

ICE Desktop

Recommended Hardware Requirements February 2008



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1. Important - Read First

Remote access to hardware:

It is necessary that Anglia's granted remote access via NHSnet/N3 and an organisations security firewall to each of the ICE servers. To facilitate the installation and continuous support of ICE software it is necessary we have remote access to each server, including test web servers.

It is further necessary to ensure SQL protocol access to the SQL Server, and, likewise, Web protocol access to the web server.

System backups:

It is wholly the responsibility of an organisation to maintain regular backups of all ICE servers and the configuration of the ICE SQL maintenance plan which is imperative to the running and performance of the database.

The Company does not hold live copies of this material.

Virtual Servers:

We do not support the use of virtualisation technologies for hosting SQL services. The performance of virtual servers is entirely dependent on the hardware on which the virtual server is loaded and the configuration of the proposed ICE and other virtual server running on that hardware. AHSL cannot take any responsibility if a trust implements any ICE service on virtualised servers and suffers a performance issue. The ICE system architecture has been written with the use of physical servers in mind.

Test/Training Environment:

The SQL Server is capable of hosting an ICETest/ICETraining database, you will need a separate web server to host the ICE Desktop web applications.

ICE Workstations:

We do not specify a minimum workstation specification, however it must be running Internet Explorer v5.5 or above with a minimum screen resolution of 1024x768.

Server Prices:

The prices in this document are for guidance only and not to be relied upon for project tenders, quote's etc. see the notes on the next page.

2. Servers Required

ICE Desktop

ICE Desktop Modules	Server(s) Required	Services	Dell Price
GP & Ward Reporting & Requesting	PowerEdge 2950	SQL dedicated	3,900
	PowerEdge 1950	Web dedicated	2,400
	PowerEdge 1950	*Management	2,400
	PowerEdge 860	Optional Test/Training Web	1,200

*The Management server will usually host ICE Messaging Labcomm Edition

For a more Resilient configuration see the ICE Desktop Resilient Server Diagram, these specifications and prices you will need to acquire from your hardware supplier.

ICE Messaging LabComm Edition

ICE Messaging LabComm	Server Required	Service	Dell Price
LabComm V5	PowerEdge 860	Pathology GP Links server	1,200

ICE SpineBroker Only

Connecting for Health Compliance	Servers Required	Services	Dell Price
Choose & Book SpineBroker	PowerEdge 860	Live Web server	1,200
	PowerEdge 860	Test Web server	1,200
	PowerEdge 1950	SQL dedicated	2,400

ICE Desktop Lab2Lab (without order communications).

ICE Desktop Lab2Lab	Servers Required	Services	Dell Price
Central Service Laboratory	PowerEdge 1950	Management Server	2,400
	PowerEdge 1950	Web server	2,400
	PowerEdge 2950	SQL server	3,000
	PowerVault MD1000	External Storage	3,800
Referring Laboratory	PowerEdge 1950	Management server	2,400

Note:

- Trust Server Specification to meet specifications or higher.
- Prices are for guidance only from Dell health public sector.
- No backup devices have been specified and the trust must make adequate provisions for daily backups of the servers.
- Monitors and Keyboards/Mice not specified.
- Operating System, SQL Server licences not specified

Server Software:

- Operating System: Windows 2003 Server with latest Service Packs
- SQL Server 2000 with SP4 or SQL Server 2005
- ICE Messaging Labcomm edition only may use MSDE2000 or 2005Express
- PcAnywhere 11 or higher

3. Server Specifications

PowerEdge 860

Processors/Cache: Dual Core Intel® Xeon® 3070 at 2.66GHz, 4MB L2cache, 1066MHz FSB
Memory: 4GB DDR2 SDRAM 667MHz Memory
1st Main Bay Hard Drive: 146GB 15,000rpm 3.5inch SAS hard drive (non hot plug)
2nd Main Bay Hard Drive: 146GB 15,000rpm 3.5inch SAS hard drive (non hot plug)
RAID Controller: SAS 5iR internal RAID Controller
RAID Connectivity: SAS/SATA RAID 1, 2 Hard Drives connected to add in SAS controller
Storage Device: CD ROM
Maintenance Service: Silver 3 Yr (24x7) Premier Enterprise Support

Estimated Total Price of System:
Total excl VAT: £1,200

PowerEdge 1950

Processor: Quad Core Intel® Xeon® E5420, 2X6MB Cache, 2.5GHz, 1333MHz FSB
Additional Processor: Quad Core Intel® Xeon® E5420, 2X6MB Cache, 2.5GHz, 1333MHz FSB
Power Supply: Two Hot-plug Power Supplies for Redundancy
Memory: 4GB FB 667MHz FBD
Storage Device: CD ROM
1st Main Bay Hard Drive: 146GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
2nd Main Bay Hard Drive: 146GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
RAID Controller: SAS 6/iR Integrated RAID Controller
RAID Connectivity: SAS/SATA, RAID 1, using add in PERC 6/iR controller
Maintenance Service: 3yr SILVER Support, 4Hr Onsite Response (24x7)

Estimated Total Price of System:
Total excl.VAT : £2,400

PowerEdge 2950

Processors: Quad Core Intel® Xeon® E5440, 2X6MB Cache, 2.8GHz, 1333MHz FSB
Additional Processor: Quad Core Intel® Xeon® E5440, 2X6MB Cache, 2.8GHz, 1333MHz FSB
Hot-Plug Power Supplies: Two Hot-plug Power Supplies for Redundancy
Memory: 8GB FB 667MHz Memory
Storage Device: CD ROM
1st Main Bay Hard Drive: 73GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
2nd Main Bay Hard Drive: 73GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
3rd Main Bay Hard Drive: 300GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
4th Main Bay Hard Drive: 300GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
5th Main Bay Hard Drive: 300GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
6th Main Bay Hard Drive: 300GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
1st RAID or SCSI Controller: PERC 6/i, x6 Backplane, Integrated RAID Controller Card
RAID Connectivity: Integrated SAS / SATA, RAID1/RAID10
Maintenance Service: 3yr SILVER Support, 4Hr Onsite Response (24x7)

Estimated Total Price of System:
Total excl.VAT : £3,900

Lab2Lab Server Specifications

PowerEdge 2950

Processors: Quad Core Intel®Xeon® E5335, 2x4MB Cache, 2.0GHz,1333MHZ FSB
Additional Processors: Quad Core Intel®Xeon® E5335,2x4MB Cache,2.0GHz,1333MHZ FSB
Hot-Plug Power Supplies: Two Hot-plug Power Supplies for Redundancy
Memory: 4GB FB 667MHz Memory
Storage Device: CD ROM
1st Main Bay Hard Drive: 73GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
2nd Main Bay Hard Drive: 73GB, SAS, 3.5-inch, 15.000 rpm Hard Drive
1st RAID or SCSI Controller: PERC 5/i, x6 Backplane, Integrated RAID Controller Card
2nd RAID or SCSI Controller: PERC 5/E SAS RAID Adapter, PCI-Express, 2x4 Connectors, External
RAID Connectivity: Integrated SAS / SATA, RAID1
Maintenance Service: 3yr SILVER Support, 4Hr Onsite Response (24x7)

Estimated Total Price of System:
Total excl.VAT : £3,000

PowerVault MD1000 SAS / SATA Base

6x 500GB 300 GB, 10,000 rpm, 3.5 inch, SAS hard drive
4x 146GB 146 GB, 15,000 rpm, 3.5 inch, SAS hard drive
3 Years Silver On-Site Service with 4 Hour Response

RAID 1 on the 2x 300 GB disks for SQL Logs
RAID 10 on the 4x 146GB disks for SQL Database

Estimated Total Price of System:
Total excl.VAT : £3,800

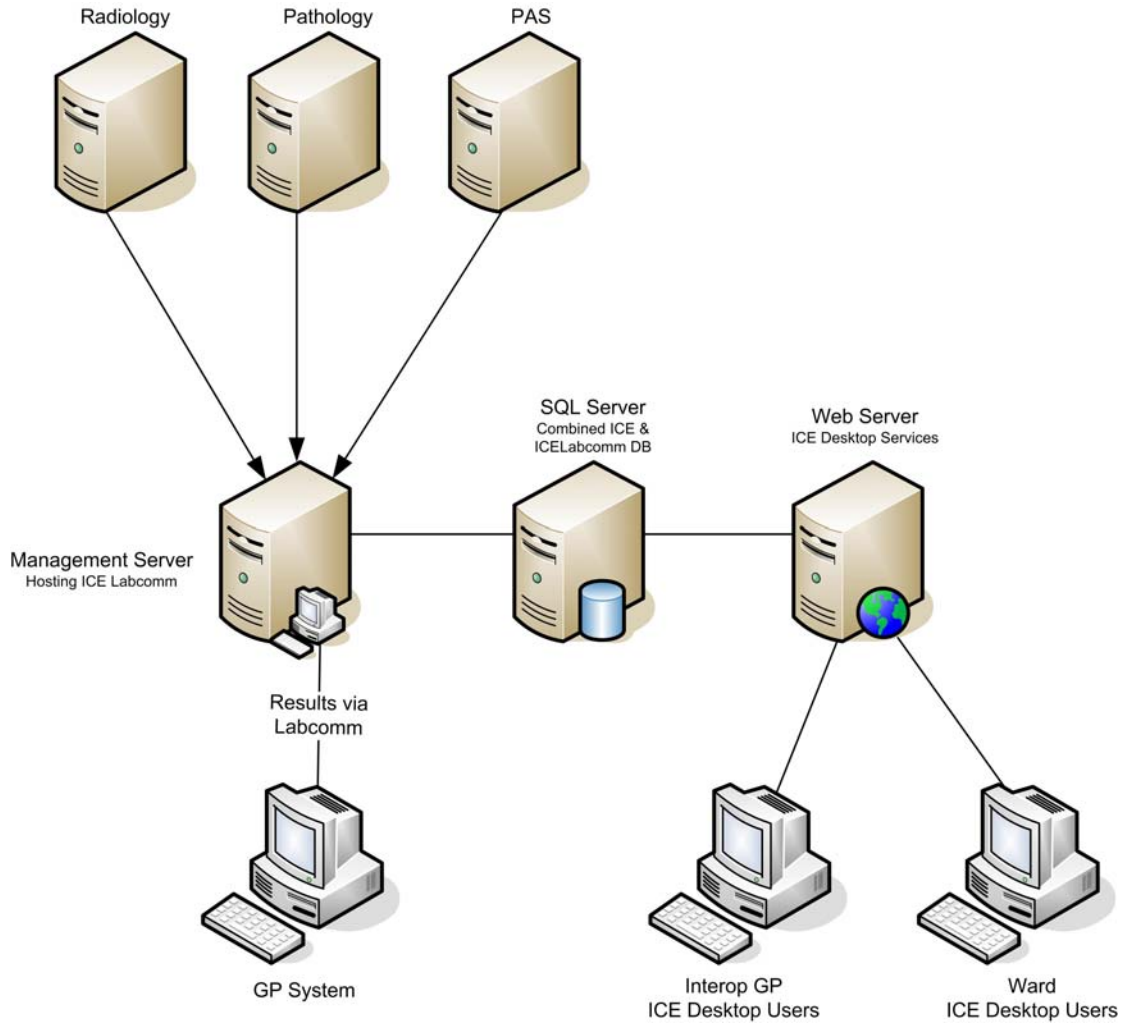
ThinICE PDA Spec

Dell Axim X51 Wireless 520MHz

Microsoft® Windows Mobile™ 5.0 (Minimum: Windows Mobile 2003)
Intel® X-Scale™ Processor with WMMX 520MHz
Integrated WiFi™ (802.11b) wireless technology
Integrated CompactFlash® Type II Secure Digital / Multi Media Card Slots
Brilliant 3.5" color TFT display; resolution 240x320 at 65,536 colors
128MB Intel® StrataFlash™ ROM memory, 64MB SDRAM Memory
Removable/rechargeable battery design, with bridge battery, allowing swapping of batteries without losing RAM data
USB docking cradle and AC adaptor with power cord
1 year Next Business Day Exchange Service

Estimated Total Price of System:
Total excl.VAT : £209

4. Standard Server Setup Diagram



5. Trust Provision Requirements in order to meet our standard Service Level Agreement

Important Notes:

Our aim is to provide an excellent level of service should you experience any problems with your Anglia product. In order to provide this service, we use a variety of support tools and technologies. This document describes those tools and technologies and the requirements they place on you as a customer.

This document must be viewed and acknowledged by a trust staff member with authority over security policies and remote access agreements. This should be carried out prior to any possible official order.

Service Provision:

All Anglia products are based on a number of technologies. These include client/server based applications, ASP.NET applications, web services and SQL server database services. All Anglia products will be linked to other trust systems for the purpose of data transfer. This data shall include patient demographic data, pathology/radiology test request and result data and many others. These interfaces will be based on a standard specification supplied by the 3rd party system but will be customised to support your unique operating environment.

All of this data is held in a central 'ICE' database. This database is based on Microsoft SQL Server 2000 or later. This database may be held on the same server as the applications for smaller systems or may be held on a dedicated SQL server for larger trust-wide or multi-departmental systems. Some trusts may have a server cluster for the provisioning of SQL services to a multitude of applications.

In order to resolve any issues that may arise with these systems, a variety of tools are used:

pcAnywhere:

pcAnywhere is used to gain remote access to server consoles. Such access is required to all servers hosting Anglia applications. It is not necessarily required if used to a trusts SQL cluster. This tool is used to monitor and control Anglia applications that are running on the servers as foreground tasks or running under Internet Information Services. It is also used to upload new program versions and associated files.

pcAnywhere requires the TCP port 5631 and UDP port 5632 to be open on the firewall.

Remote Desktop (RDP):

Remote Desktop Connection sessions can be used in place of pcAnywhere. The ability to connect to the server console using Remote Desktop is required. The ability to FTP files from our N3 FTP server is required if pcAnywhere is not available.

RDP requires the TCP port 3389 to be open on the firewall.

FTP requires outbound port TCP 21 to 10.197.121.25 to be open on the firewall.

HTTP/HTTPS:

Where ASP.NET applications are being used, it is essential that we have access to these applications remotely. This will also be required to the GP community where interoperability services are being used. This access is required to all web servers hosting Anglia applications.

HTTP requires TCP port 80 and HTTPS requires TCP port 443 to be open on the firewall.

SQL Client:

In order to track down data processing anomalies, we may need to reprocess data whilst debugging the interface code. In order to do this, we use the debugging tools built into our development environments connected to your database. Only in this way can we step through the data processing code to see where a problem occurs. In order to connect to your database we need to be able to connect an SQL client remotely. This access is required to all SQL servers hosting Anglia databases or databases to which Anglia systems are connecting for data transfer.

The SQL Client requires TCP port 1433 to be open on the firewall.

Firewall Rules:

The port numbers listed in this document are the default ports used by the applications which will be hosted on the computers within your network. In all cases they can be amended. Firstly, each application can be reconfigured to use an alternate port number. Alternatively, the port mapping functionality of your firewall can be used to make alternative ports available to external users whilst mapping these alternate ports to the default ones internally.

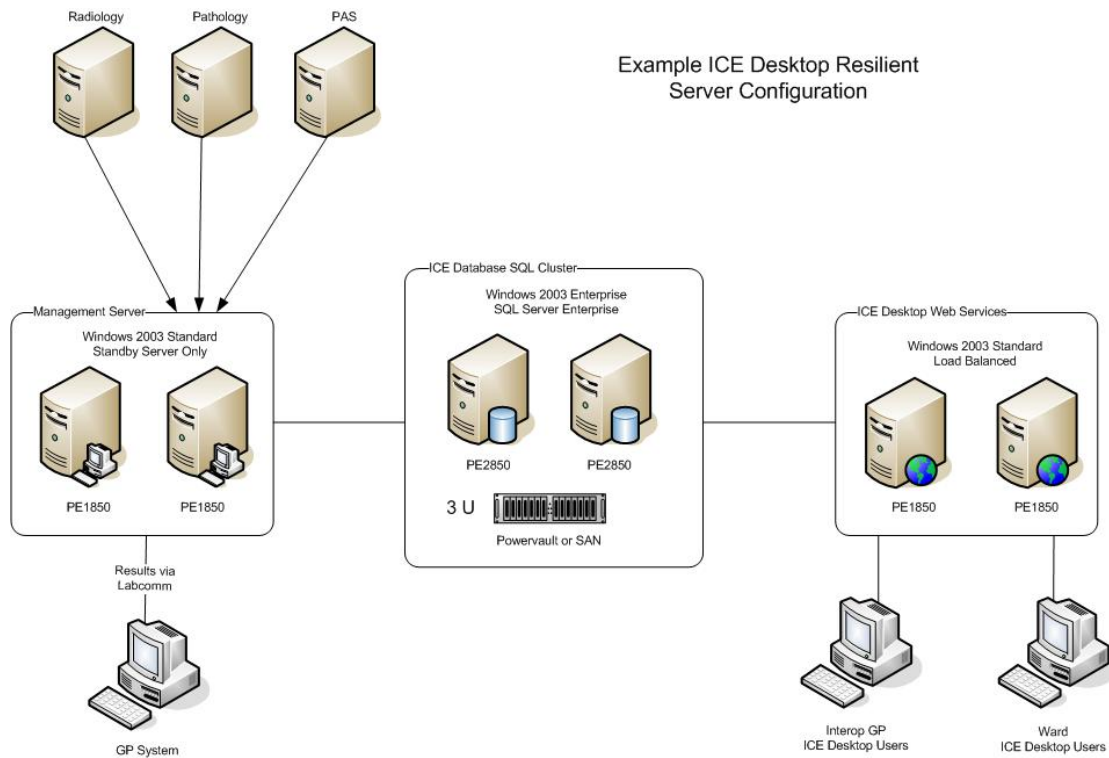
In addition to this, we use a single N3 IP address for all support functions. This IP address is 10.197.121.10. This allows you to restrict the access to these ports to our single IP address providing much tighter control and auditing.

We have had a connection to NHSNet for over 9 years and were one of the first suppliers to achieve the full code of connection we still hold today. This places strict requirements on us to ensure that security systems are in place and active at all times to not only protect ourselves but also the NHS organisations we connect to. These include network security systems such as 2-factor authentication, EAL 4 firewalls, intrusion detection and of course anti-virus systems. We use a variety of multi-layered systems to provide this protection.

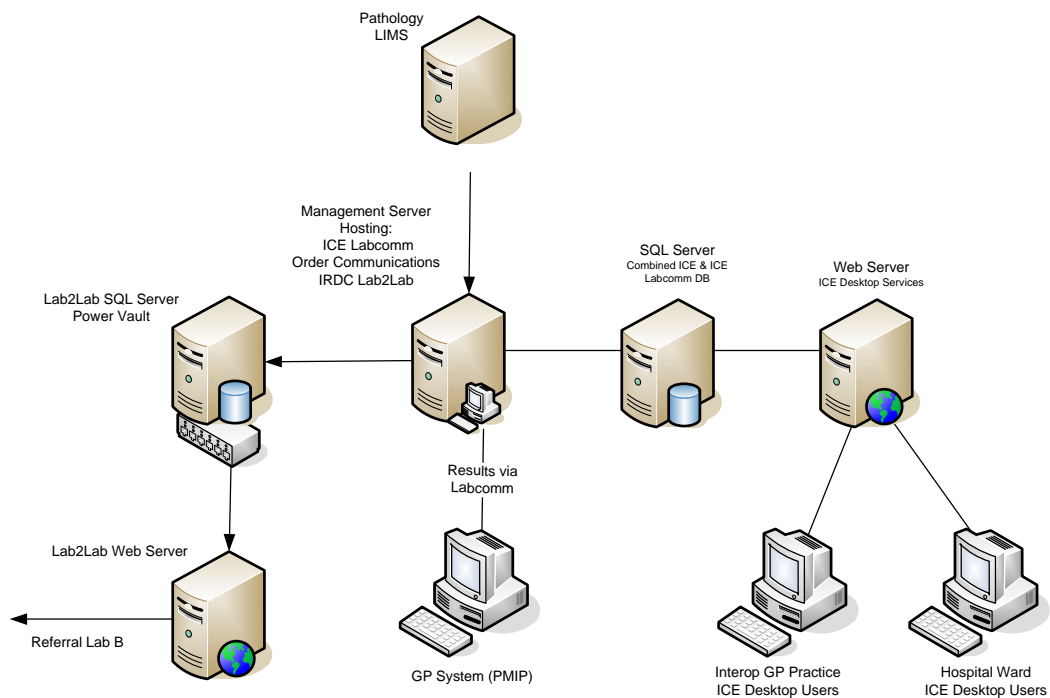
Our support N3 IP address is 10.197.121.10

Our FTP N3 IP address is 10.197.121.25

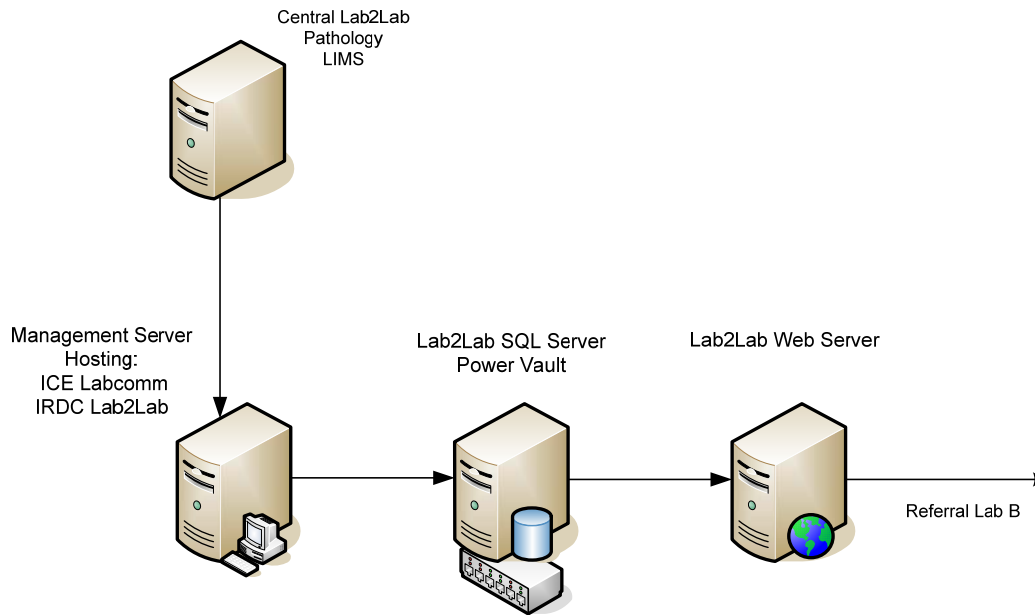
6. Example ICE Desktop Resilient Server Diagram



7. Example ICE Desktop Order Communications Requesting and Reporting plus Lab2Lab service



8. Example ICE Desktop Lab2Lab – Central Service Lab. with no Order Communications



9. Example ICE Desktop Lab2Lab – Referral Lab. with no Order Communications

