open the shipping containers and check the cushioning material. Note any signs of stress for indications of rough handling in transit. Document any damage conditions.

Mechanical Components

Unpack each component from its shipping material. Examine all parts of each component for visible damage -- broken connectors or controls, dents or scratches on instrument surfaces, or any other unusual appearance. Document any damage conditions.

Electrical Components

No detailed internal or electrical inspection is required. The equipment has undergone extensive electrical testing and configuration prior to shipment.

If physical damage is evident during unpacking or if, during initial testing and operation, the Philips system fails to meet performance specifications in any way, immediately notify the shipment carrier and the nearest Philips Sales/Support Office. Philips will arrange for immediate repair or replacement of the equipment without waiting for any claims to be settled.

Repackaging for Shipment

If you have to ship your system to a Philips Sales/Support Office, use the original Philips packaging materials, if possible, to provide proper protection during shipping. If the original packaging is not available or re-usable, contact the Philips Sales/Support Office.

Addressing a Shipment

Securely attach a label to the equipment being returned that includes:

- Owner name and address,
- Instrument model and serial number, and
- A detailed description of damage, repair required, or symptoms of faults.

Installing System Components

This section describes proper installation of the components of the PIIC iX System in their intended locations, including the assembly and installation of mounting hardware. The procedure for a particular installation depends on the planned locations of individual components developed during site planning and preparation. Hence, this section will only give general procedures for locating individual components and must be adapted for each installation.

CAUTION Inadequate air flow can lead to overheating and failure of the PIIC iX System components.

Setting up Components

Put all PIIC iX components to be located on the work surface of the clinical work station on the work surface in their intended locations.

Units placed on the work surface should be positioned in the way that is most convenient and useful to clinicians.

Mounting Components

A variety of hardware is available for mounting PIIC iX devices not located on the central monitoring work surface -- PC, UPS, power distribution module. Mounting locations and hardware should be identified during site planning so that mounting brackets and hardware can be ordered as part of the PIIC iX System purchase.

Installing Wall Brackets

Installation of wall mount hardware to walls requires the secure attachment of a wall bracket to a building structural member. This ensures that the installation can safely and securely support the weight of the mounted hardware.

CAUTION The customer is responsible for installing wall brackets that hold mounting hardware and for ensuring that the bracket installation can safely support the device weight. Philips assumes no responsibility for this part of the installation.

Display Mounts

Wall mounts are available that permit locating displays where they can be more easily viewed by clinical users. Wall mounts are particularly useful for locating remote displays.

NOTE Philips is responsible for assembling the mounting hardware, attaching it to the display, and mounting the system to the wall mount bracket.

CAUTION Careful consideration should be given to assure that a surface, or wall can hold the weight of the item being mounted.

The **Philips Customer Engineer** is responsible for assembling the mounting hardware, securing it to the surface or wall mounts, and attaching the PIIC iX System component to the mounting hardware.

PC UPS Mount

The provided PC UPS rack-mounting brackets can also be used to mount the UPS vertically. Refer to the UPS manufacturer documentation.

PDM Mount

An additional wall mount option is available for the Power Distribution Module (PDM) which is required for Philips-supplied PC UPS installations in Japan. The PDM is usually mounted next to the UPS and PC. Installation procedures for the wall mount are described in the **Power Distribution Module Installation Note** supplied with the PDM:

PIIC iX System Installation

WARNING When securing cables, be sure to provide strain relief loops and cinch cable ties securely.

PIIC iX and Small Server Installation

The PIIC iX/Small Server PIIC iX, displays, keyboards, and mouse/trackball devices should be installed in the intended location. The display, keyboard, and mouse are intended for a work surface.

After you put the components in their intended location, **install the UPS** with the proper voltage and frequency as follows:

- 1** Connect the UPS input power cord to a properly grounded, emergency-power electrical outlet. If necessary allow the UPS battery to charge. A full charge of the battery may take up to 12 hours.
- 2** Plug the PIIC iX PC, recorder power supply, and other approved accessory device power cords into the UPS battery backup outlets. (Refer to **Figure 3-5**, **Figure 3-6**, and **Figure 3-7**.)
- 3** Turn on the UPS

Enterprise Server iX Installation

The Enterprise Server should be installed in its intended location.

The Philips-provided Rack Mount 1000VA 120V UPS and the Rack Mount 1500VA 100V UPS share a common rear-panel design. Refer to **Enterprise Server iX UPS**.

After you put the Server components in their intended locations, **install the UPS** with the proper voltage and frequency for the Server as follows.

- 1** Switch the UPS off by pressing the power button located on the front panel.
- 2** **Connect the battery wire** of the UPS.
- 3** **Connect the UPS input power cord** to a properly grounded, emergency power electrical output.
- 4** Turn on the UPS, and wait for the battery LED to change from Amber to Green.
- 5** **Connect the Server iX power cord** to a UPS battery backup outlet (**page 3-15**).

Installing Printers

PIIC iX uses the Windows Operating System Print Service to accommodate printer installation. Refer to **Installing Printers, page 5-68**.

NOTE Use your Printer Manufacturer documentation for setup, unpacking procedure, and detailed instructions about the printer menu settings. Original Equipment Manufacturer documentation for Philips-provided printers is included in the PIIC iX Service Documentation portfolio.

Interconnecting the System

Once the PIIC iX System components have been positioned in their locations, they can be interconnected using proper equipment cables.

Touch Display Setup

Cable Connections

The rear panel of the touch display has connections for the Power cord, the Video cable (see **Mounting the Touch Display Stylus**), and for the USB Cable. After the connections are made, the cables can be threaded through the display stand.

Mounting the Touch Display Stylus

The touch display comes with a stylus that can be secured to the display.

- I Attach the stylus cord to the display as illustrated in **Figure G-1**.

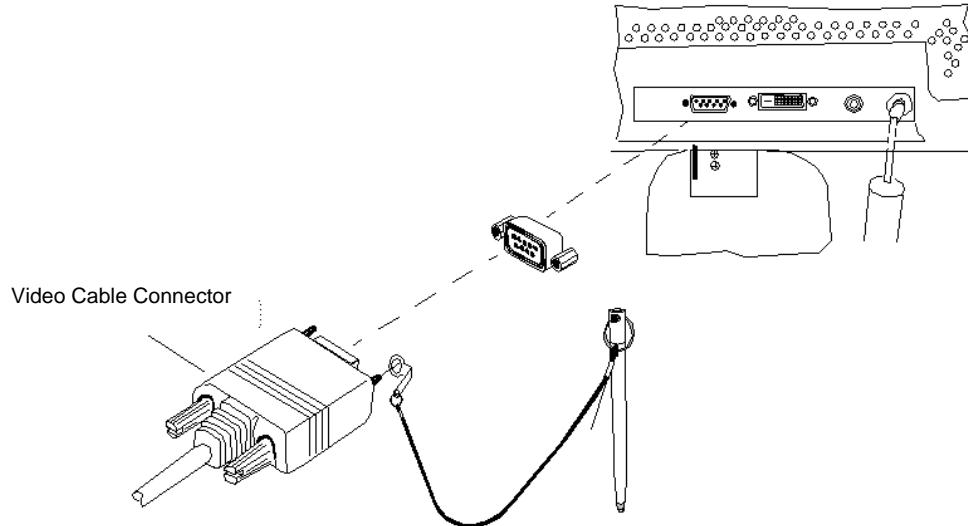
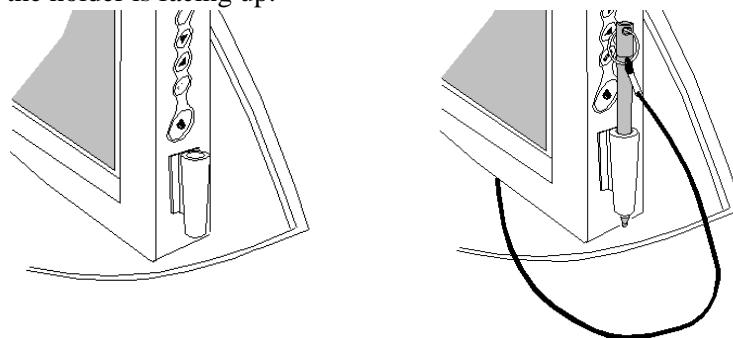


Figure G-1 Stylus Cord Connection

- 2 Clean the area below the *Control Buttons* with alcohol. When the surface is dry remove the backing from the stylus holder and attach it to the display. Be sure that the larger opening of the holder is facing up.



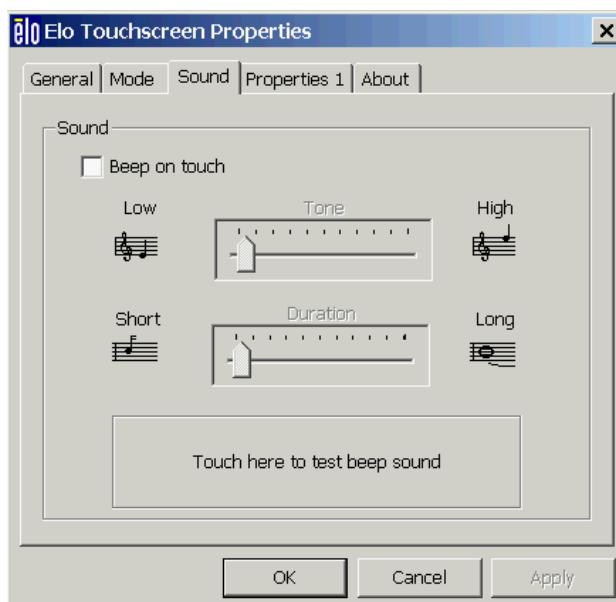
- 3 Place the stylus in the stylus holder.

Calibrating the Touch Display

- I Open **Control Panel** and double click the ELO icon.
The **ELO Touchscreen Properties** dialog displays.



- 2 Press the Video Alignment button .
- 3 Follow the on-screen instructions.
- 4 Test the touch alignment.
 - a If touch is ok, press the Green Check icon.
 - b If touch is not ok, press the Arrow icon to redo the calibration.
- 5 Select the **Sound** tab and be sure there is **no** check in the **Beep on touch** check box.



- 6 Press **OK** to close the **ELO Touchscreen Properties** dialog.

Disabling Philips Display Controls

The touch display has On-Screen Display (OSD) *Control Buttons* on the side panel, which must be disabled.

Menu	Displays/Exits the OSD menus
	Plus/Clockwise
	Minus/Counter-Clockwise
Select	Select item
	Power

- 1 Press and hold the **Menu** and  buttons simultaneously until the message *OSD IS LOCKED* appears. (If you press the buttons simultaneously again, the OSD unlocks.)
- 2 Press the **Menu** button to confirm that Menus are disabled.
- 3 Press and hold the **Menu** and  buttons simultaneously until the message *POWER IS LOCKED* appears on the screen. (If you press the buttons simultaneously again, power becomes unlocked).
- 4 Press the **POWER** button to confirm that **POWER** button is disabled.

You can enable these controls for troubleshooting, but you must **be sure to disable them when troubleshooting is complete!**

Setting up a KVM Switch

A **Keyboard-Video-Mouse (KVM) Switch** permits controlling up to four PIIC iX systems with a single keyboard and mouse. The KVM switch also permits a single display to serve as the second (Applications) display for all PIIC iX Systems.

NOTE A touch display cannot be used as the switched applications display on the KVM switch.

Hospital Intranet Connection

If you have a PIIC iX Web Server, interconnect the Server to the Hospital intranet. This is a 1 Gb/s minimum connection.

Providing Electrical Power

The following PIIC iX System components are provided with 3-wire, grounded power cables.

- Display(s)
- Host/Server
- UPS
- Power Supply for 2-Channel USB Recorder
- Printer
- 6-Way Video Splitter

Each 3-wire, power cable must be separately connected to the appropriate 3-wire, grounded electrical receptacle.

CAUTION BEFORE connecting power cables to electrical outlets:

- Verify that all components of the PIIC iX System that can be turned off are turned OFF!
- Review Safety to assure proper electrical grounding.
- If applicable, set the input voltage selection switch on the rear of the PC to the proper line voltage.
- Set Power Distribution Module input and output voltage switch settings to their proper values

PIIC iX and Philips 2-Channel USB Recorder connect to the BATTERY BACKUP outlets on the UPS.

Displays and video splitters may be connected to the Surge outlet of the UPS or to a separate non-UPS outlet.

Printers should not be connected to a UPS.

WARNING PIIC iX System components may not be located within the Patient Environment.

Setting Host Names and IP Addresses

After all Network devices are installed, you must assign **Host Names** and **IP Addresses** for the device - PIIC iX, Server iX, Switches, Printers - before you can install and configure Philips software.

Device Naming Rules

When assigning a Host Name to a device on the network, be sure that the name:

- is unique** so the Server can identify it,
- contains no more** than 15 characters,
- uses alpha-numeric characters only**, as no other characters are acceptable (no spaces, hyphens, underscores, etc.),
- does **not** begin with a number, and
- is different from factory settings** assigned during device installation.

- 1 Set **Host Name** and **IP Address** of every PIIC iX or Server iX.
- 2 Enter an **IP address** for the device using one of the **recommended** IP addresses for the device type.
- 3 Enter a **Default gateway** for this device:

For PIIC iX Systems in *non-routed topologies* with *no* Philips Telemetry devices, use the **Server IP address**.

For PIIC iX Systems in *routed topologies* with Philips Telemetry devices, use the **router IP address**.

For a Server in *non-routed topologies*, leave blank (0.0.0.0), and

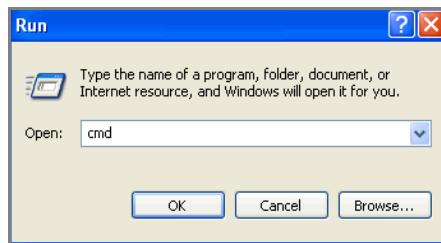
For a Server in *routed topologies* with Philips Telemetry devices on the connected PIIC iX Systems, use the **router IP address**.

- 4 After you set Host Names and IP Addresses, verify **Link Speed & Duplex** setting of the Monitoring LAN **Network Connection**.

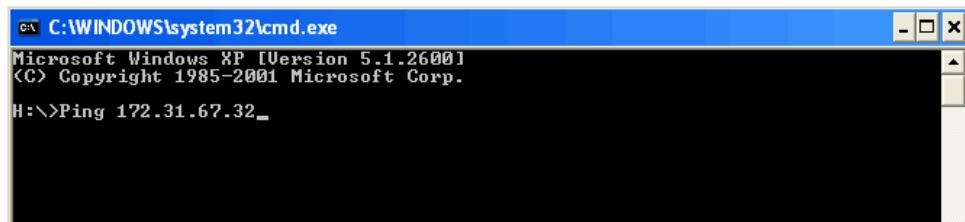
Testing Network Connectivity

After you set the IP Addresses of the PIIC iX Systems, Switches, Access Points, and Printers, you must test the Network to assure the integrity of each connection and to be sure that each device can be identified by the Server. This must be done at the Server.

- 1 Go to **Start > Run** to open the **Run** window.



- 2 Type *cmd* in the **Open:** box and click **OK**.
The command window opens.
- 3 Type *Ping host name* (or *Ping IP address*) using the host name or IP address of one of the Network-connected devices, and press **Enter**.



If connection is successful (the network connection is complete and the Host Name is resolved), a reply with the device IP address displays. If no connection/resolution can be made a failure message appears. If the command fails you must identify the problem, correct it, and repeat **Steps 1 - 3**.

- 4 Repeat **Step 3** for each PIIC iX System device on the Network.
- 5 Close the Command window and restart the computer.

Biomed Spare Configured as Warm Standby

Warm Standby Systems	H-1
Preparing a Warm Standby System.....	H-1
Replacing a Failed Host	H-2

Warm Standby Systems

A warm standby system is a host that can be put into production when another host fails. Because warm standby systems are part of the topology they have advantages over other manual recovery solutions. For example, these hosts:

- Have up-to-date database configurations,
- Have software patches applied identically to other hosts, and
- Are monitored in **Quick Unit Status** and **Device Status**.

NOTE Standby software licenses are included with the PIIC iX software.

Preparing a Warm Standby System

Warm Standby Systems are primarily intended for Primary Servers, but can be created for any host in the topology. Be aware of the following:

- Standby system hardware must be identical to that of the host it is replacing.
- Standby system software installation is the same as standard PIIC iX procedures, but the license of the System is located in the directory:
C:\Program Files\Philips\PIIC iX\[version]\Product\License\DedicatedMonitoringSystem
- At **System Setup** completion on a Standby System the device restarts and opens to the Windows Login screen.
- You must use **System Configuration** on any other host in the topology to monitor the Standby System, then use **Quick Unit Status** to confirm that it is connected to the Server.

Important You can apply patches, security updates, and perform maintenance as if the Standby System is any other host in the topology.

Replacing a Failed Host

- 1 Shut down and power off the failed host.
- 2 Log on the Standby System using the *SupportUser* account.
If you must close any running clinical applications press **ALT + F4** concurrently. Then enter the appropriate **User Name** and **Password** in the **Login to access Stop Patient Monitoring** dialog.
- 3 Change the Computer Name and IP address of the Warm Standby System to that of the failed system.
 - a In the Windows Start menu type *rename computer*, then click the **Rename this computer** link to open the **System Properties** dialog.

NOTE PIIC iX **System Setup** will not permit a **Computer Name** change.

- b In the **Computer Name** tab of the **System Properties** dialog click **Change**.
 - c Enter the failed system name in the **Computer Name** text box then click **OK**.
- 4 Shut down the replacement machine and physically move it to its new location--that of the failed host.
 - 5 Turn on the replacement machine in its new location and log on.

- Important** If PIIC iX Monitoring attempts to start press **CTRL + Esc** concurrently to show the Windows task bar, then right-click the task bar and select **Show the desktop** from the list.
- 6 Double-click the **PIIC iX System Setup** desktop shortcut on the Windows desktop of the Standby System. In the dialog warning that monitoring will stop click **Yes**.
 - 7 Progress through the **PIIC iX System Setup** screens by clicking **Next >** until you reach the **Feature Option** screen. Confirm that the system license feature is that of a production host rather than a Standby System.
 - 8 Click **Next >** to continue until you reach the **Host Qualification** screen. Several **Rules** may fail.
 - 9 Select all failed **Rules** and click **Correct**.
 - 10 If your host is not a Server several **Rules** will still fail because you did not log on with the primary user account. If so do the following.
 - a Restart the machine.
The system will automatically log on (using the primary account).
 - b Run **PIIC iX System Setup** from the desktop shortcut.
 - c Progress through the **PIIC iX System Setup** screens by clicking **Next >** until you reach the **Host Qualification** screen.
 - d Select all failed **Rules** and click **Correct**.
 - e Click **Next >** to continue to the **Setup Complete** screen.
 - f Select the **Start Patient Monitoring Services** option in the **Setup Complete** screen then click **Finish**.

- 11 After Patient Monitoring restarts access **System Configuration** from the **Main Setup** menu or from the **PIIC iX System Configuration** shortcut on the Windows desktop.
 - a Enter your **User Name** and **Password** in the appropriate text boxes of the **Login to access System Configuration** dialog.
 - b Then click **OK**.
The **System Configuration** screen opens.
- 12 Check the IP addresses and name resolution of affected systems.
 - a In **System Configuration** click the **Tools** icon.
 - b Expand the **System Health & Status** folder, then click the **Device Status** tool.

NOTE You can also check IP addresses and name resolution of affected systems at the command prompt by using *ipconfig* and *ping* commands.

- 13 If necessary run *ipconfig /flushdns* from the command prompt. Also, restart any hosts as necessary to flush all caches.

PIIC iX Database Views

PIIC iX Database Information Available to Third Party Applications

If the customer uses a third-party application that can interface with the PIIC iX Database, Read-only data is available. **Table I-1** shows the column headings that appear for each database view query.

PIIC iX includes the Windows user group, **Patient Monitoring External Users**. Users that will have access to the PIIC iX database views must be added to the local **Patient Monitoring External Users** group at the PIIC iX Primary Server or PIIC iX Local System.

- 1 Open **Computer Management** and go to **System Tools > Local Users and Groups > Groups**.
- 2 Right-click the desired group and select **Add to Group** from the list.
The user group **Properties** dialog opens.
- 3 Click **Add** in the **Properties** dialog.
- 4 In the **Select Users** dialog add the desired users then click **OK**.

Important Users who are added to the Patient Monitoring External Users group have access to the PIIC iX database read-only views.

Table I-1 PIIC iX Read-Only Database Views and Column Headings

BedView	DeviceView	PatientView	SectorView	TopologyView
BedName	ZoneName	PatientId	SectorId	EnterpriseId
BedView	InternalName	AdmitState	HostName	EnterpriseName
	DisplayName	Alias	DisplayNumber	InstitutionId
	LastLocation	BedId	SectorRow	InstitutionName
	DbConnectionString	BedName	SectorColumn	BillingCode
	DeviceType	MonitoringHostName		City
	DeviceTypeName	MonitorDeviceName		Country
	ModelNumber	MonitorDeviceId		InstitutionDescription
	SerialNumber	SectorId		Region
	MacAddress	SectorRow		Street1
	IpAddress	SectorColumn		Street2
	MdilDeviceTypeName	SectorHostName		ZipCode
	DeviceDescription	DisplayNumber		ZonId
	Manufacturer	IsOverview		ZoneName
	RfaccessCode	PhysioDbServerName		ZoneType
	IsWireless			
	IsNetworkEnabled			
	CiSendingPort			
	LineFrequency			
	NlsCatalogMajorRev			
	NlsCatalogMinorRev			
	NlsCatalogLanguage			
	MdilDeviceType			
	ProtocolType			
	MonitorDeviceTimeStamp			
	Active			
	SubnetMask			
	IpRangeStart			
	IpRangeEnd			
	Subnet			
	ScopeSubnetMask			
	DefaultGateway			
	NextAvailableIp			
	MonitoringHostName			