napp-it cs
Client Server Edition

ZFS Storageserver
or mixed servergroups

„under construction"
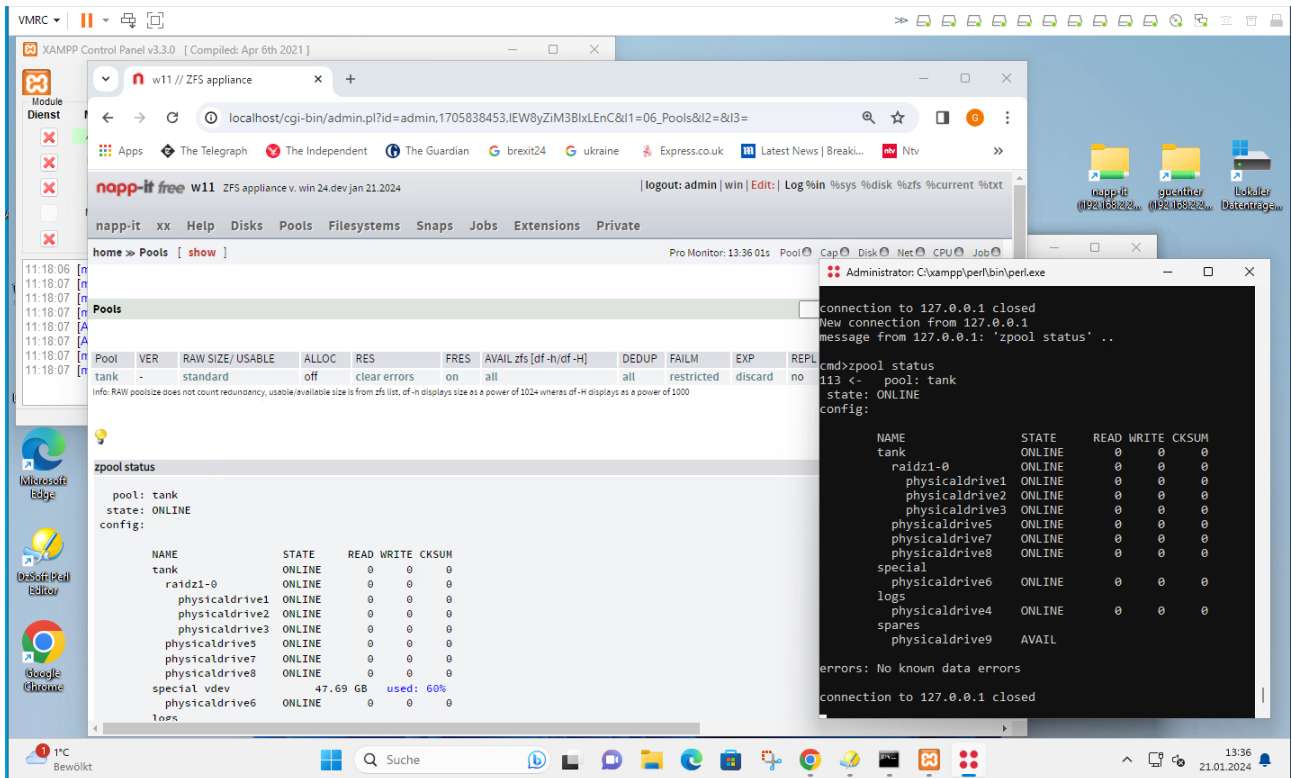
Howto

napp-it cs

About

Napp-it is a webbased management tool for a ZFS server since the early days of ZFS on Sun Solaris or OpenSolaris. Now ZFS is available on BSD, Illumos (Solaris fork), OSX and Windows where the first release candidate is available now. This gives a unique combination. The original Windows SMB server is not only quite the fastest one, it is also the most Windows compatible one especially regarding ACL permissions where only the Solaris kernelbased SMB server comes close. Combined with ZFS you have a dream team.

Napp-it cs is the „Rosetta Stone" of any mixed ZFS emvironment.
It is planned to manage any ZFS server (native Solaris ZFS or Open-ZFS) or replicate ZFS filesystems between them (native Solaris ZFS cannot replicate to/from Open-ZFS).

Main advantages of napp-it cs:
It is a mobile „Copy and Run" application, no installation requiredIt runs on Windows 10+ or Server.
Simply download and start. Setup, Update or downgrade is a simple copy action.

Requirements:
Napp-it cs needs a simple webserver with Perl and cgi capability. I decided to use
Xampp portable as it offers a whole webserver suite with Apache, FileZilla ftp, MercuryMail, mySQL, Perl, PHP, phpMyAdmin and sendmail. You can minimize size by deleting functions beside Apache and Perl.

Current state:
First beta with basic Disk, Pool, vdev and snap management.
Jobmanagement (snap, scrub, other)
Raid expansion, draid

todo: more testing, jobs and non ZFS functions ex disk handling on all platforms

Is it free?
Yes, for private noncommercial homeuse.

Those who use it for work need a Pro version to pay for development.

1. Concept

Napp-it cs requires a webserver that can run Perl scripts via cgi under any user account. I decided to use Apache on Windows with Xampp portable as this is well maintained and documented. Xampp comes with many additional services that you may need. If not just delete the according folders.

The whole Napp-it cs appliance software is in c:\xampp\[napp-it].
No installation required, just copy or update this folder.

The foldername [napp-it] can be changed ex to web-gui or other names.

Within the [napp-it] folder, you find 3 areas:

1. napp-it cs menues and scripts in
c:\xampp\[napp-it]\[data]   napp-it menues and scripts of a napp-it release
c:\xampp\[napp-it]\[data]\tools   Socket/background services, cgi libraries
You can have different napp-it versions in additional folders like data2,data3

In each data folder you find a startscript „start_zfs-gui_as admin.bat" and a stopscript.
Start the startscript as admin to start this version. This allows a troublefree up/downgrade

2. napp-it global settings, common for any release
c:\xampp\[napp-it]_log   napp-it settings, passwords or jobs
c:\xampp\[napp-it]\cfg   napp-it defaults
c:\xampp\[napp-it]\tmp   napp-it tmp folder (cleared on napp-it startup)

3, private files (update/downgrade safe) in
c:\xampp\[napp-it]_my
._my\wwwroot   -> data accessible via browser inder /my
                       -> individual html, logos, js or css files
._my\menues   -> individual web-gui menues
                       -> add =P to a folder with a private menu ex 01_My settings=P
._my_lib   -> individual language translations, menu settings or scripts

Start/Restart napp-it cs as admin via
C:\xampp\web-gui\data\start_zfs-gui_as_admin.bat

This will (re)start the ZFS web-gui with the version of this folder.
To switch to a version from another data folder, just (re)start it from there again.

When you (re)start napp-it, it will
- kill running napp-it cs services
- configure Apache and napp-it for this folder
- stop/start Apache
- start socket.pl as a backround server (to execute cli commands like zfs and zpool)
- start monitor.pl as a background task (for monitoring or preload data)
- start auto.pl as a background task for planned tasks without Windows settings)

This allows napp-it cs to be truly portable. You can use it as base for additional menues according to your needs or modify it with your look and feel without a reference to napp-it cs.

2. Setup 1 - 2 (no step 3)

1. Install newest Open-ZFS for Windows (optional)
https://github.com/openzfsonwindows/openzfs/releases

2. Download Xampp.zip minimal with the napp-it cs web-gui frontend
https://www.napp-it.org/doc/downloads/xampp.zip

or download Xampp portable from https://www.apachefriends.org/
uncompress to c:\xampp and add the \xampp\web-gui folder,

Start **C:\xampp\napp-it\data\start_zfs-gui_as_admin.bat**
This will copy the file to c:\xampp so you can start it from there as well.

-Open a Browser on Windows with adress http(s)://localhost
or from a remote client with the ip adress of Windows.You may need to open the firewall for remote access.

Update/Downgrade napp-it cs
A online update/ downgrade option in napp-it is planned. Until then, simply stop the webserver and
replace the \xampp\web-gui\data folder with the newer version. Restart napp-it cs.

newest beta.
https://napp-it.org/doc/downloads/napp-it_nightly.zip

Setup methods

You can run napp-it cs on your Windows laptop or desktop or you can virtualize Windows under ESXi,
Hyper-V or ProXmox

Not convinced?
Uninstall Open-ZFS and delete c:\xampp

Discuss:
https://forums.servethehome.com/index.php?forums/solaris-nexenta-openindiana-and-napp-it.26/
https://www.reddit.com/r/zfs/comments/19dpz70

Current state,
beta with
Disk, Pool, ZFS and Snap management
Jobmanagement (snap,scrub, replication any to any)
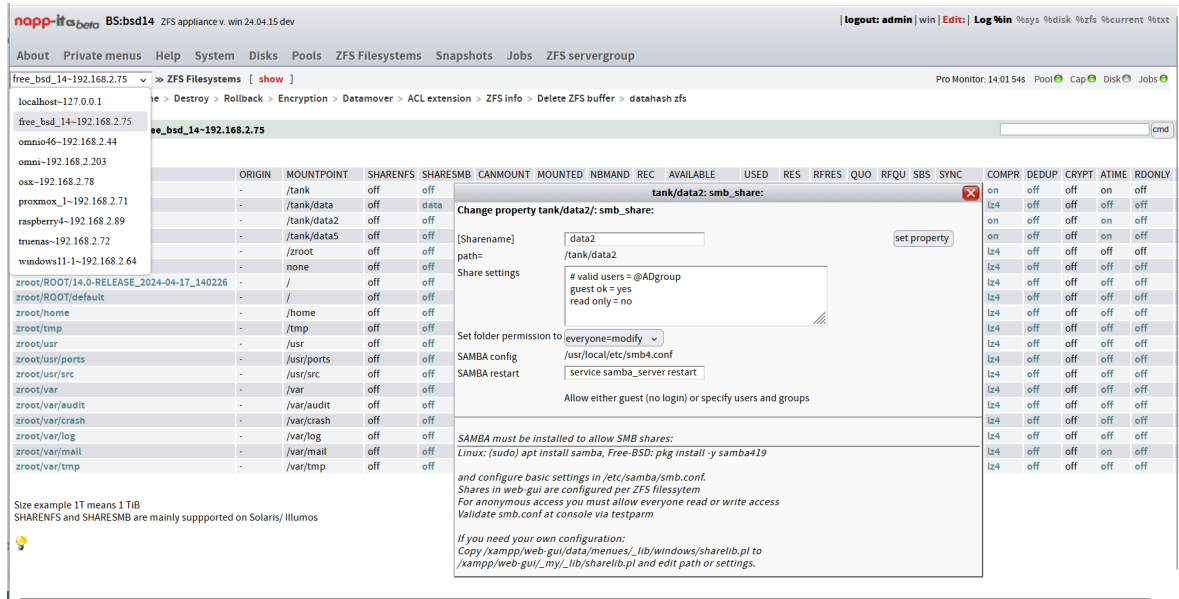Windows as source/ destination over network: currently not working
Raid-Z expansion, draid support
Overview of registry configuration options and settings in menu System.

newest infos:
https://www.napp-it.org/downloads/windows_en.html

3. ZFS Server groups

Napp-it is more than a simple web-cgi app to manage a local ZFS sever. It is a client server architecture where the webserver application admin.pl is only there for user interaction. ZFScommands, jobs or other OS settings are done by background services under remote control of the client webserver application.

For the server part napp-it starts a socketserver background task. As the socketserver can not only run on localhost but any remote host, you can use this to build sockerserver groups. In the main menu of napp-it cs you can switch to another ZFS server that was added as member in menu Servergroup.

To build a servergroup:
Use menu ZFS Servergroup: add++

Enter ip and hostname and an auth value that is needed to authorize socketserver access.
Use longer auth values ex from a SHA256 hash.

This creates a member file in /xampp/web-gui/_log/group/hostname~ip.txt with the auth value as content. This auth value ex 123abc is used for access to this ZFS socketserver.

The local Windows socketserver is in /xampp/web-gui/data/cs_server and started together with the web-gui. In the socket folder you find a file server.auth. Insert the same auth string as in hostname~ip.txt ex 123abc.

The cs_server auth value (123abc) is used for client authentication. It must be the same like the content of the memberfile in napp-it. If you copy the socket folder to other BSD/Linux/OSX/Windows to build (mixed) server groups, care that server.auth and the groupfile hostname~ip.txt contain the same value.

If you want to manage another Windows ZFS server without Apache and web-gui frontend:

Copy /xampp to c:\xampp (as you need Perl) and start only the socketserver from a admin terminal:
\xampp\perl\bin\perl \xampp\web-gui\data\cs_server\start_zfs_gui_as_admin.pl

4. Manage nearly an ZFS server

Napp-it cs is currently ported from Illumos/Solaris to ZFS on any server.

Napp-it cs is a client-server application with the frontend web-gui on Windows for user interaction and a socketserver on any managed host that executes common zfs, zpool or any other OS command in the background with admin permissions. Currently you can build server groups with nearly any ZFS appliance on BSD, Illumos (OmniOS, OpenIndiana, even SmartOS), Linux (mainly Debian/Proxmox), OSX, Solaris or Windows that you can control via the napp-it cs web-gui.

To manage a ZFS server remotely via napp-it cs, just download the folder cs_server to /opt/web-gui (or any other location like desktop on OSX or a ZFS pool and start the server app (Copy and run)

Discuss at
https://forums.servethehome.com/index.php?forums/solaris-nexenta-openindiana-and-napp-it.26/

Setup on:
*BSD, Linux/Proxmox, Illumos/OmniOS/OpenIndiana, OSX, Solaris: (Linux can be X86 or ARM)

Download cs_server online (copies cs_folder to /opt/web-gui) login as root and enter:
After second run, cs server ist (re)started automatically.
wget -O - www.napp-it.org/nappitcs | perl

SmartOS
Install SmartOS

pkgin update
pkgin install perl
pkgin install mc
ssh as root (Putty, WinSCP)

Initial download cs_server online to /opt/web-gui via (login as root and enter)
wget -O - www.napp-it.org/nappitcs | perl

To update the socketserver on any OS, run download again (this restarts the server):
wget -O - www.napp-it.org/nappitcs | perl

or download https://napp-it.org/doc/downloads/cs_server.zip
kill server.pl and monitor.pl, replace folder cs_server and restart the socketserver via
perl /opt/web-gui/cs_server/start_server_as_admin.pl

It is helpful if you use WinSCP or Putty on Windows access your ZFS server.

5. FAQ

Is Open-ZFS 2.2 on OSX or Windows stable?
Open-ZFS on OSX or Windows has release candidate state, this means beta. But as the underlying Open-ZFS is the same as on BSD or Linux, data security on a ZFS pool should be similar. Problems are more related to OSX or Windows crashes or performance.

For a production server with Open-ZFS, currently prefer ZFS on BSD or Linux. Illumos especially OmniOS that use Open-ZFS as upstream but integrates newer features only after additional tests has a proven stability with a ultra low issue rate. Best ZFS stability has native ZFS from Oracle but this is not free nor compatible with Open-ZFS.

Is napp-it for Windows free

Yes, for noncommercial homeuse. If you use it outside private homeuse you need a commercial Pro licence that includes updates and support. You can order single server or multiserver Pro subscriptions on an annual base or with a rebate for several years or perpetual.

Commercial users can request a quotation for a napp-it Pro subscription (this includes napp-it and napp-it cs) (valid per server): https://www.napp-it.org/extensions/quotation_en.html

Can I modify or redistribute napp-it
Yes for inhouse use. If you want to redistribute or sell you need a licence agreement.

Can I redistribute my own menues and functions that run under napp-it
Yes without any restrictions. If you want to include napp-it, ask for a redistribution licence.

Can I sell or configure servers with preconfigured napp-it
Yes, unless you or your customer has a Pro license for every server.
Ask for a reseller discount (depend on numbers).

Can I sublicence napp-it to distribute it under my own brand or exclusively for a region?
Yes, ask fo a redistribution license. Costs depend on numbers.