JADE OVERVIEW

Version 7.0
64 Bit Database Server
32/64 Bit Application Server
32/64 Bit Client

Download JADE for free at:
www.jadeworld.com/jade
The JADE Platform

JADE is a high-performance software platform for delivering targeted solutions to complex business problems.

JADE excels in managing complex, highly connected data, relationships and business rules:

- **Wide, interconnected networks of objects**
  Such as the web of connections between facts in an intelligence management system.

- **Deep, hierarchical object structures and decision trees**
  Such as drilling down, traversing and validating a ship’s cargo in a container management system.

- **Manipulating large collections of related objects**
  Such as tracking the exported logs of a nation in a supply chain management system, or organising transactions in a financial management system.

From logistics to financial services to case management, **JADE is delivering** proven results to over 2000 organisations worldwide.
Key Benefits of JADE

JADE allows developers to easily build intricate, real-world business models without being constrained by the mechanics of storing and accessing data. With JADE, developers can store, retrieve and rapidly traverse complex, interconnected object structures as though they are always in memory.

JADE entirely eliminates the development effort required to move objects to and from a database (often referred to as impedance mismatch). This makes developers more productive.

Coupled with a flexible distributed processing model, JADE is ideal for solving complex problems. JADE makes it easier to build and run distributed systems that take advantage of modern, high-performance hardware platforms.

Built on more than 30 years of company experience, JADE reduces the complexity of software development by delivering for Windows, a seamless fusion of:

- A proven, high-performance object database that makes the storage, retrieval and traversal of complex object models transparent.

- An object manager and application servers that provide automatic object caching and cache synchronization, powerful distributed processing capabilities and interfaces to other languages (including .NET, Java, C++ and C).

- Web Services, .NET Assembly integration and WebSphere MQ support to interoperate with other systems and technologies.

- A high-grain, conceptually economic programming model that makes it easier to implement complex business logic.

- A Synchronized Database Service (SDS) that provides hot-standby facilities and the ability to distribute read-only tasks to secondary databases.

- A Relational Population Service (RPS) that enables JADE systems to populate relational databases for Business Intelligence (BI) and data warehousing purposes.

- A Replication Framework that enables developers to more easily build disconnected applications.

- A Thin Client that enables rich user interfaces to be deployed easily over the Internet to Windows desktops, Silverlight and Windows Mobile devices.

- A clear, concise, easy-to-learn programming language.

- A repository-based development environment that enables collaborative Thin Client development from anywhere in the world.

- Increased Productivity
- No Impedance Mismatch
- Interoperable:
  - XML and Web Services
  - .NET and Java Class Libraries
  - Relational Population Service (RPS)
  - WebSphere MQ Integration
  - .NET Assembly Integration
- High Performance
- Low Administration
For Developers

JADE is for Developers:

• Who want to easily and efficiently store, retrieve and manipulate complex object models; from JADE, from .NET or from Java.
• Who want seamless object storage and integration with relational data warehouses.
• Who want to easily build distributed systems of complex business rules with automatic object caching for high performance.
• Who are frustrated with fine-grain programming models and want a higher degree of conceptual economy.
• Who want a database-to-presentation development and runtime platform for Windows.
• Who enjoy extending their skills in a range of technologies.

For Businesses

JADE is for Businesses:

• Faced with a targeted problem causing business-wide pressure.
• Wanting innovative solutions and operational engines where other technologies have not delivered.
• Needing to rapidly deliver new back-office services on Windows that integrate easily with their existing architecture and infrastructure.

For ISVs

JADE is for ISVs:

• Who want a fresh approach to build innovative products that deal with complex, highly connected data.
• Who want a high-performance, low-administration object database and application server to deliver complete solutions to their customers.
• Who want seamless server-side object storage and object caching.

Reducing Complexity

JADE simplifies programming by giving developers a single data model, seamless persistent data storage and a concise conceptual model for building OO, distributed, systems that manage complex, highly connected data.

In his landmark book, "The Mythical Man Month", Fred Brooks wrote: "I will contend that conceptual integrity is the most important consideration in system design."

Conceptual integrity is about designing and maintaining an accurate and consistent model. This makes it easier to build solutions with fewer resources. JADE’s approach delivers a programming model with a high degree of conceptual integrity, as well as conceptual economy by providing integrity with a minimum set of concepts.

One of the most significant aspects in the development of any system is the model used for persistent data storage. In his book, “Patterns of Enterprise Application Architecture”, Martin Fowler writes: “With an OO database you don’t have to worry about mapping (impedance mismatch). The database figures out when to move objects on or off disks. The chief advantage of OO databases is that they improve productivity. Anecdotal observations put the effort of mapping to a relational database at around 33% of programming effort – a cost that continues during maintenance.”

JADE entirely eliminates impedance mismatch enabling well-designed systems addressing complex needs to be built and run more easily.
Increased Productivity

JADE’s single language is compact, consistent and easy to learn. Combined with JADE’s conceptually economic programming model, a proficient developer with a good working knowledge of OO and database concepts can be productive in JADE within 3 - 4 weeks.

With JADE, developers can focus their time and attention on system design and critical business details. Investment in key development staff is maximized as they are able to focus more on the higher-level problem space. Developers can generally target more complex problems, so development is invariably faster and easier.

Compared to other environments, JADE typically allows developers to deal with fewer concepts and higher-grain objects with fewer interfaces. These factors reduce complexity and improve productivity.

"Our Greentree Business Management Suite is used by over 800 customers around the world and sales are better than ever. Thanks to JADE we are able to seamlessly deliver continuous increments of new functionality for customers, thereby adding value to their business. We achieve this without doing the typical vendor things like putting up maintenance rates. Our developers are incredibly productive and enjoy the innovative opportunities that JADE provides. Crucially, JADE is developer-friendly for collaborative ventures, making it ideal for customer-oriented teams. With JADE we see no boundaries."

Peter Dickinson
CEO
Greentree International

Smaller, Multi-disciplined, Collaborative Development Teams

JADE development teams typically are small in size, with developers being able to easily work across all layers of a system.

With JADE’s single seamless data model, language and programming model spanning all layers (from the database to the user interface), JADE teams typically have multi-disciplined developers that are able to work productively in any area of a system.

As evidence of this, the following table presents FTE (full time employee) resource details for several large international JADE projects. The total number of classes and lines of code are shown as broad, indicative measurements of size and complexity (in our experience these measurements will be less than those required to implement equivalent functionality across all layers in other technologies). Four of the projects are for systems deployed into multiple customer sites, with the remaining projects representing bespoke developments for individual customers.

<table>
<thead>
<tr>
<th>Project</th>
<th>Design</th>
<th>Develop</th>
<th>Test</th>
<th>Manage</th>
<th>Initial Build</th>
<th>Live</th>
<th>Total Classes</th>
<th>Lines of Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project A</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>2</td>
<td>8 months</td>
<td>10 years</td>
<td>6565</td>
<td>1,031,958</td>
</tr>
<tr>
<td>Project B</td>
<td>1</td>
<td>3</td>
<td>0.5</td>
<td>0.5</td>
<td>6 months</td>
<td>7 years</td>
<td>1824</td>
<td>227,883</td>
</tr>
<tr>
<td>Project C</td>
<td>0.5</td>
<td>3</td>
<td>0.5</td>
<td>0.5</td>
<td>6 months</td>
<td>5 years</td>
<td>1000</td>
<td>87,184</td>
</tr>
<tr>
<td>Project D</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>2</td>
<td>19 months</td>
<td>9 years</td>
<td>7820</td>
<td>1,353,240</td>
</tr>
<tr>
<td>Project E</td>
<td>0.5</td>
<td>3</td>
<td>0.5</td>
<td>0.5</td>
<td>9 months</td>
<td>4 years</td>
<td>2076</td>
<td>193,544</td>
</tr>
<tr>
<td>Project F</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>0.5</td>
<td>18 months</td>
<td>10 years</td>
<td>6758</td>
<td>1,048,355</td>
</tr>
<tr>
<td>Project G</td>
<td>0.5</td>
<td>3</td>
<td>0.5</td>
<td>0.5</td>
<td>4 months</td>
<td>4 years</td>
<td>1060</td>
<td>73,143</td>
</tr>
<tr>
<td>Project H</td>
<td>0.5</td>
<td>4</td>
<td>0.5</td>
<td>0.5</td>
<td>3 months</td>
<td>4 years</td>
<td>1851</td>
<td>174,014</td>
</tr>
<tr>
<td>Average</td>
<td>1</td>
<td>5.25</td>
<td>0.9</td>
<td>0.81</td>
<td>9.13</td>
<td>6.63</td>
<td>3619</td>
<td>523,665</td>
</tr>
</tbody>
</table>
"JADE is great for small, agile, collaborative development teams like ourselves. Teams of customer-oriented, solution-focused developers who get a kick out of getting on and delivering stuff. JADE enables us to achieve a high degree of code reuse and with its seamless database integration we have less code to worry about reusing. Since 1996, JADE has given us a real solid platform that we can rely on. A single platform on which we can build large commercial systems that can scale from small, inexpensive hardware to high-end servers."

Allan Baird  
Abel Software Limited

IBM were involved in a very strategic client project in Melbourne Australia that required the use of IBM toolsets as well as a Rapid Application Development environment that had to be competitive with Microsoft technologies and deliver a scaleable, robust approach – JADE was chosen.

"JADE’s strengths were that we were able to take a large development program with programmers that had Visual Basic, C++ and all sorts of other skills, and train them in JADE. Very rapidly, we were able to get them up and running with the technology, turning out prototypes, models, systems and end-to-end applications. They saw JADE as a true integrated environment. Traditionally, they would have to stitch together several things to get an environment to work whereas, in JADE, everything was there in a single environment and toolset."

Paul Sweeney,  
Principal, IBM Global Services
Reduced Administration Costs

Because JADE systems are robust they deliver lower long-term costs for support and maintenance. JADE’s robustness is derived from its single technology approach. One technology across all layers means fewer technology seams. Fewer seams make applications stronger and more robust. As a result, systems built in JADE are resilient, scalable, and generally require less administration than other platforms.

As evidence of this, consider Jade Software Corporation’s 24 x 7 managed service:

- 24 x 7 managed service operation
- 400 JADE environments
- > 150 server machines
- > 99.9% average availability (excluding scheduled outages)
- 19 FTEs (performing 24 x 7 first and second level support)

The entire JADE server-side can be encapsulated in a single installation directory. A JADE server-side installation can be relocated easily just by copying this top-level directory.

"As well as our JADE applications, we run a number of other core systems on different database and technology platforms. JADE has proven itself to be the most reliable and robust by far and we are increasing our use of it for mission-critical 24x7 applications. However, unlike some other technologies, JADE requires very little system administration. Although we have two people who are skilled in this aspect of JADE, they spend less than 5% of their time doing such work, enabling them to concentrate instead on more productive work that is of real business benefit to EWS."

Dr. Dave Fidal
Operations Systems Portfolio Manager
DB Schenker Rail (UK) Ltd, formerly English Welsh and Scottish Railway

"Port Otago Ltd uses JADE for the Container Management System that drives their business. We have been providing IT services to Port Otago since 1998 to administer their JADE system and have been delivering services for other technologies and databases since 1989. Compared to similar database platforms in use at the Port, JADE is by far the easiest platform to look after and requires minimal effort to manage and maintain. This is a critical business application and its stability, up-time and low maintenance is impressive. Compared to database platforms we maintain in other businesses, JADE stands out as the platform that requires the least amount of support."

Ron Jack
Managing Director
SCL Electronic Services Ltd

"Our JADE system is critical to the operation of our organisation, particularly our communications with our supporters and management of child sponsorships. Since going live, it has met all performance demands, with absolutely no unscheduled outages. The reliability of the JADE platform and JADE Care24 managed service has been excellent."

Andrea Spurdle
Head of IT
World Vision UK
Interoperability

JADE provides several facilities to interoperate and co-exist with other technologies, the most important of which today is Web Services (XML, WSDL, SOAP). Web Services are a set of technology standards that have become the leading model for encapsulating business processes and sharing them with other systems. JADE’s Web Services support provides a seamless interface for JADE developers to build distributed JADE applications that interoperate with other platforms (for example, .NET, Java and WebSphere).

In addition to Web Services, JADE provides language-level interoperability via its .NET and Java Class Libraries, Object Manager APIs, External Functions and .NET Assembly Integration.
"We have selected our JADE Student Management System (JSMS) to perform all of our enrolment and administration activities for over 15,000 students each year. As part of our commitment to the needs of students, our own IT staff have integrated our .NET web site with JSMS to make online services and real-time information available to students. This enables us to have flexible control of our web site and take advantage of all of the processes, business rules and data provided by JSMS to deliver new services to students. XML and Web Services have been essential to making this work and JADE’s support for these standards has been integral in this successful integration."

Dr. John Vargo
Project Director
University of Canterbury
High Performance

The JADE platform can scale from single-server systems to large multi-server systems running critical applications with thousands of users.

The following performance tests were conducted at IBM’s Innovation Centre in Sydney using IBM x3650 Dual Quad-Core CPU servers running Windows 2003 Enterprise 64-Bit Edition. Running a Stock Trading Simulation performance test, JADE achieved:

- 4110 TPS with 120000 users
- 4487 TPS with 9600 users

Running a Financial Services System performance test, JADE achieved:

- 244 TPS and 91 ms response time with 1000 users

Running inquiry transactions against a JADE OO implementation of a TPCA-like benchmark, JADE achieved:

- 467000 Read TPS with 1000 users

The following benchmark results were obtained using a real-world complex, mission-critical, JADE financial services system on production hardware. In all cases, the transactions-per-second (TPS) rate was held at the reported level in order to measure transaction response time at that rate:

- 1500 users, 36 GB database, 16 TPS, 94% of responses < 1 second
- 200 users, 36 GB database, 44 TPS, all responses < 0.5 seconds
- 2000 users, 25 GB database, 20 TPS, average response 0.2 seconds
- 358 users, 25 GB database, 86 TPS, average response 0.24 seconds

The following benchmark results were obtained using a JADE OO implementation of a TPCA-like benchmark, running on standard commodity hardware (Quad 700MHz CPUs, 1 GB RAM):

- 320 TPS, 25 users, 15 GB database, TCP/IP communication
- 470 TPS, 25 users, 15 GB database, shared memory communication
- 4100 read TPS (3 collections, 3 objects), 80 users, 15 GB database

The following benchmark results are for the JADE Stock Trading Simulation running on HP DL385 Dual 2.6GHz Opteron hardware:

- 1600 updating TPS with 220 concurrent Thin Clients
- 2200 updating TPS with 16000 concurrent TCP/IP client sessions

Synchronized Database Service (SDS)

SDS allows any number of secondary databases to automatically be mirrored and synchronized with the primary database. This provides customers with an out-of-the-box hot-standby capability for improved disaster recovery. Read-only processes can also be run against secondary databases. This provides developers with the ability to offload read-only tasks (such as inquiries and reports) from the primary database, to improve system performance.
Relational Population Service (RPS)

RPS enables JADE systems to automatically replicate data into external relational databases in near real-time. RPS allows JADE systems to interoperate with relational databases for reporting, BI (Business Intelligence), ETL (Extract, Transform, Load) and data warehousing purposes. Developers can specify the classes, objects, properties and derived values that are to be replicated to the required relational database(s). This allows an entire JADE database to be replicated, or just the data that is required for external purposes. Configurable options for replication frequency are available, similar to those provided by SDS. RPS can populate an entirely independent relational database, or tables within an existing relational database where that database may be updated from multiple sources (that is, via JADE’s RPS and also non-JADE systems).

“In addition to our own core JADE systems, Skipton Building Society manages a number of large, critical, online JADE systems for other organisations. Several of these systems must feed data into a large SQL Server data warehouse that is used to provide BI information to customers. RPS makes it easy for us to automatically replicate data from the online JADE systems to SQL Server, in near real-time. With the high performance of RPS we have seen significant reductions in CPU utilisation and batch processing time.”

Mark Christensen
Senior Technical Analyst, Skipton Building Society

Native Thin Client

JADE’s native Thin Client capability allows rich user interfaces to be deployed automatically over low-speed networks such as the Internet. The Thin Client runs natively on Windows and Windows Mobile platforms. In addition to making development easier, system administrators have the advantage of maintaining the application in a central secure location, while providing remote staff or branches with LAN-like access to the application across the Internet or WAN. Should the application be upgraded at the central location, JADE automatically upgrades all Thin Clients when they next connect.

JADE also provides a Silverlight-based Thin Client that enables JADE user interfaces to be deployed to Web browsers via Silverlight.
JADE Deployment Options

- Passive Secondary Database Server
  - LAN, Internet
  - Background Processing Node

- Primary Database Server
  - LAN, Internet
  - Web App Server

- Active Secondary Database Server
  - Read-Only Tasks (Work offloaded from the Primary Database Server)
  - LAN

- Relational Population Server
  - Registration to REDMIS

Options:

- Standard Client
  - LAN
  - Windows

- HTML Thin Client (JHTML Viewer)
  - LAN, WAN

- JADE Thin Client
  - LAN, WAN

- JADE Silverlight Thin Client
  - LAN, WAN

- Any Web Services Capable Platform
  - LAN, WAN
    - External System Interoperating via XMI, SOAP, WSDL

- JADE Thin Client
  - LAN
  - Windows Mobile
Minimum Operational Requirements

The following are recommended minimum operational requirements.

More powerful configurations may be required depending on the scale of your JADE applications and the performance requirements of your system.

Note: Although minimum Service Pack (SP) levels are specified below, we recommend that customers keep up-to-date with Service Packs and security updates for whatever Operating System (OS) they are running.

Database Server

Available in 64 bit only
- Windows 2008 Server (R2 recommended) with the latest security updates
- Windows 7 with the latest security updates
- Windows Small Business Server 2011 with the latest security updates
- Windows Vista Business (recommended for Development and Testing only)

Note: Any node that hosts a JADE 7.0 database (multi user database, single user application server, single user standard client) requires the JADE 7.0 64 bit version.

Hardware Specifications

Processors
- Intel Xeon, Pentium IV, AMD, or compatible x64 processor, 1.4 GHz or faster

Memory
- 4 GB Error Checking and Correcting (ECC) RAM
- Add 1 GB per JADE node

Storage
- Disk subsystem that guarantees that acknowledged writes are non-volatile (please refer to the Environmental Considerations for Deploying JADE White Paper)
- Available disk space of four times the expected database size, allowing for growth
- RAID 1+0 configuration

Other
- Server class hardware is essential
- TCP/IP network environment is required
- Data backup components (e.g. a backup disk drive, tape drive, or an optical read-write drive)
Minimum Operational Requirements (continued)

Application Server

Microsoft Windows Operating Systems
• Windows 2008 Server (R2 recommended) with the latest security updates
• Windows 7 with the latest security updates
• Windows Small Business Server 2011 with the latest security updates
• Windows Vista Business with the latest security updates

Where an OS provides both 32-bit and 64-bit editions, both are supported. However, if you are running a single-user application server then the 64-bit edition is required because the application server is hosting the database.

Hardware Specifications

Processors
• Intel Xeon, Pentium IV, AMD, or compatible processor, 1.4 GHz or faster

Memory
• 4 GB Error Checking and Correcting (ECC) RAM
• Add 1 GB per JADE node

Storage
• When calculating disk space requirements, allow for software installation size, transient object storage, and application external file requirements

Other
• Server class hardware is recommended
• TCP/IP network environment is required
• Data backup components (e.g. a backup disk drive, tape drive, or an optical read-write drive) if not provided by another server (e.g. the Database Server)
Minimum Operational Requirements (continued)

Standard Client Only

Microsoft Windows Operating Systems
- Windows 2008 Server (R2 recommended) with the latest security updates
- Windows 7 with the latest security updates
- Windows Small Business Server 2011 with the latest security updates
- Windows Vista Business with the latest security updates

Where an OS provides both 32-bit and 64-bit editions, both are supported. However, if you are running a single-user standard client then the 64-bit edition is required because the client is hosting the database.

Hardware Specifications

Processors
- Intel Pentium, AMD, or compatible; 1 GHz or faster

Memory
- 4 GB Error Checking and Correcting (ECC) RAM
- Add 1 GB per JADE node

Storage
- When computing disk space requirements allow for software installation size, transient object storage, and application external file requirements

Other
- Screen resolution of 800 x 600 or higher
- TCP/IP network environment is required

Web Servers

For JADE systems that deploy Web applications, the minimum Web Server requirements are:
- IIS Version 6.0 or Apache 2.2.3 for Microsoft Windows
Minimum Operational Requirements (continued)

Thin Client Workstation

Microsoft Windows Operating Systems
• Windows 2008 Server (R2 recommended) with the latest security updates
• Windows 7 with the latest security updates
• Windows Small Business Server 2011 with the latest security updates
• Windows Vista Home Premium with the latest security updates
• Windows XP Professional (recommended) with SP3

Hardware Specifications

Processors
• Intel Pentium, AMD, or compatible; 1 GHz or faster

Memory
• 512 MB RAM (recommended); 256 MB (minimum, depending on OS)

Storage
• When calculating disk space requirements, allow for software installation size, thin client forms cache, and application external file requirements

Other
• Screen resolution of 800 x 600 or higher
• TCP/IP network environment is required
Minimum Operational Requirements (continued)

Compact JADE

Mobile editions of the JADE Thin Client are referred to as the Compact JADE platform.

Microsoft Windows Operating Systems

- Windows Mobile 5.0 for Pocket PC Phone Edition
- Windows Mobile 5.0 for Pocket PC
- Windows Mobile 6.0 / 6.1 Classic
- Windows Mobile 6.0 / 6.1 Professional
- Windows Mobile 6.5 Professional

Note: Windows Mobile 6 Standard and Windows Phone 7 are not supported.

<table>
<thead>
<tr>
<th>Windows Mobile Version</th>
<th>Underlying Windows CE Version</th>
<th>Compact JADE Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Mobile 5.0 for Pocket PC Phone Edition and Windows Mobile 5.0 for Pocket PC</td>
<td>Windows CE 5.0</td>
<td>✓ Thin Client ✓ GUI Controls ✓ Serial Port Access ✓ TCP/IP Connectivity</td>
</tr>
<tr>
<td>Windows Mobile 6.0 / 6.1 Classic and Windows Mobile 6.0 / 6.1 Professional and Windows Mobile 6.5 Professional</td>
<td>Windows CE 5.02</td>
<td>✓ Thin Client ✓ GUI Controls ✓ Serial Port Access ✓ TCP/IP Connectivity</td>
</tr>
</tbody>
</table>

Hardware Specifications

Processors

- ARM V4 400 MHz (minimum), 600 MHz (recommended), or better

Memory

- 32 MB (minimum) of memory available to customer applications (this most likely means a minimum 64 MB capable device)
Minimum Operational Requirements (continued)

Storage

• This is additional storage space to the Memory requirements (above). Typically, this will be a separate SD or Flash card of 256 MB minimum size.

• For Thin Client applications that have been designed to suit the small device and limit the use of highly complex forms and large graphics, we expect 256 MB to be sufficient. Additional storage requirements will depend on the size of the Thin Client form cache and this is dependent largely on the size and complexity of application forms.

• For the best performance, selecting a fast memory card is important (e.g. the SanDisk 1 GB Extreme III CF Card).

Other

• 320 x 240 minimum display resolution

• TCP/IP network environment is required (802.11 b/g protocols are recommended)

• Depending on the performance of the cradle that comes with your device (some provide only slow transfer speeds), the use of an external Flash/SD card reader/writer may be desirable for fast file transfers to and from your device

Virtual Environments

Subject to conditions detailed in the Environmental Considerations white paper available at www.jadeworld.com/jade/whitepapers.htm#envirocon, JADE is supported in virtual environments running a supported operating system. Please refer to the white paper for more information.
Example Production System Configurations

The following table represents some business-critical production system hardware configurations as at August 2011. These are intended as indicative examples only. More powerful configurations may be required depending on the scale of your JADE applications and the performance requirements of your system. In the following table, all CPUs are Intel or Intel-compatible.

<table>
<thead>
<tr>
<th>Peak Users</th>
<th>Nodes</th>
<th>Database Size</th>
<th>Hardware Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>3</td>
<td>16.5 GB</td>
<td>Virtual server</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 2 x vCPU</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 4 GB RAM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Shared SAN Disk:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 130 GB SAN disk (Database and logs)</td>
</tr>
<tr>
<td>55</td>
<td>15</td>
<td>52 GB</td>
<td>Two servers, clustered, each server with:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 4 x hex-core 2.67GHz CPUs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 16 GB ECC RAM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dedicated SAN Disk:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 12 x 144 GB 15k FC (Database and Logs volumes)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 10 x 1 TB 7.2k SATA (Backup)</td>
</tr>
<tr>
<td>100</td>
<td>14</td>
<td>144 GB</td>
<td>Virtual Server</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 4 x vCPU</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 16 GB RAM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Shared SAN Disk:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 500 GB (Database)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 120 GB (Logs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 750 GB (Backup)</td>
</tr>
<tr>
<td>750</td>
<td>92</td>
<td>360 GB</td>
<td>Two servers, clustered, each server with:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 8 x dual-core 3.33GHz CPUs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 64 GB ECC DDR2 RAM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dedicated SAN Disk (Shared with test systems)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 30 x 73 GB 15k FC Drives (Database)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 26 x 73 GB 15k FC Drives (Logs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 16 x 146 GB 15k FC Drives (Backup)</td>
</tr>
<tr>
<td>925</td>
<td>42</td>
<td>852 GB</td>
<td>Two servers, clustered, each server with:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 4 x quad-core 2.4GHz CPUs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 90 GB ECC RAM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dedicated SAN Disk (Shared with test systems)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 33 x 300 GB FC Drives (Database and Logs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 10 x 1TB 7.2k SATA (Backup)</td>
</tr>
</tbody>
</table>
Investigation Systems), provide solutions that enable them to manage their specific information requirements. We also provide targeted, custom-made solutions, systems consultancy and a 24x7 systems management service.

Jade Software Corporation USA

Located in Atlanta, Georgia, Jade’s portfolio features Public Safety Investigation Management and Intelligence solutions, Risk Management and Internal Auditing solutions, and Logistics solutions (Ports, Shipping and Railway Management Systems). We also provide targeted, custom-made solutions, systems consultancy and a 24x7 systems management service.

Jade Software Corporation UK Ltd

Jade in the United Kingdom is focused on solutions for the Logistics (Ports, Shipping and Railway Management Systems). Finance and Banking sectors, and Risk Management and Internal Auditing solutions. We also offer targeted, custom-made solutions, consultancy and expertise to large organizations such as Homeloan Management Limited, English Welsh & Scottish Railway and Skipton Building Society. In addition to our on-site personnel, we specialise in providing offshore development services from New Zealand and Australia to offer our customers the benefits of a 24-hour work day, along with a 24x7 systems management service.

Jade Software Corporation Pty Ltd

With offices in Melbourne and Sydney, we provide organizations such as World Vision, Allianz, and Ascribe with software solutions for Logistics (Ports, Shipping and Railway Management Systems), Tertiary Management, HR Management, Risk Management and Internal Auditing, and Public Safety Investigation Management and Intelligence. We also provide targeted, custom-made solutions, systems consultancy and a 24x7 systems management service.

Jade Software Corporation (NZ) Ltd

Headquartered in Christchurch with offices in Auckland, Dunedin and Wellington, we provide organizations such as Fonterra, Air NZ and the Electricity Commission with targeted, custom-made solutions that enable them to manage their specific information requirements. We also provide packaged software solutions for the Logistics (Ports, Shipping and Railway Management Systems), Tertiary, HR Management, Risk Management and Internal Auditing, and Public Safety Investigation Management and Intelligence sectors. We also provide targeted, custom-made solutions, systems consultancy and a 24x7 systems management service.