ServiceNow Integration With Operations Center

Visualizing ServiceNow Relationships and Tickets
Contents

About Micro Focus Operations Center ........................................................................................................3
Overview ..................................................................................................................................................3
Current Features .....................................................................................................................................4
ServiceNow Integration ..........................................................................................................................5
The Hierarchy of Incidents from ServiceNow ..........................................................................................5
The Hierarchy of Problem Tickets from ServiceNow ..............................................................................5
The Hierarchy of Change Tickets from ServiceNow ................................................................................6
The Hierarchy of Service Desk Tickets ...................................................................................................8
ServiceNow Configuration Items ..........................................................................................................9
Presentation of CI Categories and Types based on Hardware .................................................................9
Configuration Item Relationships .........................................................................................................10
Combining ServiceNow Tickets with the Service Model .......................................................................12
SLA Visibility ........................................................................................................................................13
Actions Available on Tickets ................................................................................................................15
Automation Actions and Use Cases .......................................................................................................15
Notes on how the Content was Prepared ..............................................................................................15
About Micro Focus Operations Center

Micro Focus Operations Center simplifies the complexity of visualizing, managing and monitoring both technology and business services. By leveraging the impacting events from all your monitoring tools, Operations Center clearly communicates the priority of issues and focuses your technicians on the most service-impacting issue.

Operations Center has a depth of integration capabilities and a tool set to connect to databases, streams of data, files, URLs, web-based APIs, etc. This is the age of big data and correlating that data is required for companies to truly understand their operations. A lot of your data is already in monitoring tools like AppManager. However, very few enterprises are homogeneous these days and data will always be scattered across multiple kinds of monitoring tools and across a growing number of data silos: systems & server monitoring, security, access control, identity, application monitoring, business processes, service management tools, CMDBs, service desks, etc. It is imperative to have the capability to correlate and measure the issues that these various data silos surface to understand how they impact your end users and customers.

Operations Center lets you realize and broaden the value in your current technology investment without needing to re-instrument it, replace it, or lose data during integration. It provides easy-to-see visibility for data. It also retains the integrity of federated data. Operations Center can leverage expertise throughout the enterprise. It can also be deployed in a phased approach that lets you take advantage of “low hanging fruit” for a faster return on your efforts and investment.

Service level management is the “low hanging fruit” that helps you measure and improve your services. However, SLAs built on only partial data run the risk of providing a false sense of security and attainment. SLAs become easier and more complete when you have all the data in one place. Micro Focus thinks that’s practical approach. The correlation and measurement of this data often makes it more actionable for an operator or business users, putting you in a position to improve your SLA.

Overview

ServiceNow lets you see where tickets are in a workflow, who’s working on the tickets, and how those tickets impact a Configuration Item (CI) or business service. Operations Center lets you clearly visualize this data and correlate it with the live monitoring data. This is a crucial step to move from measuring and reporting SLAs on tickets as opposed to managing and reporting SLAs on your operations.

Most service management SLAs are based on tickets; when they are opened and when they are closed or resolved. However, the challenge is actually measuring “when” the issue was “resolved.” All too often today, the Service Manager has to review one or more tickets and talk to the technicians to actually determine this. Then someone has to input that information into the ticket so you can run a new report to figure out if the time the service was down was in fact shorter than the time to resolution as reported by the tickets.

The most effective management strategy is to manage IT according to these SLAs. Without an SLA that has accurate measurements, you cannot gauge improvement or the impact of changes. One of the main roadblocks comes from IT operators not always understanding the impact a single event has on a customer, let alone how a correlation of multiple events across multiple monitoring tools indicates an end user impact. The service manager also needs a tool that will show real data by combining and correlating these different sources of information.

To solve these problems, Operations Center leverages ServiceNow’s CMDB and tickets to directly correlate the system management data. It combines the data from AppManager and ServiceNow by CI name. Operations Center presents your information in a model which drives SLA measurement for a true at-a-glance display of SLA attainment. You can leverage this model to also provide a decision tree for the technician to drill into and quickly identify the root symptom of an outage. This benefit drives better SLA attainment because it supports faster resolution by taking disparate data sources and correlating them into a single, coherent model. Operations Center provides this correlated view so your technicians and managers can determine which issue impacts your services the most. This also leads to improvement against SLAs and increased customer satisfaction.

Technical Overview
The ServiceNow integration with Micro Focus Operations Center uses ServiceNow’s robust SOAP API to grab batches of tickets or items and represents them in the Operations Center client for use in the dashboard and correlation with other system, application, and infrastructure management tools.

Micro Focus Operations Center Technical Services created this integration. It is written in JavaScript, and SOAP. Due to ServiceNow’s configurable nature, Micro Focus recommends using Professional Services to initially implement as this is not an integration that customer service can help implement.

The integration pulls the information from the incident, service desk, problems, and change tables for use in correlation with the CMDB CI’s and their relationships as viewed on the ServiceNow BSM map.

ServiceNow is usually deployed in IT operations centers in conjunction with one or more systems management tools like AppManager. Often there are also point solutions such as for applications, databases, and cloud service providers. Operations Center provides you the capability to integrate this information into enterprise views according to your ServiceNow service models. This will let both your users and management view the status of their SLAs in real time.

Figure 1 - CI Relationships Correlated with Incidents Problems Change

Current Features

Technical Features
This is a summary list of technical features of the integrations to ServiceNow.

- Allows queries to be sent in configurable batches, default is 250
- You can’t query more than 250 at a time unless you change the server’s default limit value
- Requires ServiceNow admin
- Allows queries to be sent on a configurable value in seconds
- The SOAP envelope uses variables to pass data between queries to the ServiceNow engine
- It queries the getKeys table for all valid sysIDs for the table and counts the records
- It calculates how many batches need to be performed and loops through them 250 records at a time
- It gets all the values for the ticket fields using the display value field in the SOAP request
- It maps incident priority to event severity
  - Incident table only
- It maps problem priority to event severity
  - Problem table only
- It maps change type to event severity
  - Change table only
• Configuration items, CIs, are unknown, or can be set to a green OK condition
• Incidents may be updated with a text comment in worknotes.
• Incidents can be closed.
• A right click operation to ServiceNow is also provided for easy access to ServiceNow’s console.

ServiceNow Integration

The Hierarchy of Incidents from ServiceNow

This view shows a list of incidents, some of their ticket attributes and example ways to break out groups of tickets based on those attributes: categories, locations, priority, assignment groups, and workflow steps. This view demonstrates customized groupings and a VIP section for users or customers that require special attention. It also illustrates a bucket for the newest opened Incidents, where “State” = “New.” All tickets and items from any ServiceNow data source can be grouped by any attribute or combination of attributes in the ticket or configuration item. This flexibility makes it easy to produce data views in a portal leveraging live data that replaces running reports.

Figure 2- Example Incidents Grouping for Tickets

The Hierarchy of Problem Tickets from ServiceNow

This is a breakout of data from problem tickets and organizes problems by CI, location (which isn't used in the developer instance), workflow and priority by impact, and then by urgency.
The Hierarchy of Change Tickets from ServiceNow

The following change tickets are grouped as all changes, approved, by assignment group, category, risk, and calendar, which is a customized view that organizes change tickets based on when their planned change is scheduled or requested. This allows Operations Center to visualize the changes in a calendar.

Figure 4 - Change Ticket Hierarchy
Figure 5 - A Custom Calendar Example

Figure 6 - An Example of Changes by Day
The Hierarchy of Service Desk Tickets

Service Desk is different from other categories since it can include more types of tickets. It can show incidents as tasks, change tickets as change tasks, and requests as tasks. The Service Desk tickets shown below are organized by location, priority, configuration items, and by tasks by priority.

Figure 7 - Service Desk Tickets
ServiceNow Configuration Items

The Configuration Items are similar to other ticket types, but they have a different set of attributes that can be leveraged to organize them. The organization presented is only a sample of what can be achieved once built. It is easy to organize data from a CMDB using Operations Center.

The organizations shown: company, cost center, categories, and a master list of CI’s.

Figure 8 - Configuration Items.

Presentation of CI Categories and Types Based on Hardware

*Customized Layout View*

This shows an example of the visualization capabilities of Operation Center’s layout view to organize and visualize data. Viewing categories of information is one way to communicate information across an IT audience. Information like this can be used to convey quantities of data that can be measured over a threshold. A good example is licensing costs or quantities of software purchased, and these views can be made available in a web portal for a general audience.

Figure 9 - Custom Visualization for Hardware Based on CMDB
The Configuration Items from ServiceNow have many attributes, among them relationships between devices such as parent to child. This information is captured from the `cmdb_rel_ci` table in ServiceNow. This provides the information Operations Center needs to create a top-down service model of the relationships between devices in a cascading hierarchy. This service model provides the basis for Operations Center to create a decision tree by inserting algorithms to convey which object in the model is the most important to a service’s impact. It leverages the ServiceNow service model and enhances it with your correlated systems monitoring data. It then shows your operators, with a condition like critical or major, and which piece of the service model is the cause for the service disruption.

Figure 10 - Example of the Basic Relationships

The service model below is captured from the relationships in the hierarchy above.
Figure 11 - The Hierarchy of Relationships
Combining ServiceNow Tickets with the Service Model

The sample illustrations of ServiceNow data can also be combined into hybrid displays. This adds another layer of understanding that can be personalized for your organization’s needs. The combination of using the configuration relationships and incident problem with change tickets is one of the most powerful ways to visualize what ServiceNow knows about a configuration item.

Figure 12 - Change Tickets

This view can be further combined with other management system data that is not native to ServiceNow, such as Micro Focus AppManager, to provide a single view of data for your systems. This correlation of data between disparate systems is a key strength of Operations Center. This provides you a single interface from which you can visually understand your operational state, begin any problem resolution, and support root cause analysis for faster return to operations. Operations Center provides you the platform to support ITIL initiatives and supports organizing your resources in the most effective way possible for your business services.
SLA Visibility
Operations Center Real Time SLA Engine

At the heart of Operations Center is a state-based monitoring engine which examines your services for service-impacting outages. Once the service model is created, and all the monitoring data is correlated with ServiceNow’s tickets by CI and business services, Operations Center can measure the real time availability of that service over time. This is one of the missing pieces in IT operations environments; how to communicate to the operator which service to address first should multiple services have an outage. The SLA objectives can guide the operator to work on the SLA that is closest to breaching its objective, which can reduce chargebacks and decrease mean time to respond and repair.

Figure 13 - Service Level Metric Alarm View of Real Time Compliance

Above is a dual example of the event hierarchy of Service Center tickets combined with the specific use case to alert when a ticket has been opened longer than an hour. The example is built upon Priority 2 Tickets that are new and have not yet been assigned or transitioned, i.e. OPEN. Operations Center’s internal SLA engine prioritizes the objectives for the operators. This information can be viewed in a variety of ways. Objectives that are at risk for breaching can be viewed by the operator in the Operations Client.
This metric SLA data translates into an SLA summary that can be presented in the dashboard and made accessible across the business for transparency of service impact. SLAs typically measure availability, downtime, outages, and incidents. Below shows the availability metric reported as a status.
**Actions Available on Tickets**

Managing an IT service is one thing, making it actionable is how you decrease MTTR. Operations Center provides a base set of scripts that evidence a few of the basic operations an operator should have access to from an Operations Center console.

The following scripts work with the basic out-of-the-box incident table for ServiceNow.

**Incident Table:**
- Open Incident – Opens a ticket based on an element name from a management event in Operations Center, looks for a matching CI name in the CMDB_CI table and then opens a ticket with a brief short description.
- Update Incident – Updates a tickets work_notes field.
- Close Incident – Closes an incident.

**Generic Operation:**
- Open a browser to the ServiceNow console from the context of an alarm/event in Operations Center.

Additional actions can be created by request by Micro Focus Technical Services.

**Automation Actions and Use Cases**

Customers often have a need to automate specific actions. For example, open a ticket based on a critical event that impacts a service. Operations Center supports these use cases and Micro Focus Technical Services can help you reach these goals quickly while providing you the knowledge to continue customizing on your own.

Example Automations for ServiceNow:
- Open an incident when a business service becomes critical.
- Email system admins when their server becomes critical, based on email addresses used in the CMDB.
- Email a business manager when a business services SLA objective is half way to failing, and again when it is breached.

For questions or to discuss a particular use case, please contact your account executive or call Micro Focus Customer Care.

**Notes on how the Content was Prepared**

All screenshots used in this position paper utilize the data set in the developer instances provided and populated by ServiceNow.