Basic usage

Ncat always operates in one of two basic modes: *connect mode* and *listen mode*. In connect mode, Ncat initiates a connection (or sends UDP data) to a service that is listening somewhere. For those familiar with socket programming, connect mode is like using the `connect` function. In listen mode, Ncat waits for an incoming connection (or data receipt), like using the `bind` and `listen` functions. You can think of connect mode as "client" mode and listen mode as "server" mode.

To use Ncat in connect mode, run

ncat *`<host>`* [*`<port>`*]

`<host>` may be a hostname or IP address, and *`<port>`* is a port number. Listen mode is the same, with the addition of the `--listen` option (or its `-l` alias):

ncat --listen [*`<host>`*] [*`<port>`*]
ncat -l [*`<host>`*] [*`<port>`*]

In listen mode, *`<host>`* controls the address on which Ncat listens; if you omit it, Ncat will bind to all local interfaces (INADDR_ANY). If the port number is omitted, Ncat uses its default port 31337. Typically only privileged (root) users may bind to a port number lower than 1024. A listening TCP server normally accepts only one connection and will exit after the client disconnects. Combined with the `--keep-open` option, Ncat accepts multiple concurrent connections up to the connection limit. With `--keep-open` (or `-k` for short), the server receives everything sent by any of its clients, and anything the server sends is sent to all of them. A UDP server will communicate with only one client (the first one to send it data), because in UDP there is no list of "connected" clients.

By default, Ncat uses TCP. The option `--udp` or `-u` enables UDP instead, and `--sctp` enables SCTP. Ncat listens on both IPv4 and IPv6, and connects to either address family as well. The `-6` option forces IPv6-only, and `-4` forces IPv4-only. See the section called "Protocols" for more details. The rest of this guide documents all the Ncat options through descriptions and examples. For a quick summary of options at any time, run **ncat --help** or **man ncat**.

A Connect Mode Example

A good way to start learning about Ncat (and network protocols in general) is to connect to a network service and talk with it. In this case we use Ncat to manually retrieve a web page from an HTTP server, just as web browsers do in the background when you visit a web site. Example 1 shows a (truncated) sample session. Try it yourself! Text in bold is what you type; everything else is what comes back. The blank line after the `GET` line is required—just hit **enter** twice.

Example 1. Ncat as a web browser

```
$ ncat -C scanme.nmap.org 80
GET / HTTP/1.0

HTTP/1.1 200 OK
Date: Thu, 05 Feb 2009 15:31:40 GMT
Server: Apache/2.2.2 (Fedora)
Last-Modified: Mon, 19 May 2008 04:49:49 GMT
ETag: "fc8c91-2e3-44d8e17edd540"
Accept-Ranges: bytes
Content-Length: 739
Connection: close
Content-Type: text/html; charset=UTF-8

<html>
<head>
<title>Go ahead and ScanMe!</title>
</head>
```

Here we have instructed Ncat to connect to the host scanme.nmap.org on port 80, the port for HTTP. The `-C` option turns on CRLF replacement, which replaces any line endings you type with CRLF. CRLF line endings are required by many protocols, including HTTP, though many servers will accept a plain newline (LF) character.

`GET / HTTP/1.0` requests the root document of the server; we are retrieving the same document named by the URL http://scanme.nmap.org:80/. The web server responds with a status code (`HTTP/1.1 200 OK`), followed by the HTTP header and the text of the web page. If you try this with other web servers, note that many of them are actually virtual hosts and you will need to send the `Host` header field. See RFC 2616 for more information about HTTP.

A Listen Mode Example

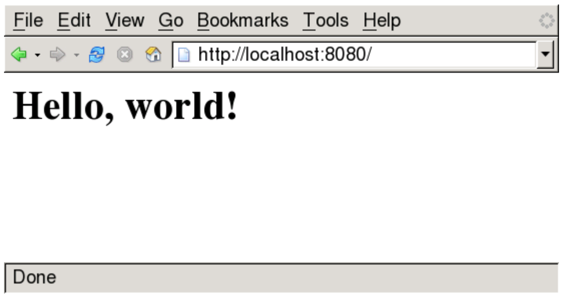
So much for using Ncat as a web browser. What about a web server? That's possible too; it just takes a bit of preparation. The first step is to create the document to serve. Create a text file called `hello.http` with these contents:

```
HTTP/1.0 200 OK

<html>
  <body>
    <h1>Hello, world!</h1>
  </body>
</html>
```

Now run the command **ncat -l localhost 8080 < hello.http**. This instructs Ncat to listen on the local port 8080 and read `hello.http` on its input. Ncat is now primed to send the contents of the file as soon as it receives a connection. Now open a web browser and type in the address **`http://localhost:8080/`**. Figure 1 shows a sample of what will appear.

Figure 1. Web page served by Ncat



In the terminal where you ran Ncat, you will see everything the web browser sent to request the page. You should see a `GET` line like the one you sent in the connect mode example. This shows that Ncat by default both sends and receives.

If you try to refresh the page, it won't work. That's because Ncat ran out of input; it won't re-send what has already been sent. For more information on making a server that continually responds to requests, see the examples in the section called “Emulating Diagnostic Services”. More HTTP server tricks can be found here in the section called “Turn Ncat into a simple web server”.

Ncat Users' Guide

Protocols

[Nmap | Sec Tools | Mailing Lists | Site News | About/Contact | Advertising | Privacy]

Google Custom Search