

Enterprise Open Source

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What is it?

Open Source

- Internet-enabled distribution of software
- Services and support business model rather than licenses
- Free enterprise quality products that ship with the source code
- Innovative distributed software development process – New Innovation
 - collaborative Worldwide developer-led grassroots movement
- Bottom line – no-cost license, high-quality, global Open Source is reshaping how software and IT companies do business.
- Separates the application from being tied to the underlying infrastructure
- Change Agent

Application Stacks

- CRM Stack (Sugar CRM)
- ERP+CRM Stack (Compiere)
- CMS Stack (Alfresco, Plone)
- ELearning Stack (Sakai, Moodle)

Developer Stacks

- Eclipse, Spring, Struts, Ant, Maven, CVS
- Java, EJB 3.0
- Linux, Apache, JBoss MySQL

Production Stacks

- Linux, Apache, MySQL, Open SSL
- JPortal, OpenLDAP
- PHP/Perl/Python

Open Source (& Linux) benefits

- Separates the application service from being tied to proprietary platforms
- All the heat and light is on Open Source – more likely to have the standards developed here first
- Open Source is designed to be platform neutral
 - Delivers choice and flexibility
- Delivers a lower cost model compared to proprietary RISC
- Open Source is a Change Agent, an Inflection Point in the industry
 - Gives you the right to re-evaluate your IT infrastructure, and how it supports the business
- Underpins the Transformation Journey
 - Supports a Real Time Infrastructure, and business transformation

What is Real-time Infrastructure?

An infrastructure end state – to be achieved through a series of transformation steps – that will deliver IT services through shared resources that are managed automatically and allocated dynamically based on business priorities.

Key elements defined

- **Infrastructure end state**
 - An idealized target architecture
- **Series of transformation steps**
 - Building blocks based on the client's current state and maturity of enabling technologies
- **IT services**
 - IT resources (servers, storage, applications) treated as a group delivering specific service
- **Shared resources**
 - Servers and storage pooled and viewed as a single resource repository
- **Managed automatically**
 - Servers and storage added, removed, allocated and healed through software tools, without people intervention
- **Allocated dynamically based on business priorities**
 - Server and storage capacity allocated to specific processes based on the most current business priorities

The Business Benefits of a Real-time Enterprise

Improved business performance

- IT performance and cost aligned dynamically with changing business demands

Lower operating costs and capital expenditures

- Higher asset utilization, reduced complexity, and hands-off systems management

Faster time to market

- Automation, standardization, self-provisioning

Improved customer satisfaction

- Higher levels of performance and availability to meet or exceed service level requirements.

Increased competitiveness

- Sense and respond capability, rapid adaptability to emerging business opportunities and threats

The Road to Real Time Infrastructure

The Infrastructure Maturity Model

Three quarters of market place themselves in early stages of IT maturity

| | Basic Uncoordinated infrastructure 10% | Standardized Standard resources, configurations 65% | Rationalized Consolidate to fewer 19% | Virtualized Infrastructure resources pooled 5% | Service-Based Services managed holistically | Policy/Value-Based Dynamic optimization to meet SLAs |
|--------------------------------|--|---|---|--|---|--|
| Objective | <i>React</i> | <i>Reduce complexity</i> | <i>Economies of scale</i> | <i>Flexibility, reduce costs</i> | <i>Service-level delivery</i> | <i>Business agility</i> |
| Ability to Change | Months to weeks | Weeks | Weeks to days | Weeks to minutes | Minutes | Minutes to seconds |
| Pricing Scheme | None, ad hoc | Fixed costs | Reduced, fixed costs | Fixed shared costs | Variable usage costs | Variable business costs |
| Business Interface | No SLAs | Class-of-service SLAs | Class-of-service SLAs | Flexible SLAs | End-to-end SLAs | Business SLAs |
| Resource Utilization | Unknown | Known | Rationalized | Shared pools | Service-based pools | Policy-based sharing |
| Organization | None | Central control | Consolidated | Pooled ownership | Service-oriented | Business-oriented |
| IT Management Processes | Chaotic - Reactive: Ad hoc | Reactive - Proactive: Life cycle management | Proactive: Mature problem mgmt | Proactive: Prediction, dynamic capacity | Service: End-to-end service management | Value: Policy management |

Pre- Real Time Infrastructure

Real Time Infrastructure



Open Source – Expectations & Challenges

“Within four years from now we could have more Linux in data centers than Unix, certainly in Europe.”

Meta, November 2004

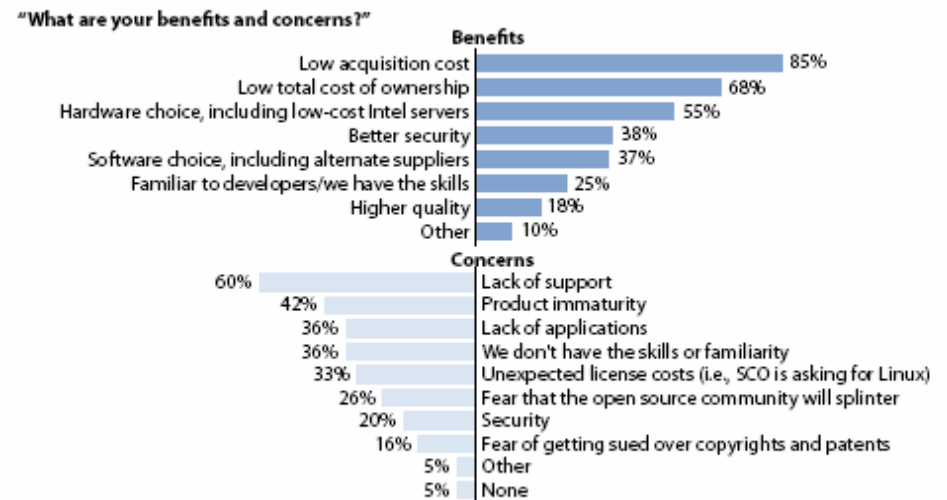
Linux is the fastest-growing server OS. Gartner Dataquest expects Linux shipments to increase from 1.4 million units in 2005 to 2.4 million in 2010, representing a compound annual growth rate (CAGR) of 11.7 percent.’

Gartner, January 2006

“Consider Linux safe to deploy not only for network edge and simple Web servers, but also for mid-tier and moderate database applications.”

Gartner, November 2005

Figure 6 Cost Is The Biggest Benefit, But Support Is A Big Concern



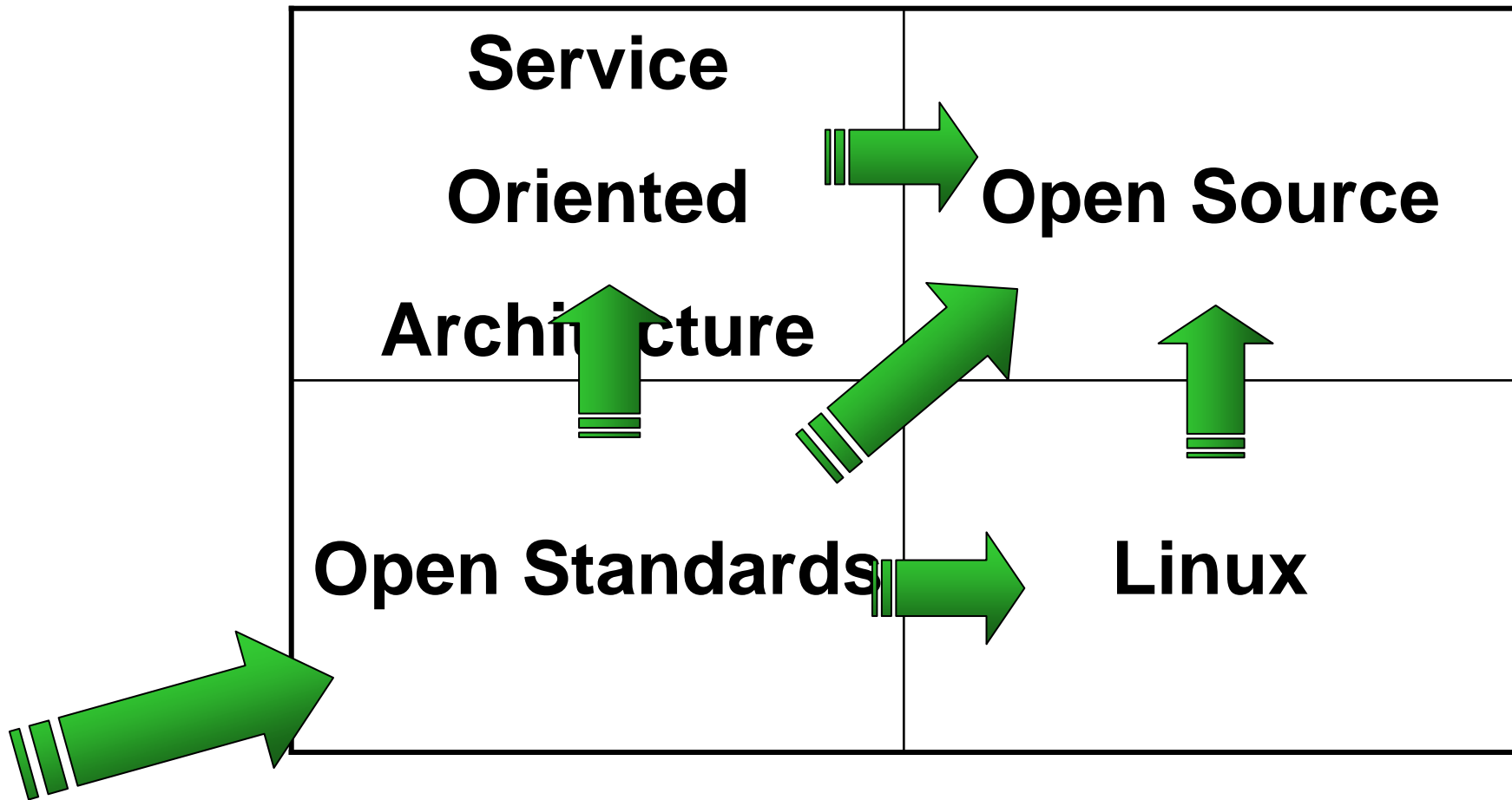
Base: 95 IT decision-makers using or planning to use Linux or open source in the next 12 months (multiple responses accepted)

Forrester Research, June 2005

Where would you need Open Source?

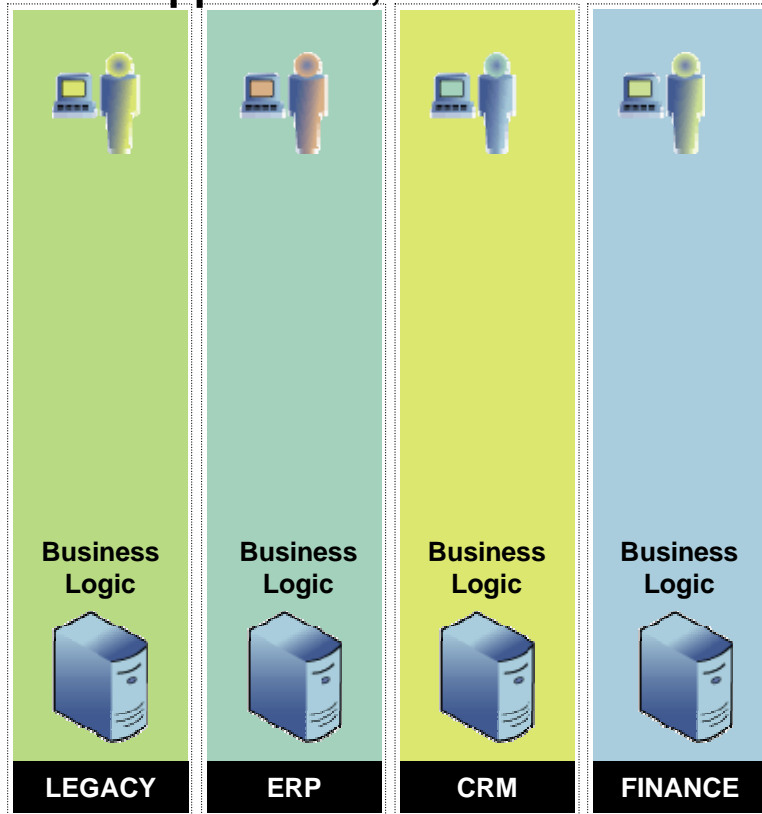
- Migration/replatforming from UNIX infrastructure
 - Cost, licences, maintain SLA, retain closed applications (Oracle, SAP....)
 - Standardisation, virtualisation, RTI, Microsoft...included in the target environment
- New application development
 - Web based, open standards, access to innovation pool, Java/J2EE...
- SOA (Service Oriented Architecture)
 - Open standards wrapped around legacy apps, connectors, portals...
- Open Source applications
 - Databases, business applications...
- Bottom Line – cost, flexibility, choice, innovation, competitive advantage

The move to “Open”



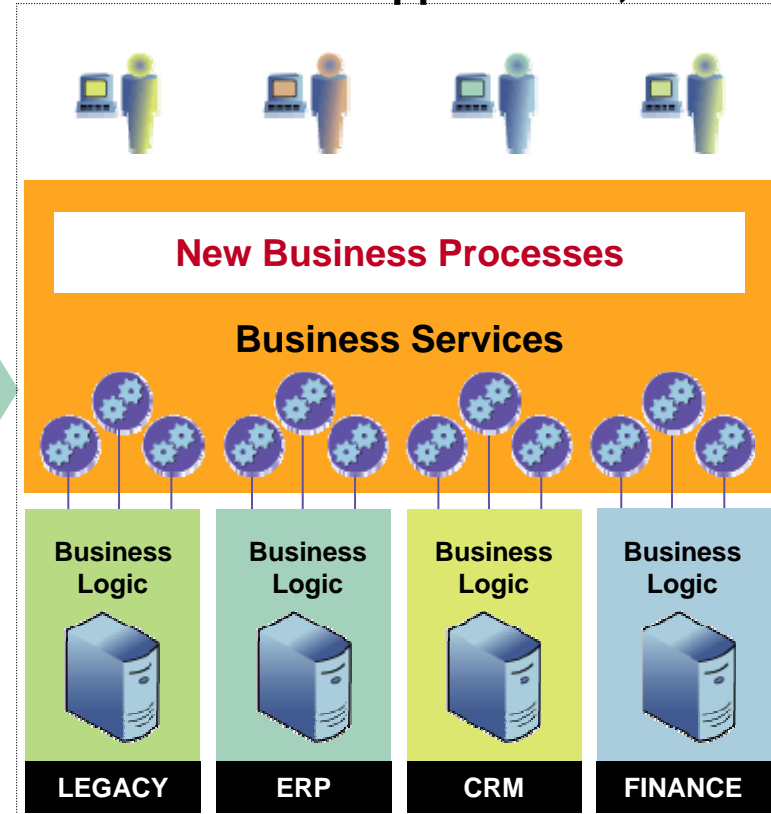
The Evolution to Service-Orientation

Application, Asset Silos



Business functionality buried in applications, asset silos ... proprietary interfaces serving the silos

Service-oriented Applications, Assets

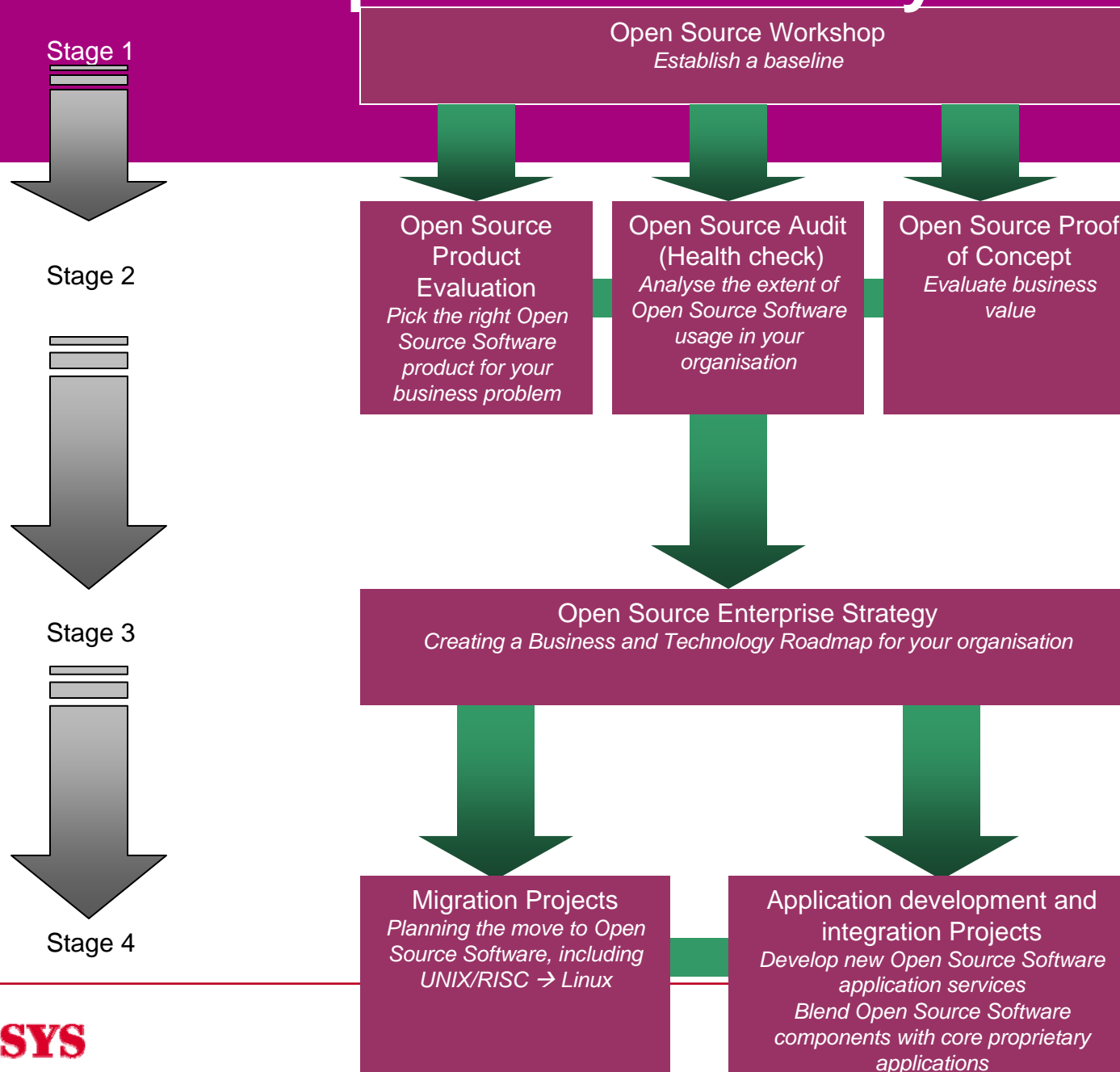


Business functionality exposed as business services ... standards-based, shared & reusable services

The Move to Open Source is a Journey

- Understand the Big Picture and where you need to be
- Know where you are today
- Identify the steps that make up the Journey
- Gain experience with Open Source in a non-critical area first
- Build on existing core applications and processes
- Use off-site facilities to avoid conflict with production systems
- Use expert skills to supplement your own

The First Steps on the Journey



Unisys Open Source Portfolio

Open Source Strategic Consulting Services

Open Source Implementation Services

Unisys Open Source Capabilities & Support

High-Performance Enterprise Linux Systems

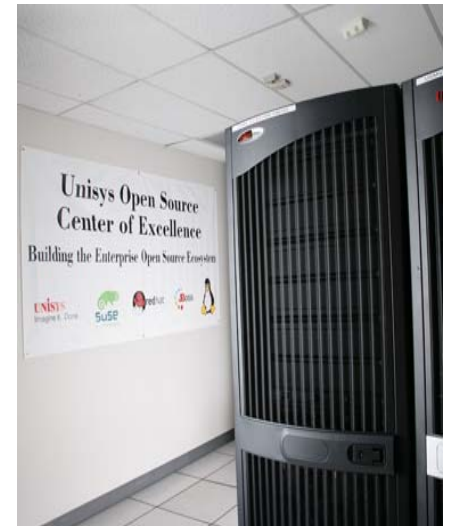
Solution Consulting & Implementation Services



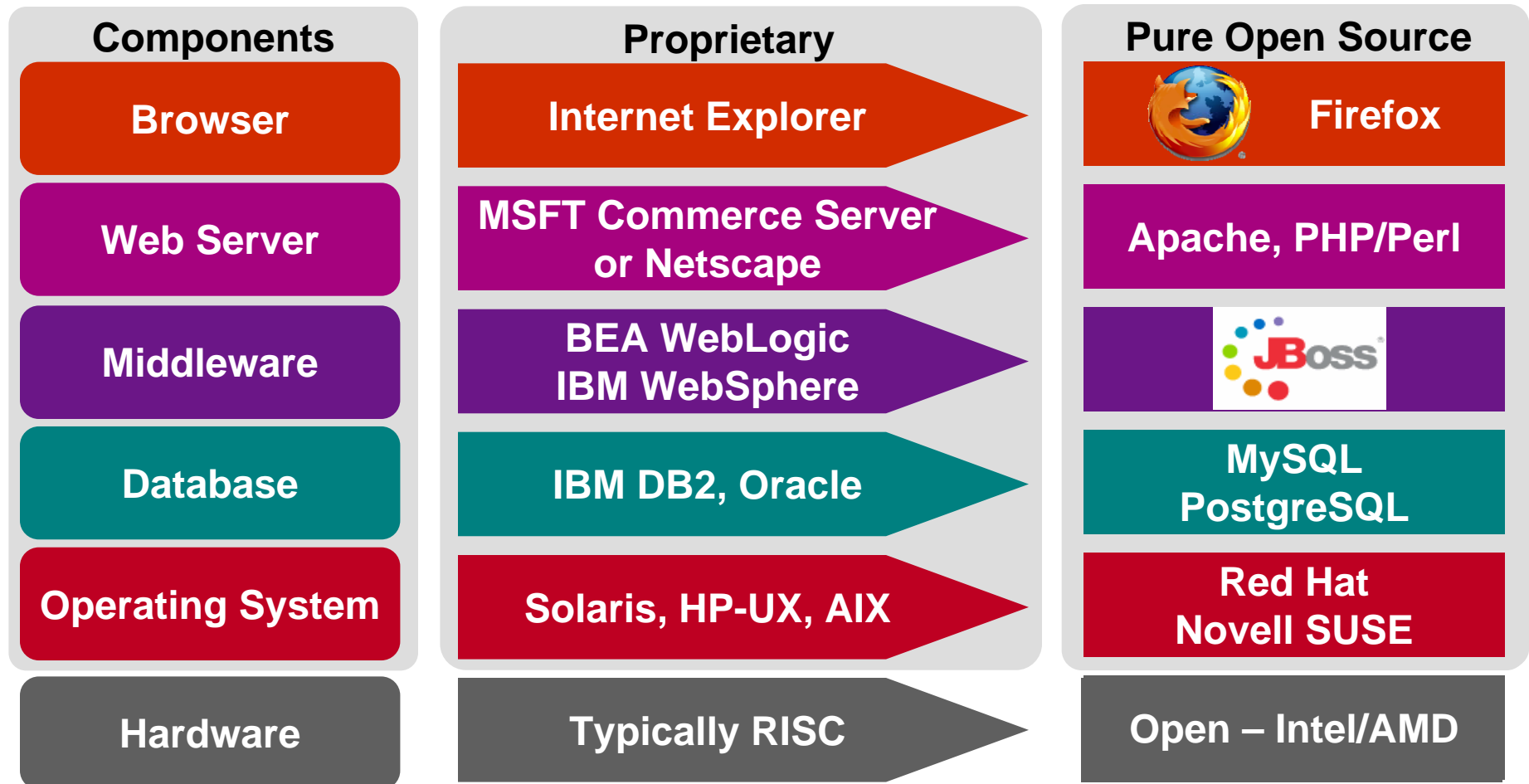
Open Source Stack

| | |
|---------------------|---|
| Application Support | Security (Unisys Application Defender), Business Process Management, Enterprise Content Management |
| Middleware | Java Application Server (JBoss), Hibernate, Enterprise Service Bus, Web Services, Transaction Management, Messaging |
| Database | PostgreSQL, MySQL, Oracle |
| Network | Directory Services, Identity Management, Network Security |
| High Availability | Clustering, Replication, Load Balancing |
| Operating System | Linux (Red Hat & Novell SUSE), Microsoft Windows |
| Platform | Physical (32-bit & 64-bit Intel), Virtual (Xen, VMware) |

Infrastructure and Platform Solutions for Open Source

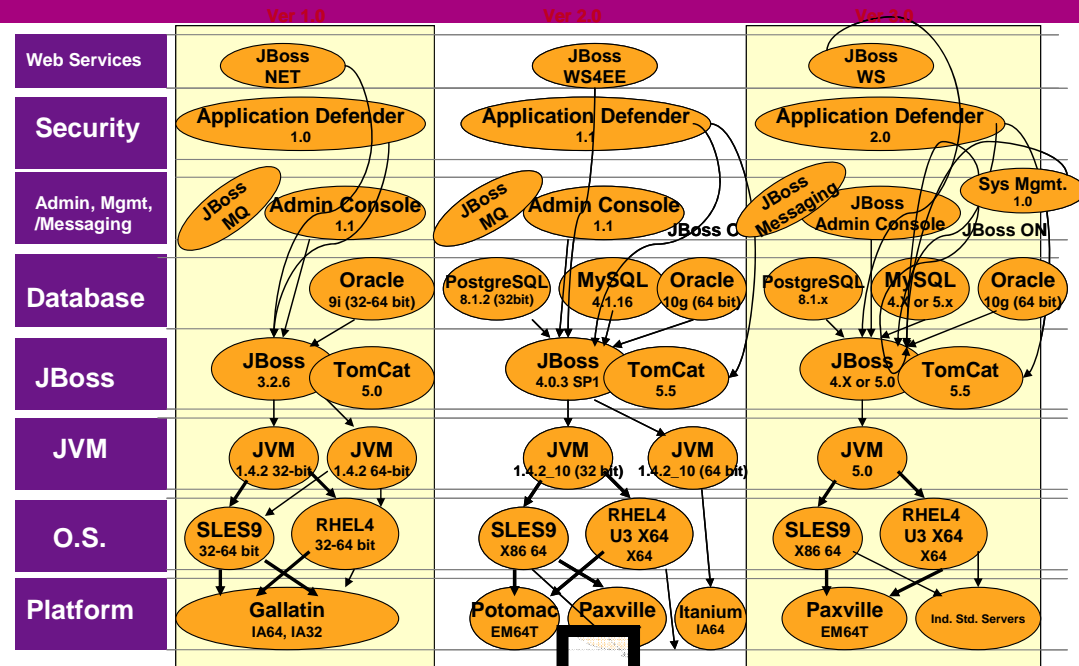


Moving to a Hybrid Stack

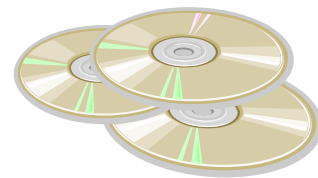


Some of the issues with stacks

The complexity and cost of managing stack component releases, patches and revisions is significant



The ideal – one point of contact & someone to sort out what works with what



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Unisys

Open And Secure Integrated Solutions

| | | | | |
|---|--|--|---|--|
| Vertical Solutions Financial Services, Public Sector, Transportation, Communications & Media, Consumer & Industrial | Consulting Services Migration Services, Implementation Services Architectural Services, Advisory Services | Application Support Security (Unisys Application Defender) Business Process Management, Enterprise Content Management | Support Services Software Certification, Revision Management, Level 1, 2, & 3 Remedial Support | Managed Services Remote Patch Management, Security Services, Provisioning |
| | | Middleware Java Application Server (JBoss), Hibernate, Enterprise Service Bus, Web Services, Transaction Management, Messaging | | |
| | | Database PostgreSQL, MySQL, Oracle | | |
| | | Network Directory Services, Identity Management, Network Security | | |
| | | High Availability Clustering Replication, Load Balancing | | |
| | | Operating System Linux (Red Hat & Novell SUSE), Microsoft Windows | | |
| | | Platform Physical (32-bit & 64-bit Intel), Virtual (Xen, VMWare) | | |

OASIS Suites

Optimized for the Enterprise

- Integrated, secure and optimized Open Source stack
- Choice of enterprise support options (24x7x1, 24x7, 9x5)
- Targeted for deployment of mission-critical applications
- Enables safe migration from high-cost proprietary platforms

Application Server Suite

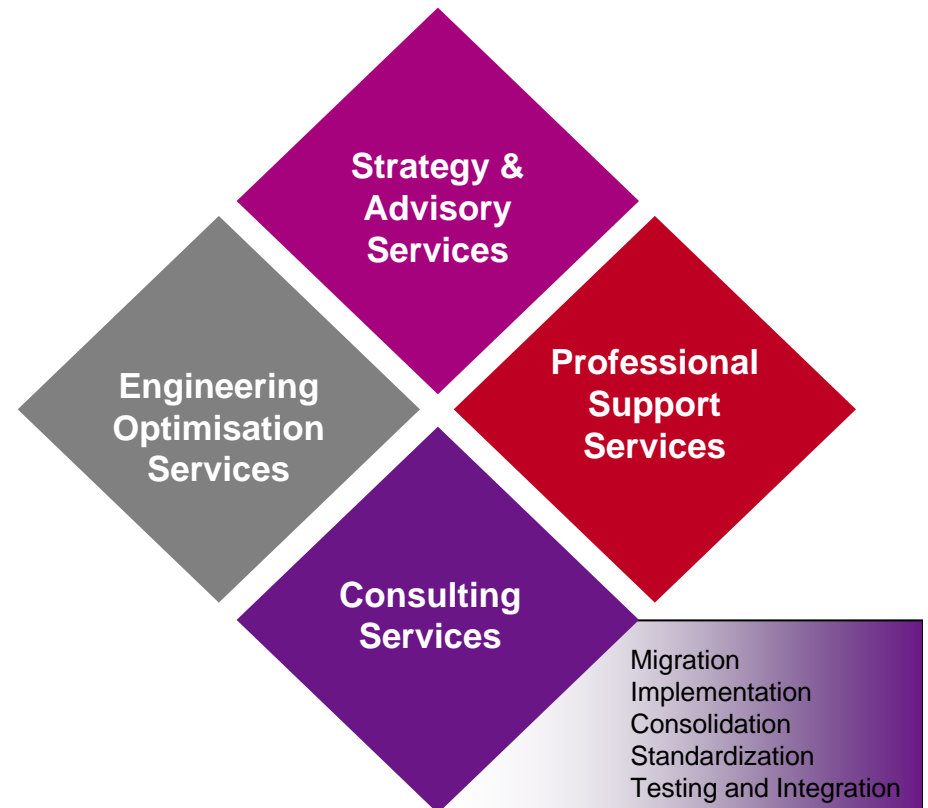


Database Suite



Open Source Services

- **Migration Services**
 - Migrate from Unix to Linux
 - Migrate from proprietary Application Infrastructure (BEA, IBM) to Open Source
 - Migrate from proprietary Database Infrastructure to Open Source
- **Implementation Services**
 - Develop new Web-based solutions using Open Source Software
- **Consolidation Services**
 - Leverage the power of Scale-up & Scale-out to Improve performance
- **Engineering Optimisation Services**
 - Consulting services around performance, scalability, tuning, and security



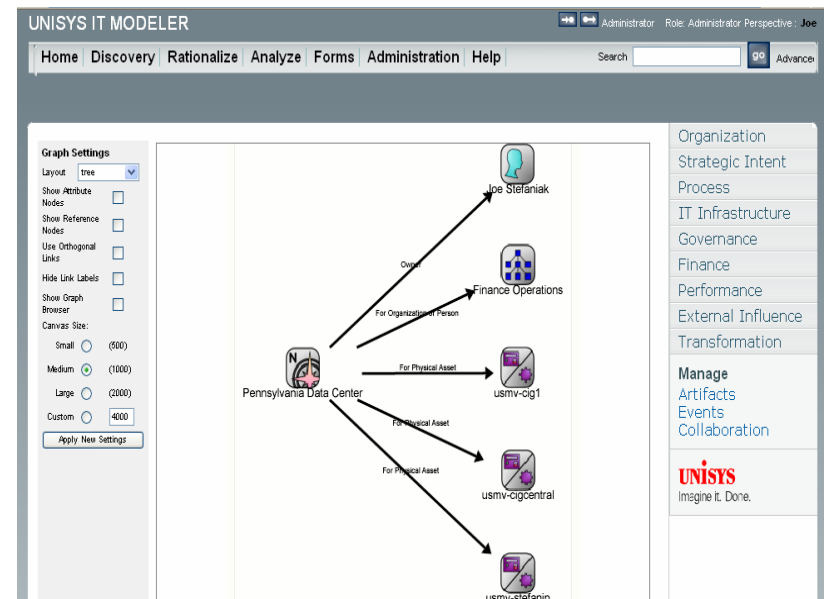
Optimization, Integration, Migration OASIS Services

- **Optimization**
 - Implementation and support services
 - Consolidation services
 - Tuning, scalability and performance services
 - Benchmarking, performance and functionality testing
 - Java application security hardening services
- **Integration (Open Source Stacks)**
 - Implementation and support services
 - Installation, configuration and support
 - Troubleshooting and resolution
 - Custom certification services
- **Migration**
 - Platform migration services
 - Compatibility test and validation services
 - Legacy migration and modernization services
 - Asset alignment and compliance services

Enable Growth: Infrastructure Discovery & Optimization

Unisys-developed automated infrastructure discovery tool called IT Modeler for Infrastructure Optimization (34 patents)

- IT Modeler “crawls” through IT environment to identify assets that may have been deployed without knowledge of support groups
- Ideal for enterprises in which Open Source components have started to penetrate
- Includes a modeling environment and is compatible with 3D-VE models



Why Discovery? Can't consolidate what you can't see

Mature Platforms for Large Scale Open Source OASIS Systems

Flexible Solution Platform

- Robust, highly available, scalable, and highest-performing servers
- Full-spectrum: Both scale-up (8, 16, 32 processors) and scale-out (Blades, 1, 2, 4) servers
- High-end design is a safe path from Unix systems

Virtualization

- VMWare and Xen (4Q06)
- Integrated management (3Q06)
- Serious virtualization requires large, high-end system



- **ES7000 as 10g RAC SuperNodes – only option for large-scale DB's on 10g**
- **10:1 reduction when moving from commodity application servers to an ES7000**
- **5:1 compression of BEA to JBoss instances on ES7000 compared with scale-out – significant cost benefits**

Performance



#1 Linux Benchmark Performance

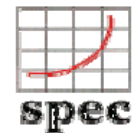
- #1 16-way Redhat / Oracle
- #1 16-way SUSE / Oracle
- #1 Spec Benchmark on Linux

Oracle Scaling (OLTP)

| | | |
|-------|---------|-----|
| IA-32 | 4 to 8 | 91% |
| IA-32 | 8 to 16 | 81% |
| IA-64 | 4 to 8 | 89% |
| IA-64 | 8 to 16 | 91% |

- Flexible Solution Platform
 - World's Most Robust, Highly Available, Scalable and Highest Performing Servers
 - Both Scale-up and Scale-out Servers
 - Enabling both Xeon & Itanium 2 in a single design
 - Supporting Leading Linux Distributions
 - Delivering Leading Proof Points
- Unisys Open Source differentiation in our platforms
 - Scalability (scale-up and scale-out)
 - MultiPath I/O
 - Partitioning
 - Virtualisation

ORACLE TPC Transaction Processing Performance Council



Unisys

Open Source Development Efforts

- Unisys participates in many key open source efforts:
 - Driver fixes and enhancements to issues found during qualification testing
 - Linux kernel ACPI development
 - Hot plug CPU, memory and I/O projects (Dynamic Partitioning)
 - Multi-path I/O in Device Mapper layer of Linux kernel
 - Xen EM64T development
 - Evaluating others...
- Partner with Open Source Development Labs
 - Active in Data Center working group and Hot Plug special interest groups



Unisys

Helping ISVs Scale on Open Source

- Unisys scalability performance services
 - Oracle, JBoss, PostgreSQL have all recently been in our scalability performance lab
 - During ISV's visit, the lab engineers help determine scaling bottlenecks in the ISV code. Once bottlenecks are found, the lab engineers educate the ISV on techniques to increase code scalability
 - This is offered as a service to both ISV's and customers
- Unisys has engineers on site at both SAP and SAS working to increase the scalability of their respective applications
- High Availability solutions in the enterprise based on SteelEye and Veritas

EU Biometric Portal

www.europeanbiometrics.info

Biometrics has the potential for €multi-billion market
The industry is emerging and fragmented
Security, privacy, legislation evolving

“ Good practice is built on proven solutions that work. Software and concrete applications that work in practice are an important element of these. They could be used as a source of inspiration for Member States to develop good and interactive public services in the future to the benefit of Europe's citizens. ”

Erkki Liikanen
Enterprise and Information
Society Commissioner, EU

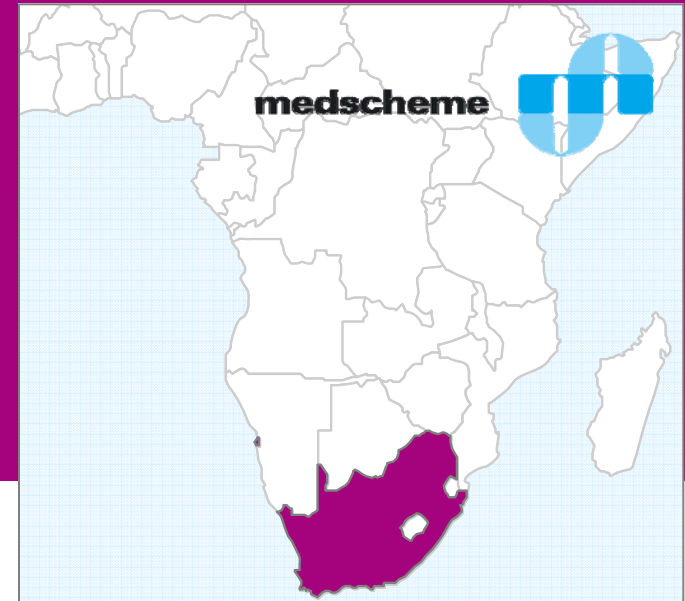
- **Solution**
 - The portal is a focal point for information exchange and coordination
 - Industry, governments, society
 - 100% Open Source solution
 - Web portal, database, content management
- **Results**
 - Two-years of running the portal on OSS has resulted in a 40% cost reduction, compared to alternative solutions
 - OSS supports a number of EU objectives, such as sharing knowledge between agencies and providing independence from dominant players in the software industry
 - information exchange, not only from Europe, but around the world
 - **Creation of a best practice example** for the public sector concerning the use of best-of-breed Open Source components.

SOUTH AFRICA Medscheme

Medscheme decided to migrate from a SCO UnixWare environment to SuSe Linux running on two 16 CPU Intel systems located in two physically different locations.

“ With the help of Unisys, we decided to go the SuSE Linux route, a platform supported by Oracle and Unisys. Moreover, by adopting an open source system such as Linux, we could be sure we would be able to run our systems on any Intel-based hardware as we expand our operations into Africa. And we saved substantially on our software licensing costs.”

Kevin Wright
Chief Information Officer
Medscheme



Visible Metrics:

- Simplified environment resulted in \$1.5 million saved in first year
- Real time claims reduced from 5 seconds to 2.5 seconds per claim transaction
- Batch runs reduced from 24 hours to 3 hours
- Reporting system refresh reduced from 36 hours to 3 hours
- Hardware maintenance reduced by 60% per annum
- Greater Flexibility

Considerations...

- Work with someone who can be objective on Open Source
 - No hidden agenda, No proprietary UNIX to defend
 - Step-by step Journey, reduce risk
- With Depth of skills
 - On the kernel side & on the ISV applications
 - Access to engineering resources
- A Net contributor to Open Source
 - Someone committed to putting more in than they take out
- Able to Certify and full support of a hybrid stack
- Who understands Enterprise Systems & Industry Solutions
 - Blend of architectural and technology expertise in high-end enterprise solutions
- Allows you to go at your own pace

More information on Open Source

www.opensourcetrends.com

OASIS Suites: Unisys Value-Add

Enhanced Security

- Deep protection against application-level attacks
- No changes to source code or configuration
- Self-learning in production or test environments

Performance and Scalability

- Highly tuned for large-scale, high-volume and consolidated deployments
- Takes advantage of unique characteristics of scale-up enterprise server platforms
- Superior performance on industry standard systems (4X proc or multi-core systems)

Improved Management

- Management of multiple servers
- Eases configuration of the JBoss environment
- Simplified application deployment

OASIS Software Suites



UNISYS Value-Add Software

 **JEMS** Middleware

 **redhat.**

 **suse**
A LINUX, NETWORK

ES7000/one



- A single, integrated enterprise server solution for standardizing on Intel in the data center
- Only offering that supports BOTH Intel Xeon MP and Itanium 2 on the same platform (different partitions)
- Positioned as technology enabler for Open Source, Microsoft and RTI Solutions