Enterprise Monitoring Management

Key steps and components of a successful solution

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Table of Contents

Executive Summary

Evolving applications, increasing mobile access, growing security countermeasures and cloud technologies are changing the landscape of IT organizations and their physical infrastructure. This rapid change results in growing diversity of technologies in an increasingly distributed system. These trends are forcing traditional applications to work with cloud based solutions often resulting in services run by company IT teams and third parties. IT leadership remains steadfast on lower cost operation but end users with mobile devices demand greater accessibility with increased reliability. This growing diversity challenges the management of end-to-end IT operations that require new ways to track performance, reduce troubleshooting time and maintain service availability.

An enterprise monitoring solution gives IT organizations the ability to integrate network, server, application, service and business transaction monitoring and event management for comprehensive bottom-up, top-down performance management. By connecting business services to underlying infrastructure and applications, it enables IT organizations to pinpoint and resolve service outages with the most impact, resulting in better quality of services at a lower cost to the business.

The successful implementation of such an enterprise level monitoring and event management solution requires many steps and components related to the product implementation itself, the processes affected, and the organizational teams involved. While different organizations may choose different paths, to meet their own unique set of circumstances, there are some essential steps that should be followed, along with awareness of the pitfalls, to ensure the best chances of success and value realization from such a solution. This paper describes these key steps and components.

Setting the Goal: Establishing an IT Initiative

The first key ingredient for success comes into play well before any product is even unwrapped or team assembled. To ensure the success of an enterprise monitoring implementation one must establish the business objectives and ultimate value that the new solution will deliver. The creation of an overarching IT Operations or Services Improvement Initiative is critical to both defining the overall objectives as well as measuring progress along the way. For a solution to be implemented either from the ground up or as an extension of existing capabilities, there are likely pain points experienced in operations and service management that need to be resolved. These should be explored, articulated and prioritized while objectives should specifically address these pain points.

As an example, frequent outages causing business impact may be a pain point which can be addressed by setting an objective such as "reduce the number of outages of the top 10 applications to less than 2 per quarter". As an example, on a recent project that Micro Focus supported, the customer (world-wide entertainment corporation) started an initiative called "Continuous Service Improvement Program (CSIP)". The intent of the enterprise wide program was to dramatically improve the availability and capabilities of the IT based operations and business services. Using the CSIP initiative as a guideline, program and project managers were aligned with subject matter experts for operational services and the products and processes that they supported.

Frequent outages or poor performing applications issues will likely result in a senior IT executive (for example, VP of Operations) being directed to resolve them. While execution of the program may be delegated, it is imperative that this executive remains as an executive sponsor, with a span of control and authority to effect change across the enterprise. A successful implementation will require changing the way in which infrastructure, applications, and services are monitored – focusing not only on the tooling – but also driving changes to ineffective organizations and processes. This, in turn, will demand that multiple teams align with the vision and support the initiative with resources and time. Well-meaning projects often fail when an executive sponsor is unable to harness and drive the collaboration of all stakeholders impacted by an enterprise monitoring initiative.

Requirements Are Critical: Business, Functional, and Technical

Once the initiative is funded and a program of work has been defined, attention can turn to the development of the requirements for the implementation. The Program Manager and Team Leads must first focus on collecting and refining requirements for their work streams. The recipe for success is to include business, functional and technical requirements, thus avoiding the common pitfall of focusing only on the latter.

In the case of the CSIP example above, the program team then began work on formulating the business, functional, and technical requirements aligned with the CSIP program, with the objective of increasing business value. These requirements were confirmed within the corporation and with their executive sponsor, and then Micro Focus provided another review at the beginning of our joint program to ensure alignment on the program's goals.

1. **Business requirements:** stated as value propositions to the business and supporting cost avoidance or reduction, risk reduction, or reduced time for IT execution. Business requirements tie the financial aspects to the results expected from the project stated as a Return on Investment (ROI), or better yet, as value assessment of ongoing services improvement during the lifetime of the overall solution.

2. **Functional requirements:** How the solution should operate or function to support the business requirements. For instance, a functional requirement might be that a single operations console consolidates the events from many monitoring tools to provide a single reference point for operations personnel. Note that there is no mention of the technical aspects of how this functional requirement is implemented or will work, but rather a function of the solution supporting one or more business requirements.

3. **Technical requirements:** The technical capabilities of the products and what is needed to support a functional requirement. In our case of the single operations console, one technical requirement could be that the solution "provides integration to third party operational monitoring tools through a standard interface." With technical requirements, the analysts, engineers, and consultants that know the products, can design the solution architecture to best meet the technical requirement and support the associated functional requirements.

Success Is a Team Sport

Success is ultimately achieved by having the right people in the right roles. The next key component in a successful enterprise monitoring implementation is to ensure that a team, aligned to the solution requirements, is in place. While this team's role is to support the overall implementation, it is not the only requirement. Equally critical to the ongoing adoption and success is the team that will support the platform and the solution after they are launched into production. Without a supporting team and an 'evangelist' to communicate the merits and benefits of the solution, the full value of the solution may not be recognized and customer acceptance of the solution may wane. A 'customer' in this sense is an organization, operations or business support functional group, or business unit that will utilize the services provided by the solution.

Additionally, the following teams are necessary and essential for a successful implementation:

- **Program and project management:** An engaged and supportive Project Manager and a defined program governance function proactively manage issues as they occur.

- **Infrastructure support:** This supporting group includes server, network, middleware, database, and other teams that are needed to deploy the products into the data center.

- **Security:** In most companies today, there is a Chief Information Security Officer (CISO) linked to Business Units. As many of the products in the solution require connections into the production environment as well as access and privileged user accounts, the security team must be involved to understand what the solution does and how sensitive personal information and corporate data are protected.

- **Application support and development teams:** The implementation of event correlation ties infrastructure monitoring to the applications and business services that they support. As such, the application support teams are critical to implement monitoring for their applications based on their needs AND based on the functional and technical requirements defined for the solution. There must be a clear method for selecting the applications to be monitored (We recommend a medal standard – gold, silver, bronze applications) and how these applications are to be monitored with established limits (monitoring transactions, measured metrics for instance).

- **Process supporting teams:** Successful enterprise management implementations do not just implement a product but also change often ineffective processes and improve the organizational support of the IT initiative to deliver the expected value.

- **Customer teams:** In the case of monitoring, a typical customer would be the IT operations team such as a Command Center or Network Operations Center. These operators' jobs will be made easier if the solution is implemented understanding their pain points and taking advantage of the full functionality.

- **Expert teams:** Micro Focus® Professional Services (PS) would be the experts with experience and a set of global practices for successful enterprise monitoring implementation. This team of experts can then define and implement a successful solution architecture, identify potential risks, give guidance on best practices, and be a part of the team that achieves the ultimate success for the business.

Critical Implementation Components

With the overall IT Initiative in mind, the requirements defined, and the teams in place and ready, the solution implementation is now ready to start. There are several key steps, dependencies, and processes to keep in mind when planning and executing the solution:

Understand the Products That Are to Be Implemented

The solution to be implemented should address the functional and technical requirements as outlined in the project objectives (often documented in a project charter) and aligned to the overall IT initiative. The capabilities of the products should meet those criteria and not normally be 'point solutions.' That is, the product should focus on more than one aspect of monitoring. Enterprise Monitoring focuses on infrastructure, application services, and business service monitoring as well as event correlation and event management. Ensure that your lead architects understand how the product supports the monitoring and event management planned for the solution. PS can be a vital part of this understanding.

Develop Project Plans Ensuring That Sequencing, Dependencies, Resources, and Durations Are Defined

An effective project plan must be developed with an understanding of the sequencing of critical tasks, their dependencies on one another, the resources needed (internal and from Micro Focus), and the durations. If an implementation is new, an expansion of current monitoring, or an upgrade of an existing platform, PS can assist from their experience, with baseline plans that include all these aspects.

Define Overall Project Governance

The governance should include scheduled status and program review meetings with the project team as well as Project Sponsors. There should be an established communications plan inclusive of reports as well as a log for issues, actions, decisions, and change requests for tracking throughout the project. All risks should be identified with action plans. With clear governance comes the ability to handle the issues that may occur, measure milestones, track resourcing, and keep the project moving forward towards a successful outcome.

Develop Overall Architecture and Design

Developing the architecture and design of the overall solution inclusive of infrastructure, software, and integrations ensures that the defined solution will support the functional and technical needs of the solution ensuring capacity for growth. Even if you are implementing the solution in stages, it is crucial to define these aspects of the solution at the start of the project, so that you do not find yourself needing to retrofit the solution or alter your requirements. The Architecture and Design document is key to develop during this phase, obtain official agreement on, and then use throughout the rest of the project. PS has an Architecture and Design document template that encompasses the full enterprise monitoring product line with standard integrations that can be used by the team to support development of the necessary architecture. Decisions are often also needed as well in terms of server capacity, physical versus virtual servers, software versions, and various software package choices. These are imperative to anticipate before implementing the solution to ensure best performance and support in the event of software product issues.

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Establish the Standards for Monitoring and Event Management

For any implementation requiring improvements to present monitoring and event management practices, configuration and usage standards must be established. Since many Business Units will want to be a part of this business improvement initiative, these standards will be published and used for configuring the solution. These standards lead to better management of the solution being deployed, optimize the software licensing, and help Operations through best practices across Business Units.

Examples of such standards are:

- Identifying key infrastructure to monitor—production servers monitored with agent based products while non-production servers use agentless monitoring

- Defining breadth and depth of monitoring using a "medal" standard – platinum, gold, silver, bronze – related to a given application's business criticality.

- Controlling how business units utilize monitoring licenses – number of agents, SiteScope points, monitoring locations, etc.

- Creating the views and thresholds for the infrastructure and applications.

- Defining processes and organizational support within the business units and with the operations support teams for monitoring and event management.

Define Monitoring Implementation Plans (Infrastructure, Application, Business Services)

With infrastructure monitoring, ensure that the key metrics of availability and performance are captured for key components. Use of predefined and Micro Focus-provided templates also enables infrastructure topology to be implemented, which is critical to the implementation of event correlation. So focus monitoring implementation on the SiteScope templates and Operations Management Smart Plug-ins (SPi) to ensure the best monitoring policies are implemented. Micro Focus suggests limiting or eliminating the definition of custom policies and monitoring standards for infrastructure because such customization often leads to future support issues and upgrade challenges.

Understanding the infrastructure to be monitored is important as well. Products such as Universal Discovery, Network Node Manager, Operations Manager, and APM have discovery capabilities to find infrastructure, build relationships for topology views, and later create associations with applications and business services.

For successful application monitoring:

1. **Select the applications to be monitored.** Prioritize critical applications by metrics related to business criticality, customer facing, revenue generating, and operations dependency. This allows focus on those key applications to the business.

2. **Identify the most critical transactions.** Often, the application user will have a deep understanding of those transactions that are most essential. These transactions are normally role based, so ensure that you also request input from multiple users of the applications to define those transactions.

3. **Determine where the application should be monitored.** Wherever the critical users are located should determine where data collection points are also installed. Also determine if there should be monitoring at the data center supporting the application to provide comparison data between the user locations and the data center. This difference, measured over time, can provide useful information for problem determination.

4. **Configure thresholds aligned with Service Levels or expected performance.** If the application has a Service Level Availability defined, configure an alert on SLA violations. For performance, Micro Focus suggests that you have measure application performance for at least 30 days and use those metrics, reviewed with the application users, for alerting thresholds.

Micro Focus recommends that all successful enterprise monitoring solutions implement both infrastructure and application monitoring to realize the full value of the solution through establishing the relationship between business services (one or more applications together) and infrastructure elements and building the Topology Based Event Correlation (TBEC) capability that is one of the primary value based feature of enterprise monitoring. TBEC allows you to reduce Mean Time to Repair when application outages or performance issues occur. PS has developed standards for on-boarding of applications into the monitoring solution as well as the implementation of TBEC which together maximize the business value of the solution.

Define Event Management Implementation Plans
Enterprise monitoring offers the ability to establish a central event console to consolidate the alerts and event stream from multiple current tools into a single view. The definition, design, and implementation of a central event console requires much thought and experience as multiple integrations are often required, in addition to decisions about how to process the events. Micro Focus OMi can provide this integration and single dashboard capability when configured correctly. This central console is another key value proposition since it provides reduced MTTR and operations cost through consolidating monitoring tools and centralizing dashboard views.

Determine the Processes and Organizations That Require Change and Lead That Change
The changes necessary to the processes and supporting organizations for the monitoring and event management solutions are often forgotten or neglected. Successful enterprise monitoring implementations involve the Event Management, Operations Management, Application Availability Management, and Incident Management teams in the changes to their processes for optimum value attainment.

More mature organizations will go even further into integrating monitoring into other processes such as Development and Testing in order to understand and design management requirements throughout the application lifecycle to enable DevOps as well integration with Security to further enrich the required information for both the IT Operations as well the Security processes in order to gain further efficiencies and drive cost down.

These teams can often help drive additional value from the enterprise monitoring solution through understanding of the solution and then refining their processes to align with the capabilities of the product. For example, the concept of a Closed Loop Incident Process (CLIP) solution. In this key integration, event management is tied to an incident management product (Service Manager, for example) in a bi-directional solution to support event-to-incident ticket management. This integration provides automation to this often manual and resource intensive process and provides value to the business through reduced cost and improved efficiencies.

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In terms of organization, the changes needed are often tied to the processes that change. Thus, establish roles and responsibilities for the enterprise monitoring solution that are critical to success. PS uses a number of tools based on project management principles such as RACI charts and Swim Lanes to assist customers with aligning organizations to changing processes and their implemented solution. Without this alignment, confusion can result and prevent obtaining full adoption and value realization.

Measure the Key Metrics along the Way

Establish key metrics at the beginning of the project, then track and report those metrics until project closure. The best metrics are those that mean the most to the project team, your customers, and the project and executive sponsors. Notice that these roles all have different interests in the success of the projects, so various metrics need to be established and reported accordingly.

- **For the project team:** Metrics relate primarily to project management based measures such as project schedule to plan, earned value, number of outstanding issues, and resource alignment. Another key metric is the completion of deliverables and established milestones in the project charter or with a services provider contract.

- **For the services customer:** Metrics relate to what the ultimate user of the tool will need. For instance, the IT Operations team will likely focus on the number of events per day as a measure of how the solution can provide benefits. In addition, the number of infrastructure components discovered, mapped, and monitored, and the number of applications on-boarded into the monitoring solution provide a measure of the maturity of the platform and ensures that what needs to be discovered, mapped, and monitored has been completed to their requirements.

- **For the business and project sponsors:** Metrics relate to business value propositions and are often not achieved until the product goes into production. For example, an executive sponsor may want to measure his ability to issue SLA availability violations to a third party application services provider. After monitoring is implemented, this executive will be able to provide to the 3rd party provider gaps in application availability that resulted in financial penalties to that provider. Ultimately, the 3rd party provider will strive to improve application availability in order to avoid the penalties.

Ensure That Enablement and Production Transition Testing Are Defined
When the enterprise monitoring solution is ready for deployment, the next two steps are indispensable – defining the final testing plan for the pre-production environment and developing enablement content and training for the end-users of the solution. When a solution is close to production, there must be a final testing plan for the solution inclusive of the core functionality aligned with the requirements as well as involving the processes and organizations that will change. In addition, there must also be enablement for the users of the solution prior to production launch to ensure that they know how to effectively use the new solution and minimize confusion after launch. A production launch checklist is also key to develop and utilize when the solution moves to production. PS has testing plans, enablement content, and production launch checklists that can be useful at this critical time.

Project Closure and Next Steps

With the solution in production, the project team, project sponsors, and executive sponsor should meet to review the project with the following in mind:

- Completion of requirements (business, functional, technical) with the deployed solution.

- Remaining solution components that need to be deployed as a next step.

- Value assessment based on the solution and including value metrics to be measured in the future.

- Lessons learned to ensure that the challenges and successes of the project are used to understand how future related projects can be successful.

- Next steps—how does this enterprise monitoring platform continue to mature to ensure the full success and business value that it can provide?

Summary

This document provides those components of a successful implementation and solution that you should use as a guide. The key result of any software installation is to achieve a return on investment for the purchased software and implementation costs, thus attaining value for the business.

The implementation is not the last step in an optimized and valued monitoring and event management solution. The solution should be continuously reviewed by the technical teams, application owners, the business units, and executives to ensure that opportunities to further mature the solution are identified, implemented, and realized. In addition, most large scale implementations provide mostly reactive event management – the next level of maturity of the solution is to become predictive. That is, using a set of measures and metrics, use the solution to anticipate an impending issue and alert operations of a potential outage or performance problem. Those organizations that mature to the predictive event management level will realize the most value from the solution.

The environment must also be configured to align with the changing world of IT—the emergence of technologies such as Cloud computing, hybrid environments, and mobile computing over recent years required changes to successfully monitor and manage IT solutions that use these technologies. Taking advantage of new product features requires awareness of changes to your IT operations and data centers to ensure that the solution continues to support these emerging platforms and provide business value.

As a last thought—the path to an optimized enterprise monitoring solution providing maximum business value for your company is a journey, sometimes without a fixed destination. The optimization process requires continuous evaluation, prioritizing of requirements, alignment with other IT initiatives and capabilities, and the desire to prove value. This document should be used as a guide for you on this journey.

Learn More At
www.microfocus.com/itomservices

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