Focused Run
The Ultimate Solution for Monitoring, Alerting, Root Cause Analysis, and Analytics

CUSTOMER/PARTNER
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OVERVIEW FOCUSED RUN

Focused Run is a spin-off of SAP Solution Manager 7.2 and concentrates on the specific needs for high-volume monitoring, alerting, root cause analysis, and IT operations analytics use cases. It is a powerful solution for service providers, who want to host their customers in a central, performant, scalable, secure, and automated environment. It also addresses customers with advanced needs as prediction of system anomalies, regular system health checks, real user monitoring, integration & cloud monitoring, hyper case support, automated alert reactions, and configuration & security analytics.

Focused Run uses the full power of SAP HANA as a platform, including replication, partitioning, predictive analytics, and compression. It is a separate installation running on top of SAP’s proven ABAP technology powered by SAP HANA and can run side-by-side with existing tools like SAP Solution Manager or SAP Landscape Management.

Focused Run is optimized for high volume operation purposes and can be purchased at SAP as perpetual license or via subscription. More information can be found here: https://support.sap.com/en/solution-manager/focused-solutions/focused-run.html.

USE CASES FOCUSED RUN

Focused Run is an operations platform which supports the complete detect-to-correct process. It comes out-of-the-box with rich content for monitoring, alerting, root cause analysis, analytics, health checks and corrective actions. Focused Run covers on-premise as well as SaaS and/or PaaS applications. It is the perfect fit to operate today’s SAP-centric hybrid solution landscapes.

For on-premise products it allows to operate high volumes of systems efficiently with Advanced System Management and Advanced Configuration Monitoring. Advanced User Monitoring gives visibility into the user-to-machine communication covering on premise applications, as well as, PaaS-based applications. With Advanced Integration Monitoring you get insights in the machine-to-machine communication covering peer-to-peer interfaces as IDOC, as well as, message flows orchestrated by SAP Process Integration or SAP Cloud Platform Integration capabilities. Especially, the communication between on premise and cloud-based applications is in scope.
Advanced System Management

Advanced System Management enables you to operate thousands of managed systems, databases, and hosts/operating systems with one central infrastructure in a scalable, performant, secure, and efficient matter. One of the base line functionality is System Monitoring, which comes out-of-the-box with pre-configured content covering the complete SAP product portfolio. It is based on modelled and auto discovered system information and is adapted automatically in case landscape changes are happen.

Figure 2: Coverage with Focused Run

Advanced Root Cause Analysis gives very detailed visibility in On-Premise as well as PaaS applications. With Advanced Event & Alert Management you get a powerful and open infrastructure to generate sufficient events and alerts, based on monitoring data generated by the different monitoring use cases. With Advanced Dashboarding & Intelligence we enable you to visualize the data specifically to your needs and to predict critical situations as system anomalies or unexpected user behavior.

Figure 3: System Monitoring as part of Advanced System Management
With system anomaly analysis it’s possible to discover a critical situation before an actual system outage is happen. To enable monitoring for un-modelled managed objects we provide Open Component Monitoring. This tool allows you to monitor hosts, URL’s, certificates, TCP/IP ports, OS processes and/or windows services without the need of modelled information. This means in parallel to the deep detailed System Monitoring we provide you with Open Component Monitoring a generic monitoring capability with a low entry barrier.

**Figure 4:** Open Component Monitoring as part of Advanced System Management

In addition, we provide system management functionalities, such as IT Calendar, Work Mode Management, Service Availability Management, License & Maintenance Certificate Management, and Automated System Health Check. Automated System Health Check is complimentary to System Monitoring and allows to generate automatically reports describing the system status based on own-defined checks. SAP delivers content out-of-the-box for the most common technologies as SAP ABAP, SAP J2EE, SAP HANA and SAP ASE which can be adapted customer specifically.

By providing data for License & Maintenance Certificate Management, Maintenance Planner and for SAP EarlyWatch Alert, to be processed in the SAP Support Cloud, you do not need to run SAP Solution Manager in parallel for these purposes.

**Advanced User Monitoring**

Advanced User Monitoring allows you to monitor real, as well as, synthetic end-user requests across systems and technology at deepest level. Synthetic User Monitoring provides a base line monitoring regarding user experience measured based on synthetic probes from different locations. This means user scenarios are scripted and are executed on regular basis on robots which are installed in different locations. Synthetic User Monitoring is a generic monitoring capability which can be used for SAP and non-SAP web based applications.
With Real User Monitoring it is possible to measure each single request execution performance on different frontends as SAPGUI and SAPUI5 as well as on the server components as SAP GW, SAP ABAP, and SAP J2EE, etc. We enabled Real User Monitoring also for SAP Cloud Platform. For other SAP cloud products, the enabling is in preparation. Correlation cross-system and cross-technology is possible based on SAP Passport.

**Advanced Integration Monitoring**

Advanced Integration Monitoring helps you to manage complex and integrated landscapes with millions of interface calls and/or message flows. It covers the handling of single message flows processed by SAP Process Integration or SAP Cloud Platform Integration, as well as peer-to-peer interface technologies as IDOC or RFC on single execution level.
Figure 7: Integration & Cloud Monitoring as part of Advanced Integration Monitoring

Entry point in Integration & Cloud Monitoring can be single managed objects as systems or cloud services or alternatively integration scenarios. Based on the fact, that integration fragments are collected on the most detailed level, we are capable to correlate different integration artifacts to end-to-end message flows.

Figure 8: Exception Management as part of Advanced Integration Monitoring

In addition, we provide support for the handling of integration exceptions related to SAP-based cloud products, such as SAP Hybris Cloud for Customers, SAP Cloud Platform, SAP SuccessFactors, and SAP Ariba. We provide out-of-the-box visibility into SAP Cloud Platform Integration capabilities (formerly known as SAP HANA Cloud Integration).

Advanced Event & Alert Management

Advanced Event & Alert Management allows to operate efficiently thousands of systems, users, and/or integration events, including the underlying IT infrastructure events. It provides a central, dashboard-oriented and intuitive alert inbox.
Advanced Event & Alert Management is consuming events from the different monitoring use cases and normalizes the information for efficient processing by the 1\textsuperscript{st} and 2\textsuperscript{nd} level 24/7 operation organizations.

External monitoring tools, e.g. network management tools, can be easily integrated to make the associated metrics and events visible in the Focused Run based alert inbox for further automated or manual processing. Outbound integration is possible out-of-the-box via the delivered OS script & SNMP trap adapters.

All events visible in Alert Inbox are determined by configuration of the different monitoring use cases. Automatic alert reactions as collection of problem context information are defined especially for System Monitoring alerts as reaction to production down situations. Customer specific definition of alert reactions is possible.

**Advanced Configuration Monitoring**

Configuration & Security Analytics which is part of Advanced Configuration Monitoring enables central governance of software levels, and configuration settings by enforcing pre-defined configuration & security policies. It allows efficient browsing and searching within high volumes of configuration items, investigation of software and parameter changes, as well as, validation of technical and security configuration.
Configuration & Security Analytics supports configuration items at system, database, and operating system level. It is especially intended to handle millions of configuration items in a reliable and efficient manner. The enforcement of certain configuration templates or security hardening guides is reached by defining so-called policies and the comparison of AS-IS with HAS-TO-BE situation.

Advanced Root Cause Analysis

Advanced Root Cause Analysis summarizes deep dive analysis tools as Trace Analysis, System Analysis as well as File System Browser. Trace Analysis allows you to deep-dive in end-user requests based on the component-specific traces. The tool supports the complete SAP product portfolio including SAP HANA and SAP Cloud Platform.

SAP passport is used to correlate user requests coming from different components to end-to-end request flows. Based on this it is easy possible to identify in a complex scenario the critical components which cause for example a performance degradation.
Figure 12: System Analysis as part of Advanced Root Cause Analysis

System Analysis comes with out-of-the-box content for the main SAP technologies. Beside metrics which are collected permanently, it is possible to switch on the collection of detailed information temporary. Examples for this are ABAP statistical records, HANA thread samples as well as ABAP work process details. Intention is to support hyper care phases, which require monitoring and analysis information at a much more detailed level.

File System Browser is used to display log or trace files for managed systems centrally in Focused Run.

Advanced Dashboarding & Intelligence

Advanced Dashboarding & Intelligence is using SAP’s state-of-the-art predictive analytics capabilities including dashboards tailored to your needs. Analytics functionality is directly embedded into the different Focused Run applications to enable one stop user experience. The dashboards can be customized and personalized to adapt it to your needs. The associated infrastructure is shared by all Focused Run applications, so that the dashboard content can be shared and reused.

Figure 13: Self-defined System Analysis dashboards as part of Advanced Dashboarding & Intelligence
For all the different use cases we try our best to apply artificial intelligence mechanism in a meaningful way. Examples are Metric Forecasting, System Anomaly Analysis to avoid production down situations as well as dynamic threshold determination. For sure here are more to come.

**Figure 14:** System Anomaly Analysis as part of Advanced Dashboarding & Intelligence

**ARCHITECTURE FOCUSED RUN**

Focused Run comes with a completely new architecture concept. The main goal of the design is to provide a secure and highly scalable infrastructure to enable high volume monitoring and analytics. In addition, the architecture provides multi-tenancy to allow that multiple customers can share one Focused Run system in a safe manner.

**Figure 15:** Architecture and Data flow with Focused Run

Focused Run has a central configuration approach. The necessary configuration is transferred from Focused Run in the administration network to different agents within the customer network via HTTP(S) push communication. Based on the received configuration, the agents collect the necessary information from the managed systems and transfer it back via HTTP(S)-based push communication to Focused Run. The following statements illustrate the technical differences between SAP Solution Manager and Focused Run:

**Small technical footprint and reduced total cost of ownership**

- Extremely simplified architecture through removal of J2EE Stack, SAP BW, SAP CRM, DBA Cockpit, Extractor Framework, and SLD (optional)
- Streamlined communication by using HTTP(S) as the only protocol (no RFC, no native DB, no RMI)

**Highest possible security levels**

- Proven built-in security concept with HTTP(S) as the only communication protocols and push as the only communication direction
- Clear and safe separation of customer-data by multi-tenancy enablement
Improved scalability, performance, and data throughput in comparison with SAP Solution Manager

- Scalability improved by factor 20 – up more than 20,000 systems can be supported
- Performance increased by factor 15
- Data throughput increased by factor 40
- Data footprint decreased by factor 20

Maximum of automation during assignment and maintenance of managed systems

- Simple Diagnostic Agent is embedded in SAP Host Agent
- Simple System Integration through simplified UI-driven approach and completely API-driven approach
- Landscape changes trigger automatic reconfiguration

FUTURE DIRECTIONS FOCUSED RUN

In this section we will give some insights regarding the future directions of Focused Run. This doesn’t mean necessary, that everything, what is mentioned in the following section will be implemented. SAP has always the right to delay or skip certain functionality completely.

Figure 16: Current and planned coverage for Focused Run

In the figure above, you can find the super set of functionalities holistically to be considered in context of monitoring, alerting, root cause analysis and analytics. System Management, User Monitoring, Integration Monitoring, Technical Analytics as well as Event and Alert Management is available based on the current version Focused Run 1.0 feature pack 3.

Now the interesting question is, how Focused Run will evolve in future? With Focused Run 2.0 we like to focus on the following things:

Focus on Openness: We like to open the infrastructure to consume 3rd party data sources. This means we like to provide an easy-to-integrate approach especially for IT Infrastructure Management tools as Nagios or SPLUNK but also for Application Performance Management tools like Dynatrace and AppDynamics. This approach holds true for both event and/or alert to be utilized in E2E Event & Alert Management as well as raw data / metrics to be utilized in E2E Monitoring Dashboards. E2E Event & Alert Management is already prepared to consume event from other data sources. E2E Monitoring Dashboards including the associated persistence layer is in process of being prepared for this challenge.
Focus on Application and Business Process level: We don’t plan to provide own developed visibility into the IT Infrastructure level. Here we prefer to integrate existing data sources coming from open sources solutions or 3rd party. We also don’t plan to provide own developed APM technology based on byte-code-morphing technology. Here we will partner with the leaders in this sector as CA, New Relic, Dynatrace and AppDynamics. However, we will invest our resources in user and integration monitoring, especially in conjunction with correlation of single user requests or message flows to end-to-end views. In Application Management area we plan to provide step-by-step Job Management, Data Volume Management as well as Data Consistency Management. Main target here is to provide these capabilities with a minimum of setup and maintenance efforts by automation in conjunction with auto-discovery. In the business process area, we plan to provide a lightweight Business Process Monitoring. In addition, we plan to provide Business Process Improvement to analyze business processes in deep detail and derive improvement potential.

Focus on Artificial Intelligence: Based on the use cases described before we have now raw data on its finest granularity available. Why not using the value in the data based in AI mechanisms? As mentioned before, we started already to implement metric forecasting and system anomaly analysis. We plan to grow this topic aggressively using SAP’s AI infrastructure components on one hand side as well as the high volume and quality of data on the other hand side. We plan to provide automatic definition / adoption of thresholds to lower the barrier of implementing and maintaining the solution.

Focus on Cloud Enabling: With Focused Run we started already to transfer certain functionality which is provided today by SAP Solution Manager to cloud services. SAP Maintenance Planner and SAP EarlyWatch Alert are here examples. This means Focused Run still delivers the data for the cloud services but the execution is happening in the associated cloud services. Step-by-step we plan to transfer also further services as SAP GoingLive Check, SAP EarlyWatch and SAP OS/DB Migration Service to the cloud.

Focused on Cloud Products: With the current version of Focused Run we have a nearly complete coverage for all SAP on-premise products in all use cases as well as a fair coverage of SAP delivered cloud services. With Focused Run 2.0, we will especially concentrate on an increased coverage of SAP delivered cloud services. For cloud services system management plays a minor role from customer perspective. That's why we will invest in integration monitoring, user monitoring, application monitoring and business process monitoring.

In general, our development will be driven by customer requests. We are open for co-innovation with customers and partners to deliver the best as possible value based on very concrete problem situations.

POSITIONING FOCUSED RUN COMPARED TO OTHER SAP TOOLS

As pointed out before, it isn’t planned for Focused Run to provide out-of-the-box visibility in the IT infrastructure layer. Instead of, we plan to integrate 3rd party (e.g. APM or SPLUNK) or open source tools (e.g. Nagios) to act as data provider for associated metrics and events.

The approach is different for the business process layer. Here we plan to integrate out-of-the-box visibility in this layer. This means we plan to provide business process monitoring and analytics capabilities as part of Focused Run.
Figure 17: Positioning of Focused Run and other SAP tools

The comparison with other On-Premise SAP tools is conducted in two dimensions a) local vs. central (see also mass volume support) and b) scope of visibility (coverage of different layers). The following sections compare Focused Run with other on-premise SAP tools in more detail.

SAP Landscape Management & Focused Run

Focused Run and SAP Landscape Management (LaMa) complement each other very well. While Focused Run is your central monitoring, alerting, root cause analysis & analytics infrastructure (passive management) for SAP centric hybrid landscapes, LaMa is your central automation and orchestration solution for managing SAP centric hybrid landscapes (active management).

SAP LaMa helps you, simplify and standardize your SAP operations, automate advanced, time-intensive system administration tasks, centralize your landscape-wide operations via a single pane of glass and tailor it to your specific business needs. Some of the key capabilities of SAP LaMa are: end-to-end automation for SAP system clone/copy/refresh operations including post-copy automation (both ABAP and Java), automation for advanced SAP HANA operations such as system replication setup, takeover, failback, near-zero downtime maintenance and “SAP application aware” near-zero downtime tenant moves, single and mass mass-operations for SAP systems with inter-system dependency support, as well as managing SAP systems deployed in Hybrid or Private Cloud scenarios (e.g. AWS, OpenStack, Azure).

Focused Run and SAP LaMa plans the integration with each other, e.g. if a system stop shall be executed via SAP LaMa, it is checked in Focused Run whether an appropriate work mode is scheduled. If there is no work mode scheduled, the appropriate work mode scheduling can be executed in Focused Run e.g. to suppress alerts in planned down times.

Another possible scenario, is the integration of Focused Run based Simple System Integration in System Provisioning or System Manipulation processes modelled in SAP LaMa. Both infrastructures are using SAP Host Agent as access point to the managed objects.

SAP Solution Manager & Focused Run

The main difference between SAP Solution Manager and Focused Run is the simplified architecture. SAP Solution Manager was intended to satisfy the implementation and operation needs of customers. So, it is intended to be closely located to the managed objects in the customer landscape. Focused Run is designed to handle high volumes of data and managed objects in a very secure and automated manner. The configuration is to a high degree automated, so that the efforts to setup and maintain a Focused Run system and associated managed systems and cloud services is dramatically reduced.
Compared to SAP Solution Manager we need to consider the following things:

- **Advanced System Management**: We added here smaller features in IT Calendar, Work Mode Management, and Service Availability Management. System Monitoring is enhanced with predictive analytics capabilities as metric forecasting and system anomaly analysis. We added a complete new capability called Open Component Monitoring. This is intended as a low-barrier monitoring capability for all managed objects, which aren’t modelled in Focused Run. Simple checks as URL checks, TCP/IP pings or host pings can be executed, to check the availability. To serve the specific needs of system administrators we provide out-of-the-box System Health Checks for the most common SAP stacks. To simplify the application foundation, we just conduct the data collection for SAP EarlyWatch Alert and SAP Maintenance Planer in Focused Run and send the collected data to SAP Support Cloud. The actual processing of the data is conducted in SAP Support Cloud.

- **Advanced User Monitoring**: Besides use cases as Synthetic User Monitoring and Trace Analytics, which are shared between SAP Solution Manager and Focused Run, we added Real User Monitoring on top. This allows you to monitor every single click executed by the real users. The newly-built Focused Run architecture (based on the power of SAP HANA as a platform) enables such high value monitoring use cases without the need of data aggregation. Correlation based on the SAP Passport technology allows to follow request flows from end users to the different involved server components or cloud services.

- **Advanced Integration Monitoring**: A quite similar approach is chosen in the Integration Monitoring area, which takes care about monitoring of machine-to-machine communication. In contrast to SAP Solution Manager we are with Focused Run now capable to monitor every single interface call for peer-to-peer communication or every single message flow for orchestrated communication. Besides this, we consolidated the different Interface and Integration Monitoring capabilities in SAP Solution Manager as Process Integration Monitoring, Message Flow Monitoring and Interface & Connection Monitoring into one use cases in Focused Run called Advanced Integration Monitoring to achieve a unified user experience.

- **Advanced Configuration Monitoring**: Within Focused Run we also brought the Configuration Change Database and the associated application to the next level. Configuration & Security Analysis in Focused Run is completely adapted to the SAP HANA platform and allows interactive analysis of high volumes of configuration. Besides that, the user interface is completely renewed and provides advanced functionality as browsing and free search within configuration stores, analysis of configuration changes as well as configuration validation.

- **Advanced Event & Alert Management**: This part of Focused Run comes with a completely new user interface for the alert inbox. Based on alert dashboards as entry point, the end user can decide in which area to invest first. The underlying alert store is now opened also for inbound communication, meaning data provided by external monitoring solutions can be fed in Focused Run. On the outbound integration side, we provide out-of-the-box better integration with most common receivers of event and/or alert data as ticketing systems or event management systems.

- **Advanced Root Cause Analysis**: Here we deliver out-of-the-box diagnosis content for the most common SAP technologies. In addition, the end user can freely define on dashboards to slice and dice the data accordingly to the specific needs. For this purpose, we opened the metric catalog to freely select all configured metrics. This flexibility isn’t provided with SAP Solution Manager. We enabled additional data collection as ABAP Work Process Overview or HANA Thread samples which can be switched on in specific hyper care phases.

- **Advanced Dashboarding & Intelligence**: With these capabilities we bring the presentation of the data to the next level. We enabled customization and personalization. Analytics is embedded in every application to have a one stop user experience. Artificial intelligence is used, whenever it makes sense. Already mentioned metric forecasting and system anomaly analysis are only the first use cases, we enabled.
Hereby you can find a comparison between SAP Solution Manager and Focused Run:

**Figure 18:** Comparison SAP Solution Manager and Focused Run

### When to use SAP Solution Manager?
- Customers who have to operate BUILD and RUN in **one shared infrastructure** (integration first)
- Customers who have to operate a **medium size landscape** with reasonable effort
- Customers who are **satisfied with the functional scope** as today provided by SAP Solution Manager
- Customers who are **not interested to consume the latest innovations** coming from development

### When to use Focused Run?
- Customers & Partners who have to **operate large size landscapes** with advanced needs in terms of scalability, performance, security, and automation
- Customers & Partners who are interested in **advanced functionality** as high volume monitoring and AI use cases
- Customers who like to establish **different release cycles** for BUILD and RUN functionality (segregation of duties)
- Customers & Partners who are interested in **co-innovation based on SAP HANA**

#### SAP HANA Cockpit & Focused Run

SAP HANA cockpit is the successor of SAP HANA studio, and is intended to provide a platform for all active and passive management tasks associated to one or multiple SAP HANA installations.

Focused Run is not intended to provide complete Database Administration functionality. For this we have the SAP HANA Cockpit, which are completely in sync with the development of the SAP HANA platform, and provide complete coverage of all necessary administration functionality.

The target of Focused Run is to provide a central and unified Monitoring, Alerting, Root Cause Analysis and Analytics platform cross multiple stacks, and technologies based on out-of-the-box instrumentation.

Besides that, SAP HANA Cockpit accesses the managed SAP HANA platform on request via native database connection, versus Focused Runs gets the data pushed via HTTP(S) connection and store it centrally for monitoring, alerting, root cause analysis and analytics purposes. In summary, both tool approaches are co-existing without overlapping significantly.

#### SAP Technical Monitoring Cockpit & Focused Run

SAP Technical Monitoring Cockpit is part of the ABAP Stack from version 7.40 onwards and provides visibility throughout the entire ABAP stack, in fact for all databases and operating systems supported with the Application Server ABAP.

It is a local root-cause analysis tool and comes with out-of-the-box user interfaces based on pre-defined and exchangeable content. It will replace the local DBA Cockpit, while seamlessly covering the ABAP and OS layer, in addition. SAP Technical Monitoring Cockpit retrieves comprehensive and fine-granular data on request, meaning in concrete root-cause analysis scenarios. That is, the Technical Monitoring Cockpit works on ad hoc and history data that is collected by the technology layers, and it doesn’t collect and persist any monitoring data itself.

Focused Run is a central infrastructure focusing on high volume monitoring, alerting and analytics use cases, whereas the SAP Technical Monitoring Cockpit focuses on local root cause analysis. Focused Run allows root-cause analysis to a certain degree and SAP Technical Monitoring Cockpit complements this by providing root-cause analysis on deepest possible level.

As described above, the SAP HANA studio and SAP HANA cockpit comes with the HANA DB software and focuses on pure Database monitoring and administration for HANA. In case the SAP Technical Monitoring Cockpit for HANA locates an issue inside the HANA database, it allows to trigger a corrective action using the SAP HANA cockpit with one click.