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### ***Linux Ubuntu 22.4.5 Manual Pages on command 'qemu-nbd.8'***

**\$ man qemu-nbd.8**

QEMU-NBD.8(8)

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#### **NAME**

qemu-nbd - QEMU Disk Network Block Device Server

#### **SYNOPSIS**

qemu-nbd [OPTION]... filename

qemu-nbd -L [OPTION]...

qemu-nbd -d dev

#### **DESCRIPTION**

Export a QEMU disk image using the NBD protocol.

Other uses:

? Bind a /dev/nbdX block device to a QEMU server (on Linux).

? As a client to query exports of a remote NBD server.

#### **OPTIONS**

filename is a disk image filename, or a set of block driver options if --image-opts

is specified.

dev is an NBD device.

--object type,id=id,...props...

Define a new instance of the type object class identified by id. See the

qemu(1) manual page for full details of the properties supported. The common

object types that it makes sense to define are the "secret" object, which is

used to supply passwords and/or encryption keys, and the "tls-creds" object,

which is used to supply TLS credentials for the qemu-nbd server or client.

**-p, --port=port**

The TCP port to listen on as a server, or connect to as a client (default 10809).

**-o, --offset=offset**

The offset into the image.

**-b, --bind=iface**

The interface to bind to as a server, or connect to as a client (default 0.0.0.0).

**-k, --socket=path**

Use a unix socket with path path.

**--image-opts**

Treat filename as a set of image options, instead of a plain filename. If this flag is specified, the -f flag should not be used, instead the "format=" option should be set.

**-f, --format=fmt**

Force the use of the block driver for format fmt instead of auto-detecting.

**-r, --read-only**

Export the disk as read-only.

**-P, --partition=num**

Deprecated: Only expose MBR partition num. Understands physical partitions 1-4 and logical partition 5. New code should instead use --image-opts with the raw driver wrapping a subset of the original image.

**-B, --bitmap=name**

If filename has a qcow2 persistent bitmap name, expose that bitmap via the "qemu:dirty-bitmap:name" context accessible through NBD\_OPT\_SET\_META\_CONTEXT.

**-s, --snapshot**

Use filename as an external snapshot, create a temporary file with backing\_file=filename, redirect the write to the temporary one.

**-l, --load-snapshot=snapshot\_param**

Load an internal snapshot inside filename and export it as an read-only device, snapshot\_param format is 'snapshot.id=[ID],snapshot.name=[NAME]' or '[ID\_OR\_NAME]'

**-n, --nocache**

--cache=cache

The cache mode to be used with the file. See the documentation of the emulator's "-drive cache=..." option for allowed values.

--aio=aio

Set the asynchronous I/O mode between threads (the default) and native (Linux only).

--discard=discard

Control whether discard (also known as trim or unmap) requests are ignored or passed to the filesystem. discard is one of ignore (or off), unmap (or on).

The default is ignore.

--detect-zeroes=detect-zeroes

Control the automatic conversion of plain zero writes by the OS to driver-specific optimized zero write commands. detect-zeroes is one of off, on or unmap. unmap converts a zero write to an unmap operation and can only be used if discard is set to unmap. The default is off.

-c, --connect=dev

Connect filename to NBD device dev (Linux only).

-d, --disconnect

Disconnect the device dev (Linux only).

-e, --shared=num

Allow up to num clients to share the device (default 1). Safe for readers, but for now, consistency is not guaranteed between multiple writers.

-t, --persistent

Don't exit on the last connection.

-x, --export-name=name

Set the NBD volume export name (default of a zero-length string).

-D, --description=description

Set the NBD volume export description, as a human-readable string.

-L, --list

Connect as a client and list all details about the exports exposed by a remote NBD server. This enables list mode, and is incompatible with options that change behavior related to a specific export (such as --export-name, --offset, ...).

--tls-creds=ID

Enable mandatory TLS encryption for the server by setting the ID of the TLS credentials object previously created with the --object option; or provide the credentials needed for connecting as a client in list mode.

--fork

Fork off the server process and exit the parent once the server is running.

--pid-file=PATH

Store the server's process ID in the given file.

--tls-authz=ID

Specify the ID of a qauthz object previously created with the --object option.

This will be used to authorize connecting users against their x509 distinguished name.

-v, --verbose

Display extra debugging information.

-h, --help

Display this help and exit.

-V, --version

Display version information and exit.

-T, --trace [[enable=]pattern][,events=file][,file=file]

Specify tracing options.

[enable=]pattern

Immediately enable events matching pattern (either event name or a globbing pattern). This option is only available if QEMU has been compiled with the simple, log or ftrace tracing backend. To specify multiple events or patterns, specify the -trace option multiple times.

Use "-trace help" to print a list of names of trace points.

events=file

Immediately enable events listed in file. The file must contain one event name (as listed in the trace-events-all file) per line; globbing patterns are accepted too. This option is only available if QEMU has been compiled with the simple, log or ftrace tracing backend.

file=file

Log output traces to file. This option is only available if QEMU has been

compiled with the simple tracing backend.

## EXAMPLES

Start a server listening on port 10809 that exposes only the guest-visible contents of a qcow2 file, with no TLS encryption, and with the default export name (an empty string). The command is one-shot, and will block until the first successful client disconnects:

```
qemu-nbd -f qcow2 file.qcow2
```

Start a long-running server listening with encryption on port 10810, and whitelist clients with a specific X.509 certificate to connect to a 1 megabyte subset of a raw file, using the export name 'subset':

```
qemu-nbd \  
  --object tls-creds-x509,id=tls0,endpoint=server,dir=/path/to/qemutls \  
  --object 'authz-simple,id=auth0,identity=CN=laptop.example.com,,\  
    O=Example Org.,L=London,,ST=London,,C=GB' \  
  --tls-creds tls0 --tls-authz auth0 \  
  -t -x subset -p 10810 \  
  --image-opts driver=raw,offset=1M,size=1M,file.driver=file,file.filename=file.raw
```

Serve a read-only copy of just the first MBR partition of a guest image over a Unix socket with as many as 5 simultaneous readers, with a persistent process forked as a daemon:

```
qemu-nbd --fork --persistent --shared=5 --socket=/path/to/sock \  
  --partition=1 --read-only --format=qcow2 file.qcow2
```

Expose the guest-visible contents of a qcow2 file via a block device /dev/nbd0 (and possibly creating /dev/nbd0p1 and friends for partitions found within), then disconnect the device when done. Access to bind qemu-nbd to an /dev/nbd device generally requires root privileges, and may also require the execution of "modprobe nbd" to enable the kernel NBD client module. CAUTION: Do not use this method to mount filesystems from an untrusted guest image - a malicious guest may have prepared the image to attempt to trigger kernel bugs in partition probing or file system mounting.

```
qemu-nbd -c /dev/nbd0 -f qcow2 file.qcow2  
qemu-nbd -d /dev/nbd0
```

Query a remote server to see details about what export(s) it is serving on port

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10809, and authenticating via PSK:

```
qemu-nbd \  
  --object tls-creds-psk,id=tls0,dir=/tmp/keys,username=eblake,endpoint=client \  
  --tls-creds tls0 -L -b remote.example.com
```

## SEE ALSO

[qemu\(1\)](#), [qemu-img\(1\)](#)

## AUTHOR

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