main Branches Tags Go to file Code

.github
integration_tests
static
v2
.gitignore
Dockerfile
LICENSE.md
README.md
THANKS.md

About

A fast port scanner written in go with a focus on reliability and simplicity. Designed to be used in combination with other tools for attack surface discovery in bug bounties and pentests

projectdiscovery.io

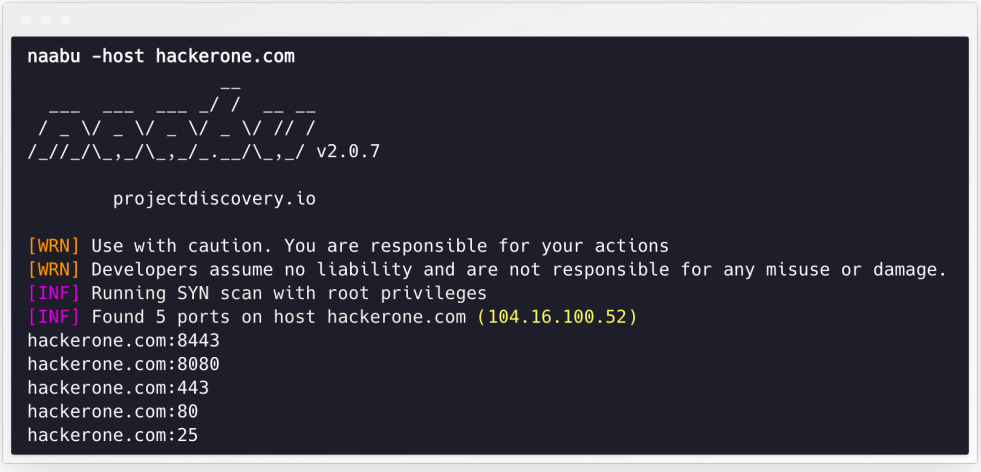
#nmap #scan-ports #hacktoberfest #portscanner #port-enumeration #cdn-exclusion

Readme
MIT license
Code of conduct
Security policy
Activity

naabu

Naabu is a port scanning tool written in Go that allows you to enumerate valid ports for hosts in a fast and reliable manner. It is a really simple tool that does fast SYN/CONNECT/UDP scans on the host/list of hosts and lists all ports that return a reply.

Features



- Fast And Simple **SYN/CONNECT/UDP** probe based scanning
- Optimized for ease of use and **lightweight** on resources
- **DNS** Port scan
- **Automatic IP Deduplication** for DNS port scan

69 watching
519 forks
Report repository

Releases 31
v2.3.1 Latest
on May 9
+ 30 releases

Packages
No packages published

45

Other 0.8%

- **IPv4/IPv6** Port scan (**experimental**)
- **Passive** Port enumeration using Shodan Internetdb
- **Host Discovery** scan (**experimental**)
- **NMAP** integration for service discovery
- Multiple input support - **STDIN/HOST/IP/CIDR/ASN**
- Multiple output format support - **JSON/TXT/STDOUT**

Usage

```
naabu -h
```

This will display help for the tool. Here are all the switches it supports.

```
Usage:
  ./naabu [flags]

INPUT:
   -host string[]              hosts to scan ports for (comma-separated)
   -list, -l string            list of hosts to scan ports (file)
   -exclude-hosts, -eh string  hosts to exclude from the scan (comma-separated)
   -exclude-file, -ef string   list of hosts to exclude from scan (file)

PORT:
   -port, -p string            ports to scan (80,443, 100-200)
   -top-ports, -tp string      top ports to scan (default 100) [full,100,1000]
   -exclude-ports, -ep string  ports to exclude from scan (comma-separated)
   -ports-file, -pf string     list of ports to scan (file)
   -port-threshold, -pts int   port threshold to skip port scan for the host
   -exclude-cdn, -ec           skip full port scans for CDN/WAF (only scan for port 80,443)
   -display-cdn, -cdn          display cdn in use

RATE-LIMIT:
   -c int     general internal worker threads (default 25)
   -rate int  packets to send per second (default 1000)

UPDATE:
   -up, -update                 update naabu to latest version
   -duc, -disable-update-check  disable automatic naabu update check

OUTPUT:
   -o, -output string  file to write output to (optional)
   -j, -json           write output in JSON lines format
   -csv                write output in csv format

CONFIGURATION:
   -config string                  path to the naabu configuration file (default $HOME/.config/naabu/config.yaml)
   -scan-all-ips, -sa              scan all the IP's associated with DNS record
   -ip-version, -iv string[]       ip version to scan of hostname (4,6) - (default 4) (default ["4"])
   -scan-type, -s string           type of port scan (SYN/CONNECT) (default "s")
   -source-ip string               source ip and port (x.x.x.x:yyy)
   -interface-list, -il            list available interfaces and public ip
   -interface, -i string           network Interface to use for port scan
   -nmap                           invoke nmap scan on targets (nmap must be installed) - Deprecated
   -nmap-cli string                nmap command to run on found results (example: -nmap-cli 'nmap -sV')
   -r string                       list of custom resolver dns resolution (comma separated or from file)
   -proxy string                   socks5 proxy (ip[:port] / fqdn[:port]
   -proxy-auth string              socks5 proxy authentication (username:password)
   -resume                         resume scan using resume.cfg
   -stream                         stream mode (disables resume, nmap, verify, retries, shuffling, etc)
   -passive                        display passive open ports using shodan internetdb api
   -irt, -input-read-timeout value  timeout on input read (default 3m0s)
   -no-stdin                       Disable Stdin processing

HOST-DISCOVERY:
   -sn, -host-discovery           Perform Only Host Discovery
   -Pn, -skip-host-discovery      Skip Host discovery
   -ps, -probe-tcp-syn string[]   TCP SYN Ping (host discovery needs to be enabled)
   -pa, -probe-tcp-ack string[]   TCP ACK Ping (host discovery needs to be enabled)
   -pe, -probe-icmp-echo          ICMP echo request Ping (host discovery needs to be enabled)
   -pp, -probe-icmp-timestamp     ICMP timestamp request Ping (host discovery needs to be enabled)
   -pm, -probe-icmp-address-mask  ICMP address mask request Ping (host discovery needs to be enabled)
   -arp, -arp-ping                ARP ping (host discovery needs to be enabled)
```

```
   -nd, -nd-ping                IPv6 Neighbor Discovery (host discovery needs to be enabled)
   -rev-ptr                     Reverse PTR lookup for input ips

OPTIMIZATION:
   -retries int       number of retries for the port scan (default 3)
   -timeout int       millisecond to wait before timing out (default 1000)
   -warm-up-time int  time in seconds between scan phases (default 2)
   -ping              ping probes for verification of host
   -verify            validate the ports again with TCP verification

DEBUG:
   -health-check, -hc        run diagnostic check up
   -debug                    display debugging information
   -verbose, -v              display verbose output
   -no-color, -nc            disable colors in CLI output
   -silent                   display only results in output
   -version                  display version of naabu
   -stats                    display stats of the running scan (deprecated)
   -si, -stats-interval int  number of seconds to wait between showing a statistics update (deprecated) (default 5)
   -mp, -metrics-port int    port to expose naabu metrics on (default 63636)
```

Installation Instructions

Download the ready to run binary / docker or install with GO

Prerequisite

> **Note**: before installing naabu, make sure to install `libpcap` library for packet capturing.

To install libcap on **Linux**: `sudo apt install -y libpcap-dev`, on **Mac**: `brew install libpcap`

Installing Naabu

```
go install -v github.com/projectdiscovery/naabu/v2/cmd/naabu@latest
```

Running Naabu

To run the tool on a target, just use the following command.

```
naabu -host hackerone.com
```

This will run the tool against hackerone.com. There are a number of configuration options that you can pass along with this command. The verbose switch `-v` can be used to display verbose information.

```
naabu -host hackerone.com

                __
  ___  ___  ___ _/ /  __ __
 / _ \/ _ \/ _ \ _ \ // /
/_//_/\_,_/\_,_/_.__/\_,_/ v2.0.3

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[WRN] Use with caution. You are responsible for your actions
[WRN] Developers assume no liability and are not responsible for any misuse or damage.
[INF] Running SYN scan with root privileges
[INF] Found 4 ports on host hackerone.com (104.16.100.52)

hackerone.com:80
hackerone.com:443
hackerone.com:8443
hackerone.com:8080
```

The ports to scan for on the host can be specified via `-p` parameter (udp ports must be expressed as `u:port`). It takes nmap format ports and runs enumeration on them.

```
naabu -p 80,443,21-23,u:53 -host hackerone.com
```

By default, the Naabu checks for nmap's `Top 100` ports. It supports the following in-built port lists -

Flag	Description
`-top-ports 100`	Scan for nmap top **100** port
`-top-ports 1000`	Scan for nmap top **1000** port
`-p -`	Scan for full ports from **1-65535**

You can also specify specific ports which you would like to exclude from the scan.

```
naabu -p - -exclude-ports 80,443
```

To run the naabu on a list of hosts, `-list` option can be used.

```
naabu -list hosts.txt
```

To run the naabu on a ASN, AS input can be used. It takes the IP address available for given ASN and runs the enumeration on them.

```
echo AS14421 | naabu -p 80,443

216.101.17.249:80
216.101.17.249:443
216.101.17.248:443
216.101.17.252:443
216.101.17.251:80
216.101.17.251:443
216.101.17.250:443
216.101.17.250:80
```

You can also get output in json format using `-json` switch. This switch saves the output in the JSON lines format.

```
naabu -host 104.16.99.52 -json

{"ip":"104.16.99.52","port":443}
{"ip":"104.16.99.52","port":80}
```

The ports discovered can be piped to other tools too. For example, you can pipe the ports discovered by naabu to httpx which will then find running http servers on the host.

```
echo hackerone.com | naabu -silent | httpx -silent

http://hackerone.com:8443
http://hackerone.com:443
http://hackerone.com:8080
http://hackerone.com:80
```

The speed can be controlled by changing the value of `rate` flag that represent the number of packets per second. Increasing it while processing hosts may lead to increased false-positive rates. So it is recommended to keep it to a reasonable amount.

IPv4 and IPv6

Naabu supports both IPv4 and IPv6. Both ranges can be piped together as input. If IPv6 is used, connectivity must be correctly configured, and the network interface must have an IPv6 address assigned (`inet6`) and a default gateway.

```
echo hackerone.com | dnsx -resp-only -a -aaaa -silent | naabu -p 80 -silent

104.16.99.52:80
104.16.100.52:80
2606:4700::6810:6434:80
2606:4700::6810:6334:80
```

The option `-ip-version 6` makes the tool use IPv6 addresses while resolving domain names.

```
echo hackerone.com | ./naabu -p 80 -ip-version 6

                 __
  ___  ___  ___ _/ /  __ __
 / _ \/ _ \/ _ \ _ \ // /
/_//_/\_,_/\_,_/_.__/\_,_/ v2.0.8

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Use with caution. You are responsible for your actions
Developers assume no liability and are not responsible for any misuse or damage.
[INF] Running CONNECT scan with non root privileges
[INF] Found 1 ports on host hackerone.com (2606:4700::6810:6334)
hackerone.com:80
```

To scan all the IPs of both version, `ip-version 4,6` can be used along with `-scan-all-ips` flag.

```
echo hackerone.com | ./naabu -iv 4,6 -sa -p 80 -silent

[INF] Found 1 ports on host hackerone.com (104.16.100.52)
hackerone.com:80
[INF] Found 1 ports on host hackerone.com (104.16.99.52)
hackerone.com:80
[INF] Found 1 ports on host hackerone.com (2606:4700::6810:6334)
hackerone.com:80
[INF] Found 1 ports on host hackerone.com (2606:4700::6810:6434)
hackerone.com:80
```

Host Discovery

Naabu optionally supports multiple options to perform host discovery, as outlined below. Host discovery is completed automatically before beginning a connect/syn scan if the process has enough privileges. `-sn` flag instructs the toll to perform host discovery only. `-Pn` flag skips the host discovery phase. Host discovery is completed using multiple internal methods; one can specify the desired approach to perform host discovery by setting available options.

Available options to perform host discovery:

- **ARP** ping (`-arp`)
- TCP **SYN** ping (`-ps 80`)
- TCP **ACK** ping (`-pa 443`)
- ICMP **echo** ping (`-pe`)
- ICMP **timestamp** ping (`-pp`)
- ICMP **address mask** ping (`-pm`)
- IPv6 **neighbor discovery** (`-nd`)

Configuration file

Naabu supports config file as default located at `$HOME/.config/naabu/config.yaml`, It allows you to define any flag in the config file and set default values to include for all scans.

Nmap integration

We have integrated nmap support for service discovery or any additional scans supported by nmap on the found results by Naabu, make sure you have `nmap` installed to use this feature.

To use, `nmap-cli` flag can be used followed by nmap command, for example:-

```
echo hackerone.com | naabu -nmap-cli 'nmap -sV -oX nmap-output'

                 __
  ___  ___  ___ _/ /  __ __
 / _ \/ _ \/ _ \ _ \ // /
/_//_/\_,_/\_,_/_.__/\_,_/ v2.0.0

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```

```
[WRN] Use with caution. You are responsible for your actions
[WRN] Developers assume no liability and are not responsible for any misuse or damage.
[INF] Running TCP/ICMP/SYN scan with root privileges
[INF] Found 4 ports on host hackerone.com (104.16.99.52)

hackerone.com:443
hackerone.com:80
hackerone.com:8443
hackerone.com:8080

[INF] Running nmap command: nmap -sV -p 80,8443,8080,443 104.16.99.52

Starting Nmap 7.01 ( https://nmap.org ) at 2020-09-23 05:02 UTC
Nmap scan report for 104.16.99.52
Host is up (0.0021s latency).
PORT     STATE SERVICE       VERSION
80/tcp   open  http          cloudflare
443/tcp  open  ssl/https     cloudflare
8080/tcp open  http-proxy    cloudflare
8443/tcp open  ssl/https-alt cloudflare
```

CDN/WAF Exclusion

Naabu also supports excluding CDN/WAF IPs being port scanned. If used, only `80` and `443` ports get scanned for those IPs. This feature can be enabled by using `exclude-cdn` flag.

Currently `cloudflare`, `akamai`, `incapsula` and `sucuri` IPs are supported for exclusions.

Scan Status

Naabu exposes json scan info on a local port bound to localhost at `http://localhost:63636/metrics` (the port can be changed via the `-metrics-port` flag)

Using naabu as library

The following sample program scan the port `80` of `scanme.sh`. The results are returned via the `OnResult` callback:

```go
package main

import (
        "log"

        "github.com/projectdiscovery/goflags"
        "github.com/projectdiscovery/naabu/v2/pkg/result"
        "github.com/projectdiscovery/naabu/v2/pkg/runner"
)

func main() {
        options := runner.Options{
                Host:      goflags.StringSlice{"scanme.sh"},
                ScanType: "s",
                OnResult: func(hr *result.HostResult) {
                        log.Println(hr.Host, hr.Ports)
                },
                Ports: "80",
        }

        naabuRunner, err := runner.NewRunner(&options)
        if err != nil {
                log.Fatal(err)
        }
        defer naabuRunner.Close()

        naabuRunner.RunEnumeration()
}
```

Notes

- Naabu allows arbitrary binary execution as a feature to support nmap integration.
- Naabu is designed to scan ports on multiple hosts / mass port scanning.
- As default naabu is configured with a assumption that you are running it from VPS.
- We suggest tuning the flags / rate if running naabu from local system.
- For best results, run naabu as **root** user.

Naabu is made with 🖤 by the projectdiscovery team. Community contributions have made the project what it is.