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Businesses are looking to service-oriented architectures (SOA) as the best way to leverage their IT assets and to provide their organizations with the agility needed to be competitive in today's economy.

SOA is an approach to software design ("architecture") where applications are assembled from reusable components ("services").

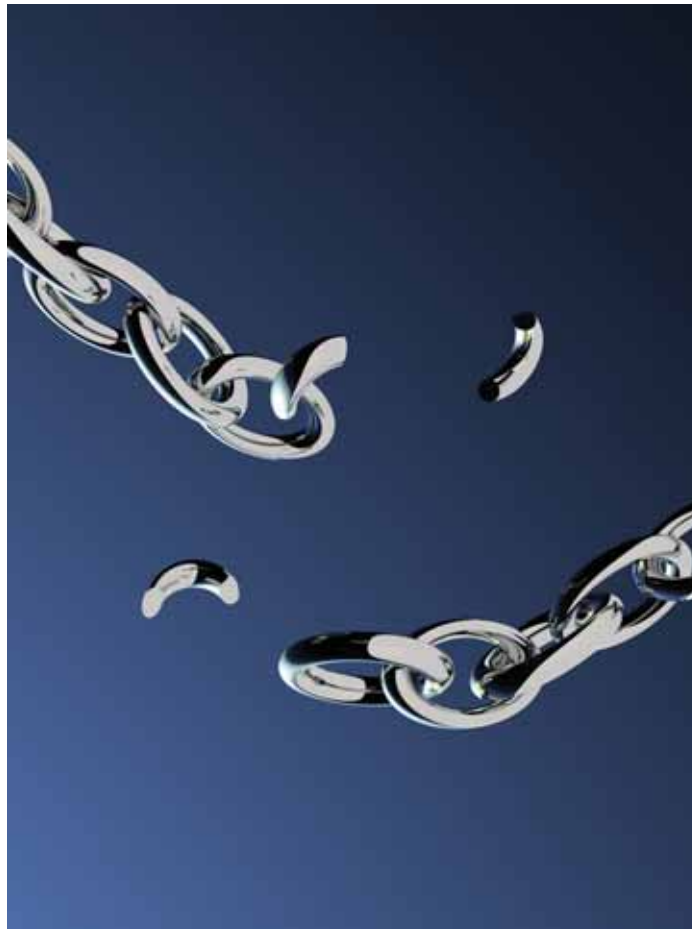
A service is a software building block that performs a distinct function – such as retrieving customer information from a database – through a well-defined interface.

SOA differs from other forms of computing in a few fundamental ways.

Loosely Coupled

First, software is organized into modular components. This is not a novel concept,

but the difference with SOA is that the components, or services, are loosely coupled. Loose coupling is significant because it underlies the flexibility behind SOA. Loose coupling means services can be linked together dynamically at run-time, with few dependencies on how the services are actually implemented and regardless of whether the service was built using the same or different programming technologies as the calling application. Tight coupling, in contrast, results when there are dependencies between software modules that are designed, coded, or compiled into application programs.



Loosely coupled services can be linked together easily and quickly as business requirements demand. Tightly coupled systems are less flexible, usually involving recoding or recompilation when interdependent components are modified. Tight coupling makes it hard for applications to adapt to changing business requirements.

An important consequence of loose coupling is that services can run anywhere on the network and they are not restricted to a specific hardware or software platform or programming language. In an SOA, services can originate from different

technology vendors. Tightly coupled systems, on the other hand, usually involve a commitment to a specific software environment, which creates interoperability issues when different platforms need to be integrated.

Service Interface and Service Implementation

The second defining feature of SOA is that services exist as two distinct elements – a well-defined service interface and the service implementation.

The service interface describes how to call the service, specifying, among other things, where the service is located and the format of input/output parameters. The service interface is what provides another program with the information it needs to make a request to the service and get a response. The service implementation is the actual code that fulfills the functionality of the service. Unlike the service interface, which is defined in a neutral format, the service implementation is inherently platform-dependent. SOA is not concerned with how services are actually implemented.

Business Oriented Services

Finally, SOA is implicitly about business-oriented services versus lower-level technical functions. Whether a service involves looking up customer information, checking inventory levels, or verifying a

SOA is an approach to software design ("architecture") where applications are assembled from reusable components ("services")

credit card transaction, the point is to encapsulate a logical unit of functionality that can be reused across business applications. A key aspect of SOA is that services can be comprised of other services, which makes it possible to assemble higher-level composite services that map to entire business processes.

Real Business Benefits

Aside from its technical appeal, SOA helps companies to bring structure to an increasingly chaotic IT environment and to better equip themselves for change. The past decade has seen unprecedented leaps in computing, ubiquitous business computing and the use of internet to communicate with trading partners. The combination of these factors has resulted in an explosion of stovepipe applications, databases, and electronic connections. The challenge for IT today is to create and support an infrastructure that is capable of harnessing these diverse assets, and to deliver on new business requirements more effectively than with previous approaches.

SOA provides the basis for this infrastructure and the promise of tangible business benefits.

Ultimately, the value proposition is that SOA helps companies to be more agile and to do more with the resources that they already have.

The Role of Web Services

The ideas behind SOA – modularization, platform independence, etc. – are not new. Prior technologies have promoted many of the same principles, but failed to achieve the status of SOA. So why has SOA gained so much traction? The answer is Web services.

In theory, SOA does not require Web services, and simply implementing Web services does not necessarily result in an SOA. In reality, however, SOA and Web services are inexorably linked, and it is their synergy that is driving service-orientation into the mainstream.

On the one hand, Web services – which are simply services that use specific XML-based protocols and interface descriptions to communicate – provide the standards upon which today's SOAs are being built.

On the other hand, SOA principles are directing the maturation of Web services with the qualities expected of a good architecture – reliability and security. As a result, additional standards now exist, or are in the process of being developed, to enable Web services to fulfill the true promise of SOA.

SOA roadmap

The heart of SOA is designing the architecture so that Web services can, in fact, be orchestrated to produce a business service. This is possible in a mature, well-orchestrated implementation of SOA. Getting to that level of maturity involves a sequence of steps that build incrementally on each other. One attractive aspect of Web services and SOA is that they can, in fact, be implemented incrementally. This is because SOA is concerned with just the interfaces to the business activities. How those activities are performed does not change; hence, previous investments in business logic are preserved, or actually leveraged.

The incremental progression towards SOA often entails four stages:

1. Implementation of individual Web services - Frequently, this starting point involves wrapping a Web service interface around an existing application. Java applications and Microsoft .NET applications are particularly amenable to this wrapping because both platforms have built-in support for Web services.

2. SOA integration of Web Services - This stage involves the integration of Web services within a single department.

The heart of SOA is designing the architecture so that Web services can, in fact, be orchestrated to produce a business service.

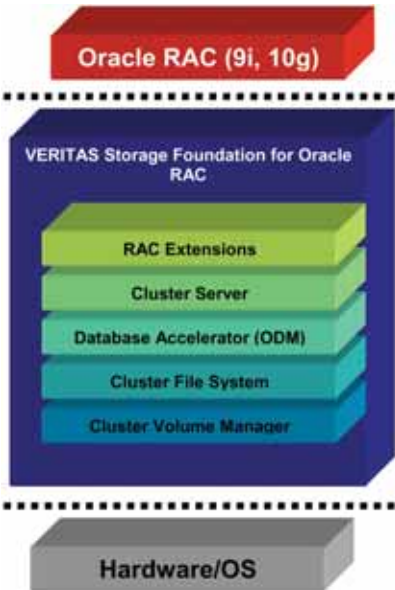
It is at this stage that the benefits of open standards that provide a common interface between applications and among systems become evident—especially so because once a department moves to SOA, adding new services to the department's function becomes a simple process.

3. SOA Integration within the Enterprise - In this stage, departments use Web services to communicate between themselves and with various suppliers.

4. On-demand computing through SOA - Business processes within the enterprise and in B2B contexts run on Web services. Changing the computing infrastructure to match changes in business processes and to external events becomes a much more straightforward operation. The IT organization is agile and can provide not only configurability but scalability due to the modular design of its infrastructure.

BEAR Facts - Tech Tips from BEAR Data Systems

VERITAS Storage Foundation for Oracle Real Application Clusters from Symantec



VERITAS Storage Foundation™ for Oracle Real Application Clusters provides an industry leading cluster framework for implementing robust, manageable and scalable Real Application Clusters. The solution encapsulates leading storage management and high availability components from VERITAS that have been integrated with Oracle RAC providing the most manageable Oracle RAC solution in the industry for both 9i and 10g environments.

Oracle Real Application Clusters™ (RAC) is Oracle's solution for increasing availability and scalability while maintaining a single database across various servers to reduce manageability and overhead. Storage Foundation for Oracle RAC enhances Oracle RAC by adding flexibility, reducing system downtime and boosts scalability. Also, a single management view enables users to install, configure, manage, and perform backup operations once.

Using Storage Foundation™ for Oracle RAC, administrators can create clustering solutions using best of breed storage products to allow flexibility of choice when it comes to storage hardware providers. This allows businesses to adapt to their changing technology requirements and contain costs.

Advantages of Storage Foundation for Oracle RAC

Manageability – includes a robust Cluster file system that significantly eases the management burden of raw database partitions while ensuring no performance or data integrity loss.

Single Management Console – allows administrators to manage RAC clusters with an easy to use, graphical user interface that simplifies disk and cluster management and provides the ability to manage multiple servers and storage systems from a single console.

High Availability – monitors, restarts, and controls startup and shutdown of Oracle Databases in RAC environments, ensuring users can rapidly access essential data. The solution also improves data availability through online operations such as storage reconfiguration, dynamic multipathing, I/O fencing, and online point-in-time copies of data with minimal impact to applications or users.

Scalability – allows administrators to add storage and servers to their RAC environment while critical applications remain online, making RAC highly available and scalable.

Solution Components

VERITAS Cluster Server (VCS) controls startup and shutdown of the component layers of RAC and manages all processes and resources required to access the database as part of parallel service groups providing increased levels of availability for the Oracle environment. In Oracle 10g RAC, VCS provides an added stability to Cluster Ready Services (CRS) and ensures high availability.

• Database Accelerator

Storage Foundation™ for Oracle RAC leverages Oracle Disk Manager (ODM) for Oracle RAC. ODM addresses performance issues that can be associated with the use of file systems by replacing a complex set of system I/O calls with a simplified I/O architecture that increases performance, uses system resources more efficiently and improves file management.

• Cluster File System

VERITAS Cluster File System (CFS) integrates with the

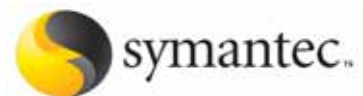
cluster framework to ensure systems are coordinated in access to data, regardless of server failures. CFS is a true cluster file system that supports concurrent storage access from multiple systems. In case of node failure, the file system will continue to provide services on other nodes. CFS allows tablespaces to grow online without the need to pre-allocate storage capacity.

• Cluster Volume Management

VERITAS Volume Manager enables the physical disks configured to be managed as logical devices or volumes. Cluster Volume Manager (CVM) is an extension to the VERITAS Volume Manager that allows multiple nodes to share a disk group across the cluster for simultaneous access to the Oracle database. CVM also provides the mirroring, striping, dynamic multipathing, and online administration capabilities of Volume Manager, enabling administrators to optimize storage reliability and performance.

System Requirements

Oracle9i RAC, Oracle 10g RAC (Solaris, Linux only), SPARC/Solaris systems running Solaris 8 & 9, HP-UX 11i, AIX 5.2 and Linux (RHEL 3.0)



Source: Symantec Corporation

IP Telephony : Part 3

VOIP Deployment: In-house vs. Hosted Solution

While there are many choices of enterprise VoIP, in the end the basic decision boils down to deploying the solution in-house (IP-PBX) versus having a service provider supply the solution in a hosted fashion (IP Centrex). Both approaches are viable. The choice is not just about money, but rather how features, functionality and system control play a significant role in making the right choice.

Leasing vs. Ownership

As with buying or leasing a car, either system provides phone services and equipment with equally matched voice quality and reliability. IP Centrex is like leasing. Users do not own the equipment, and in fact, most of the equipment, with the exception of the telephones, resides at the remote IP Centrex site. With IP-PBX, the user buys the equipment and maintains it on site.

With either choice, the features reach across the network, regardless of geography or type of telephone, whether IP, soft-phone or wired phone, giving users access to the office telephone system

remotely or at the company. IP Centrex is offered by some of the oldest and biggest players in telecom, including Verizon, BellSouth and SBC, as well as new start-ups, Vonage and Covad, all of which have attracted customers at a tremendous rate. IP-PBX is also offered by respected telecom players.

With IP Centrex, the user pays on a periodic basis; there is no steep upfront cost, but the cost is ongoing. IP Centrex providers charge much like a wireless provider, billing a contracted monthly rate plus a variable rate for additional services. With an IP-PBX, upfront costs can be significant.

Choosing a vendor

Choice of vendor is key. Geography does not matter, because the provider of IP Centrex services can be based anywhere. The IP Centrex provider can ship equipment to the user or install it for them. In the past, technology was a major issue in choosing a telecom company, but more and more, it no longer limits vendor choice. What does matter is the reputation and track record for quality, reliability, and the overall feature set. Security features have become a major consideration.

Users aren't relegated to just one vendor when they choose IP-PBX or IP Centrex. They can buy the telephone equipment from one vendor, networking equipment from another, dial tone from another, and Internet services from yet another. Both IP Centrex and IP-PBX providers can deliver one-stop shopping as well.

Ownership leads to greater control

If a company plans to keep the system for a while, say more than five years, buying an IP-PBX may make more sense,

especially if it comes with the ability to migrate to future systems and accommodate growth. To truly customize it, you need to own it. There is no doubt that ownership equals control, but it also means that there is a learning curve.

Owning an IP-PBX means there is a significant upfront commitment to install, maintain and learn how to use the system. All these considerations should be factored into the total cost of ownership. The upside is that once the system is running smoothly, it should stay that way for a very long time. For companies that do not have the staff or bandwidth to implement an IP-PBX, IP Centrex may be the best way to reap benefits of IP telephony.

With either IP Centrex or IP-PBX, users can move the phones wherever there is Internet access without the traditional service charges for moves, adds or changes. For IP-PBX systems, it is less expensive to add new users than with IP Centrex because data and infrastructure is already built into the system.

Feature requirements

Features play an important role in decision making. If all the user wants to do is make and receive calls, the most straightforward solution is IP Centrex. IP Centrex cannot win in all scenarios because IP-PBX typically has the edge in the number of features, the types of features that users are accustomed to from legacy TDM systems.



Typical IP-PBX systems offer 20–25 percent more features than IP Centrex systems and can include such features as database integration and screen pops, which can be a deal breaker for the IP Centrex provider. Users are accustomed to the features they have had in their legacy TDM systems and do not want to give them up. IP Centrex providers seem to be figuring this out and are adding features, but it is important to review the features to know what is there.

1. Adaptability There are new features available, including adaptability, which allow users to customize certain features and capabilities using a scripting language. This capability lets users do creative, useful things with their phones, such as having important information scroll across telephone screens. This is in addition to unique call handling capabilities, customizable for a variety of triggers.

2. Multi-locations The jury is still out on what the best solution is when a company has multiple sites. Since IP phones or softphones can be plugged in anywhere there is Internet access, they can basically function as nodes off the home office's IP-PBX or from the IP Centrex. With either system, companies can

have IP telephony in as many offices or home offices as they'd like, without any geographic limitations.

3. Security This is quickly becoming a differentiator among communications systems of all types, and IP telephony is no exception. But IP-PBX has an edge here. Because the equipment is owned, security can be handled and increased in any way desired. Viruses are here to stay, and experts are predicting that they will soon be aimed more at voice systems.

WHICH OPTION IS RIGHT FOR YOUR COMPANY?

- If you plan on owning the system for more than five years, buy the IP-PBX as it will be cheaper in the long run.
- If you want to keep the system a shorter time, buy IP Centrex as the upfront costs are not very high.
- If you want special services or customization, choose the IP-PBX.
- If you want basic services — calls in, calls out — use IP Centrex.

4. Disaster Recovery For users concerned with disaster recovery and survivability, there isn't a clear winner. It all depends on where the disaster takes place. For maximum survivability, the system, whether it's an IP-PBX or IP Centrex, needs to be redundant and not physically co-located. Calls need to be automatically rerouted when the system goes down. The one advantage IP-PBX has is that because the users can set it up themselves, they have the control to establish the level of potential disaster recovery that is a priority for their business. IP Centrex systems are also very reliable during a disaster, if it occurs at the client site. IP Centrex can usually reroute calls very quickly, and because the IP phones can be plugged in anywhere, users can be connected very quickly in the event of a disaster.

5. Investment Protection Like buying a car, the money that goes into the IP PBX system goes into ownership. With IP Centrex, users are essentially "leasing" the service, so there is no investment being made. For investment protection, IP-PBXs clearly have the edge because most equipment manufacturers have built their systems to allow upgrades

and migration to future products. For a system to grow with the company, or decrease during cutbacks, the company needs to own the system. With IP Centrex, companies must buy their lines in batches, so they may be adding a great deal more lines than they really need in order to add phones for one or two users. With IP-PBX, users can add one or two or many more ports, up to the maximum size of the system.

Conclusion

Short-term telecommunications expense management, while necessary, cannot be the sole VoIP driver. Per station costs, ease of Move-Add-Change administration, as well as the minimization of local and long distance usage, while all relevant, are tactical not strategic. This being the focus, IP-enabled PBXs may well once again trump IP Centrex. However virtual Centrex, with its increasingly robust features, complemented by limitless geographical presence, should necessitate greater deliberation between the two choices.

How the enterprise can functionally differentiate itself from the competition, increasing market share while also reducing telecommunications overhead, is certainly the more important question. Total cost of ownership must include the opportunity costs of having made the less optimized decision. The more strategic selection should yield greater return on investment over time.



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Unified Threat Management

A compelling one-stop security solution for SMBs

Internet threats don't discriminate by business size. Small and medium-sized businesses (SMBs) today face the same security threats as large corporations. They are often forced to choose between less expensive security that doesn't provide the protection they need or enterprise-class security that they can't afford. What they need is something that will protect them against today's threats but not break the bank.

Unified Threat Management is an emerging trend that might be the answer to this problem. It is the evolution of the traditional firewall into a product that not only guards against intrusion but performs content

filtering, spam filtering, intrusion detection and anti-virus duties traditionally handled by multiple systems.

When hackers were the primary focus of an IT enterprise, a firewall was sufficient to protect most networks. Then as viruses became more prevalent, corporations took to anti-virus gateways that scanned for viruses followed by Web content filtering, and later, spam filtering. This resulted in a mess of systems that were costly to administer and took up valuable rack space.

As the hardware that powered today's enterprise firewalls became more robust it became viable to add functions that were traditionally off the box right into the firewall. Firewalls became 'firewall appliances'. This is where Unified Threat Management comes in. Rather than administer multiple systems that handle anti-virus, content filtering, intrusion detection and spam filtering, companies can purchase a Unified Threat Management firewall appliance that integrates all of the above into a single rack mountable network appliance. The multiple functionality of the Unified Threat Management appliance can be the justification for replacing older more basic firewalls.

IDC has defined what a UTM appliance must consist of to be regarded as such. First, it must have an operating system and an installation process that requires a minimum of human intervention. The appliance must have the ability to perform network firewalling, intrusion detection and prevention (IDS/IPS) and gateway anti-virus. All capabilities need not be utilized, but the functions must exist in the appliance. A UTM appliance may also include other features such as security management and policy management by group or user.

Advantages of UTM

Why are people buying threat management security appliances when many excellent software-based security applications are

Point Solutions Lack UTM Efficacy

The modern threat era of malicious hackers who thwart conventional, point solutions with very deceptive, fast-moving code or content based attacks has changed the landscape of network security. In fact, according to McAfee, the top 10 threats of 2004 all fall into one of the

following key areas: spyware/adware, e-mail-borne viruses, and malware delivered by spam or a combination thereof, commonly referred to as the 'blended' threat. Increasingly hackers have focused on blended threats, combinations of malicious code keyed to exploit multiple vulnerabilities. These blended attacks are specifically designed to circumvent point security mechanisms such as independent VPN, firewall and antivirus products. Blended

threats have a higher probability of failure when confronted with unified security solutions such as UTM's. The UTM philosophy provides the most flexible, best practices security solution for the ever-changing nature of blended threats.

already on the market? Simply put, convenience and ease of installation are the key advantages of threat management security appliances. The growth of the threat management security appliance market is largely on account of:

Reduced complexity: The all-in-one approach simplifies product selection, product integration, and ongoing support.

Easy to deploy: Customers or more often VARs can easily install and maintain the products. Increasingly, this process is handled remotely.

Synergies with high-end software solutions: Appliances are used in remote sites where an enterprise does not have security professionals on the ground. A plug-and-play appliance can be installed and managed remotely. This management is synergistic with large, centralized software-based firewalls.

Low operator interaction: Users have a tendency to play with things, and the black box approach limits the 'damage' users can do. This reduces trouble calls and improves security.

Troubleshooting ease: When a box fails, it is easier to swap it out than troubleshoot. This process gets the node back online quicker, and a non-technical person can also do it. This feature is especially important for remote offices without dedicated technical staff onsite.

SOX Sarbanes Oxley Compliance

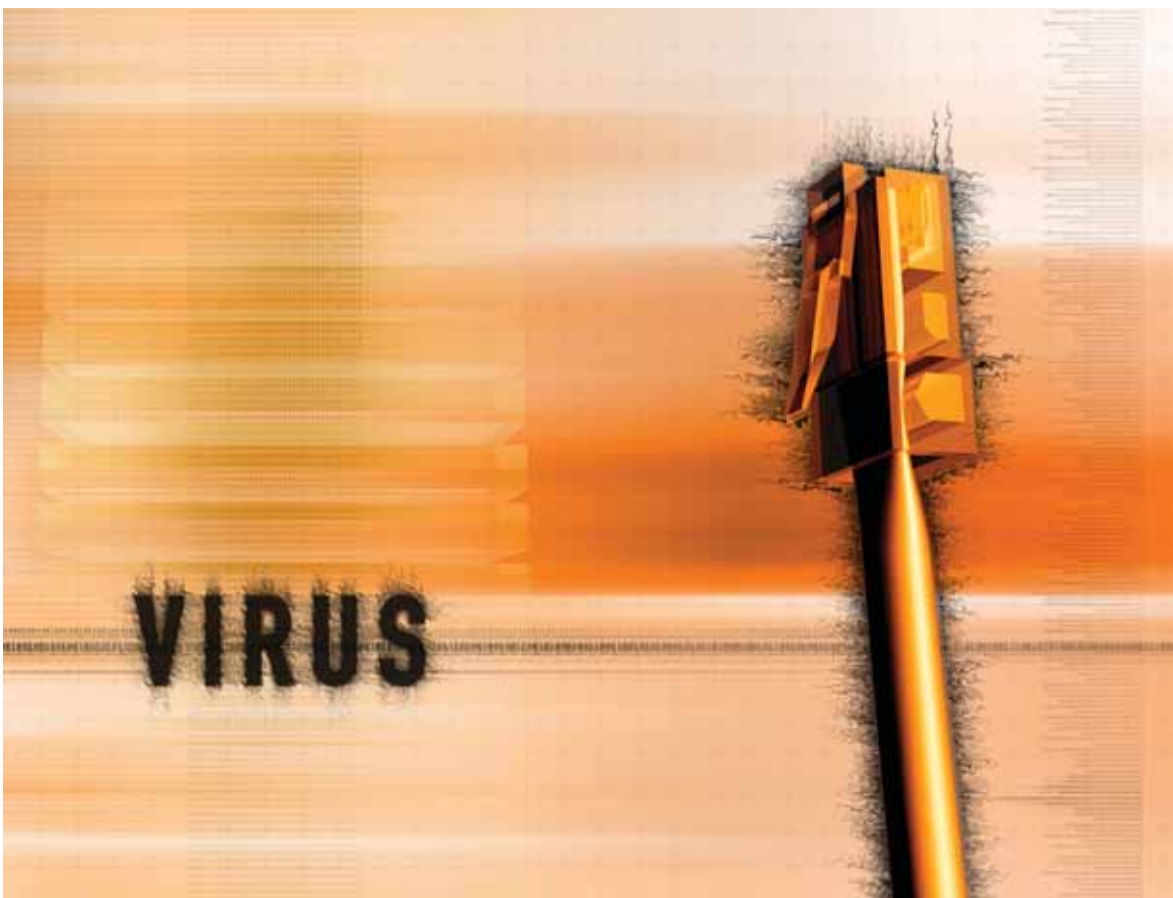
One of the key aspects in passing Sarbanes Oxley (SOX) Section 404 audits of internal controls is proving

you have proper controls in place. IT Controls can be as simple as anti-virus anti-spam and content filtering or as complicated as providing reports of who accessed what data and when. Today's UTM Firewall Appliances can not only provide the controls necessary for Sarbanes Oxley Section 404 but can prove this with excellent reporting tools.

Market for UTM

Overall, IDC forecasts that the threat management security appliance market will grow at a combined annual growth rate of 17 percent between 2003 and 2008. This translates into

a global market of \$3.45 billion. Appliances have become popular by being a simple means of delivering security software. By 2007, 80 percent of all security solutions will be delivered via a dedicated appliance. IDC believes that, over the next five years, the revenue generated by the sale of UTM appliances will exceed that of standard firewall/VPNs, effectively replacing these products.





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Adopting LINUX Part 3 :

How the Linux distributions compare

There are now dozens of Linux distributions to choose from, each one with its own characteristics. Distrowatch (www.distrowatch.com) can be used to evaluate the distributions; the site lists features of 90 major Linux distributions, with interest counts based on page requests for each of the distributions. The most dominant distributions are Debian, Red Hat, SuSE and Mandrake.

Distribution	Distrowatch Rank	Google Rank
Mandrake	1	3
Red Hat	2	2
Debian	3	1
Sorcerer	4	15
Gentoo	5	8
SuSE	6	6
Slackware	7	5
Lycoris	8	10
Lindows	9	9
Vine	10	11
Beehive	11	12
SourceMage	12	17
Xandros	13	14
ALT	14	19
Root	15	18
Caldera/SCO	16	4
CRUX	17	16
TurboLinux	18	7
Libranet	19	13
Lunar	20	20

Table 1: Popular distributions according to Distrowatch and Google (from Distrowatch)

Debian



The Debian Project was born in 1993 to provide a stable, error-free Linux distribution. Debian is not supported by a corporation. As it was in the early days of Linux, hundreds of developers are trying to make the distribution better. The first releases of Debian had some problems in terms of stability, but the newer releases are more solid and stable. The installation of Debian is rather complicated as disk partitioning and other installation tasks are not automated adequately. Although experienced users prefer Debian for complex and detailed administration, desktop users will find Debian too cumbersome. However, Debian has an easy software selection tool, dselect, in installation process. X windows is configured by anXious utility which has similar methodology as other distributions. Pluggable authentication modules (PAM) are integrated successfully with other software that require authentication process. Debian is supported via Web-based forums and mailing lists. As a server platform it provides stable environment that new technological releases are inserted after a long testing process. In terms of service level and support agreements and software vendor support, the Debian distribution is not popular in the industry.

Advantages:

- Stable server system
- Suitable for learning and engineering purposes

Disadvantages:

- Not user friendly
- Difficult to install and administer

- No service level and support agreement
- Not supported by majority of software vendors

Mandrake



MandrakeSoft, which distributes Mandrake Linux, was formed in 1998 by a company based in France to prepare an easy-to-use package with an excellent graphical installer. Since Red Hat covered most of the server market, Mandrake concentrated on the desktop market. Installation and disk partitioning can be managed with a simple GUI, and software package selection is standard and comfortable. After the installation, users need to simply reboot and log on to the system. Mandrake is supported by mailing lists and by Mandrake itself, via Web forums. But it has some drawbacks as a Linux server, since it has been designed primarily as a desktop operating system.

Advantages:

- Excellent installer GUI
- Ease of administration
- Proper distribution for Desktop clients

Disadvantages:

- Not supported and preferred as server software

Red Hat Linux



Red Hat Linux is the best known distribution, both in server and client market. Started in 1994, Red Hat was one of the first to offer customer support within the open source philosophy. Red Hat works extremely well as a server in a corporate environment. Since it is an established company, it offers a full range of services to its clients.

Red Hat Linux is the leading platform for open source computing. It is sold by subscription and is certified by top enterprise hardware and software vendors. Red Hat provides both Client and Server solutions under the Red Hat Enterprise Linux platform. The distribution includes most of the software that is needed, and installation, with the help of a GUI, is simple. Disk partitioning is automated, and there is a lot of support knowledge and material about Red Hat.

The Fedora Project is a Red Hat sponsored and community-supported open source project. It is not a supported product of Red Hat, Inc. The goal is to work with the Linux community to build a complete, general

purpose operating system exclusively from free software. It is viewed as proving ground for new technology that may eventually make its way into Red Hat products. The Fedora distribution can be used for general purpose, both as desktop client or server system.

Advantages:

- Best known Linux distribution in corporate market
- Supported by the majority of software vendors
- Service level and support agreements are available
- Suitable for both desktop clients and servers
- Easy installation and administration

SuSE



SuSE Linux originated from Germany and was acquired by Novell, Inc in 2003. SuSE and Novell have combined to provide better support and service and hence accelerating its adoption.

It has tied up with Oracle and IBM to ensure that its distribution is properly utilized with databases. SuSE also developed SuSE Linux eMail Server, an email and groupware application that is widely used in desktops and servers.

SuSE has a very friendly installation and disk customization GUI. SuSE can also easily access Windows drives from within its OS, which makes migration between platforms much easier. The distribution works well as both on servers and desktops.

SuSE has wide support in web forums and mailing lists. Its default graphical interface, based on KDE, is much more friendly and effective when compared to Red Hat's Gnome-based X Windows system. SuSE also provides a strong server platform with its enhancing functionality and graphical management tools.


Advantages:

- Widely used Linux distribution in corporate market
- Supported by the majority of software vendors
- Service level and support agreements are available

- Suitable for both desktop clients and servers
- Easy installation and administration
- Excellent graphical management tool both for administrators and end-users.

Conclusion

Linux distributions are being adopted in the corporate environment more frequently and this trend will likely continue to accelerate. Red Hat distributions have excellent support and are the most widespread and best known. However for applications which need maximum stability Debian should be considered. For those who are new to Linux, Mandrake or especially SuSE is a good option. It is very difficult to make a decision between SuSE and Red Hat as they have very comparable features. Both Red Hat and SuSE support a compatibility standard called Linux Standard Base (LSB). Both vendors support the latest LSB 2.0 standard, and are collaborating to make that standard more usable by software vendors in the upcoming 3.0 specification. This makes the switching between the two distributions easier. The best solution for users is to adopt the distribution which they are most familiar with.



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Letter from the CEO

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These values not only guide our everyday business relationships and interactions with our clients and colleagues, but are the key differentiators and assets that allow us to deliver results to our customers.

As a vendor agnostic consulting company, our consulting team's primary goal is to provide our customers with unbiased opinions that drive business results. Our portfolio of services coupled with the diversity in our engineering staff helps to deliver to each client innovation, competitiveness, technological initiatives and flexibility. Combined these services help to maximize your company's productivity.

In closing, all of us at BEAR Data Systems have the utmost respect for our customers and partners. It is my responsibility, together with the BEAR Data leadership team, to make sure that as we move forward we stay grounded in our core values. It is critical that we maintain close relationships built on trust.

The value of our company is dependent on the trusted relationships we have with our clients, our partners and our people.

Sincerely,

Don W. James, CEO
BEAR Data Systems, Inc.

BEARbytes

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Services-Oriented Architecture (SOA) – It's not just about technology

"At the end of the day, the game for us is information. We need to deliver it to customers and employees within the context of their business requirements. We must make workflows simple. If we make things convenient and easy, we'll allow people to save time. And saving time, means saving money – that's a very valuable and compelling benefit."

In a nutshell, that's how Steve Ellis, executive vice president, Wells Fargo, described the bank's need to become more unified, cohesive and customer-centric. And customer-centric means providing convenience and simplicity of doing business for customers, as well as the bank's employees.

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According to Ellis, "A key IT benefit of SOA and WebLogic is time to market. ... We can now design the user experience around their workflows, and we don't have to start from scratch with every project. ... We've become very agile."

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