



Health & Inventory Information for Quality

HI-IQ Architecture Options

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Introduction

HI-IQ, designed by SIR volunteers, provides effective solutions for a diverse range of IR needs. The HI-IQ software system captures and reports on comprehensive patient, procedural, and inventory data. It facilitates compliance with Quality Improvement initiatives, encourages billing accuracy, and allows resource utilization and efficiency analysis, as well as Just-in-Time inventory management.

Created for IR, by IR, HI-IQ has been modeled after the workflow of busy IR departments and is easily configured to meet the unique needs of IR practices, whether at small community hospitals or large teaching institutions. Each site has the flexibility to determine which HI-IQ modules to implement, in accordance with their objectives, priorities and schedules.

HI-IQ can accommodate multiple hospitals or locations, each with multiple procedural and inventory-stock rooms, and is commonly accessed by 10-50 users per location. Selection of appropriate application architecture based upon local site needs is critical.

Written for end users, IT managers and engineers, this document outlines the application delivery architectures available for your HI-IQ system. It assumes a general familiarity with Citrix application delivery concepts.

For more info about Citrix, please see: www.Citrix.com/healthcare

Architectural options

The HI-IQ network administrator has three architectural options:

1. **Hosted HI-IQ**
2. **Locally-hosted Citrix installation**
3. **Networked workstation installation**

1. Hosted HI-IQ

With Hosted HI-IQ, ConexSys provides secure, reliable access to HI-IQ via an Internet connection. Your data is hosted and maintained on our Citrix servers. Hosted HI-IQ virtually eliminates the need for hospital IT support by eliminating the need for the site to manage the application infrastructure. It reduces the cost of entry for new HI-IQ users, and keeps overhead costs low going forward.

Hosted HI-IQ provides the following benefits:

- *Access freedom:* Users can login to HI-IQ from any computer with Internet access.
- *No unexpected costs:* Affordable quarterly pricing, low upfront costs and built-in upgrade protection give you the ability to accurately predict expenses and plan return on investment.
- *Integrated Support:* Technical support and maintenance is included in the hosting fee so that HI-IQ is managed by the people who know it best, us. This leaves you free to focus on what you know best, patient care.
- *Greatly lowered IT costs:* IT support at the hospital is limited to ensuring that users have an Internet connection, everything else, including software updates, daily backups and general end-user support, is handled by ConexSys.
- *Offsite reliability:* ConexSys has built a state-of-the art Citrix application server farm, designed to offer you excellent performance over the internet via a secure, encrypted connection.
- *Reduced time & cost of implementation:* Because you're not waiting for hospital IT staff to install HI-IQ, we can have you up-and-running in a matter of days, meaning that you can start realizing return on investment sooner

With Hosted HI-IQ, implementation is as simple as deciding which modules to use. Using Hosted HI-IQ, authorized users can access HI-IQ from anywhere, anytime, on almost any device. Internet access is the only IT requirement, there's no need for expensive capital purchases such as servers or workstations. Users simply access HI-IQ via a web

browser; from the clinic, office, or home - wherever their work finds them, at any hour of the day, they enjoy a simple, secure point of access.

ConexSys' data security policies have been designed to meet, and in some cases exceed, the requirements outlined by HIPAA. Data is protected by 128-bit Secure Sockets Layer Encryption as it travels across the Internet. Data backups are archived and maintained off-site for recovery in the case of an unforeseen disaster. System maintenance is performed by ConexSys at regularly scheduled intervals, and users will always have access to the most current version of HI-IQ.

Hosted HI-IQ is the best solution for those institutions who need HI-IQ power and maximum access flexibility, and for those that lack the appropriate IT-infrastructure to support networked workstation installations of HI-IQ.

2. Locally-hosted Citrix installation

In this configuration, the HI-IQ application is installed on a Citrix server/farm connected to a file-system based share, preferably over a high-speed fiber channel, at your hospital. HI-IQ workstation requirements are greatly reduced; users see and work with the application's interface, but 100 percent of the application executes on the HI-IQ server.

As with Hosted HI-IQ, local Citrix installation efficiently separates application logic and CPU-intensive processing from the user interface. Citrix technology provides the foundation for turning any client device—thin or fat—into the ultimate thin client. This allows the use of lower-power workstations, including wireless WinCE-based tablets. Also, because HI-IQ runs on the Citrix server, and never actually resides on individual workstations, operational liabilities introduced by the individual workstation environment are virtually eliminated. Software maintenance and support is far more efficient; users can expect greater 'up-time', improved reliability and performance.

On Citrix, HI-IQ consumes as little as one-tenth of its normal network bandwidth. The Citrix ICA protocol consumes an average 20 KBPS of bandwidth, providing real interactive performance.

HI-IQ performs with greater reliability in a Citrix environment due to the lowering of workstation dependent environmental liabilities. Errors that do occur can be centrally diagnosed and treated; the

need to touch individual HI-IQ workstations is eliminated.

In summary, HI-IQ on Citrix, whether local or Hosted, offers these advantages to the IT manager:

- Less network traffic
- Lowered Workstation hardware requirements
- Lower cost implementation and maintenance
- Faster performance
- More robust operation

3. Traditional networked workstation

The traditional rich-client workstation approach works well provided that sufficient IT resources, workstation horsepower and local area network bandwidth is available. For this approach, a file-system 'share' is configured for access by a group of HI-IQ users. All users must have full share access rights, and the application must be installed on each HI-IQ workstation. Reasonably current workstations are required (see www.hi-iq.com/sysreq.aspx for more info).

Maintenance of the HI-IQ application is handled by the hospital's IT staff. HI-IQ does include a semi-automatic software update process, with the ability to push updates from an 'administrative' workstation to other workstations. This process requires local administrator privileges and generally works well; however, in some 'locked-down' environments, software updating can be problematic.

Conclusion

Whether considering a locally hosted HI-IQ architecture, or Hosted HI-IQ, IT managers should consider a Citrix-based HI-IQ implementation to lower costs while improving application lifecycle quality.

For more information, email support@HI-IQ.com.

Here are some pointers to related Citrix information:

<http://www.citrix.com/healthcare>

<http://www.citrix.com/English/ps2/segments/v/feature.asp?contentID=21042>

<http://www.citrix.com/English/ps2/segments/v/feature.asp?contentID=21054>