Cisco Smart Storage

Business Challenges and Goals
Small businesses face exponential growth of electronic information in the form of e-mail, digitized voice mail, customer information, legal agreements, and video feeds from security cameras—to name only a few. Protecting this information is vital for business continuity, as well as to meet various regulatory requirements.

Many businesses still use locally attached external hard disk drives, DVDs, and even old-fashioned tape drives to back up their data. However, the process of backing up data periodically to these media is time consuming, error prone, and subject to human complacency.

Also, these solutions do not scale well with the increasing volume of data and can become extremely tedious. DVDs can get scratched, the quality of tape media degrades over time and hard disk drives can crash.

To overcome these challenges, small businesses today need the following capabilities in a storage system:

- Immediate and continuous data protection and security
- Fast access to data from any place, at any time
- Fast backup of data, either locally or remotely
- Flexibility to support different user platforms, including Windows, Macintosh, and Linux
- Security to prevent unauthorized access to data
- Simplicity of configuration and management
- Storage capacity that grows with the business
- Energy efficiency

Solution Overview
Cisco Smart Storage provides a total solution based on the best practices included in the following network designs:

- Cisco Secure Network Foundation (SNF)
- Cisco Small Business Pro Foundation (SBPF)
- Cisco Smart Business Communication System (SBCS)

For details about each of these designs, see the following URL:

www.cisco.com/go/smartdesigns

Cisco Smart Storage builds upon the Cisco network infrastructure to provide an integrated solution with the following benefits:

- Business continuity—Storage can be backed up and synchronized between locations
- Security—Data integrity and confidentiality are maintained when data is transferred over the network
- High-performance—Large amounts of data can be transferred at high speed without affecting other network applications

Network Attached Storage
A Network Attached Storage (NAS) device is the most efficient and manageable way to centralize, protect and share data.

NAS provides fast access to stored data, making full use of high-speed LAN connectivity, up to 1 gigabit per second. Authorized users, whether local or remote, can access data from anywhere in the network. In addition, deploying NAS devices in different physical locations with synchronization between the devices provides an effective strategy for business continuity.

Both NAS and LAN security features can be used to protect data from unauthorized access. NAS allows all users to share data efficiently, with support for various user platforms, including Windows, Apple Macintosh and Linux.

Cisco NSS 300 Series Smart Storage is a NAS solution that provides the features and capabilities that a small business needs the most (Figure 1).
RAID Options

A NAS solution can provide a single drive volume or can combine two or more hard disk drives into a logical volume. When configured using Redundant Array of Independent Disks (RAID), multiple disk volumes can help protect data and provide high levels of storage availability. Most RAID configurations automatically maintain an exact copy of the business data on another physical disk drive (see Table 1).

Table 1 RAID Levels Supported by Cisco Smart Storage

<table>
<thead>
<tr>
<th>RAID Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAID 0</td>
<td>Striped volume (no data redundancy)</td>
</tr>
<tr>
<td>RAID 1</td>
<td>Mirrored volume (data redundancy)</td>
</tr>
<tr>
<td>RAID 5</td>
<td>Block-level striping with parity data (minimum 3 drives with 1 drive failure allowed)</td>
</tr>
<tr>
<td>RAID 6</td>
<td>Block-level striping with 2 parity data (minimum 4 drives with 2 drive failure allowed)</td>
</tr>
</tbody>
</table>

Storage Infrastructure

Deploying a NAS solution requires some planning because you must choose a RAID configuration that adequately protects your data. Once you choose the RAID level, you can determine whether to implement NAS with one or multiple disks, RAID 5 or 6 is a common implementation for small businesses.

NAS solutions are typically deployed with extra capacity to allow for future growth in storage requirements. The NAS solution should still support expansion or even changes in the RAID implementation to accommodate the evolution of the business environment and rapid growth in information storage requirements.

Cisco NSS 300 Series Smart Storage helps ensure business continuity and growth by supporting multiple RAID configurations (0, 1, 5 and 6) and by providing tools to expand and migrate volumes online without affecting data access.

Security

There are several levels of security that can be used to provide data access only to authorized users. Cisco NSS 300 Series Smart Storage provides local authentication for a simple Windows environment or it can be integrated into an Active Directory (AD) environment. An AD login provides network and network share access with a single login and can support the Macintosh and Linux user platforms in addition to Windows.

Cisco network infrastructure provides added security for data transfer and remote access. Combining the security features of the Cisco NSS 300 Series Smart Storage with the security features of the network helps ensure that data is secure and provides peace of mind for your business.

For example, Cisco SNF recommendations include virtual private network (VPN) capabilities that provide for highly secure remote access for authorized users. Centrally stored information is readily accessible to properly authorized users over a VPN, which helps foster a responsive and dynamic work environment. In addition to enabling highly secure remote access to business data, the Cisco NSS 300 Series Smart Storage provides data encryption to help protect critical data from unauthorized use.

A network edge deployment, often referred to as a demilitarized zone (DMZ), allows public access to specified resources. Cisco NSS 300 Series Smart Storage lets the system administrator adjust the security levels using a simple web browser. This gives an authorized system administrator full remote control over security levels for the Smart Storage device and access to DMZ resources.

Backup and Restore

It is important for every business to protect data against unforeseen events and automated backups need to be part of standard practice. Cisco NSS 300 Series Smart Storage works with many popular backup software applications to provide fast access and highly secure storage. It also provides other options to help ensure business continuity. For example, locally stored data can be backed up to externally connected hard drives for data mobility or synchronized with a remotely located Cisco NSS 300 Series Smart Storage device.

Applications

Unlike many other storage solutions, Cisco NSS 300 Series Smart Storage is provides built-in and add-on applications that extend use beyond storage. This provides more value to small business customers for their investment.

The applications are web based and can be run from any computer, with no per-user installation fee or additional license required. The applications included with the device are as follows:

- Web server—Create and publish web content using the WordPress blogging platform.
- Media server—Stream media to browsers, to clients using Universal Plug and Play/Digital Living Network Alliance (UPnP/DLNA) media adapters (such as XBOX and PlayStation), to Windows PCs, Macintoshes, iPhone apps, and iTunes. This capability allows streaming audio or video to lobbies and other locations.
- Network tools (integrated syslog and RADIUS servers)—Help improve network security and centralize network logging and debugging.

Energy Efficiency

Cisco NSS 300 Series Smart Storage provides energy-efficient features. It conserves power with an Energy Star V-rated power adapter and hard disk drives that spin down on inactivity. A schedule can be set to power the device on or off, aligned with business hours. Consolidating
applications into Cisco NSS 300 Series Smart Storage can also reduce the number of devices on the network and lower power consumption.

Cisco NSS 300 Series Smart Storage
Cisco NSS 300 Series Smart Storage is a series of 2-bay, 4-bay, and 6-bay desktop devices that combine best-in-class performance with affordability and ease of use. With a high-performance storage system, such as the the NSS 300 Series devices, backups take less time, and more users can use the device simultaneously. NSS 300 devices are easy to set up, configure, and manage, with a simple, browser-based interface that helps save time.

Cisco provides the broadest portfolio of networking and communications solutions, including switching, routing, wireless, network storage, voice, and video surveillance. Cisco Smart Storage offers significant advantages as a resilient platform that grows with a small business, on its own, or as part of a more complete solution,

Cisco also provides investment protection, through Cisco Small Business Pro Service, which offers an affordable, 3-year comprehensive service and support plan that provides peace of mind to the small business customer.

Features
The following summarizes the main features provided by Cisco NSS 300 Series Smart Storage:

Backup Server
- PC-to-Smart Storage using the Windows backup client or any third-party backup software
- MAC-to-Smart Storage using Time Machine
- Server-to-Smart Storage using standard file transfer or Rsync
- Smart Storage-to-Smart Storage using remote replication (Rsync)

Security
- On-disk data encryption
- Network access protection to prevent unauthorized access

Built-In and Add-On Applications
- Integrated network reporting (syslog) and centralized authentication (RADIUS) servers to simplify management of the entire network
- User-configurable web server with integrated WordPress publishing platform
- Other advanced applications for ease of use

Service and Support
- Optional Cisco Small Business Pro Service delivering three-year coverage
- Optional Rapid Replacement Service, providing four-hour advanced hardware replacement
- SMART Design implementation and design guidance for easy deployment
- Added assistance available from Partner Design Support

Figure 2 Cisco NSS 300 Series Smart Storage in a Small Business Network
How It All Comes Together

Cisco NSS 300 Series Smart Storage provides significant advantages by building on the capabilities of the Cisco network.

Network routers provide highly secure access for remote users through VPN connectivity, while switches provide high-speed access and additional LAN security.

Figure 2 shows how Cisco NSS 300 Series Smart Storage builds on the network, using a typical Cisco SNF implementation as an example.

Other technologies, such as video surveillance, as well as the network itself, benefit from the capabilities of Cisco NSS 300 Series Smart Storage, which can provide highly secure and reliable data storage. Applications included with the Cisco NSS 300 Series, such as network reporting (syslog) and centralized authentication (RADIUS) services, also enhance the network.

Solution Summary

With Cisco NSS 300 Series Smart Storage, a business can provide network users with fast, secure, reliable access to data storage, while accommodating growth of the business over time.

With added security provided by the Cisco network, such as VPN and DMZ deployments, data can be accessed securely by local and remote users. A small business can plan for business continuity by synchronizing data between an on-site Cisco Smart Storage unit and a second unit in a remote location, with the Cisco network providing reliable connectivity between locations.

Cisco NSS 300 Series Smart Storage provides peace of mind for the small business customer. It provides highly secure data storage in an affordable, high-speed performance solution, with service and support delivered by a local partner, backed by Cisco. Built-in and add-on applications give small businesses more for their money.

Why Cisco?

Cisco Small Business technology helps you connect your business to the world, secure it, and communicate more effectively using reliable, affordable options that work together and fit your unique needs. A local reseller, backed by Cisco support and expertise, can help make the right choice simple.

Cisco offers:

- **Everything for your network**: With the broadest portfolio of products, financing options, services and support designed and priced for small business, Cisco will help meet your immediate technology needs while keeping pace with your business growth.

- **Experienced local partners**: Local Cisco partners, fully backed by Cisco world-class support, understand your requirements and can help you deploy a system that is specifically tailored to your unique needs. This lets you focus on your business, instead of technology challenges.

- **Solutions that just work**: Cisco provides the reliability, security, and performance you expect from your business network.

Contact a Cisco partner to learn more and for a relationship you can trust to help your business succeed.