

OpenSUSE simple Docker operation.

The presentation enables the docker application on OpenSUSE. The presentations enables performance measurement. The presentation downloads and runs a couple of example containers. The presentation loads the raw performance measurements into a spreadsheet.

Hardware/Software in this presentation

Operating System: OpenSUSE Leap 42.2 (M State Moorhead spring 2017 version)

Operating System: Windows 10 Anniversary Update

Preuss

4/27/2017



Home



Trash

The presentation logs into Linux.





YaST Control Center @ opensuse-s2017

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The presentation opens YaST and launches "Software Management" as shown.



Home



Trash

YaST2

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nmon Search

Search in

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Package	Summary	Installed (Size
<input checked="" type="checkbox"/> nmon	Performance M...	16f-10.1	190.9 ...
<input type="checkbox"/> xfce4-panel-plugin-genmon	Generic Monito...	(3.4.0-10...	117.2 ...
<input type="checkbox"/> xfce4-panel-plugin-genmon-la...	Languages for ...	(3.4.0-10...	62.9 KiB

Description Technical Data Dependencies Versions File List

nmon - Performance Monitor

This systems administrator, tuner, benchmark tool gives you a huge amount of important performance information in one go. It can output the data in two ways 1. On screen (console, telnet, VNC, putty or X Windows) using curses for low CPU impact which is updated once every two seconds. You hit single characters on you keyboard to enable/disable the various sorts of data

Cancel Accept

The presentation selects "nmon" as shown. This is the program that will collect the performance measurements.

```
preuss@opensuse-s2017:~> nmon -f -U -D -g auto -s 2 -c 600
```

The presentation starts nmon as shown.

- f Must be the first option on the line (switches off interactive mode)
 Saves data to a CSV Spreadsheet format .nmon file in then local directory
- g auto Will generate a file
- U Include the Linux 10 CPU utilisation stats (CPUUTIL lines in the file)
- D Use with -g to add the Disk Wait/Service Time & in-flight stats
- s <seconds> time between data snapshots
- c <count> of snapshots before exiting

<http://nmon.sourceforge.net/pmwiki.php?n=Site.Documentation>

```
preuss@opensus-s2017:~> nmon -f -U -D -g auto -s 2 -c 600  
Generating disk group file from lsblk output to file: "auto"  
preuss@opensus-s2017:~> █
```

The presentation successfully started nmon data collection.


```
preuss@opensuse-s2017:~> nmon -f -U -D -g auto -s 2 -c 600
Generating disk group file from lsblk output to file: "auto"
preuss@opensuse-s2017:~> su
Password:
opensuse-s2017:/home/preuss # docker --version
Docker version 1.12.6, build 78d1802
opensuse-s2017:/home/preuss # █
```

This is how the presentation checks if Docker is installed. The screen shows Docker is successfully installed.


```
preuss@opensuse-s2017:~> nmon -f -U -D -g auto -s 2 -c 600
Generating disk group file from lsblk output to file: "auto"
preuss@opensuse-s2017:~> su
Password:
opensuse-s2017:/home/preuss # docker --version
Docker version 1.12.6, build 78d1802
opensuse-s2017:/home/preuss # docker ps
Cannot connect to the Docker daemon. Is the docker daemon running on this host?
opensuse-s2017:/home/preuss # service docker start
opensuse-s2017:/home/preuss # docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
NAMES					

```
opensuse-s2017:/home/preuss # █
```

The presentation checks the running Docker tasks. This time, Docker is shown running with no containers running.

```
preuss@opensuse-s2017:~> nmon -f -U -D -g auto -s 2 -c 600
Generating disk group file from lsblk output to file: "auto"
preuss@opensuse-s2017:~> su
```

```
Password:
opensuse-s2017:/home/preuss # docker --version
Docker version 1.12.6, build 78d1802
opensuse-s2017:/home/preuss # docker ps
Cannot connect to the Docker daemon. Is the docker daemon running on this host?
```

```
opensuse-s2017:/home/preuss # service docker start
opensuse-s2017:/home/preuss # docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
NAMES					

```
opensuse-s2017:/home/preuss # docker run hello-world
```

The presentation issues the command to download and run "hello-world".


```

opensus-s2017:/home/preuss # docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world

78445dd45222: Pull complete
Digest: sha256:c5515758d4c5e1e838e9cd307f6c6a0d620b5e07e6f927b07d05f6d12a1ac8d7
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker engine received your request.
 2. The Docker engine identified the image you wanted locally, and pulled it from the Docker Hub.
 3. The Docker engine created a new container from that image which runs the command you provided, and started it.
 4. The Docker engine returned the output of the command to your Docker client, which sent it back to you.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images and Dockerfiles to your Docker registry free Docker ID:
https://cloud.docker.com

For more information see our documentation at
https://docs.docker.com

opensus-s2017:/home/preuss # docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
NAMES
opensus-s2017:/home/preuss # docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
NAMES
3780391623f4       hello-world        "/hello"           44 seconds ago     Exited (0) 41 seconds ago
zen_cori
opensus-s2017:/home/preuss #

```

The presentation lists all currently running Docker containers. There are no currently running containers shown.

The presentation lists all available Docker containers on this system. Only "hello-world" is shown.

```
opensuse-s2017:/home/preuss # docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
```

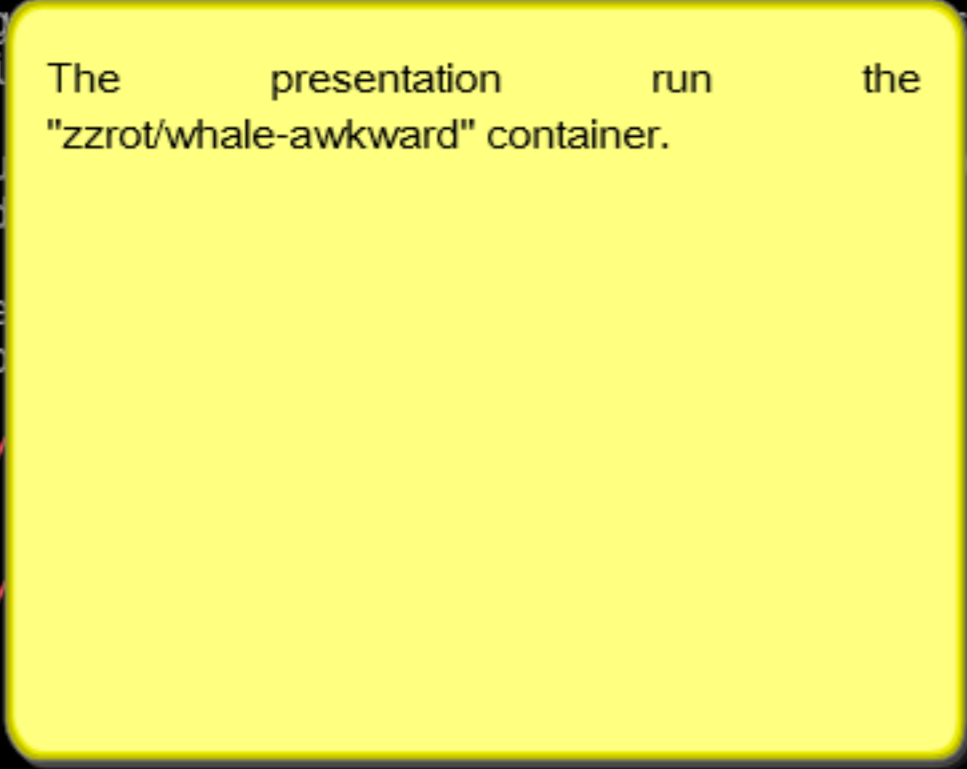
```
78445dd45222: Pull complete
Digest: sha256:c5515758d4c5e1e838e9cd307f6c6a0d620b5e07e6f927b07d05f6d12a1ac8d7
Status: Downloaded newer image for hello-world:latest
```

Hello from Docker!
This message shows that your installation appears to be working correctly.

- To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
 3. The Docker daemon created a new container from that image which runs the executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it to your terminal.

To try something different, you can create and run a new container with:

```
$ docker run -it
Share images, and
https://cloud.d
For more example
https://docs.do
```



```
opensuse-s2017:/
CONTAINER ID          CREATED          STATUS          PORTS
NAMES

opensuse-s2017:/
CONTAINER ID          CREATED          STATUS          PORTS
NAMES
3780391623f4         44 seconds ago  Exited (0)      41 seconds ago
zen_cori
```

```
opensuse-s2017:/home/preuss # docker run zzrot/whale-awkward
```



```

opensuse-s2017:/home/preuss # docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
NAMES
opensuse-s2017:/home/preuss # docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
NAMES
3780391623f4       hello-world        "/hello"           44 seconds ago     Exited (0) 41 seconds ago
zen_cori
opensuse-s2017:/home/preuss # docker run zzrot/whale-awkward
Unable to find image 'zzrot/whale-awkward:latest' locally
latest: Pulling from zzrot/whale-awkward
f7
Di The presentation lists all available containers 2bc895097e25af7a8326e90cc6f9dbdf71630
St on this system. whale-awkward:latest

Wh
Fr

opensuse-s2017:/home/preuss # docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
NAMES
76dd60fbc482       zzrot/whale-awkward "/hello"           12 seconds ago     Exited (0) 10 seconds ago
backstabbing_mirzakhani
3780391623f4       hello-world        "/hello"           About a minute ago Exited (0) About a minute ago
zen_cori
opensuse-s2017:/home/preuss #

```

The presentation lists all available containers on this system.

```

opensuse-s2017:/home/preuss # docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
NAMES
opensuse-s2017:/home/preuss # docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
NAMES
3780391623f4       hello-world        "/hello"           44 seconds ago    Exited (0) 41 seconds ago
zen_cori
opensuse-s2017:/home/preuss # docker run zzrot/whale-awkward
Unable to find image 'zzrot/whale-awkward:latest' locally
latest: Pulling from zzrot/whale-awkward
f77069336d7b: Pull complete
Digest: sha256:af96027106a08cb077dab02c1622bc895097e25af7a8326e90cc6f9dbdf71630
Status: Downloaded newer image for zzrot/whale-awkward:latest

      ##
     ## ## ##      ==
    ## ## ## ## ## ===
   /"-----" \  / ===

```

The presentation downloads and run the container "atmoz/sftp".

```

opensuse-s2017:/home/preuss # docker run atmoz/sftp

```

```
opensus-s2017:/home/preuss # docker run atmoz/sftp --readme
```

The "atmoz/sftp" container has a readme option after download. The presentation issues the command to view the readme documentation.

File Edit View Bookmarks Settings Help

```
opensus-s2017:/home/preuss # clear
opensus-s2017:/home/preuss # docker run atmoz/sftp --readme
# Supported tags and respective `Dockerfile` links

- [`debian-jessie`, `debian`, `latest` (*Dockerfile*)](https://github.com/atmoz/sftp/blob/master/Dockerfile) [![]](https://images.microbadger.com/badges/image/atmoz/sftp.svg) (http://microbadger.com/images/atmoz/sftp "Get your own image badge on microbadger.com")
- [`alpine-3.5`, `alpine` (*Dockerfile*)](https://github.com/atmoz/sftp/blob/alpine/Dockerfile) [![]](https://images.microbadger.com/badges/image/atmoz/sftp:alpine.svg) (http://microbadger.com/images/atmoz/sftp:alpine "Get your own image badge on microbadger.com")
- [`alpine-3.4` (*Dockerfile*)](https://github.com/atmoz/sftp/blob/alpine-3.4/Dockerfile) [![]](https://images.microbadger.com/badges/image/atmoz/sftp:alpine-3.4.svg) (http://microbadger.com/images/atmoz/sftp:alpine-3.4 "Get your own image badge on microbadger.com")

# Securely share your files

Easy to use SFTP ([SSH File Transfer Protocol](https://en.wikipedia.org/wiki/SSH_File_Transfer_Protocol)) server with [OpenSSH](https://en.wikipedia.org/wiki/OpenSSH).
This is an automated build linked with the [debian](https://hub.docker.com/_/debian/) and [alpine](https://hub.docker.com/_/alpine/) repositories.

# Usage

- Required: define users as command arguments, STDIN or mounted in `/etc/sftp-users.com` (syntax: `user:pass[:e][:uid[:gid[:dir1[,dir2]...]]]...`).
  - Set UID/GID manually for your users if you want them to make changes to your mounted volumes with permissions matching your host filesystem.
  - Add directory names at the end, if you want to create them under the user's home directory. Perfect when you just want a fast way to upload something.
- Optional (but recommended): mount volumes.
  - The users are chrooted to their home directory, so you can mount the volumes in separate directories inside the user's home directory (/home/user/**mounted-directory**) or just mount the whole **/home** directory. Just remember that the users can't create new files directly under their own home directory, so make sure there are at least one subdirectory if you want them to upload files.
  - For consistent server fingerprint, mount your own host keys (i.e. `/etc/ssh/ssh_host_*`)
```

This is part of the "atmoz/sftp" readme documentation.

```

opensuse-s2017:/home/preuss # docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS
PORTS             NAMES
87c92b9b718f      atmoz/sftp         "/entrypoint --readme"  45 seconds ago     Exited (0) 41 seconds ago
1f56567f52be      cranky_sammet     "/entrypoint --readme"  About a minute ago Exited (0) About a minute ago
d2ebdfe78343      atmoz/sftp         "/entrypoint"         About a minute ago Exited (3) About a minute ago
76dd60fbc482      elegant_golick    zzrot/whale-awkward  "/hello"           3 minutes ago       Exited (0) 3 minutes ago
3780391623f4      backstabbing_mirzakhani
hello-world       "/hello"           4 minutes ago       Exited (0) 4 minutes ago
zen_cori
opensuse-s2017:/home/preuss #
    
```

This is a listing of all available containers on this system.

```

opensuse-s2017:/home/preuss # docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS
PORTS              NAMES
87c92b9b718f       atmoz/sftp         "/entrypoint --readme"   45 seconds ago     Exited (0) 41 seconds ago
1f56567f52be       atmoz/sftp         "/entrypoint --readme"   About a minute ago Exited (0) About a minute ago
d2ebdfe78343       atmoz/sftp         "/entrypoint"           About a minute ago Exited (3) About a minute ago
76dd60fbc482       zzrot/whale-awkward "/hello"               3 minutes ago      Exited (0) 3 minutes ago
3780391623f4       hello-world        "/hello"               4 minutes ago      Exited (0) 4 minutes ago
zen_cori

opensuse-s2017:/home/preuss # exit
exit
preuss@opensuse-s2017:~> ps x | grep nmon
 5724 pts/0    S      0:02 nmon -f -U -D -g auto -s 2 -c 600
 8532 pts/0    S+    0:00 grep --color=auto nmon
preuss@opensuse-s2017:~>
    
```

The presentation logs out of "root".

The presentation finished before the "nmon" time is done.

The presentation searches for the "nmon" process as shown.

```

opensuse-s2017:/home/preuss # docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS
PORTS              NAMES
87c92b9b718f      atmoz/sftp         "/entrypoint --readme" 45 seconds ago     Exited (0) 41 seconds ago
1f56567f52be      cranky_sammet     "/entrypoint --readme" About a minute ago  Exited (0) About a minute ago
d2ebdfe78343      atmoz/sftp         "/entrypoint"         About a minute ago  Exited (3) About a minute ago
76dd60fbc482      elegant_golick    "/hello"             3 minutes ago       Exited (0) 3 minutes ago
3780391623f4      backstabbing_mirzakhani
zen_cori           hello-world         "/hello"             4 minutes ago       Exited (0) 4 minutes ago
    
```

```

opensuse-s2017:/home/preuss # exit
exit
preuss@opensuse-s2017:~> ps x | grep nmon
 5724 pts/0    S        0:02 nmon -f -U -D -g auto -s 2 -c 600
 8532 pts/0    S+       0:00 grep --color=auto nmon
preuss@opensuse-s2017:~> kill 5724
preuss@opensuse-s2017:~> ps x | grep nmon
 8558 pts/0    S+       0:00 grep --color=auto nmon
preuss@opensuse-s2017:~> █
    
```

The presentation stops or kills the "nmon" process. This ends the data collection before the expiration time originally given.

```
preuss@opensuse-s2017:~> ls
auto      Documents  GNUstep    os          Pictures    scripts02  Videos
bin       Downloads  Music      ossec       Public     setup      Templates
Desktop   example_scripts  opensuse-s2017_170426_2124.nmon  ossec-info.txt  public_html
```

The presentation lists all the files to see the "nmon" data file. The "nmon" data traditionally ends with .nmon


```
preuss@opensus-s2017:~> ls
auto      Documents      GNUstep        os            Pictures       scripts02     Videos
bin       Downloads      Music          ossec         Public         setup
Desktop   example_scripts  opensus-s2017_170426_2124.nmon  ossec-info.txt  public_html    Templates
preuss@opensus-s2017:~> sort -n opensus-s2017_170426_2124.nmon > opensus-s2017_170426_2124.csv
```

The presentation uses the Linux sort command to arrange the data in opensus-s2017__170426__2124.nmon in a form suitable for a spreadsheet.

Untitled 1 - LibreOffice Calc

File Edit View Insert Format Sheet Data Tools Window Help

Liberation Sans

A1

1 A

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13

14

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16

17

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Sheet1

Sheet 1 of 1

Default

Average: ; Sum: 0

100%

Open - LibreOffice

Places

- Home
- Network
- Root
- Trash
- 28.0 Gi...
- 10.0 Gi...

Home

- bin
- Desktop
- Documents
- Downloads
- example_scripts
- GNUstep
- Music
- os
- ossec
- Pictures
- Public
- public_
- scripts0
- setup
- Templa
- Videos
- auto
- opensus-s2017_170426_2124.csv
- opensus-s2017_170426_2124.nmon
- ossec-info.txt

Name: opensus-s2017_170426_2124.csv

Filter: All files

Read-only

Open

Cancel

The presentation opens the opensus-s2017_170426_2124.csv in a spreadsheet program.

File Edit View Insert Format

Liberation Sans 10

A1

	A	B
1		
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26		

Sheet1

Text Import - [opensuse-s2017_170426_2124.csv]

Import

Character set: Western Europe (DOS/OS2-850/International)

Language: Default - English (USA)

From row: 1

Separator Options

Fixed width Separated by

Tab Comma Semicolon Space Other

Merge delimiters Text delimiter: "

Other Options

Quoted field as text Detect special numbers

Fields

Column type:

	Standard	Standard	Standard
1	AAA	boottime	09:03 PM 26-Apr-2017
2	AAA	command	nmon -f -U -D -g auto -s 2 -c 600
3	AAA	cpus	2
4	AAA	date	26-APR-2017
5	AAA	disks	5
6	AAA	disks_per_line	150
7	AAA	host	opensuse-s2017
8	AAA	interval	2
9	AAA	max_disks	256

Help OK Cancel

The presentation uses the options shown to import the csv file.

	A	B	C
483	<u>BBBP</u>		452 /etc/fstab
484	<u>BBBP</u>		453 /etc/fstab
485	<u>BBBP</u>		454 /etc/fstab
486	<u>BBBP</u>		455 netstat -r
487	<u>BBBP</u>		456 netstat -r
488	<u>BBBP</u>		457 netstat -r
489	<u>BBBP</u>		458 netstat -r
490	<u>BBBP</u>		459 netstat -r
491	<u>BBBP</u>		460 uptime
492	<u>BBBP</u>		461 uptime
493	<u>BBBP</u>		462 getconf PAGESIZE
494	<u>BBBP</u>		463 getconf PAGESIZE
495	CPU001	CPU 1 opensuse-s2017	User%
496	CPU001	T0001	3
497	CPU001	T0002	
498	CPU001	T0003	
499	CPU001	T0004	3
500	CPU001	T0005	1
501	CPU001	T0006	
502	CPU001	T0007	
503	CPU001	T0008	
504	CPU001	T0009	
505	CPU001	T0010	6
506	CPU001	T0011	1
507	CPU001	T0012	7
508	CPU001	T0013	

The sort command arranged the data in the spreadsheet. The presentation highlights one of the headers/title lines found in the data.

Looking through the data, many other headers/title lines will be found.