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nd (Netcat) with Examples

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NETCAT NETWORK

mand (Netcat) with Examples

a command-line utility for reading and writing data between communication happens using either TCP or UDP. The on the system (**`netcat`**, **`nc`**, **`ncat`**, and others).

ter for network and system administrators due to the rich eatures and scripting usability.

ommand (Netcat OpenBSD version) and provides example

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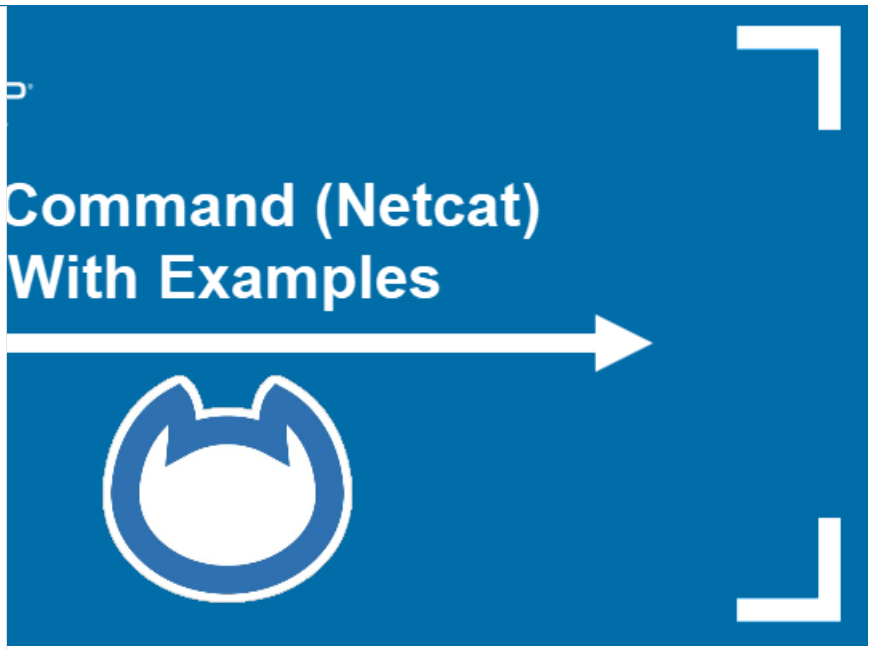

network. The examples use two Ubuntu 18.04 virtual

ne/terminal on both devices.
vice.
curl command.

d Syntax

ommand is:

```
t> <port>
```

following elements:

nc and **netcat** both work as symbolic links for the
t. On CentOS, Debian, and RHEL, the command is **ncat**.
neric IP address or a symbolic hostname.
neric port or service name.

es:

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mode, Netcat works as a client. The utility requires the **<hos**
s.

e, Netcat works as a server. When **<host>** is omitted, Netcat
esses for the specified port.

art a TCP connection at the provided host and port without

mand Options

mon **nc** command options:

Type	Description
Protocol	Use IPv4 only.
Protocol	Use IPv6 only.
Protocol	Use Unix domain sockets.
Protocol	Use UDP connection.
Connect mode	Set hops for loose source routing in IPv4. Hops are IP addresses or hostnames.
Connect mode	Binds the Netcat source port to <port>.
Connect mode	Binds the Netcat host to <host>.
Listen mode	Listens for connections instead of using connect mode.
Listen mode	Keeps the connection open for multiple simultaneous connections.

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	Type	Description
	Output	Sets verbosity level. Use multiple times to increase verbosity.
	Output	Report connection status without establishing a connection.

. Check the manual page for a complete list of options using

d press **q** to exit.

d Examples

xamples assume two devices with unique IP addresses. The re:

with IP **10.0.2.4**.

```
AST,RUNNING,MULTICAST>  mtu 1500
sk 255.255.255.0  broadcast 10.0.2.255
e:2a28:6e43  prefixlen 64  scopeid 0x20<link>
:c6  txqueuelen 1000  (Ethernet)
es 4266808 (4.2 MB)
 0  overruns 0  frame 0
es 163691 (163.6 KB)
 0 overruns 0  carrier 0  collisions 0
```

with IP **10.0.2.5**.

```
AST,RUNNING,MULTICAST>  mtu 1500
sk 255.255.255.0  broadcast 10.0.2.255
b:3ece:b1e2  prefixlen 64  scopeid 0x20<link>
:8e  txqueuelen 1000  (Ethernet)
es 5432513 (5.4 MB)
 0  overruns 0  frame 0
es 222496 (222.4 KB)
 0 overruns 0  carrier 0  collisions 0
```

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achines with Ubuntu 18.04, but other setups are possible.
for different operating systems.

nection

tion is between two devices. One device acts as a server
as a client (connects).

mand in listen mode and provide a port:

```
34
ly 0, port 1234)
```

mode, making device 1 the server. The output shows the
ns due to the **-v** option.

mand with the IP address of device 1 and the port:

```
0.2.4 1234
port [tcp/*] succeeded!
```

tion is successful. Device 1 confirms the link and prints the

```
34
ly 0, port 1234)
82 received!
```

establishes successfully.

r device, and the same message shows up on the other
behave the same after the connection establishes.

CTRL+C on either machine.

on Website

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o the ping command to test a specific port to a website. For

```
43
```

ut shows the successful connection message. The **-z**
n does not persist.

cific information, and there are other methods to ping a

for open ports.

n on port 1234:

nnection stays open after a disconnect.

d on device 2 to check whether port 1234 is open:

```
4
```

shows a successful connection message.

ports on device 2 by adding a port range. For example:

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```
0-1235
```

e connection is successful or not for each port.

ges, filter the results using grep:

```
0-1235 2>&1 | grep 'succeeded'
```

word ***succeeded*** only shows open ports in the output.

s through established connections. To see how file transfers

ice 1 using the **touch** command:

```

```

oty text file.

on on device 1 and redirect the file to the **nc** command:

```
txt
```

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ice 1 and redirect the file:

```
4 > file.txt
```

nplete using the ls command.

ne, indicating the transfer was succesful.

y

rring directories in the same way as files. Use the tar
es or directories and pipe the command to Netcat.

device and add multiple files:

```
files/file{1..5}.txt
```

directory with five text files.

sing the cd command:

and enter the destination directory:

```
tion && cd files_destination
```

on on port 1234 and pipe the **tar** command:

```
fv -
```

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cts a file that tar extracts.

e directory with:

```
10.0.2.5 1234
```

nd sends the tar file.

files immediately, and the transfer is complete.

er

etcat, do the following:

ce 1 and listen for connections on port 1234:

```
4
```

web server on localhost.

s and port in a browser. Alternatively, use the curl command:

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ything for now.

server is listening, the request sent by the browser or **`curl`**

est information, such as the request type, host, and user

lient (device 2), paste the following code on device 1:

```
hing OK

html; charset=UTF-8

d with nc</h1>
```

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ormation immediately.

om a browser, the browser page fetches the updates live.

cessfully. Shut off the server with **CTRL+C**.

er

communication functionality to create a simple chat server.

ng command:

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```
'$0="Bob: "$0' | nc -lv 1234
```

Bob's username to the messages sent through the server.

username and connect to the chat server:

```
'$0="Alice: "$0' | nc 10.0.2.4 1234
```

h to test the chat. Bob (device 1) sees messages sent from names and vice versa.

show up in their chat windows.

st

a HTTP request to a website. For example, to send a t 80 (for TCP/IP connections), run the following:

```
1.0\r\n\r\n" | nc -v google.com 80
```

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vriter at phoenixNAP who is passionate about programming.
:ngineering and Computing combined with her teaching
to easily explain complex technical concepts through her

nd

ader and contents. Most pages disable a TCP connection

from this tutorial, you know how to use the **nc** command.
etwork administrators.

eck out the netstat command.

Yes No

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