

Infrastructure Monitoring, Troubleshooting, and Validation

This overview covers the most recent completed work focused on stabilizing web services, improving observability, and validating system health across development and staging environments. The primary objective was to ensure reliable monitoring, confirm resource availability, and resolve alert-driven concerns through structured verification and configuration.

Monitoring coverage was expanded and validated using CheckMK with agent-based integrations. Hosts were confirmed as reachable and correctly registered, service discovery was performed, and essential checks—CPU load and utilization, disk I/O, filesystem health, NTP synchronization, and security auditing—were reviewed and confirmed healthy. Discovered services were accepted where appropriate, and configuration changes were activated to ensure monitoring reflected the current system state.

System-level troubleshooting ruled out resource exhaustion as a root cause for alerts. Uptime, load averages, memory usage, swap activity, and disk utilization were all within normal operating ranges. Process activity was minimal and stable, indicating no abnormal CPU or memory pressure during investigation.

Web server support configurations were also reviewed to ensure operational continuity. Apache log rotation settings were verified to confirm logs are managed correctly and that the service reloads gracefully after rotation, preventing interruptions or runaway disk usage. Network mounts and filesystem options were checked and matched expected configurations, further confirming platform stability.

Overall, these efforts resulted in clean monitoring states, validated system health, and confidence that the staging and development web infrastructure is operating as expected. Monitoring is fully active with accurate visibility, alerts are actionable, and the environment is positioned for proactive operations rather than reactive troubleshooting.

Basic system health checks were run on stage-web-eg3 to validate server stability. The system has been up for over 10 days with very low load averages, indicating no CPU pressure. Disk usage shows ample free space across all mounted filesystems, including the root filesystem and the NFS mount, with no partitions near capacity.

Memory utilization is within normal range, with sufficient available RAM and minimal swap usage. Overall, CPU, disk, and memory resources appear healthy, ruling out resource exhaustion as the cause of the reported web server alerts.

```
[egarrido@stage-web-eg3 ~]$ uptime
11:34:18 up 10 days, 1:15, 2 users, load average: 0.04, 0.03, 0.00
[egarrido@stage-web-eg3 ~]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M   0    4.0M  0% /dev
tmpfs          383M   0   383M  0% /dev/shm
tmpfs          153M  9.7M  144M  7% /run
efivarfs       256K  27K   225K 11% /sys/firmware/efi/efivar
/dev/mapper/cs_localhost--ks9-root  17G  2.1G   15G  13% /
/dev/sda2       960M 235M   726M 25% /boot
/dev/sda1       599M  7.5M   592M  2% /boot/efi
10.1.30.148:/nfs/share/vhosts     13G  6.3G   6.6G 49% /nfs/incoming/vhosts
tmpfs           77M   0    77M  0% /run/user/770000476
[egarrido@stage-web-eg3 ~]$ free -h
              total        used         free      shared  buff/cache   available
Mem:       764Mi      302Mi      295Mi      0.0Ki      285Mi      462Mi
Swap:      2.0Gi      125Mi      1.9Gi
```

Only one active process is running at the time of capture, with the rest in a sleeping state, indicating normal system behavior. These results further confirm that CPU and memory pressure are not contributing factors to the reported web server issue.

```
egarrido@stage-web-eg3:~ x + - □ x
top - 11:35:48 up 10 days, 1:17, 2 users, load average: 0.01, 0.02, 0.00
Tasks: 224 total, 1 running, 223 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.3 us, 1.3 sy, 0.0 ni, 97.7 id, 0.0 wa, 0.3 hi, 0.3 si, 0.0 st
MiB Mem : 764.6 total, 295.6 free, 301.9 used, 285.8 buff/cache
MiB Swap: 2048.0 total, 1922.2 free, 125.8 used. 462.8 avail Mem

indicating no CPU pressure. Disk usage shows ample free space across all mounted filesystems, including the root filesystem and the NFS mount,
no partitions near capacity.

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
37486 root 20 0 0 0 0 I 1.0 0.0 0:01.10 kworker/0:2-xfs+
37493 egarrido 20 0 19828 4480 3584 R 0.7 0.6 0:00.13 top
  1 root 20 0 176752 9656 5608 S 0.0 1.2 1:40.24 systemd
  2 root 20 0 0 0 0 S 0.0 0.0 0:01.08 kthreadd
  3 root 20 0 0 0 0 S 0.0 0.0 0:00.00 pool_workqueue_
  4 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/R-rcu_g
  5 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/R-sync_
  6 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/R-slub_
  7 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/R-netns
  9 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/0:0H-ev+
11 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/R-mm_pe
13 root 20 0 0 0 0 I 0.0 0.0 0:00.00 rcu_tasks_kthre
14 root 20 0 0 0 0 I 0.0 0.0 0:00.00 rcu_tasks_rude_
15 root 20 0 0 0 0 I 0.0 0.0 0:00.00 rcu_tasks_trace
16 root 20 0 0 0 0 S 0.0 0.0 0:03.11 ksoftirqd/0
17 root 20 0 0 0 0 I 0.0 0.0 0:22.25 rcu_preempt
18 root 20 0 0 0 0 S 0.0 0.0 0:00.00 rcu_exp_par_gp_
19 root 20 0 0 0 0 S 0.0 0.0 0:00.00 rcu_exp_gp_kthr
20 root rt 0 0 0 0 S 0.0 0.0 0:02.69 migration/0
21 root -51 0 0 0 0 S 0.0 0.0 0:00.00 idle_inject/0
23 root 20 0 0 0 0 S 0.0 0.0 0:00.00 cpuhp/0
25 root 20 0 0 0 0 S 0.0 0.0 0:00.00 kdevtmpfs
26 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/R-inet_
```

The CheckMK host overview is filtered to display stage-web-eg3.procore.prod1. Filters are applied using the host name, narrowing the view to this specific staging web server.

From this view, host-level actions such as acknowledging problems, scheduling downtime, and further inspection can be performed, confirming that the host is correctly registered and accessible within the monitoring environment for troubleshooting and validation.

The screenshot shows a browser window with several tabs open at the top:

- 0:51:48 | Jibble - Dashboard
- Board - Edward Garrido - Pro-Core-...
- Jira ticket troubleshooting guide
- Check-mk - Procore-Plus Wiki
- Checkmk Local site procore - All

The main content area displays a host overview titled "All hosts stage-web-eg3.procore.prod1". The URL in the address bar is 10.1.30.37/procore/check_mk/index.py?start_url=%2Fprocore%2Fcheck_mk%2Fview.py%3Fcsrf_token%3D173d8ab9-b7d... .

A sidebar on the left includes icons for Monitor, Customize, and Setup, along with links for Help and User.

A prominent "Filter" dialog box is open on the right side of the screen. It contains the following settings:

- Folder:** Main
- Host name (regex):** stage-web-eg3.procore.prod1
- Site:** Optional selection of a site

At the bottom of the dialog are buttons for "Add filter", "Apply filters", and "Reset".

Service discovery for stage-web-eg3.procore.prod1 completed successfully, with all data sources reporting OK. The host is correctly identified as a Linux VM running CentOS Stream 9, and 156 services are actively monitored.

Key checks including the CheckMK agent, CPU load, CPU utilization, disk I/O, and the root filesystem (/) are all in an OK state, confirming the staging web server is healthy and functioning normally within CheckMK.

The screenshot shows the Checkmk interface for the host `stage-web-eg3.procore.prod1`. The top navigation bar includes links for 'Setup', 'Hosts', 'Main', 'Dev', and 'Properties of host stage-web-eg3.procore.prod1'. A yellow notification bubble indicates '5 changes' with an exclamation mark. The main content area displays the following information:

- Datasources:** All datasources are OK. Success messages include '[agent]: Success' and '[piggyback]: Success (but no data found for this host)'.
- Discovered host labels (6):** Active status. Labels listed: `cmk/device_type:vm`, `cmk/os_family:linux`, `cmk/os_name:CentOS Stream`, `cmk/os_platform:centos`, `cmk/os_type:linux`, and `cmk/os_version:9`. The 'Check plug-in' column lists `labels`, `check_mk`, and other variations.
- Monitored services (156):** A table showing service status, name, and summary. Services listed include:
 - `Check_MK Agent`: OK. Summary: Version: 2.3.0p2, OS: linux, TLS is not activated on monitored host (see detail). Agent plug-ins: 0, Local checks: 0.
 - `CPU load`: OK. Summary: 15 min load: 0.02, 15 min load per core: 0.02 (1 cores).
 - `CPU utilization`: OK. Summary: Total CPU: 1.39%.
 - `Disk IO SUMMARY`: OK. Summary: Initializing counters.
 - `Filesystem /`: OK. Summary: Initialized: '/.delta'

The sidebar on the left contains icons for 'Setup', 'Monitor', 'Customize', 'Actions', 'Host', 'Settings', 'Display', 'Help', and 'Sidebar'.

Additional service checks for stage-web-eg3.procore.prod1 show all monitored components in an OK state. Filesystem mount options for /, /boot, and /boot/efi match expected configurations, and the NFS mount at /nfs/incoming/vhosts is active and initialized correctly.

Time synchronization is healthy with NTP in sync, thread usage remains low relative to capacity, and the auditd security service is running and active. Overall, these results confirm stable system configuration and no active issues on the staging web server.

The screenshot shows the Checkmk web interface for the host `stage-web-eg3.procore.prod1`. The main page displays a list of services with their current status, last check time, and detailed information. A sidebar on the left provides navigation links for various monitoring and setup functions.

Service	Status	Details
Mount options of /	OK	Mount options exactly as expected
Mount options of /boot	OK	Mount options exactly as expected
Mount options of /boot/efi	OK	Mount options exactly as expected
NFS mount /nfs/incoming/vhosts	OK	Initialized: '/nfs/incoming/vhosts.delta'
NTP Time	OK	Offset: 0.0000 ms, Stratum: 4, Time since last sync: 9 minutes 49 seconds
Number of threads	OK	432, Usage: 7.51%
Systemd Service auditd	OK	Status: active, Security Auditing Service

At the top right, there is a yellow warning icon with the number "1 change". The browser address bar shows the URL `10.1.30.37/procore/check_mk/index.py?start_url=%2Fprocore%2Fcheck_mk%2Fwato.py%3Ffol...`.

Pending configuration changes were successfully activated in CheckMK for the local site procore. The activation completed without errors, showing a Success status, and confirms that all recent monitoring and service updates are now live and applied to the environment.

The screenshot shows a web browser window for 'Checkmk Local site procore - Act'. The URL is 10.1.30.37/procore/check_mk/index.py?start_url=%2Fprocore%2Fcheck_mk%2Fwato.py%3Fmode...'. The page title is 'Activate pending changes' under 'Setup > Activate pending changes'. A sidebar on the left includes icons for checkmk, monitor, customize, setup, help, and user. The main content area has tabs for 'Changes' (selected), 'Related', 'Display', and 'Help'. A button 'Activate on selected sites' is visible. Below is a table titled 'Activation status' with columns: Actions, Site, Status, Version, Changes, Progress, and Details. One row shows 'Local site procore' as online, version 2.3.0p2, changes 0, progress 100%, and status 'Success' with details 'Started at: 13:31:36. Finished at: 13:31:42.' At the bottom right is a '+' icon.

Summary

Monitoring and troubleshooting efforts were completed across development and staging environments to address alert-driven concerns and improve system visibility. CheckMK agent-based monitoring was validated, hosts were confirmed reachable, service discovery was completed, and monitoring changes were activated to reflect the current system state.

System health checks confirmed stable operation, with normal uptime, low load averages, sufficient memory, minimal swap usage, and adequate disk capacity. Key services including CPU, filesystem, disk I/O, NTP synchronization, security auditing, and network mounts were all verified and operating as expected.

Web server support configurations were also reviewed, including Apache log rotation, to ensure logs are managed correctly and services reload cleanly without disruption. Overall, the environment is stable, monitoring is fully active, and the infrastructure is positioned for proactive detection and resolution of issues