Monitoring & Notification Mechanism for MLNOESQLEXP01

1. Overview

This document describes the server monitoring and alerting mechanism currently in place to track the health of MLNOESQLEXP01 (Production SQL Server). The goal is to ensure the team is notified promptly if the server becomes unavailable.

2. Architecture

- Monitoring Host: MLNOESQLTEST01 (Test SQL Server)
- Target Host: MLNOESQLEXP01 (Production SQL Server)
- Script: ServerWatch.ps1, located in C:\Monitors\
- Notification Channel: Microsoft Teams, Data Warehouse → Server Alerts channel
- State Tracking: JSON file ServerWatch.state.json in C:\Monitors\

3. How it Works

1. Scheduled Task runs every 1 minute on MLNOESQLTEST01.
2. ServerWatch.ps1 performs:
- Ping check (ICMP)
- SQL port check (TCP 1433)
3. If both checks fail for a configurable number of consecutive runs (FailAfter threshold):
- A Teams alert is sent to Server Alerts.
Example:
[ALERT] MLNOESQLEXP01 appears DOWN
Host: MLNOESQLEXP01
Checks: Ping + Port 1433
Observed: 3 consecutive failures (threshold = 3)
4. When connectivity is restored, a [RECOVERED] message is sent.
5. State file (ServerWatch.state.json) prevents duplicate notifications by storing:
- Last known status (Up/Down)
- Failure streak count
- Timestamp of last alert

4. Notifications

- Alerts are sent to Microsoft Teams using an Incoming Webhook configured on the Server Alerts channel.

- Webhook URL: (secured, stored in script config).
- All members of the Data Warehouse Team can view alerts in Teams.

Email notifications:
- Direct SMTP email from TEST01 is not currently available (outbound mail restricted).
- As a workaround, users should enable Missed activity emails in Teams settings:
Settings → Notifications → Missed activity emails → Recommended: Every 10 minutes.
- Outlook rules can then highlight, move, or forward these alert emails.

6. Maintenance

- To reset monitoring state: Delete C:\Monitors\ServerWatch.state.json (auto recreated).
- To change alert frequency: Adjust the Scheduled Task repeat interval (currently 1 minute).
- To change failure threshold: Edit FailAfter in ServerWatch.ps1.
- To add more servers/ports: Extend the Targets array in the script.
- To disable Teams alerts: Comment out or disable the Teams webhook section in the script.

7. Limitations

- Monitoring is dependent on MLNOESQLTEST01 being online.
- If both PROD and TEST servers fail simultaneously, no alerts will be generated.
- Alerts are only as fast as the Scheduled Task interval + FailAfter threshold.
- Missed activity emails from Teams are not instant (minimum 10 minutes).

8. Future Improvements

- Enable SMTP relay from TEST01 to send email alerts directly.
- Configure a heartbeat alert (periodic 'ServerWatch is alive' message).
- Consider external/cloud monitoring for redundancy (to cover full-site outages).

5. Configuration Parameters

Parameter	Default Value	Description
Targets	MLNOESQLEXP01	Server(s) to monitor
Ports	1433	SQL port(s) to check
FailAfter	3	Number of consecutive failures before alert
CooldownMinutes	15	Minimum time between repeated alerts
PingTimeoutMs	1500	Timeout for ping (ms)
TcpTimeoutMs	1500	Timeout for TCP port test (ms)
StateFile	C:\Monitors\ServerWatch.state.json	Persistent state file