

GoSpider

Introduction :

GoSpider is a powerful, high-performance web crawler written in Go, designed specifically for cybersecurity professionals. It is widely used in bug bounty reconnaissance, penetration testing, and OSINT to uncover hidden endpoints, parameters, JavaScript files, and more.

Unlike traditional crawlers, GoSpider is optimized for speed and deep crawling — supporting subdomain exploration, JavaScript parsing, sitemap/robots.txt analysis, and proxy routing through tools like Burp Suite or ZAP.

This manual provides a step-by-step guide to using GoSpider in a real-world cybersecurity workflow, helping professionals build a strong and automated reconnaissance pipeline.

1. Ensure Go (Golang) is installed:

sudo apt update

sudo apt install golang-go -y

```
(naqash@kali)~$ sudo apt update
[sudo] password for naqash:
Hit:2 https://repo.mongodb.org/apt/debian bookworm/mongodb-org/7.0 InRelease
Get:1 http://mirror.ourhost.az/kali kali-rolling InRelease [41.5 kB]
Get:3 http://mirror.ourhost.az/kali kali-rolling/main amd64 Packages [21.0 MB]
Get:4 http://mirror.ourhost.az/kali kali-rolling/main amd64 Contents (deb) [51.4 MB]
Get:5 http://mirror.ourhost.az/kali kali-rolling/non-free amd64 Packages [198 kB]
Fetched 72.6 MB in 7min 31s (161 kB/s)
237 packages can be upgraded. Run 'apt list --upgradable' to see them.
Warning: https://repo.mongodb.org/apt/debian/dists/bookworm/mongodb-org/7.0/InRelease: Policy will reject signature within a year, see --audit for details
Installing:
  golang-go

Installing dependencies:
  golang-1.24-go golang-1.24-src golang-src

Suggested packages:
  bzr | brz mercurial

Summary:
  Upgrading: 0, Installing: 4, Removing: 0, Not Upgrading: 237
  Download size: 49.9 MB
  Space needed: 258 MB / 28.0 GB available

Get:1 http://kali.download/kali kali-rolling/main amd64 golang-1.24-src all 1.24.4-1 [21.2 MB]
Ign:1 http://kali.download/kali kali-rolling/main amd64 golang-1.24-src all 1.24.4-1
Get:2 http://kali.download/kali kali-rolling/main amd64 golang-1.24-go amd64 1.24.4-1 [28.7 MB]
Get:3 http://http.kali.org/kali kali-rolling/main amd64 golang-src all 2:1.24-2 [5,136 B]
Get:4 http://http.kali.org/kali kali-rolling/main amd64 golang-go amd64 2:1.24-2 [44.3 kB]
Get:1 http://kali.download/kali kali-rolling/main amd64 golang-1.24-src all 1.24.4-1 [21.2 MB]
Fetched 29.6 MB in 6min 22s (77.5 kB/s)
Selecting previously unselected package golang-1.24-src.
(Reading database ... 484279 files and directories currently installed.)
Preparing to unpack .../golang-1.24-src_1.24.4-1_all.deb ...
Unpacking golang-1.24-src (1.24.4-1) ...
Selecting previously unselected package golang-1.24-go.
Preparing to unpack .../golang-1.24-go_1.24.4-1_amd64.deb ...
Unpacking golang-1.24-go (1.24.4-1) ...
Selecting previously unselected package golang-go:amd64.
Preparing to unpack .../golang-go_2:1.24-2_amd64.deb ...
Unpacking golang-go:amd64 (2:1.24-2) ...
Setting up golang-1.24-src (1.24.4-1) ...
Setting up golang-1.24-go (1.24.4-1) ...
Setting up golang-src (2:1.24-2) ...
Setting up golang-go:amd64 (2:1.24-2) ...
Processing triggers for kali-menu (2025.3.0) ...
Processing triggers for man-db (2.13.1-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
```

2. Install GoSpider:

go install [github.com/jaeles-project/gospider@latest](https://github.com/jaeles-project/gospider)

```
(naqash@kali)-[~]
$ go install github.com/jaeles-project/gospider@latest

go: downloading github.com/jaeles-project/gospider v1.1.6
go: downloading github.com/json-iterator/go v1.1.11
go: downloading github.com/spf13/cobra v1.1.3
go: downloading github.com/sirupsen/logrus v1.8.1
go: downloading github.com/gocolly/colly/v2 v2.1.0
go: downloading github.com/mitchellh/go-homedir v1.1.0
go: downloading github.com/oxffaa/gopher-parse-sitemap v0.0.0-20191021113419-005d2eb1def4
go: downloading github.com/x-cray/logrus-prefixed-formatter v0.5.2
go: downloading golang.org/x/net v0.0.0-20210614182718-04defd469f4e
go: downloading github.com/gocolly/colly v1.2.0
go: downloading github.com/spf13/pflag v1.0.5
go: downloading golang.org/x/sys v0.0.0-20210423082822-04245dca01da
go: downloading github.com/modern-go/concurrent v0.0.0-20180306012644-bacd9c7ef1dd
go: downloading github.com/modern-go/reflect2 v1.0.1
go: downloading github.com/mgutz/ansi v0.0.0-20200706080929-d51e80ef957d
go: downloading golang.org/x/crypto v0.0.0-20200622213623-75b288015ac9
go: downloading github.com/matttn/go-colorable v0.0.9
go: downloading github.com/PuerkitoBio/goquery v1.5.1
go: downloading github.com/antchfx/htmlquery v1.2.3
go: downloading github.com/antchfx/xmlquery v1.2.4
go: downloading github.com/gobwas/glob v0.2.3
go: downloading github.com/kennvgent/sanitize v1.2.4
go: downloading github.com/saintfish/chardet v0.0.0-20120816061221-3af4cd4741ca
go: downloading github.com/tomoto/robotstxt v1.1.1
go: downloading google.golang.org/appengine v1.6.6
go: downloading github.com/matttn/go-isatty v0.0.3
go: downloading github.com/antchfx/xpath v1.1.8
go: downloading github.com/golang/grouper v0.0.0-20200121045136-8c9f03a8e57e
go: downloading github.com/andybalholm/cascadia v1.2.0
go: downloading golang.org/x/text v0.3.6
go: downloading github.com/golang/protobuf v1.5.2
go: downloading google.golang.org/protobuf v1.26.0
```

3. (Optional) Make GoSpider globally executable:

sudo ln -s ~/go/bin/gospider /usr/local/bin/gospider

```
(naqash@kali)-[~]
$ sudo ln -s ~/go/bin/gospider /usr/local/bin/gospider
```

4. Basic Crawl of <https://cust.edu.pk> :

gospider -s https://cust.edu.pk -d 2 -o output-cust

```
(naqash@kali)-[~]
$ gospider -s https://cust.edu.pk -d 2 -o output-cust

[url] - [code=200] - https://cust.edu.pk
[robots] - https://cust.edu.pk/wp-admin/
[robots] - https://cust.edu.pk/wp-admin/admin-ajax.php
[subdomains] - http://pay.cust.edu.pk
[subdomains] - https://pay.cust.edu.pk
[subdomains] - http://odoo.cust.edu.pk
[subdomains] - https://odoo.cust.edu.pk
[subdomains] - http://thesis.cust.edu.pk
[subdomains] - https://thesis.cust.edu.pk
[subdomains] - http://alumni.cust.edu.pk
[subdomains] - https://alumni.cust.edu.pk
[subdomains] - http://online-admissions.cust.edu.pk
[subdomains] - https://online-admissions.cust.edu.pk
[subdomains] - http://jbr.cust.edu.pk
[subdomains] - https://jbr.cust.edu.pk
[subdomains] - http://cms.cust.edu.pk
[subdomains] - https://cms.cust.edu.pk
[href] - https://cust.edu.pk/
[href] - https://cust.edu.pk/about/
[href] - https://cust.edu.pk/about-capital/messages/chancellors-message/
[href] - https://cust.edu.pk/about-capital/messages/vice-chancellor-s-message/
[href] - https://cust.edu.pk
[href] - https://cust.edu.pk/my-capital/allpolicy/undergrad-regulations/
[href] - https://cust.edu.pk/my-capital/allpolicy/ms-regulations/
[href] - https://cust.edu.pk/my-capital/allpolicy/phd-regulations/
[href] - https://cust.edu.pk/my-capital/allpolicy/general-policies/
[href] - https://cust.edu.pk/my-capital/allpolicy/students-discipline/
[href] - https://cust.edu.pk/my-capital/allpolicy/university-dress-code/
[href] - https://cust.edu.pk/my-capital/academic-calendar/
[href] - https://cust.edu.pk/scholarship/
[href] - https://pay.cust.edu.pk/
[href] - https://cust.edu.pk/placement-office/
[href] - https://cust.edu.pk/green-cust/
[href] - https://cust.edu.pk/sustainability/
[href] - https://cust.edu.pk/about-gym/
[href] - https://cust.edu.pk/my-capital/vis-directorate/
[href] - https://cust.edu.pk/wp-content/plugins/UberMenu/assets/js/ubermenu.min.js?ver=3.3
[href] - https://fonts.googleapis.com/css?family=Lato&3A100%2C100italic%2C300%2C300italic%2Cregular%2Citalic%2C700%2C700italic%2C900%2C900italic&ver=7.8
[href] - https://fonts.googleapis.com/css?family=Roboto&3A100%2C100italic%2C300%2C300italic%2Cregular%2Citalic%2C500%2C500italic%2C700%2C700italic%2C900%2C900italic&ver=7.8
[javascript] - https://cust.edu.pk/wp-content/plugins/UberMenu/assets/js/ubermenu.min.js?ver=3.3
[url] - [code=200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fifn%2Fformat-xml
[url] - [code=200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fices-2025%2F
[url] - [code=200] - https://cust.edu.pk/wp-json/wp/v2/pages/431304
[url] - [code=200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fices-2025%2F%2Fformat-xml
```

- Crawls the site up to 2 levels deep.
- Saves discovered links, forms, and JS to the folder output-cust.

5. Parse JavaScript Files for Hidden Endpoints:

gospider -s https://cust.edu.pk -d 3 --js -t 20 -o output-js

```
(naqash@kali)-[~]
└─$ gospider -s https://cust.edu.pk -d 3 --js -t 20 -o output-js

[url] - [code-200] - https://cust.edu.pk
[robots] - https://cust.edu.pk/wp/wp-admin/
[robots] - https://cust.edu.pk/wp/wp-admin/admin-ajax.php
[subdomains] - https://pay.cust.edu.pk
[subdomains] - https://pay.cust.edu.pk
[subdomains] - https://odoo.cust.edu.pk
[subdomains] - https://odoo.cust.edu.pk
[subdomains] - https://thesis.cust.edu.pk
[subdomains] - https://thesis.cust.edu.pk
[subdomains] - https://alumni.cust.edu.pk
[subdomains] - https://alumni.cust.edu.pk
[subdomains] - https://online-admissions.cust.edu.pk
[subdomains] - https://online-admissions.cust.edu.pk
[subdomains] - https://jbr.cust.edu.pk
[subdomains] - https://jbr.cust.edu.pk
[subdomains] - https://cms.cust.edu.pk
[subdomains] - https://cms.cust.edu.pk
[href] - https://cust.edu.pk/
[href] - https://cust.edu.pk/about/
[href] - https://cust.edu.pk/about-capital/messages/chancellors-message/
[href] - https://cust.edu.pk/about-capital/messages/vice-chancellor-s-message/
[href] - https://cust.edu.pk/
[href] - https://cust.edu.pk/my-capital/allpolicy/undergrad-regulations/
[href] - https://cust.edu.pk/my-capital/allpolicy/ms-regulations/
[href] - https://cust.edu.pk/my-capital/allpolicy/phd-regulations/
[href] - https://cust.edu.pk/my-capital/allpolicy/general-policies/
[href] - https://cust.edu.pk/my-capital/allpolicy/students-discipline/
[href] - https://cust.edu.pk/my-capital/allpolicy/university-dress-code/
[href] - https://cust.edu.pk/my-capital/academic-calendar/
[href] - https://cust.edu.pk/scholarship/
[href] - https://pay.cust.edu.pk/
[href] - https://cust.edu.pk/placement-office/
[href] - https://cust.edu.pk/green-cust/
[href] - https://cust.edu.pk/sustainability/
[href] - https://cust.edu.pk/about-gym/
[href] - https://cust.edu.pk/my-capital/vis-directorate/

[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fabout-capital%2Fmessages%2Fvice-chancellor-s-message%2Fformat=xml
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Fallpolicy%2Fumiversity-dress-code%2Fformat=xml
[url] - [code-200] - https://cust.edu.pk/wp-json/wp/v2/pages/395903
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Fallpolicy%2Fgeneral-policies%2F
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Fallpolicy%2Fgeneral-policies%2Fformat=xml
[url] - [code-200] - https://cust.edu.pk/wp-json/wp/v2/pages/395904
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Fallpolicy%2Fms-regulations%2F
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Fallpolicy%2Fms-regulations%2Fformat=xml
[url] - [code-200] - https://cust.edu.pk/wp-json/wp/v2/pages/395864
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Fallpolicy%2Fphd-regulations%2F
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Fallpolicy%2Fphd-regulations%2Fformat=xml
[href] - https://fonts.googleapis.com/css?family=Roboto:300,400,700&subset=latin&ver=6.6.2
[href] - https://cust.edu.pk/wp-content/plugins/UberMenu/pro/assets/css/ubermenu.min.css?ver=3.3
[href] - https://cust.edu.pk/wp-content/plugins/UberMenu/assets/css/skins/blackwhite.css?ver=347982401e0dda2404558cd35965d4c4
[href] - https://cust.edu.pk/wp-content/plugins/UberMenu/assets/css/fontawesome/css/font-awesome.min.css?ver=4.3
[href] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Four-team%2Fdr-m-mansoor-ahmed%2F
[href] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Four-team%2Fdr-m-mansoor-ahmed%2Fformat=xml
[href] - mailto:mansoorcust.edu.pk
[href] - https://cust.edu.pk/wp-content/uploads/2022/12/CUST-Harassment-Policy-28-01-2022.pdf
[href] - https://cust.edu.pk/wp-content/uploads/2018/04/CUST-Handbook-HR-Policy-March-2025-new.pdf
[javascript] - https://cust.edu.pk/wp-content/plugins/UberMenu/assets/js/ubermenu.min.js?ver=3.3
[url] - [code-200] - https://cust.edu.pk/wp-json/wp/v2/pages/391736
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Facademic-calendar%2F
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Facademic-calendar%2Fformat=xml
[url] - [code-200] - https://cust.edu.pk/wp-content/plugins/js_composer/assets/lib/vc/vc_accordion/vc_accordion.min.js?ver=7.8
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fscholarship%2F
[url] - [code-200] - https://cust.edu.pk/wp-content/plugins/js_composer/assets/lib/vc/vc_tta-autoplay/vc-tta-autoplay.min.js?ver=7.8
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fscholarship%2Fformat=xml
[url] - [code-200] - https://cust.edu.pk/wp-json/wp/v2/pages/395908
[url] - [code-200] - https://cust.edu.pk/wp-json/wp/v2/pages/404774
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Fallpolicy%2Fstudents-discipline%2Fformat=xml
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fmy-capital%2Fallpolicy%2Fstudents-discipline%2F
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fplacement-office%2F
[url] - [code-200] - https://cust.edu.pk/wp-json/oembed/1.0/embed?url=https%3A%2F%2Fcust.edu.pk%2Fplacement-office%2Fformat=xml
[url] - [code-200] - https://connect.facebook.net/en_US/fbevents.js
[url] - [code-200] - https://apis.google.com/js/plusone.js
[url] - [code-200] - https://assets.pinterest.com/js/pinit.js
```

- --js: Enables JavaScript URL extraction (very useful for detecting APIs or login logic).
- -d 3: Goes three layers deep into link structure.
- -t 20: Uses 20 threads to increase speed.

DAY 2

6. List all .json output files:

find output-cust/ -type f -name "*.json" > json-files.txt

```
(naqash@kali)-[~]
└─$ find output-cust/ -type f -name "*.json" > json-files.txt
(naqash@kali)-[~]
└─$ cat output-cust/*.json | jq -r '.link' | sort -u > all-links.txt
(naqash@kali)-[~]
```

7. Extract JavaScript (.js) files:

grep '\.js' all-links.txt > js-files.txt

```
all-links.txt > urls-with-params.txt
(naqash@kali)-[~]
└─$ grep '\.js' all-links.txt > js-files.txt
(naqash@kali)-[~]
└─$ cat js-files.txt > all-links.txt > js-files.txt
```

8. Extract URLs with parameters:

grep '=' all-links.txt > param-urls.txt

```
all-links.txt > js-files.txt
(naqash@kali)-[~]
└─$ grep '=' all-links.txt > param-urls.txt
(naqash@kali)-[~]
└─$ cat output-cust/*.json | jq -r '.link' | sort -u > all-links.txt
```

9. View Total Results:

wc -l all-links.txt js-files.txt param-urls.txt

```
(naqash@kali)-[~]
└─$ wc -l all-links.txt js-files.txt param-urls.txt
all-links.txt 1
js-files.txt 1
param-urls.txt 1
total 3
```