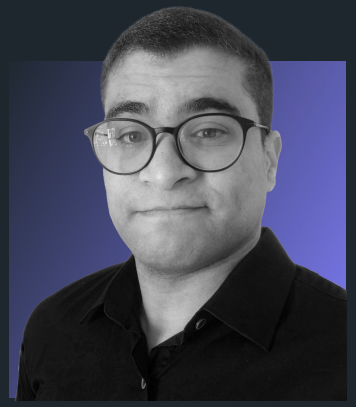
Checkmk Conference #11

Writing Extensions with AI



Paulo Santana

IS Infrastructure Monitoring Specialist

ABB

The SysAdmin’s Dilemma

- We want to monitor everything OOTB
- Sometimes we can’t afford to wait
- Finding the right example isn’t that easy
- The docs are solid, but a lot for small tasks
- Started many times… and stopped halfway

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I might not be the only one...

Check Plugin Form Parameters

Checkmk Exchange checkmk-v2, plugin, rules

1h - Hello, I have a problem with one of my custom checks when I introduce a SingleChoice parameter form to an existing ruleset that has SimpleLevels parame...

How to write CheckMK Checks

Checkmk Exchange

Oct 18, 2024 - Hi everyone, I know there are not many options to make the topic even more generous, but I did that purposefully. I am now working multiple days on the first baby steps of writing a CheckMK plugin,...

Check Plugin Form Parameters

Checkmk Exchange checkmk-v2, plugin, rules

1h - Hello, I have a problem with one of my custom checks when I introduce a SingleChoice parameter form to an existing ruleset that has SimpleLevels parame...

[Check_mk (english)] Problems trying to write SNMP check

checkmk-en

Jun 11, 2019 - I'm trying to write a check for an Eaton PDU. After reading through https://checkmk.de/checkmk_devel_snmpbased.html and the apc_powernet_pdu check, I figured my best option would be to copy the apc...

Writing a simple winperf counter check (Windows counter to Checkmk)

How-to Articles

Aug 10, 2020 - This brief video show how to get a Windows performance counter, via Checkmk's built-in winperf handling so that you can actually see it in Checkmk. Requires creating a check. In this case, I'm pull...

☑ Help with agent_based and rulesets

Checkmk Exchange checkmk-v2, checkmk-enterprise, checkmk-v2-3

5d - Hi! I found the problem, it should be written as State(params['parameter_name']) it looks like this: if qemu_state == "running": state_code = State(par...

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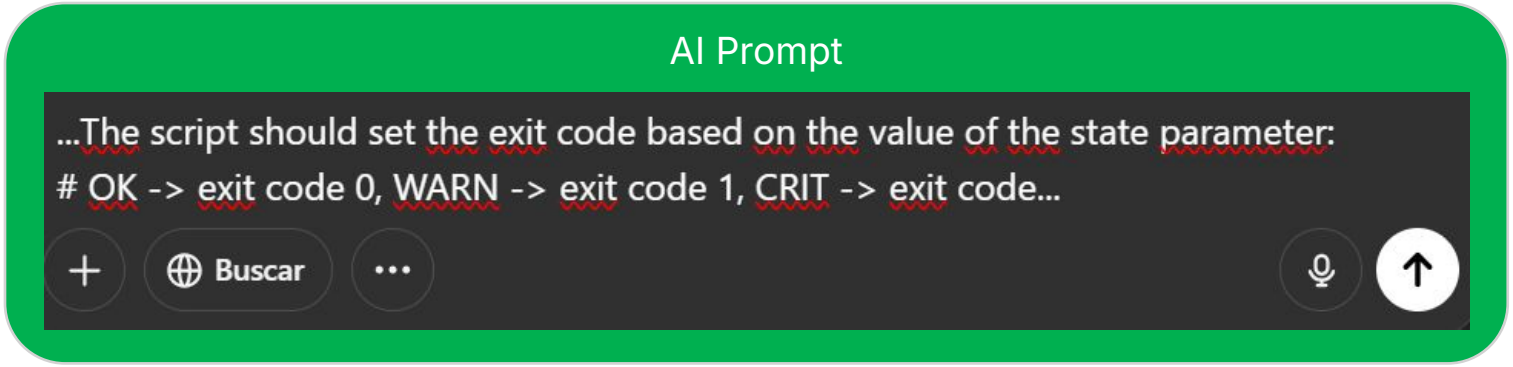
Building extensions brick by brick

- Started with a minimal working active check using AI



Active Check

```
OMD[test]:~/local/lib/python3/cmk_addons/plugins/esp_ps/libexec$ python3 ./check
_esp_ps_active_check_minimal
State: OK
```

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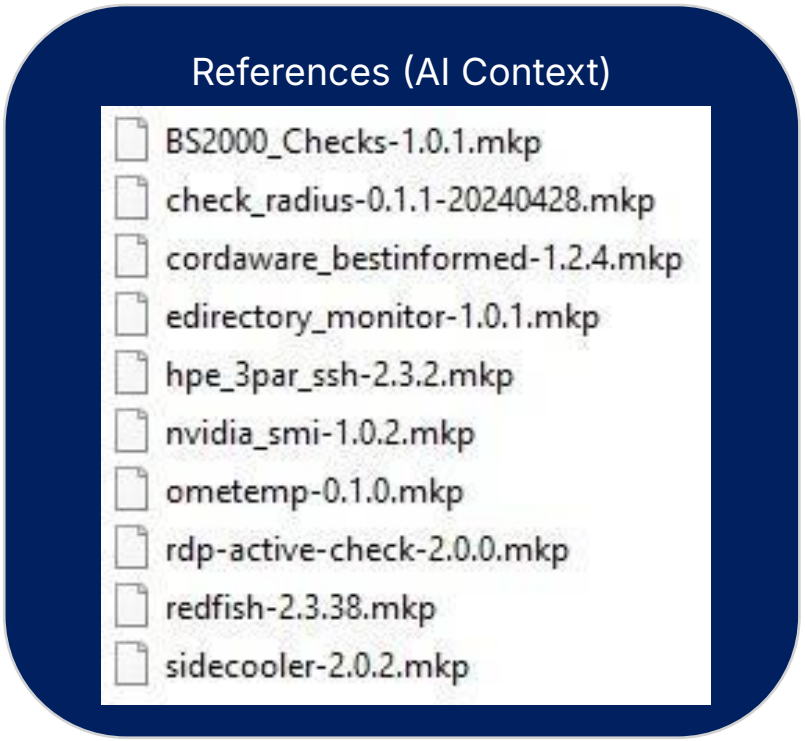
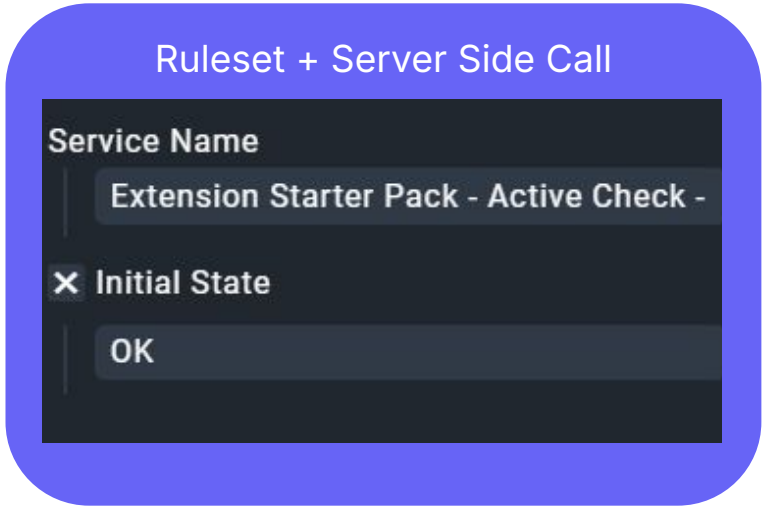
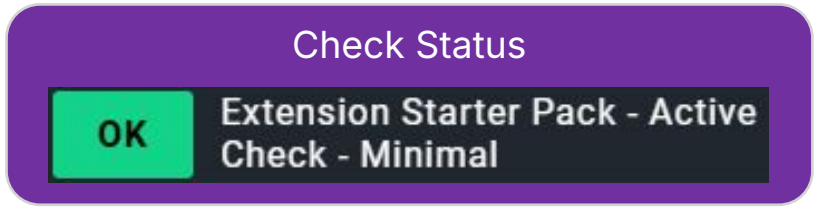
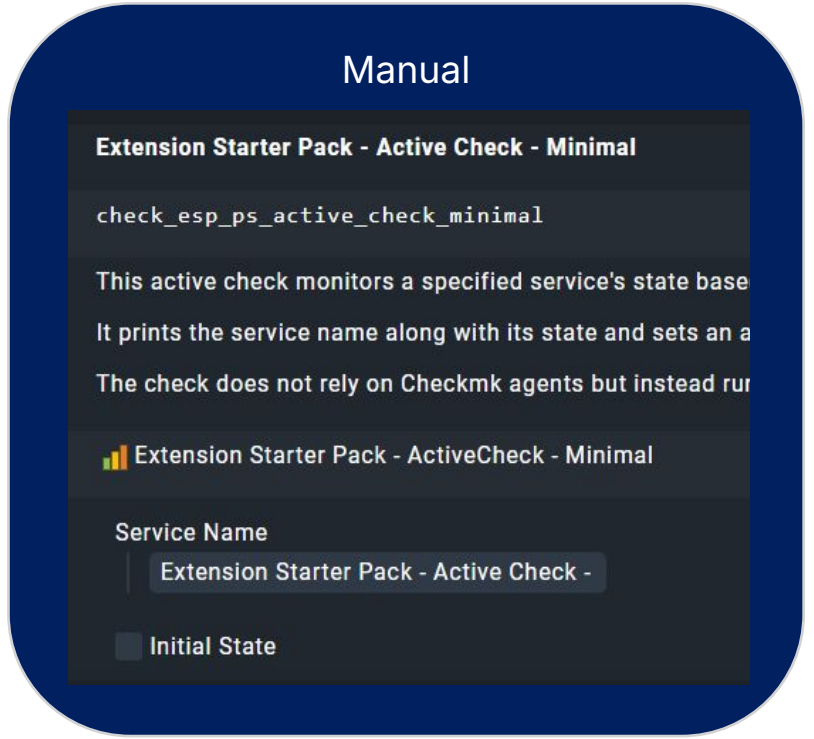
Building extensions brick by brick

- Gradually added ruleset, server-side call, and manual









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Building extensions brick by brick

- Inserted AI-friendly comments to guide structure and support AI assistance

References (AI Context)

```
# AI Context: Checkmk is a monitoring t

# Import necessary modules from Checkmk
from cmk.rulesets.v1.form_specs import
from cmk.rulesets.v1.rule_specs import

# Define the form specification functio
def _formspec():
    return Dictionary(
        title=Title("Extension Starter
        help_text=Help("A structured ex
        elements={
```

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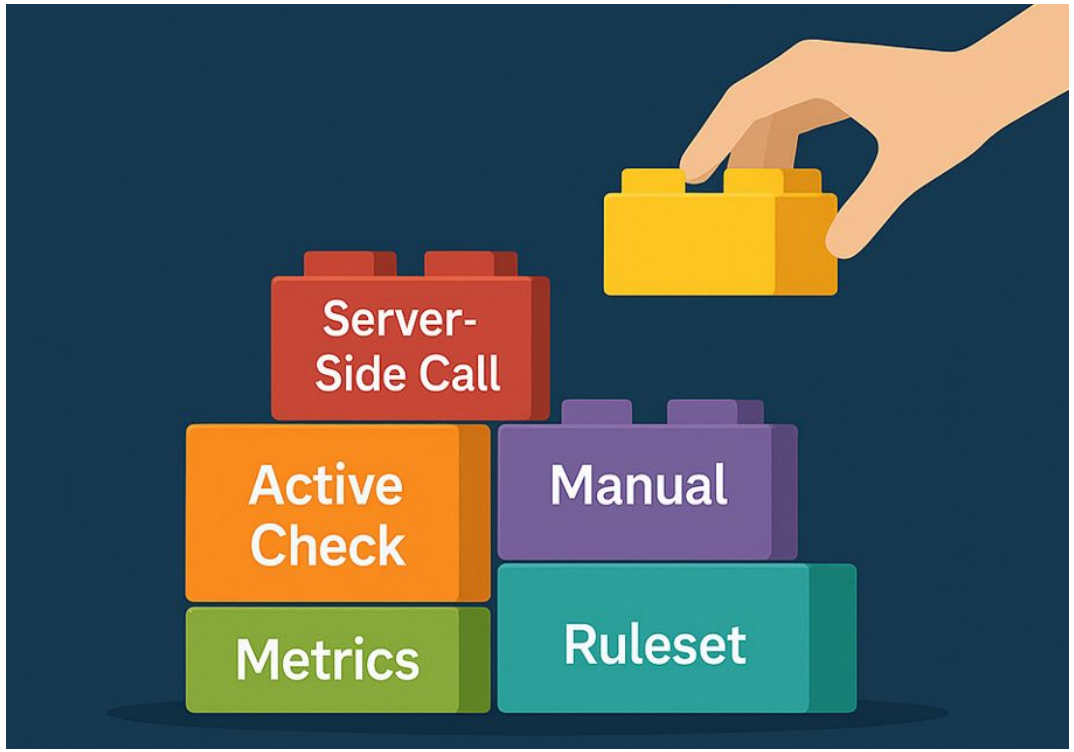
Building extensions brick by brick

- Combining the bricks into an MKP



MKP Creation

Package name (required)	esp_ps
Package version (required)	1.0.0
Minimum required Checkmk version	2.3.0b1
Valid until Checkmk version	No version limitation
Title (required)	Extension Starter Pack by Paulo Santana
Author	Paulo Santana
Homepage / Download - URL of this pack	https://github.com/paulosantanabr/esp_ps

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Setting up the Test Environment

Docker Desktop

- Started using VirtualBox VM
- Switched to Docker Desktop

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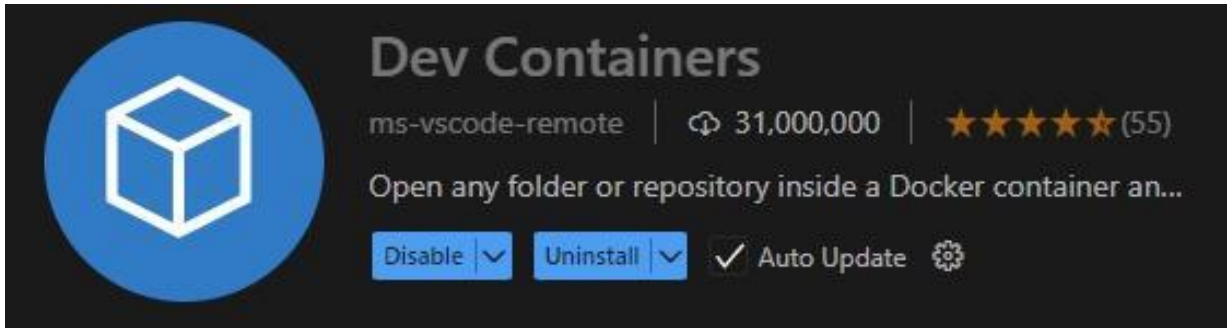
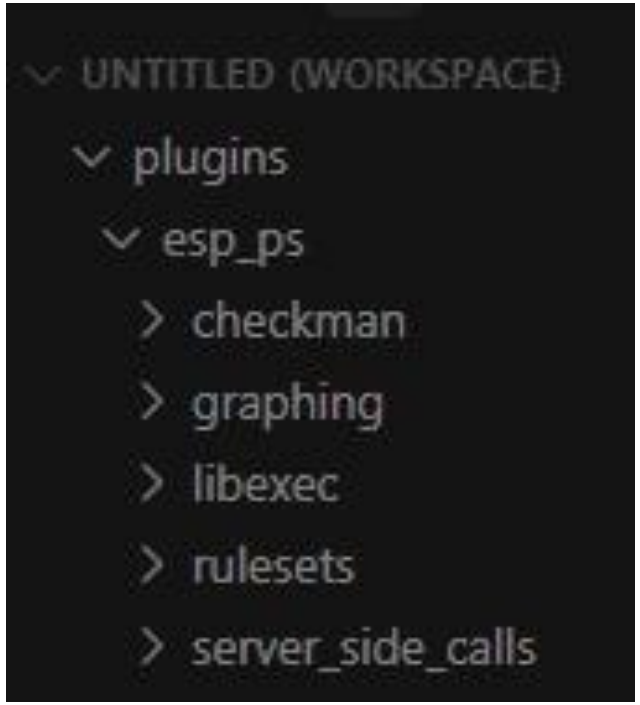
Setting up the Test Environment

Cursor + Container ENV

- Started using VSCode + GitHub Copilot + Dev SSH

- Switched to Cursor + Claude + Dev Containers
  - Custom Container Configuration File
  - Mapped plugins folder





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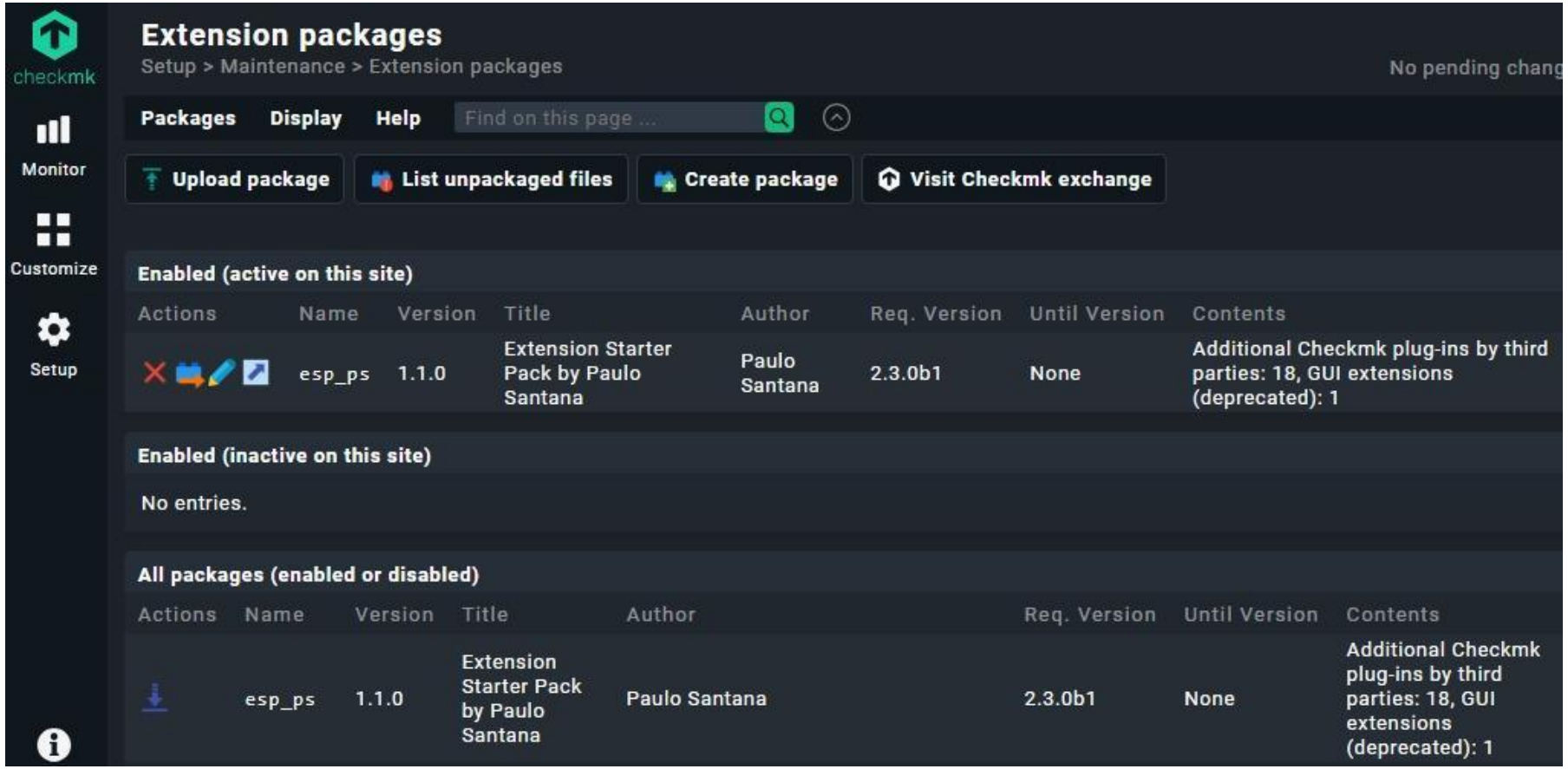
Setting up the Test Environment

Checkmk + ESP Extension



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Real-World Challenge: Apache Guacamole

- Description: Web-based, multi-protocol client (SSH, RDP, VNC, etc.)
- Reason: A personal goal I've had for a long time
- Objective: Retrieve the number of active sessions via API

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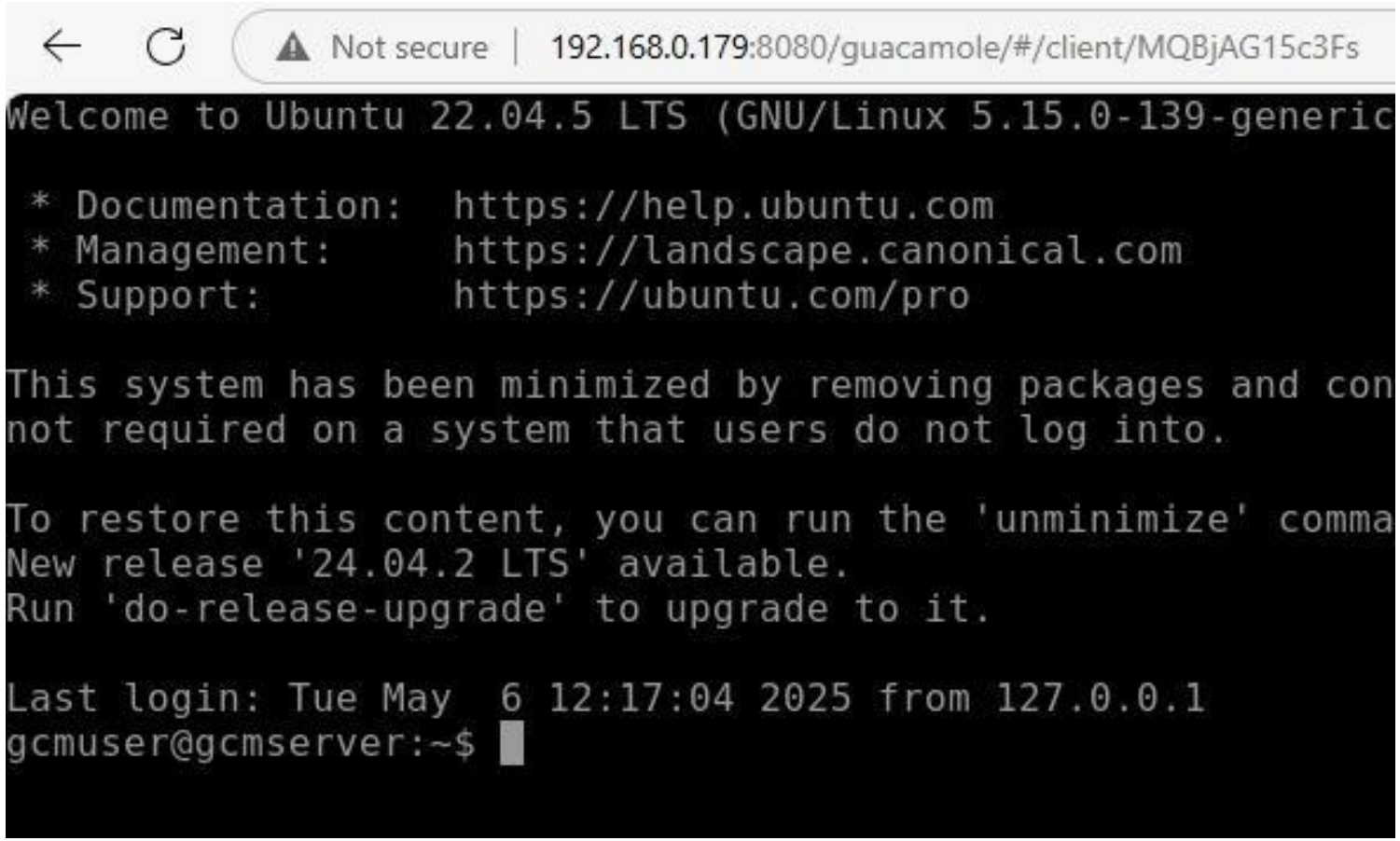
Setting up the Test Environment

Apache Guacamole



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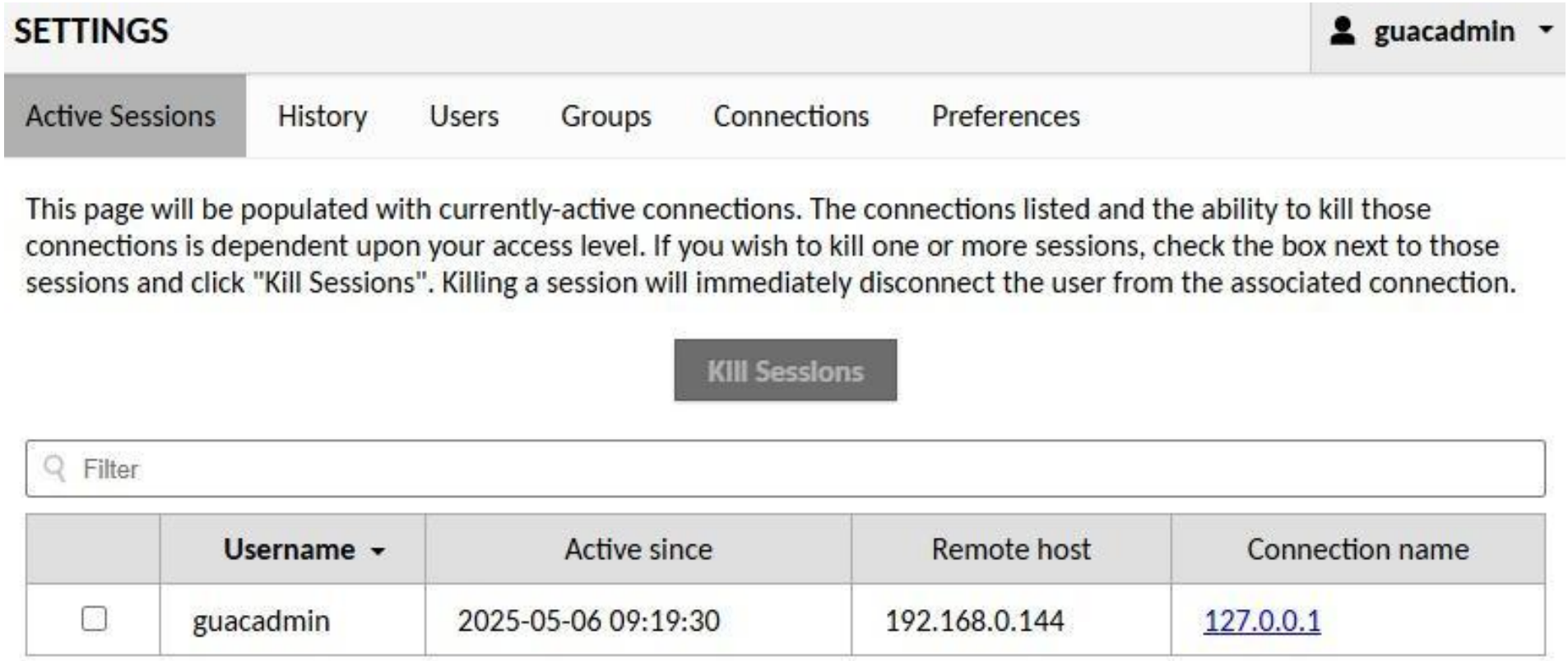
Setting up the Test Environment

Apache Guacamole



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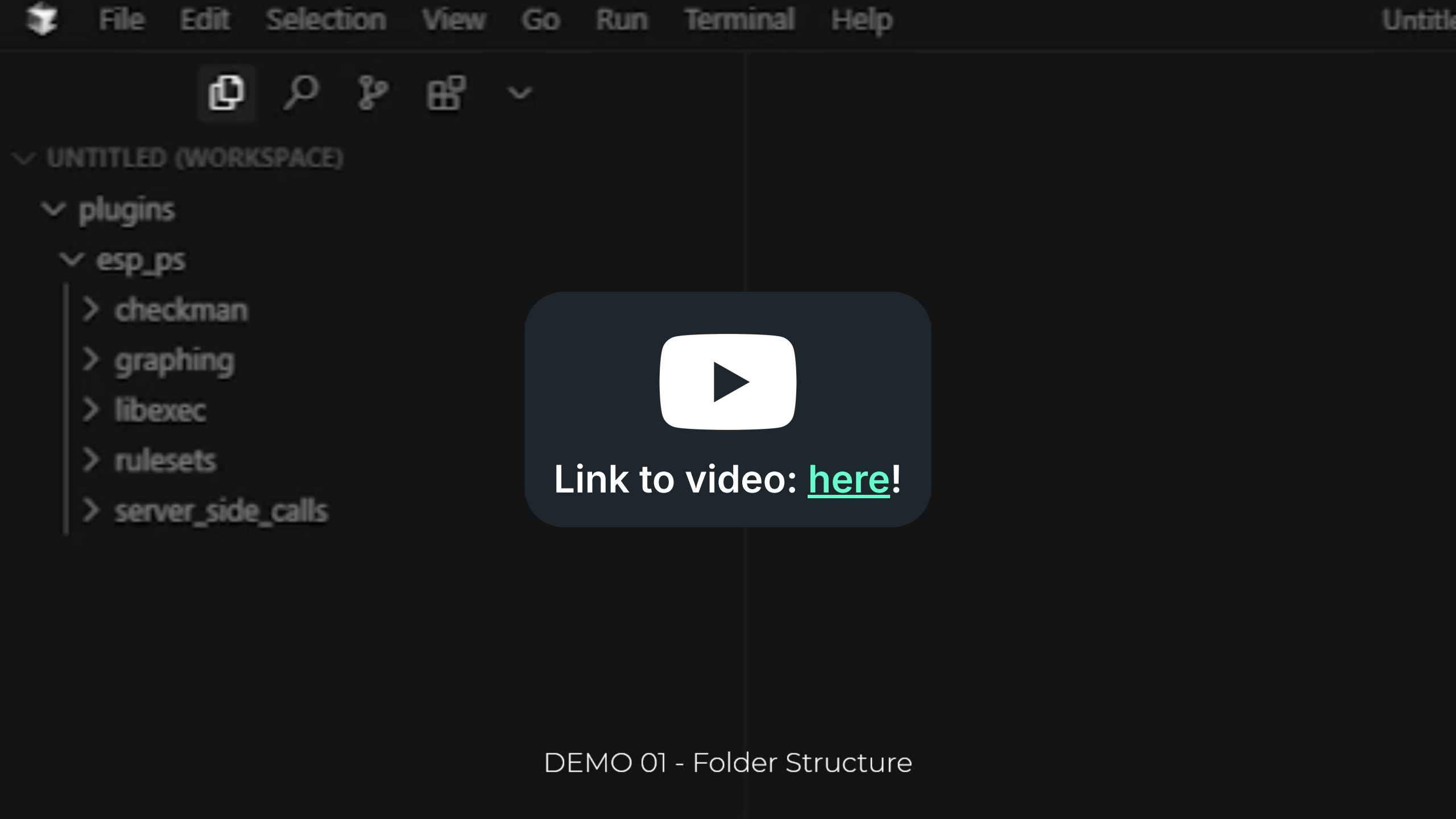
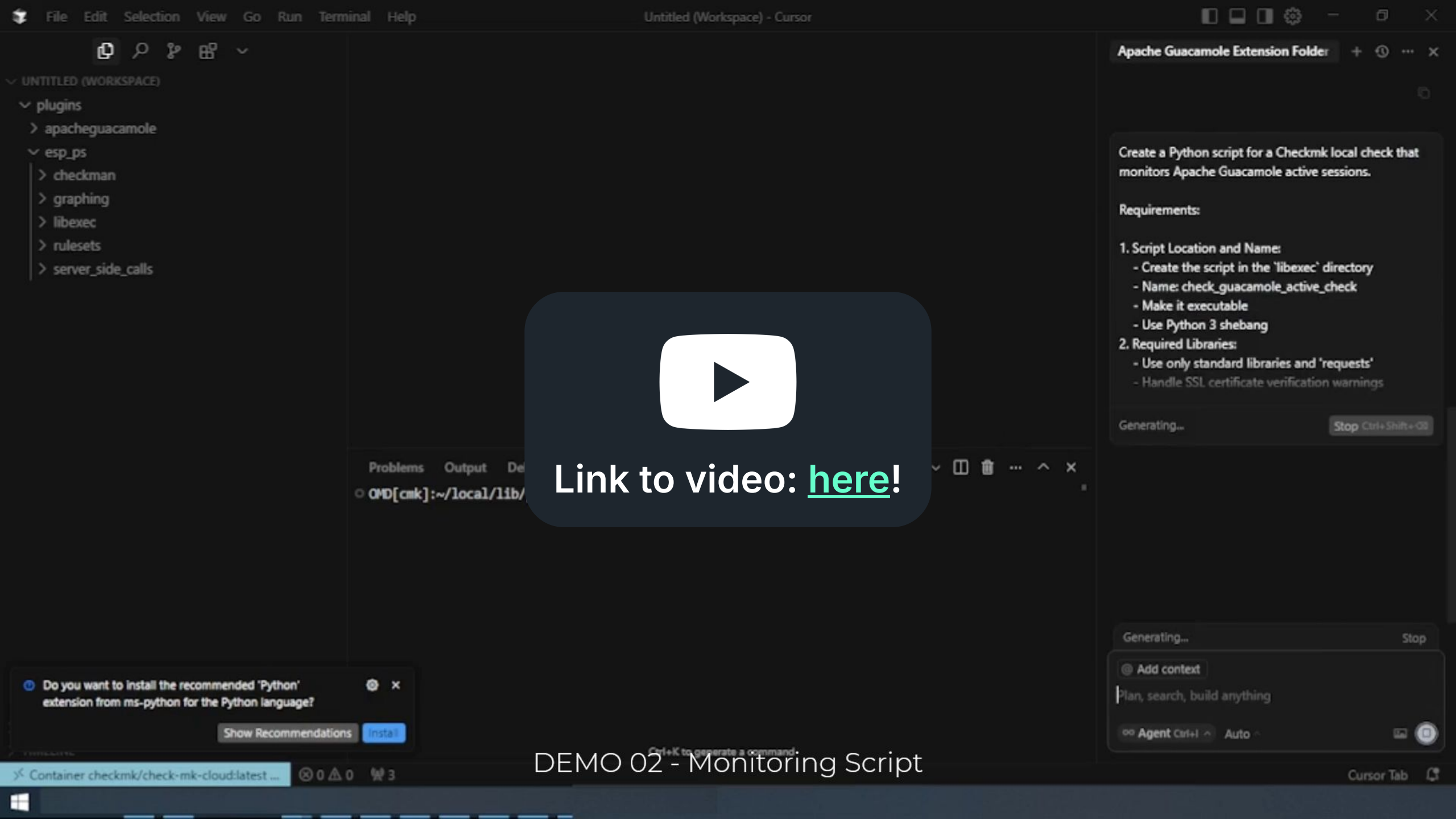
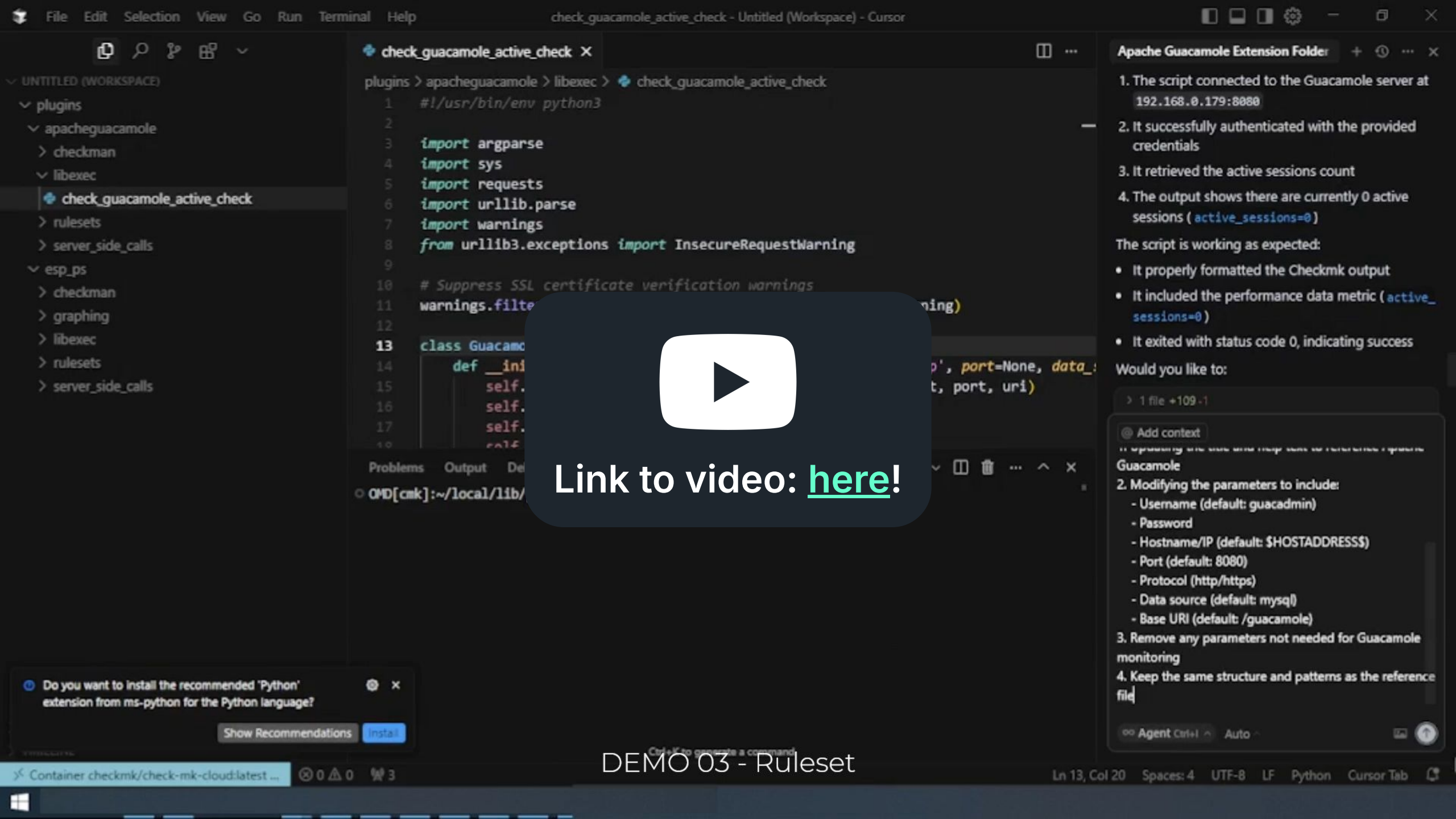


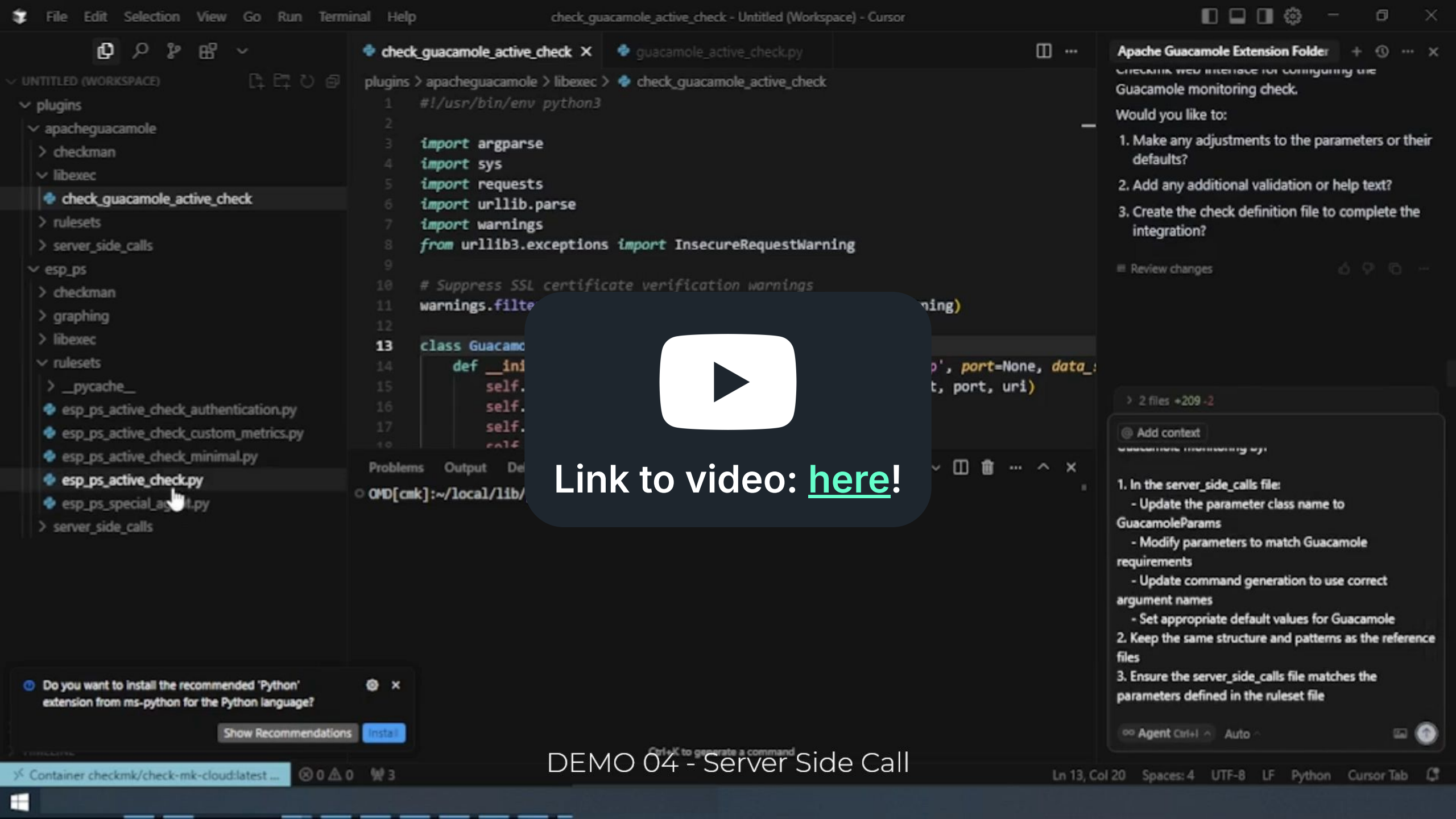
DEMO 01 - Folder Structure



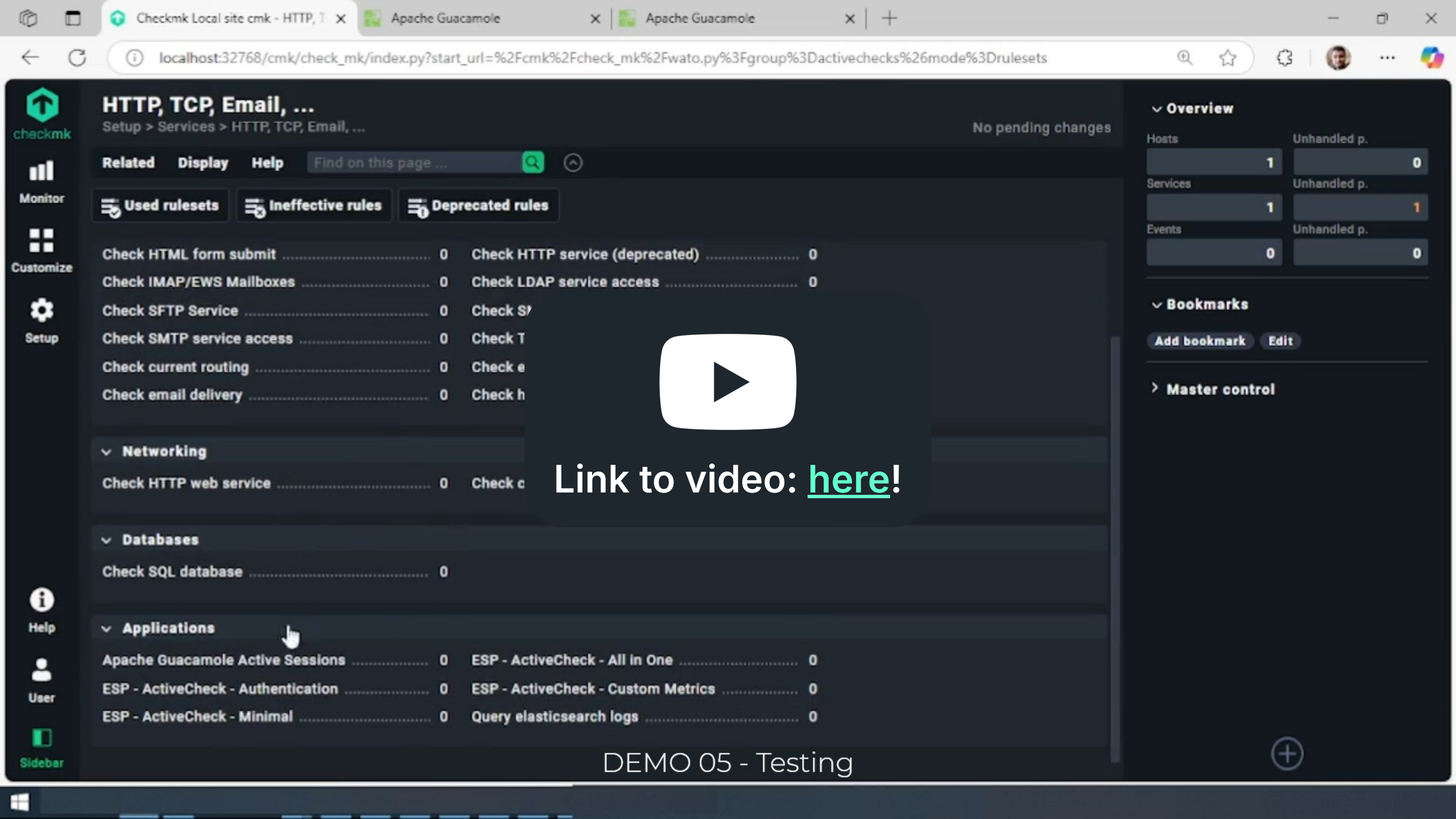
DEMO 02 - Monitoring Script



DEMO 03 - Ruleset

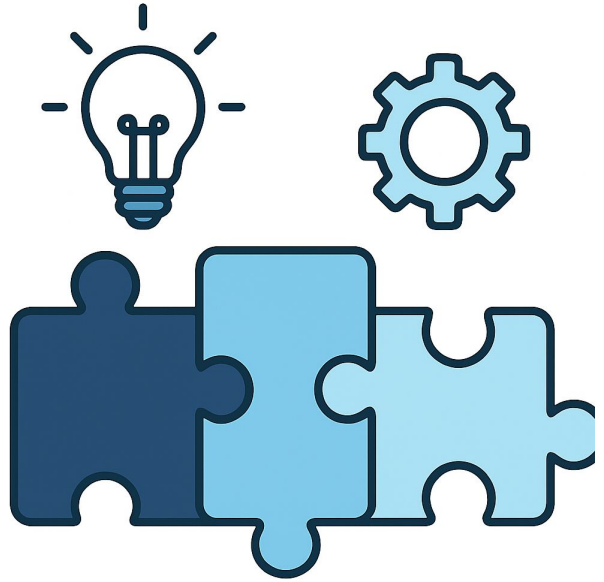


DEMO 04 - Server Side Call


Checkmk Local site cmk - HTTP, T
Apache Guacamole
Apache Guacamole
localhost:32768/cmk/check_mk/index.py?start_url=%2Fcmk%2Fcheck_mk%2Fwato.py%3Fgroup%3Dactivechecks%26mode%3Drulesets
checkmk
Monitor
Customize
Setup
Help
User
Sidebar
HTTP, TCP, Email, ...
Setup > Services > HTTP, TCP, Email, ...
No pending changes
Related
Display
Help
Find on this page ...
Used rulesets
Ineffective rules
Deprecated rules
Check HTML form submit 0
Check HTTP service (deprecated) 0
Check IMAP/EWS Mailboxes 0
Check LDAP service access 0
Check SFTP Service 0
Check SMTP service access 0
Check current routing 0
Check email delivery 0
Networking
Check HTTP web service 0
Databases
Check SQL database 0
Applications
Apache Guacamole Active Sessions 0
ESP - ActiveCheck - All in One 0
ESP - ActiveCheck - Authentication 0
ESP - ActiveCheck - Custom Metrics 0
ESP - ActiveCheck - Minimal 0
Query elasticsearch logs 0
Overview
Hosts 1
Unhandled p. 0
Services 1
Unhandled p. 1
Events 0
Unhandled p. 0
Bookmarks
Add bookmark
Edit
Master control
Link to video: here!
DEMO 05 - Testing

Lessons Learned

- Don’t build everything at once
- Document Everything
- Context is very important
- Sometimes is best to start over



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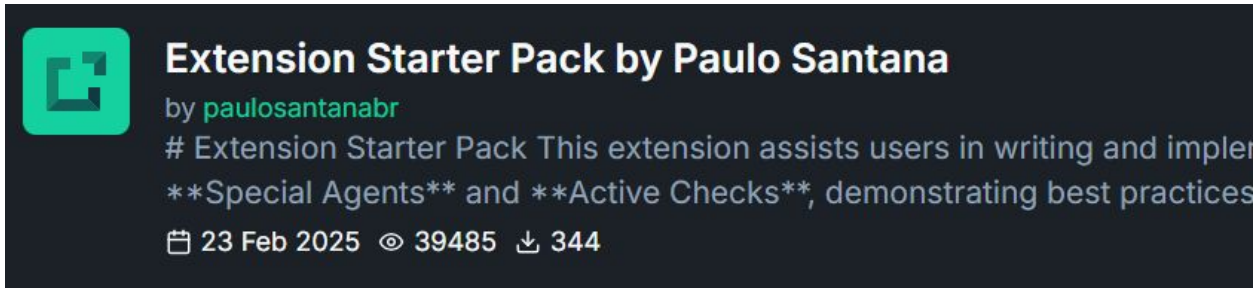
Thank you!

- Thank you for your time and attention
- Let’s make extension building easier and more welcoming
- Happy to connect, collaborate, and share ideas



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