



PHILIPS

Pinnacle³

Professional

The power of centralized computing at your fingertips

Philips Pinnacle³ Professional specifications

The power of centralized computing in a scalable offering for mid-size clinics

Experience the advantages of Professional

- Centralized computing combined with thin client technology simplifies system installation and ongoing maintenance
- Integrated Lights Out Management provides proactive management of the system increasing uptime
- Thin clients virtually eliminate the need for desktop maintenance

Professional helps reduce costs

- VCC software enables existing Windows and Apple Macintosh* computers to act as Pinnacle³ access points

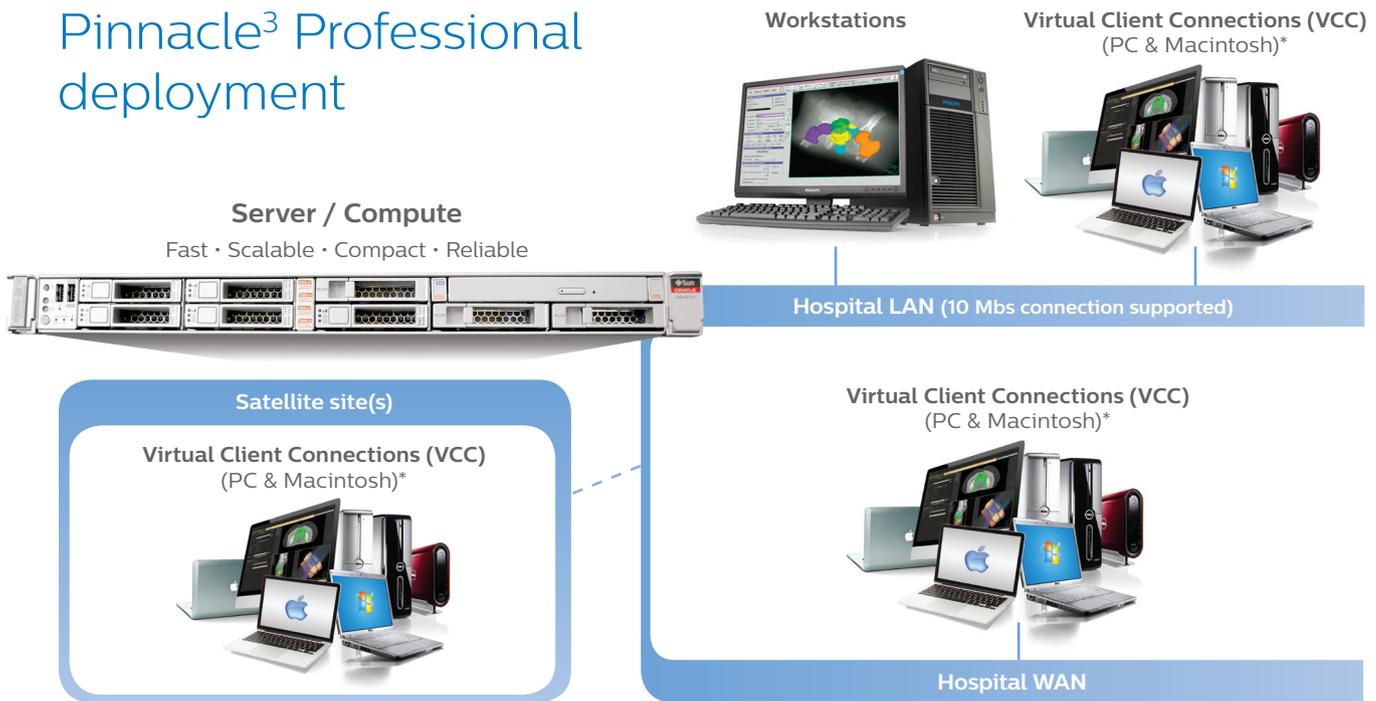
Professional provides fast and flexible access to Pinnacle³

- Easy to add additional access points providing access from virtually anywhere
- All Pinnacle³ licenses are available at any access point
- Improved performance across low bandwidth connections

The system is made up of two key components:

1. **Professional server** – provides server processes, compute power and 2.9 TB data storage for Pinnacle³
2. **Access points** – Virtual Client Connections (VCC) or customer-supplied PCs from which the end users access the Pinnacle³ application

Pinnacle³ Professional deployment



* Supports English, French, German, and Dutch localized keyboards only.

System specifications¹

Pinnacle ³ Professional application server	
OEM model	X5-2 server supplied by Oracle*
CPU	Intel® Xeon® E5-2699 v3 18-core 2.3 GHz processor
RAM	192 GB base. Upgradeable to 256 GB
Clustering software	N/A
OS	Oracle Solaris 11 – Update 2
Intel* turbo boost and hyperthreading	Yes
Virtual CPUs for Pinnacle ³ multi-threading	Two (2) 18-Core Intel Xeon E5-2669 (2.3 GHz, 45MB cache) processors, 72 threads
HBA	N/A
HBA ports and supported speeds	N/A
Hard drives	5x 1.2TB 10k RPM SAS-3 (RAID 5)
Primary NIC Ethernet Ports:	4x 10,000/1,000/100 Mbps Base-T Ethernet ports
Remote Management Port (ILOM)	1x 1,000/100/10 Base-T Ethernet ports (for remote management/support)
Required Ethernet switch ports (customer provided)	1 or 2 for network connections (2 if using recommended redundant network configuration); 1 for ILOM port
DVD drive	Internal TEAC drive
Remote administration	Network-based remote power control and console capability (ILOM)
Size	1 U, Height: 42.6mm (1.7in), Width: 436.5mm (17.2in), Depth: 737.0mm (29.0in, Weight: 18.0kg (40.0lb)
Rack mounting	Tool-less slide rail kit and cable management arm included
Peak heat load	1,497 BTU/hour
Peak power	550 W
Operating environment	5°C to 31°C (41°F to 95°F); 10%–90%, non-condensing. Up to 3,000 m, maximum ambient temperature is derated by 1°C per 300 m above 900 m
Acoustic noise	7.0 B operating, 7.0 B idling; 63.1 dBA operating, 60.5 dBA idling; systems must be acoustically isolated from staff work areas.
Power supply	Dual-redundant Sun 760W AC HE Gold Power Supplies 100–240 VAC, 50 or 60 Hz; IEC 320-C13 power connector
Current draw	4.0 A @ 110 VAC, 2.0 A @ 220 VAC
Power cords	Philips will supply power cords to match the local power outlet, or jumper cables to fit IEC 320-C14 rack PDU power sockets.
Data storage specifics	Five (5) 1.2TB hard disk drives; configured in a RAID storage array with a single hot-spare hard drive. This configuration will yield roughly 2.9 TB of usable space, which will contain the Solaris Operating Environment, storage for patient data, Pinnacle ³ binaries, and user home directories. Patient data, home directories, and the Pinnacle ³ software are stored on the RAID-5 internal storage system
File systems	The /PrimaryPatientData, /export, and /files file systems will use the ZFS file system. Additional archival space can be provided by most non-Windows NFS systems (requires additional configuration).

Firewalls and ports

General	Pinnacle ³ Professional can function correctly in an environment with firewalls, provided that the necessary ports are opened between the systems. The production network connections between server cluster nodes and Pinnacle ³ application servers must be on the same subnet, with no firewalls between these systems. Connectivity in and out of these systems is described in later sections.
VCC and Thin Clients	Sun Ray server software: TCP and UDP ports 7009, 7013, 7777 Sun Ray load-balancing: TCP and UDP ports 7011 Sun Ray graphics: TCP and UDP ports 32768 – 65535 – 69/udp (for firmware updates) ICMP: ICMP (recommended to be enabled for troubleshooting) contact Philips technical support for further questions
ILOM management port requirements	The management network connection requires the following ports to be open between the client (a web browser on the health care facility network) and the Integrated Lights-Out Management interface on the server: <ul style="list-style-type: none"> • HTTP/HTTPS: TCP ports 80 and 443 (HTTP automatically redirects to HTTPS) • SSH: TCP port 22 • Console – CD Redirection: TCP port 5120 • Console – Keyboard and mouse: TCP port 5121 • Console – Encryption: TCP ports 5555 and 5556 • Service Tag Daemon: TCP port 6481 • Console – Video: TCP port 7578 • ICMP: ICMP (recommended to be enabled for troubleshooting)
DICOM import and export	The firewall must be open to allow devices to push images into the Pinnacle ³ system. The Pinnacle ³ DICOM listener will operate on the server cluster virtual IP address by default, using TCP port 104. The firewall must additionally be open to allow each Pinnacle ³ application server and workstation to initiate connections to push data into record and verify systems and other treatment planning systems. The DICOM protocol operates on TCP port 104 by default, although this may vary depending on the configuration of the customer-owned target system. All ports pertaining to NIS/YP and NFS are required if firewalls exist between the Professional server and any attached clients. TCP/UDP 111, TCP/UDP 4045, TCP/UDP 2049, and stateful RPC packet inspection which can monitor client requests for NFSv3 and NIS ports, dynamically opening the associated random ports. The firewall must allow each Pinnacle ³ application server and each Pinnacle ³ workstation to initiate connections to all printers. The ports used for printing will depend on the protocol used to access the customer-owned printers.
Enterprise backup	The firewall must allow Pinnacle ³ Professional server (and virtual IP address) to communicate with the customer's enterprise backup system. The required ports are dependent on the enterprise backup system deployed.
Data transfer at installation	For existing customers with data to be migrated from a workstation server onto the Professional server, the firewall will need to be opened between the Professional server (individual nodes and virtual IP) and the customer's existing server. This requirement is temporary, unless the customer will be keeping the workstation and converting it into a client to the newly installed system.
Remote support	For faster problem resolution, a significant number of support calls can be resolved remotely via the Philips Remote Services (PRS). This is a VPN-based connection accomplished with either a Philips-provided router, or a configuration to an existing customer-managed VPN concentrator. The following systems and ports must be authorized for Philips to provide remote support: <ul style="list-style-type: none"> • Pinnacle³ Professional server: TCP port 22 • ILOM ports: TCP ports 443, 5121, 5555, 5556, 6481, 7578 • Workstation (thick-client): TCP port 22

Advanced Connectivity

Active Directory	Philips recommends the server installation of a compatible Solaris active LDAP agent (not included) to allow the use of your existing active directory servers. All LDAP vendors are subject to approval for use by Philips customer support.
SMB Sharing Services	Share files and directories to Windows devices. Contact Philips customer support for further details.
Virtual Client Connection (VCC)	
PC/Macintosh hardware	Not included (user provided)
Minimum specifications	<ul style="list-style-type: none"> • Windows: minimum specifications as required by Microsoft Windows 7*, XP or Vista (32 and 64 bit) • Macintosh: OS X v10.6 (Snow Leopard) (English, French, German, and Dutch localized keyboards only) • Disk space: 100 MB to load emulation application • Display resolution: 1280 x 1024 or better with dual monitor support • 10 Mb/s network with less than 15 ms latency

Workstations (thick clients)

General	The Professional platform supports one 810X thick client with full planning capabilities. The Workstation has a one-gigabit network connection. A minimum bandwidth of 100 Mbps to the Professional server must be available for basic performance, 1000 Mbps is recommended.
IP address	Static IP addresses are required

Backup

Philips recommends the server installation of a compatible backup agent (not included) to allow the use of your existing enterprise backup system. You will be required to create schedules and handle all operational responsibilities regarding backup (e.g., monitoring backups and rotating tapes).

Support can be provided by the Philips installation representative, and Philips will provide an acceptance verification procedure to ensure that Pinnacle³ is operating properly after backup agent installation.

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1. Pinnacle³ Professional is designed to be installed in a data center environment or a suitable mobile enclosure. Backup and disaster recovery systems are not included. Specifications subject to change.



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Please visit www.philips.com/pinnacle-professional

Printed in The Netherlands.
0000 000 00000 * Feb 2016