

Goal

“Replacing Microsoft System Center Operations Manager (SCOM) with an Open Source monitoring framework”

Timeline



Icinga2

- ✓ PowerShell
- ✓ Configuration Manager puppet
- ✓ Scalable, modular, extendable
- ✓ Rich API + Web management

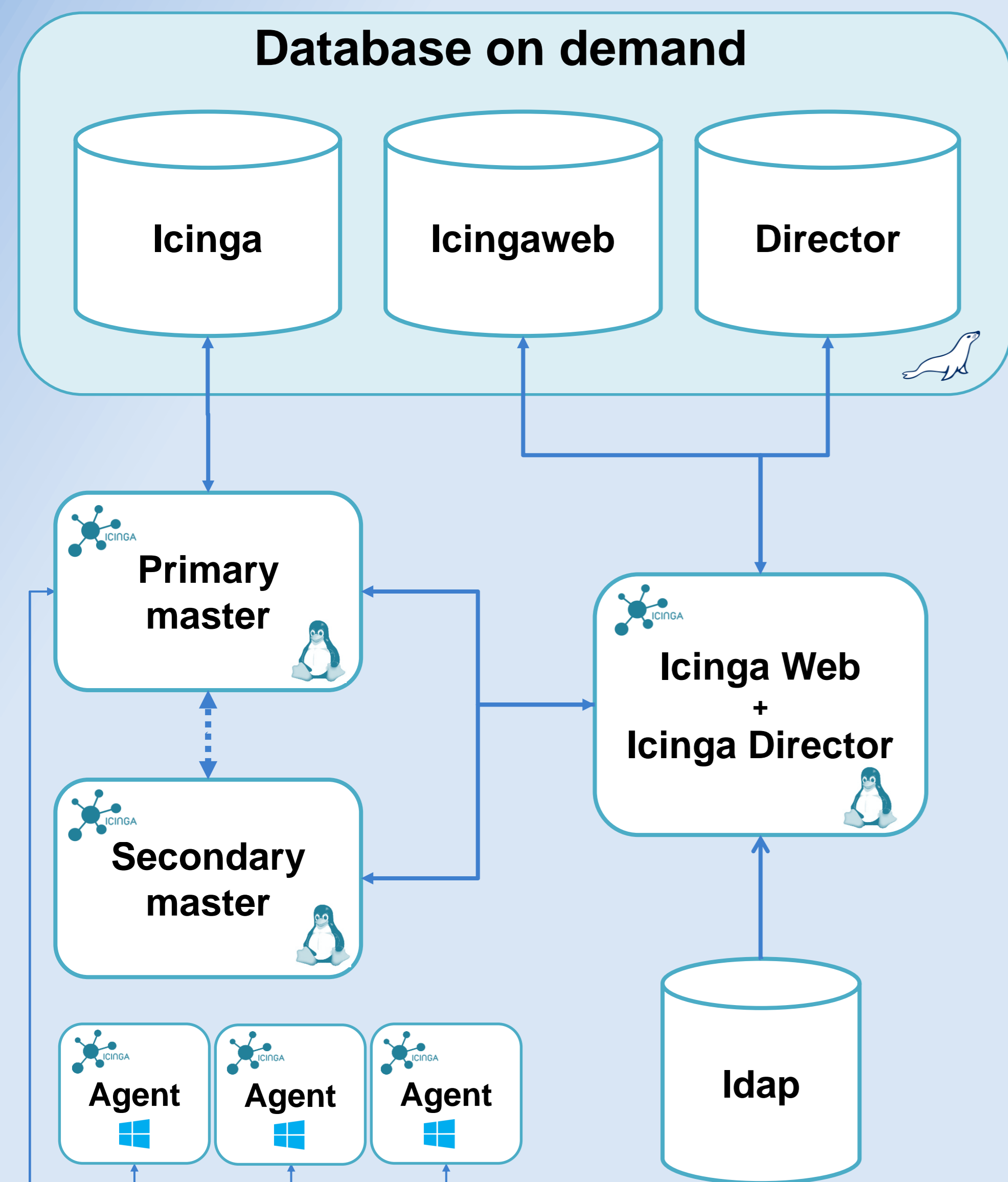
Scope

- Migrate SCOM use cases
- Agent deployment
- Integrate with CERN services
- Develop custom functionality

Monitor Windows Infrastructure

- Service operations
- Windows updates
- Hardware events
- Service status and availability

Icinga2 at CERN



Architecture:

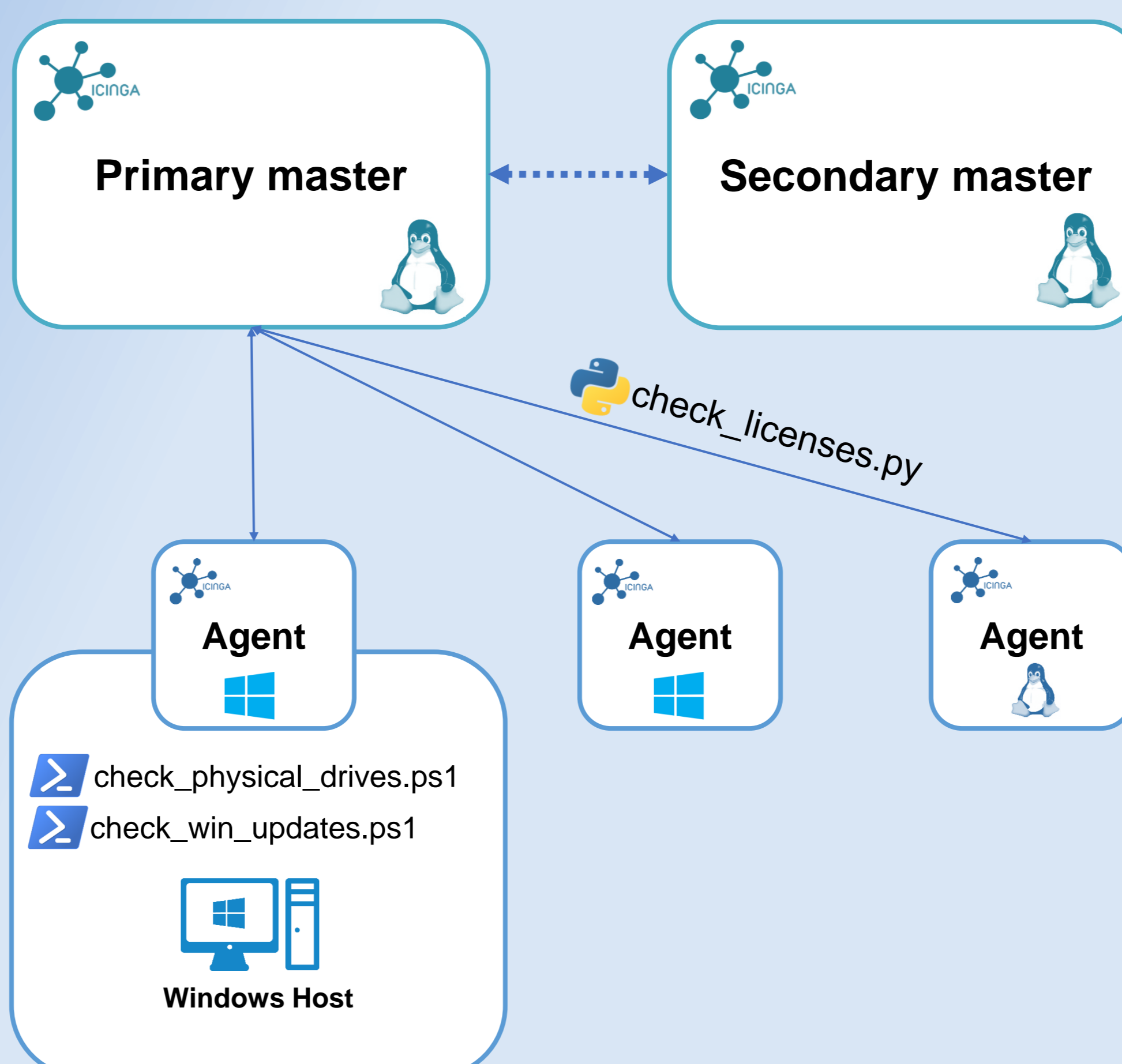
- +450 monitored Windows Servers
- 2 x Icinga2 masters in HA
- 3 x MySQL Databases
- 1 x Icinga2 Web + 1 x Icinga2 Director
- Sync. users from Active Directory

Icinga2 Director

- ✓ Deploy configurations in Icinga2 Web
- ✓ Powerful with large deployments
- ✓ Traceability + version control

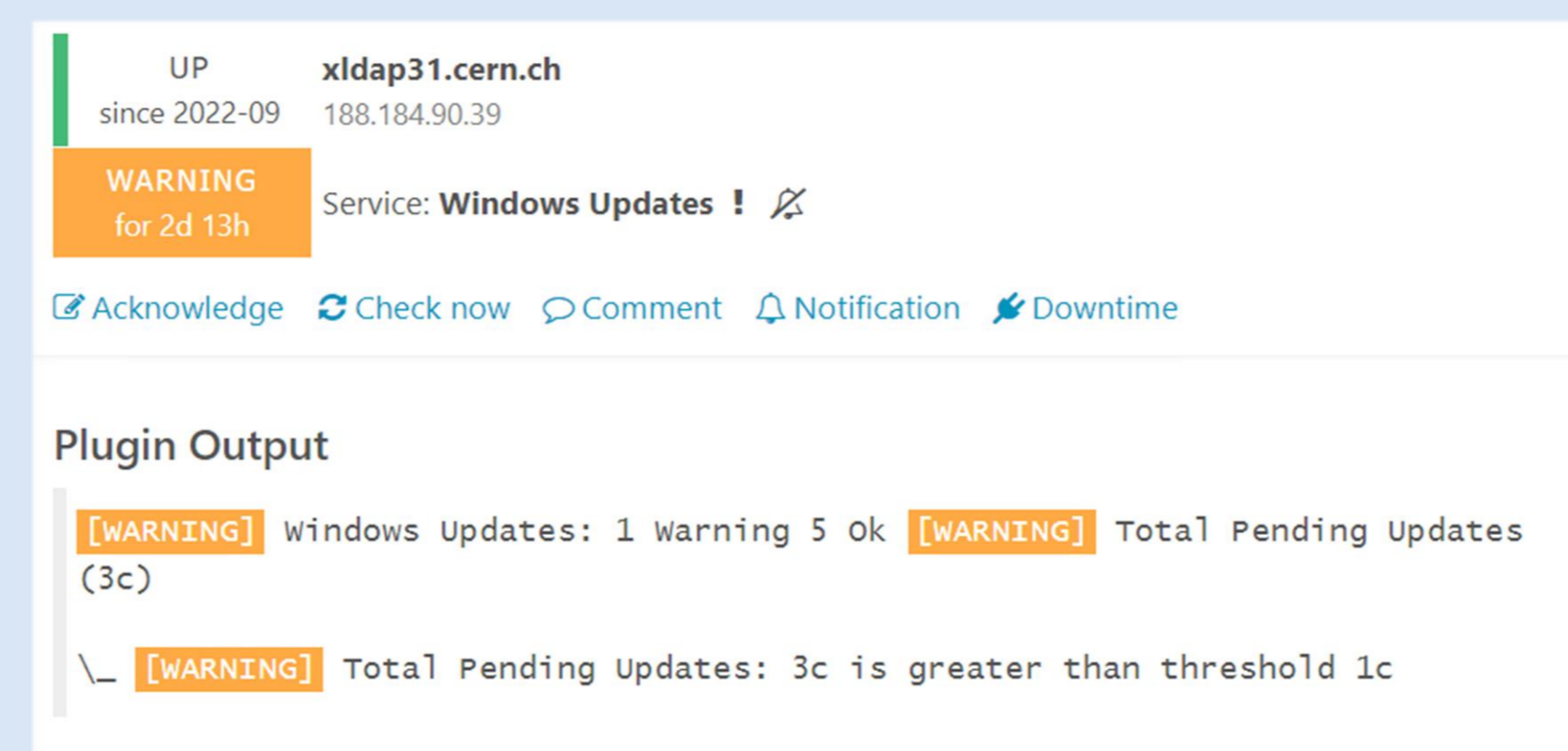
Icinga2 checks

- Remote-based: Ports, URLs, certificates
- Agent-based: PowerShell + Icinga2 agent



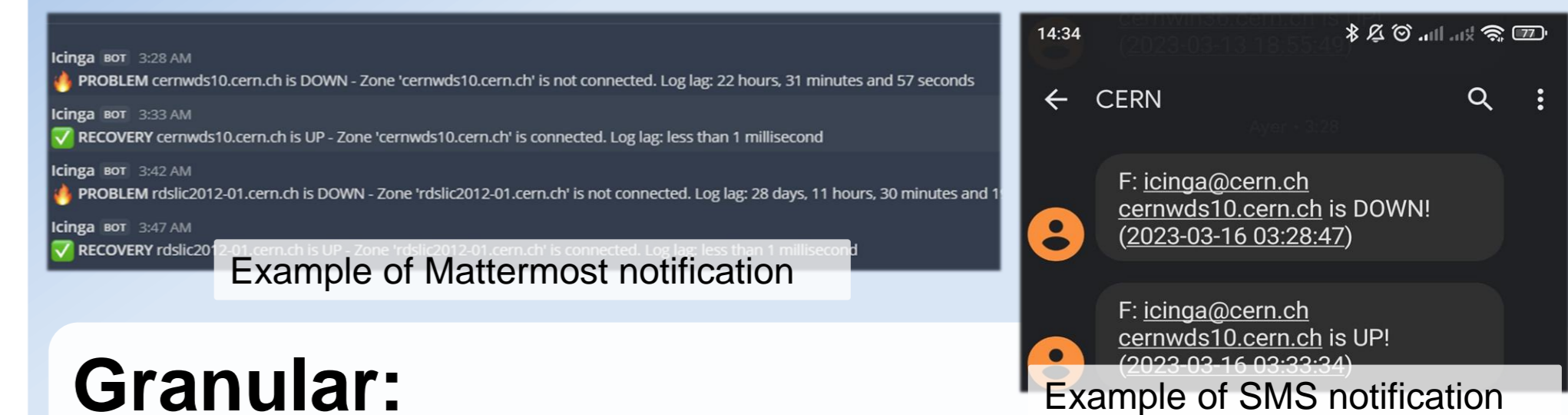
CERN checks:

- Hardware → Disks, Memory, Licenses
- Active Directory replication and DNS records
- Backup monitoring → TSM, System Backups, MS SQL restores



Example of Windows Updates check

Notifications



Granular:

- ✓ Templates + inheritance

Customizable:

- ✓ Intervals, time periods, delays, notify on certain states

Email, SMS and Mattermost

Event handlers

Production CERN use case:

- Problem: IIS Web sites unavailable
 - Cause: IIS loses access to underlying storage hosting web config files
- Automate remediation of alarms**

Icinga2 restarts IIS and notifies owners

Integrations

- Icinga2 historical events → Central CERN IT monitoring
- Service availability for Windows services



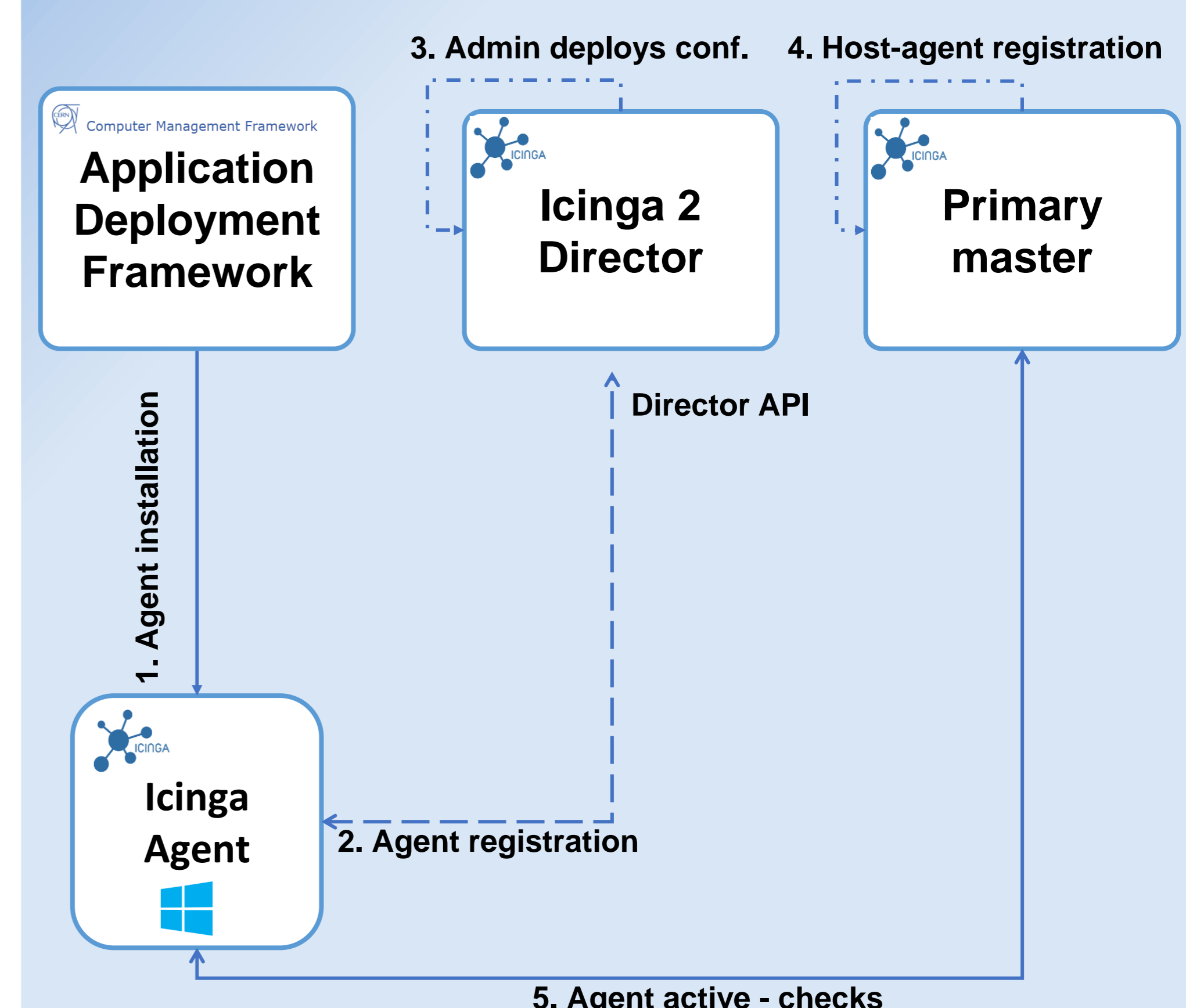
Monitored services

- ✓ Active Directory
- ✓ +35 Remote Desktop clusters
- ✓ PLM: SmarTeam + Aras
- ✓ Microsoft SQL clusters
- ✓ Microsoft DFS
- ✓ Engineering License Servers
- ✓ CERN's Print service
- ✓ Microsoft Certificate Authority
- ✓ Microsoft Hyper-V clusters
- ✓ Web Services: Internet Information Services, Web AFS and Drupal

Achievements

- Removed dependency on complex commercial monitoring system
- Improved visibility into CERN Windows services
- On-the-go notifications and web monitoring
- Less time maintaining infrastructure, focus on what really matters!

Agent Configuration



Overview of Icinga2 agent installation on Windows hosts