

OpenAFS on the Nokia N800 & N810 Internet Tablets

Jason Edgecombe
Derrick Brashear

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Biographical

- Derrick Brashear
- OpenAFS developer
- Sine Nomine
- Jason Edgecombe
- Solaris & Linux Administrator and AFS Guru for the UNC-Charlotte College of Engineering
- Volunteer Contributor

Why?

- Mobile & embedded devices are growing faster than PCs
- Augment the limited storage of a mobile device and access your files from anywhere!
- Leave the laptop & still do AFS administration on the road!
- Better support for ARM platforms.
- The geek factor
- Nokia encourages hacking the N8X0!

What's in the Nokia N800?



- TI OMAP 2420 (400MHz ARM)
- 800x480 Pixel Screen
- 128MiB RAM
- 256MiB Flash
- 2 SDHC slots
- 802.11b/g wifi
- Bluetooth 2.0, USB
- FM Radio
- **NOT A Phone!**

What's in the Nokia N810?



- TI OMAP 2420 (400MHz ARM)
- 800x480 Pixel Screen
- 128MiB RAM
- 2GiB Flash
- 1 miniSD slot
- 802.11b/g wifi
- Bluetooth,USB
- GPS, built-in keyboard
- **Not a phone!**

Nokia Software Stack

- Maemo – loosely based on Debian, uses apt & busybox
- 2.6 Linux kernel
- SDK provided by Nokia
- Source code is available except for wifi drivers & some closed apps.
- Most software was copied from OSS
- GUI package manager with 3rd-party repository support
- Developers can upload to default “extras” repository.

Nokia Hype

- Nokia N800 & N810 are still in the top 21 best sellers in the Computers & PC Hardware category on Amazon.com as of May 20, 2008
- WiMAX-enabled N810 announced for Spring 2008

Development/Testing History

- Derrick did the first ARM port to his car stereo
- Started with an email on Dec. 14, 2007 from Derrick
- Focused on AFS 1.4.x client
- Jason did compiling & testing on N800 with Derrick fixing code bugs.
- Did testing on N800 running OS2008. Derrick has a N810 w/OS2008.
- Used the Maemo development VM for compiling.

Methodology

- Started with only kas, no krb5 – had to work with Derrick on the compilation – got it working
- tried krb5 debian packages – couldn't compile because of missing or mismatched dependencies
- compiled krb5 – rough road, but got it working if I didn't compile apps (curses library mismatch)
- compiled openafs with krb5 – worked
- had to create packages from scratch

Where are we now?

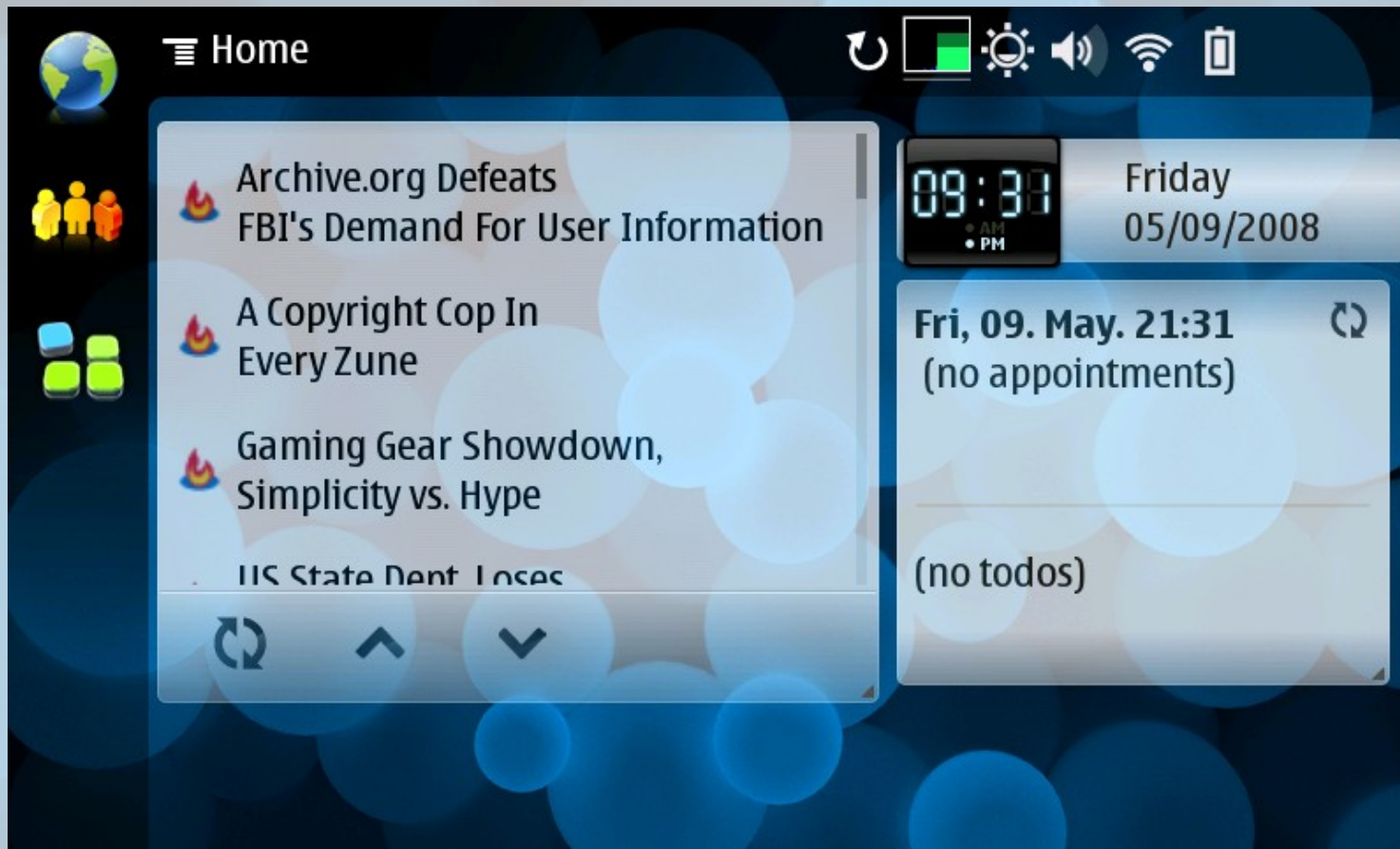
- Working AFS client with krb5 auth & klog
- AFS memory cache
- command-line only
- apt-get install from maemo-extras
- startup scripts working
- no multi-user support (maemo limitation)

The future aka “nice to haves”

- gui tool for managing tickets/tokens & authenticating
- dbus integration for notification of network changes
- better performance from maemo file manager

And now, for a demo

Screenshot



AFS Screenshot

