Nexenta, OpenStorage and Commercial Open Source

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What we'll cover

- Nexenta Core Platform
  - OpenSolaris
  - Ubuntu
  - Nexenta's difference
  - Distribution Creation
  - Derivatives
  - Nexenta.org
- Commercial Open Source
  - The OpenStorage Industry
- NexentaStor
  - www.nexentastor.org
Nexenta Core Platform

- Nexenta is a combination of two great technologies:
  - OpenSolaris: The enterprise class FOSS kernel
  - Ubuntu userland: The most popular *nix userland and packaging framework

- Started in 2005 as a desktop distribution, based on Ubuntu.
  - Proved hard to support due to small dev team
  - Starting from early 2008, the project only concentrated on a command-line only core platform, which became known as the Nexenta Core Platform.
    - The focus was to create the one of the best server platform out there.
NCP: The OpenSolaris side

- Nexenta is based on the opensolaris kernel. It thus has goodies like
  - The ZFS filesystem, which has revolutionized the open source file systems arena.
  - Dtrace, which provides administrators and developers with the ability to analyze the system in a fine-grained manner.
  - Zones, the lightweight virtualization which allows for opensolaris (and linux) virtualization on Nexenta.
- Nexenta maintains patches of it's own improvements to the OpenSolaris kernel, which includes patches providing iSCSI on ZFS volumes, and CIFS performance.
- To fit into the Ubuntu/Debian model, the opensolaris kernel is packaged as .deb packages, for ex:
  - sunwckr : the core kernel runtime package
  - sunwzfs : the zfs package
NCP: The Ubuntu side

- All userland packages, which include shell commands, server packages, tools and utilities are ports of upstream Ubuntu packages.
- Ubuntu has a lot of packages. LTS releases are supported for 3 years.
- NCP2 is based on Ubuntu 8.04 packages.
- >13000 packages: The most number of packages for any OpenSolaris based distribution.
- Enhancements to many core server packages like Apache, rsync, MySql, etc to add support for solaris SMF.
- Package commands are same as ubuntu
  - To install `apt-get install apache2`
  - To upgrade `apt-get upgrade`
  - To remove `apt-get remove apache2`
Nexenta's difference

- ZFS integrated APT package handling utility
- Truly safe Upgrades.

**apt-clone install apache2**
- First, create a clone of the current active root filesystem
- Perform `apt-get install apache2` in the clone
- Add a GRUB entry to enable booting into this clone

Let us say the above command created the filesystem 'syspool/rootfs-nmu-005'

To activate this as the root filesystem upon bootup, run

**apt-clone -a syspool/rootfs-nmu-005**

You can now reboot, and the system will use this point.

This allows for very safe upgrades.
Devzones

- Developed by community member Tim Spriggs
- Simple dev-env setup
- Resource Efficient
- Admin Peace of mind
- Used for NCP hackathons
- More details:
  - devzone.sf.net
NCP stands for Nexenta Core *Platform*

Iso / Install tools make use of Debian packaging/setup tools like debarchiver and debootstrap
NCP Derivatives

- NexentaStor
  - Developer Edition: Gratis version for upto 4TB of storage

- StormOS
  - Developed by community member Andrew Stormont
  - Desktop distribution with XFCE Desktop
  - StormOS-builder, Jaunty packages and install improvements
  - http://www.stormos.org
The hub of all NCP activities
- Setup as a forge environment
  - Uses Redmine.
  - Users can setup projects.
  - Get access to wiki, repository.
  - Issue tracker and other tools.
- Currently hosted projects
  - Nexenta bug tracker
  - Nexenta's Opensolaris Gate + patches
  - Nexenta-builder suite
  - StormOS
Commercial Open Source

- Called the "OpenCore" model.
- Open Source core + Proprietary addon
- Widely used business model
  - MySQL
  - SugarCRM
  - Alfesco, Terracota, Asterix
- Nexenta as an OpenCore player
  - Leader: The fastest growing storage startup
  - Intention is to open complete Developer edition
OpenStorage

- Storage is the last bastion of proprietary IT solutions.
- NetApp and EMC are the big legacy players
- OpenStorage Entrants:
  - NexentaStor
  - Sun's Unified Storage
- Extremely fast growth
- Open Platform – No Vendor Lockin
- All of ZFS's goodness
**NexentaStor**
- Hardware Independant
- NAS / SAN / iSCSI
- Sync. Replication
- Remote Management
- Analytics

**NexentaCore**
- Ubuntu #1 community + packaging
- Solaris kernel
- > Million Downloads

**ZFS**
- Data integrity, end to end checksumming
- Software Raid. Identifies and corrects data corruption
NexentaStor

- Unified Solution for NAS and SAN
- Very scalable
- Unlimited Clones/snapshots
- Thin Provisioning
- End to End data Integrity
- Built in Mirroring & RAID
- Hybrid Storage Pools
NexentaStor Optional Modules

- HA Cluster
- VM Data Center
- Target: iSCSI and FC
- Delorean
- Worm
- AutoCDP
- Multiple Open Source plugins
Hosting site for all NexentaStor open source projects

Currently includes

- Amanda Backup
- ATA over Ethernet
- Benchmarking
- Clamav Antivirus
- Ntop
- Oracle backup
- UPS
References

- [http://www.nexenta.org](http://www.nexenta.org) : Home of the NCP project
  - #nexenta on IRC (irc.freenode.net)
  - gnusol-devel@sonic.net - Developer mailing list
  - gnusol-users@sonic.net - User mailing list
- [http://www.nexentastor.org](http://www.nexentastor.org) : Home of the NexentaStor open source projects
- [http://www.nexenta.com](http://www.nexenta.com) : Commercial home of Nexenta Systems
- [http://www.stormos.org](http://www.stormos.org) : The Xfce Derivative of NCP
- [http://devzone.sf.net](http://devzone.sf.net) : Devzones project
Thank you

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