



# Nexenta, OpenStorage and Commercial Open Source

Anil Gulecha  
Developer / Community Lead,  
Nexenta Core Platform



# 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](http://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.



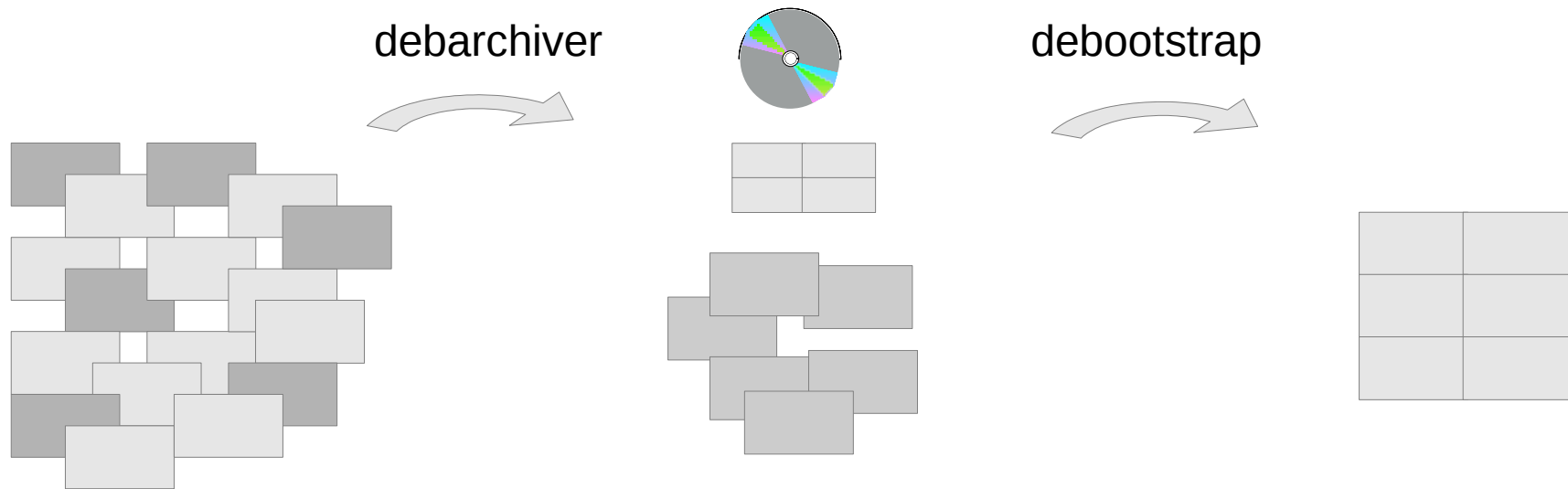
# Devzones

- 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](http://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







# 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

The screenshot shows the Nexenta.org website interface. At the top left is the giraffe logo and the text "nexenta.org". To the right of the logo is the tagline "Power of OpenSolaris, with the usability of Linux". Below this is a green navigation bar with links for "Home", "Wiki", "Forums", "Projects", "My page", and "Administration". Below the navigation bar, there are statistics: "Developers: 19", "Files: 0", and "Projects: 4".

The main content area is divided into two columns. The left column has a section titled "Latest projects" with four entries: "StormOS Project" (Desktop distro based on NCP3), "Nexenta-Gate" (The Nexenta Opensolaris gate), "Nexenta Builder" (The Nexenta Builder toolkit), and "Nexenta Project" (The Nexenta.org site, community work organization and issue tracking). Below this is a "Latest Posts" section with two entries: "Nice new page" and "Hello world".

The right column has a "Welcome to Nexenta.org" section with a message about the website being the home of the community and a link to "Let NexentaMan give you a tour. Join our Community". Below this is a "Latest news" section with three entries: "Website Migration Initiated" (10/23/2009 - by Anil Gulecha - Nexenta Project: Website move from Moinmoin wiki to Redmine platform), "Oct 13, 2009: NCP3 Alpha1 released" (10/23/2009 - by Anil Gulecha - Nexenta Project: The Alpha1 release of Nexenta Core Platform 3.0 is announced), and "Apr 1, 2009: NCP2 RC3 released!" (10/23/2009 - by Anil Gulecha - Nexenta Project: The RC3 release of Nexenta Core Platform is announced).



# 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



# OpenStorage

## NexentaStor

- Hardware Independent
- NAS / SAN / iSCSI
- Sync. Replication
- Remote Management
- Analytics

Closed Source

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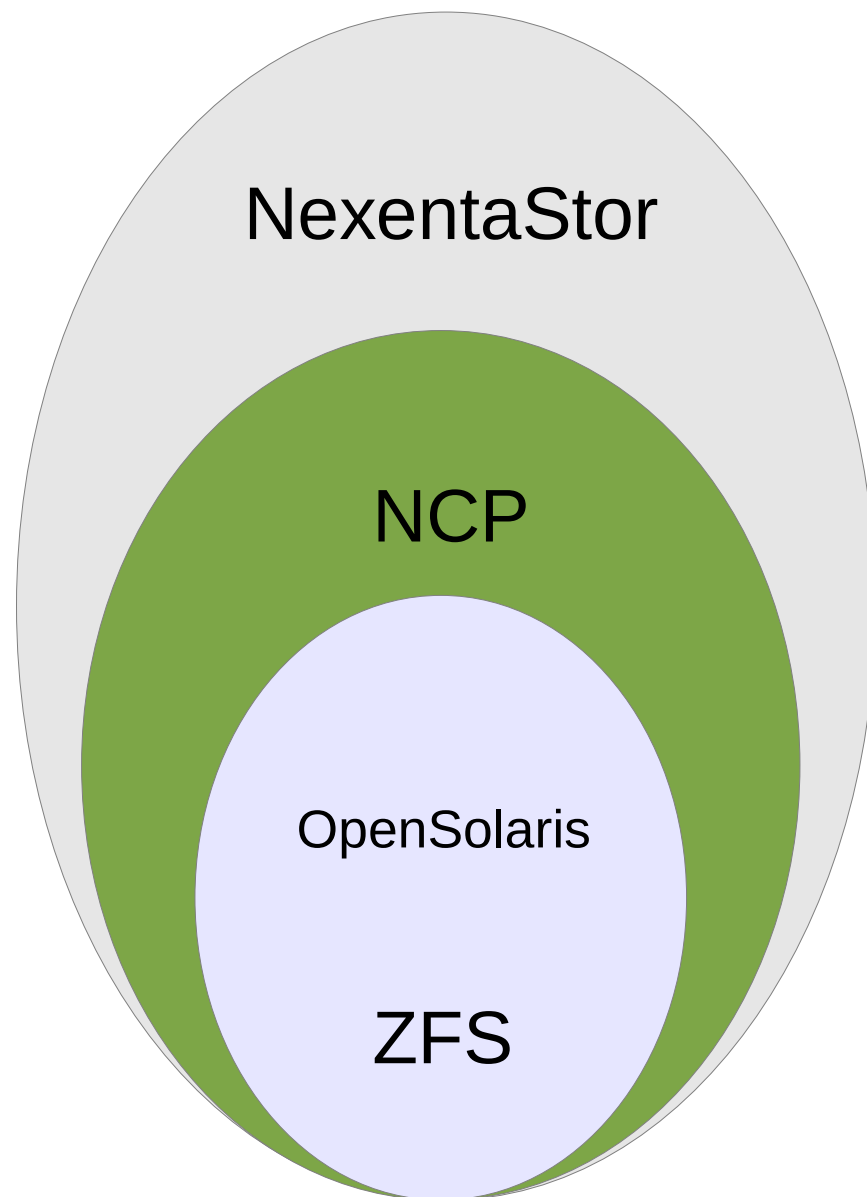
## NexentaCore

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

Open Source

## ZFS

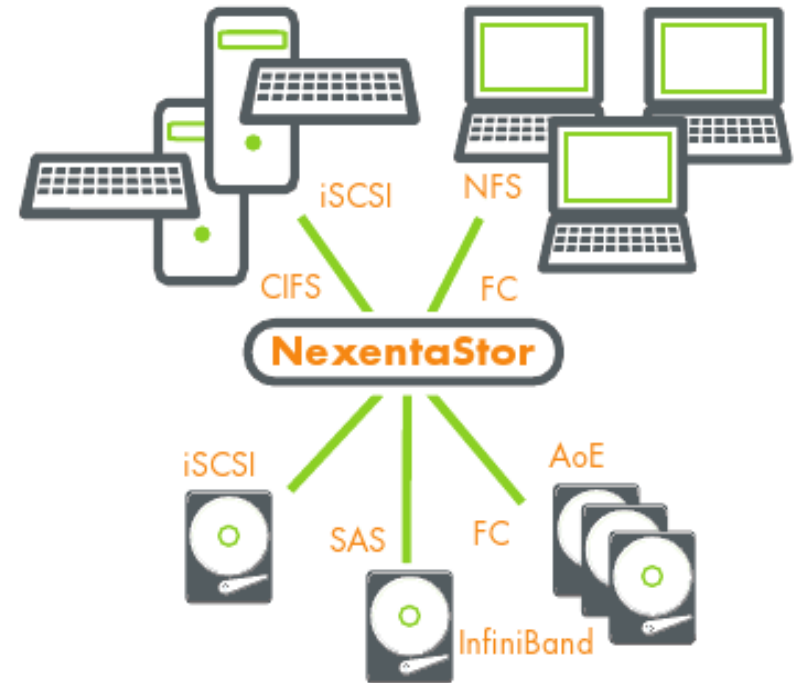
- Data integrity, end to end checksumming
- Software Raid. Identifies and corrects data corruption





# 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

The screenshot shows the 'Nexenta Delorean' interface. The top part displays a table of 'Backup Services' with columns for Name, State, Folder, Frequency, Free space, Last backup, Time taken, Status, Appliance, and Comment. Below this, there is a 'Snapshots' section with a table listing individual snapshots by Name and Created date.

Name	State	Folder	Frequency	Free	Last backup	Time taken	Status	Appliance	Comment
cluster	online	c:\temp\cluster	every 30 minutes	969M	Sat Jun 06 13:36 2009	00:11		192.168.102.188	
tmp1	starting	c:\temp	every 4 hours	969M	Sat Jun 06 12:26 2009	00:26	starting VSS	192.168.102.188	
work	online	c:\temp\work	every 10 minutes	969M	Sat Jun 06 13:38 2009	00:14		192.168.102.188	

Name	Created
snap-hourly-4-2009-06-06-1219	Sat Jun 6 12:19 2009
snap-hourly-4-2009-06-06-1226	Sat Jun 6 12:26 2009
snap-hourly-4-latest	Sat Jun 6 12:26 2009
snap-minute-10-2009-06-06-1337	Sat Jun 6 13:37 2009
snap-minute-10-2009-06-06-1338	Sat Jun 6 13:38 2009
snap-minute-10-latest	Sat Jun 6 13:38 2009
snap-minute-30-2009-06-06-1337	Sat Jun 6 13:37 2009
snap-minute-30-latest	Sat Jun 6 13:37 2009



# NexentaStor.org

- Hosting site for all NexentaStor open source projects
- Currently includes
  - Amanda Backup
  - ATA over Ethernet
  - Benchmarking
  - Clamav Antivirus
  - Ntop
  - Oracle backup
  - UPS



Downloads: **3120**   Developers: **21**   Files: **8**   Projects: **15**

## Latest projects

### ClamAV Antivirus

ClamAV antivirus integration with NexentaStor

### Oracle Backup Client

NMC plugin to backup oracle databases.

### Plain theme for NMV

This theme supports old browsers like an Internet Explorer 6. No JavaScript and new-featured CSS.

### Nexenta Builder

Toolkit that builds Nexenta distributions.

### UPS project

UPS monitoring and easy management extension

## Nexenta Partner

Nexenta welcomes partners to use this site to host their products and provide unmatched storage features. Becoming a partner offers many product and cost advantages to your solution.

[Become a Partner](#) >

[Social Network for Partners](#) >

## Latest news

### Nexenta-builder moved

September 28, 2009 - by Anil Gulecha - Nexenta Builder:  
The nexenta-builder project is now hosted at nexentastor.org

### UPS plugin Open sourced

September 14, 2009 - by Anil Gulecha - UPS project:  
UPS plugin has been open sourced under the CDDL license.

### NexentaStor 2.1.1 bug fix release





# References

- <http://www.nexenta.org> : Home of the NCP project
  - #nexenta on IRC (irc.freenode.net)
  - [gnusol-devel@sonic.net](mailto:gnusol-devel@sonic.net) - Developer mailing list
  - [gnusol-users@sonic.net](mailto: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

[anil@nexenta.org](mailto:anil@nexenta.org)

[anilg@#freenode](#)

Gtalk: [anil.verve](#)

[facebook/linkedin/twitter: anilgulecha](#)

<http://www.gulecha.org>