

# Deploying PACS with ClearCube PC Blades



Review of film-based images is inefficient.

The healthcare industry continues to face pressure to reduce costs, improve quality of service and streamline operations. Computer technology has been critical in enabling healthcare organizations to address these pressures. The concept of the “paperless” office has found its way into the healthcare industry through digital document management strategies for everything from electronic medical records to hospital administration records.

Image management techniques are now bringing advances to medical specialties like radiology and cardiology. With a Picture Archive and Communication System (PACS), medical professionals quickly access digital images such as patient radiological X-rays for diagnosis and treatment. PACS streamlines the capturing, archiving, storing and transmitting of patient images and provides for faster, more accurate, lower cost delivery of medical services.

## PACS Streamlines Delivery of Medical Services

PACS makes images available electronically for review and interpretation by personnel in areas such as the radiology

department, emergency room (ER), operating room (OR) and intensive care units (ICU). PACS also allows for the combination of images with patient records that are made available to authorized physician/clinical care providers.

PACS systems address three main areas:

- Diagnostic workstations - radiologists interpret images and make clinical decisions.
- Clinical review workstations - physicians review and refer to images in the ER, OR or ICU.
- Remote physician workstations – physicians quickly access images from their offices.

As shown in Table 1, diagnostic, clinical review and remote physician workstations have different requirements for resolution and number of monitors. ClearCube PC Blades can meet the requirements of the clinical review and remote physician workstations based on their need for resolutions from 1024x768 to 1600x1200. The resolution requirements of diagnostic workstations are not addressed by the ClearCube solution.

PACS workstation	Resolution (pixels, megapixels-MP) and number of monitors	Max. color depth (bits/pixel)	ClearCube product
Diagnostic	1536x2048, 3MP – single/dual monitor	24	-
	2048x2560, 5MP – single/dual monitor	32	-
Clinical Review	1024x768, .8MP – single/dual monitor	24	I/Port
	1280x1024, 1.3MP – single/dual monitor 1600x1200, 2MP – single monitor only*	32	C/Port**
Remote Physician	1024x768, .8MP – single/dual monitor	24	I/Port
	1280x1024, 1.3MP – single/dual monitor 1600x1200, 2MP – single monitor only*	32	C/Port**

\* Dual monitor mode is not supported by ClearCube for 1600x1200 resolution.

\*\* Dual monitor mode requires use of MVX with C/Port.

Table 1: PACS Workstation Requirements Supported by ClearCube PC Blades

The ClearCube PC Blade solution delivers fully functional, Intel-based PC computing to the PACS workstation from a secure, centralized datacenter. Rack-mounted, dense PC Blades deliver full, on-demand computing to the PACS end user. The ClearCube User Port connects computer peripherals like the monitor, keyboard, mouse and speakers to PC Blades in the datacenter.

### ClearCube PC Blades Offer Clear Advantages as PACS Workstations

ClearCube PC Blades are deployed in many clinical review and remote physician workstation environments for quickly accessing patient images. PC Blades provide significant benefits over traditional desktop PCs because of their superior manageability, reliability and security.

- Manageability** - Since the PC Blade is located in a centralized data center and remotely managed, if a problem occurs, IT managers fix it from their own terminals without having to enter and contaminate a sterile environment or interrupt doctors and nurses during a procedure. The ClearCube User Port is a compact device that has no moving parts and requires no maintenance. ClearCube PC Blades are centrally located in a datacenter which also improves manageability.
- Reliability** - ClearCube simplifies remote management. From one terminal, IT technicians can manage an entire hospital and its network of remote clinics, ensuring 99.9% end user availability without leaving their desks. All hardware assets are secured in a data center providing an easier means of asset control and tracking.

- Security** - ClearCube PC Blades are centrally located in a datacenter which improves security and frees up valuable space. The centralization of patient information also reduces security risk while making HIPAA compliance straightforward.

An IDC study titled “The Tangible Benefits of Blade Clients” shows that average savings exceeded 40% of the costs associated with desktop PCs. The ClearCube solution provides higher levels of manageability, reliability and security which translate to lower support costs for PACS workstations.

### Duncan Regional Hospital Uses ClearCube for PACS Workstations

Duncan Regional Hospital, in Duncan, OK, is using the ClearCube PC Blade solution for deploying its GE Centricity PACS solution. Roger Neal, Director of IT, has implemented ClearCube in the OR, birthing center, radiology department and on acute care floors. “Running the ClearCube PC Blade solution



Physician reviews image on ClearCube-based PACS system.

with my PACS system has eliminated IT headaches because of its ease of use and the ability to switch on the fly if a computer goes down. It has eased my space constraints in these areas.” said Neal.

Duncan Regional Hospital is a 142-bed hospital in southwest Oklahoma. Duncan Regional combines highly trained health-care professionals, advanced technology facilities, and highly skilled physicians to provide quality healthcare services to its community.

### Summary

Using the ClearCube PC Blade architecture, PACS is deployed in hospitals to eliminate the use of paper/film-based image records and lower IT support costs relative to desktop PCs. The ClearCube solution, with a dense, rackable architecture, also helps to address physical space and environmental hazard issues associated with desktop PCs.

The acceptance of PC blades for PACS environments continues to gain momentum as organizations realize the benefits of the ClearCube PC Blade solution. Furthermore, PACS, with its ability to manage digital images, is vital to the continued reduction of costs, improvement in service quality and streamlining of processes in the healthcare industry.