Submission Worksheet

Submission Data

Course: IT490-451-M2025
Assignment: IT490 System Services
Student: Kenneth C. (kac63)
Status: Submitted | **Worksheet Progress:** 100%
Potential Grade: 10.00/10.00 (100.00%)
Received Grade: 0.00/10.00 (0.00%)
Started: 6/30/2025 5:21:46 PM
Updated: 6/30/2025 8:39:44 PM
Grading Link: https://learn.ethereallab.app/assignment/v3/IT490-451-M2025/it490-system-services/grading/kac63
View Link: https://learn.ethereallab.app/assignment/v3/IT490-451-M2025/it490-system-services/view/kac63

Instructions

- Overview Link: https://youtu.be/fj627ClET6s

1. As a group, create a system service for your DB MQ Consumer and API MQ Consumer that does the following:
    - Starts the related consumers to run in the background
    - Starts when the system is booted
    - Starts only if/when the network is available (since you can't check the mq service since it's a different machine)
    - Restarts the process (or child processes) if they fail or terminate abruptly
2. Each related `.service` file should be uploaded to your group repo under an appropriate file name
3. Since there are only two files that are part of the project core, group members who aren't directly addressing those files should do a similar process for example/test consumers on extra `node` VMs
4. Fill in the below evidence
5. Export the PDF and add it to your group repository
6. Upload the same PDF to Canvas (only one group member needs to fill and submit this)

Section #1: (8 pts.) Systemd

Progress: 100%

Details:

- Setup a service for DB's consumer
- Setup a service for API's consumer
- Setup example services on `node-#` VMs

☰ Task #1 (2.67 pts.) - DB's Service

Progress: 100%

☐ Part 1:

Part 1:

Progress: 100%

Details:

- Include a screenshot of the service file contents
- Include screenshots of log/output snippets from `systemctl` / `jounrnalctl` of the following
  - Process running
  - Process restarting (due to service file)
  - Using `systemctl` is not a valid restart process for this, you'll want to kill the process or cause some unexpected termination

running

output and running

process kill

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Part 2:

Progress: 100%

Details:

- Include the link to the uploaded service file from the group repo (link should just end in the file extension)

URL #1
https://github.com/KennethCardenas/it490/blob/main/it490/services/db_consumer.service

URL
https://github.com/KennethCarde

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Part 3:

Progress: 100%

Details:

- Explain what each property in the service file does and why it was used/set

Your Response:

Description: Provides a readable name for the service. Helpful when listing or checking status with system tools.

After / Wants: Ensures the service starts only after the network is fully online. Prevents failures when the service relies on external connections.

ExecStart: Defines the command to run the database consumer script. This is the main logic the service manages.

Restart / RestartSec: Automatically restarts the service if it crashes. Adds a short delay before trying again to prevent overload.

User: Specifies the user account under which the service runs. Ensures proper execution and file access.

WorkingDirectory: Sets the starting directory for the service process. Helps resolve any relative paths in the script.

WantedBy: Registers the service to start automatically during system boot. Enables persistent background operation.

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Task #2 (2.67 pts.) - API's Service

Progress: 100%

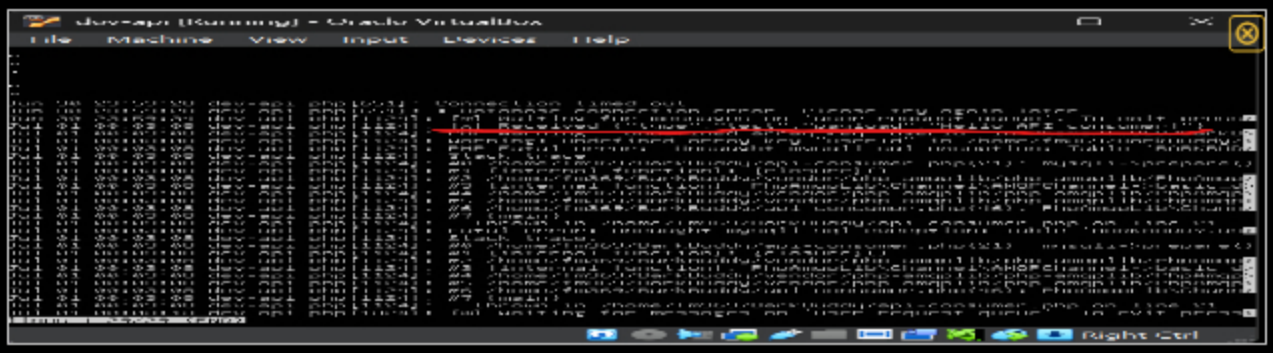
Part 1:

Progress: 100%

Details:

- Include a screenshot of the service file contents
- Include screenshots of log/output snippets from `systemctl` / `jounrnalctl` of the following
  - Process running
  - Process restarting (due to service file)
  - Using `systemctl` is not a valid restart process for this, you'll want to kill the process or cause some unexpected termination

script



output and running

killed

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Part 2:

Progress: 100%

Details:

- Include the link to the uploaded service file from the group repo (link should just end in the file extension)

URL #1
https://github.com/KennethCardenas/it490/blob/main/it490/services/api_consumer.service

URL
https://github.com/KennethCarde

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Part 3:

Progress: 100%

Details:

- Explain what each property in the service file does and why it was used/set

Your Response:

Description: Labels the service for easy identification in logs and system lists. Doesn't affect behavior, just clarity.

After / Wants: Delays startup until the network is available. Required when the service communicates over the network.

ExecStart: Specifies which command or script the service runs. This is the core action the service provides.

Restart / RestartSec: Enables automatic recovery after failure with a short pause. Helps maintain uptime without manual restarts.

User: Sets which system user runs the service process. Needed for permissions and ownership alignment.

WorkingDirectory: Determines the path from which the script is executed. Supports relative file access.

WantedBy: Connects the service to the system's boot sequence. Starts the consumer automatically on reboot.

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Task #3 (2.67 pts.) - Misc Nodes Service

Progress: 100%

Part 1:

Progress: 100%

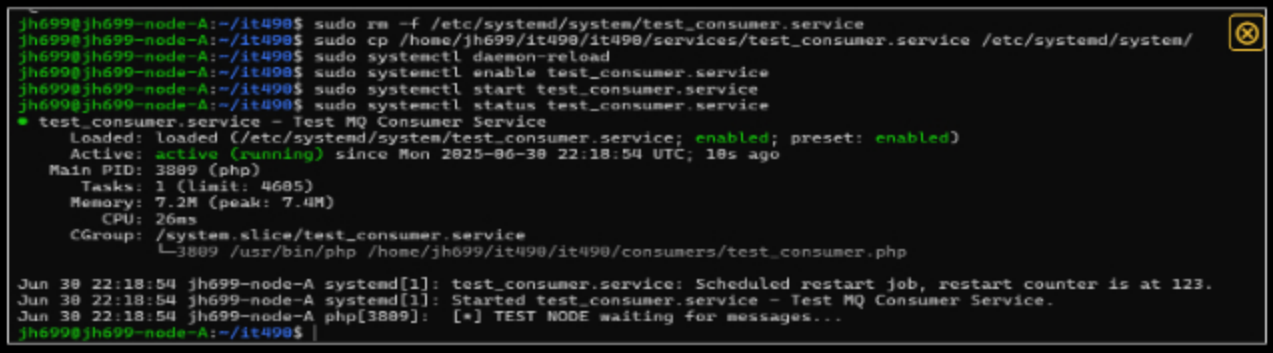
Details:

- Include a screenshot of each service file contents (there should be an indicator of who

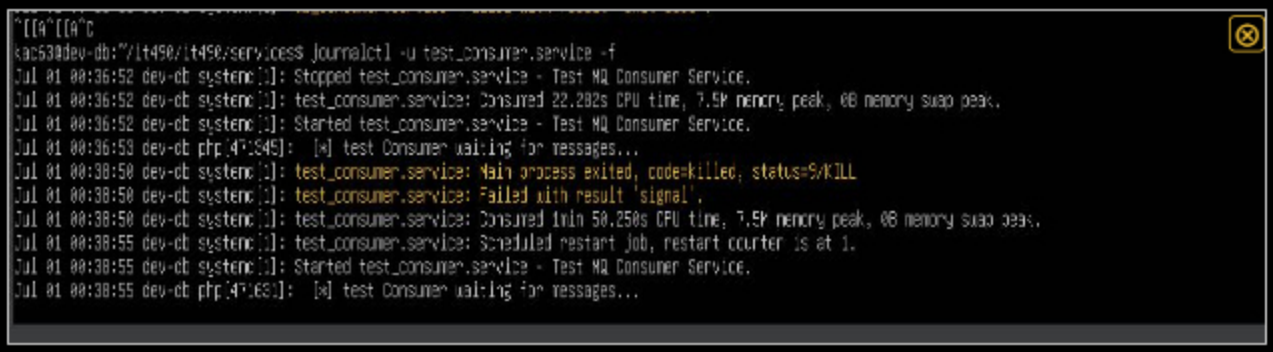
worked on this like using ucid in the name)

- Include screenshots of log/output snippets from `systemctl` / `jounrnalctl` of the following
  - Process running
  - Process restarting (due to service file)
  - Using `systemctl` is not a valid restart process for this, you'll want to kill the process or cause some unexpected termination
- Include in each caption which team member the data represents (the screenshots should reflect the same)

content- jhonathan



running- jhonathan



killed - jhonathan

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Part 2:

Progress: 100%

Details:

- Include the link to the uploaded service file from the group repo (link should just end in the file extension)
- Add the link for each service file related to one of the extra Node VMs

URL #1
https://github.com/KennethCardenas/it490/blob/main/it490/services/test_consumer.service

URL
https://github.com/KennethCarde

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Part 3:

Progress: 100%

Details:

- Explain what each property in the service file does and why it was used/set
- Separate out the response from each team member who did a custom Node VM and clearly note who the response is from

Your Response:

Description: Gives the service a label to distinguish it from others. Useful for monitoring or debugging.

After / Wants: Ensures network readiness before the script runs. Prevents startup issues when relying on external systems.

ExecStart: Tells systemd which script to launch. This is the main test functionality being activated.

Restart / RestartSec: Restarts the script if it exits unexpectedly. Adds a pause before retrying to avoid repeated failures.

User: Defines the user under which the script should run. Required for service execution.

WorkingDirectory: Sets the path context for running the script. Ensures proper access to local files or resources.

WantedBy: Marks the service to run during standard multi-user boot mode. Keeps it active without manual intervention.

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Section #2: (2 pts.) Reflection

Progress: 100%

Task #1 (1 pt.) - Explain what the team learned about the service file configurations and related activities

Progress: 100%

Details:

- Include the team member name followed by their response, or N/A if they didn't contribute

Your Response:

Kenneth Cardenas: Learned how to correctly configure systemd .service files to ensure PHP MQ consumer scripts start on boot, recover from failure, and wait for network availability. Also learned that mismatched paths, usernames, or ExecStart commands cause failure states like status=217/USER or status=203/EXEC.

Chris: n/a

Filip: Understood the role of After=network-online.target and Restart=always in making services reliable and network-safe on startup.

Jonathan: Observed how test consumers could be used to validate MQ reachability and how lightweight .service files can be written for non-core VMs.

Jerry: n/a

Matan: n/a

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Task #2 (1 pt.) - Highlight Contributions

Progress: 100%

Details:

- Note the group name
- List each team member
- Briefly summarize their contribution to this assignment and include the Github Issue link with the task related to this assignment (each group member should have their own Issue item which must be assigned to them and in the proper status)

Your Response:

Kenneth Cardenas - Created and configured db_consumer.php and its .service file. Handled troubleshooting for service startup and system integration.

https://github.com/MattToegel/it490-2025-barkbuddy/issues/43

Jonathan - Set up and tested test_consumer.php to verify MQ and systemd functionality on a test node. Validated service persistence after reboots.

https://github.com/MattToegel/it490-2025-barkbuddy/issues/45

Filip Developed the api_consumer.php script and its matching service file. Implemented RabbitMQ consumption logic and ensured proper service startup configuration.

https://github.com/MattToegel/it490-2025-barkbuddy/issues/44

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