



NomaDesk and the Virtual Fileserver Network Platform – A Review

Introduction

NomaDesk enables business professionals to create, edit and share their team-documents securely across company boundaries and the Internet. Users are free to make changes even when off-line, and document changes are synchronized automatically providing users with the greatest degree of freedom.

NomaDesk achieves unparalleled connection-independent and location-transparent access to documents and files on top of a Virtual Fileserver Network (VFN) platform. This proprietary, Distributed File System (DFS) has been designed to optimize file availability without requiring an active network connection, while maintaining the highest degree of data security.

Business Requirements

NomaDesk comes from a need expressed by people who work nomadically - such as the legions of consultants who spend most of their time on the road, or the small or single-person businesses with ad-hoc office space and geographically dispersed teams. Their need called for a solution that allowed them to access their documents at all times - even when an internet connection was not available. NomaDesk's unique solution allows them to do so, and more. Small teams can seamlessly collaborate sharing a common Fileserver that appears on their PC as a Windows® mounted drive or a volume on the Mac. There is no need for infrastructure support from IT experts or deep knowledge about servers and networking. Users download a small, simple program (i.e., Thin Client) that unites them with other invited

users whenever a file is dragged into their Fileserver and shared across their virtual network.

Technical Requirements

The key technical requirements of keeping team-documents available, synchronized and secure include:

- Mutual trust among participating PC's
- Scalability
- Reliability
- Availability
- Connection independence
- Location transparency

Technical requirements are achieved through a distributed file network, which:

- Achieves document availability and reliability through replicated storage;
- Ensures the confidentiality of document contents with encryption techniques;
- Maintains the integrity of file and directory data through synchronization;
- Is scalable by using native (thin) client software for pathname translations;
- Achieves good performance by locally caching file data, while optimally propagating file updates.

What is the advantage of a virtual file network over a local area network of file servers, and how does NomaDesk create these advantages?

NomaDesk capitalizes on the nature of its distributed architecture in a manner that is consistent with non-technical users' expectations. NomaDesk-based documents are managed using familiar file and folder procedures that Windows® and Mac users are comfortable with. Underneath the simplicity of



the user interface is a name-space extension that seamlessly incorporates requirements such as encryption-based security, document synchronization, and high-performance file sharing. NomaDesk delivers unparalleled connection-independent and location-transparent access to documents and files in a secure environment.

NomaDesk is driven by a virtual file network (VFN) which is location-independent; it draws upon the highly successful architecture of the Internet itself to leverage the power of a truly distributed architecture. With this approach there is no single point of failure unlike local area networks. Therefore it is more agile and delivers a reliable communications framework that teams and professionals can depend on.

What's wrong with creating, managing, and storing files solely on a desktop PC/Mac?

There's really nothing wrong with this approach, but it creates some risks and reduces the effectiveness of employee and team collaboration.

The risks are small but real; computer failures are probable over the long run, and disk drives sometimes crash. However, the possibility of copying over a newly updated document from an older version on a common file server is far more likely than a system failure, placing your latest information at risk of deletion. Expecting information workers to copy files repeatedly and reliably in the right direction depending on where the latest information resides, is unreasonable.

The greatest problems with storing and managing files on a desktop PC are the numerous tasks that employees must perform to effectively utilize a common file server to

maintain a comprehensive document collaboration process.

NomaDesk performs these tasks for the employee – seamlessly synchronizing and managing documents without risk of losing the information or failing to back it up. And NomaDesk does this while compressing the tasks into simple and intuitive steps.

What is it like to use NomaDesk?

With a heavy emphasis on security, all users must log on to the NomaDesk Dashboard. Once logged on, an encrypted section of the user's PC is unlocked and each Fileserver is displayed, along with their status. Fileservers are either connected, disconnected (but still available offline of course), or syncing files to- or from- the server and other users. Fileservers are accessed either through clicking on the Fileserver name on the Dashboard, or, directly through the Windows® Explorer or Mac Finder interface. Because NomaDesk is seamlessly integrated into the Windows®/Mac operating system, Fileservers will show up as a mounted hard drive. Users simply drag and drop files into their Fileserver to start sharing files with teammates.

Along with this very basic level of collaboration, other tools are available for users. Teammates can be invited through an interface integrated with Outlook or any web-based email clients (for the retrieval of contacts), and the Windows®/Mac right-click context menu is leveraged to send safe URL-based links of files via email, or apply metadata tags such as notes and file states (upcoming release).

Once a user logs off from NomaDesk, the Fileserver is automatically encrypted with 256-bit encryption. Further, if a user's laptop is reported lost or stolen, the TheftGuard™ feature



will ensure data is removed the moment someone successfully attempts to log on.

How does NomaDesk ensure security and data safety?

The basic strategy is first to encrypt the contents of each file, then to make multiple replicas of the encrypted file, and finally to distribute the encrypted replicas to several client machines. Encryption prevents an unauthorized user from reading a file, even if the file happens to be stored on that user's PC.

By making multiple replicas, and by distributing those replicas in a secure fashion, VFN makes it difficult for a malicious user to destroy every copy of any given file. Additionally, a benefit of replication is improved file reliability. If the disk on your PC crashes then all of the files stored on that disk will be lost. However, with NomaDesk, files will be replicated to disks on other machines, so the loss of a single disk will never be critical.

In what ways does NomaDesk improve document sharing performance and scalability?

NomaDesk includes capabilities that automatically tune itself for optimal performance concerning document replicas, synchronization, and disk storage space. For example, authorized files are replicated as PCs join the NomaDesk network, and removed when they leave a team.

Do I need to worry about backing up files managed in NomaDesk?

No. NomaDesk virtually eliminates the risk of ever losing a file because the network contains replicas of every file. NomaDesk seamlessly

provides backup reliability and only the idea of archiving needs to be considered.

What is the ideal customer target for NomaDesk?

Ideal customers either work with teams of 2-25 members who work as “nomadic”, independent groups; or are solo-consultants who travel frequently and work within small, medium or large companies. Professionals like this typically use PC's that are interconnected over the Internet with high-bandwidth services. In most cases the team members are geographically dispersed, sometime mobile, and have significant differences among the hardware and persistent network access.

Are there any technical issues when integrating services such as Google Docs with NomaDesk?

Yes, there are many issues that should be considered.

While Google Docs can be configured to work with NomaDesk, Google Docs is not fully compatible with Microsoft Office document formats. This could result in the reformatting of Microsoft Office documents upon upload to Google Docs. If reformatted documents are then resynchronized back to a NomaDesk project, team members will receive the latest versions in Google Docs format, not Microsoft Office format. This could be very disruptive to the team and their document development and management objectives.

NomaDesk's security model is far superior to Google Docs which (through Google Gears) must introduce web browser plugins. The possibility for security issues is significant higher when sharing documents with online services such as Google Docs.



About NomaDesk

NomaDesk is the easy and secure software-as-a-service used to share, synchronize, and back up business critical files, wherever users are, even when offline.

NomaDesk was founded in 2004 by Filip Tack (<http://tinyurl.com/filiptack>), by its current CEO, along with CTO Miguel De Buf (<http://tinyurl.com/migueldebuf>) and COO Peter Geldhof (<http://tinyurl.com/petergeldhof>).

NomaDesk was awarded “Europe’s Most Promising Startup” at the Innovate!Europe 2009 competition. Based in Gent, Belgium, the company is supported by Gimv, a European independent investment company. NomaDesk employs 18 employees with offices and servers in Gent and Atlanta, Georgia.

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