Fall2019 Cent OS 7 NFS Installation and Operation

The presentation installs NFS on a NFS server named "nfs-server" and a NFS client named "nfs-client". The presentation configures both systems for communication. At the end, the presentation installs Wireshark to capture and export packets.

Preuss
12/4/2019

Cent OS 7 Settings on both systems

40 GB disk
8 GB RAM
2 Processors
NAT Network Settings

Software Install: Server with GUI (no additional software)
Automatic partitioning
No security policy chosen

Post-Installation
Install open-vm-tools
Install updates

Resource:
https://www.unixmen.com/setting-nfs-server-client-centos-7/

nfs-server - VMware Workstation 15 Player (Non-commercial use only)

Player

Applications Places Tue 20:45

Home

Trash

The presentation logs into the first CentOS 7 system named "nfs-server".

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CENTOS

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[preuss@nfs-server ~]$ su
Password:
[root@nfs-server preuss]#
```

The presentation opens the terminal and becomes root.

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[preuss@nfs-server ~]$ su
Password:
[root@nfs-server preuss]# yum install nfs-utils nfs-utils-lib
```

The presentation issues the command to install the necessary programs.

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[preuss@nfs-server ~]$ su
Password:
[root@nfs-server preuss]# yum install nfs-utils nfs-utils-lib
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
 * base: mirror.tzulo.com
 * extras: mirrors.usinternet.com
 * updates: centos.mirrors.tds.net
Package 1:nfs-utils-1.3.0-0.65.el7.x86_64 already installed and latest version
No package nfs-utils-lib available.
Nothing to do
[root@nfs-server preuss]#
```

All the required software is installed.

nfs-server - VMware Workstation 15 Player (Non-commercial use only)

Player | Applications Places Terminal Tue 20:47

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# systemctl enable rpcbind
[root@nfs-server preuss]# systemctl enable nfs-server
Created symlink from /etc/systemd/system/multi-user.target.wants/nfs-server.service to /usr/lib/systemd/system/nfs-server.service.
[root@nfs-server preuss]# systemctl enable nfs-lock
[root@nfs-server preuss]# systemctl enable nfs-idmap
[root@nfs-server preuss]#
```

The presentation issues the "systemctl" commands to enable nfs.

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# systemctl start rpcbind
[root@nfs-server preuss]# systemctl start nfs-server
[root@nfs-server preuss]# systemctl start nfs-lock
[root@nfs-server preuss]# systemctl start nfs-idmap
[root@nfs-server preuss]#
```

The presentation issues the "systemctl" commands to start nfs.

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# mkdir /var/share01
[root@nfs-server preuss]# mkdir /var/share02
[root@nfs-server preuss]#
```

The presentation creates two directories to share as shown.

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# chmod 777 /var/share01
[root@nfs-server preuss]# chmod 777 /var/share02
[root@nfs-server preuss]#
```

The presentation changes the permissions on the directories to share as shown.

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# chown nobody:nobody /var/share01
[root@nfs-server preuss]# chown nobody:nobody /var/share02
[root@nfs-server preuss]#
```

The presentation changes the ownership of the directories to share as shown.

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# nano /etc/exports
```

Home

Trash

The presentation uses the nano program to edit the "exports" file as shown.

nfs-server - VMware Workstation 15 Player (Non-commercial use only)

Player | Applications Places Terminal Tue 20:53

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
 GNU nano 2.3.1                File: /etc/exports                      Modified

/var/share01/ 192.168.117.0/24(rw,sync)
/var/share02/ 192.168.117.0/24(ro,sync)
```

The presentation edits the exports file as shown.

The directory /var/share01 is shared with any host with an IP address within 192168.117.0/24. The directory will be read and write. The directory will also be sync.

The directory /var/share02 is shared with any host with an IP address within 192168.117.0/24. The directory will be read only. The directory will also be sync.

```
^G Get Help  ^O WriteOut  ^R Read File ^Y Prev Page ^K Cut Text  ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is  ^V Next Page ^U UnCut Text ^T To Spell
```

preuss@nfs-server:/home/preuss

nfs-server - VMware Workstation 15 Player (Non-commercial use only)

Player

Applications Places Terminal Tue 20:54

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# nano /etc/exports
[root@nfs-server preuss]# /sbin/ip a sh
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 00:0c:29:67:81:72 brd ff:ff:ff:ff:ff:ff
    inet 192.168.117.138/24 brd 192.168.117.255 scope global noprefixroute dynamic ens33
       valid_lft 1561sec preferred_lft 1561sec
    ine                                                                  xroute

3: vir                                                  disc noqueue state DOWN group default qlen 1000
    li
    in                                                  l virbr0

4: vir                                                  _fast master virbr0 state DOWN group default qlen 1000
    li
[root@
```

The presentation documents the "nfs-server" IP address.

preuss@nfs-server:/home/preuss

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preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# exportfs -a
```

Home

Trash

The presentation loads the exports file changes into nfs as shown.

nfs-server - VMware Workstation 15 Player (Non-commercial use only)

Player | Applications Places Terminal | Tue 20:56

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# rpcinfo -p
   program vers proto   port  service
    100000    4   tcp    111  portmapper
    100000    3   tcp    111  portmapper
    100000    2   tcp    111  portmapper
    100000    4   udp    111  portmapper
    100000    3   udp    111  portmapper
    100000    2   udp    111  portmapper
    100024    1   udp  46052  status
    100024    1   tcp  41545  status
    100005    1   udp  20048  mountd
    100005    1   tcp  20048  mountd
    100005    2   udp  20048  mountd
    100005    2   tcp  20048  mountd
    100005    3   udp  20048  mountd
    100005    3   tcp  20048  mountd
    100003    3   tcp   2049  nfs
    100003    4   tcp   2049  nfs
    100227    3   tcp   2049  nfs_acl
    100003    3   udp   2049  nfs
    100003    4   udp   2049  nfs
    100227    3   udp   2049  nfs_acl
    100021    1   udp  38966  nlockmgr
    100021    3   udp  38966  nlockmgr
    100021    4   udp  38966  nlockmgr
    100021    1   tcp  46522  nlockmgr
    100021    3   tcp  46522  nlockmgr
    100021    4   tcp  46522  nlockmgr
[root@nfs-server preuss]#
```

The presentation lists the ports needed by nfs as shown.

preuss@nfs-server:/home/preuss

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nfs-server - VMware Workstation 15 Player (Non-commercial use only)

Player | Applications Places Terminal | Tue 21:05

Home

Trash

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

GNU nano 2.3.1 File: firewall_rpcinfo.sh Modified

```
#!/bin/bash


# This opens nfs firewall ports as listed by rpcinfo -p
#

firewall-cmd --permanent --add-port=111/tcp
firewall-cmd --permanent --add-port=111/udp
firewall-cmd --permanent --add-port=20048/udp
firewall-cmd --permanent --add-port=20049/tcp
firewall-cmd --permanent --add-port=2049/udp
firewall-cmd --permanent --add-port=2049/tcp
firewall-cmd --permanent --add-port=38966/udp
firewall-cmd --permanent --add-port=38966/tcp
firewall-cmd --permanent --add-port=46522/udp
firewall-cmd --permanent --add-port=46522/tcp

firewall-cmd --reload
```

The presentation creates a shell script to open the necessary ports as shown.

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell

preuss@nfs-server:/home/preuss

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nfs-server - VMware Workstation 15 Player (Non-commercial use only)

Player

Applications Places Terminal Tue 21:06

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# chmod 700 firewall_rpcinfo.sh
[root@nfs-server preuss]# ./firewall_rpcinfo.sh
```

Home

Trash

The presentation makes the shell script executable as shown.
The presentation runs the shell script "firewall_rpcinfo.sh"

preuss@nfs-server:/home/preuss

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# chmod 700 firewall_rpcinfo.sh
[root@nfs-server preuss]# ./firewall_rpcinfo.sh
success
success
success
success
success
success
success
success
success
success
success
[root@nfs-server preuss]#
```

The script successfully opens the firewall ports.

preuss@nfs-client:/home/preuss

File Edit View Search Terminal Help

```
[preuss@nfs-client ~]$ su
Password:
[root@nfs-client preuss]# yum install nfs-utils nfs-utils-lib
```

Home

Trash

The presentation is now log in to "nfs-client" machine.

The presentation opens the terminal and becomes root as shown.

The presentation issues the command to install nfs.

Home

Trash

preuss@nfs-client:/home/preuss

File Edit View Search Terminal Help

```
[preuss@nfs-client ~]$ su
Password:
[root@nfs-client preuss]# yum install nfs-utils nfs-utils-lib
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
 * base: mirror.tzulo.com
 * extras: repo.miserver.it.umich.edu
 * updates: mirrors.usinternet.com
Package 1:nfs-utils-1.3.0-0.65.el7.x86_64 already installed and latest version
No package nfs-utils-lib available.
Nothing to do
[root@nfs-client preuss]#
```

The presentation finds all the necessary programs are installed.

preuss@nfs-client:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-client preuss]# systemctl enable rpcbind
[root@nfs-client preuss]# systemctl enable nfs-server
Created symlink from /etc/systemd/system/multi-user.target.wants/nfs-server.service to /usr/lib/systemd/system/nfs-server.service.
[root@nfs-client preuss]# systemctl enable nfs-lock
[root@nfs-client preuss]# systemctl enable nfs-idmap
[root@nfs-client preuss]#
```

Home

Trash

The presentation issues the "systemctl" commands to enable nfs.

preuss@nfs-client:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-client preuss]# systemctl start rpcbind
[root@nfs-client preuss]# systemctl start nfs-server
[root@nfs-client preuss]# systemctl start nfs-lock
[root@nfs-client preuss]# systemctl start nfs-idmap
[root@nfs-client preuss]#
```

Home

Trash

The presentation issues the "systemctl" commands to start nfs.

preuss@nfs-client:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-client preuss]# mkdir /mnt/share10
[root@nfs-client preuss]# mkdir /mnt/share20
[root@nfs-client preuss]#
```

Home

Trash

The presentation creates the receiving directories on "nfs-client".

preuss@nfs-client:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-client preuss]# mount -t nfs 192.168.117.138:/var/share01/ /mnt/share10/
```

Home

Trash

The presentation issues the mount command to connect
nfs-server /var/share10
to
nfs-client /mnt/share10

Home

Trash

preuss@nfs-client:~

File Edit View Search Terminal Help

```
[root@nfs-client preuss]# mount -t nfs 192.168.117.138:/var/share01/ /mnt/share10/
[root@nfs-client preuss]# mount -t nfs 192.168.117.138:/var/share02/ /mnt/share20/
[root@nfs-client preuss]# ls -l /mnt/share10
total 0
[root@nfs-client preuss]# touch /mnt/share10/silly_example_nfs.txt
[root@nfs-client preuss]# ls -l /mnt/share10
total 0
-rw-r--r--. 1 nfsnobody nfsnobody 0 Nov 26 21:12 silly_example_nfs.txt
[root@nfs-client preuss]# exit
exit
[preuss@nfs-client ~]$ touch /mnt/share10/yet_another_silly_nfs.txt
[preuss@nfs-client ~]$
```

The presentation successfully creates a file on "nfs-client /mnt/share10" which is really "nfs-server /var/share10"

Home

Trash

preuss@nfs-client:~

File Edit View Search Terminal Help

```
[root@nfs-client preuss]# mount -t nfs 192.168.117.138:/var/share01/ /mnt/share10/
[root@nfs-client preuss]# mount -t nfs 192.168.117.138:/var/share02/ /mnt/share20/
[root@nfs-client preuss]# ls -l /mnt/share10
total 0
[root@nfs-client preuss]# touch /mnt/share10/silly_example_nfs.txt
[root@nfs-client preuss]# ls -l /mnt/share10
total 0
-rw-r--r--. 1 nfsnobody nfsnobody 0 Nov 26 21:12 silly_example_nfs.txt
[root@nfs-client preuss]# exit
exit
[preuss@nfs-client ~]$ touch /mnt/share10/yet_another_silly_nfs.txt
[preuss@nfs-client ~]$ ls -l /mnt/share10
total 0
-rw-r--r--. 1 nfsnobody nfsnobody 0 Nov 26 21:12 silly_example_nfs.txt
-rw-rw-r--. 1 preuss    preuss    0 Nov 26 21:13 yet_another_silly_nfs.txt
[preuss@nfs-client ~]$
```

The presentation verifies the file creation.

preuss@nfs-server:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-server preuss]# ls -l /var/share01
total 0
-rw-r--r--. 1 nfsnobody nfsnobody 0 Nov 26 21:12 silly_example_nfs.txt
-rw-rw-r--. 1 preuss    preuss    0 Nov 26 21:13 yet_another_silly_nfs.txt
[root@nfs-server preuss]#
```

Home

Trash

The presentation returns to nfs-server and sees the newly created files in /var/share10.

preuss@nfs-client:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-client preuss]# yum install wireshark wireshark-gnome
```

Home

Trash

The presentation issues the command to install Wireshark on CentOS 7.

nfs-client - VMware Workstation 15 Player (Non-commercial use only)

Player

Applications Places Terminal Tue 21:19

Home

Trash

preuss@nfs-client:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-client preuss]# yum install wireshark wireshark-gnome
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
 * base: mirror.tzulo.com
 * extras: repo.miserver.it.umich.edu
 * updates: mirrors.usinternet.com
Package wireshark-1.10.14-16.el7.x86_64 already installed and latest version
Resolving Dependencies
--> Running transaction check
---> Package wireshark-gnome.x86_64 0:1.10.14-16.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================================================
 Package                          Arch                    Version                          Repository              Size
================================================================================================================
Installing:
 wireshark-gnome                  x86_64                  1.10.14-16.el7                   base                   910 k

Transaction Summary
================================================================================================================
Install  1 Package

Total download size: 910 k
Installed size: 2.4 M
Is this ok [y/d/N]: y
Downloading packages:
wireshark-gnome-1.10.14-16.el7.x86_64.rpm                                                  | 910 kB  00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : wireshark-gnome-1.10.14-16.el7.x86_64                                                          1/1
  Verifying  : wireshark-gnome-1.10.14-16.el7.x86_64                                                          1/1

Installed:
  wireshark-gnome.x86_64 0:1.10.14-16.el7

Complete!
[root@nfs-client preuss]#
```

The presentation completes the installation.

preuss@nfs-client:/home/preuss

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nfs-client - VMware Workstation 15 Player (Non-commercial use only)

Player | Applications Places Terminal | Tue 21:21

The Wiresh

File Edit View Go Capture Analyze Statisti

Filter:

WIRESHARK The World's M
Version 1.10.14 (

Capture

No interface can be used for capturing in this syste
the current configuration.

(Couldn't run /usr/sbin/dumpcap in child process: P
denied
Are you a member of the 'wireshark' group? Try run
'usermod -a -G wireshark _your_username_' as roo

See Capture Help below for details.

Refresh Interfaces
Get a new list of the local interfaces.

Capture Help

How to Capture
Step by step to a successful capture setup

Network Media
Specific information for capturing on:
Ethernet, WLAN, ...

Ready to load or capture | No Packets

preuss@nfs-client:/home/preuss

File Edit View Search Terminal Help

```
[root@nfs-client preuss]# usermod -a -G wireshark preuss
```

The presentation adds the login "preuss" to the wireshark group. The presentation logs out of the system and logs back into the system.

preuss@nfs-client:/home/preuss | The Wireshark Network Analyzer [... | 1 / 4

nfs-client - VMware Workstation 15 Player (Non-commercial use only)

Player

Applications Places Tue 21:22

Favorites
Accessories
Documentation
Internet
Office
Sound & Video
Sundry
System Tools
Utilities
Other

Empathy
Firefox
Wireshark Network Analyzer

Activities Overview

The presentation starts Wireshark from the menu as shown.

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CENTOS

nfs-client - VMware Workstation 15 Player (Non-commercial use only)

Player | Applications Places Wireshark Network Analyzer Tue 21:23

The Wireshark Network Analyzer [Wireshark 1.10.14 (Git Rev Unknown from unknown)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: Expression... Clear Apply Save

WIRESHARK

The World's Most Popular Network Protocol Analyzer

Version 1.10.14 (Git Rev Unknown from unknown)

Capture

Interface List
Live list of the capture interfaces
(counts incoming packets)

Start
Choose one or more interfaces to capture from, then **Start**

virbr0
bluetooth0
nflog
nfqueue
ens33
any

Capture Op
Start a capture with

How to Cap
Step by step to a suc

Files

Open
Open a previously captured file

Open Recent:

Sample Captures
A rich assortment of example capture files on the wiki

Online

Website
Visit the project's website

User's Guide
The User's Guide (online version)

Security
Work with Wireshark as securely as possible

The presentation starts Wireshark listening on the current ethernet port (ens33).

Ready to load or capture

Profile: Default

CENTOS 7

The Wireshark Network Analyzer [...

1 / 4

nfs-client - VMware Workstation 15 Player (Non-commercial use only)

Player | Applications Places Wireshark Network Analyzer Tue 21:23

Capturing from ens33 [Wireshark 1.10.14 (Git Rev Unknown from unknown)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protoc	Lengt	Info
26	1.091258946	fe80::b551:3bad:2b68:(	ff02::fb	MDNS	95	Standard query 0x0000 A vff-print.local, "QM" question
27	1.503754624	192.168.117.1	192.168.117.255	NBNS	92	Name query NB VFF-PRINT<20>

- Frame 1: 92 bytes on wire (736 bits), 92 bytes captured (736 bits) on interface 0
- Ethernet II, Src: Vmware_c0:00:08 (00:50:56:c0:00:08), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
- Internet Protocol Version 4, Src: 192.168.117.1 (192.168.117.1), Dst: 192.168.117.255 (192.168.117.255)
- User Datagram Protocol, Src Port: netbios-ns (137), Dst Port: netbios-ns (137)
- NetBIOS Name Service

The presentation sees Wireshark is now collecting packets.

```
0000  ff ff ff ff ff ff 00 50  56 c0 00 08 08 00 45 00   .......P V.....E.
0010  00 4e 1c 25 00 00 80 11  b2 28 c0 a8 75 01 c0 a8   .N.%.... .(..u...
0020  75 ff 00 89 00 89 00 3a  8f 21 91 7a 01 10 00 01   u......: .!.z....
0030  00 00 00 00 00 00 20 46  47 45 47 45 47 43 4e 46   ...... F GEGEGCNF
```

ens33: <live capture in progress> File: . Packets: 27 · Displayed: 27 (100.0%) Profile: Default

CENTOS 7

Capturing from ens33 [Wireshark ... 1 / 4

nfs-client - VMware Workstation 15 Player (Non-commercial use only)

Player | Applications | Places | Wireshark Network Analyzer | Tue 21:26

Capturing from ens33 [Wireshark 1.10.14 (Git Rev Unknown from unknown)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: Expression... Clear Apply Save

No.	Destination	Protoc	Lengt	Info
377	d:2b68:ff02::1:3	LLMNR	89	Standard query 0xcd2f AAAA vff-print
378	d:2b68:ff02::1:3	LLMNR	89	Standard query 0x7358 A vff-print
379	224.0.0.252	LLMNR	69	Standard query 0xcd2f AAAA vff-print
380	224.0.0.252	LLMNR	69	Standard query 0x7358 A vff-print
381				INT<20>
382				
383				
384				
385				
386				
387				
388				
389				

Frame 1
Etherne
Address

0000 ff f... 01 .....)..;....
0010 08 0... 3b .....)..;..u.
0020 00 00 00 00 00 00 c0 a8 75 02 ..... u.

ens33: <live capture in progress> Fil... | Packets: 423 · Displayed: 423 (100.0%) | Profile: Default

View menu:
- Main Toolbar
- Filter Toolbar
- Wireless Toolbar
- Status Bar
- Packet List
- Packet Details
- Packet Bytes
- Time Display Format
- Name Resolution
- Colorize Packet List
- Auto Scroll in Live Capture
- Zoom In Ctrl++
- Zoom Out Ctrl+-
- Normal Size Ctrl+=
- Resize All Columns Shift+Ctrl+R
- Displayed Columns
- Expand Subtrees Shift+Right
- Expand All Ctrl+Right
- Collapse All Ctrl+Left
- Colorize Conversation
- Reset Coloring 1-10 Ctrl+Space
- Coloring Rules...
- Show Packet in New Window
- Reload Ctrl+R

Time Display Format:
- (•) Date and Time of Day: 1970-01-01 01:02:03.123456 Ctrl+Alt+1
- ( ) Time of Day: 01:02:03.123456 Ctrl+Alt+2
- ( ) Seconds Since Epoch (1970-01-01): 1234567890.123456 Ctrl+Alt+3
- ( ) Seconds Since Beginning of Capture: 123.123456 Ctrl+Alt+4
- ( ) Seconds Since Previous Captured Packet: 1.123456 Ctrl+Alt+5
- ( ) Seconds Since Previous Displayed Packet: 1.123456 Ctrl+Alt+6
- ( ) UTC Date and Time of Day: 1970-01-01 01:02:03.123456 Ctrl+Alt+7
- ( ) UTC Time of Day: 01:02:03.123456 Ctrl+Alt+7
- (•) Automatic (use precision indicated in the file)
- ( ) Seconds: 0
- ( ) Deciseconds: 0.1
- ( ) Centiseconds: 0.12
- ( ) Milliseconds: 0.123
- ( ) Microseconds: 0.123456
- ( ) Nanoseconds: 0.123456789
- [ ] Display Seconds with hours and minutes

The presentation modifies the "Time Display Format" as shown.

CENTOS 7

Capturing from ens33 [Wireshark ... | 1 / 4

nfs-client - VMware Workstation 15 Player (Non-commercial use only)

Player | Applications | Places | Wireshark Network Analyzer | Tue 21:28

Capturing from ens33 [Wireshark 1.10.14 (Git Rev Unknown from unknown)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Open... Ctrl+O
Open Recent
Merge...
Import from Hex Dump...
Close Ctrl+W
Save Ctrl+S
Save As... Shift+Ctrl+S
File Set
Export Specified Packets...
Export Packet Dissections
Export Selected Packet Bytes... Ctrl+H
Export SSL Session Keys...
Export Objects
Print... Ctrl+P
Quit Ctrl+Q

The presentation selects "Export Packet Dissections" as shown.

Expression... Clear Apply Save

Destination	Protoc	Lengt	Info
ff02::1:3	LLMNR	89	Standard query 0xcd2f AAAA vff-print
ff02::1:3	LLMNR	89	Standard query 0x7358 A vff-print
224.0.0.252	LLMNR	69	Standard query 0xcd2f AAAA vff-print
224.0.0.252	LLMNR	69	Standard query 0x7358 A vff-print
192.168.117.255	NBNS	92	Name query NB VFF-PRINT<20>
224.0.0.251	MDNS	75	Standard query 0x0000 A vff-print.local, "QM
			dard query 0x0000 A vff-print.local, "QM
			dard query 0x0000 AAAA vff-print.local,
			dard query 0x0000 AAAA vff-print.local,
			dard query 0x0000 A vff-print.local, "QM
			dard query 0x0000 A vff-print.local, "QM
			dard query 0x0000 AAAA vff-print.local,

Ethernet II, Src: Vmware_0c:cc:3b (00:0c:29:0c:
Address Resolution Protocol (request)

```
0000  ff ff ff ff ff ff 00 0c  29 0c cc 3b 08 06 00 01   ........ )..;....
0010  08 00 06 04 00 01 00 0c  29 0c cc 3b c0 a8 75 8b   ........ )..;..u.
0020  00 00 00 00 00 00 c0 a8  75 02                     ........ u.
```

ens33: <live capture in progress> Fil... | Packets: 511 · Displayed: 511 (100.0%) | Profile: Default

Capturing from ens33 [Wireshark ...

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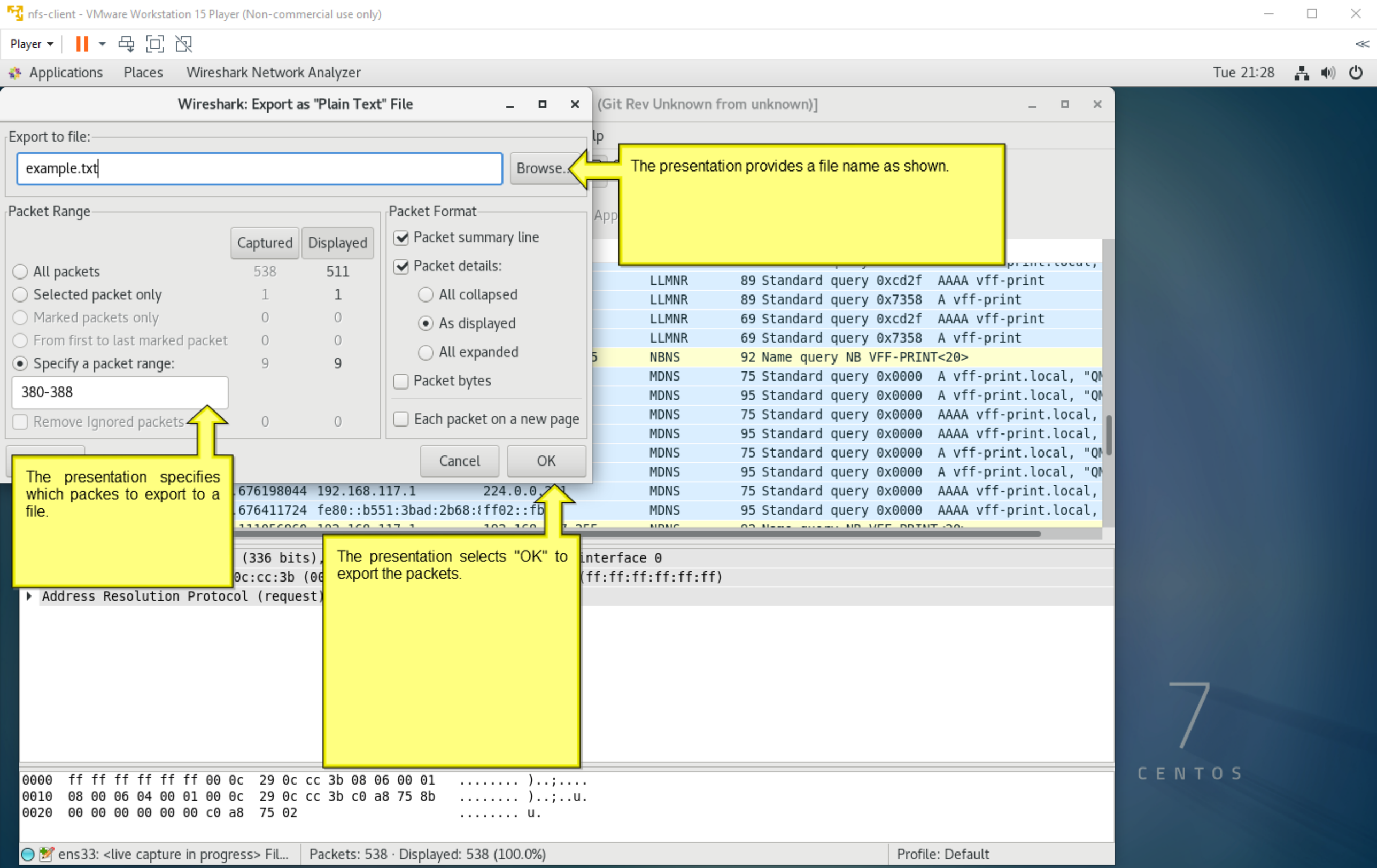
nfs-client - VMware Workstation 15 Player (Non-commercial use only)
Player
Applications
Places
Wireshark Network Analyzer
Tue 21:28
Wireshark: Export as "Plain Text" File
(Git Rev Unknown from unknown)]
Export to file:
example.txt
Browse...
The presentation provides a file name as shown.
Packet Range
Captured
Displayed
All packets 538 511
Selected packet only 1 1
Marked packets only 0 0
From first to last marked packet 0 0
Specify a packet range: 9 9
380-388
Remove Ignored packets 0 0
Packet Format
Packet summary line
Packet details:
All collapsed
As displayed
All expanded
Packet bytes
Each packet on a new page
Cancel
OK
The presentation specifies which packes to export to a file.
The presentation selects "OK" to export the packets.
LLMNR 89 Standard query 0xcd2f AAAA vff-print
LLMNR 89 Standard query 0x7358 A vff-print
LLMNR 69 Standard query 0xcd2f AAAA vff-print
LLMNR 69 Standard query 0x7358 A vff-print
NBNS 92 Name query NB VFF-PRINT<20>
MDNS 75 Standard query 0x0000 A vff-print.local, "QM
MDNS 95 Standard query 0x0000 A vff-print.local, "QM
MDNS 75 Standard query 0x0000 AAAA vff-print.local,
MDNS 95 Standard query 0x0000 AAAA vff-print.local,
MDNS 75 Standard query 0x0000 A vff-print.local, "QM
MDNS 95 Standard query 0x0000 A vff-print.local, "QM
MDNS 75 Standard query 0x0000 AAAA vff-print.local,
MDNS 95 Standard query 0x0000 AAAA vff-print.local,
676198044 192.168.117.1 224.0.0.
676411724 fe80::b551:3bad:2b68:ff02::fb
(336 bits), interface 0
0c:cc:3b (00 (ff:ff:ff:ff:ff:ff)
Address Resolution Protocol (request)
0000 ff ff ff ff ff ff 00 0c 29 0c cc 3b 08 06 00 01 .....)..;....
0010 08 00 06 04 00 01 00 0c 29 0c cc 3b c0 a8 75 8b .....)..;..u.
0020 00 00 00 00 00 00 c0 a8 75 02 ..... u.
ens33: <live capture in progress> Fil...
Packets: 538 · Displayed: 538 (100.0%)
Profile: Default
7
CENTOS
Capturing from ens33 [Wireshark ...
Wireshark: Export as "Plain Text" File
1 / 4

nfs-client - VMware Workstation 15 Player (Non-commercial use only)

Player

Applications Places Text Editor Tue 21:28

Open example.txt Save

```
No.     Time                           Source                Destination           Protocol Length Info
    380 2019-11-26 21:26:17.022439179 192.168.117.1         224.0.0.252           LLMNR    69     Standard query 0x7358  A vff-print

Frame 380: 69 bytes on wire (552 bits), 69 bytes captured (552 bits) on interface 0
Ethernet II, Src: Vmware_c0:00:08 (00:50:56:c0:00:08), Dst: IPv4mcast_00:00:fc (01:00:5e:00:00:fc)
Internet Protocol Version 4, Src: 192.168.117.1 (192.168.117.1), Dst: 224.0.0.252 (224.0.0.252)
User Datagram Protocol, Src Port: 52470 (52470), Dst Port: llmnr (5355)
Link-local Multicast Name Resolution (query)

No.     Time                           Source                Destination           Protocol Length Info
    381 2019-11-26 21:26:17.360410368 192.168.117.1         192.168.117.255       NBNS     92     Name query NB VFF-PRINT<20>

Frame 381: 92 bytes on wire (736 bits), 92 bytes captured (736 bits) on interface 0
Ethernet II, Src: Vmware_c0:00:08 (00:50:56:c0:00:08), Dst: Broadcast (ff:ff:ff:ff:ff:ff)
Internet Protocol Version 4, Src: 192.168.117.1 (192.168.117.1), Dst: 192.168.117.255 (192.168.117.255)
User Datagram Protocol, Src Port: netbios-ns (137), Dst Port: netbios-ns (137)
NetBIOS Name Service

No.     Time                           Source                Destination           Protocol
    382 2019-11-26 21:26:17.609975605 192.168.117.1         224.0.0.251           MDNS                                                QM"
question

Frame 382: 75 bytes on wire (600 bits), 75 bytes captured (600 bits) on interface 0
Ethernet II, Src: Vmware_c0:00:08 (00:50:56:c0:00:08), Dst: IPv4mcast_00:00:fb (01:00:5e:0
Internet Protocol Version 4, Src: 192.168.117.1 (192.168.117.1), Dst: 224.0.0.251 (224.0.0
User Datagram Protocol, Src Port: mdns (5353), Dst Port: mdns (5353)
Domain Name System (query)

No.     Time                           Source                Destination           Protocol
    383 2019-11-26 21:26:17.610621062 fe80::b551:3bad:2b68:8b4f ff02::fb                MDNS                                                l,
"QM" question

Frame 383: 95 bytes on wire (760 bits), 95 bytes captured (760 bits) on interface 0
Ethernet II, Src: Vmware_c0:00:08 (00:50:56:c0:00:08), Dst: IPv6mcast_00:00:00:fb (33:33:00:00:00:fb)
Internet Protocol Version 6, Src: fe80::b551:3bad:2b68:8b4f (fe80::b551:3bad:2b68:8b4f), Dst: ff02::fb (ff02::fb)
User Datagram Protocol, Src Port: mdns (5353), Dst Port: mdns (5353)
Domain Name System (query)

No.     Time                           Source                Destination           Protocol Length Info
```

This is an example output from Wireshark.

Plain Text Tab Width: 8 Ln 1, Col 1 INS

[Capturing from ens33 [Wireshark... Home example.txt (~/) - gedit 1 / 4