



# FreeNAS

## FreeNAS 10 BETA

2016.08.31

**The FreeNAS Project**  
iXsystems, Inc

### **Release Notes**

The FreeNAS Development Team is very proud to announce this general-availability BETA release of its totally redesigned, ground-up rewrite of FreeNAS, a release containing dozens of new features,

additional polish, and hundreds of bug fixes to the previously released ALPHA2 of FreeNAS 10.

While still not considered “production ready” by any means, we hope that the new features, redesigned middleware, advanced CLI interface, and radically improved User Experience of FreeNAS 10 overall will attract users who are interested in a preview of what is to come with FreeNAS 10 RELEASE.

We also hope that software developers who are keen to understand the internals of this new design, and the ways in which it is facilitating the evolution of entirely new class of features and capabilities, will join us in making their own contributions to what has become the world’s most popular open source storage operating system!

## What’s New Since ALPHA2

### 1. GUI Changes:

- a. Alerts have been added to sidebar (and can also be generated from the CLI for testing purposes).
- b. Logout / Reboot / Shutdown options and session status light now appear in lower-left corner of UI
- c. File selector widgets are now available wherever a file or directory argument is required during creation or updating of an object.
- d. Dashboard is now configurable and has a wider selection of widgets which can be dragged from an extensible palette, to either the widget display area or the side bar (widgets in the side bar will have a different display mode, post-BETA, to make them more efficient when placed there).
- e. Storage UI now has full support for creation and manipulation of ZFS snapshots and datasets (and zvols) as well as ZFS import / export.
- f. Storage UI now offers per-disk inspectors for setting disk-related options and viewing individual disk status.
- g. Storage UI now supports iSCSI share create / update / delete.
- h. Networking UI substantially cleaned up and supports more per-interface options.
- i. Full Settings UI is now available, including a fancy timezone picker!
- j. Calendaring UI for periodic tasks (still a WIP, but substantially functional), including replication, scrubs, smart tests, and such.
- k. Peering UI for managing backup / replication peers (still a WIP, but works well enough for basic ZFS replication peers),
- l. Virtual Machines now have their own GUI section, with support for both serial and VGA consoles and more comprehensive and powerful virtual device support.
- m. Basic Docker container UI allows creation of some “canned containers” for demonstration purposes, starting/stopping and attaching console sessions to them just like VMs.

## 2. Directory Services

- a. FreeNAS 10 now supports Active Directory and FreeIPA directory services, with support for paged queries (no more “whole directory caching”) and integration at all levels of the UI and CLI. The Directory Services code has been entirely rewritten, and also finally supports a configurable search path for looking up users and groups.
- b. Directory Server connection status is now available from the UI

## 3. Docker Containers

- a. While the support for Docker containers remains somewhat simplistic in the UI, the CLI allows for a wide range of docker container creation directly from dockerhub as well as manipulation of more complex container properties.
- b. Containers may now be used as a substitute for Jails in FreeNAS 9.x, though the BETA UI does not yet offer the same “curated collection” of plugins in the form of containers, but this is coming soon, along with a more sophisticated Docker container management UI.

## 4. Backups / Replication

- a. “Peers” have been broken out from the notion of backup and replication targets, and can be used more flexibly and for more things in the future. Backup and replication tasks simply reference peer objects.
- b. Uni-directional replication works with other FreeNAS peer machines from the GUI, using the calendaring service, and reports replication information on both sides of the connection.
- c. Bi-directional and service-failover replication requires another FreeNAS machine, and is available only from the CLI.

## 5. CLI Improvements

- a. The CLI is now essentially feature-complete
- b. Documentation for the CLI, while still “very early draft”, is built-in to FreeNAS 10 by going to <http://freenas.local/cli> (where freenas.local is the name of your FreeNAS 10 instance).
- c. A new session namespace in CLI allows users to see who else is logged in and send them messages in order to coordinate global activities; see session namespace.

## 6. ReST API

- a. FreeNAS 10 BETA now includes a full ReST API for controlling the middleware, complementing the existing WebSocket API (CLI and GUI use the WebSocket API)

## 7. Virtual Machines

- a. In addition to having a fancy new UI, many more VM templates are available from <https://github.com/freenas/vm-templates> and can be added to flexibly and freely, so send us pull requests for VM templates you want to publish!
- b. VGA graphical consoles are available for any VM guest that can boot from UEFI. VGA support is also coming to non-UEFI machines in the near future, though many such

guests also support VNC remote desktop support, which is another alternative for hosting a desktop-oriented virtual OS on FreeNAS.

- c. 9pfs, the Plan9 Filesystem, while still in its infancy in FreeBSD has been substantially improved by iXsystems and can be used to provide high-speed filesystem access between the host and guest OSes, support for which is also part of both the UI and CLI for VMs.

## Where to get FreeNAS 10 BETA

The installation media may be obtained from <http://www.freenas.org/download/>, with nightly builds, both pre and post BETA, also available from <http://download.freenas.org/10/MASTER> for those wishing to follow our progress even more closely. The FreeNAS update server also provides daily updates through BETA and beyond on the 10-Nightlies Train.

**See also the important Notes section at the end of this document.**

**IMPORTANT NOTES:** Documentation for the CLI, while still “very early draft”, is built-in to FreeNAS 10 by going to <http://freenas.local/cli> (where `freenas.local` is the name of your FreeNAS 10 instance).

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- **Upgrades from 9.x to 10 are NOT currently supported at all.** This will be an option in a post-BETA build, but is not yet ready for BETA (more testing and development is needed to make this option solid!).
- Only from-scratch installs of 10-BETA, or upgrades from earlier 10 builds (including 10-ALPHA2), using the [update.freenas.org](http://update.freenas.org) server, are currently supported. Upgrades using the ISO image are also **not yet supported!**
- Installation of [U]EFI boot blocks is currently not supported in 10-BETA; we default to BIOS booting all 10 installs by default right now for compatibility issues. This behavior will be selectable in post-BETA builds.
- **Google Chrome is the only supported browser at this time.** Multi-browser compatibility will be a goal for post-BETA builds.

## Q&A

### I. Forum

- A. Please see the [10 Testing section](#) on the [FreeNAS Forum](#) for general discussion about FreeNAS 10.

### II. Mailing lists

- A. Our FreeNAS Development [Mailing list](#) is also a reasonable place for discussion, though it tends to be somewhat low-traffic.

### III. IRC

- A. See the [#freenas](#) IRC channel on [irc.freenode.net](http://irc.freenode.net) for more real-time discussion on what's going on in the world of FreeNAS (though do understand that this is IRC, so a certain "relaxed attitude" may prevail).

Many of us are available to help answer questions and engage in general discussion on any or all of these forums!