

Taking Care of Small Business

February 3, 2004

By [Davis D. Janowski](#) and Oliver Kaven

Getting a small-business network up and running can be a daunting task, particularly in terms of choosing the proper components, both hardware and software. In particular, finding the right network operating system is paramount, because it's the backbone on which everything on your network is shared and added.

Your decision requires a firm understanding of what your company's budget, work habits, staffing, and needs will be. You don't want a server OS whose initial and upkeep costs stretch beyond your means, but you also need to make sure your operating system is scalable and provides a path for future growth.

Will you want it to support mobile employees, and to offer extensive remote access or collaboration with business partners? Will you require it to integrate with third-party applications, such as CRM or accounting? And who will install and maintain your system? Will you rely on consultants or in-house IT staff?

A Brief OS Education

Microsoft, Net Integration Technologies, Novell, and SUSE Linux are among the companies that produce operating systems geared for small businesses, and their products are reviewed in our roundup. All offer the same basic functions, which begin with e-mail services.

Though many small businesses still outsource their e-mail to service providers, there are advantages to self-hosting. These include having your own domain and custom e-mail address. But more important from a business perspective, many in-house solutions provide other e-mail-related features such as global address books, maintenance of centralized mailing lists, and group calendaring. Web-based e-mail clients are becoming another common feature for small-business OSs, allowing employees to log on from home or from the road.

Server OSs provide other, more basic network functions as well, such as file and print sharing or sharing of a single Internet connection throughout your business. In addition, office productivity applications run on top of the server OSs. Though many businesses will stick with Microsoft applications, we recently reviewed several alternatives ("[If You Don't Do Windows](#)," November 25, 2003).

Key to maintaining a growing network is having a directory service such as LDAP (Lightweight Directory Access Protocol), Microsoft Active Directory, or NDS (Novell Directory Services). In general, a directory service provides both a directory for your entire network (including hardware and software) and a central location for storing user information (including passwords, privileges, and groups) and security settings.

Other features that are increasingly seen as necessities among business networks of any complexity include database support, remote access for administrators and users, and the ability to host an intranet or Web site if desired. (Most businesses, however, will continue to outsource their Web sites, so they will be easily scalable and someone else will be responsible for uptime.)

Three of the four products in this roundup come bundled with database servers. While Novell Small Business Suite 6.5 has built-in support for three different database products, these must be purchased separately.

The Need for Consultants or VARs

Server OSs have grown fat with features and at the same time more complex, leading many small businesses to hire consultants or value-added resellers (VARs) to help them choose the right OS, install it, and set it up. In fact, 43 percent of small businesses turn to VARs to purchase an OS, says Arjun Mehra, an analyst with AMI-Partners.

While that leaves a large percentage of small businesses buying their networking software and equipment elsewhere, the vast majority of these businesses are still having either consultants or in-house experts install and configure them. We cannot recommend taking the do-it-yourself route with any of the products we review here. Even Microsoft Small Business Server,

with its user-friendly wizard-driven installation, still requires a sound basic understanding of networking, protocols, and security settings. We recommend hiring VARs or consultants to help with the installation and management of any server OS in our roundup, especially if you lack on-staff expertise. Doing so gives you the best chance of having a system and services that are running and secure from the start. The biggest potential pitfall, as with hiring any type of consultant, is finding someone who will complete the work at a reasonable price and within your timeframe. You can also expect to incur some level of ongoing maintenance and support costs.

Finding the experts may be a challenge too, depending on the server OS you choose. Microsoft SBS is the small-business server OS most commonly sold and supported by integrators and VARs. And in metropolitan areas, the number of consultants and VARs selling and supporting SUSE and other Linux products is growing. (At press time, Novell was amid talks to acquire SUSE Linux; what this could mean for the sale and ongoing support of SUSE OS offerings is anyone's guess.)

Cost and Other Considerations

Budget is always an issue, and costs vary significantly from solution to solution. In terms of software cost alone—without considering support or hardware—you can equip a 20-person office for about \$2,000 by purchasing one of the two Linux products. Microsoft SBS comes in at around \$3,000, though several hardware manufacturers, including Dell and HP often run discounted specials on their servers when they are purchased with the OS preinstalled.

The four products reviewed here vary in level of complexity, feature set, and flexibility. The following reviews evaluate each of these areas to help you decide which OS is right for you, based on your company's needs, resources, and expertise.

We asked Ingram Micro (<http://www.ingrammicro.com/>), a leading wholesaler of IT products, sales, marketing, and logistics, for a price proposal for each product in our roundup.

The price was to be based on an office of 20 users, with the following features included: e-mail server, Web-based e-mail client for the e-mail server, file-transfer services/FTP server, print and file serving, firewall and Internet connection sharing, directory service support, remote-access server, Web server, and database server. We've highlighted Ingram Micro's responses throughout this story. (Net Integrator was not included, because Ingram Micro doesn't currently sell it.)

Summary and Conclusions (see below for in depth analysis of the systems compared)

Microsoft Windows Small Business Server (SBS) 2003 presents the most intuitive interface by far among the products in this story. Small-business end users, consultants, in-house IT experts, and VARs responsible for installing and maintaining systems will all appreciate how easy it is to navigate this OS. We also found the Web-based e-mail client Outlook Web Access unparalleled in the number and quality of features offered. And SBS 2003's integration and synchronization features for mobile devices were both impressive and unique.

Using Microsoft's remote-access feature, we felt as if we were sitting at our workplace desktop; there was simply no learning process needed. Such features are handy both for in-house IT managers working from their own workstations within a company and for administrators or VARs that manage systems remotely.

The IT-oriented set will be pleased with the many configuration wizards, which make even the most complex installation and configuration tasks straightforward. Many server hardware manufacturers are offering the system preinstalled—a benefit for VARs, which can just perform minimal customization at their customers' sites.

SBS 2003 is the first server OS that transparently integrates Exchange, without requiring a separate purchase and dedicated configuration. With this product, Microsoft has set the standard for small-business server operating systems.

Net Integration Technologies NITIX Autonomic Linux Server OS earns an honorable mention as an extremely integrated solution that is innovative and secure. This is a good choice for small businesses that want to deploy a comparatively simple infrastructure without ongoing reliance on VARs or highly qualified IT staff for maintenance and management.

Mac OS X Server v10.3

January 28, 2004

By Troy Dreier

- Product: Mac OS X Server v10.3
- Price: 10-client license, \$499 direct; unlimited license, \$999
- Company Info: Apple Computer Inc., www.apple.com

Editor Rating: ●●●●○

Online Extra

More IT directors should know what a capable and affordable solution Mac OS X Server is; unfortunately, we didn't receive a test copy in time for the print version of this story. While its small share of the server market seems to be growing, this is still a minor player, perhaps because many administrators don't realize how seamlessly it works with Windows networks and PCs, or because they're unfamiliar with the Macintosh operating system.

OS X Server is a robust and far-reaching server; it is largely a grouping of open-source utilities bound together, integrated, extended, and given a clear, intuitive graphical user interface. It provides excellent file management, user management, and print, Internet, and mail services for those looking to use it in a small-business setting, besides which it can be administered remotely and via a command line prompt. It's also a capable Web site server, grouping together simple hosting, broadcasting, and streaming controls.

The server includes easy configuration for most basic small-office functions, such as mail protocols, file sharing, and print sharing. We did find a few significant omissions, though, compared with some of the other products in this roundup. Among these is a lack of Outlook integration, which would include calendaring and scheduling tools. In fact, OS X Server lacks centralized group planning tools, like meeting scheduling, instant messaging, and discussion forum capabilities. It also lacks a Web-based portal for users.

While OS X Server has a very friendly graphical user interface, below the surface its heritage to the Linux and BSD platforms is apparent. And it is here, when adapting Linux- and BSD-based applications to the OS X platform, that things become less than simple. In fact, getting most Linux-based applications to work with OS X would mean re-compiling them, a task not many administrators can do by themselves. This means that OS X users will have to rely largely on applications that were developed specifically for OS X.

OS X Server has recently been upgraded to Version 10.3, to match the designation of the Panther desktop operating system. Among the many improvements to OS X Server is the inclusion of Samba 3, bringing smooth file and print services to Windows clients. Living in a Microsoft Windows world, Apple has often extended itself to play nicely with the competition, and OS X Server v10.3 continues that trend, working with Windows' SMB/CIFS file-sharing protocol and providing simple log-on and authentication for Windows users.

OS X Server's low price should make it appeal to any budget-conscious small business. A ten-client license costs \$499, and an unlimited license is \$999. That puts it well below our Editors' Choice winner, Microsoft Windows Small Business Server 2003. Mac OS X Server has also become a more common choice for replacing aging Windows NT servers; administrators who can't see the point of going to the expense and trouble of upgrading to Active Directory are instead turning to OS X Server.

Although the server is relatively easy to set up and manage, some Unix or Linux savvy is necessary in command line configuration. We therefore recommend hiring a knowledgeable consultant or VAR for installation and configuration if you lack a programmer on staff.

What You're Really Getting

OS X Server is open-source without the work, since Apple has taken the best-of-breed open-source applications and made them all work together, extended their functions and abilities in some cases, and then wrapped them in a clear and simple user interface. Version 10.3 shows significant improvements over the already capable 10.2. It has been built on Darwin 7, the current version of the open-source Unix OS Apple uses, which in turn finds its roots in FreeBSD 4.4. The server has been optimized for Apple's latest processor, the G5, which is now also found in the Xserve G5 hardware.

We like that virtual private networking (VPN capability) has been beefed up in this release. Technically, VPNs were a part of Version 10.2--but in an extremely limited way. Apple had simply included an open-source client but hadn't built on it or integrated it with the rest of the applications. As a result, it supported only PPTP and was not easy to configure. But Apple has done VPNs right with 10.3, including a new VPN server that is easy to configure and supports L2TP/IPsec and PPTP. It's

robust enough that each server can support hundreds of clients.

The Server Admin tool, where you'll likely be spending much of your time, has been improved to consolidate more services. Firewall, Mail, Open Directory, and VPN are listed along the left, where you can see at a glance whether they're running or not. Modifying services, adding groups, and working remotely are all simple with the unified interface. Server Admin supports OpenLDAP, DNS, NAP, VPN, QuickTime Streaming Server, NTP, and SNMP.

OS X Server also offers stronger network services and authentication with Open Directory 2 and Kerberos. Open Directory 2 is Apple's centralized directory management protocol, and with the support of Kerberos Key Distribution Center (KDC), users on any platform can use a single sign-on for access to all the services on a network. With OpenLDAP as a base, directory services are built into the OS, and the server is compatible with any open standard directory. OS X Server works with Active Directory as well, but as a client only, so it doesn't have post privileges.

Installation and Management

We ran OS X Server on a G4-based Xserve, Apple's rack-mountable 1U server (the new G5 model was not available in time for this story), in a configuration offering dual 1.33-GHz PowerPC G4 processors, a 60GB ATA storage drive, and memory increased from the base amount of 256MB to the maximum of 1GB. The minimum requirements are much lower, though, and Mac OS X Server can be installed on virtually any G3, G4, or G5 Macintosh, even a lowly eMac, as long as it has 128MB of RAM, 4GB of storage space, and a built-in USB port.

The basic configuration was simple and quickly finished. When we first launched the server, we needed to fill out perhaps half a dozen screens of information, and once that was over we were free to set up the network and application settings. Expect to spend up to an hour configuring a medium-size network, or much less if you're already familiar with OS X Server.

Usually we found that the GUI front end given to the open-source tools worked just as well as a command line prompt (via the Terminal application), but that wasn't always the case. Setting up SquirrelMail, the open-source Web mail tool, requires Unix or Linux knowledge, as no graphical user interface is available to configure the Web mail component. The overall OS X GUI is limited to providing a switch for enabling Web mail globally and giving permissions to access the HTML directory on the server. Using the command line here is necessary simply to get SquirrelMail up and running.

In general, OS X Server provided us with a rich, fully featured experience, with little hassle over setup and none for open-source tool integration. It may not best the range of features available in our Editors' Choice winner, but it certainly earns high marks for ease of use, compatibility, and price. Keep in mind, though, the many collaborative features that OS X Server lacks compared with its competitors, and remember that it's largely limited to using the business software created especially for the Apple Macintosh platform.

Microsoft Windows Small Business Server 2003

February 3, 2004

By Oliver Kaven

- Product: Microsoft Windows Small Business Server 2003
- Price: For 10 users, \$1,088
- Company Info: Microsoft Corp., www.microsoft.com/windowsserver2003/sbs/default.mspx

Editor Rating: ●●●●○

Ingram Micro price quote: Microsoft Windows SBS 2003
Premium Edition with 5 user licenses, \$1,499.
15 additional client licenses, \$1,467.
Total: \$2,966 (including Microsoft SQL Server).

You can tell from the word *go* (or rather *start*) that the latest iteration of Microsoft Windows Small Business Server (SBS) is targeted at companies with little IT expertise. **Microsoft has focused on ease of use and feature integration, making it a viable choice for small businesses with 75 or fewer employees.**

Nevertheless, the wealth of options might be overwhelming for very small offices that need only simple collaboration and e-

mail. These businesses might be better off with the Net Integration or SUSE offering reviewed in this story.

Included in SBS 2003 are several features not available in its predecessor, SBS 2000. The most impressive of these let workers remotely access their office desktops, synchronize their mobile devices, and use a built-in version of Microsoft SharePoint.

What You're Really Getting

Beneath its interface, SBS 2003 is a complex set of different servers, services, and applications. While installation and configuration wizards help achieve a quick setup, the underlying architecture contains many components: The core operating system is driven by Windows Server 2003 including IIS (Internet Information Services); e-mail runs on Exchange Server 2003, and collaborative functions are handled by SharePoint Services. Outlook 2003, Microsoft SQL Server, and FrontPage are also included in the package.

Our only concern—and a minor one—is that even with all the wizards and tremendous improvements in usability, end users might be overwhelmed by the plethora of features. But once SBS 2003 users get a handle on how to navigate the system and its features, they'll find much to boost their productivity.

Let's start with the most basic, most crucial of communications components— e-mail. Outlook has received a complete redesign of its Web access interface. The way Outlook 2003 communicates with its Exchange back-end counterpart has also been improved. Microsoft has introduced technology called *cached mode*, in which the mail folder content is downloaded into a cache on the local computer, freeing the Outlook application from constant server interaction when users read their mail.

Most significant among the groupware changes to SBS are the added remote-access and collaboration capabilities provided by Microsoft SharePoint, an intranet-based collaboration tool. When an end user logs on to the local network's intranet site (created by SharePoint), the software sets up an individual home page for that user, who then has instant access to a variety of collaborative tools such as document archiving, document sharing, and revision management. Project files and presentations can be managed in dedicated workspaces as well.

The Remote Web Workplace feature in SharePoint is an automatically created Web portal that provides remote access to the end user's office PC (including applications such as e-mail) and to company intranet Web pages. When the user chooses to log on to the desktop remotely, the system creates a Terminal Services connection within Internet Explorer. Since the process utilizes an ActiveX control, there is no need for a locally installed Terminal Services client application. We found this connection method extremely convenient, providing end users and administrators with the exact look and feel of their office desktops.

Other impressive features in SBS 2003 include mobile connectivity to Windows Mobile 2003–based devices, application distribution, and various interface redesigns. (For more on [Mobile 2003](#), see First Looks, December 30.)

Installation and Management

While the SBS 2003 system installation is comparatively easy, we still recommend that you consult a knowledgeable IT administrator to ensure proper setup, even if you purchase your server through a system vendor and receive it preinstalled.

Those already familiar with setting up SBS will recognize the new To Do List page as the first significant change in the latest version of the product. This page, which offers a compilation of wizards, appears after the initial installation is complete and the administration console is launched. It guides whoever is setting up SBS 2003 through all the necessary steps of server installation and configuration.

The E-mail and Internet Connection Wizard walks administrators through various network topologies, which can also be found on the setup poster that ships with the OS.

After setting up e-mail and Internet connections, the administrator can decide which services to make available to users from the Internet. The choices include OWA (Outlook Web Access), SharePoint services, and the new Remote Web Workplace, to name just a few. Although Microsoft Exchange does not include spam filtering, administrators can configure the server to strip certain file types from incoming e-mail.

Adding users to your network is another process that has been greatly improved, with four predefined templates included— user, mobile user, power user, and administrator. Additional templates can be created if necessary. Use of these templates

largely automates the configuration of security and rights settings, remote-access settings, and automated application installation (this last feature lets administrators deploy such programs as Outlook or Internet Explorer directly to client workstations over the network).

We were pleasantly surprised to see SBS 2003 arrive complete with a backup strategy as part of the initial To Do List. Though we do not recommend backing up to a share on the same hard drive—as SBS 2003 is configured by default—some backup is still better than none. We suggest that your organization invest in a dedicated drive for backup, or even better, a tape solution that allows data storage off-site.

Another administrative component unparalleled in this roundup is monitoring and reporting. Performance and usage reports that highlight critical failures can be sent automatically to the administrator (or a designee) via e-mail or viewed on the server, including the Remote Web Workplace (just in case your Exchange server is the failing component). These reports, however, demand a higher level of IT expertise to decipher.

Without question, Microsoft Windows Small Business Server 2003 presents the greatest breadth of features. The only real question is whether you will need them all. **Regardless, if you want a system offering all the features to be found on any enterprise network and an upgrade path that will accompany your own business's growth, then SBS 2003 is the right choice for you.**

Net Integration Technologies NITIX Autonomic Linux Server OS

February 3, 2004

By Oliver Kaven

- Product: Net Integration Technologies NITIX Autonomic Linux Server OS
- Price: For 25 users, \$1,999
- Company Info: Net Integration Technologies Inc., www.net-itech.com

Editor Rating: ●●●○○

Net integration price quote: NITIX Autonomic Linux Server OS.
Total: \$1,999 for 25 users. (including MySQL database server).

Net Integration Technologies awed us in 2002 with its Net Integrator Mark 1 server appliance (one of our Best of the Year products, January 2003), and this small company awes us once again. Its newest concept is innovative: a complete server OS on a chip. You plug it into the IDE slot of your server, and you're ready to go. Still, only an experienced IT administrator should handle installation. By the time you read this, NITIX should also be available on CD, with all the same features found on the chip version.

The chip must contain an amazingly clean bit of code; it's all of 16MB in size. By contrast, Microsoft's SBS 2003 requires 4 *gigabytes* of hard drive space. But therein lie both the beauty and the catch of NITIX. It is a good fit only for companies that are interested in a very simple, highly automated system and want to spend little time thinking about backup, security, and IT in general. If you're looking for a system that integrates complex databases or third-party CRM solutions, this is not for you.

Key Features

Our version of NITIX was customized to run on a Sun Fire V65x.

NITIX is essentially a very stripped-down and hardened version of Linux. The OS can function as your core infrastructure server, delivering file sharing, e-mail (including Web mail), a Web server, an FTP server, and a DNS server. Net Integration provides free dynamic DNS listings for customers, so you can host your own domain even if your ISP provides dynamic IP addressing only. File sharing services are available via NFS (Network File System) and SMB (Server Message Block), ensuring compatibility with attached Linux/Unix and Windows clients.

Though the integrated Web mail client is easy to use, it lacks much of the sophistication found in SUSE's Web interface and doesn't come close to the quality of Microsoft Outlook Web Access. Aside from access to your e-mail, the Web mail interface is limited to fairly simple contact management and calendaring functions.

NITIX provides little in the way of collaborative options, so if you rely heavily on features such as group scheduling, shared contact management, and task scheduling, especially for remote users, you'll need to install Net Integration's Exchange! software. This comes bundled with the OS but must be installed separately, as does the client side of the application. Exchange! enables the collaborative features found in Microsoft Outlook or the Linux desktop product Ximian Evolution. But NITIX does not contain any file management features or built-in team workspaces or discussion groups.

An aspect of NITIX that particularly intrigues us is the Expression Desktop and Expression server-side module. Using a boot CD-ROM or a USB memory token (for systems that can boot off a USB device), you can load the Expression Desktop even on legacy hardware, without needing to configure hard drives. Using this means of loading the desktop provides that all drive mappings and your e-mail will be instantly available from the Expression server—a simple solution for setting up PCs in places where workers need just a limited set of applications. Key applications included with Expression are Galeon as the default Web browser, OpenOffice 1.1, and the Ximian Evolution e-mail client.

Core OS Management

Installation of the core OS should be very simple for an IT person. Once the NITIX chip is physically installed, on boot-up the server accesses the chip as though it were booting off an ordinary IDE hard drive. The server then copies the OS and all included services to the hard drive and fires up the OS. Core system functions remain on the chip's nonvolatile memory, enabling the OS to provide Internet and firewall services even if your main hard drive dies.

You would usually set up NITIX with two network interfaces: one for your external network and one for your internal network. This enables the OS to handle NAT (Network Address Translation) automatically. Net Intelligence, a discovery and setup system, also works automatically to identify the subnet connected on your LAN and WAN and configure itself with a valid IP address. NITIX will not configure itself with an IP address that already exists on your network; instead, it automatically enables or disables its built-in DHCP server based on its discovery results.

For an IT person experienced with a simple network, configuring NITIX is just as easy as installing it. All configuration tasks are performed using the server's Web interface. In it you handle everything from creating user accounts to managing the system. And we really like the included balloon help.

NITIX configures a gateway and provides a built-in firewall, which allows users to plug the server directly into a cable or DSL modem. While traditional IPsec (IP Security) VPNs require the configuration of users, security settings, and your firewall, NITIX handles all of this internally.

Access and data security were also of paramount importance in the design of the OS. NITIX utilizes two hard drives, storing incremental backups onto the second hard drive every 15 minutes. This procedure is enabled by default and requires no user intervention. Should the first hard drive fail, simply replace it and the system will rebuild itself automatically.

Unique to NITIX is the DoubleVision feature, which provides load balancing across multiple WAN links. If one link fails, the feature reroutes traffic to a working connection.

Web-based services are provided by the integrated Apache Web server, which can serve public content to the Internet and reserve personal Web space for internal users. The Web server, which also provides access to Web-based e-mail, includes SSL 128-bit encryption and support for CGI, Perl, and PHP4 scripts, in case you need to supply dynamic content.

NITIX is an attractive option because of its simplicity, but anyone looking for complex features will need to look elsewhere.

Novell Small Business Suite 6.5

February 3, 2004

By Padraic Boyle

- Product: Novell Small Business Suite 6.5
- Price: Five new users, \$475; five upgrade users, \$252
- Company Info: Novell Inc., www.novell.com

Editor Rating: 

Ingram Micro price quote: Novell Small Business Suite.
Version 6.01, with 5 user licenses, \$1,295 (6.5 pricing unavailable).
15 additional client licenses, \$900.
Pervasive SQL 8 database server for 20 users, \$1,995.
Total: \$4,190.

With its solid base of core OS features and host of bundled applications, Novell Small Business Suite (NSBS) is the product most comparable to Microsoft Windows Small Business Server 2003 in this roundup. We reviewed a closed beta version of NSBS 6.5; this means there will be no significant changes before the software becomes available in the first quarter of this year. Novell had not finalized the product's pricing or release date at press time but said it would come in at considerably less than a similarly configured NSBS 6.01 system and be comparable in price to Microsoft's SBS 2003.

We believe Novell's product will serve small and medium-size businesses well, but only if they have qualified Novell administrators on staff—or if they can afford to hire qualified Novell consultants to install and manage their networks.

In Version 6.5 of the suite, Novell has doubled the number of licenses supported, from 50 in NSBS 6.0 to 100 users now; Microsoft's SBS 2003 supports 75 user licenses. And Novell throws in support for two-node clustering as well as iSCSI support for increased availability and high-speed backup.

Bells and Whistles

For all intents and purposes, NSBS 6.5 is a fully functional version of NetWare, complete with all the standard applications and utilities such as NDS, Apache Web server, Tomcat application server, iFolder, iManage, and iPrint.

One compelling feature of NSBS 6.5, at least for any company that expects rapid growth in employees and network size, is Novell Directory Services (NDS). While it might be overkill for the typical small business—NDS has always been considered ideal for larger installations—the directory service provides a central repository for user information, such as passwords, access-control lists, and groups, and is easily scalable. Moreover, NDS is compatible with most operating systems (including AIX, Linux, Solaris, and Windows 9x, NT, 2000, and XP), allowing for a single point of log-on, file sharing, and application delivery across platforms. By comparison, Microsoft's Active Directory is currently supported only under Windows 2000 and XP, and it does not provide the breadth of features that NDS boasts.

Beyond the strong NDS engine under the hood, NSBS 6.5 provides a host of bundled products comparable to those found in Microsoft's SBS 2003, including Novell GroupWise 6.5, BorderManager 3.8, and ZENworks 4.01. These products are installed by default, but unfortunately they do not have the simple, integrated configuration tools available for Microsoft's SBS; instead, NSBS provides a host of utilities with differing interfaces.

In the past Novell had also bundled third-party applications such as Tobit's FaxWare, but at press time it was considering making them available for download from its Web site instead, to ensure that customers have the current versions.

On the e-mail and calendar collaboration front, GroupWise covers the bases, and it includes a spam blocker that can be configured on a per-user and per-site basis. Much like Microsoft's SBS 2003, GroupWise provides mobile-device synchronization with e-mail, calendaring, and group tasks. Because of Novell's slipping market share, GroupWise—unlike its Microsoft counterpart—has not been such a lightning rod for hackers; thus end users may be less of a target. This is also true of the included Apache Web server: It is less targeted than its Microsoft counterpart.

On the security front, NSBS 6.5 provides excellent protection with BorderManager 3.8. Using a proxy server and caching capabilities, BorderManager provides typical firewall functions such as packet filtering on both inbound and outbound traffic to prevent unauthorized users from accessing the network. A VPN can also be set up for remote access (though it's no simple task), and content filtering is available through third-party products. A wizard helps to create the filter rules, but BorderManager demands an in-depth configuration commitment and is not for the faint of heart. It is best handled by an experienced Novell consultant.

Rounding out the bundled product list is ZENworks 4.0, an application deployment tool. With it you can deploy applications based on specific criteria, such as machine type, space requirements, and processor. Utilizing the NDS Tree and policies, ZENworks can be configured to deploy applications and updates by user, by group, or to an entire office from a single point. And ZENworks provides self-curing for applications; for example, if Microsoft Word has a corrupted DLL, ZENworks will overwrite the file.

Collaborating Remotely

Virtual Office, a Web-based portal, is a key application in NSBS 6.5, because it is the springboard to group and team collaboration, either locally or remotely. It lets users securely access e-mail and calendars, connect to network printers, and install applications. But it also lets them create "virtual teams" on the fly; the members can have access to team calendars, share documents, and chat with other members.

Installation and Cost Concerns

Although most of the installation and configuration of NSBS 6.5 are done using wizards, these steps require a strong knowledge of NDS and networking in general. Moreover, the standard installation process does not install BorderManager or ZENworks. We strongly recommend that a certified Novell VAR or consultant or a qualified IT staff member perform the installation and configuration to make the most of the product's features. Novell encourages the use of VARs by serving up special deals; for example, it plans to offer a Starter Pack of NSBS 6.5 with a free five-user license if you purchase it through a certified VAR.

We recommend you research the Novell-certified VARs and consultants available in your area (www.novell.com/nsbs_starterpack/locator) and seek quotes for ongoing support before purchasing NSBS. If there are few or none in your area, or if potential support costs are beyond your company's means, you would be better off with one of the other solutions reviewed here.

SUSE Linux Openexchange Server 4.1

February 3, 2004

By Oliver Kaven

- Product: SUSE Linux Openexchange Server 4.1
- Price: With 10 groupware licenses, \$1,249
- Company Info: SUSE Inc., www.suse.com

Editor Rating: ●●●●○

Ingram Micro price quote: SUSE Linux Openexchange Server 4.1.
With 10 groupware client licenses, \$1,249.
Additional 10 groupware licenses, \$498.
Total: \$1,747 (including PostgreSQL database server).

If your organization doesn't need the fanciest features of Microsoft Windows Small Business Server 2003, such as mobile-device synchronization or remote desktop access, SUSE Linux Openexchange Server 4.1 is an ideal, cost-effective choice. It can be deployed quickly and requires little in the way of ongoing IT expertise.

Although the Openexchange user and management interfaces are not quite as polished and refined as those in Microsoft's product, they're still impressive, particularly the collaboration features. We found both interfaces easy to navigate, letting users at any expertise level painlessly complete their daily chores.

Openexchange is built on top of SUSE Linux Enterprise Server 8, a stable server OS based on open-source standards; it is practically transparent to users and administrators, unless your environment requires special configuration. Additional included components are the Apache Web server, OpenLDAP, the Postfix mail server, a PostgreSQL database, Samba (for Windows-compatible file sharing), and the Tomcat application server.

E-Mail and Web Serving

SUSE's own impressive e-mail client, with its Web-based interface, is intuitive and can easily serve the needs of most businesses and users. But if you truly want or already depend on Outlook, you can use it via the WebDAV/XML connector application and get full calendaring and conflict management capabilities.

Though the Web-based mail client is not as feature-rich and refined as Microsoft's new Outlook Web Access client (OWA), it meets all of a user's basic needs. For example, the Openexchange client can be used in conjunction with both the contacts

and calendaring components via the portal. The system is also very secure, relying on an SSL (Secure Sockets Layer) connection by default.

The portal offers a variety of other collaborative elements, which can be extensively tailored. In addition to calendaring and contact management, Openexchange offers a discussion forum, a simple project management tool, and a bookmark and knowledge depository.

Many of the collaborative elements take advantage of the integrated PostgreSQL database, which allows linking objects from different parts of the groupware portal. For example, you can create a meeting and link a PDF document from the document management section to it, or link a bookmark to a meeting or contact. Since everything is stored in the PostgreSQL database, users are just creating links and not duplicating documents.

Other useful collaborative elements include the integration of DyCE Instant Messenger for your organization's internal use, as well as a bulletin board.

Installation

Designed as a complete groupware solution targeted at a broad range of customers (companies with anywhere from 5 to 2,500 users), Openexchange cannot be installed on systems already running a SUSE server OS; it is intended to be set up as a dedicated system. Typically, a small business will be starting from scratch and installing a fresh Openexchange server anyway. While Openexchange is comparatively uncomplicated, small-business owners will still probably want a consultant or VAR completing the initial installation and configuration, especially if their businesses need any customization or additional applications installed.

After the initial installation, all configuration and management of groupware-related functions are performed through the dedicated Web-based interface. This lets administrators or consultants remotely configure and maintain the system with ease from their own workstations.

One catch: For specialized setups and the integration of some applications, especially enterprise-level products, an administrator may still need to log on to the server locally and use either the YaST2 management tool or the command line interface. Also, the architecture ties some core networking components directly into the Openexchange administrative platform. DNS and LDAP are good examples of applications that should be changed only through Openexchange—and not edited or manipulated at the SUSE Linux OS level unless you know exactly what you are doing.

Groups and Management

Openexchange lets designated administrators easily create groups that include any system users and any shared folders. The separation of groups and folders might be a little confusing at first, but it actually turns out to be a flexible and handy tool once you're used to the concept, which is similar to the shared folders in Microsoft Outlook. Shared folders are used in the e-mail portion of the system and can be used not only to store mail but as global mailing lists. Users can subscribe to a shared folder, and new mail will appear within the folder in each user's mail tree.

The mail server is fully featured with SMTP (Simple Mail Transport Protocol) authentication, TLS (Transport Layer Security), and the user-configurable SpamAssassin, a spam-filtering solution. POP (Post Office Protocol) and IMAP (Internet Message Access Protocol) are also supported.

From an administrative point of view, Openexchange is easy to manage. All basic configuration is straightforward and explained with balloon help, a feature that is also accessible to end users. Using the Web interface, the administrator also has access to various monitoring items, such as graphs that display historical data over time (up to one year). These are helpful tools for detecting bottlenecks.

If you are a Linux expert, you might want to take advantage of the WebDAV/XML interface documentation for the calendaring, contacts, and document management sections of the system. Companies that already have existing XML-based CRM or project management solutions can transparently exchange and synchronize data with Openexchange.

Our one big complaint is that Openexchange lacks a backup mechanism or even advice on how to choose the right backup plan. You can set up your own bare-bones server backup through the local interface or YaST2, but only if you are an experienced Linux administrator; no guidance is offered.

Having said this, we find that on the whole, SUSE Linux Openexchange Server 4.1 is a well-rounded, affordable product. It provides all the key ingredients needed to get a small business or organization off the ground. And a knowledgeable administrator, VAR, or consultant can add many other applications to the system's basic feature set.

Scorecard: Server Operating Systems for Small Business

February 3, 2004

Our **setup and deployment** rating reflects the complexity and effort required to set up core network functions (DNS, DHCP, e-mail, file and print sharing, and remote access). **Local management** refers to the administrative interface and the ease with which common and ongoing configuration tasks can be completed. **Remote management** involves all mechanisms available to the system administrator for performance maintenance and remote troubleshooting. We base the **user portal** rating on the intuitiveness and design of the Web portal providing such services as e-mail, file sharing, or discussion groups. For **collaboration** we compare all system components that provide team- and group-oriented features. For **remote connectivity** we examine the system's ability to provide remote access to users; this includes traditional VPN tunnel setup, Web- or SSL-based access, and other remote services. **Mobile connectivity** involves the server's ability to provide access to mobile devices or synchronize data with them. **Data security** means file system security, including provisions for secure backup. **Access security** involves security protocols, firewall options, and the remote-access technologies used. Finally, the **overall** rating is not an average but an aggregate based on analysis by PC Magazine Labs staff and reviewers.

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Summary of Features: Server Operating Systems for Small Business

January 13, 2004

Download our Summary of Features table.

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