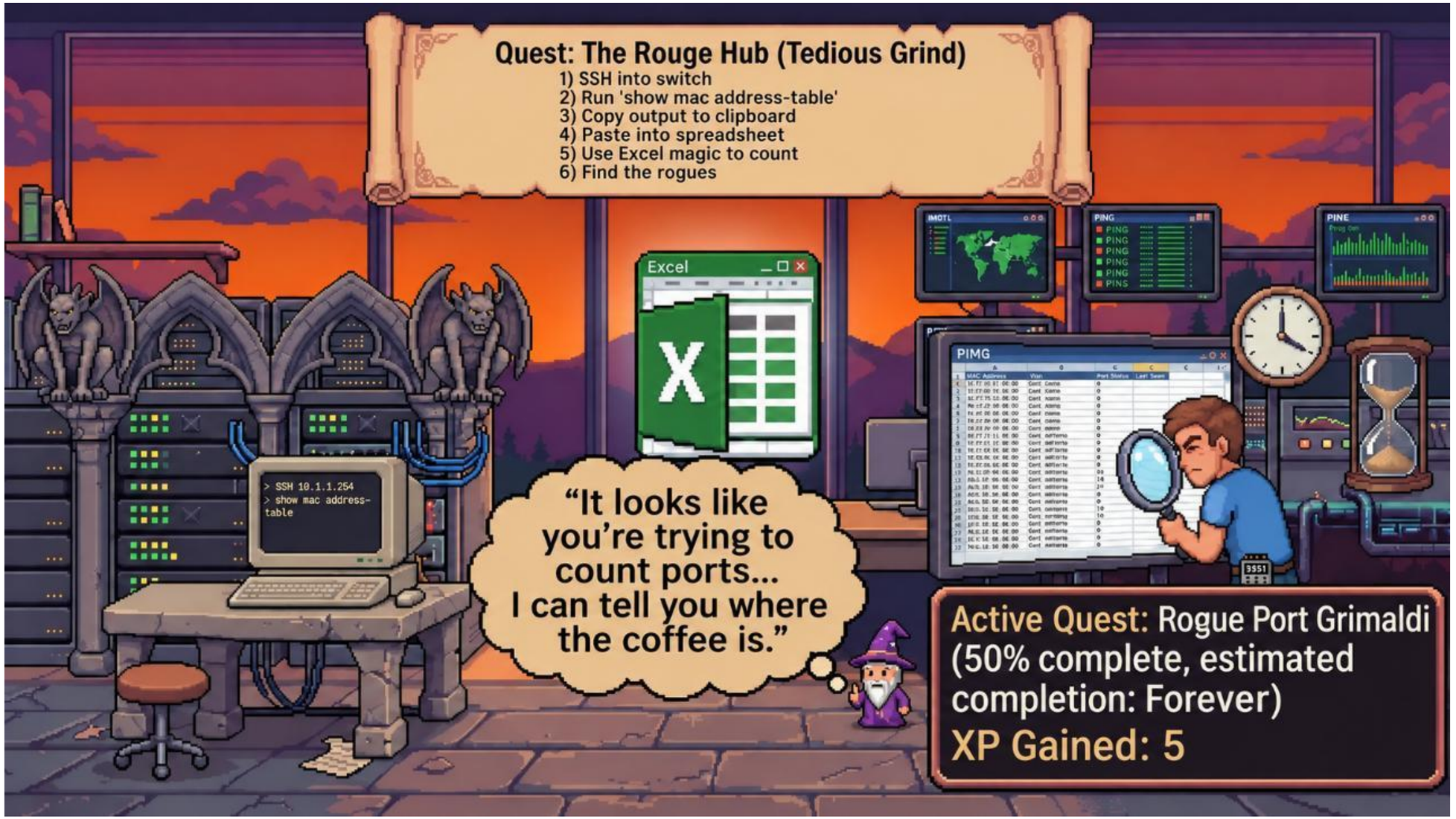
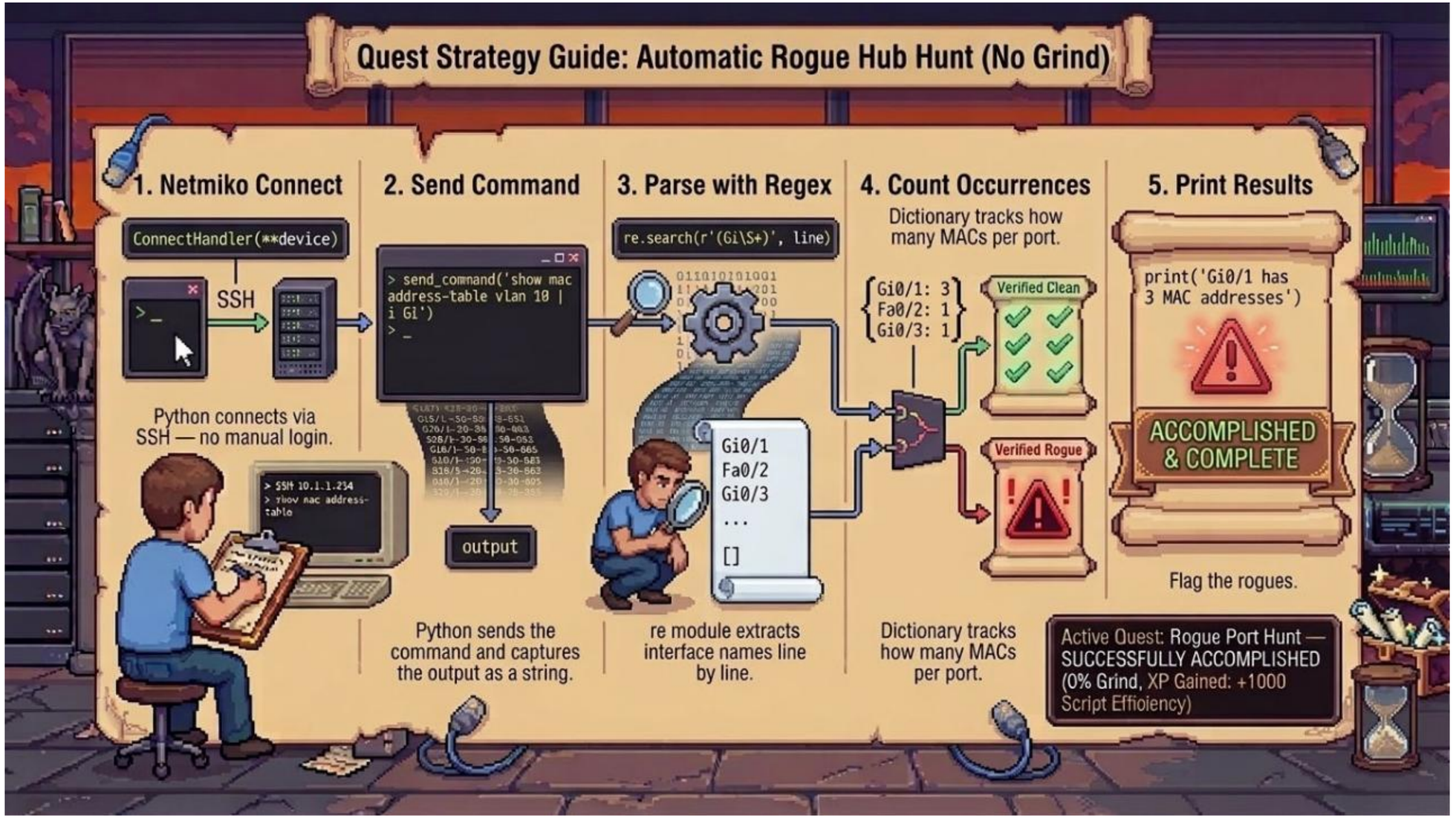

FOLLOW THE ANNOYANCE
Level 1 of a Network Engineer's Automation Journey
Sean Mahoney
PRESS START
RATED E
E
FOR ENGINEERS


Quest: The Rouge Hub (Tedious Grind)
1) SSH into switch
2) Run 'show mac address-table'
3) Copy output to clipboard
4) Paste into spreadsheet
5) Use Excel magic to count
6) Find the rogues
Excel
> SSH 10.1.1.254
> show mac address-table
"It looks like you're trying to count ports... I can tell you where the coffee is."
IMOTL
PING
PINE
PIMG
Active Quest: Rogue Port Grimaldi (50% complete, estimated completion: Forever)
XP Gained: 5


New Package Found!
NETMIKO
from netmiko import ConnectHandler
ssh_connection = ConnectHandler(
device_type="cisco_ios",
host="192.168.1.1",
username="admin",
password="password"
)
output = ssh_connection.send_command("show clock")
print(output)
ssh_connection.disconnect()
This is the hello world for
Network Engineers


Wouldn't it be cool if...
...I could use Python to find these rouge devices?
netmiko
regex101.com
Rx}
from netmiko import ConnectHandler
device = {'device_type': 'cisco_ios',
'host': '10.0.0.1'}
net_connect = ConnectHandler(**device)
output = net_connect.send_command('show mac
address-table')
print(output)


Quest Strategy Guide: Automatic Rogue Hub Hunt (No Grind)
1. Netmiko Connect
ConnectHandler(**device)
SSH
Python connects via SSH — no manual login.
2. Send Command
> send_command('show mac address-table vlan 10 | i Gi')
> _
output
Python sends the command and captures the output as a string.
3. Parse with Regex
re.search(r'(Gi\S+)', line)
Gi0/1
Fa0/2
Gi0/3
...
[]
re module extracts interface names line by line.
4. Count Occurrences
Dictionary tracks how many MACs per port.
Gi0/1: 3
Fa0/2: 1
Gi0/3: 1
Verified Clean
Verified Rogue
Dictionary tracks how many MACs per port.
5. Print Results
print('Gi0/1 has 3 MAC addresses')
ACCOMPLISHED & COMPLETE
Flag the rogues.
Active Quest: Rogue Port Hunt — SUCCESSFULLY ACCOMPLISHED (0% Grind, XP Gained: +1000 Script Effioiency)


Wouldn't it be cool if...
...I could run this across multiple devices at once?
for loops
lists
dictionaries


New Annoyance Detected!
The Clunky Manual Workflow (Or: Why Sean is Tired)
1. Format IPs via Notepad++ macros
2. Run Script with prepared input (requires manual target list)
3. Manually copy results & update support tracker
Terminal
> — python rogue_hunt.py targets.txt
Check In checked: Success!
G10/1 in checked: Success!
G10/2 in checked: Success!
G10/3 in checked: Success!
There has to be a better way...
Interface
MACs
Location
Status
GI0/1
3
Omaha NOC
SUPPORT NOTIFIED
NOC LIFE


Wouldn't it be cool if...
...I could stop copy-pasting into Notepad?
file I/O
input.txt
read
write
output.txt
csv module
CSV
CSV


Wouldn't it be cool if...
...I could just have the script email me the results?
smtplib
smtp.serv
Set email server
Build message
Send email


LEVEL 1 COMPLETE: BOSS DEFEATED!
THE CLUNKY WORKFLOW IS SLAIN!
NOC LIFE
TECH MASTER'S VICTORY LOG
Rogue Hubs Found: 90%
Scripts Written: 1
(Primary Automator Weapon)
Packages Looted & Mastered (Icons):
Netmiko
re
csv
smtplib
ROGUE HUB
(Neutralized)
Netmiko Skill Tome
RE Filter Lens
CSV Scroll
SMTP Envoy Badge
THE EVOLUTION OF AN AUTOMATOR
MANUAL CLI
(Notepad++, manual list, weary Sean)
THE SCRIPT
(Manual run on target list)
MULTI-DEVICE
(Automated across network)
CSV PARSING
(No manual copy, clean output)
CRON JOB
(FULLY AUTOMATED REPORTS, victory)
LEVEL 1 COMPLETE