Focused Run for SAP Solution Manager
## Typographic Conventions

<table>
<thead>
<tr>
<th>Type Style</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example</strong></td>
<td>Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Textual cross-references to other documents.</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td>Emphasized words or expressions.</td>
</tr>
<tr>
<td><strong>EXAMPLE</strong></td>
<td>Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td>Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td>Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.</td>
</tr>
<tr>
<td><strong>&lt;Example&gt;</strong></td>
<td>Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.</td>
</tr>
<tr>
<td><strong>EXAMPLE</strong></td>
<td>Keys on the keyboard, for example, <code>F2</code> or <code>ENTER</code>.</td>
</tr>
</tbody>
</table>
Document History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>2016-10-21</td>
<td>Initial version of Focused Run</td>
</tr>
</tbody>
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1 Introduction

Focused Run for SAP Solution Manager is a powerful solution for service providers who want to host all their customers in a central, scalable, safe, and automated environment. Focused Run uses the full power of SAP HANA as a platform without compromises including streaming, replication, scale-out, predictive analytics, and compression. With this, you can support thousands of systems in high volume monitoring use cases.
2 Infrastructure

2.1 Landscape Management Database (LMDB)

The landscape management database (LMDB) is the central landscape information repository in Focused Run for SAP Solution Manager. A system landscape description is the basis for many Focused Run applications, like monitoring and alerting. Also to calculate updates and upgrades with the maintenance planner in SAP Support Portal, a landscape description is required.

Focused Run collects and stores detailed information about the technical system landscape. This information is built from two parts: the software descriptions from the SAP software catalog (SAP CR content) and the information that is sent automatically by technical systems.

Information flow from technical systems to Focused Run, and SAP Support Portal

1. During the setup of Focused Run, the CIM model and SAP Software Catalog (SAP CR content) are copied from a system landscape directory (SLD) to the LMDB by an initial, full synchronization. After this, incremental synchronization propagates software catalog updates from the SLD to the LMDB every 10 minutes.
2. Most of the system information is provided automatically by data suppliers that are installed on the technical systems.
3. a. Focused Run applications use the system information managed in the LMDB, for example monitoring and alerting and root cause analysis.
   b. With the system information, applications can monitor systems in the landscape.
4. From the LMDB, technical system information is sent to SAP Support Portal, to be used by the maintenance planner, for example.
5. Based on the dependencies between technical systems, the maintenance planner can calculate the stack XML files that are required for planned installations, upgrades, and updates. The files are pushed to the download basket.
6. With the files, you can implement new software on the technical systems.
Sources Providing LMDB Content

The LMDB gets its content from the following sources:

- **System landscape directory (SLD)**
  By synchronization, the SLD provides the LMDB with the latest CIM model and SAP software catalog (SAP CR content).

- **Existing data suppliers**
  In Focused Run, the data suppliers provide the landscape information and write landscape data directly into the LMDB.

- **Outside Discovery by SAP host agent**
  In Focused Run, the SAP host agent provides the Outside Discovery information and writes landscape data directly into the LMDB.

- **Editor for technical systems in the LMDB**
  Some information, like additional attributes, can only be created manually in the technical system editor of the LMDB. Apart from these exceptions, do not create system information manually. If the system is registered subsequently by a data supplier, manual information will be overwritten in the LMDB the next time the data supplier sends data.

A technical system description in the LMDB has the following prerequisites:

- Up-to-date CIM model and SAP CR content in the SLD that is connected to the LMDB.
- All technical systems register themselves in the LMDB.

Many entities in the system landscape description are identified partly by host names (not fully-qualified and case insensitive). The host name is used in the system configuration. For example, the host name “localhost” cannot be used in this part of the system configuration.

Every host in the system landscape must have at least one unique host name. Different system landscapes can be separated in the LMDB by using customer networks. Each host name within one customer network must be unique.
2.2 Monitoring and Alerting Infrastructure

Monitoring is an essential task in the management of SAP technology - performant and automated monitoring helps ensure reliable operations in your SAP system environment. SAP provides you with the infrastructure and recommendations to set up your alert monitoring, to recognize critical situations for in you system landscape as quickly as possible.

With SAP Solution Manager 7.1, SAP has introduced the end-to-end Monitoring and Alerting Infrastructure (MAI), which allows stable and reliable operation of complex heterogeneous system landscapes. In focused Run for SAP Solution Manager, configuration, scalability and performance of the MAI was optimized especially for monitoring large system landscapes. This changes include:

- For the storage of the metrics the new HANA based Unified Data Model is used: in the reporting layer SAP Business Warehouse is replaced by SAP HANA, meaning that the data for monitoring and reporting is stored only once. This increases the data throughput and decreases the data footprint and the database load significantly.
- Only push-based communication will be used for the transport of metric data from the managed objects to the managing system.
- The possible number of managed systems handled by the MAI has been increased drastically.

Integration

The Monitoring and Alerting Infrastructure depends on

- Landscape Management Database for your system landscape information
- Simple Diagnostic Framework for connecting your managed systems to the Focused Run system
- Notification Management for notifying the corresponding users in case of an issue
- Simple System Integration for configuring the managed systems
- Rapid Content Delivery for automatically downloading the latest content updates for metrics, events and alerts.
2.3 Simple Diagnostic Framework

The Simple Diagnostics Framework is the server component managing the Simple Diagnostics Agents (SDA) on all managed systems centrally. The framework is mainly responsible for the installation or update of the SDA, the transfer of the SDA configurations and the SDA self-monitoring. The framework also provides user interfaces for the SDA management and for the mass update of all SDAs in the landscape.

The Simple Diagnostics Agent (SDA) is a component on the host of the managed system, which collects system metrics and sends it to Focused Run for SAP Solution Manager. It is integrated into the SAP Host Agent; as a result, the SAP Host Agent, which serves as a reverse HTTP proxy, provides the connection to the SDA. There are no additional communication channels needed. In addition, the SDA runs under the user of the SAP Host Agent. No additional operating system user is required.

There is only one SDA on each physical host. It collects data for all logical hosts and for multiple Focused Run systems.

After the host has been registered in the Landscape Management Database (LMDB) by an outside discovery function of the SAP Host Agent, the SDA is automatically installed and configured for self-monitoring.
2.4 Notification Management

Notification Management maintains and notifies Focused Run system users and external users. Recipients or recipient lists in a central location avoid duplication of effort, and use the information to send notifications from tools such as Work Mode Management and Alert Management.

Prerequisites
You are authorized to access the Technical Administration work center.

Features
You can:
- Maintain external recipients and Focused Run system users
- Avoid duplication of effort by maintaining recipients in a global recipient pool.
- Copy distribution lists from e-mail server
- Define availability of users based on factory and holiday calendars.
- Define absence of users.
- Automatically forward notifications to substitutes if a user is not available.
- Add recipients or recipient lists to a recipient list.

Activities
7. Copy recipient lists from Microsoft Exchange or Lotus Domino Server, and to send notifications by SMS, set up the LDAP and SMS server.
8. Maintain the recipient and recipient list details.
9. Notify the status to recipients or recipient lists.
10. Notifications can be forwarded automatically to substitutes if the recipient is not available.
2.5 Simple System Integration

You can use Simple System Integration (SSI) as part of Focused Run for SAP Solution Manager to automatically configure technical systems for the following use cases:

- Advanced System Management (ASM)
- Configuration and Security Analytics (CSA)
- Advanced User Monitoring (AUM)*
- Advanced Event and Alert Management (AEM)
- (*) SSI supports Trace Analysis configuration

Features

Simple System Integration supports you with the following tasks:

- Search for technical systems
- Edit the relevant configuration for technical systems
- Automatically configure one or many technical systems
- View the configuration status of technical systems
- Access the configuration log messages of technical systems
- In addition:
  - The automatic configuration supports prerequisites and post configuration checks to prevent misconfigured systems
  - The automatic configuration can be invoked via a Web services interface

Process

The Simple System Integration process is as follows:

11. Set up customer network.
    Set up the customer network for which you want to configure your technical systems. For more information see: Managed Systems Preparations Guide, chapter Customer Network Preparation.

12. Prepare technical system.
    Install SAP Host Agent, create monitoring user etc.
    For information about the technical system types supported and for preparation instructions see Managed Systems Preparations Guide.

13. Edit technical system configuration.
    In the Simple System Integration application enter the parameters relevant for the automatic configuration.

14. Run automatic configuration.
    In the Simple System Integration application click Configure Automatically.

15. Review configuration logs.
    In the Simple System Integration application review the configuration logs and fix the configuration errors. For troubleshooting support see chapter on troubleshooting in Managed Systems Preparations Guide.

Integration

Simple System Integration is closely integrated with:

- Landscape Management Database (LMDB)
- Simple Diagnostic Framework / Simple Diagnostics Agent
- Monitoring and Alerting Infrastructure
- CCDB

**Authorization Schedules**

You can access Simple System Integration using one of the following authorization schedules. For information, refer to the Focused Run Security Guide:

- Display
- Execute
- Expert
- Administrator
2.6 Self-Monitoring

The end-to-end monitoring and alerting infrastructure (MAI) allows stable and reliable operation of complex heterogeneous system landscapes. To monitor the correct functioning of the landscape, a large number of metrics and alert types, as well as various views and applications, are available to you, which provide prior warning about possible problems. So Self-Monitoring keeps you informed about the trustworthiness and timeliness of the monitoring data, and - if there are any issues - how to resolve the issue.

The Self-Monitoring has different aspects:

- Monitoring of the MAI and other central functions
- This feature contains functions that display specific metrics, alerts, and logs and traces for the central infrastructure of Focused Run for SAP Solution Manager. In the overview view of Self-Monitoring, this information is grouped by the following technical components:

<table>
<thead>
<tr>
<th>Technical Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent Framework</td>
<td>The agent framework manages Simple Diagnostic Agents installed in all managed systems, centrally. In Self-Monitoring, the status regarding agent errors, configuration issues and availability checks are displayed.</td>
</tr>
<tr>
<td>CCDB Infrastructure</td>
<td>The configuration and change database (CCDB) stores the configuration data of the managed systems, allowing you to trace configuration changes. For scheduling, sending and processing these data the Collector Framework is used; in Self-Monitoring, the status of the Collector Framework is displayed.</td>
</tr>
<tr>
<td>Introscope Enterprise Manager</td>
<td>The CA Wily Introscope Enterprise Manager (EM) acts as the central repository for all Introscope performance data and metrics collected in an application environment. In Self-Monitoring, metrics for availability, health and capacity of the EM are displayed.</td>
</tr>
<tr>
<td>Monitoring and Alerting Infrastructure</td>
<td>The Self-Monitoring displays specific metrics and alerts to monitor the correct functioning of technical components belonging to the MAI. Including the Event Calculation Engine and the Unified Metric Store.</td>
</tr>
</tbody>
</table>

- Self-Monitoring of Managed Systems
  To be able to monitor managed systems, the monitoring for these systems needs to be correctly set up, the associated agents and monitoring functions need to be working correctly, and it must be possible to connect from the Focused Run system to the relevant managed system without problems. In the system view, this information is displayed, grouped by technical systems.

- Self-Monitoring features within System monitoring
  The status and values of the Self-Monitoring metrics are integrated into System Monitoring, both on system and on metric level.

Features

Generally, in Self-Monitoring the following functions are available to you:

- For each metric and alert type, you can display a description that provides information about the meaning of the metrics and, if there is an error status, about the meaning, consequences, analysis, and possible solutions of the error.
• You can display the development of performance metrics over time, in the Metric Monitor.

• Appropriate analysis and troubleshooting tools are available to you at the level of metrics, but also at the level of technical components. You can call these tools directly from the Self-Monitoring user interface. When you call these tools, additional context information is passed, so that corresponding filters are set to display only the information that is related to the affected object in the appropriate tool.

Monitoring of the MAI and other central functions by technical components

If you want to monitor the components of the MAI or other central functions of Focused Run, use the Overview of the Self-Monitoring in the tab Central Components. Here, the most important metrics are displayed, together with their status and the number of associated alerts, broken down by the technical components listed above.

Self-Monitoring of Managed Systems

If you want to display the Self-Monitoring of the managed systems, use the Managed System View. You can filter the systems displayed according to different criteria:

• Data Separation (systems belonging to a customer or a data center)
• Properties or roles of the technical system

The Managed System View checks if the following prerequisites are fulfilled by the managed systems:

• The properties of the system in the Landscape Management Database (LMDB) are automatically updated by SLD data suppliers.
• The agent and the Introscope Enterprise Manager responsible for the system are available, running without errors and the configuration settings of the agent match those stored centrally in Focused Run.
• The configuration data of the system is sent to the CCDB Infrastructure.

Self-Monitoring features within System monitoring

In System Monitoring, alerts and metrics of Self-Monitoring are displayed on system level utilizing the fact that Self-Monitoring is a monitoring category like availability, performance, configuration and exceptions. That means that next to the monitoring values of your managed systems the trustworthiness and timeliness of these values are displayed.

On metric level, you can check the data collection, which leads to Self-Monitoring information and troubleshooting tools for this metric.
2.7 Rapid Content Delivery

Rapid Content Delivery tool allows you to import the latest content updates for various functions of Focused Run Solution for SAP Solution Manager, such as, Monitoring and Alerting, and CCDB Collector Framework. Content updates are available in the form of Support Packages (content package) in SAP Support Portal. Each content package contains the latest content updates for various functions of Focused Run for SAP Solution Manager.

Prerequisites
You have authorization to access the Rapid Content Delivery tool.

Features
- You can download the content manually from the SAP Support Portal.
- It is a standard channel to import content packages.
- Content delivery is independent of support package delivery. Content can be individually shipped at any point of time.
2.8 Monitoring and Alerting Analysis Tools

The Monitoring and Alerting Infrastructure (MAI) contains a variety of different analysis tools for error handling. Using these tools, you can monitor and safeguard the proper functioning of the system monitoring and the other use cases of the MAI.

The analysis tools are closely connected with the Self-Monitoring of the MAI. The Self-Monitoring keeps you informed about the trustworthiness and timeliness of the monitoring data; if the Self-Monitoring reports an issue, you can use the analysis tools to resolve it.

⚠️ Caution

When you start the analysis tools, only a limited number of tools, which are designed for the use of customers, are displayed. You can display more tools using the expert mode, which are intended only for Digital Business Support.

Features

The Monitoring and Alerting Infrastructure tools are grouped along the following different activities:

- analysis of the monitoring data and the data provisioning
- displaying logs and traces
- administrating technical settings of the MAI
- configuration of templates, metrics, monitoring settings and managed objects
- simulation and testing

Additionally, the tools offer a launchpad for the most commonly used UIs within monitoring and related components to provide a convenient access of the affected applications during troubleshooting.

Within each activity, the tools are sorted by technical component:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alerting Directory</td>
<td>The Alerting Directory contains metrics, events and alerts which are used for one or more concrete managed objects at customer site including the corresponding information of the considered managed objects that are monitored by the MAI.</td>
</tr>
<tr>
<td>Template Repository</td>
<td>The Template Repository is the storage place and delivery infrastructure for metrics, events and alerts (MEAs) based on templates. It is the pool of all MEAs that can principally be used by the customer.</td>
</tr>
<tr>
<td>Landscape Management</td>
<td>The Landscape Management uses the Landscape Management Database (LMDB) as the central landscape information repository.</td>
</tr>
<tr>
<td>Data Provider Connector</td>
<td>The Data Provider Connector is responsible for delivering metric or event instances from managed objects to the MAI. In Focused Run for SAP Solution Manager, only push-based communication will be used for metric data transport from the managed objects to the MAI.</td>
</tr>
<tr>
<td>Tool</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Self-Monitoring</td>
<td>To monitor the functioning of the MAI, a Self-Monitoring containing a large number of metrics and alert types, as well as various views and applications, is available to you to provide prior warning about possible problems.</td>
</tr>
<tr>
<td>Unified Metric Store</td>
<td>In Focused Run, all monitoring data is stored in the Unified Metric Store in a HANA-based unified data model. Storage and aggregation of the monitoring data in BW Info Cubes is discontinued, which reduces the database footprint of the metric data dramatically.</td>
</tr>
</tbody>
</table>
3 Configuration and Security Analytics

Configuration and Security Analytics (CSA) provides an overview of the changes that have been applied to the systems configured in Focused Run for SAP Solution Manager. It takes regular snapshots of the configuration settings and store them in the configuration and change database (CCDB) in different containers called configuration stores.

Configuration stores are grouped depending on the type of configuration data. For example configuration store: ABAP_COMP_SPLEVEL contains details on Software Components currently implemented and the change history of each component.

Features described below use the information from CCDB and shows configuration stores in different applications that even make possible to validate existing configuration or settings.

Features

- Display Changes of Configuration Data: shows the recorded changes for the systems selected in scope during a specific time range.
- Search: search in CCDB for configuration data. It looks for configuration items matching the string entered in the search field.
- Store Browser: Shows the total of technical systems according to the selection scope and displays the configuration items within the configuration stores collect for a technical system. It also provides the history of changes recorded for a configuration item.
- Validate Configuration Data: helps you to determine whether the systems in your landscape are configured consistently and in accordance with your requirements. It allows you to validate configuration data of your system based on policies defined in policy management. The validation results are displayed group by system or policy check id level.
- Policy Management: allows you to create policies which contain rules to determine if a configuration item is compliant or not compliant.
- CSA Administration: allows you to review the status of the extractor framework which collects the configuration data from the managed systems.

Note

Collection of the change data starts with the date when the configuration stores are filled for the first time. Only changes of a product instance configuration made after this date can be displayed in the change analysis. Thus is not possible to report any changes that were made before the change analysis function was set up.

Therefore, the history of changes that were made during the past two years can also only display changes after the change analysis function was set up.

The configuration stores are shown in Display Changes of Configuration Data. The Configuration and Security Analytics can only report changes if there were any.
4 Advanced User Monitoring

4.1 Real User Monitoring

The Real User Monitoring provides permanent measurement of all real user requests types (Dialog, RFC, http, https and WS) within a system landscape.

User requests are collected on client side and server side. User requests on the client side are coming for example, from the SAPUI5 or the SAP GUI.

On server side requests are provided by SAP Gateway or SAP ABAP Systems and SAP J2EE. They are collected by the Real User Monitoring and transferred to the Focused Run for Solution Manager System. After that all collected data is assembled and correlated allowing you to have different features described below.

Features

- Overview
  - It provides you a status overview of your systems as well as the status of the different request types grouped by system. Overview page helps you to identify specific systems or requests types with poor performance.
  - Once a system is identified with poor performance you can drill down in the Request Overview page.
- Request Overview
  - This page helps you to identify single requests with poor performance for a specific user and to know how often a specific application or function was executed.
    - With the UI personalization you can customize your request types and filter by specific user, user type, timeframe, and request name or request type.
    - From the request overview you can drill down into the Request Flow.
    - Request Flow provides an analysis of a single request flow including all components involved in the execution. You can review the time spent by a single sub request for a component and analyze the resource consumption of each sub request.
- Request Type
  - It is a default dashboard delivered with Focused Run for SAP Solution Manager and shows you the status of all the requests types existing in your selected scope.
- Dashboard
  - You can build a customized pages for analyzing the behavior of end users by relevant requests or systems in which you are interested at. Each selection is represented in a dedicated dashboard tile.
  - Each dashboard tiles provides the following information:
    - Average response time
    - Total number of executions
    - Percentage of red rated executions.
    - Request Types
- End User
  - This page provides you an overview of the Operating Systems and Browsers used in the SAPUI5 request type.
4.2 Trace Analysis

The most common use case of the trace analysis tools is to identify user requests across SAP ABAP and SAP J2EE that have an excessive execution time.

For example, an employee complained about the high system response time while using the Bank Information feature of an Employee Self-Service scenario. Trace Analysis provides you the possibility to analyze the problem and identify the component which is responsible for poor performance.

Features

- SAP Client Plug-In: It is a client side component that allows you to record the activity of a single user or a single process in detail.
- Trace Analysis: It includes analysis features across SAP ABAP and SAP J2EE, so that a component causing a problem can be isolated and identified.
  
  To analyze a trace you check the distribution of the response time over the client, network and server. Furthermore, you can drill down the response time of each server component involved in the execution.

Note

The system which needs to be traced have to be enabled explicitly in the Focus Run for Solution Manager System.
5 Advanced System Management

5.1 System Monitoring

System Monitoring monitors the status of the systems, hosts, and databases in the Focused Run 1.0 landscape.

Prerequisites

- You have configured System & Application Monitoring using the transaction SOLMAN_SETUP.
- The Calculation Engine is working.
- All the required roles are assigned to your user.

Features

- There are three sections on the Overview tab page, as follows:
  
  **Overview:** In this section, you can view the total number of systems, hosts, or databases in the landscape.
  You can also view the status of the systems, hosts, or databases, based on their rating.
  You can use the Scope Selection option in the monitoring application to select the required technical systems.
  The various statuses are as follows:
  - Critical
  - Warning
  - Okay
  - Unknown
  
  **System List:** You can view the details of the systems in a table, as follows:

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Status</td>
<td>Overall status of the managed objects is displayed in this column. Status is Critical, Warning, Okay, Unknown, or Planned Downtime.</td>
</tr>
<tr>
<td>Availability</td>
<td>Availability category rating and icon are displayed this column. Rating is Critical, Warning, Okay, or Unknown.</td>
</tr>
<tr>
<td>Performance</td>
<td>Performance category rating and icon are displayed. Rating is Critical, Warning, Okay, or Unknown.</td>
</tr>
<tr>
<td>Configuration (for systems and database)</td>
<td>Configuration category rating and icon are displayed. Rating is Critical, Warning, Okay, or Unknown.</td>
</tr>
<tr>
<td>Exception</td>
<td>Exception category rating and icon are displayed. Rating is Critical, Warning, Okay, or Unknown.</td>
</tr>
<tr>
<td>Self-Monitoring (for systems)</td>
<td>Self-Monitoring category rating and icon are displayed. Rating is Critical, Warning, Okay, or Unknown.</td>
</tr>
<tr>
<td>Work Mode</td>
<td>The current work mode of the system is displayed.</td>
</tr>
<tr>
<td>Column Name</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>Customer</td>
<td>The e-mail address and name of the business partner associated with this function are displayed. Note that the data in this column will only be available when BO is associated with the customer</td>
</tr>
</tbody>
</table>

**Alert Ticker:** You can view the number of alerts for the systems, host, or database. Click on the alert to view its details. Note that the top five recently occurred alerts are shown in the Alert Ticker which has red or yellow rating.

- On the **System** tab you can do the following:
  - Filter the systems, hosts, or database according to search criteria, and view their details.
  - View the template names assigned to the managed systems, hosts, or databases.
  - View the IT Calendar of the managed systems, hosts, or databases.
  - View details of the managed objects, by going to the Landscape Browser.
  - View the hierarchal structure of the systems, hosts or databases.
  - Filter the metrics in the tree view, based on the rating, and view the metrics report.

- **Personalization:** You can personalize the view of System Monitoring by adding tabs. You can drag and drop the required view on the screen and a new tab gets added. You can rename, hide, copy, or delete the newly added tab.
5.2 System Analysis

The System Analysis gives you a panorama of the performance of your system landscape with different views available for your components. You can easily identify bottlenecks or look for peaks which are correlated to the typical working hours of your systems using different views with different time frame selections. For example, unless your system is not used globally, one would expect a pronounced daily pattern exhibiting peaks during the day and relatively low load at night.

Features

- **ABAP Basis**, shows you the key performance indicators of the ABAP System in graphical form. You can review the total and average response time by task type, review the number of logged-on users or review the ICM load in your system. Additionally you can look for dumps generated in your system or entries in the ABAP System Log.

- **J2EE Engine**, allows you to review the behavior of your Java Virtual Machine with the view available for Effective Old Space Usage and Effective Perm Space Usage. You can also review the number of http requests and users logged-on in your system. Optionally you can check number of application errors and response time for Java SQL statements.

- **Host**, displays the workload peaks for CPU Utilization and Page Out. You can identify whether CPU has been over utilized and look for a solution.
5.3 Service Availability Management

Service availability management reports SLA-relevant downtimes of entities (technical systems on which business-critical business transactions are performed) based on data that is adjusted by system administrators and then confirmed by IT service managers or other supervisors. This downtime data is called service outages. Service availability management matches the service outages with the agreed service times, the promised availability during service times as agreed in Service Level Agreement (SLA) contracts.

Service availability management creates service outages automatically based on unplanned downtimes reported by the SAP Solution Manager monitoring and alerting infrastructure (MAI). To adjust the measured data automatically, service availability management takes into account planned downtimes that are defined in work modes and service availability definitions. Using service availability management, you can adjust the automatically created service outages or you can create service outages manually to compensate for missing measurements.

Prerequisites

- You have set up your entities (systems) in the SAP Solution Manager Configuration in the Managed Systems Configuration.
- You have authorization for service availability management. All the required roles are assigned to your user.
- For service outages to be created automatically based on availability alerts or work modes, you need to define service availability definitions for your entities in the service availability management.

Features

- Service availability definitions
  You can create, display, and maintain service availability definitions.
  In a service availability definition, you specify the following for the entities:
    - Agreed services times
    - SLA threshold and reporting period
      The SLA threshold is the promised service availability of the entity in percentage for the reporting period.
    - Contractual maintenance patterns or dates
      Contractual maintenance patterns are regular maintenance times for your entities. The time defined in a contractual maintenance pattern or date is a planned downtime and not SLA relevant.
- Automatic service outage creation
  Service availability management automatically creates service outages for entities based on availability alerts or planned work modes if you have configured service availability definitions for the particular entities.
- Service outage maintenance
  You can modify automatically created service outages and adjust, for example, start and stop times or faulty measurements, or you can hide service outages if they are caused by false alarms.
- Manual service outage creation
  As a system administrator, you can create service outages manually if measurements are missing.
- Manual service outage confirmation
  As an IT service manager, you approve service outages that the system administrators have created or changed. You do this regularly, for example weekly or at the end of a reporting period. You can also revoke confirmed service outages and reprocess them.
- Service availability monitoring
You can display the availability of entities graphically on the Overview tab page. You can switch between a monthly or yearly display depending on your reporting period, and you can drill down to view the system availability for individual months or days.

- **Analysis**
  
  You can display a chart for analyzing the system uptime. The uptime is the time an entity is up since it has recovered from the last outage.
5.4 Work Mode Management

You use this application to plan and notify work modes for technical systems, databases, Instances during activities such as:

- Patch upgrades
- Database, hardware, or operating system maintenance
- Configuration or customizing changes
- Migration
- Different type of work modes available are as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned Downtime</td>
<td>Work mode during which the system is technically down and you do not have access. System administrators can use this work mode to perform planned administration tasks that can only be performed during downtime.</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Work mode during which the system is technically up and you have no access. System administrators can use this work mode to perform planned administration tasks that can only be performed during maintenance.</td>
</tr>
<tr>
<td>Peak Business Hours</td>
<td>Work mode during which the system is technically up and you have access. Most users are logged on to the system and load peaks are expected.</td>
</tr>
<tr>
<td>Non-Peak Business Hours</td>
<td>Work mode during which the system is technically up and you have access. Less users are logged on to the system, and load peaks are not expected.</td>
</tr>
<tr>
<td>Non-Business Hours</td>
<td>Work mode during which the system is technically up and you have access. Most users are not logged on to the system and load peaks are not expected.</td>
</tr>
</tbody>
</table>

Prerequisites

You are authorized to access the Technical Administration work center.

Features:

- Single and Recurring Work Modes can be scheduled
- Planned Downtimes can be notified to target users based on a pre-determined pattern
- Prevent creation of unnecessary alerts, notifications, or incidents during planned downtimes.
- Single point of entry to review up-to-date planning information for managed systems.
5.5 IT Calendar

You use IT Calendar to manage the workmodes for technical components such as technical systems, databases, technical scenarios, and hosts in an easy-to-use interface. You can also analyze the events for technical components for any period.

Features

- **Scope Selector**: You can use this to narrow down the list of technical components. You can search based on Customer Name, Data Center and so on. You can define your own search criteria as per your requirement.
- **Context Switching**: You can switch among technical scenarios, systems, and Instances
- **Create Event**: You can create event.
- **Download to excel**: You can download the planned calendar events to excel.
- **Date Picker**: You can choose a period or a date to view the events planned on the defined period or date.
5.6 SAP EarlyWatch Alert

SAP EarlyWatch Alert is a diagnostic service, which monitors solutions in SAP systems. Focused Run transfers the service data collected from the managed system to the SAP Support Portal, where data is analyzed and a report is created. You can access this report via your service inbox on SAP Service Marketplace.

Prerequisites
- Your managed system is connected to Focused Run.
- Your system is an ABAP-based system. Create an http(s) connection so that data can be transferred from the managed system to Focused Run.
- On the managed system, activate the SDCCN transaction. Schedule a periodic task to get session data.

Features
The following managed system data is collected weekly, and passed to SAP Solution Manager:
- General component status
- System configuration
- Hardware
- Performance development
- Average response times
- Current system load
- Critical error messages and process interruptions
- Database administration

Activities
You can access the SAP EarlyWatch Alert report via your service inbox on SAP Service Marketplace. To do this, open EWA Reports on the launchpad. You can also access the SAP Early Watch Alert report in the SAP ONE Support portal by opening Service Messages.
5.7 Maintenance Planner

SAP Solution Manager’s cloud-based Maintenance Planner is the successor of Maintenance Optimizer. Maintenance Planner is the central tool to plan updates, upgrades, and new installations in your system landscape.

Maintenance Planner enables:
- Easy and efficient planning of all changes in your SAP system landscape
- Offers integrated processes for SAP Fiori apps and SAP S/4HANA
- All critical aspects of landscape maintenance in one tool.

Maintenance Planner is already available for SAP Solution Manager 7.1 onwards and mandatory for SAP Solution Manager 7.2 as well as for planning SAP S/4HANA and SAP NetWeaver 7.5+ based systems.

Prerequisites
- You have authorization to access Maintenance Planner with your S-user.
- You have your landscape details available in the SAP Support Portal.

Features
Maintenance Planner supports you with the following:
- Plan complex landscape maintenance process of updating, upgrading, or installing new systems in a dialog-driven process.
- Plan a new SAP S/4HANA system or convert an existing SAP ERP system to SAP S/4HANA.
- Plan deployment of SAP Fiori apps through integrated maintenance process from SAP Fiori apps reference library.
- Analyze the impact on dependent systems
- Consolidate planning for complete system tracks
- Correct erroneous system information as part of maintenance activity, that is, identify and evaluate changes to the landscape.
- Streamline planning of new installations of desired target stack level.

Activities
You can access the Maintenance Planner using the link - https://apps.support.sap.com/sap/support/mp/index.html
6 Advanced Event and Alert Management

6.1 Alert Management

This application is the central access point to handle alerts for Systems, DBMS and Hosts. It allows efficient alert handling based on consolidation of single alerts to alert aggregates.

Features

- On the Overview page, you can view multiple graphical reports on the alerts that act as visual filters. The reports are displayed based on the scope selected.
- On the Alerts screen, you can do the following:
  - Perform actions like confirm, postpone, and assign processor to a single as well as multiple alerts.
  - View the alert details. Single alert details displays information like rating, metric, documentation, and action log
    - **Rating**: Displays the changes in ratings of all alert groups.
    - **Metric**: Displays the metric details, metric documentation and allows navigation troubleshooting guides.
    - **Documentation**: Displays SAP and custom description of the alerts.
    - **Action**: Displays the logs on an alert like processor change and postponement.