# 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 : <u>The</u> 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`

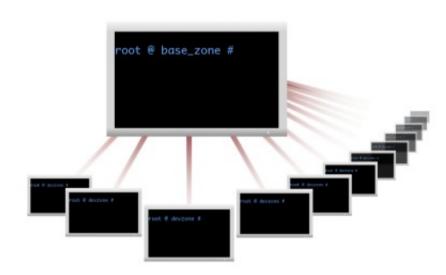  - To remove    `apt-get remove apache2`

# 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 upong 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.
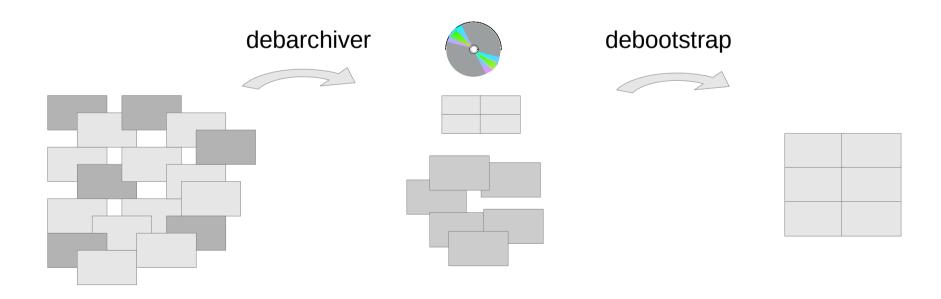
# Devzones

- 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

# Distribution creation

- NCP stands for Nexenta Core *Platform*

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

debarchiver

debootstrap

# NCP Derivatives

- NexentaStor

  - Developer Edition: Gratis version for upto 4TB of storage
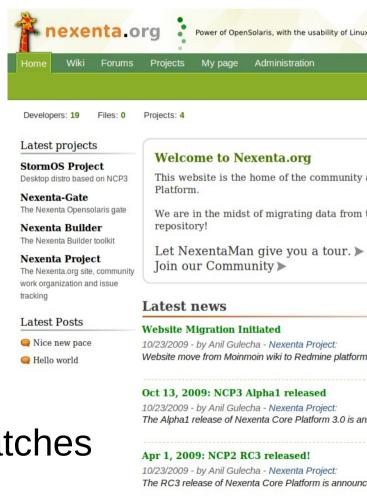
  - Enterprise Edition: Licensed version.

- StormOS

  - Developed by community member Andrew Stormont

  - Desktop distribution with XFCE Desktop

  - StormOS-builder, Jaunty packages and install improvements

  - http://www.stormos.org

# Nexenta.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 proprietery 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

# OpenStorage

**NexentaStor**
- Hardware Independant
- NAS / SAN / iSCSI
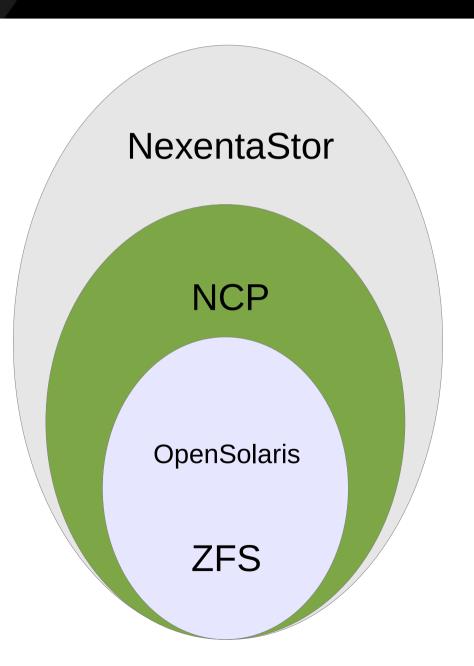- Sync. Replication
- Remote Management
- Analytics

Closed Source

Open Source

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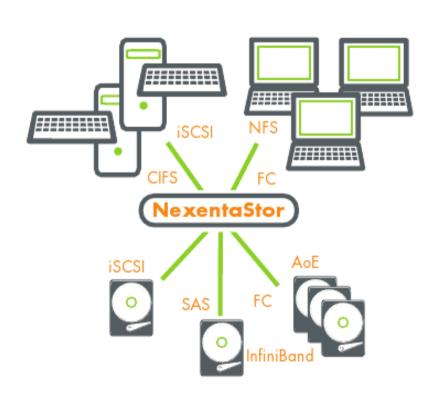- Solaris kernel
- > Million Downloads

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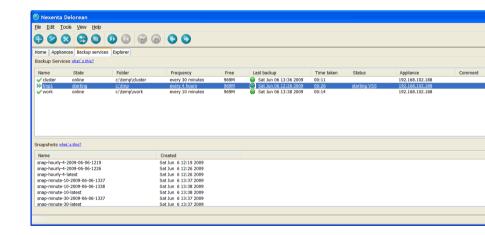
NexentaStor

NCP

OpenSolaris

ZFS

# 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

# NexentaStor.org

- 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 : 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 : Home of the NexentaStor open source projects

- http://www.nexenta.com : Commercial home of Nexenta Systems

- http://www.stormos.org : The Xfce Derivative of NCP

- http://devzone.sf.net : Devzones project

# Thank you

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