

# Custom Crafted Management Pack Use Cases

**cplace Monitoring on Microsoft SCOM**

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# cplace (Collaborative Place) Monitoring

As part of a recent customer project, we developed a custom **cplace Management Pack** for Microsoft System Center Operations Manager (SCOM). This tailored solution enables IT operations teams to monitor the performance, availability, and health of cplace environments directly within the SCOM framework. By providing deep visibility into key operational metrics, the Management Pack supports proactive incident detection and ensures that cplace remains a reliable, secure, and high-performing platform for enterprise project and portfolio management.

With this Use Case paper, we're sharing our experience with the SCOM community to showcase what's possible with tailored monitoring integrations. Our goal is to help IT teams extend the value of SCOM and enhance their operational capabilities through advanced monitoring.

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## What is cplace?

**cplace** (short for "collaborative place") is a flexible, low-code platform developed by collaboration Factory GmbH, designed to support complex project and portfolio management processes. It empowers enterprises to design custom workflows, dashboards, and data models tailored to their organizational needs.

cplace supports **modular architecture**, **plugin extensibility**, and both **on-premise** and **cloud** deployments, making it suitable for enterprises with highly specific governance and compliance requirements.

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## Key Use Cases for cplace

**Project and Portfolio Management (PPM):** cplace supports centralized planning, execution, and oversight of complex project portfolios, enabling strategic alignment and transparency across initiatives.

**Collaborative Project Planning:** Teams can co-create and update plans in real time, with role-based views and customizable workflows to enhance collaboration and reduce friction.

**Hybrid Project Management:** Supports both classic (waterfall) and agile project methodologies, making it ideal for organizations transitioning between or combining different approaches.

**Cross-Project Dependencies and Roadmapping:** Visualize and manage dependencies across multiple projects and teams to improve coordination and mitigate risks.

**Resource Management:** Enables tracking and allocation of resources (e.g., personnel, budgets, time), helping ensure optimal utilization and avoiding conflicts.

**Risk and Issue Management:** Identifies, assesses, and monitors project risks and issues, providing tools for mitigation planning and escalation workflows.

**Custom Workflows and Applications:** Thanks to its low-code/no-code capabilities, cplace allows organizations to build tailored applications and workflows that meet specific business needs.

**Data Integration and Consolidation:** Integrates with various enterprise systems (e.g., ERP, PLM, CRM) to provide a unified view of project-related data, improving decision-making.

**Real-Time Reporting and Dashboards:** Provides interactive dashboards and reports with up-to-date KPIs and status indicators to support data-driven management.

**Compliance and Auditability:** Tracks changes, approvals, and responsibilities, ensuring transparency and helping organizations meet regulatory or internal compliance requirements.

In short, **cplace acts as the control tower** for complex project landscapes, bringing teams, data, and plans together to ensure every initiative stays aligned, transparent, and on track.

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## Why Monitor cplace?

Given its role as the digital backbone for project and portfolio management, cplace is more than just a tool, it's a **strategic enabler**. It integrates diverse teams, connects distributed data sources, and orchestrates mission-critical workflows across departments and regions. Because of this central function, ensuring the health and availability of cplace is essential.

Monitoring cplace isn't just about detecting issues, it's about **proactively safeguarding the continuity, performance, and reliability** of key business processes. When cplace falters, entire planning cycles, decision-making chains, and execution pipelines can be disrupted. Robust monitoring ensures that potential issues are identified before they impact users or derail strategic initiatives.

### Benefits of Monitoring cplace

- Prevent unplanned outages that could disrupt strategic planning
- Ensure responsive performance for user-driven workflows and dashboards
- Detect plugin or integration failures before they cause data loss or process delays
- Identify data model inconsistencies or processing bottlenecks early
- Support auditability, compliance, and SLA obligations with reliable system insights

Because cplace is often central to business-critical PMO processes, monitoring it ensures continuous operation and responsiveness for teams relying on it daily.

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# Top Areas to Monitor in cplace

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## Availability

**Service and process uptime:** Ensures that the core cplace application and related services (like Tomcat or application containers) are running and responsive, so users can access the system without interruption.

**Module loading and startup status:** Verifies that all application modules, plugins, and custom features load correctly at startup to prevent degraded or partial functionality.

**Plugin loading errors:** Identifies failures in custom or third-party plugins that may be critical to business logic or workflows.

**REST/GraphQL integration failures:** Monitors API calls to external systems like Jira, SAP, or databases, catching failed or incomplete data exchanges.

**Data source sync problems:** Tracks recurring issues during data imports or sync operations from external systems to maintain data accuracy and completeness.

**Failed data imports or sync operations:** Identifies issues in the data ingestion layer that could lead to incomplete reporting, missing information, or user confusion.

**Timeout or database connection errors:** Detects underlying infrastructure problems like dropped DB connections, which can result in data loss or delayed transactions.

**Low-level system logs (OS/JVM/app server):** Supplements application monitoring with server-side health insights, helping correlate performance drops with infrastructure issues.

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## Performance

**JVM health (memory, GC, thread pools):** Monitors key Java Virtual Machine stats to catch memory leaks, inefficient garbage collection, or thread exhaustion, which can lead to crashes or slowdowns.

**API and page response times:** Tracks latency for both backend APIs and the user interface, helping identify bottlenecks affecting user experience or automation.

**Scheduled job execution time:** Measures how long background or scheduled jobs (e.g., data syncs, rule evaluations) take to run, helping prevent delays and detect degraded performance.

**User login and page load latency:** Detects slowness in core user interactions, which can indicate infrastructure strain or misconfigured services.

**Object count anomalies:** Detects unexpected spikes or drops in core object types (e.g., projects, tasks), which may indicate sync failures or corrupt imports.

**Reference/link integrity:** Ensures relationships between objects (e.g., tasks linked to projects) remain intact, avoiding broken views or incomplete dashboards.

**Concurrent user count:** Measures how many users are actively logged in, useful for capacity planning and identifying load-related performance drops.

**Log anomalies (e.g., ERROR/EXCEPTION levels):** Surfaces runtime issues that may not crash the app but indicate unstable components or misbehaving plugins.

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## Security & Access

**Login attempts and session metrics:** Tracks successful and failed login attempts, providing visibility into usage patterns and potential brute-force activity.

**Role/permission change tracking:** Monitors admin-level changes to access controls for auditing, compliance, and early detection of misconfigurations.

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# Place Cloud vs On-Prem Monitoring: Key Differences

The approach to monitoring place depends on the chosen deployment model—cloud or on-premises. Each environment has distinct capabilities and limitations that shape the monitoring strategy. Cloud deployments offer limited access to underlying infrastructure, whereas on-premises setups provide full visibility into all system components.

Below are the main differences and monitoring focus areas for each environment:

## Cloud (SaaS)

Hosted by collaboration Factory (the creators of place) or an authorized partner.

Emphasizes “outside-in” monitoring, focusing on service availability and the end-user experience.

## On-Premises

Deployed and managed within the customer’s infrastructure (e.g., data center or private cloud).

Enables “inside-out” monitoring, offering comprehensive technical and performance insights through full-stack access.

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## Cloud (SaaS) Monitoring

**Limited access to infrastructure-level monitoring**, since the backend is managed by the provider.

### Monitoring focus

- **Synthetic transaction monitoring** to simulate user behavior and check application availability/performance.
- **API endpoint monitoring** (e.g., uptime, response times).
- **External service monitors** (e.g., using Azure Monitor, Dynatrace, or SCOM agents configured for URL checks).
- **User experience monitoring** via browser-based tools (e.g., Selenium, Lighthouse, or commercial APMs).

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# On-Premises Monitoring

**Full-stack monitoring** is possible.

## Monitoring focus

- **Application layer:** Java application monitoring (e.g., JVM health, thread usage, memory), cplace service status.
- **Infrastructure layer:** Server OS metrics, disk space, CPU, memory.
- **Database monitoring:** cplace typically uses PostgreSQL; monitor query performance, availability, storage.
- **Web layer:** Web server (e.g., Apache, Nginx) status, SSL certs, load times.
- **Custom metrics:** Using SCOM or Prometheus exporters to track custom KPIs relevant to cplace use.

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## Summary Table

| Aspect                     | Cloud (SaaS)  | On-Premises   |
|----------------------------|---|---|
| Infrastructure Access      | Not accessible (managed by vendor)                        | Full access (customer-managed)                          |
| Monitoring Focus           | External availability & performance                       | Full-stack: infra, app, DB, services                    |
| Tools Used                 | Synthetic monitoring, uptime checks, browser testing      | SCOM agents, Prometheus, APMs, log analysis tools       |
| Application Monitoring     | Via APIs and synthetic transactions                       | JVM metrics, thread/memory usage, service health        |
| User Experience Monitoring | High priority (outside-in)                                | Possible, but complemented by system metrics            |
| Database Monitoring        | Limited or not available                                  | Full monitoring (e.g., PostgreSQL metrics, query stats) |
| Custom Metrics             | Via exposed APIs or external probes                       | Deep integration possible (custom SCOM MPs, exporters)  |
| Alerting & Dashboards      | External tools (e.g., status pages, 3rd-party dashboards) | Integrated with internal tools (e.g., SCOM, Grafana)    |
| Responsibility             | Vendor-managed  | Customer-managed  |

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## Recommendations for SCOM Monitoring

**On-Prem:** Use a custom cplace SCOM Management Pack leveraging JVM metrics, PostgreSQL monitoring, and service health checks.

**Cloud:** Use lightweight, synthetic transaction monitoring and API-based checks; integrate external SaaS health dashboards.

**Hybrid:** Combine both approaches and unify alerts in SCOM for centralized visibility and streamlined incident response.

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# Essential Features of an cplace Management Pack for SCOM

To effectively monitor cplace environments within Microsoft System Center Operations Manager (SCOM), a dedicated Management Pack should encompass key features that provide comprehensive visibility into the application's health and performance. Below are the essential capabilities that such a Management Pack should include to support proactive management and rapid issue resolution.

**Service Availability Monitoring:** Track the uptime and responsiveness of core cplace services and APIs.

**JVM Health Metrics:** Monitor Java Virtual Machine performance, including heap usage, garbage collection, and thread counts.

**Database Health Checks:** Monitor PostgreSQL status, connection health, query performance, and storage metrics.

**Infrastructure Monitoring:** Keep an eye on CPU, memory, disk space, and network usage on servers hosting cplace components.

**Web Server & Proxy Monitoring:** Ensure web servers (e.g., Apache, Nginx) and reverse proxies are operational and performant.

**Synthetic Transaction Monitoring:** Simulate user interactions to verify end-to-end application functionality.

**Event and Log Monitoring:** Collect and alert on critical application and system log events relevant to cplace stability.

**Custom Performance Counters:** Expose and track cplace-specific KPIs and custom metrics important to the organization.

**Alerting and Notifications:** Configurable alerts with clear severity levels and integration into ITSM workflows.

**Dependency Mapping:** Visualize and track dependencies between cplace components and related infrastructure.

**Dashboard and Reporting:** Provide intuitive dashboards for real-time status and historical trend analysis.

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# Key Areas SCOM Admins Should Focus on When Monitoring cplace

Monitoring cplace effectively within Microsoft System Center Operations Manager (SCOM) requires an understanding of its unique architecture, key components, and the best practices for tracking its health and performance. This guide highlights the critical insights and strategies SCOM administrators need to ensure reliable, proactive monitoring of cplace environments—whether deployed on-premises, in the cloud, or in hybrid setups.

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## Discovery & Inventory

**Discover cplace servers:** To ensure all relevant application servers (including test and prod environments) are included in monitoring, avoiding blind spots and ensuring full infrastructure coverage.

**Identify clustered instances:** Enables monitoring of distributed deployments and ensures high availability setups are functioning as expected, with proper load distribution and failover readiness.

**Inventory plugin modules:** Helps track which plugins are installed and active, allowing visibility into potential points of failure or custom business logic critical to end-user functionality.

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## Health State Monitoring

**Monitor application startup and module readiness:** Verifies that cplace and its essential components are fully initialized and operational after restarts or deployments, ensuring no degraded partial states are missed.

**Track JVM heap memory usage and garbage collection:** Prevents performance degradation or service outages caused by memory leaks, inefficient code, or incorrect JVM sizing, especially important in long-running environments.

**Monitor thread pool usage and saturation:** Identifies thread exhaustion or bottlenecks in background processing tasks, which can silently delay job execution or API responses.

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## Log File Analysis

**Parse cplace logs for error patterns:** Captures known error strings or exceptions early, even when not critical enough to crash the system — enabling preemptive support response.

**Detect plugin and integration-related issues:** Many plugin or external system errors appear only in logs. Surface these to avoid unnoticed disruptions in workflows or data pipelines.

**Track database connection timeouts or persistence errors:** Highlights infrastructure-level issues (e.g., DB latency, network drops) that could impact the overall availability and data consistency in cplace.

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## Scheduled Job Monitoring

**Detect failed or skipped scheduled jobs:** Alerts teams immediately when data imports, syncs, or calculation jobs fail, preventing stale data or missed business-critical updates.

**Track job execution time and performance trends:** Helps optimize long-running jobs and spot creeping inefficiencies before they become operational issues or violate performance SLAs.

**Monitor retry patterns and stuck executions:** Indicates job stability problems or systemic issues (e.g., faulty data, integration dependencies) that need deeper root cause analysis.

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## Plugin & Integration Monitoring

**Check plugin load success and readiness:** Ensures that custom or third-party extensions load correctly on startup, critical for environments that rely on these for business logic.

**Monitor REST and GraphQL API connectivity:** Detects broken or slow integrations with external systems (e.g., Jira, ERP tools), helping maintain uninterrupted process automation.

**Alert on version mismatches or deprecated plugins:** Helps administrators stay ahead of compatibility or security issues due to outdated or unsupported plugin versions.

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## Dashboards & Views

**Provide health dashboards for operations and PMO:** Delivers quick, role-specific insights — from technical health (for IT) to process-level metrics (for business stakeholders).

**Visualize job runs, user sessions, and error trends:** Enables trend analysis and supports data-driven capacity planning, SLA tracking, and proactive maintenance scheduling.

**Map plugin and integration health across systems:** Aids in root cause analysis by showing dependencies and highlighting where failures originate — within cplace or in a connected system.

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## Alerting & Escalation

**Configure alerts for key thresholds (e.g., heap size, API latency):** Prevents service-impacting issues by catching abnormal behavior early — long before users are affected.

**Generate alerts based on log analysis or job failures:** Increases precision in operational monitoring by triggering alerts not just on metrics, but also meaningful runtime patterns and exceptions.

**Integrate with ServiceNow or other ITSM tools:** Streamlines incident response by automatically creating and assigning tickets, ensuring faster resolution and clearer accountability.

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## SCOM Admin Quick Checklist for cplace Monitoring

| Category     | What to Monitor                            | SCOM Feature           |
|--------------|--|------------------------|
| Availability | App/service status, module load state      | Application Monitors   |
| Performance  | JVM stats, API response time, job duration | Perf Counters & Rules  |
| Logs         | Error/exception parsing in cplace logs     | Event Rules            |
| Jobs         | Scheduled task failures, retries, hangs    | Custom Monitor Scripts |
| Plugins      | Load success, execution errors, latency    | Dependency Views       |
| Security     | Login anomalies, permission changes        | Alert Rules            |
| Dashboards   | Role-specific views, integration health    | Custom Dashboards      |

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# cplace Monitoring Use Cases

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## Preventing Business Reporting Errors Due to Failed Data Sync Jobs

### Use Case

A program management office (PMO) notices incorrect project dashboards in cplace, showing outdated data. Investigation reveals a scheduled data import from an external system (e.g., SAP) had silently failed multiple times, going unnoticed for days.

### How Monitoring Helps

- Continuously monitors scheduled job status and failure counts
- Flags retry loops or skipped executions immediately
- Surfaces alerts when external data syncs don't complete or when data volume anomalies occur

### Benefits

- Ensures project and portfolio data remains accurate and trustworthy
- Minimizes manual troubleshooting and delays in decision-making
- Helps IT proactively address integration issues before they impact end users or leadership

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## Monitoring Permission Changes to Prevent Unauthorized Access

### Use Case

The security team wants to ensure that no unauthorized or accidental permission changes occur in cplace, which could expose sensitive project data.

### How Monitoring Helps

- Tracks role and permission modifications in real time
- Alerts on unusual or high-risk permission changes
- Audits access changes for compliance reporting

### **Benefits**

- Protects sensitive project and portfolio data from exposure
- Supports governance and regulatory compliance
- Enhances trust in data security among stakeholders

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## **Ensuring Scheduled Jobs Run Reliably to Keep Data Fresh**

### **Use Case**

Operations teams observe occasional stale data in dashboards but have no visibility into why scheduled synchronization or import jobs fail or run late.

### **How Monitoring Helps**

- Monitors scheduled job execution status and duration
- Flags failed, skipped, or stuck jobs immediately
- Correlates job failures with system health indicators

### **Benefits**

- Keeps project data current and reliable for decision-makers
- Reduces manual intervention and troubleshooting time
- Improves confidence in automated processes

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## **Handling Increased User Load Without Degrading Performance**

### **Use Case**

As more teams adopt cplace, concurrent user counts and data volumes surge, leading to noticeable slowdowns in page load times and job executions.

### **How Monitoring Helps**

- Tracks concurrent user sessions, page latency, and JVM resource usage
- Identifies performance bottlenecks related to memory, CPU, or thread pools

- Provides historical trends to inform capacity upgrades or load balancing

**Benefits**

- Maintains consistent user experience during growth
- Avoids costly downtime or emergency scaling efforts
- Supports strategic planning for infrastructure investments

We hope this cplace Monitoring Use Case paper inspires you to extend your monitoring on Microsoft SCOM. Feel free to reach out for help building your next custom Management Pack.

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# NiCE Services and Training for Microsoft SCOM

NiCE Services & Training for Microsoft System Center Operations Manager (SCOM) offers specialized expertise in enhancing IT monitoring through the development of custom Management Packs tailored to an organization's unique infrastructure and business needs.

By leveraging NiCE's deep knowledge of SCOM, their services empower IT teams to extend native monitoring capabilities, enabling precise, scalable, and efficient oversight of complex environments. The custom management packs crafted by NiCE address specific applications, devices, and services not covered by default SCOM templates, ensuring comprehensive visibility and proactive issue detection.

In addition to bespoke management pack creation, NiCE provides targeted training to equip IT professionals with the skills to maintain, customize, and optimize SCOM environments independently. This combination of tailored solutions and knowledge transfer significantly improves operational reliability, reduces downtime, and maximizes the return on investment in Microsoft SCOM deployments.

For more information, please visit <https://www.nice.de/nice-services-for-microsoft-system-center/>.

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# About NiCE

NiCE Services for Microsoft System Center encompass consulting services tailored to System Center Operations Manager, Configurations Manager, and Service Manager. Our offerings include SCOM Health Assessments, advice and provisioning for third-party SCOM tools, as well as SCOM-centric monitoring solutions for business elements such as applications, databases, operating systems, services, and custom applications.

**NiCE Management Packs for SCOM** and **Azure Monitor SCOM Managed Instance** (SCOM MI) are available for AIX, Azure AD Connect, Entra ID, Citrix VAD & ADC, Custom Applications, HCL Domino, IBM Db2, IBM HMC & VIOS, IBM Power HA, Linux on Power Systems, Log Files, MariaDB, Microsoft 365, Microsoft Teams, Microsoft SharePoint, Microsoft Exchange, Microsoft OneDrive, Mongo DB, NetApp ONTAP, Oracle, Veritas Clusters, VMware, VMware Horizon, and zLinux.

## Our commitment

1. Ongoing development, incl. latest version support
2. Top required metrics come out-of-the-box
3. Integrated source knowledge to solve issues faster
4. Custom development & coaching
5. Highly responsive support team
6. Easy onboarding & renewals
7. Largest set of Microsoft SCOM Management Packs

## About Microsoft System Center Operations Manager (SCOM)

Microsoft SCOM is a powerful IT management solution designed to help organizations monitor, troubleshoot, and ensure the health of their IT infrastructure. SCOM provides comprehensive infrastructure monitoring, offering insights into the performance, availability, and security of applications and workloads across on-premises, cloud, and hybrid environments. With its robust set of features, SCOM enables IT professionals to proactively identify and address potential issues before they impact the business, improving overall operational efficiency and reducing downtime. By leveraging SCOM, businesses can achieve greater control over their IT environment, ensuring a seamless user experience and enhancing the reliability of their services.

Take advantage of all the benefits of advanced monitoring using NiCE Management Packs for Microsoft System Center Operations Manager. Contact us at [solutions@nice.de](mailto:solutions@nice.de) (EMEA, APAC), or [solutions@nice.us.com](mailto:solutions@nice.us.com) (US, LATAM) for a quick demo, and a free 30 days trial.

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