Three types of user interface requirements

- General user interface
  - Notification Tools
  - Explorer Shell Extensions
- Individual User configuration
  - Control Panels
- Local Machine configuration
  - Microsoft Management Console
Problems with the Existing User Interfaces

- Operations from different layers are mixed in a single tool
  - Users are confused by features they cannot use
  - Tools do not support privilege separation
- Operations do not exist where users expect to find them
Microsoft Vista User Account Control

- Vista does not permit unprivileged processes to modify machine configuration
  - Shadow copies are provided for the current logon session
  - Modifications are lost when the session ends
- UAC requires privilege separation
  - A privileged sub-process or secondary service must be used to modify machine configuration
What We Propose?

- Remove privileged operations from user tools and move them to Microsoft Management Console
  - Network Identity Manager
  - Get rid of AFS Creds Manager
- Replace AFS Control Panel with NIM Options Panels
- Redesign the Explorer Shell Extension
Network Identity Manager
Configuration Options
Changes to NIM Options: Kerberos v5

Kerberos v5 Configuration

Default Realm: SECURE-ENDPOINTS.COM
Include all configured realms in New Credentials realm list
Configuration File: C:\WINDOWS\kerb5.ini

Microsoft Windows® Options
Hostname: GALATEA
Domain: WINDOWS
Import: Never

Microsoft Windows® Options
Hostname: BLACKBIRD
Domain: MSHOME
Import: Always

Launch Kerberos Management Panel
Changes to NIM Options: Remove Kerberos v5 Realm Editing
Changes to NIM Options:

AFS
Changes to NIM Options: Add AFS PTS Group Management
Control Panels

- Kerberos and OpenAFS Control Panels
- access Network Identity Manager Options Panels
Microsoft Management Console
Microsoft Management Console: Kerberos – General
Microsoft Management Console: Kerberos – Realm Configuration
Microsoft Management Console: Kerberos – Integrated Login
Microsoft Management Console: OpenAFS - General
Microsoft Management Console:
OpenAFS - CIFS
Microsoft Management Console: OpenAFS – Performance
Microsoft Management Console: OpenAFS – Cache Manager
Microsoft Management Console: OpenAFS – Freelance Mode
Microsoft Management Console: OpenAFS – Servers
Microsoft Management Console: OpenAFS – Logon Options
Microsoft Management Console: OpenAFS - Diagnostics
Google Desktop Integration
Explorer Shell Integration
Explorer Shell Integration:
AFS Column Selection

[Image showing a screenshot of Explorer Shell with AFS column selection options]
Explorer Shell Integration: AFS MetaData within Columns

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Type</th>
<th>Date Modified</th>
<th>AFS Owner</th>
<th>AFS Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folder in AFS</td>
<td></td>
<td>File Folder</td>
<td>12/20/2006 1:26 AM</td>
<td>asanka</td>
<td>mit</td>
</tr>
<tr>
<td>More Files</td>
<td></td>
<td>File Folder</td>
<td>12/19/2006 8:21 PM</td>
<td>asanka</td>
<td>mit</td>
</tr>
<tr>
<td>MountPt</td>
<td></td>
<td>File Folder</td>
<td>12/19/2006 8:21 PM</td>
<td>asanka</td>
<td>mit</td>
</tr>
<tr>
<td>My Pictures</td>
<td></td>
<td>File Folder</td>
<td>12/19/2006 8:21 PM</td>
<td>asanka</td>
<td>mit</td>
</tr>
<tr>
<td>Secret</td>
<td></td>
<td>File Folder</td>
<td>12/19/2006 8:20 PM</td>
<td>asanka</td>
<td>mit</td>
</tr>
<tr>
<td>Some other folder</td>
<td></td>
<td>File Folder</td>
<td>12/19/2006 8:20 PM</td>
<td>asanka</td>
<td>mit</td>
</tr>
<tr>
<td>Test</td>
<td></td>
<td>File Folder</td>
<td>12/19/2006 8:19 PM</td>
<td>asanka</td>
<td>mit</td>
</tr>
<tr>
<td>a.txt</td>
<td>1 KB</td>
<td>Text Document</td>
<td>1/2/2007 3:38 PM</td>
<td>asanka</td>
<td>mit</td>
</tr>
<tr>
<td>b.txt</td>
<td>0 KB</td>
<td>Text Document</td>
<td>1/2/2007 7:41 PM</td>
<td>asanka</td>
<td>mit</td>
</tr>
<tr>
<td>symlink to a.txt</td>
<td>1 KB</td>
<td>Text Document</td>
<td>1/2/2007 3:38 PM</td>
<td>asanka</td>
<td>mit</td>
</tr>
</tbody>
</table>
Explorer Shell Integration:
File and Directory Properties

[Images of file and directory properties windows showing properties and options for file and directory in AFS system]
Explorer Shell Integration: Volume and ACL Properties

Folder in AFS Properties

Volume: user.asanka
Cell: ethano.mit.edu
Read/write ID: 537259207
Backup ID: 537259289

Capacity: 100,000,000 bytes (100 MB)
Used space: 73,000,000 bytes (73 MB)
Free space: 27,000,000 bytes (27 MB)

Creation: Fri Aug 20 10:56:37 1999
Copy: Thu Dec 07 07:04:22 2006
Last Update: Wed Jan 03 08:01:09 2007

Folder in AFS Properties

Normal permissions
Name: system:espunge
- r: read
- l: lookup
- i: insert
- d: delete
- w: write
- k: lock
- a: administer

Negative permissions

Clean...
Explorer Shell Integration: Mountpoint and Symlink Properties

MountPt Properties

- Mount point: #user.asanka
- Owner: asanka (16273)
- Group: mit (-99252)
- Unix file attributes: Read, Write, Execute

symlink to a.txt Properties

- Symbolic link: /afs/athena.mit.edu/user/a/s/asanka/fcoo/target
- AFS FID: 35235
- Owner: asanka (16273)
- Group: mit (-99252)
- Unix file attributes: Read, Write, Execute

Flushing options available for Mount Point and Symbolic Link.
Explorer Shell Integration:
Meta Data Display
Road Map Web Pages

- Kerberos for Windows

- OpenAFS for Windows
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