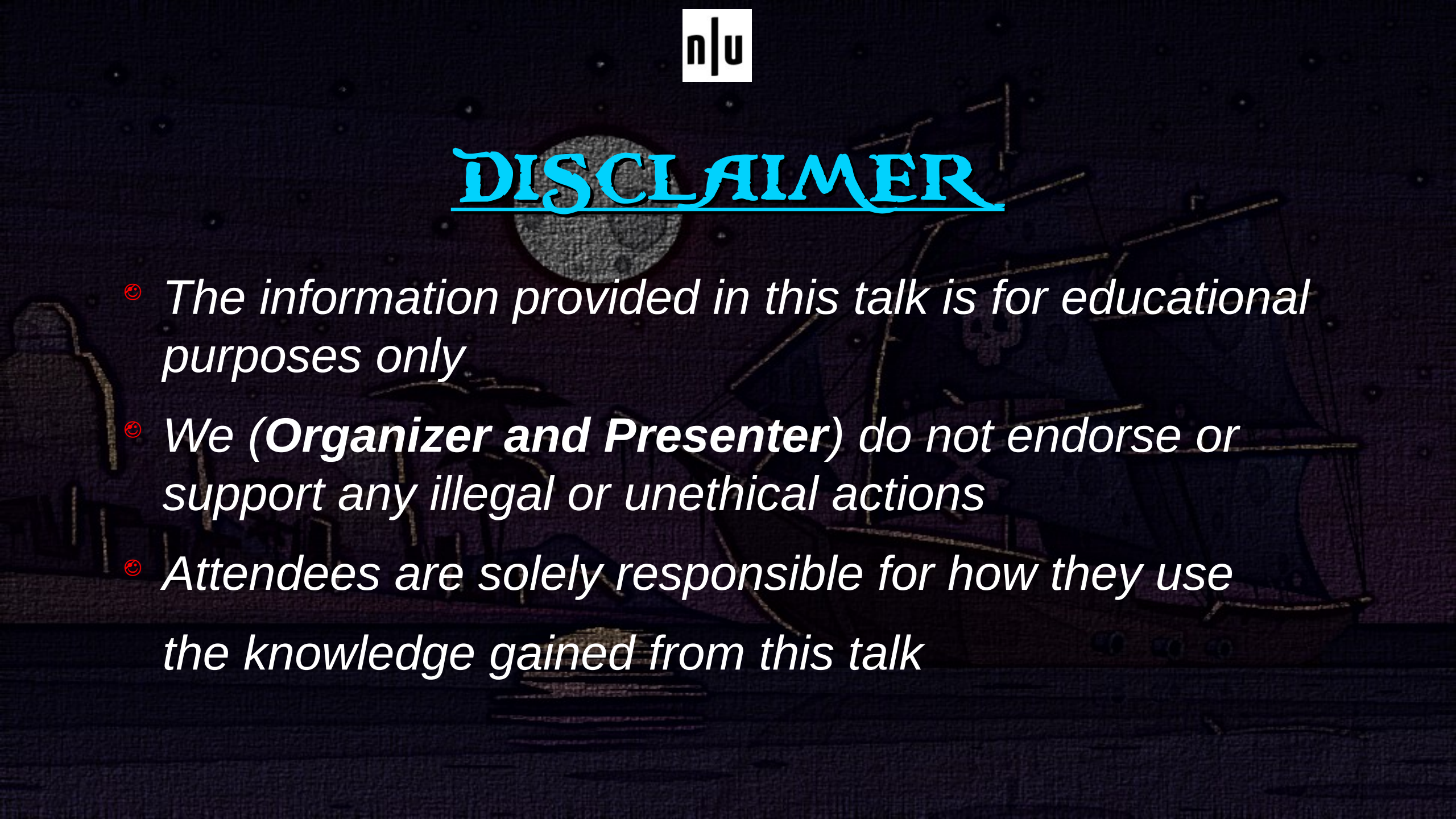
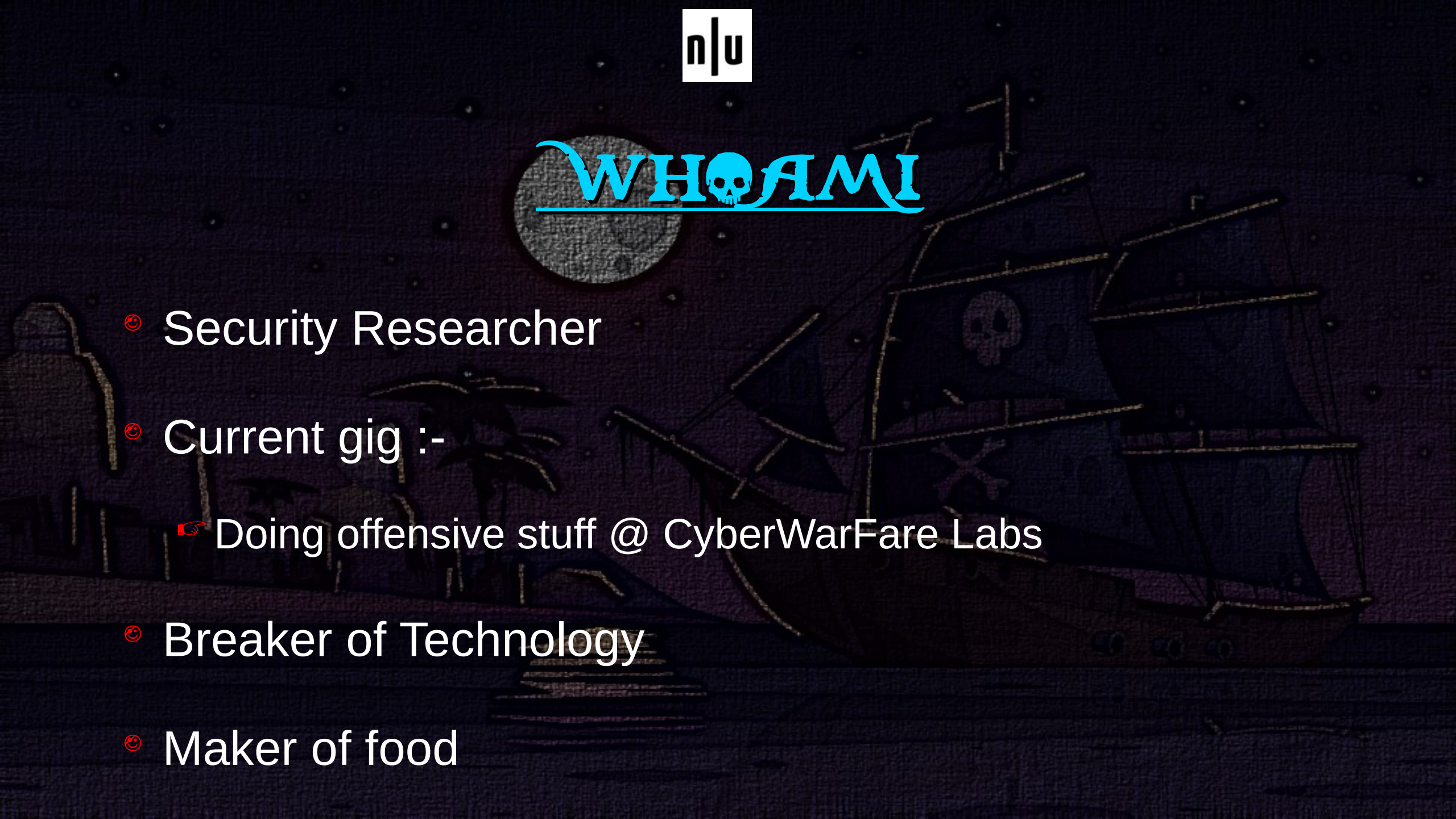

OPSEC ON THE HIGH SEAS:
A GOPHISH ADVENTURE

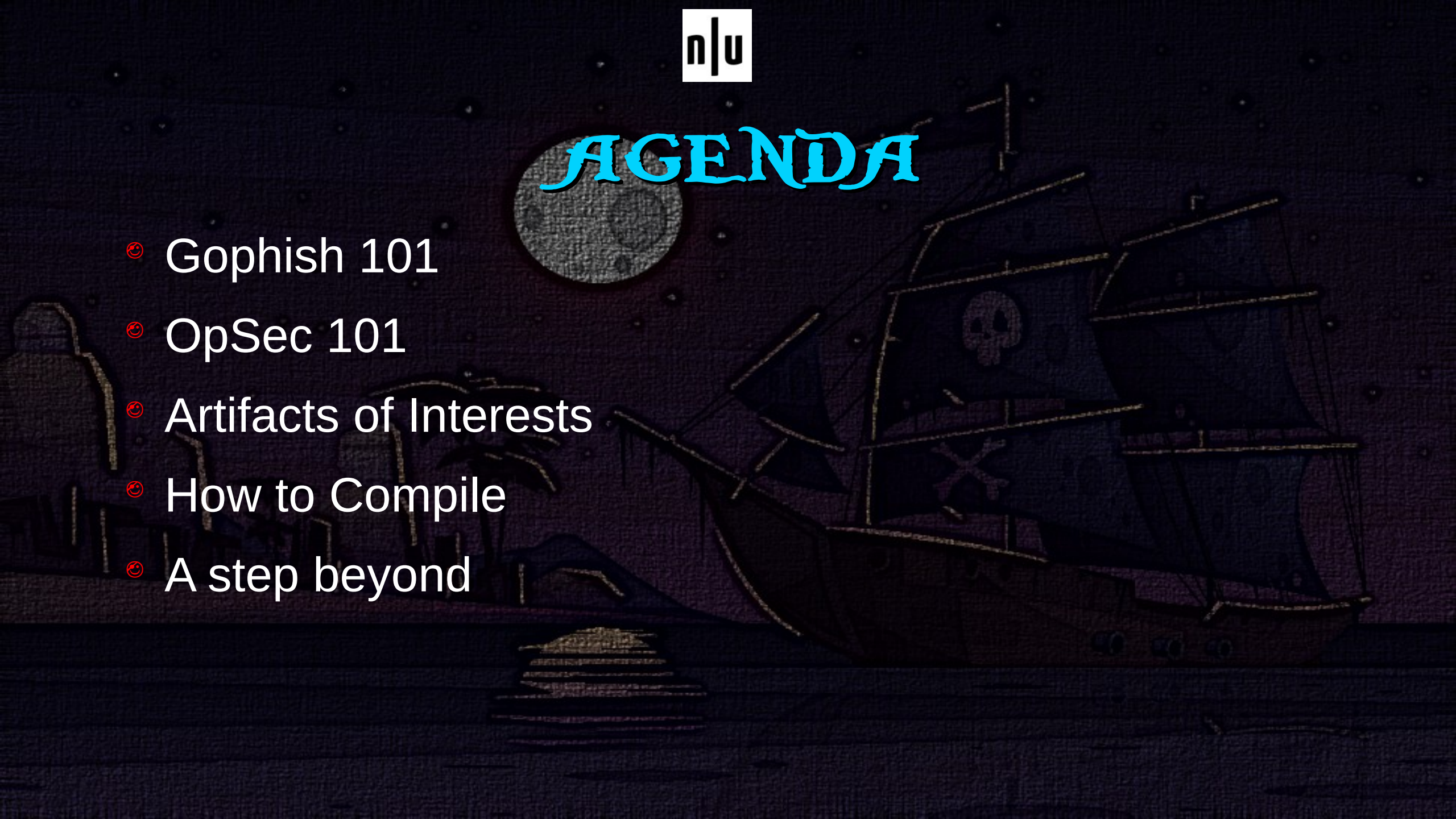


DISCLAIMER

- *The information provided in this talk is for educational purposes only*
- *We (**Organizer and Presenter**) do not endorse or support any illegal or unethical actions*
- *Attendees are solely responsible for how they use the knowledge gained from this talk*



- Security Researcher
- Current gig :-
  - Doing offensive stuff @ CyberWarFare Labs
- Breaker of Technology
- Maker of food

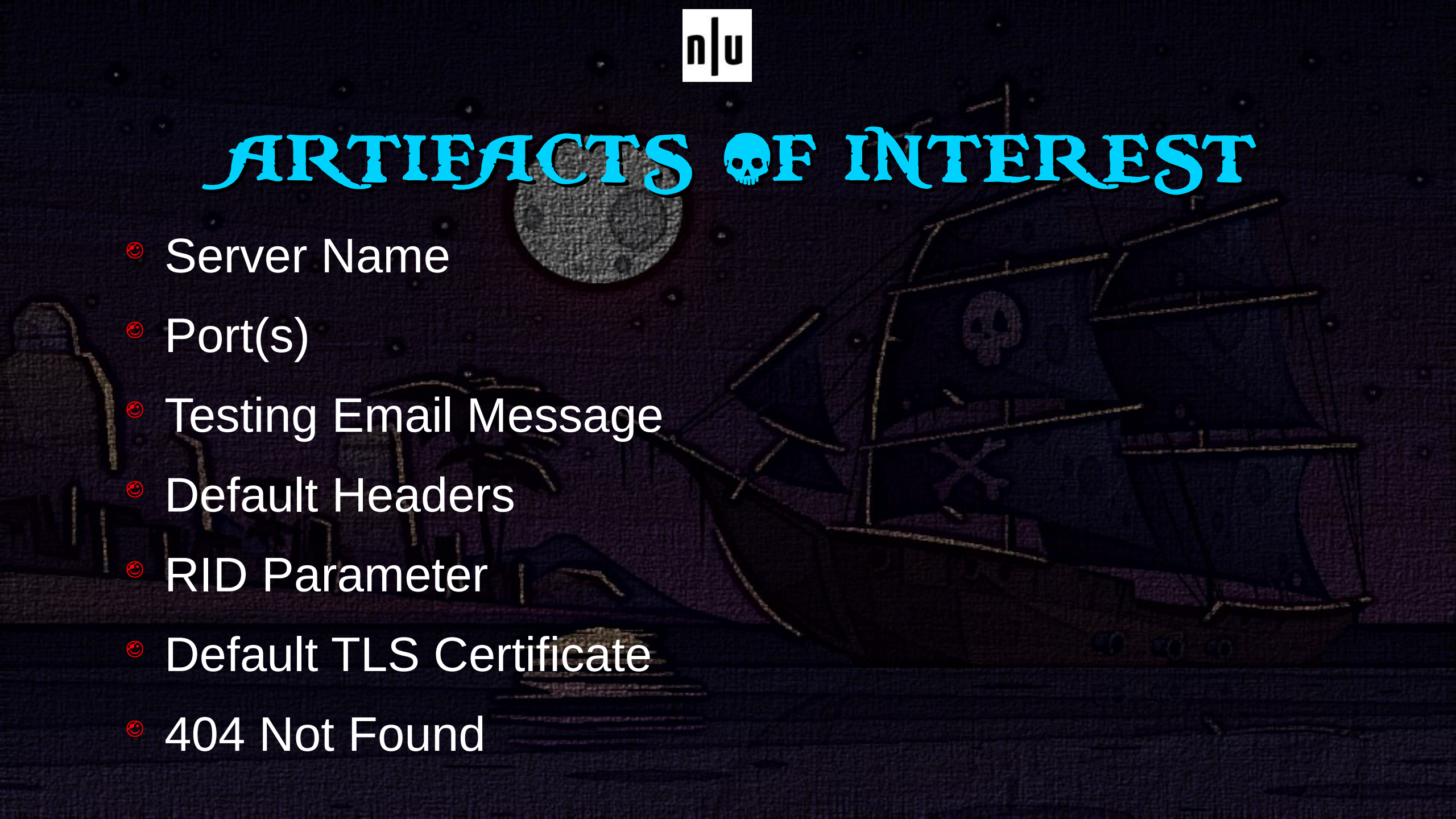

AGENDA
Gophish 101
OpSec 101
Artifacts of Interests
How to Compile
A step beyond

GOPHISH 101

- Phishing simulation tool
- Open source
- Written in GO
- Easy to deploy
- Highly customizable

OPSEC 101 FOR GOPHISH

- Stands for Operational Security
- Protect internal operations
- Prevent disclosure of sensitive information
- Remove Indicator of Compromise (IoC) artifacts

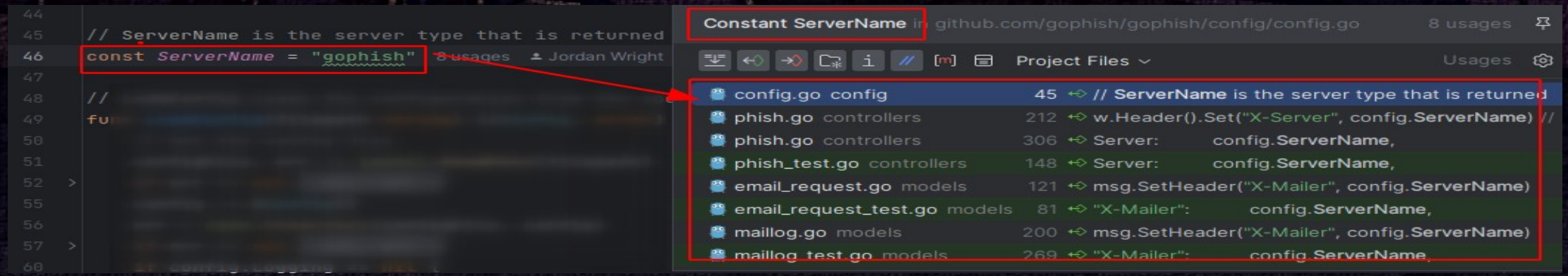


ARTIFACTS OF INTEREST

- Server Name
- Port(s)
- Testing Email Message
- Default Headers
- RID Parameter
- Default TLS Certificate
- 404 Not Found

SERVER NAME

- Identifier of the Gophish server
  - Used in Email Headers
- Configuration at :
  - `config > config.go`



PORT(S)

- Admin portal listens on port ***3333***
- Configuration(s) at :
  - ***config.json***
  - ***config > config_test.go***
- Use SSH port forward :


```
ssh -L [local_addr]:[local_port]:[remote_addr]:[remote_port] [user]@[remote_ip] -i <keyfile.pem>
```

TESTING EMAIL MESSAGE

- Used for testing setup if no template is provided
- Huge red flags
- Alerts email providers
- Burns phishing domain(s)

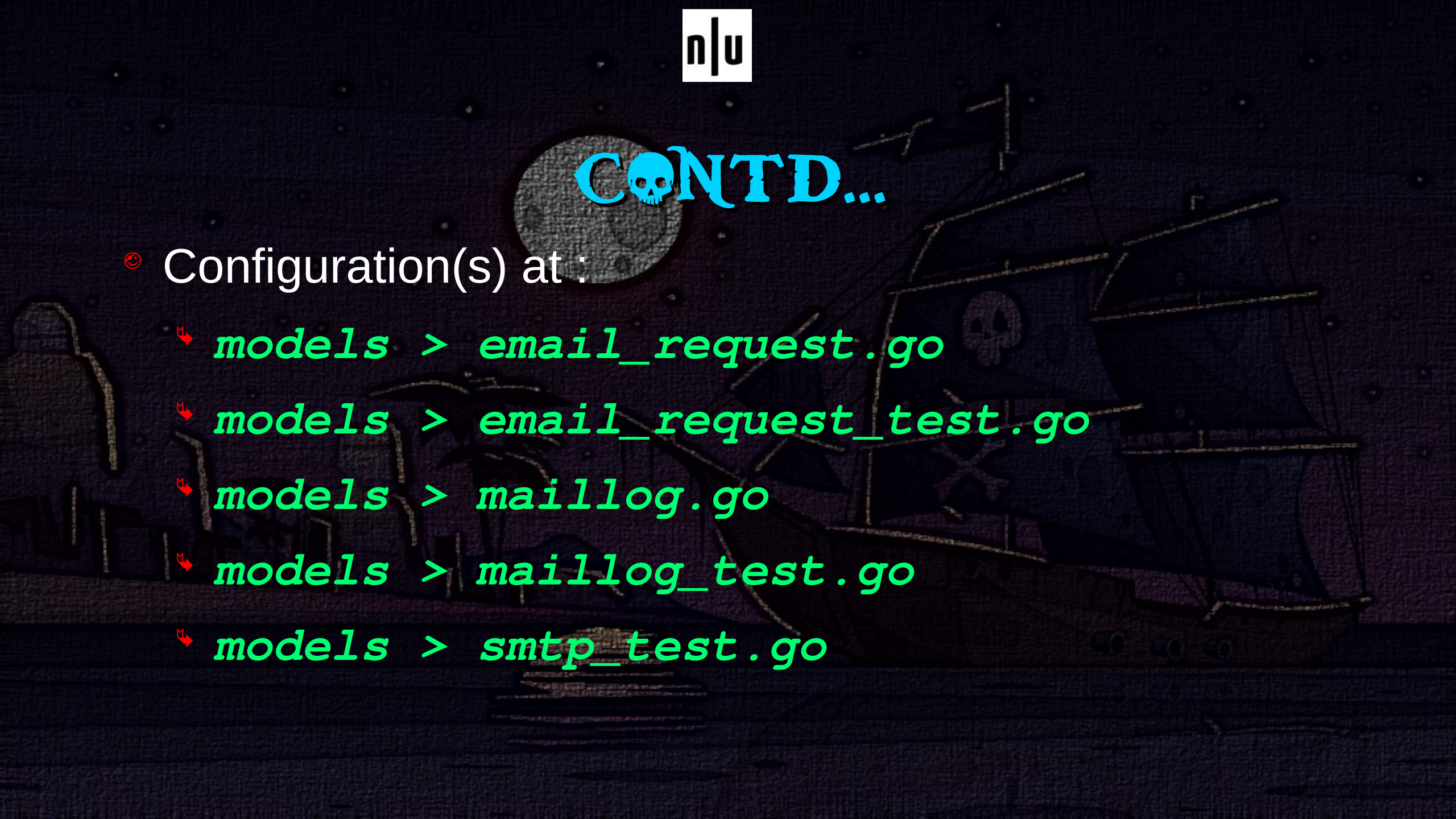
CONTD...

- Configuration at :
  - ***Controllers > api > util.go***

```
// If a Template is not specified use a default
if s.Template.Name == "" {
        //default message body
        text := "It works!\n\nThis is an email letting you know that your gophish\nconfiguration was successful.\n"
                "Here are the details:\n\nWho you sent from: {{.From}}\n\nWho you sent to: \n" +
                "{{if .FirstName}} First Name: {{.FirstName}}\n{{end}}" +
                "{{if .LastName}} Last Name: {{.LastName}}\n{{end}}" +
                "{{if .Position}} Position: {{.Position}}\n{{end}}" +
                "\nNow go send some phish!"
        t := models.Template{
                Subject: "Default Email from Gophish",
                Text:    text,
        }
        s.Template = t
```

DEFAULT HEADERS

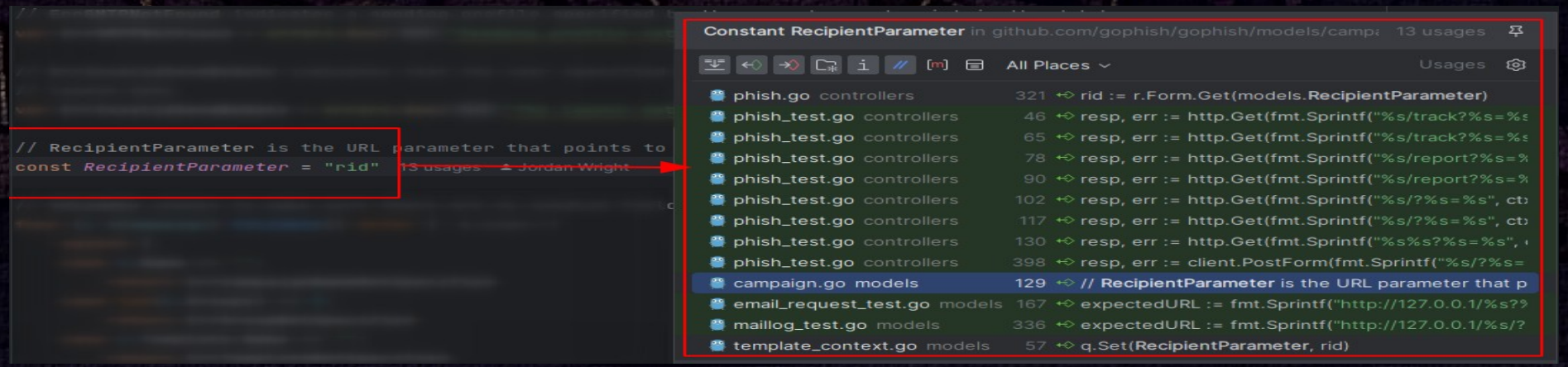
- Used for identification
- To communicate with web servers
- To filter out script kiddies
- To prevent abuse of Gophish
- Headers include :-
  - X-Mailer
  - X-Gophish-Contact



- Configuration(s) at :
  - `models > email_request.go`
  - `models > email_request_test.go`
  - `models > maillog.go`
  - `models > maillog_test.go`
  - `models > smtp_test.go`

RID PARAMETER

- Used for tracking campaigns
- Configuration at :
  - ***models > campaign.go***



DEFAULT TLS CERTIFICATE

- TLS certificate used for Admin interface (*Port 3333*)
- Value is ***Gophish*** in default TLS certificate
- Configuration at :
  - ***util > util.go***

```
template := x509.Certificate{
        SerialNumber: serialNumber,
        Subject: pkix.Name{
                Organization: []string{"Gophish"},
        },
        NotBefore: notBefore,
        NotAfter:  notAfter,
```

CONTD...

- Change to another string

  OR,

- Generate using **Let's Encrypt** (for free)

404 NOT FOUND

- On invalid URL requests
- Easy to detect
- Change to custom error page

HOW TO COMPILE?

- Install ***GO*** and ***GCC***
- Open a terminal & clone Gophish GitHub repository
- Navigate to Gophish directory
- Run “ ***go build*** ”
- Copy the compiled binary to the remote server using ***SCP***


A STEP BEYOND
Use domain reputation
Purchase expired domains
Don’t use own SMTP servers
Use providers like AWS SES, Mailgun, Sendgrid, etc
Don’t reuse infrastructure across engagements
Use IaC tools like Terraform + Ansible

REFERENCES

- https://github.com/gophish/gophish
- https://www.sprocketsecurity.com/resources/never-had-a-bad-day-phishing-how-to-set-up-gophish-to-evade-security-controls
- https://github.com/puzzlepeaches/sneaky_gophish
- https://blog.cybercx.co.nz/identifying-gophish-servers

- Slides will be available at:
  https://github.com/wand3rlust/My-Presentations