



File System Factory™ for Active Directory



Automating Network User Home Folder Management through File System Factory for Active Directory

A Business White Paper



Synopsis: *The manual approach to network user home folder management is time consuming, monetarily inefficient, and susceptible to inconsistencies and errors. File System Factory for Active Directory automates network user home folder management from provisioning to on-going management including migration, to archiving and deletion through identity and event-driven policies that you define.*

The Efficiency Mandate

The current business environment, with all of its resulting uncertainties, expense cutting, and hiring freezes, has also brought about mandates for better efficiency. When it comes to managing user network storage, this means staffing less IT personnel to manage more user home folders, and requiring this personnel to make the best use of existing network disk capacity—rather than buying more disk capacity.

But when storage responsibilities like these are added to the other pressing projects of an oftentimes understaffed IT department, user storage management tasks tend to take a lower priority. While a work order request will eventually result in someone taking action to create a new user's home folder and some needed access rights, the moving, archiving or deletion of former employees' home folders are tasks that are commonly overlooked completely. Over time, this inaction fills up critical disk space on a network's primary storage devices with "orphan folders"—home folders belonging to users that are no longer in the network directory.

Storage Growth

While it would seem logical that a member of the IT department could address the orphan folders by simply archiving or deleting them, regulations such as the Sarbnes-Oxley Act (SOX) and the Health Insurance Portability and Accountability Act (HIPAA) have strict guidelines for file retention, access, and security that oftentimes fosters a belief that it is better to keep everything where it is and be safe, rather than delete it or archive it and be sorry later. Despite the warnings from analyst firms that this is a practice that must eventually end, organizations continue to add more storage devices to accommodate their storage growth.

One such analyst firm sounding the alarm early on was IDC. In a 2007 report, the analyst firm stated that "Simply continuing to add more storage through traditional methods is unsustainable because many datacenters will be unable to provide the necessary power, space, or cooling. As a result, companies need to be more effective and efficient in the way they provide storage resources."¹

Unstructured Data

Compounding the problem of exponential storage growth is the type of files being stored. According to IDC, "The fastest-growing data type is the file. Unstructured, file-based data is growing faster, is consuming more space, and is being retained longer. This is a challenge that touches every tier of storage, from primary to data protection to archiving"²

Unlike the more storage-efficient block-based data that resides in fixed fields within a record or file, unstructured file-based data including text documents, spreadsheets, images, video, records, and virtual machine images, does not reside in a fixed location. This makes it more difficult to identify, manage, and back up.

The Need for Automated, Lifecycle-based Storage Management

The most efficient approach to managing storage tasks such as home folder creation and rights assignments, along with managing the exploding growth of user-based storage, is through an automated solution that performs user storage management tasks when needed.

Automation would not only assure that storage was being assigned, cleaned up, and archived at appropriate times, but that corporate storage policies, along with applicable industry regulations pertaining to storage retention, access, and security were being enforced.

Introducing File System Factory for Active Directory

File System Factory for Active Directory from Condrey Corporation automates the full lifecycle management of user network storage. Leveraging Microsoft Active Directory, File System Factory for AD automates a comprehensive set of storage management tasks based on events, identities and policies that you define for your organization. In the process File System Factory for AD can save you significant time and money.

File System Factory for AD introduces not only lifecycle management, but structure to unstructured user file-based data. Identity-based, event-driven policies not only identify user storage content, but can take needed action with this storage when policies dictate. These actions can include automating the migration of storage from one volume to another, renaming a home folder when a user's name has been changed, making storage inaccessible when a user leaves, and archiving or deleting storage when a user is removed from Active Directory.

File System Factory delivers secure, automated, and flexible management for user storage, and saves time—a *lot* of time.

A Closer Look

Chances are your enterprise has established written policies pertaining to network storage. These policies might specify the size of a user's home folder based on the user's role in the organization. They might also specify—based on the department the user belongs to—on which volume the home folder is to reside.

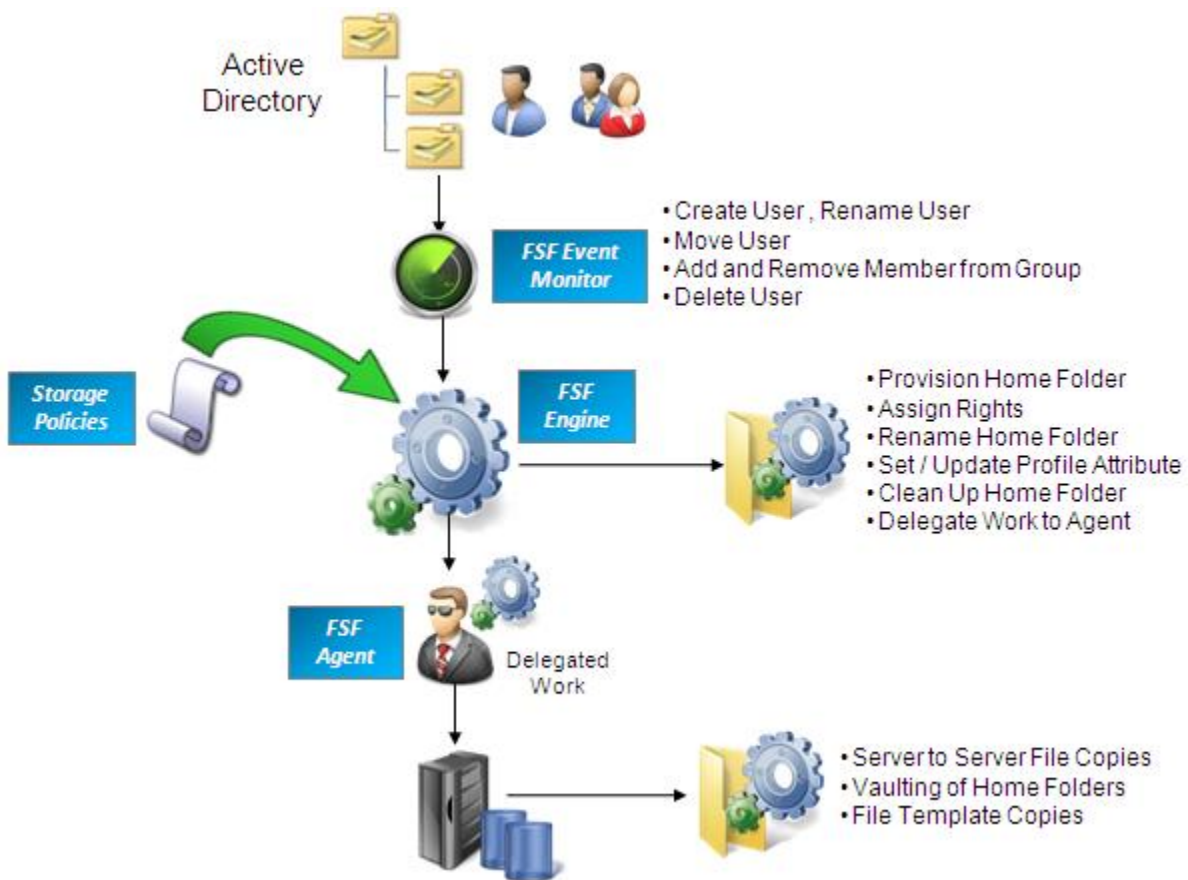
Additionally, industry regulations may contribute to the enterprise policies with specifications for network access areas, archiving, and disposition.

File System Factory for AD lets you define your storage policies. Once defined, the policies dictate the actions that are to take place when certain directory events take place.

A directory event would be anything that changes the status of a user. Examples are the creation of a new user, the change in role of a user, the transfer of a user from one Organizational Unit or group in the directory to another, elimination of the user, making the user inactive, etc.

In a File System Factory for AD deployment, an “Event Monitor” is deployed on a server to capture Active Directory events as they take place. Directory events are sent from the Event Monitor to the File System Factory for AD “Engine.” If a policy stipulates that an action be taken based on the directory event, the Engine initiates the action.

The Engine sends directives to the File System Factory for AD “Agents” to perform the action dictated by the policy.



File System Factory for AD components include a single Engine, single Event Monitor, and Agents.

For a simple example where all of the above components interact, suppose that a new employee is hired to work in the Human Resources department of a large insurance firm. The firm’s IT department sets up the new user account and makes the new user a member of the HR group. Upon creation of the account, the Event Monitor sees that the action has taken place and notifies the Engine. The Engine looks to the policies and sees that according to a policy, each HR department employee is to be

allocated a home folder on a specific volume of a specific Windows server. Additionally, a set of rights to this storage is specified.

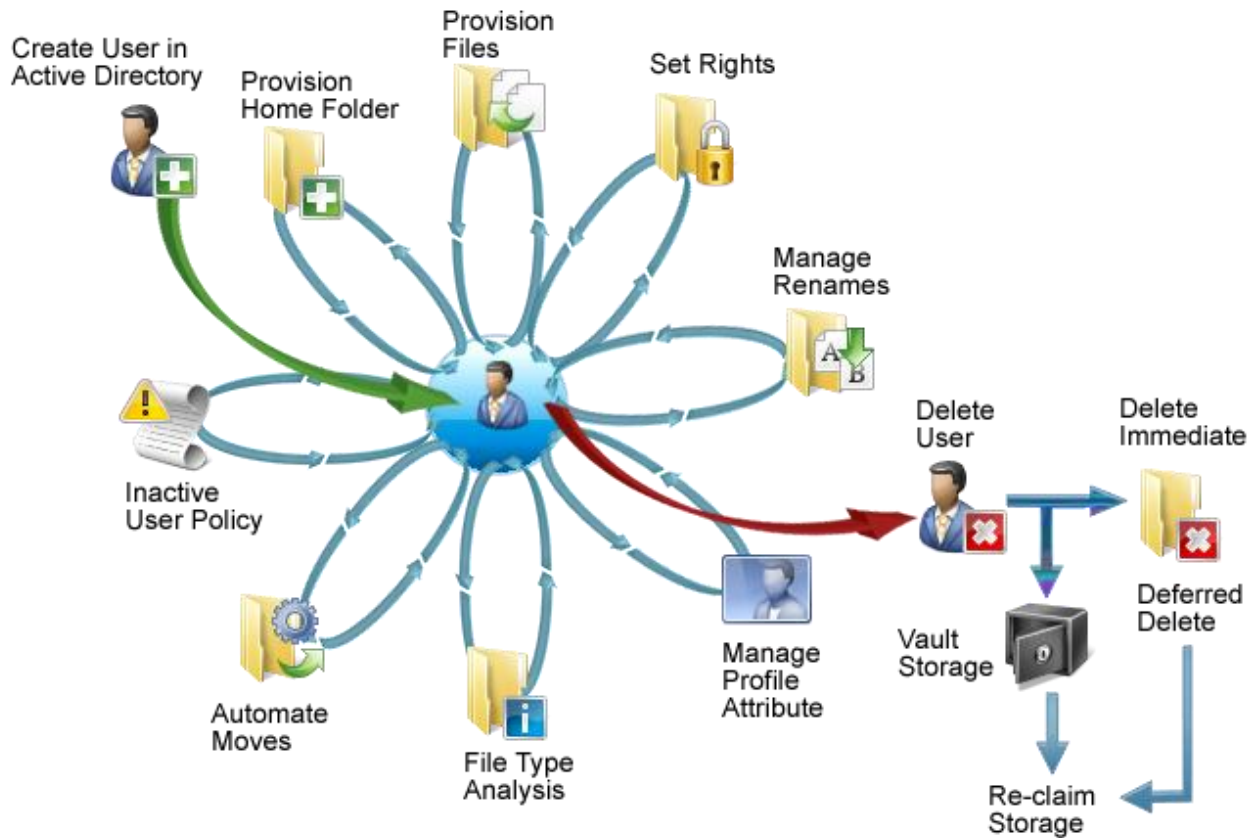
The Engine sends the directive to the Agent for the Windows server where the HR home folders reside and creates a new home folder for the new user with the specified rights. Additionally, as the user is a member of the HR group, the home folder is provisioned with HR-specific documents.

Life Cycle Management of Storage

File System Factory for AD automates the full life cycle of user storage through event-driven policies discussed above. Lifecycle storage management includes:

- Home Folder Provisioning: Once a user is created in Active Directory, File System Factory for AD automatically provisions a home folder for the new user.
- User Profile Management: With File System Factory for AD, you have the option of managing the user in Active Directory as a home folder with a drive letter or a roaming profile.
- Setting Rights: As home folders are created, the associated rights to the folders are set according to a policy that you set. A note about these rights: for security reasons, File System Factory for AD does not grant Full Control to the home folder and thus, prevents some associated security vulnerabilities.
- File Provisioning: This means populating created home folders with specific documents. An example might be HR forms for the employee to complete during his or her first day on the job.
- Managing Renames: When a user is renamed in Active Directory, the user home folder automatically renames the associated home folder and updates the home folder attribute in the directory so the user can log in and access his or her storage.
- File Type Analysis: This allows administrators to browse down a file path from any server and volume to a particular folder and then have File System Factory for AD report file types that are being stored in a folder and all subfolders based on file extension. For example, by selecting a home folder, you can easily see the number of .MP3, .MOV, .JPG, etc., files the user is storing on the network.
- Automated Moves: A common manual process for IT departments within companies with multiple departments or physical locations is moving an employee's storage when they transfer to a new city. File System Factory for AD completely automates this process.
- Managing Inactive Users: Many enterprises do not delete users immediately but move them to an inactive state. File System Factory for AD supports this practice by allowing you to configure an inactive users policy. When someone gets associated with this policy, their storage is moved to another location and their access rights are removed.
- Deleting User Storage: When an employee leaves your enterprise, you can have File System Factory for AD automatically delete the user's home folder and its contents. This can be done immediately, or after a set number of days.
- Vaulting User Storage: If you choose to retain the home folder of a departing employee, you can have File System Factory for AD automatically vault the storage to a specified storage device. This can be done immediately, or after a set number of days.

- Re-claiming Primary Storage: Once a user home folder deleted, archived, or moved from primary storage, the primary storage space becomes available for new storage.



File System Factory for AD automates the complete life cycle of network user storage through identity and event-driven policies.

Regulatory Compliance and Risk Management

A heightened focus on security has prompted a wave of government and industry regulations for the storage and transmission of electronic data. To effectively comply with many of these regulations—including SOX, HIPAA and more—you need a secure, identity-based storage management solution. You also need to minimize risk. Noncompliance will be the least of your worries if you lose key data or end up in a legal entanglement.

File System Factory for AD helps ensure regulatory compliance for data retention, security, and access through identity and policies. An identity-driven management solution—one based on clearly defined policies—is much less vulnerable to data loss. With File System Factory for AD, you specify, within the policies themselves, where user storage will reside. This could be on volumes or servers where sensitive corporate data is not stored. Additionally, File System Factory lets you set and then enforces file system rights when the user home folder is created. As mentioned earlier, Full Control is not a default right that File System Factory for AD grants to the user and thus, prevents potential security threats. If users have been previously been given Full Control, or any other right you wish to revoke, you can simply perform a

Manage Operation in File System Factory for AD to enforce all users into compliance with the rights as indicated in the policy.

Finally, File System Factory lets you indicate when and where to vault the user home folders when users leave the organization. With this knowledge, you can easily retrieve and restore this data when needed.

Saving Time and Money

Since Condrey Corporation first introduced File System Factory in 2002, the objective has always been to save network administrators time and money by automating the manual tasks associated with storage management for users in directory-based networks. Initially focused on Novell networks, File System Factory—later offered as “Novell Storage Manager” as a Novell product—was rapidly adopted by organizations in all industries in need of automating manual storage management tasks.

After seven years and hundreds of customers managing millions of users, Condrey Corporation is now introducing File System Factory for AD and doing so, providing an extensive set of features and benefits developed over those seven years to Microsoft network users.

File System Factory for AD features will save you time and money by:

- Automating thousands of hours of manual work and doing so in a consistent manner
- Alleviating personnel from doing mundane, error-prone storage jobs
- Freeing up disk space on primary storage devices by removing and deleting or archiving an employee’s home folder when he or she leaves
- Assuring that your new users will have their network storage and provisioned with the documents they need on Day 1 in the organization or department
- Providing you the confidence that all your storage is secure and available should you need to prove compliance with government or industry regulations
- Assuring that inactive users cannot access storage
- Assuring that file access rights are enforced universally

Conclusion

With the exponential growth of network storage, an automated, identity-driven, policy-based user storage solution is needed more than ever.

File System Factory for AD provides automated user and collaborative storage management for Windows networks in Active Directory. Additionally, File System Factory for AD takes unstructured network-stored data and structures it so that it can be managed automatically through event-driven policies. These policies oversee the full lifecycle management of user storage from home folder creation until folder archiving or deletion, and an expansive set of other storage management services for user storage.

Automation through identity and policies within File System Factory for AD will save enterprises time and money while helping to assure that industry and government regulations pertaining to storage are being followed.

¹“Worldwide Server Power and Cooling Expenses 2006-2010” by Jed Scaramella, September 2006, IDC #203598

²“Finding Ways to Efficiently Manage Fast-Growing File-Based Storage” by Noemi Greyzdorf, January 2009, IDC #216131