



OpenAFS for Windows Status Report

AFS & Kerberos
Best Practice Workshop
2010

Another Year Gone By ...

- 1.5.74 is the recommended release
 - 10 releases since Workshop 2009
- Continued improvements by OpenAFS
 - Many bug fixes
 - Performance improvements

Critical Bugs

- StoreData64 bug introduced in 1.5.3 will fail to store the first chunksize of data to servers that have no large file support
- Unaligned StoreData requests would fail to store (offset % blockSize) octets of data
- Pioctl serialization bug
- RXAFS_FetchData could return an invalid length resulting in the server being marked down

DCE RPC Pipe Services and Streams

- SRVSVC and WKSSVC implemented
- No more truncated share names when browsing \\AFS in Explorer or using NET VIEW \\AFS
- Support for stream enumeration (but not creation)

Many Rx Fixes

- Rx Round Trip Time computations replaced based upon Van Jacobson's work on TCP/IP
- Race condition in Rx library fixed that could result in a panic while freeing the Rx call iov queue
- Resent and data packet counts were incorrect
- Negotiated Rx MTU size did not limit the maximum send size (windows only)
- Idle data connection processing could timeout if the send window filled and took longer than the idle data timeout period for the transmit window to re-open.

More Rx Fixes

- The transmit queue could be emptied prematurely. A required check for the queue being in use was forgotten.
- The function that is supposed to implement a wait for the transmit queue to idle failed to wait.
- Rx library lock contention avoidance between rx_NewCall and rx_EndCall.
- Rx library races due to inconsistent use of rx_connection conn_data_lock to protect the flags field.
- Rx library inconsistent use of RX_CALL_TQ_WAIT which could result in deadlocks.
- Rx library must signal transmit queue waiters when flushing. Otherwise, deadlocks can occur.

Callback processing improvements

- Servers are tracked by UUID permitting RXAFS_InitCallbackState3 RPCs to reset objects served from one server in one cell

Deprecation of AFSCreds and Control Panel

- AFSCreds and AFS_Config were deprecated in 2005 with the release of 1.4 due to the conflation of user specific and system specific functionality within the same UI
- There were serious compatibility problems on Vista due to User Account Control that produce high numbers of help desk reports
- Per user drive mapping tab and service start/stop tab have been removed
- Future directions:
 - Brant Gurganus' MMC must be completed
 - An AFS-centric identity provider for NetIdMgr must be developed

Error Messages and Logging

- New Windows Application Event Log messages for VBUSY and VRESTARTING server errors and ALL_BUSY, ALL_OFFLINE and ALL_DOWN volume states.
- Kerberos v5 and PT error messages are now generated by aklog, integrated logon, NetIdMgr AFS provider, etc.
- Translate_et can translate Kerberos v5 error codes

Windows 7 / 2008-R2

- Support for Windows 7 required
 - Changes to the installation process
 - Removal of all 16-bit windows compatibility API calls
 - Implementation of RPC Pipe Services and Stream enumeration
- The current release is compatible with Win7 but a bug in Microsoft's Netbios name resolution results in the AFS SMB server becoming unreachable after an IP address change

Native Client Status

- Peter Scott will give details on the architecture later today
- Still to do ...
 - Upgrade without reboot
 - Process Authentication Groups
 - Automated conversion of drive mappings between “Microsoft Network” and “OpenAFS Network” network providers
 - Identify and correct an issue preventing Office 2007/2010 from being started by clicking on a document from a UNC path
- Once the 1.6 branch is cut, the redirector code base can begin to be reviewed and folded onto ‘master’ along with the other targets for 1.8.

Future Work?

- Integrate .backup volume with Windows Volume Snapshot Service
- Integrate AFS quotas with Windows Quota Service
- Construct Windows Object IDs from AFS cell and FID and then implement the Windows Link Tracking Service
- Windows Management Instrumentation
 - Growl-like UI to monitor AFS activity via WMI events

Got Questions About Windows?

- OpenAFS for Windows Status Reports available at
 - <http://www.secure-endpoints.com/>
- Mailing List
 - Developers
 - openafs-win32-devel@openafs.org
 - Users
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