

Rapport de Projet de Groupe - Infrastructure de Monitoring

Date : 25 juin 2025

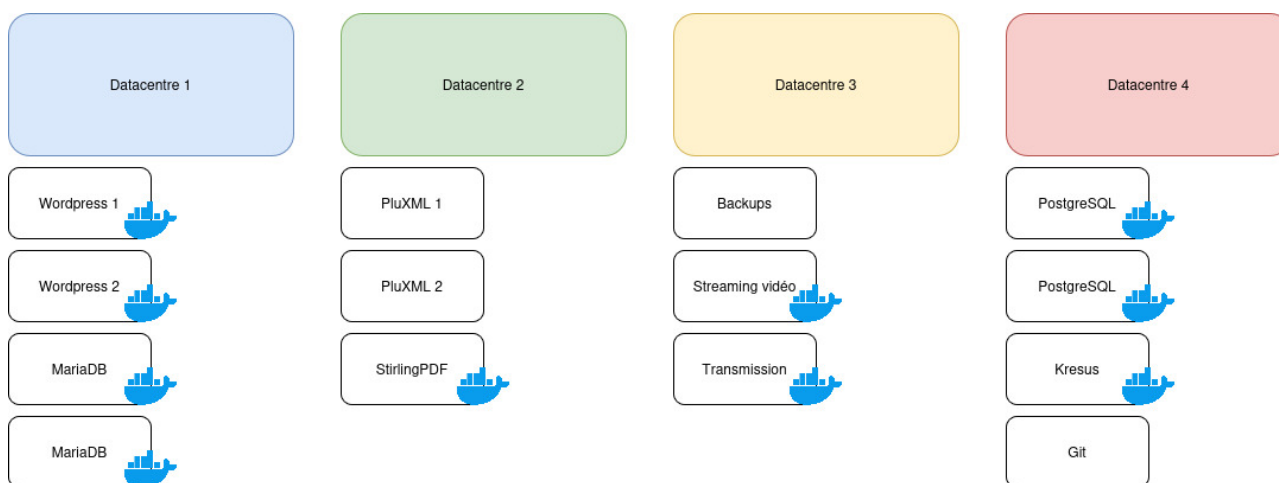
Équipe : Groupe de 4 personnes : Joran Ripiego, Leo Goriot, Julien Alleaume, Mathieu Puig

Sujet : Mise en place d'une infrastructure de monitoring multi-datacentres

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Objectifs du Projet



Objectifs Principaux

- Concevoir une architecture de monitoring centralisée pour 4 datacentres
- Implémenter une solution de surveillance en temps réel des services critiques
- Assurer la haute disponibilité du système de monitoring
- Fournir des alertes proactives en cas de dysfonctionnement
- Créer des tableaux de bord (dashboards) pour la visualisation des métriques

Objectifs Spécifiques

- Monitoring des bases de données (MariaDB, PostgreSQL)
- Surveillance des applications web (WordPress)
- Monitoring des services de traitement (PluxML, StirlingPDF)
- Supervision des systèmes de backup et de streaming
- Mise en place d'alertes configurables
- Documentation complète de la solution

Architecture Proposée

Vue d'Ensemble

Notre solution s'articule autour d'une architecture distribuée avec les composants suivants :

Datacentres Monitorés

1. **Datacentre 1** (Géré par Mathieu Puig)

- WordPress 1
- MariaDB
- WordPress 2
- MariaDB

2. **Datacentre 2** (Géré par Joran Ripiego)

- PluxML 1
- PluxML 2
- StirlingPDF

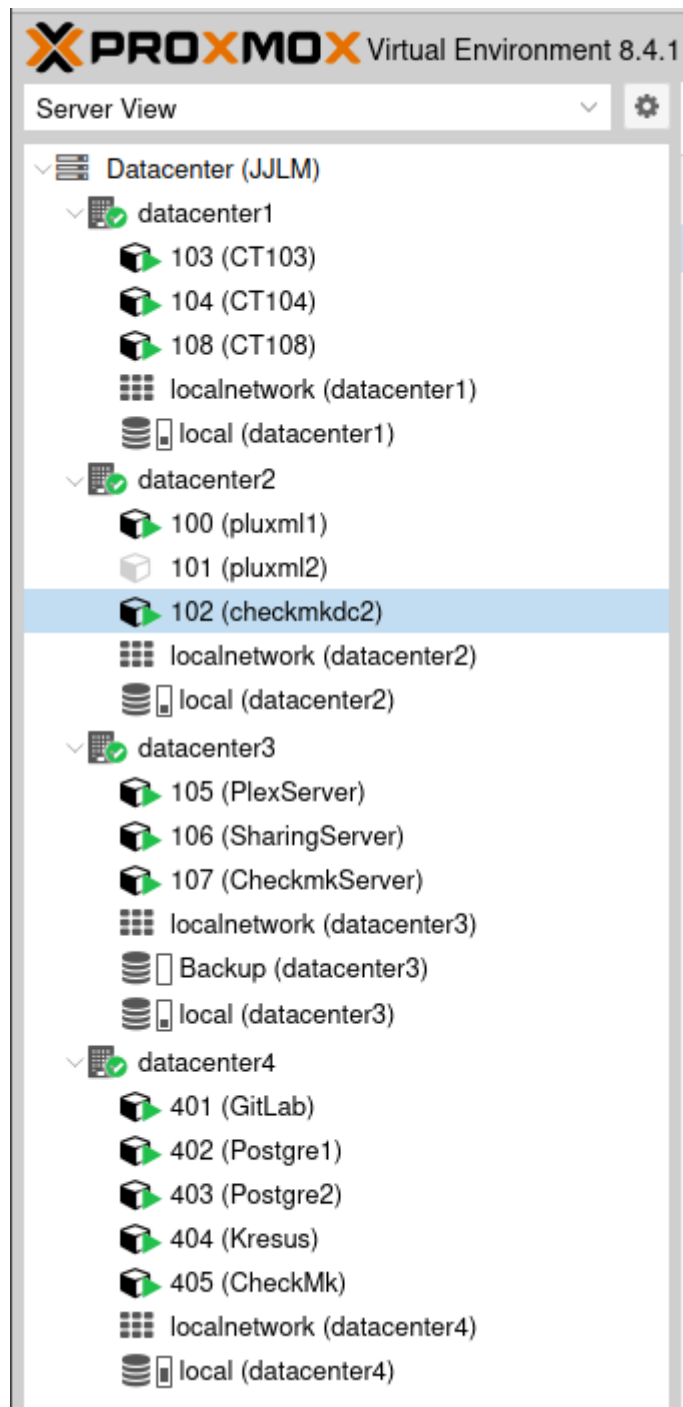
3. **Datacentre 3** (Géré par Julien Alleaume)

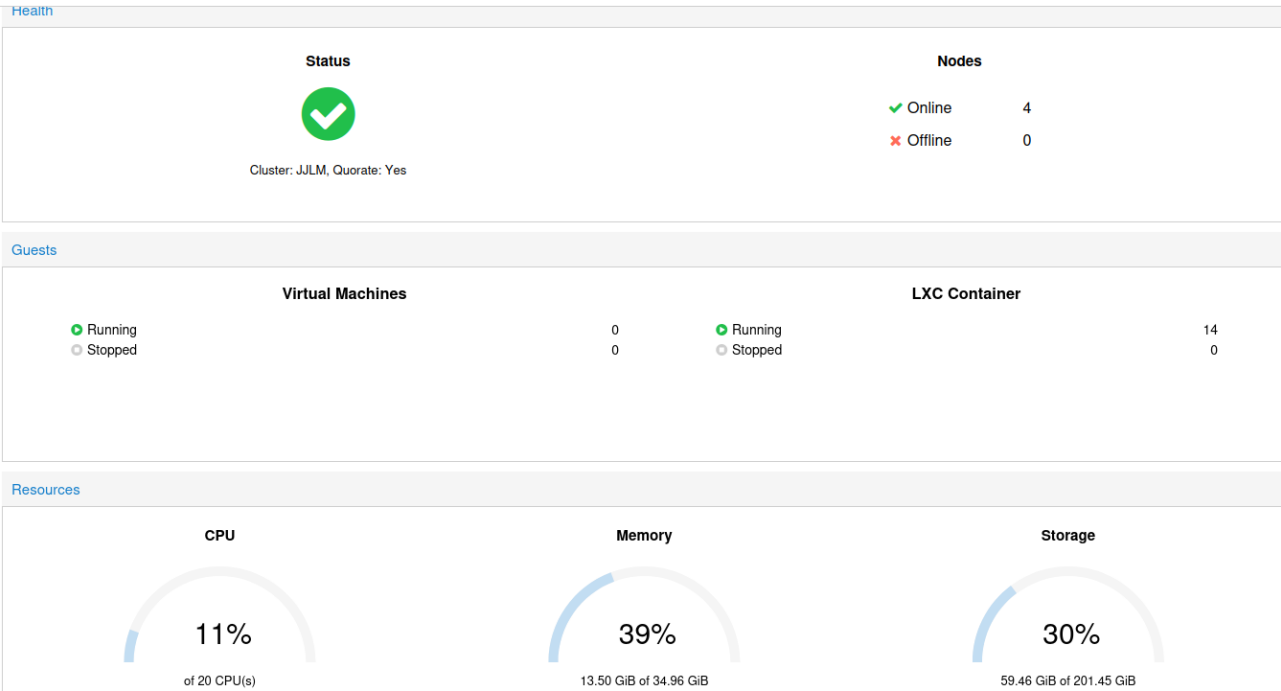
- Services de Backup (proxmox backup)
- Streaming Vidéo (Plex)
- Transmission (Qbittorrent et samba)

4. **Datacentre 4** (Géré par Leo Goriot)

- PostgreSQL
- PostgreSQL
- Kresus
- Git (GitLab)

Le cluster Proxmox

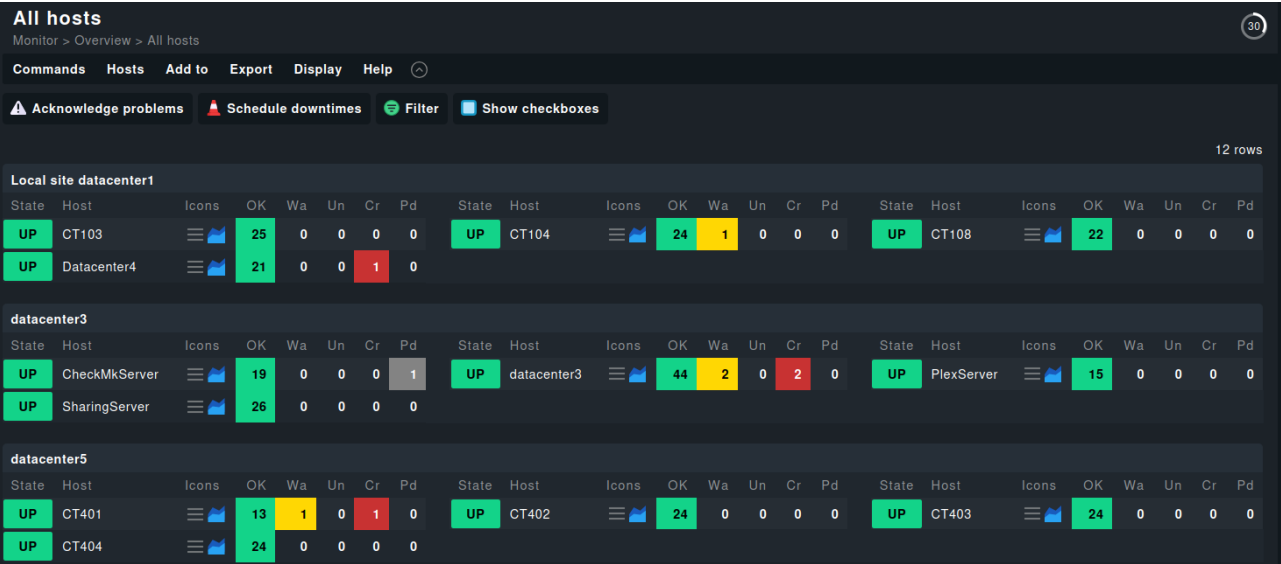




Après votre accord le datacenter2 a disparu dans le neant distordu. (C'est strasbourg, il a brûlé)

Composants du Système de Monitoring

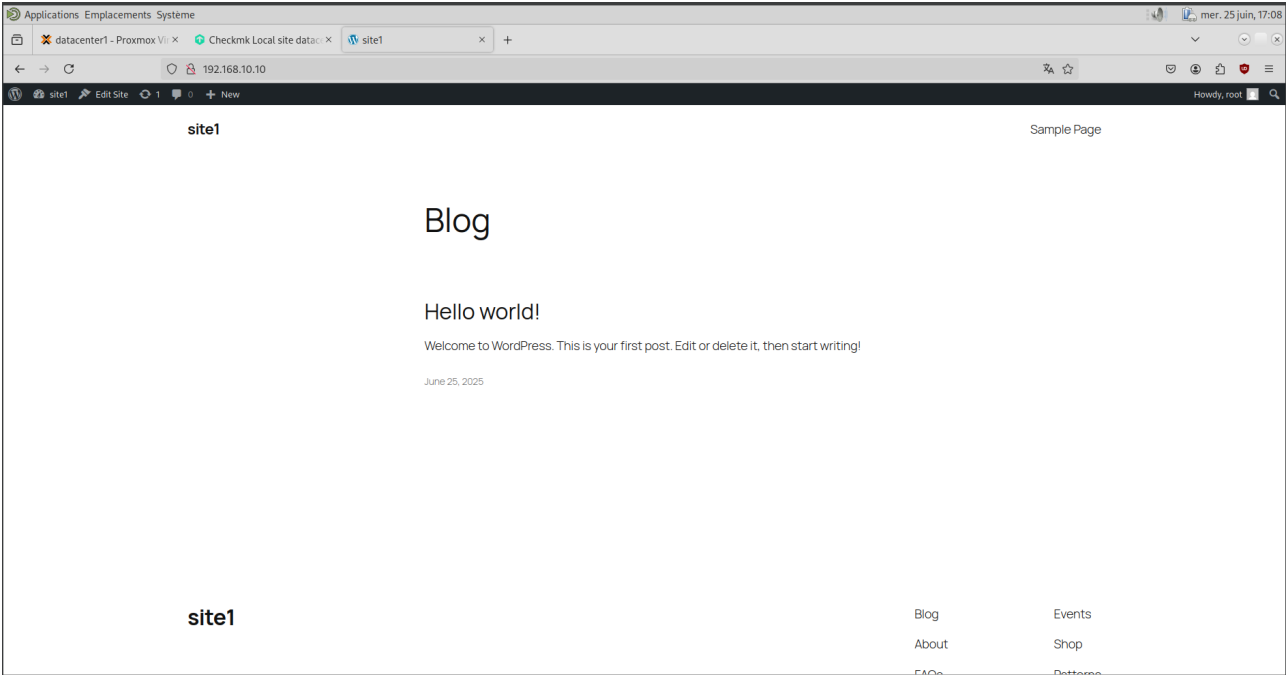
Nous avons chosi d'utiliser checkmk pour la collecte des métriques et la surveillance des services. Sur DC1 nous avons notre serveur checkmk principal, sur les autres datacentres nous avons des agents checkmk sur lesquels on monitore les service du DC.



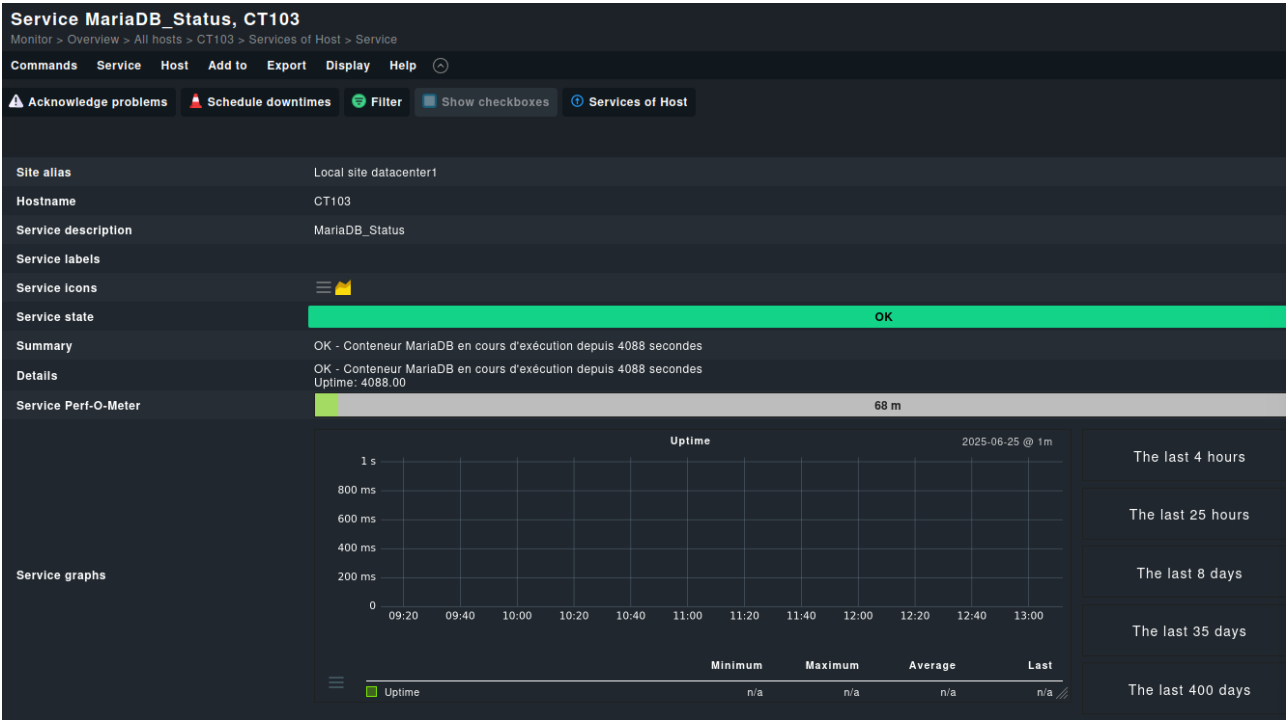
Ce que nous avons mis en place

- Service WordPress avec sa base de données MariaDB

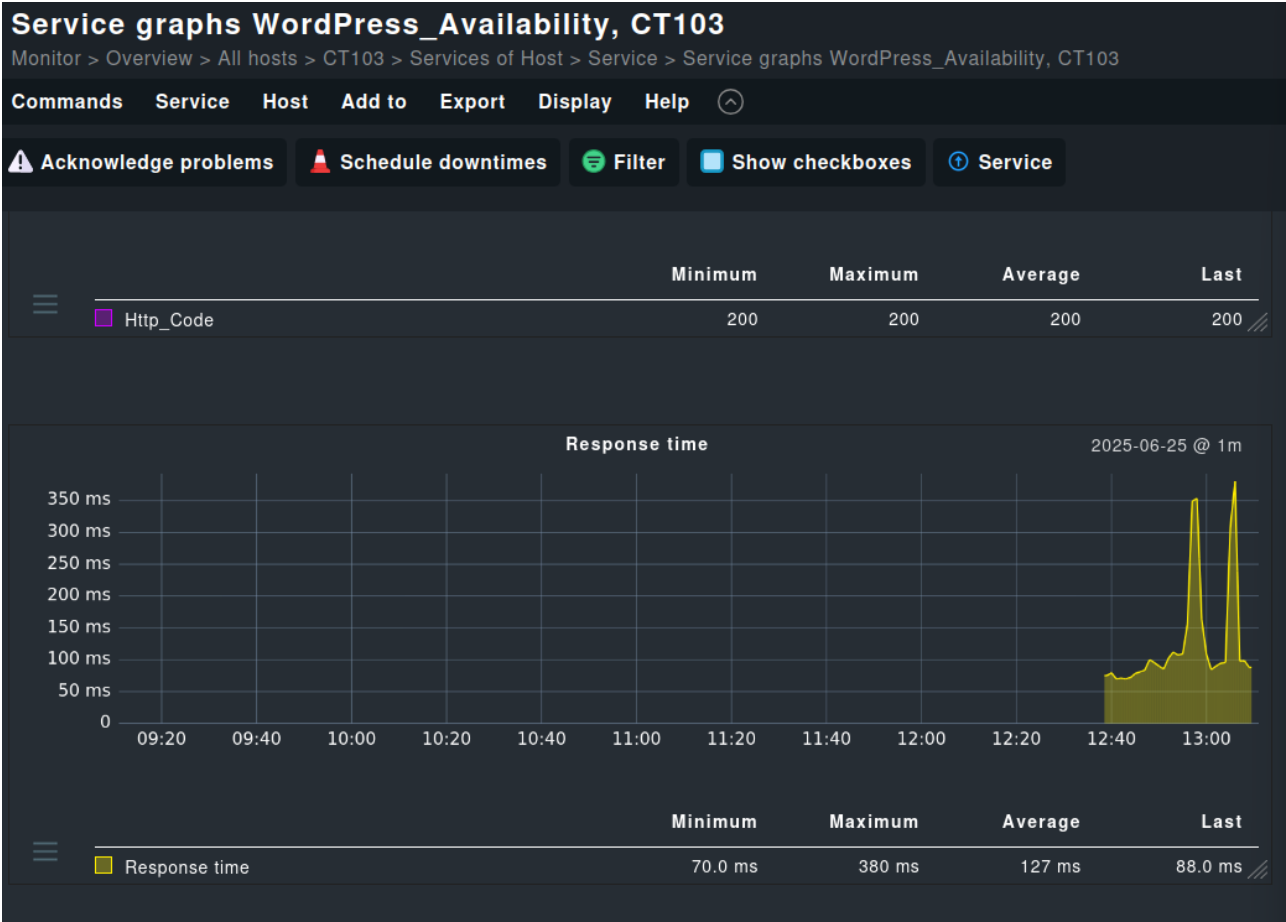
Ces services tourne dans des containers LXC sur Proxmox. Nous utilisons un docker-compose qui lie les service wordpress et mariadb. Nous avons mis en place un monitoring de ces services avec checkmk.



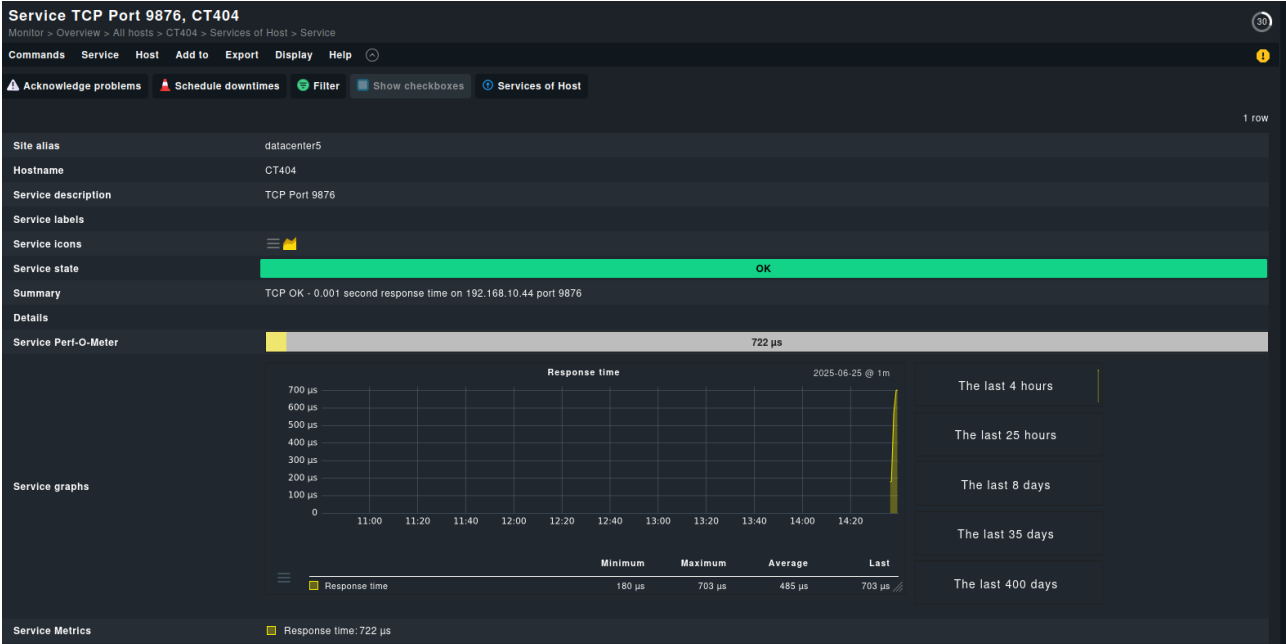
- Monitoring des accès aux bases de données MariaDB



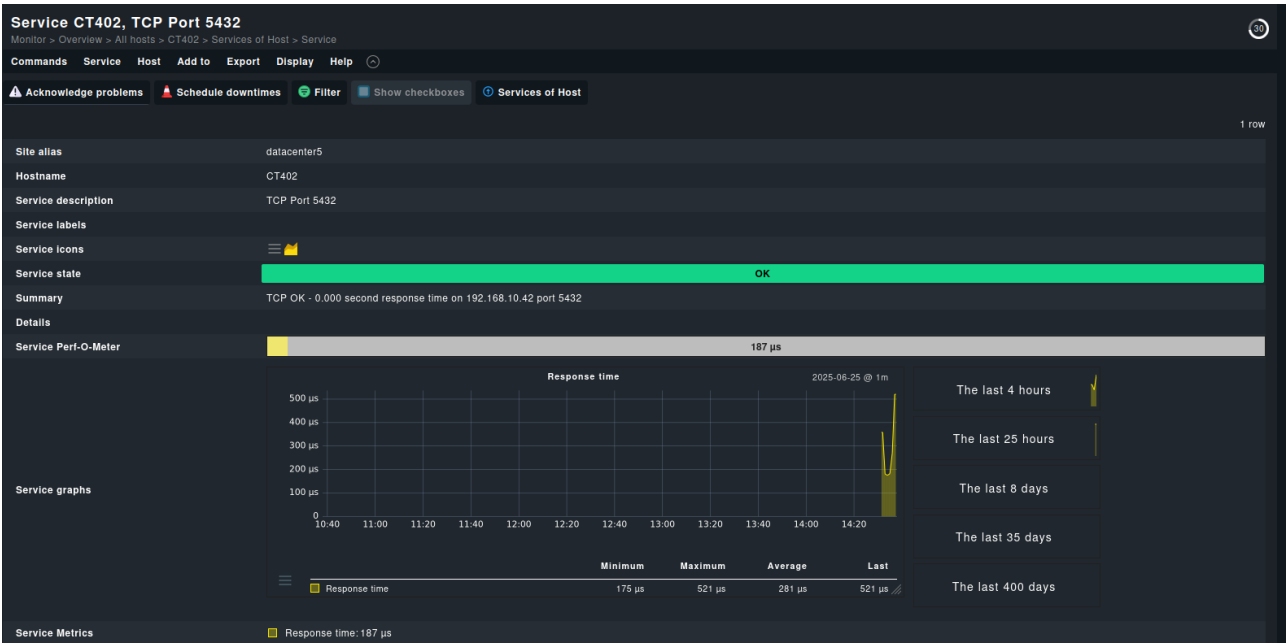
- Monitoring des bases des accès aux sites WordPress



- Monitoring de Kresus



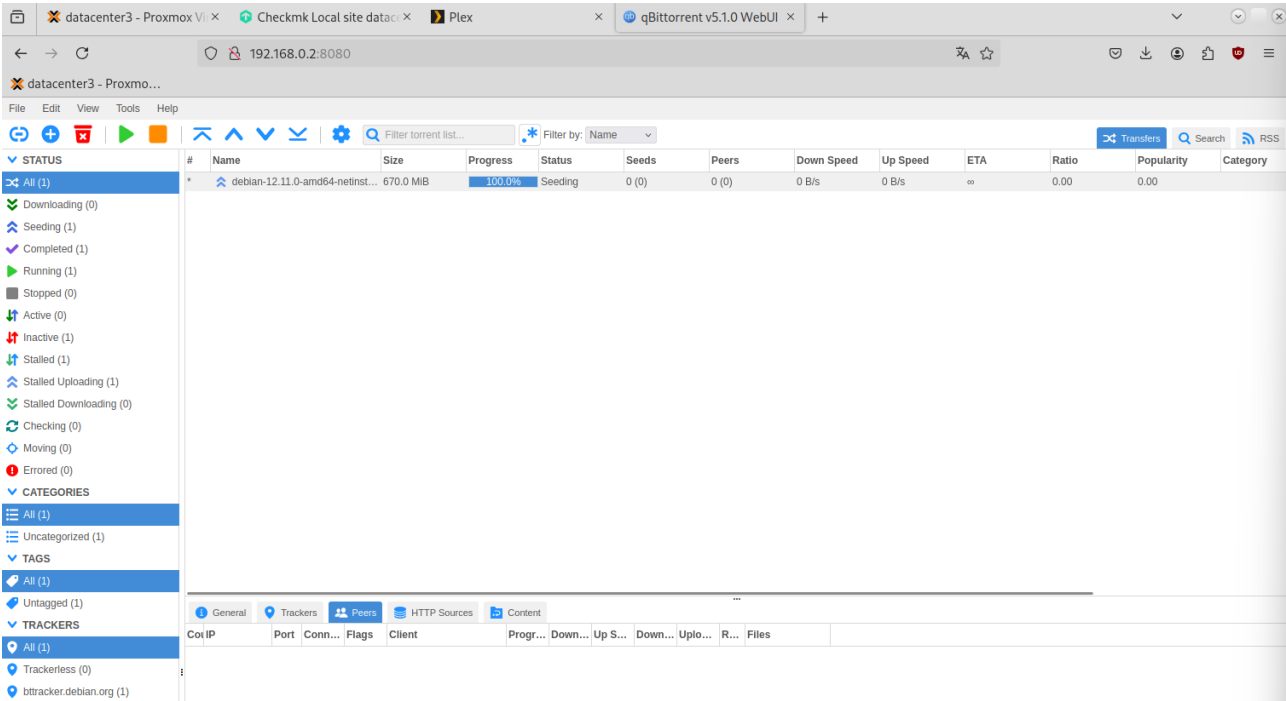
- Monitoring de PostgreSQL



- Pour les monitoring des machines ou sont les container, en plus de nos sondes, nous avons mis en place un monitoring de l'état des containers avec checkmk.

OK	Docker containers	Containers: 1, Running: 1, Paused: 0, Stopped: 0	9 m	42.7 s	1
OK	Docker disk usage - buildcache	Size: 0.00 B, Reclaimable: 0.00 B, Count: 0, Active: 0	9 m	42.7 s	0.00 B
OK	Docker disk usage - containers	Size: 63.00 B, Reclaimable: 0.00 B, Count: 1, Active: 1	9 m	42.7 s	63.00 B
OK	Docker disk usage - images	Size: 418.09 MB, Reclaimable: 0.00 B, Count: 1, Active: 1	9 m	42.7 s	418.09 MB
OK	Docker disk usage - volumes	Size: 38.11 MB, Reclaimable: 0.00 B, Count: 1, Active: 1	9 m	42.7 s	38.11 MB
OK	Docker node info	Daemon running on host Postgre2	9 m	42.7 s	

- Service de partage de fichiers avec Qbittorrent et Samba



- Monitoring du partage de fichiers

SharingServer						
State	Service	Icons	Summary	Age	Checked	Perf-O-Meter
OK	Check_MK		[agent] Success, execution time 3.2 sec	56 m	9.88 s	3.25 s
OK	Check_MK Agent		Version: 2.1.0p49, OS: linux, Agent plugins: 1, Local checks: 4	5 m	6.88 s	
OK	Check_MK HW/SW Inventory		Found 113 inventory entries, Found 5 status entries	52 m	52 m	
OK	CPU utilization		Total CPU: 2.68%	56 m	6.89 s	2.68%
OK	Disk IO SUMMARY		Read: 2.80 kB/s, Write: 244 kB/s, Latency: 62 microseconds	56 m	6.90 s	2.73 kB/s / 238.33 kB/s
OK	Docker containers		Containers: 2, Running: 2, Paused: 0, Stopped: 0	56 m	6.91 s	2
OK	Docker disk usage - buildcache		Size: 0.00 B, Reclaimable: 0.00 B, Count: 0, Active: 0	56 m	6.92 s	0.00 B
OK	Docker disk usage - containers		Size: 23.29 kB, Reclaimable: 0.00 B, Count: 2, Active: 2	56 m	6.93 s	23.29 kB
OK	Docker disk usage - Images		Size: 237.77 MB, Reclaimable: 0.00 B, Count: 2, Active: 2	56 m	6.93 s	237.77 MB
OK	Docker disk usage - volumes		Size: 4.38 MB, Reclaimable: 0.00 B, Count: 5, Active: 5	56 m	6.94 s	4.38 MB
OK	Docker node info		Daemon running on host SharingServer	56 m	6.94 s	
OK	Filesystem /		37.46% used (2.91 of 7.78 GB), trend: +449.91 MB / 24 hours	56 m	6.95 s	37.46%
OK	Interface 2		[eth0], (up), MAC: BC:24:11:20:A5:07, Speed: 10 GBit/s, In: 106 B/s (<0.01%), Out: 387 B/s (<0.01%)	56 m	6.96 s	852 bit/s / 3.10 kbit/s
OK	Interface 3		[eth1], (up), MAC: BC:24:11:D3:3F:FF, Speed: 10 GBit/s, In: 39.6 B/s (<0.01%), Out: 0.00 B/s (0%)	56 m	6.96 s	317 bit/s / 0.00 bit/s
OK	Interface 4		[br-4ea08f0eec25], (up), MAC: 62:12:A9:1D:9E:AC, Speed: 10 GBit/s, In: 123 B/s (<0.01%), Out: 48.6 B/s (<0.01%)	56 m	6.97 s	981 bit/s / 389 bit/s
OK	Memory		Total virtual memory: 7.53% - 192.88 MB of 2.50 GB, 8 additional details available	56 m	6.99 s	9.42%
OK	Mount options of /		Mount options exactly as expected	56 m	7.02 s	
OK	Postfix Queue		Deferred queue length: 0, Active queue length: 0	56 m	7.03 s	0 / 0
OK	Postfix status		Status: the Postfix mail system is running, PID: 337	56 m	7.03 s	
OK	Qbittorrent_API		1 torrent(s), DL: 0.00MB/s, UL: 0.00MB/s	56 m	7.03 s	
OK	Qbittorrent_Disk		Utilisation: 34%, Espace dispo: 4.9G	56 m	7.03 s	
OK	Qbittorrent_UI		OK - Web UI répond	56 m	7.03 s	
OK	Samba_Status		OK - Ports 139 et 445 accessibles	56 m	7.04 s	
OK	TCP Connections		Established: 1	56 m	7.04 s	
OK	Uptime		Up since Jun 25 2025 12:03:08, Uptime: 2 hours 58 minutes	56 m	7.04 s	178 m

- Monitoring du service Plex

PlexServer						
State	Service	Icons	Summary	Age	Checked	Perf-O-Meter
OK	Check_MK		[agent] Success, execution time 0.7 sec	25 m	22.5 s	680 ms
OK	Check_MK Agent		Version: 2.1.0p49, OS: linux, Agent plugins: 0, Local checks: 1	6 m	21.5 s	
OK	CPU utilization		Total CPU: 1.47%	59 m	21.5 s	1.47%
OK	Disk IO SUMMARY		Read: 8.93 kB/s, Write: 702 kB/s, Latency: 83 microseconds	59 m	21.5 s	8.72 kB/s / 685.84 kB/s
OK	Filesystem /		17.07% used (1.33 of 7.78 GB), trend: +136.40 kB / 24 hours	59 m	21.5 s	17.07%
OK	Interface 2		[eth0], (up), MAC: BC:24:11:07:84:B7, Speed: 10 GBit/s, In: 62.3 B/s (<0.01%), Out: 249 B/s (<0.01%)	59 m	21.5 s	498 bit/s / 1.99 kbit/s
OK	Interface 3		[eth1], (up), MAC: BC:24:11:09:47:59, Speed: 10 GBit/s, In: 440 B/s (<0.01%), Out: 39.4 B/s (<0.01%)	59 m	21.5 s	3.52 kbit/s / 315 bit/s
OK	Memory		Total virtual memory: 3.21% - 82.23 MB of 2.50 GB, 8 additional details available	59 m	21.5 s	4.01%
OK	Mount options of /		Mount options exactly as expected	59 m	21.5 s	
OK	Plex_Status		OK - 0 lecture(s) active(s), 0 utilisateur(s) connecté(s)	59 m	21.5 s	
OK	Postfix Queue		Deferred queue length: 0, Active queue length: 0	59 m	21.5 s	0 / 0
OK	Postfix status		Status: the Postfix mail system is running, PID: 337	59 m	21.5 s	
OK	TCP Connections		Established: 1	59 m	21.5 s	
OK	Uptime		Up since Jun 25 2025 12:03:03, Uptime: 3 hours 0 minutes	59 m	21.5 s	180 m

Site alias

datacenter3

Hostname

PlexServer

Service description

Plex_Status

Service labels

Service icons

☰

Service state

OK

Summary

OK - 0 lecture(s) active(s), 0 utilisateur(s) connecté(s)

Details

OK - 0 lecture(s) active(s), 0 utilisateur(s) connecté(s)

Service Perf-O-Meter

Service graphs

Service Metrics

Currently in downtime

no

Current check attempt

1/1

The age of the current service state

60 m

The time since the last check of the service

46.3 s

Cached agent data

The time of the next scheduled service check

-

The last time the service was OK

46.3 s

Service check latency

0.00 s

Service check duration

0.00 s

Service notification period

24X7

In notification period

yes

Service notification number

1

The time of the last service notification

-

The time of the next service notification

-

Notification postponement reason

Service normal/retry check interval

60 s / 60 s

Service contact groups

all, check-mk-notify

Service contacts

check-mk-notify

Service groups the service is member of

Service service level

Service check command

check_mk-local

Service performance data (source code)

Service custom attributes

Check manual (for Checkmk based checks)

This check type processes the output of the checks the agent sends in the <<local>> section. Local checks are implemented by scripts or programs running on the target hosts. Please refer to the online documentation details about how to write those check scripts.

Custom services notes

- Service de backup Proxmox

PROXMOX Virtual Environment 8.4.1

Search

Documentation

Create VM

Create CT

root@pam

Server View

Storage 'Backup' on node 'datacenter3'

Help

Summary

Restore

Show Configuration

Edit Notes

Change Protection

Prune group

Remove

Backups

Permissions

Name

Notes

Date

Format

Size

vzdump-lxc-107-2025_06_25-16_00_37.tar.zst

CheckmkServer

2025-06-25 16:00:37

tar.zst

711.82 MB

vzdump-lxc-106-2025_06_25-16_00_11.tar.zst

SharingServer

2025-06-25 16:00:11

tar.zst

1.34 GB

vzdump-lxc-105-2025_06_25-16_00_00.tar.zst

PlexServer

2025-06-25 16:00:00

tar.zst

336.27 MB

vzdump-lxc-107-2025_06_25-12_00_31.tar.zst

CheckmkServer

2025-06-25 12:00:31

tar.zst

710.97 MB

vzdump-lxc-106-2025_06_25-12_00_11.tar.zst

SharingServer

2025-06-25 12:00:11

tar.zst

532.47 MB

vzdump-lxc-105-2025_06_25-12_00_00.tar.zst

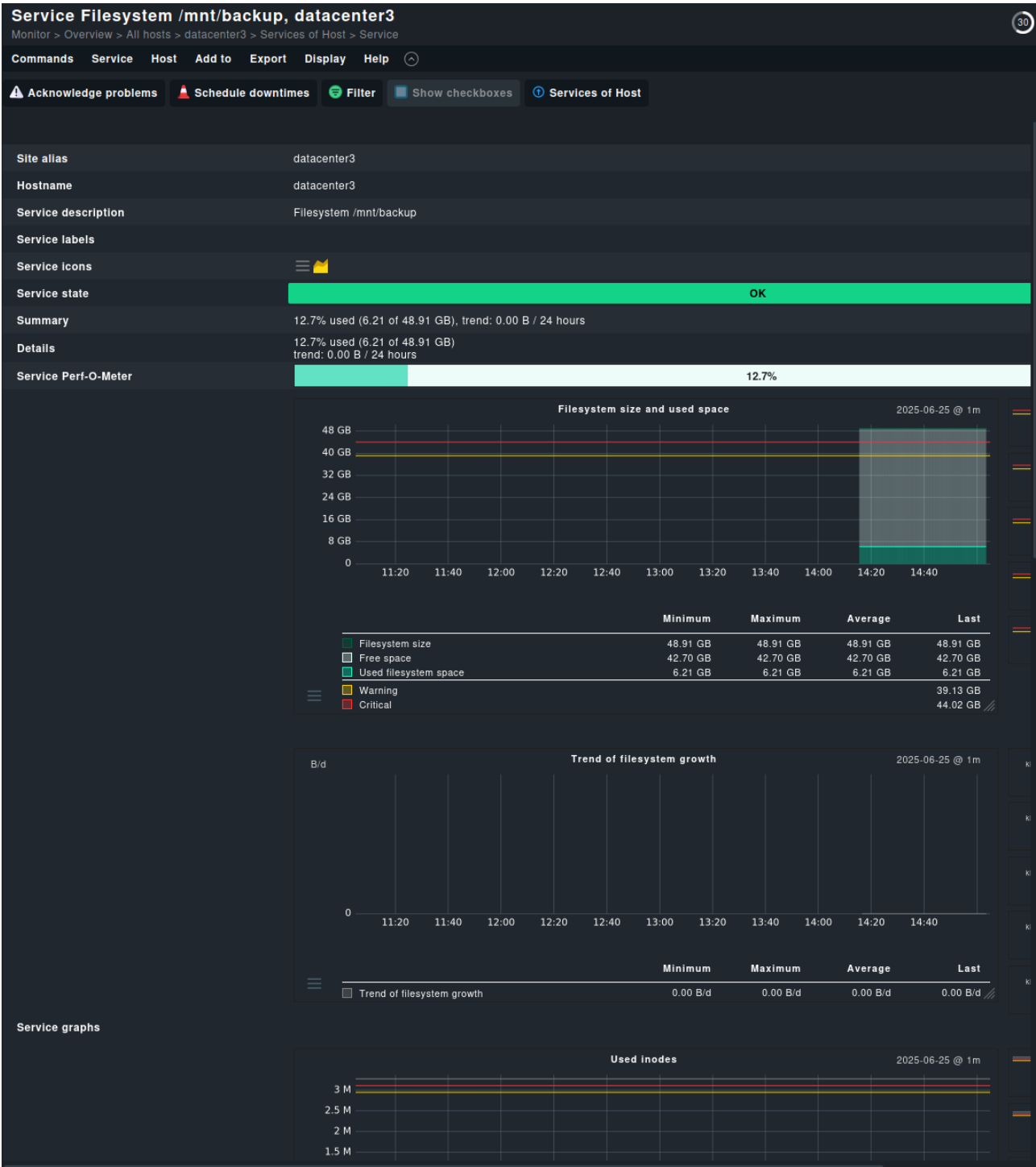
PlexServer

2025-06-25 12:00:00

tar.zst

336.11 MB

- Monitoring du service de backup Proxmox











Ce que nous n'avons pas pu mettre en place

- Monitoring des liens entre les datacentres

Regle de masquage pour checkmk

- Regle de masquage de checkmk discovery pour ne pas afficher les services inutiles, Systemd Service Summary et le NTP Time

Rules in folder Main (2)				
Ma.	Actions	Conditions	Value	Description
	   	Host tag: Checkmk agent / API integrations is API integrations if configured, else Checkmk agent Host matching labels: <code>cmk/site.datacenter3</code> Service name begins with Check_MK Discovery	Positive match (Add matching services to the set)	
	   	Host tag: Checkmk agent / API integrations is API integrations if configured, else Checkmk agent Host matching labels: <code>cmk/site.datacenter3</code> Service name begins with NTP Time or Systemd Service Summary	Positive match (Add matching services to the set)	

Lien vers le dépôt GitHub

github.com/mathieu-ui/monitoring