AFS Tools Review

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2010 AFS & Kerberos Best Practices Workshop
Agenda

New tools in the OpenAFS project
Community contributed tools
What’s new in OpenAFS (toolwise)

• We have some new vos commands
  – setaddr: manually set server address
  – endtrans: manually end volume transaction
• fs option to assist in restoring acls
• afsmonitor – show more fs stats
• Improved pts support for supergroups
Example: -expandgroups

```
pts mem management
  -expandgroups

Expanded Members are:
  jane
  mary
  sarah
  carol
```
A new tool, afsio

- High throughput i/o of data to and from afs files.
- Requires a cache manager to create and stat files
- write, append, read data
- Author: Hartmut Reuter
Some useful bits,

- vldb_check, prdb_check
- volinfo, voldump, restorevol
- twiddle – adjust (some) cm parameters
- afscp – basic afs file copy (testing)
- fsx – stress testing
- afsdump_scan – CMU dumpscan
Contributed Tools

- A few sites have made their tools available
- Some assembly may be required
The Stanford Toolset

- Well documented, well maintained AFS and Kerberos tools used at Stanford University
- Authors: Russ Allbery, Neil Crellin, et al
- License: GPL and Artistic
- http://www.eyrie.org/~eagle/software
The Stanford Toolset (cont)

- Volume Management
  - smart move, create, remove
  - delegated administration
  - balancing*

- Monitoring and Reporting
  - meta-data and mount point database
  - nagios plugins, partition usage
  - read/write vs read-only tree diff

* requires IBM CPLEX
The Stanford Toolset (cont)

And more!

- recursive fs command wrapper
- PAM modules
- k5start for daemons and cron jobs
- remctl for kerbertized remote control
UNC Toolset

- University of North Carolina at Chapel Hill
- Author: Steven Joyce
- License: GPL*
- http://www.physics.unc.edu/~stephen/
UNC Tools (cont)

• AFS Disk Space Allocation
  – Visualize quota allocation of volumes for each partition, web based
  – Show volumes close to reaching quota limit
  – Show quota over commit (deficit)

• This is an in-house UNC tool, Steven offered to release
UNC Toolset (cont)

• **phpaafsefree**
  – web-based AFS disk utilization
  – inspired by the tcl program afsfree
• **BackupPC4AFS**
  – use BackupPC to backup AFS volumes
• **http://www.physics.unc.edu/~stephen**
BackupPC4AFS

**Restore Options for afs_user_s**

You have selected the following files/directories from share /, backup number #135:

- /user_s/user_2007_08_19_23_10_29-L0.vdmf
- /user_s/user_2007_08_24_23_08_10-L1.vdmf
- /user_s/user_2007_08_23_08_42-L2.vdmf
- /user_s/user_2007_08_29_07_16-L4.vdmf
- /user_s/user_2007_09_30_23_02-24-L6.vdmf
- /user_s/user_2007_10_02_23_37-23-L8.vdmf

You have three choices for restoring these files/directories. Please select one of the following options.

**Option 1: Direct Restore**

Restoration of afs_user_s via vos

You can start a restore that will restore these volume(s) directly into AFS.

Warning: If you do not specify an extension, the VOLUME YOU'RE RESTORING WILL BE OVERWRITTEN!

Restore the files to host (don't change)

```
afs_user_s
```

Pass the following options to "vos restore"

```
-server SERVERNAME -partition PARTITIONNAME -e
```

Unused for AFS restores (don't change)

Start Restore

**Option 2: Download Zip archive**

Archive: Zip is not installed so you will not be able to download a zip archive. Please ask your system administrator.

**Option 3: Download Tar archive**

You can download a Tar archive containing all the files/directories you have selected. You can then use a local application to extract the files.

Warning: depending upon which files/directories you have selected, this archive might be very very large. It might take several hours and you will need enough local disk space to store it.

- Make archive relative to /user.stephen (otherwise archive will contain full paths).
- Download Tar File
CMU AFS Tools

- Authors: Many and various
- License: BSD-type
- ftp.andrew.cmu.edu/pub/
- /afs/grand.central.org/dl/software/dumpscan
CMU Tools

- dumpscan
  - tools and libs to examine and construct AFS volume dumps

- balance
  - auto-balance by size, volumes, access
  - needs a maintainer

- ws – walk subtrees
University of Michigan Tools

• Filedrawers – web-based AFS access
  – http://www.filedrawers.org

• Apache modules
  – mod_waklog, mod_cosign

• webafsman – web-based admin
  – http://rsug.itd.umich.edu/cgi-bin/cvsweb.cgi
Mitre AFS Tool Suite

- A set of python tools for AFS admin
- Author: Jeff Blaine
- License: GPL v2
- http://ats.sourceforge.net
Mitre AFS Tool Suite (cont)

• smart remove
• volume sanity check
• replication policy check
• assist in placing volumes by space
• report quota commitments by partition
AFS Manager

• Web-based AFS administration tool
• Authors:
  – Fabrizio Manfredi, Peppe Guarino
• License: TBD
• Contact:
  – Fabrizio Manfredi (manfred)
  – fabrizio.manfredi at gmail.com
AFS Manager (cont)

![AFS Manager screenshot](image-url)
AFS Access Control Viewer

• Visualization tool developed as a masters project at UNC
• Paper: Interactive Exploration of the AFS File System
• Author: Joshua Foster, et al
• License: TBD
• Contact: TBD
AFS Access Control Viewer (cont)
AFS Access Control Viewer (cont)

• Series of visualizations of AFS volumes, directories, files
• Levels of granularity, overview to details
• Pixel visualization of users
AFS Space Statistics (afssss)

• Perl script to generate reports about AFS fileserver partitions and volumes
• Author: Stephan Wiesand
• http://www-zeuthen.desy.de/~wiesand/AFS/
AFS Audit Volumes

• Perl script to report volume inconsistencies or errors.
• License: Perl
• http://git.sinenomine.net/git/
AFS Monitor for SNIPS

- AFS plug-in for SNIPS monitoring tools
  - fileserv er up/down, fileserv er busy
  - http://git.sinenomine.net/git/
AFS Tools for Mac OS Clients

- AFS Commander
- afsinstall
- Contextual Menu for finder
- afstokens

http://www.ibiblio.org/macsupport/afs/afstools.html
Thank you

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