

PLS System Infrastructure Overview

The Pathology Laboratory System (PLS) from Kestral provides a total information management solution across the many disciplines of Pathology. PLS intelligently automates the accurate and complete transfer of information requests between both PLS and the hospital PMI.

The PLS System Overview

There are six main components to the PLS environment of a large client.

- The PLS Ctree Database Server
- The PLS Support PC and KDE
- The PLS Application Client
- The Machine Interface Application Client
- The CIS Service (Optional)
- The HL7 Connect Gateway (Optional)

The PLS Ctree Database Server

This is a server that runs two Windows® services that are required in tandem for a PLS system to operate. The first is the Ctree service which manages the PLS database and the second is the Kestral Lockserver service which manages the issuing of database keys.

Every instance of the PLS application client and the Machine interface application client requires a TCP/IP connection to both of these services. Every PLS environment has two separate databases housed on this server - the production (Live) and testing (Test) systems.

There are also provisions to have further systems housed on this server which Kestral refers to as custom areas. Each of these systems are managed and controlled by the Kestral Development Environment application (KDE).

The PLS Support PC and KDE

The PLS support PC is a workstation used by Kestral support consultants to manage the site's PLS install. Kestral requires remote access to this PC and from here will access the other key servers on the client's site (PLS Server, CIS Server, HL7Connect Server, Interface Server).

The PC runs the Kestral Development Environment (KDE) application which is used to manage the entire PLS system. It performs code synching operations against Kestral internal code while managing and auditing incremental source code changes for each client. It also integrates with Delphi's IDE to compile source code and produce new PLS application client executables and Machine Interface client executables.

KDE has a tight relationship with the three PLS systems areas; Live, Test and Custom and drives the releasing of new code to each of these areas in a controlled fashion.

KDE ensures that the Kestral support consultant is protected from making simple mistakes by enforcing checks and procedures to safeguard the production system from accidental damage.

The PLS Application Client

This is the client application with which most users interact - and commonly call PLS. On launching, it will check the PLS server for any new application version and download it if required. It then connects via TCP/IP to the Ctree service and the Kestral lockserver service and allows the users to go about their Pathology work.

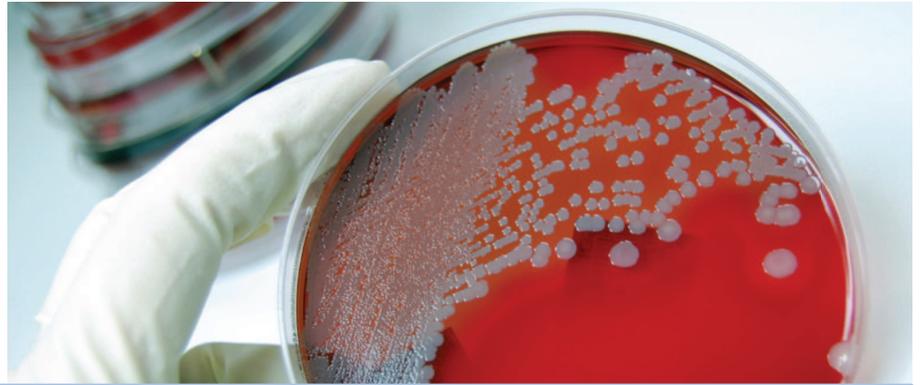
A switch on the clients PLS windows shortcut allows them to change between the Live, Test or Custom area. A PLS launcher application named KLoader.exe manages which application version and which database is accessed.

continued overleaf...



kestral

giving you the complete picture



The Machine Interface Application Client

This is an application client run to perform dedicated non-interactive tasks. Some examples are:

- An interface to connect to and process PMI HL7 messages.
- An interface to connect to a biochemistry analyser and process ASTM result messages.
- A background task for processing new accounting runs.
- An interface sending HL7 results messages to a hospital Data repository.

The machine interface application client runs much like PLS, in that it checks for a new version on start-up and connects to the Ctree service and the Kestral lockserver.

Most clients will have dedicated servers where they will run many instances of the machine interface each configured to perform a different task.

Clients will also have other instances not on the dedicated server but spread around their laboratory. These are required, as some analysers require direct serial communications to the machine interface utilising the PC serial port.

The CIS Service (Optional)

The Clinical Information System (CIS) is an optional component to a PLS system, utilised by most large hospitals. CIS consists of a Windows® service with a Microsoft™ SQL database that usually runs on a dedicated server. Other configurations can occur, such as the SQL database being located on a separate server.

CIS has a small foot print; using minimal server resources. The service hosts a website which users securely login to for access to clinical results. No clinical data is stored in the SQL database, only the login details, encrypted passwords and group membership information of the users is stored. All clinical data is retrieved from PLS in real-time as requested.

The CIS service has connections to one or many Machine Interfaces Application clients to obtain this data. It should also be noted that CIS does not use Microsoft™ IISx1 and will clash if this service is running on the same server.

The HL7 Connect gateway (Optional)

HL7 Connect is a messaging gateway capable of routing and manipulating not only HL7 but also CDA and DICOM. It is an optional addition to a PLS system but is very common among almost all Kestral clients. It is installed as a Windows® service with a Microsoft™ SQL database. Like CIS, clients commonly use a dedicated server yet the service can be split from its SQL database.

The service hosts a web front end where I.T staff will manage and configure message feeds. Messages can also be manipulated as they pass through.

A very common scenario would be a PMI HL7 message which would travel from a PMI to HL7Connect where it may be manipulated and routed to many other sources. One such source could be a PLS machine interface application client which where it is processed and a patient's record is updated in the PLS Ctree database.