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Net Integration Technologies

Competitive Analysis: Nitix vs. Windows

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Contents

Overview	2
References	2
Methodology	3
Pricing & Configuration Information	3
Equivalency	3
Total Equivalent Cost of Ownership (TECO).....	4
Installation Time & Maintenance.....	4
Nitix in a Nutshell.....	5
Nitix Editions	5
Unique Features and Benefits	6
Autonomic Computing	7
Net Intelligence	8
Function Comparison	9
General Product Features	9
Core Services	10
Backup & Recovery	11
Software License Comparison.....	12
Nitix Small Business Comparison — 5 User Installation.....	12
Nitix Standard Comparison — 20 User Installation	13
Nitix Premium Comparison — 45 User Installation	14
Summary	15
Message/Collaboration Server Comparison	18
Total Equivalent Cost	18
Server Comparison.....	18
Server Cost	19
Software License Cost.....	19
Software Assurance	19
Summary	20
Conclusion	21
Function Comparison.....	21
Cost Comparison	21
Commentary	22

Overview

This document presents a competitive analysis of price and functionality for Net Integration Technologies' Nitix operating system and Microsoft Small Business Server 2003 and Microsoft Exchange Server 2003. The Nitix operating system includes the ExchangeIT service that delivers group-ware capability equivalent to Microsoft Exchange.

Three different comparisons are made:

- ◆ **Software Function Comparison** — a comparison of features and functionality delivered by Nitix and Microsoft Small Business Server 2003.
- ◆ **Software License Comparison** — a software license comparison, exclusive of a server platform, is made between Nitix Small Business (SB), Standard (SE) and Premium (PE) versus Microsoft Small Business Server 2003 Standard and Premium for 5, 20 and 45 user configurations.
- ◆ **Messaging/Collaboration Server Comparison** — a dedicated messaging/collaboration server comparison is made between Nitix deployed on a Net Integrator Mark II and Microsoft Exchange Server 2003 deployed on a HP ProLiant DL 350.

For the software license and messaging/collaboration server comparisons, the following comparative cost metrics are calculated:

- ◆ **Total Equivalent Cost of Ownership (TECO)** — the total cost of equivalent solutions for products being compared.
- ◆ **Net Equivalent Cost per User (NECU)** — the TECO divided by the total number of licensed/configured users.
- ◆ **Normalized Net Equivalent Cost (NNEC)** — the relative NECU costs normalized to the Nitix solution to provide a relative measure of the cost of the Microsoft solution(s) on a percentage basis.

References

- [1] "Microsoft Sales Tool Kit", Microsoft Corporation, January – March 2004.
- [2] Tech Data Corporation, Reseller Price Catalog and Database.
- [3] Net Integration Technologies Configurator (www.net-itech.com).
- [4] Hewlett Packard Company, ActiveAnswers Tools (www.hp.com), Messaging & Collaboration sizing tool for Exchange Server 2000.
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- [8] Norman Virus Protection (www.norman.com/products_nvc_exchange.shtml)
- [9] MailMarshal Spam Blocker (www.nwtechusa.com/mailmarshal.php)
- [10] "Windows Small Business Server 2003: Out-of-the-box ROI for Small Business", Microsoft Corporation (www.microsoft.com/windowsserver2003/sbs/evaluation/roi/outofboxROI.msp)
- [11] "Taking Care of Small Business", PC Magazine, February 2004, page 120.
- [12] "Windows Small Business Server 2003, Best Practices", Harry Brelsford, SMB Nation Press, ISBN 0-974858-04-8, page 2-16.

Methodology

Pricing & Configuration Information

All prices quoted are for list prices and are current as of February 16, 2004. No attempt is made to address or estimate “street price”.

Microsoft prices are based on the Open Business volume license program and not Full Packaged Product (FPP) prices. This provides a 13% benefit to the Microsoft price point (e.g. \$521 versus \$599 for the standard edition). In practice, most savvy resellers will price product under the Open Business license plan.

For Nitix and the Net Integrator Mark II server, pricing and configuration information is obtained from the Net Integration Technologies web-site and Nitix configurator [3].

For Microsoft Small Business Server 2003, part numbers and configuration information is obtained from the Microsoft Sales Toolkit [1] issued to partners and value added resellers. Pricing information is obtained from the e-commerce site of Tech Data Corporation [2] under the author’s own account.

For the HP Proliant Server, the server was sized using the HP ActiveAnswers Configurator [4] accessible from the HP consumer and partner web-portals. The configurator was used to size a server to support 250 users providing each user with 144MB/user for mailbox, maintenance space and content indexing. Tower configurations were used for both the HP Proliant and Net Integrator Mark II server; both servers are available in a rack-mount chassis.

Equivalency

It is difficult to achieve an apples-to-apples functional/value comparison when one of the products in the comparison is missing key functionality. This is especially true when the missing functionality is tightly bundled with the richer product and no breakout pricing is available. To work around this difficulty, an attempt was made to configure equivalent solutions by adding third party products to the weaker solution to deliver a solution functionally or value equivalent to that of the richer product.

For example, the Nitix operating system includes a NAT firewall and Intelligent Disk Backup (iDB). A server configured with Microsoft Small Business Server Standard Edition would never be deployed without an adequate backup solution, nor connected to the Internet without the protection of a suitable firewall/router. In this case, the Microsoft Small Business Server must be augmented with a tape drive and a firewall to produce a configuration functionally equivalent to the Nitix operating system.

Reasonable choices were made for both tape backup and firewall/router.

A Linksys[6] or Netgear[5] firewall/router provide adequate firewall and VPN support. The firewall used was scaled with each configuration as the number of users increased; this was done to support a larger number of VPN connections. The firewall was not configured in the Microsoft Small Business Server 2003 Premium edition solution because this product includes Microsoft Internet Security and Acceleration Server (ISA) that functions as a NAT firewall/proxy server.

The choice of a Certance[7] Travan tape drive — a low-end solution using a USB 2.0 connection — gives, perhaps, an unfair advantage to Microsoft in these comparisons. In practice, most resellers would configure a DDS/DAT tape drive at double the price for reasons of performance and media format.

For the messaging/collaboration server, the Nitix iDB feature was offset with a HP StorageWorks DLT VS 80 tape drive; standard issue for a Proliant server.

Total Equivalent Cost of Ownership (TECO)

TECO is computed for a two/three year period.

Since Microsoft software assurance covers a two-year period, all software is configured with a two-year software assurance program.

Since in most deployments, a HP Proliant server is normally protected under an extended three-year warranty program, all server hardware is protected under a three year extended warranty program.

Installation Time & Maintenance

Although critical, installation and on-going maintenance/administration time has not been factored into the total cost of ownership.

As discussed under “Function Comparison: General Product Features”, the uniquely small footprint of Nitix and its method of distribution have an extraordinary impact on the time and complexity (read simplicity for Nitix) of installation and disaster recovery.

In an independent study commissioned by Microsoft [10], Lawrence & Associates LLC, in conjunction with dozens Microsoft Partners and participating clients, determined that on average:

- ◆ Installation cost: \$4,561
- ◆ Down-time and training cost: \$1,477
- ◆ Incremental support: meaningful cost data not provided.

Nitix in a Nutshell

Nitix Editions

Nitix has three editions: Small Business (SB), Standard (SE), and Premium (PE).

All editions share the core features and functions of the operating system and ExchangeIT group-ware services and the optional VirusProtect anti-virus service.

Core Server Functions

- ◆ File and Print Server
- ◆ Web Server & Web Caching
- ◆ ExchangeIT group-ware:
 - Email Server Outlook®-Compatible
 - Web-Based Email
 - Calendar and Scheduling
- ◆ Remote Access Server
- ◆ Router/Gateway
- ◆ Firewall
- ◆ Virtual Private Network Server
- ◆ Continuous, automated, unattended backup
- ◆ Two-Minute Disaster Recovery
- ◆ Windows®/Mac®/Linux® Support
- ◆ Content-Filtering/SPAM Blocking
- ◆ Server-Based Anti-Virus (optional component)
- ◆ Directory Services
- ◆ FTP Server
- ◆ MySQL® Database Server
- ◆ LDAP Server
- ◆ Domain Name System (DNS)
- ◆ Dynamic Host Configuration Protocol (DHCP)
- ◆ Redundant Internet Connectivity (supports multiple simultaneous connections to different ISPs).

Anti Virus Protection —VirusProtect

VirusProtect is a powerful and award-winning anti-virus engine that protects Nitix-based mail services from email borne viruses. Nitix's unique software architecture eliminates the need for manual installation; once a purchase has been processed, VirusProtect is automatically enabled.

Edition Differences

The following table lists the differences between the SB, SE and PE editions.

Feature	Edition		
	Small Business (SB)	Standard (SE)	Premium (PE)
Core Functions	Yes	Yes	Yes
ExchangeIT	Yes	Yes	Yes
Disk Drives Supported	2	4 ¹	4 ¹
Intelligent Disk Backup (iDB)	Yes	Yes	Yes
Bundled Basic CALS	5	20	45
Bundled Nitix CALS	5	20	45
Additional Basic CALS	N/A	\$39	\$35
Additional Nitix CALS	\$79	\$69	\$59
Software RAID	No	No	Yes

¹See [11], review performed by PC Magazine.

Nitix CALS

Nitix is licensed on the basis of a client access license (CAL). There are two types of CALs available: basic and Nitix. A basic CAL licenses access to all server functions except ExchangeIT. A Nitix CAL licenses access to all server functions including ExchangeIT.

Unique Features and Benefits**Reliability**

Nitix is a sub-20 MB server operating system that is built on a linux kernel and incorporates autonomic elements making it extremely stable, reliable and secure. It can load and execute without the presence of a hard disk drive.

Footprint

Due to its sub-20 MB memory footprint and unique architecture, the operating system can load and execute without the presence of a hard disk drive.

Recoverability

Nitix's patent-pending backup and real-time recoverability technologies significantly minimize downtime compared to traditional general-purpose operating systems.

Security

Nitix is a secure server operating system that uses autonomic features to protect itself. Nitix is not susceptible to the vast array of viruses and worms, denial of service attacks and benign and belligerent hackers that plague Microsoft Windows and other platforms.

Productivity

Nitix provides tools that simplify deployment, management and administration, and maximize productivity.

Connectivity

Nitix provides an extensible platform for quickly building solutions that keep employees, partners, systems and customers connected.

Affordability

When compared to similar, traditional server operating systems, Nitix offers reduced product licensing, ongoing support and administration costs, providing overall IT savings.

Autonomic Computing**Why Autonomic Computing?**

As quickly as computer technology has advanced, so has the cost and complexity of deploying, managing and maintaining that technology. However, today's economic environment is forcing businesses to demand a real return on technology investments.

To address this paradox, several leading IT vendors are starting to look for ways to manage increasingly complex IT infrastructures so that customers can get back to focusing on the benefits technology brings to their business, rather than the technology itself. While still a mere vision that is thought to be eight to 10 years away, one ideology calls for the development of autonomic computer systems that configure and manage themselves, automatically diagnose and fix their own problems, and figure out how to protect themselves in the future, thereby greatly reducing the cost and complexity of IT infrastructure.

What is Autonomic Computing?

IBM Corporation defines Autonomic Computing as an approach to self-managed computing systems with a minimum of human interference. The term derives from the body's autonomic nervous system, which controls key functions without conscious awareness or involvement.

Autonomic Computing systems are systems which are self-managed (adjust itself according to workload demands), self-healing (detect, diagnose and repair problems), self-configuring (automatically incorporate and configure new components), self-optimizing (performance tuning), and self-protecting (anticipate and defend against security breaches) resulting in ultra-reliable, robust, yet dynamically flexible systems.

The State of Autonomic Computing

The research departments at several organizations, including IBM Autonomic Computing, Microsoft .NET, Sun N1 and HP Adaptive Infrastructure, have just recently started initiatives to focus on autonomic and next generation computing. Net Integration Technologies has been developing and delivering award winning, next generation Autonomic Computing technology since 1997.

Nitix, the World's First Autonomic Server Operating System

Nitix is the first server operating system in the world that satisfies the criteria of an autonomic computing system:

- ◆ Self-managing: Adjusting itself according to workload demands

On a Nitix-powered server, if an administrator changes the configuration of a particular service, Nitix automatically updates affected subsystems. For example, firewall and DNS parameters are automatically (and correctly) updated, when an administrator makes his web server public. Net Intelligence is the unique technology that enables Nitix's self-managing capabilities.

◆ Self-healing: Detecting, diagnosing and repairing problems

Nitix is able to detect and correct problems that on other servers would result in downtime, and then human intervention to remedy. Net Intelligence is the unique technology that enables Nitix's self-healing capabilities.

◆ Self-configuring: Automatically incorporating and configuring new components

When setting up a new Nitix-powered server, Nitix automatically detects and configures standard networking parameters. When adding new users to Nitix-powered server, Nitix automatically creates a personal directory, an email account and a personal web page for each user. By automating many standard server configuration tasks, Nitix-powered servers allow its partner channel to focus on customizations that are specific to the unique business requirements of their end-user customers. Net Intelligence is the unique technology that enables Nitix's self-configuring capabilities.

◆ Self-protecting: Anticipating and defending against security breaches

Based on the requirements of the end-user customer and their local-area network, Nitix-powered servers automatically erect and configure secure firewalls. Nitix-powered servers also have the ability to detect and evade malicious external attacks. If a foreign program should attempt to modify the Nitix operating system, Nitix will automatically write-over that attempted change.

Net Intelligence

Net Intelligence is the propriety technology that delivers autonomic computing to the Nitix operating system.

Net Intelligence enables Nitix's capabilities for:

- ◆ Self-configuring.
- ◆ Self-healing.
- ◆ Self-managing.
- ◆ Self-protecting.

Microsoft Small Business Server has no equivalent capability.

Function Comparison

A functional comparison is made between Nitix and Microsoft Small Business Server Standard and Premium editions.

General Product Features

Features	Product:	Nitix	Small Business Server	
	Edition:	Any	Standard	Premium
Media Distribution		<ul style="list-style-type: none"> ◆ 1 CD, or ◆ 1 non-volatile solid state disk (64MB) 	<ul style="list-style-type: none"> ◆ 1 DVD, and ◆ 6 CDs <ul style="list-style-type: none"> • 3 for Small Business Server 2003 • 1 for Outlook 2003 Standard • 1 for FrontPage 2003 • 1 for Service Packs <p>System can be installed from DVD or CD depending on the server's configuration.</p>	
Installation		Minutes	4 to 8 hours	4 to 8 hours
Disaster Recovery		2 minutes	min. 4 hours	min. 4 hours
Operating system memory foot-print		20MB	> 2 GB	
Operating System		Nitix	Windows 2003	
Disk Space Required For Installation		None	5GB	5GB

Comment

Operating system size — Nitix is clearly revolutionary in packing so much functionality into such a small footprint. This impacts everything from distribution (media cost and bill of materials complexity), installation (time and complexity), disaster recovery (time and complexity).

Nitix is effectively delivered ready-to-run with no assembly required.

When Nitix is delivered on a non-volatile solid state disk, installation takes essentially no time. The operating system is live the moment the computer is powered-on. What immediately follows is the autonomic function of the operating system scanning its network environment including Internet connections, and self-configuring to make the system live and operating. This self-configuring phase takes a matter of minutes. The installer then adds users and user teams, and provides relatively straightforward customization to the system's setup through a web browser or the front panel of the server (Net Integrator models).

By comparison, a reasonable installation of Microsoft Small Business Server takes two hours just to complete the installation of the software for the operating system software and core services (Exchange server, ISA, SQLServer). Microsoft claims that installation of OEM licenses distributed pre-installed with a server takes just 15 minutes. However, these installations presume that the disk drive can be partitioned into one logical drive. In practice, this is rarely recommended and the automatic installation requires manual intervention by a knowledgeable technician.

Once installed, Microsoft Small Business Server then requires the installer to spend another 2 to 4 hours configuring the various services (Exchange, ISA, SQLServer, SharedFax, user accounts, printers etc) including the setup of each desktop computer that will participate in the network domain created by the Microsoft Small Business Server.

The same disparity exists with disaster recovery. Rebuilding a Nitix based server with a solid-state disk takes a matter of minutes plus the reload of the hard-drive data from the iDB backup; the latter is optimally efficient since it is a disk to disk restore. Rebuilding a Microsoft Small Business Server can take a minimum of four hours to rebuild the operating system plus the restoration of data store from a tape backup.

Core Services

Features	Product:	Nitix	Small Business Server	
	Edition:	Any	Standard	Premium
Group Ware		ExchangeIT		Exchange 2003
SharePoint Services			✓	✓
Shared Fax Server			✓	✓
Shadow Volume Copy			✓	✓
Database		MySQL	None	SQLServer 2000
Firewall		✓	None	ISA Server 2000
File & Print Server		✓	✓	✓
Web Server & Caching		✓	✓	✓
Remote Access Server		✓	✓	✓
Router/Gateway		✓	✓	✓
VPN Server		✓	✓	✓
Content Filtering		✓	None	None
SPAM Blocking		✓	None	None
Directory Services		✓	✓	✓
FTP		✓	✓	✓
LDAP		✓	✓	✓
DHCP		✓	✓	✓
DNS		✓	✓	✓
Redundant Internet Connectivity		✓	None	None
Virus Detection		Optional	None	None

Comment

Both Nitix and Microsoft Small Business Server deliver an equivalent core of features and functionality, but with the following key distinctions:

- ◆ Group-ware — Microsoft Outlook cannot tell the difference between Nitix/ExchangeIT and Microsoft Exchange for all commonly used messaging and collaboration functions.

- ◆ Firewall — Nitix provides a self-configuring firewall that has proven impregnable to test attacks by Bell Canada security experts and others. Microsoft’s software firewall offering is only available in the Premium version.
- ◆ Virus detection — an economical optional component of Nitix; requires a third party add-on to Microsoft Exchange Server (e.g. Norman[8]), that might be outside the budget of most small businesses.
- ◆ Content filtering and Spam blocking — a standard option with Nitix; requires a third part add-on to Microsoft Small Business Server/Exchange (e.g. MailMarshall[9]) that might be outside the budget of most small businesses.
- ◆ Redundant Internet Connectivity — Nitix supports dual, simultaneously active Internet connections to the same or different ISP and optimizes their utilization.
- ◆ Microsoft’s SharePoint Services — Nitix has no equivalent offering although third party products and reseller value-add can offset this weakness.
- ◆ Microsoft’s Shared Fax server — a limited value?
- ◆ Databases —Microsoft SQLServer in the Premium edition of Microsoft’s product is preferable to the MySQL product installed with in Nitix. However, the following should be noted:
 - In small business environments, Microsoft Access is typically the database application platform of choice. This product can provide a shared/multi-user database solution without the need for a dedicated back-end database server/engine. Microsoft Access can be connected to MySQL just as easily as it can be connected to Microsoft SQLServer.
 - In five user environments, Microsoft’s MSDE is an effective database engine for business applications that must talk to a SQLServer database (e.g. Microsoft Small Business Manager accounting system).
 - In the absence of a qualified database administrator or the budget to retain one for periodic support, MSDE would be the preferred choice for small businesses over the full edition of Microsoft SQLServer delivered with the Microsoft Small Business Server Premium edition.

Backup & Recovery

Features	Product:	Nitix	Small Business Server	
	Edition:	Any	Standard	Premium
Tape Drive		Not Necessary	Additional Hardware Required	
Continuous		✓	✗	✗
Automated		✓	Must Be Scheduled or Manually Started	
Unattended		✓	Must Load Tape Manually w/o AutoLoader	

Comment

Intelligent Disk Backup (iDB) — Nitix has it!

iDB, coupled with a journaling file system, eliminates the need for a tape backup device and provides an optimally efficient, automated, continuous and unattended data protection mechanism.

The closest Microsoft offering is Shadow Volume Copy — neither well-documented nor easy to implement for a novice installer; and a tape backup device is still required to provide off-site security and disaster recovery.

Software License Comparison

NITI recently released of Nitix as a separately configurable and licensed product that can be installed on both Net Integration Technologies' own Net Integrator series of servers and Sun Fire™ V65x. Certification is pending for IBM, HP and Dell platforms.

A competitive comparison can now be made between two products that claim to deliver the best solution suite for small business independent of server platform.

Nitix Small Business Comparison — 5 User Installation

An equivalent solution comparison has been made for a five user installation between Nitix Small Business Edition (SB) and Microsoft Small Business Server Standard and Premium Editions. All products come bundled with five client access licenses.

Product Edition	Nitix	Microsoft SBS 2003	
	Small Business (SB)	Standard	Premium
Equivalent Cost of Ownership			
Software Licenses	\$598	\$521	\$1,298
Software Assurance (2 years)	\$199	\$260	\$649
Firewall (Linksys BEFSX41)	\$0	\$80	\$0
Tape Backup (Certance Travan Tape, 40GB)	\$0	\$470	\$470
Total Equivalent Cost Ownership (TECO)	\$797	\$1,331	\$2,417
Net Equivalent Cost Per User (NECU)	\$159	\$266	\$483
Normalized Net Equivalent Cost Per User (NNECU)	100%	167%	303%
Licensing			
Base License	\$598	\$521	\$1,298
Number of CALS Included	5	5	5
Additional CALS (Quantity)	0	0	0
Additional CALS (Unit Price)	\$79	\$92	\$92
Total Cost Software Licenses	\$598	\$521	\$1,298
Net Cost Per User	\$119.60	\$104.20	\$259.60
Software Assurance			
First Year Free	YES	NO	NO
Premium (1 year)	\$199		
Premium (2 years)		\$260	\$649
Premium CALS (2 years)	\$0	\$46	\$46
Total Cost for 2 Years	\$199	\$260	\$649

Nitix Standard Comparison — 20 User Installation

An equivalent solution comparison has been made for a twenty user installation between Nitix Standard Edition (SE) and Microsoft Small Business Server Standard and Premium Editions. The Nitix SE edition is bundled with twenty client access licenses. The Microsoft products are delivered by default with five client access licenses and this comparison configures an additional fifteen client access licenses.

The Linksys firewall/router has been replaced by a Netgear product that supports up to 8 simultaneous VPN connections and approaches the level of functionality offered by the Nitix platform.

Product Edition	Nitix	Microsoft SBS 2003	
	Standard (SE)	Standard	Premium
Equivalent Cost of Ownership			
Software License	\$1,499	\$1,901	\$2,678
Software Assurance (2 years)	\$359	\$950	\$1,339
Firewall (Netgear FVS318)	\$0	\$186	\$0
Tape Backup (Certance Travan Tape, 40GB)	\$0	\$470	\$470
Total Equivalent Cost Ownership (TECO)	\$1,858	\$3,507	\$4,487
Net Equivalent Cost Per User (NECU)	\$93	\$175	\$224
Normalized Net Equivalent Cost Per User (NNECO)	100%	189%	241%
Licensing			
Base License	\$1,499	\$521	\$1,298
Number of CALS Included	20	5	5
Additional CALS (Quantity)	0	15	15
Additional CALS (Unit Price)	\$69	\$92	\$92
Total Cost Software Licenses	\$1,499	\$1,901	\$2,678
Net Cost Per User	\$75	\$104	\$260
Software Assurance			
First Year Free	YES	NO	NO
Premium (1 year)	\$359		
Premium (2 years)		\$260	\$649
Premium CALS (2 years)	\$0	\$46	\$46
Total Cost for 2 Years	\$359	\$950	\$1,339

Nitix Premium Comparison — 45 User Installation

An equivalent solution comparison has been made for a forty-five user installation between Nitix Premium Edition (PE) and Microsoft Small Business Server Standard and Premium Editions. The Nitix PE edition is bundled with forty-five client access licenses. The Microsoft products are delivered by default with five client access licenses and this comparison configures an additional forty client access licenses.

The Netgear router has been upgraded to a product that supports up to 100 simultaneous VPN connections and approaches the level of functionality offered by the Nitix platform.

Product Edition	Nitix	Microsoft SBS 2003	
	Premium (PE)	Standard	Premium
Equivalent Cost of Ownership			
Software License	\$2,999	\$4,203	\$4,980
Software Assurance (2 years)	\$629	\$2,100	\$2,489
Firewall (Netgear FVL328)	\$0	\$418	\$0
Tape Backup (Certance Travan Tape, 40GB)	\$0	\$470	\$470
Total Equivalent Cost Ownership (TECO)	\$3,628	\$7,191	\$7,939
Net Equivalent Cost Per User (NECU)	\$81	\$160	\$176
Normalized Net Equivalent Cost Per User	100%	198%	219%
Licensing			
Base License	\$2,999	\$521	\$1,298
Number of CALS Included	45	5	5
Additional CALS (Quantity)	0	40	40
Additional CALS (Unit Price)	\$59	\$92	\$92
Total Cost Software Licenses	\$2,999	\$4,203	\$4,980
Net Cost Per User	\$67	\$104	\$260
Software Assurance			
First Year Free	YES	NO	NO
Premium (1 year)	\$629		
Premium (2 years)		\$260	\$649
Premium CALS (2 years)	\$0	\$46	\$46
Total Cost for 2 Years	\$629	\$2,100	\$2,489

Summary

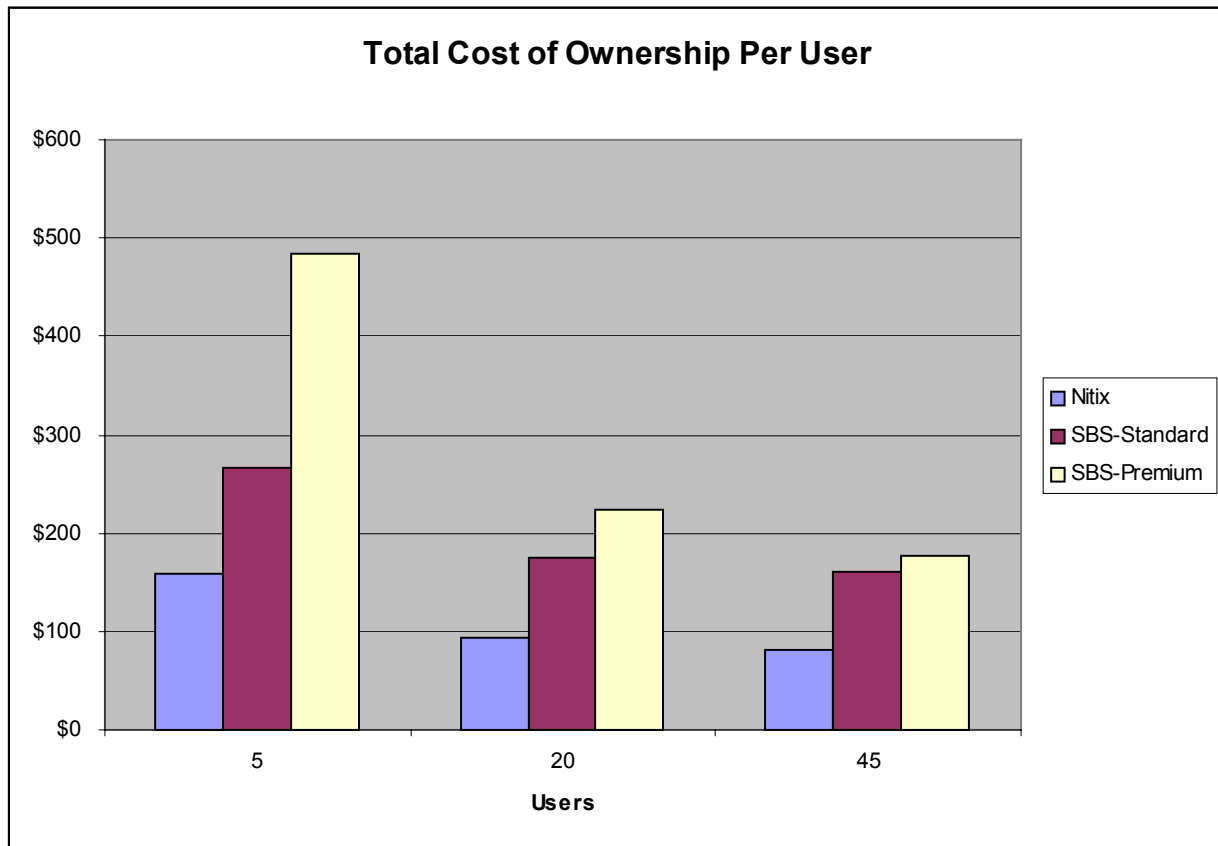
There are three cost components to the acquisition of any software product:

- ◆ The cost of the initial software license.
- ◆ The cost of maintaining the software — obtaining interim releases, patches and enhancement releases.
- ◆ The cost of software installation, configuration and ongoing technical support.

Both Nitix and Microsoft Small Business Server are licensed on the basis of a central software license and a client access license. Both companies provide interim and enhancement releases through software assurance programs

Software License Cost

The chart below clearly illustrates the difference in total cost of ownership per user for Nitix and Microsoft Small Business Server Standard and Premium edition for equivalent solutions for 5, 20



and 45 users.

Nitix offers similar or better functionality at a much lower cost of ownership. At the closest point of comparison, 45 users, the Microsoft solution still costs a premium of 98% (Standard edition) and 119% (Premium edition) over the cost of Nitix.

It should be noted that Microsoft Small Business Server supports a maximum client count of 75 users. Beyond this point, each server software component (e.g. Windows, Exchange, SQLServer, ISA

etc.) is licensed separately, with separate client access licenses for each. Upgrade fees apply to Microsoft Small Business Server installations that grow beyond the limit of 75 clients.

Nitix has no such limitation.

Software Assurance

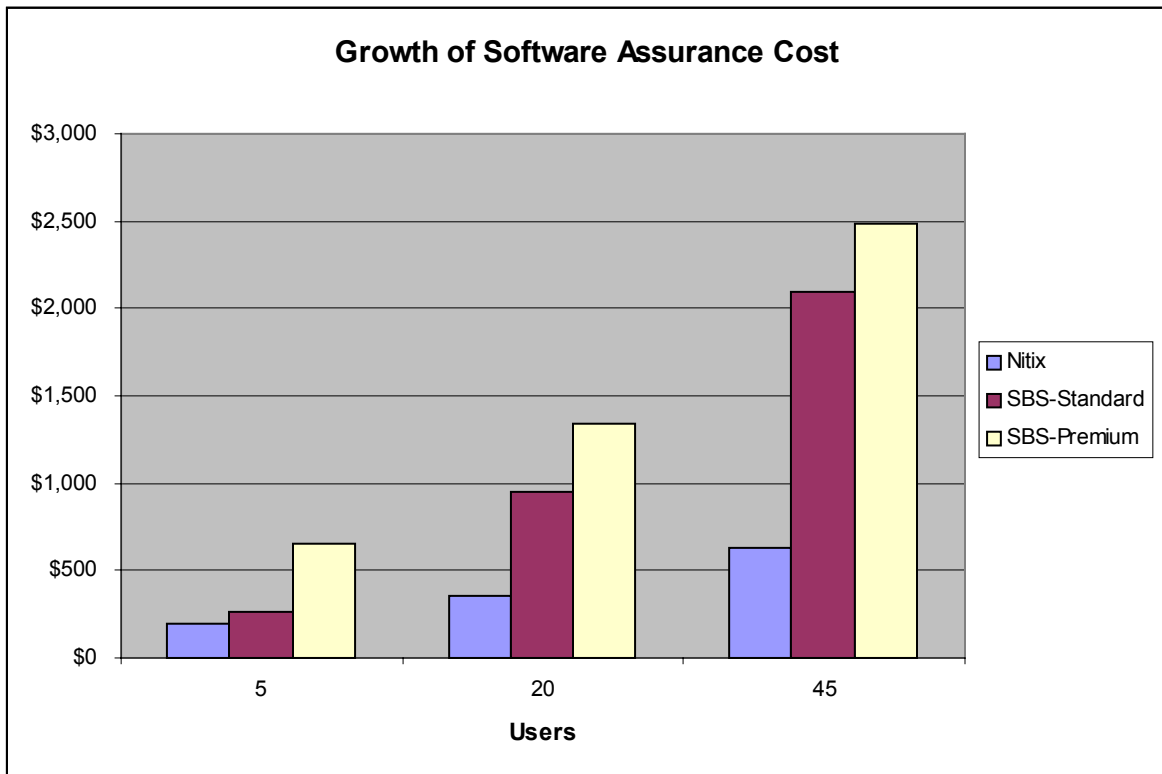
A critical component to the cost of owning any software product is the cost of maintaining the software, that is receiving incremental releases, patches and enhancement releases.

Both Net Integration Technologies and Microsoft charge for their support and enhancement programs through “Software Assurance” programs.

The Microsoft program assesses a fee of 25% per year for server products against both the server license and the client access license.

The software assurance program for Nitix only assesses a fee against edition licensed and no charge against additional client access licenses.

The chart below illustrates the effect of this different pricing model on the cost of software assurance as the number of licensed users is increased.



Nitix offers better value at lower cost and provides additional discounts for future years and when software assurance is purchased at the time of the license. Microsoft requires that software assurance is purchased within 90 days of the original license purchase and must be purchased in a two-year contract. Microsoft does not offer discounts for future years or for purchasing software assurance with the original license.

Installation & Technical Support

The cost of installation and ongoing partner support have not been included in this document because of the lack of data and the variation of partner fees. Note, partner technical support is not included in the software assurance fees paid to the publisher of the software; these costs are in addition to software assurance.

The simplicity of the installation of Nitix versus Microsoft Small Business Server (minutes versus hours) and the autonomic properties of Nitix indicate that Nitix is the better value for both installation and partner support fees.

Assuming that a complete installation of Nitix can be achieved for a 5 user installation within one hour, and the range of experience for the installation of Microsoft Small Business Server spans 4 to 8 hours, then Nitix has the edge by a ratio of 4:1 to 8:1 in terms of installation cost.

Message/Collaboration Server Comparison

An equivalent solution comparison has been made for a dedicated messaging/collaboration server sized to support 250 users.

One server was configured with Nitix Premium Edition running on a Net Integrator Mark II server.

Another server was configured using Hewlett Packard's ActiveLink configuration tool for a messaging/collaboration server to support 250 users. This server configurator recommended a solution based on a HP ProLiant DL350 server. The server runs Microsoft Windows 2003 and Microsoft Exchange 2003.

Total Equivalent Cost

	Net Integration Technologies	Microsoft/HP
Server Hardware	\$3,986	\$5,768
Software Licenses	\$24,094	\$31,417
Software Assurance (2 years)	\$629	\$8,959
Total Equivalent Cost	\$28,709	\$46,144
Net Equivalent Cost Per User	\$114.84	\$184.58
Normalized Net Equivalent Cost Per User	100%	161%

Server Comparison

	Net Integration Technologies	Hewlett Packard
Server	Net Integrator Mark II	ProLiant ML350 G3
Base system	Athlon XP 3000+	Intel Xeon 3.06GHz/533 MHz-512KB
Memory	1GB	1GB
Disk Drives	3 x 250GB	4 x 36.4 GB Pluggable U320 SCSI 15K
RAID	1	1 (2 mirrored pairs)
IDB Drive	Yes	Not available
Tape Drive	Not necessary	HP StorageWorks DLT VS 80
Redundant GB NIC	Yes	Yes

Server Cost

	Net Integration Technologies	Hewlett Packard
Server	Net Integrator Mark II	ProLiant ML350 G3
Server Cost	\$2,999	\$3,780
DLT Tape		\$40
250MB iDB Cartridge	\$429	
Hardware warranty extension (2 years)	\$359	
Redundant GigaBit NIC	\$199	
HP StorageWorks DLT VS 80		\$1,349
HP CarePAQ (162675-002)		\$599
Total Server Cost	\$3,986	\$5,768

Software License Cost

	Net Integration Technologies	Microsoft
Product:	Nitix	Microsoft Windows 2003/ Exchange 2003
Edition:	Premium (PE)	Standard: Open Business Licensing
Operating System License	\$2,999	\$718
Exchange/ExchangeIT Software	\$0	\$699
Number of bundled CALS	45	0
Additional CALS (Quantity)	205	250
Additional CALS (Unit Price)	\$59	\$67
SPAM Filtering (Unit Price)	\$0	\$17 MailMarshall
Virus Scan (Unit Price)	\$36	\$36 Norman (estimated)
Total Software License Cost	\$24,094	\$31,417
Net Cost Per User	\$96.38	\$125.67

In configuring the software, it is assumed that the Microsoft Windows 2003 license installed on the server is covered by the client access licenses purchased for the network's primary domain controller.

Software Assurance

	Net Integration Technologies	Microsoft/HP
Product:	Nitix	Microsoft Windows 2003/ Exchange 2003
Edition:	Premium (PE)	Standard: Open Business Licensing
First Year Free	YES	NO
Annual Premium for 2 years (OS)	\$629	\$359
Annual Premium for 2 years (Exchange)	\$0	\$350
Annual CALS Premium	\$0	\$33
Total Software Assurance	\$629	\$8,959
Net Cost Per User	\$3	\$36

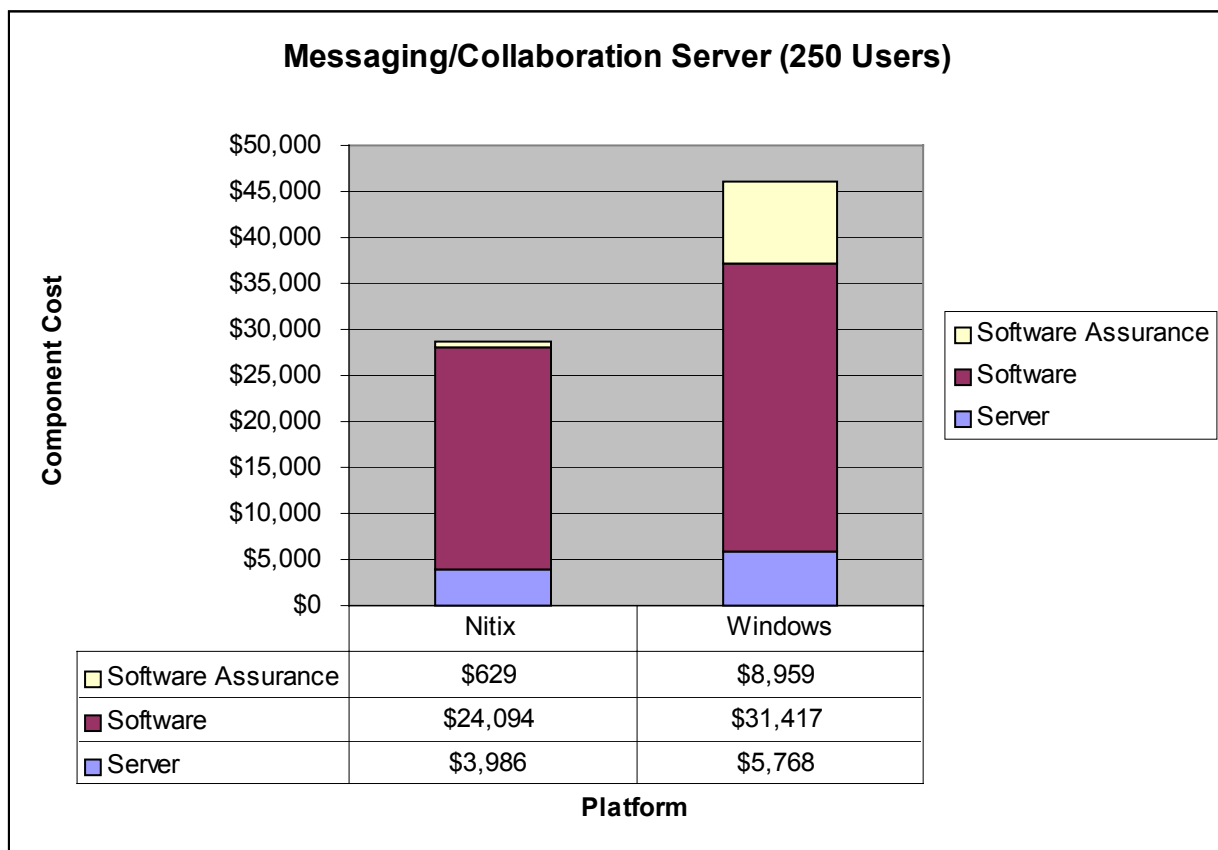
Summary

There are four cost components to the acquisition of a dedicated server:

- ◆ The cost of the initial software license.
- ◆ The cost of maintaining the software — software assurance cost.
- ◆ The cost of the server.
- ◆ The cost of server and software installation, configuration and ongoing technical support.

In each of the first three categories, the Nitix based solution delivers the better value.

- ◆ The Microsoft solution costs 30% more for software licenses than the Nitix solution.
- ◆ The cost of software assurance for Nitix is just 7% of the cost for software assurance for Microsoft Windows 2003, Exchange 2003 and the Exchange client access licenses.
- ◆ The HP Proliant server costs 45% more than the Net Integrator Mark II. 77% of the additional cost is due to the DLT tape drive, an unnecessary component in the Net Integrator Mark II because of the Intelligent Disk Backup.



Installation, configuration and partner support costs are not factored into the cost of ownership since meaningful data is not available. The time involved would vary depending on the environment in which the server is deployed. Labor costs would be impacted by the variation in partner fees and/or the availability of certified/trained professionals on-staff.

Conclusion

This document presents:

- ◆ A functional comparison between Nitix and Microsoft Small Business Server.
- ◆ A total cost of ownership analysis for equivalent solutions for a business suite configuration — Nitix versus Microsoft Small Business Server Standard and Premium editions.
- ◆ A total cost of ownership analysis for a single mission messaging/collaboration server sized to support 250 users — Nitix/NetIntegration Mark II versus Microsoft/HP Proliant DL 350.

The total cost of ownership calculation excludes installation and maintenance costs. Although, a critical component in any TCO analysis, hard data for a meaningful comparison are not at hand.

Function Comparison

Nitix is equivalent or better than Microsoft's products in all areas except two:

- ◆ Share Point Services.
- ◆ SQLServer database.

Both components could mitigate the additional cost of a Microsoft solution.

Share Point Services delivers intranet/extranet browser based collaboration, document management, and the foundation for business portals and dashboards through the development of custom WebParts. The latter requires Visual Studio .Net and a .Net programmer.

SQLServer is in a class by itself with respect to database server technology. At this point MySQL cannot be compared in terms of performance and overall richness of the tools and technology (triggers, stored procedures, SQLAgent, security model, distributed queries, replication, DTS etc). MySQL version 4.0 and version 5.0 (in development) will address some of these functional shortcomings.

Currently, if you have to have SQLServer there is no substitute. But, as discussed in the commentary, for most small businesses SQLServer will be a problem because of the lack of trained DBAs on-hand to correctly install and maintain the product. Microsoft SQLServer Desktop Edition (MSDE) running on a client workstation and Microsoft Access, either as its own client/server, or in conjunction with a MySQL server or MSDE are viable, more cost-effective prudent and easily managed alternatives.

Cost Comparison

In every cost category covered — software licensing, software assurance, server platform — the Nitix solution has a significantly lower total equivalent cost of ownership than the corresponding Microsoft based solution.

At the points of closest comparison:

- ◆ Software Licenses — Microsoft was 98% (Standard Edition) and 119% (Premium Edition) more expensive than the equivalent Nitix solution.
- ◆ Software Assurance — Microsoft was 31% (Standard Edition) and 226% (Premium Edition) more expensive than the equivalent Nitix solution.
- ◆ Server — HP was 45% more expensive than a Net Integrator Mark II, 77% of which was due to the lack of an Intelligent Disk Backup on the HP platform.

Commentary

Microsoft Small Business Server 2003 is for its part an excellent package of robust and comprehensive server-class computing services.

The product's core components — Microsoft Windows 2003, Exchange 2003, SQLServer 2000, and ISA 2000, coupled with the new Share Point Services — all lay just claim to being best-of-breed in their functional domain. In most businesses, each of these services is deployed on its own dedicated server and requires well-trained, usually certified professionals, for installation and administration.

The fact that Microsoft has merged all of these components into one system and managed to get them to install without a cadre of certified professionals on hand is no small feat. Microsoft has also created special wizards, unique to the Small Business Server product, for most of the complicated configuration tasks.

However, the following in general are true:

- ◆ Rarely does an installation complete without errors that require consultation with a trained or certified professional or a Microsoft technical support incident to resolve.
- ◆ Care must be taken to correctly size and configure a server to simultaneously run all of this soft-iron — 1GB of memory and a dual processor motherboard is typically the minimum practical server configuration [12].
- ◆ None of the special wizards approach the autonomic capabilities of Nitix, and Small Business Server has none of the self-healing capabilities of Nitix.
- ◆ When something breaks in Microsoft Small Business Server, either a trained or certified professional or a Microsoft technical support incident, at \$250 per incident, is required to resolve the problem. To use a phrase, there are no user serviceable parts inside.

In contrast, Nitix is delivered ready-to-run with no assembly required. This cliché is reality for the Nitix product, a label that it can wear proudly as a badge of honor.

IT experts can expound upon the meaning of autonomic computing and show exuberance at the profound impact this has when correctly packaged into a commercial product. But, autonomic computing is meaningless techno-babble to the small business owner.

For the small business owner, autonomic computing reduces to two simple ideas — “ready-to-run” and “no assembly required”.

These ideas are readily and immediately understood. They convey an assurance that the business owner's investment will deliver as promised, meet or exceed expectations and provide relatively trouble-free operation from the date of delivery. They convey a promise that the system will require nothing but minimal or routine support from the selling partner. They imply an expectation that the system will not require the business owner to dabble in things mystical or require an IT guru to be on-call ready to respond at a moments notice.

A Nitix system excels in this assurance, promise and expectation, as competing products can only aspire to do; be they Microsoft Windows or other Linux derivatives.

For the applied technologist you can add “delivery on demand” to the two concepts of “ready-to-run” and “no assembly required”.

Nitix packages its autonomic capabilities into an extremely small footprint. This is extraordinary, but the significance is simple. Nitix may be the first operating system of its class with the capability of providing a truly universal platform for all manner of computing devices. In this context universal could mean:

- ◆ Personal devices — smart phone, digital assistant, tablet computer with blue tooth or wire-less communication.
- ◆ Specialized equipment operating under remote command/control and acquiring data to be delivered back to a central point — e.g. home environmental control systems, medical heart monitors, remote sensors in a power plant, on a farm, or in a factory.
- ◆ Desktop and notebook computers.
- ◆ Smart remote office connection devices — e.g. Net Integrator Micro.
- ◆ Small business servers — e.g. Net Integrator Micro and the Mark I, II and III servers.
- ◆ Single mission servers — e.g. the messaging/collaboration server discussed herein.
- ◆ Mission critical and high performance servers — e.g. 64-bit servers and multi-processor servers.

Nitix, because of its small foot-print and autonomic features, has the capability to be “delivered on-demand” to any computing device (via blue-tooth, wire-less, or wired connection) at the push of a button, boot the device, configure to the environment, start services and function!

Try doing that with Windows or any other Linux/Unix operating system.