Service Summary

Alerts Decisive For Red Report

Alert Overview

Note: This report can be viewed in . One of the benefits using is proactive alerts calculated in the workspace. Do not miss any important findings: subscribe to notifications with just a few clicks on . For detailed configuration options, read this blog.

How to get access to the SAP EarlyWatch Alert apps is explained in . The following link to the app always opens up the latest report for this system. Similarly, this link to the shows you the analytical dashboard for this system. Specific links to analytical detail pages in are included in the respective sections in this report.

The is your entry point for analysis if you are missing the current data in EarlyWatch Alert apps.

Based on these findings, it is recommended that you perform the following Guided Self-Services.

For more information about Guided Self-Services, see . Academy -

Check Overview

*Remark: The check overview includes checks executed with a green result, which do not appear in the report.

Note: All recommendations in this report are based on our general experience. Test them before using them in your production system. Note that EarlyWatch Alert is an automatic service.

Note: If you have any questions about the accuracy of the checks in this report or the correct configuration of the SAP Solution Manager EarlyWatch Alert service, create a customer case under component SV-SMG-SER-EWA.

Note: If you require assistance to resolve concerns about the performance of the system, or if you require a technical analysis of other aspects of your system as highlighted in this report, please contact your customer or Customer Interaction Center. To contact the Customer Interaction Center, please refer to the contact methods provided in . For details of how to set the appropriate priority level, see .

Performance Indicators for PRD

The following table shows the relevant performance indicators in various system areas.

Landscape

Products and Components in current Landscape

Product

Main Instances

Databases

Servers in current Landscape

SAP Application Servers

DB Servers

Components

Hardware Configuration

Host Overview

Service Data Quality and Service Readiness

Sending EarlyWatch Alert of PRD to SAP Backbone

All connections to SAP Support Backbone use https protocol only. For a how to, refer to .

The following table shows the latest data transmissions for system PRD:

Latest Service Data for System PRD Sent to SAP

Configuring PRD for SAP Note Assistant

Configuration and Usage of Digitally Signed SAP Notes

Service Preparation of PRD

In preparation for SAP services, ensure that connections, collectors, and service tools are up to date. These functionalities are explained in SAP Notes and .

Service Preparation Check (RTCCTOOL)

Before we can ship any services, the latest version of the SAP Service tools must be implemented in your system. Report RTCCTOOL was last run on 11.10.2025. During the check, the tool detected issues for which a RED rating was set.

Recommendation: ST-A/PI 01V_731 Support Package 3 Addon supportpackage level 3 for ST-A/PI 01V_731 for NetWeaver as of 7.31 [your current version is more than two levels lower than the latest available] From ->ST-A/PI->Support packages-> ST-A/PI 01V_731 download patches up to SAPKITABC6. Use the Maintenance optimizer to release the download. Upload from frontend to transaction SPAM, define a queue and import. SAP Note 2485075 for DVM [Serv. Exec] Table deletion from Analysis not working Please implement coding correction from note 2485075 using SNOTE.

SDCC Destination Table

The table below summarizes the destinations configured in Service Data Control Center.

Recommendation: Resolve the issue reported in the table.

Performance DB (ST03 / ST06)

Analysis of ST06 and history data indicate some problems with SAPOSCOL. Check SAPOSCOL and see SAP Note .

Hardware Utilization Data

Hardware capacity checks could not be run successfully due to missing data. See SAP Note .

Software Configuration for PRD

Your system's software versions are checked. If known issues with the software versions installed are identified, they are highlighted.

SAP Application Release - Maintenance Phases

Rating Legend

Your main product version runs under SAP mainstream maintenance until 31.12.2026.

Please refer to the for further information about the maintenance status of any additional Add-On product version on your system.

Security Risk Due to Outdated Support Packages

The chapter provides the following ratings regarding the maintenance status of implemented Support Packages:

The Support Package level of key software components on your system threatens to run out of security maintenance. For more information, see chapter .

Support Package Maintenance - ABAP

The following table shows an overview of currently installed software components.

Support Packages

Database - Maintenance Phases

* Maintenance phases and duration for the DB version are defined by the vendor. Naming of the phases and required additional support contracts differ depending on the vendor. Support can be restricted to specific patch levels by the vendor or by SAP. Check in the referenced SAP Note(s) whether your SAP system requires a specific patch release to guarantee support for your database version.

Operating System(s) - Maintenance Phases

* Maintenance phases and duration for the operating system version are defined by the vendor. Naming of the phases and required additional support contracts differ depending on the vendor. Support can be restricted to specific patch levels by the vendor or by SAP. Check in the referenced SAP Note(s) whether your SAP system requires a specific patch release to guarantee support for your operating system version.

The automatic determination of the used operating system version(s) of system PRD did not work correctly for at least one host. For more information and possible reasons, refer to the section 'Service Preparation and Data Quality of PRD'.

HANA Database Version for PRD

The following table shows your current/planned SAP HANA database version.

HANA Database Version

SAP HANA: SQLDBC Version

SAP HANA: Installed SQLDBC Version

The following table shows your currently installed SAP HANA database client component version.

SAP HANA: Installed DBSL Version

The following table shows the DBSL version currently installed.

Your installed SAP HANA DBSL meets the recommended requirement to access the SAP HANA database.

SAP Kernel Release

Your system is running an SAP kernel that is up to date. This means that you have the latest available improvements and error corrections offered by SAP to its customers.

Additional Remarks

SAP releases Support Package stacks (including SAP kernel patches) on a regular basis for most products (generally 2–4 times a year). We recommend that you base your software maintenance strategy on these stacks.

You should only consider using a more recent SAP kernel patch than that shipped with the latest Support Package Stack for your product if specific errors occur.

For more information, see SAP Service Marketplace at (SAP Support Package Stack information) and (Support Packages & patch information).

For each patch there is an SAP Note in which all known regressions for this level are listed. Find it using the keyword in the SAP Note search. For detailed information, see SAP Note - Finding information about regressions in the SAP kernel.

Missing Side Effect Solving Notes for Finance

For all implemented SAP Notes in Finance causing side effects, the solution is implemented too.

Missing Side Effect Solving Notes for Materials Management

For all implemented SAP Notes in SAP Materials Management causing side effects, the solution is implemented too.

Missing Side Effect Solving Notes for Payroll

For all implemented SAP Notes in SAP Payroll causing side effects, the solution is implemented too.

Important SAP Notes for IBM Cloud

The table below lists important SAP Notes for your current hyperscaler environment.

SAP Notes for IBM Cloud

Hardware Capacity

Note: Hardware capacity evaluation is based on hosts for which data is at least partially available.

Overview System PRD

General This analysis focuses on the workload during the peak working hours (9-11, 13) and is based on the hourly averages collected by SAPOSCOL. For information about the definition of peak working hours, see SAP Note .

CPU If the average CPU load exceeds 75%, temporary CPU bottlenecks are likely to occur. An average CPU load of more than 90% is a strong indicator of a CPU bottleneck.

Memory If your hardware cannot handle the maximum memory consumption, this causes a memory bottleneck in your SAP system that can impair performance. The paging rating depends on the ratio of paging activity to physical memory. A ratio exceeding 25% indicates high memory usage (if Java has been detected 0%) and values above 50% (Java 10%) demonstrate a main memory bottleneck.

Note: For virtualization or IaaS scenarios (for example, IBM PowerVM, VMware, Amazon AWS, ...) it is possible that the CPU rating for some hosts is YELLOW or RED, even though the utilization value is quite low. In this case, the relevant host could not use maximum usable capacity due to a resource shortage within the virtualized infrastructure (for example, IBM PowerVM: Shared Pool CPU utilization).

Enhanced Hardware Monitoring in Cloud Environments

Enhanced hardware monitoring for virtualized environments is not working for some of the current hosts:

Enhanced Monitoring Settings

Recommendation:

For full SAP support, we recommend enabling built-in monitors on your SAP system and on the underlying infrastructure to retrieve enhanced information about configuration and resource utilization.

SAP Note provides an overview of key metrics by IaaS platform that will get available once the enhanced monitoring is active.

See SAP Notes 2414820[2414820] and 2923984[2923984] for details on how to enable the enhanced hardware monitoring on IBM Cloud Infrastructure and SAP.

Business Key Figures

System errors or business exceptions can be a reason for open, overdue, or unprocessed business documents or long-lasting processes. SAP Business Process Analysis, Stabilization and Improvement offerings focus on helping you to find these documents (as it may directly or indirectly negatively impact business). This section provides an example of indicators, and its findings are a basis of further SAP

offerings. In the example below, the backlog of business documents is compared to daily or weekly throughput or set in relation to absolute threshold numbers.

It provides business information to discuss possible technical or core business improvement process potential. SAP tools and methods can help to monitor and analyze business processes in more detail. Find more information, see .

NOTE: Overdue or exceptional business documents are often caused by system errors, such as user handling issues, configuration or master data issues, or open documents on inactive organizational units or document types that can be included in the measurements. These documents are rarely processed further by the business departments and often do not have a direct impact on customer satisfaction, revenue stream, or working capital. Nevertheless, these documents can have negative impacts on other areas such as supply chain planning accuracy, performance (of other transactions, reports, or processes), and reporting quality. For more information about this section, see . See "Which optional content can be activated in SAP EarlyWatch Alert?".

SAP Business Process Analytics

With SAP Business Process Analytics in SAP Solution Manager, you can continuously analyze the above key figures and more than 750 additional out-of-the-box key figures for continuous improvement potential in your SAP business processes.

With SAP Business Process Analytics, you can perform the following functions:

(1) Internal business process benchmarking (across organizational units, document types, customers, materials, and so on) for a number of exceptional business documents and/or for the cumulated monetary value of these documents.

(2) Age analysis to measure how many open documents you have from the previous years or months.

(3) Trend analysis for these business documents over a certain time period.

(4) Create a detailed list for all of these exceptional business documents in the managed system, enabling a root cause analysis to find reasons why these documents are open, overdue, or erroneous.

SAP Business Process Analytics can help you to achieve the following main goals:

- Gain global transparency of business-relevant exceptions to control template adherence

- Improve process efficiency and reduce process costs by reducing system issues and eliminating waste (for example, user handling, configuration issues, and master data issues)

- Improve working capital (increase revenue, reduce liabilities and inventory levels)

- Ensure process compliance (support internal auditing)

- Improve supply chain planning (better planning results and fewer planning exceptions)

- Improve closing (fewer exceptions and less postprocessing during period-end closing)

SAP also provides business process improvement methodology to help you identify and analyze improvement potential within your business processes using Business Process Analytics in SAP Solution Manager and visualize it for your senior management.

For more information, navigate to the following link: .

In general, SAP Active Global Support provides several self-assessments or guided services to encourage customers to benefit from an SAP Business Process Stabilization and/or Business Process Improvement project.

Workload of System PRD

This chart displays the main task types and indicates how their workload is distributed in the system. The table below lists the detailed KPIs.

Response Time Components In Hours

Workload By Users

User activity is measured in the workload monitor. Only users of at least medium activity are counted as 'active users'.

Workload Distribution PRD

The performance of your system was analyzed with respect to the workload distribution. We did not detect any major problems that could affect the performance of your SAP system.

Workload Distribution across ABAP Application Servers

To prevent a workload imbalance on one or more servers, we have analyzed the workload statistics for each SAP instance in your SAP production system.

If your total hardware capacity is sufficient to handle your peak workload, an overload on one or more servers can increase response times for all users logged on to those servers. If the affected servers are running updates or a database instance, all users can be affected. The following diagrams show the system workload distribution across all instances. We strongly recommend that you distribute the workload equally across all application servers. The following aspects of the workload are evaluated below: - The total number of transaction steps performed on the different servers - The percentage of CPU time consumed by SAP applications running on the different servers If the workload is distributed equally, the distribution of CPU time should be proportional to the number of CPUs on the different servers.

Note that your database capacity is limited by the database server hardware available. This is important, since your database is a central resource for all system activities. In contrast, application servers are not a central resource and affect only the users on that particular server. CPU shortages can be solved by improving the workload distribution or by adding a new application server. For information about automatic load balancing, refer to SAP Note .

Workload by Application Module

The following diagrams show how each application module contributes to the total system workload. Two workload aspects are shown: - CPU time: total CPU load on all servers in the system - Database time: total database load generated by the application

All programs that are not classified in the Application Hierarchy are summarized in the "Unassigned" category. Customer programs, industry solutions, and third-party add-on developments may fall into

this category.

The Application Hierarchy can be found in the Repository Browser (transaction SE80): in the "Object Category" selection field choose "Application Hierarchy".

DB Load Profile

The following diagram shows the DB load caused by dialog, RFC, HTTP(S), and background tasks, over different time frames.

The data provided in the diagram represents the average number of database processes occupied by each task type in the database during the specified time frames.

These statistics are calculated as a weekly average, the average values over six working days with a unit of one hour. Periods between 00:00-06:00 and 21:00-24:00 contain an average value per hour, as these are not core business hours.

You can enable 24-hour monitoring by implementing SAP Note 910897. With 24-hour monitoring, the time profile returns the workload of the system or application server on an hourly basis rather than returning an average value per hour for the periods 00:00–06:00 and 21:00–24:00.

By comparing the load profiles for dialog and background activity, you can get an overview of the volume of background activity during online working hours.

Performance Overview PRD

Note: To access the response time statistics in SAP EarlyWatch Alert Workspace, click

The following table shows the average response times for various task types:

Averages of Response Time Components in ms

44% of the total response time is database time. If the dialog response time lies outside the acceptable boundaries and you are unhappy with overall system performance, investigate the reason for the high database times.

More than 200 ms of the dialog response time is caused by GUI time. High GUI time can be caused by poor network performance.

Perform a LAN Ping check via ST06 with a package size of 4096 bytes. The reference response times are:

- In a local area network (LAN: < 20 milliseconds

- In a Wide Area Network (WAN): < 50 milliseconds

- With a modern connection (for example, 56 KB): < 250 milliseconds

- There should be no loss of data package.

For further analysis, use NIPING as per SAP Note 500235 – Network Diagnosis with NIPING. If necessary, contact your network partner to improve the network throughput.

Other optimization options:

Low-Speed Connection

In WAN (wide area network) environments, switch the network communication between the GUI and the application level to Low Speed Connection.

This will reduce the volume of data transferred per dialog step (see SAP Note 164102). You can activate the low-speed connection in the SAP logon window by selecting the entry for an SAP system and selecting the "Low Speed Connection" option in the Properties Advanced menu option.

SAP Easy Access Menu

1) Restrict the number of transactions in a user role (ideally 1,000 or fewer).

2) Avoid widely used background images in SAP Easy Access menu (which should be no larger than 20 KB).

Please refer to SAP Note for details on how to analysis high GUI times on SAP systems.

Performance Evaluation

The measured times are compared against reference times to provide a rating.

- If the number of dialog steps in an hour is less than 1000, this hour is not considered.

- If the total number of transaction steps is less than 20000, the rating for the task is not performed (indicated by a gray icon in the table).

- RED if at least three time ranges are rated RED.

- YELLOW if two time ranges are rated RED or at least three time ranges are rated YELLOW.

The table below shows that no problem is expected on the application or database servers.

The ratings in the table above are determined by comparisons against the reference table below.

If the dialog response times are very poor, it will cause a RED rating for the entire check.

Transaction Profile Check

The following tables show the response times and the number of dialog steps for the transactions that cause the heaviest workload in your system.

Transactions by Total Workload

To access the transaction response time in SAP EarlyWatch Alert Workspace, click .

The following tables list the activities with the highest contribution to the total workload.

Workload by Transaction (Dialog/HTTP(S)/WS-HTTP)

2.5% of the total response time in the above table is caused by customer transactions.

Workload by Transaction (Batch)

14.2% of the total response time in the above table is caused by customer transactions.

Workload by Web Services

Transactions by DB Load

The following transaction profiles list the transactions that have the greatest share in the database load, sorted by percentage of total database access times.

Database Load by Transactions (Dialog/HTTP(S))

5.0% of the total database time in the above table is caused by customer transactions.

If average database times are outside acceptable boundaries and you are unhappy with the performance of a transaction, contact your in-house developers about possible optimization potential and open a message under component SV-PERF if required.

Database Load by Transactions (Batch)

18.4% of the total database time in the above table is caused by customer transactions.

RFC Load by Initiating Action

The load in task type RFC is shown. In the workload monitor, this information is shown as 'Load from External Systems'. The calling system can be an application server of the system itself or any external system using the RFC interface. The 'Initial Action' is the calling program initiating the RFC. The total response time for each initial action is shown as an absolute value and as a percentage compared to the total RFC load considered in this table. The average times (per dialog step) are shown in milliseconds [ms]. Calls from external systems are shown if they account for at least 8h or 5% of the total RFC load. Local calls are shown if they account for at least 24h or 20% of the total RFC load.

Load Overview

Top 20 RFC Calls From External Systems - Average Times [ms]

Top 20 RFC Calls From Local System - Average Times [ms]

SAP System Operating PRD

Availability based on Collector Protocols

A value of 100% means that the collector was available all day. "Available" in the context of this report means that at least one SAP instance was running. If the SAP collector was not running correctly, the values in the table and graphics may be incorrect.

To check these logs, call transaction ST03N (expert mode) and choose "Collector and Performance DB -> Performance Monitor Collector -> Log".

This check is based on the logs for job COLLECTOR_FOR_PERFORMANCEMONITOR that runs every hour.

The job does NOT check availability; it carries out only general system tasks such as collecting and aggregating SAP performance data for all servers/instances. The log does not contain any direct information about availability; it contains only information about the status of the hourly statistical data collection.

As of SAP Basis 6.40, system availability information is available in the CCMS (Computing Center Management System) of an SAP System, in Service Level Reporting of SAP Solution Manager.

This function is provided by the relevant Solution Manager Support Packages as an advanced development. For more information, refer to SAP Note 944496, which also lists the prerequisites that must be fulfilled before implementation can take place."

Update Errors

In a system running under normal conditions, only a small number of update errors should occur. To set the rating for this check, the number of active users is also taken into consideration. The following table contains the number of update errors detected.

We have detected 939 update errors.

Recommendation: Check the update errors periodically with the corresponding application teams according to SAP Note 1510367. This is in order to determine whether an update record can be updated again, depending on what action has already been taken by the affected users. Implementation: Problems during the processing of update requests can be checked in the syslog and the database log files; refer to the relevant SAP Notes. Note: To select the update errors in transaction SM13, enter the following values: - Client = * - User = * - From date back = one year

Table Reorganization

When analyzing your database, we detected large or rapidly growing tables or indexes. Recommendation: Implement the SAP Notes listed below to reduce the size of some of these tables or indexes. Background: For more information about SAP Data Volume Management, see .

Program Errors (ABAP Dumps)

26070 ABAP dumps have been recorded in your system in the period 04.10.2025 to 11.10.2025. ABAP dumps are generally deleted after 7 days by default. To view the ABAP dumps in your system, call transaction ST22 and choose Selection. Then select a timeframe.

It is important that you monitor ABAP dumps using transaction ST22 on a regular basis. If ABAP dumps occur, you should determine the cause as soon as possible.

Based on our analysis, we found several ABAP dumps that need your attention. Evaluate and resolve the above dumps. If you cannot find a solution, send a customer message to SAP to request support.

Critical Number Ranges

We have checked the usage of ABAP number ranges and found some that have already been used 90% or more.

The object names in column "Object" are provided with a direct link into the analysis of number ranges in the EarlyWatch Alert Workspace. There you can view the time series of the number range and a

predicted worst-case date when the number range may be exhausted, provided that enough data is already available.

This table shows our findings. Please note that the following number ranges are not considered:

- Number ranges that have never been used (where the level is equal to the "from" value)

- External number ranges

- Number ranges below a certain level

- Number ranges of the client 000 except SPO_NUM, AENDBELEG

- Rolling number ranges that have rolled successfully in the past

- After three successful EarlyWatch Alert sessions, number ranges that do not change in their level are removed from the check. These are still visible in the -> "Critical Number Ranges Card"

The column "Length" indicates the total number of numbers in the number range. The column "% Warning" is a predefined threshold for the used percentage of a given number range object. If this limit is reached, the business user receives a warning. Unlike previous versions of this check, the rating of a number range now uses this warning threshold instead of an artificially chosen fixed value. This is to be closer to real-world usage of number ranges.

The column "Weeks" may contain a figure that indicates in how many weeks a number range might fill completely if it is used in the same rate like in the last two weeks.

In contrary to the prediction of the date when a number range may fill completely that is available in the EarlyWatch Alert Workspace this prediction is not calculated by means of machine learning but by simple linear extrapolation of up to three last known values. Take them with a grain of salt.

All empty columns will be hidden to improve the readability of the table.

When there are too many number range objects to report, up to 8 of each object per client are listed above.

This table lists those superfluous number range objects. Please use the links in the table for further analysis of these number ranges.

If a number range is exhausted, then the following may happen:

Non-rolling Number Range

- The process gets no new number and receives an error message.

Rolling Number Range

- The next number drawn after the last one will again be the one defined by the “from” value. There is no warning.

- There might be old objects with keys that are now drawn again from the number range. Depending on the business process, either existing objects will be overwritten, or they cannot be saved because of conflicting unique keys. The former might happen undetected and usually this is not what you want.

Recommendation: Check the number ranges that are critical to your business and make sure that you have enough numbers available. Depending on the business process and application area, the number range can be extended:

- By adapting the interval parameters "from number", "to number", and "level"

- By providing a new interval. This might happen automatically for some applications.

In case of rolling number ranges, make sure that old objects are reorganized, deleted, or archived in time before the number range reaches its limit.

Regarding specific number ranges, further information may be found in SAP Notes or Knowledge Base articles. Use the number range object name as a search criterium.

If you think that the rating is too harsh, that is, there are plenty of numbers still available, then check the warning level of that number range object in transaction SNRO or SNUM. Enter the number range object name and choose Display. Then check the value of % Warning. For example, a value of 10.0 % means "warn me if there are only 10 % of the possible numbers left", while here in this check, the respective fill level is displayed. In this example it would be 90 %. The warning level should nevertheless be set according to business requirements.

See also and SAP Help Portal

Number Range Trace

The following table shows the findings regarding the number range trace. Please follow the recommendations below the table.

An active number range trace severely affects the performance of number assignment. It is meant as a means to track down specific issues for a short period of time.

For general information about the number range trace, please read .

Number Range Trace Information

Recommendation: Depending on the figure in the column Remark, we recommend:

(1) For this number range object, the trace is active. Please check whether this is necessary. The number range trace can cause performance degradations and thus should only be used to track down a specific issue. When this has been finished, the trace should be switched off.

(2) For this number range object, the trace is not active but there are still trace records available. See column No. of Trace Records. These should be deleted once they are not needed any more.

(3) There are trace records of a number range trace that has been deleted. These should be deleted once they are not needed any more.

The Number Range Trace is managed using program NK_SET_SYSLOG_PARMS. Trace records can be viewed and/or deleted using program NK_DISPLAY_TRACE. See also .

The configuration of number range traces and the display of trace records with NK_DISPLAY_TRACE is not cross-client. You must log on to the respective client to follow the recommendations. See the

client field in the table above.

Exhausted Number Range Buffers

We found number range buffers that are already exhausted.

Many exhausted number range buffers in the number range shadow table (NRIVSHADOW) can degrade the performance of number range assignment. This in turn directly affects the throughput of the respective business process.

Please read for criteria for deletion (reorganization) of exhausted, that is, fully used up buffers.

Exhausted Local Number Range Buffers

Recommendation: Use program NK_REORGANIZE according to to delete used buffers.

This means that ranges that have already been used up will be removed from the table NRIVSHADOW. That is where the number range level is greater than or equal to the buffer's upper limit.

Security

SAP HANA Database PRD

SAP HANA System Privilege DATA ADMIN

Users with DATA ADMIN Privilege

Users in your SAP HANA database have the DATA ADMIN system privilege. The count considers direct grants to the users as well as indirect grants using roles. Users are counted as activated if the validity time range matches the time of the evaluation and the user is not deactivated. The SYSTEM and _SYS_REPO users are not considered, because these users have the DATA ADMIN privilege by design and the privilege cannot be revoked from these users.

DATA ADMIN provides the authorization to modify and delete every object in every schema.

Recommendation: Remove the DATA ADMIN privilege from all user accounts except the SYSTEM und _SYS_REPO users.

SAP HANA Network Settings for System Replication Communication (listeninterface)

With current parameter settings, the default (public) network route is used for system replication communication or the system replication communication is not strictly restricted to the hosts of your scenario. This can be used to attack your SAP HANA system.

Recommendation: Immediate action is recommended. Implement one of the best practices outlined below: Enable TLS encryption for system replication communication to ensure that all communication is limited to hosts having the same system PKI. As of SAP HANA 1.0 SPS 10, a system PKI is automatically set up as part of the installation. It is ready for use without further configuration: 1. Set parameter enable_ssl to value 'on'. The parameter is in file global.ini, section system_replication_communication. 2. Encrypt the Internal Communication of SAP HANA by changing parameter ssl to value 'systempki'. This parameter is in file global.ini, section [communication]. Both parameters are not case sensitive and must be set on all sites of your replication scenario. After making the change, you must restart your SAP HANA system. This is the simplest approach to secure system

replication communication. It is recommended for all current SAP HANA revisions: SAP HANA 1.0 revision 122.15 (January 2018) or later and SAP HANA 2.0 revision 12.4 (February 2018) or 24 (March 2018) or 30 (April 2018) or any later revision of the respective Support Package). If your system is already configured with separate networks for public, internal, and system replication communication, you can also choose an alternative approach. With such a network topology, you can ensure that hosts listen to system replication communication only on the dedicated ports of the separate network and reject incoming requests on other interfaces: 1. Set parameter listeninterface in section system_replication_communication to '.internal'. 2. In the system_replication_hostname_resolution section of the global.ini file, configure parameters that define a correct mapping of IP address to hostname for each host of your SR scenario. Select the appropriate name / value pairs based on your documentation of your network topology. Entries for hosts of neighboring sites must be included as a minimum. Note that some SAP HANA scenarios do not support the parameter setting listeninterface = .internal. If you choose this option, refer to the on SAP Help Portal.

Activation Status and Validity of User SYSTEM

The activation status and validity dates (VALID FROM and VALID TO) of user SYSTEM have been checked in system table USERS.

Active standard users are an easy and widely used target for hacking attacks since they are available in every system. Furthermore, the user SYSTEM is like a super user with very powerful user authorizations that cannot be revoked.

Recommendation: Review the current usage of user SYSTEM and set up and test a user and role concept, so that the use of user SYSTEM becomes obsolete.

Deactivate the user account with the SQL statement: ALTER USER SYSTEM DEACTIVATE USER NOW.

To prevent misuse of user SYSTEM, activate related audit policies in your SAP HANA system as described in the SAP HANA Administration Guide.

ABAP Stack of PRD

Age of Support Packages

The following table shows the current status, the final assembly date at SAP, and the implementation date of selected key software components that are installed in the system.

SAP provides SAP Security Notes with high or very high priority for Support Packages shipped within the last 24 months. We identified key software components on your system that are about to leave this timeframe within the next 6 months. In the case of SAP Solution Manager, the software component BBPCRM is not separately checked because the update is covered via software component ST. For more information as well as exceptions, see --> “SAP Security Patch Day”.

Recommendation: Run support package updates at least once a year. In addition, evaluate SAP Security Notes once a month at the time of the monthly SAP Security Patch Day. SAP strongly recommends always performing support package updates for the complete support package stack and not just for the software components listed above. See for further information.

Default Passwords of Standard Users

Standard users have default passwords.

Recommendation: Run report RSUSR003 to check for standard users having default passwords in some clients. Ensure that user SAP* exists in all clients and has a non-default password even if profile parameter login/no_automatic_user_sapstar is set to 1. Ensure that user SAPCPIC has a non-default password in all clients. User EARLYWATCH was used in client 066 only. This client should no longer exist, and therefore, this user should not exist either in any client. SAP Note describes how to remove an obsolete client 066. Make sure that user TMSADM exists only in client 000 and that the standard password has been changed. SAP Note describes a support tool for changing the password of user TMSADM in all systems of the transport domain. For more information, see either on SAP Help Portal or in the SAP NetWeaver AS ABAP Security Guide.

Protection of Passwords in Database Connections

Database user passwords of connected systems can be found in table DBCON.

Recommendation: Execute the valid manual postprocessing step described in SAP Security Note . Note: This Note is valid for all ABAP installations that use database connections, including when the text focuses on SAP Solution Manager. The Note refers to SAP Solution Manager because typically, many DB connections are maintained. If this recommendation is displayed, there are DB connections with passwords on the analyzed system. Although transaction DBCO (which you use to maintain such DB connections) does not show the passwords, you can find the obfuscated passwords using transaction SE16 for table DBCON with the field value PASSWORD <> space.

ABAP Password Policy

If password login is allowed for specific instances only, the password policy is checked only for these instances.

Password Complexity

Parameter: login/min_password_lng

The current system settings allow a password length of fewer than 8 characters. This allows weak passwords. Attackers may successfully recover these passwords and gain unauthorized access to the system.

Recommendation: Assign a minimum value of 8 to the profile parameter login/min_password_lng.

In addition, SAP provides options to enforce complex passwords. Find the current settings of the corresponding profile parameters in the following table.

Recommendation: Enforce a minimum of 3 independent character categories using the corresponding profile parameters. For more information, see SAP Note and the section either on SAP Help Portal or in the SAP NetWeaver AS ABAP Security Guide.

RFC Gateway Security

Enabling an Initial Security Environment

Parameter: gw/acl_mode

Profile parameter gw/acl_mode is not set to 1.

Recommendation: Profile parameter gw/acl_mode should be set to 1 to activate a more secure default behavior if either of the access control lists defined by profile parameters gw/sec_info and gw/reg_info does not exist. SAP recommends setting profile parameter gw/acl_mode to 1 to establish an additional line of defense should any of the access control lists be missing. For more information, see SAP Note .

RFC Gateway Access Control Lists

Parameters: gw/sec_info gw/reg_info

reg_info

sec_info

Parameter: gw/sim_mode

At least one of the following critical conditions is true: - Profile parameters gw/reg_info is not set - File reginfo does not exist - File reginfo contains at least one trivial entry

Recommendation: The profile parameters gw/sec_info and gw/reg_info provide the file names of the corresponding access control lists. These access control lists are critical to controlling RFC access to your system, including connections to RFC servers. You should create and maintain both access control lists, which you can do using transaction SMGW. The files secinfo and reginfo, which are referenced by these profile parameters, should exist and should not contain trivial entries. The profile parameter gw/acl_mode should be set to 1 to enable secure default rules if any of these files do not exist. The profile parameter gw/sim_mode should be set to 0 to disable the simulation mode which would accept any connections. SAP recommends defining and properly maintaining these access control lists to prevent rogue servers from accessing the system. For more information, see the following SAP Notes: SAP Note - Overview note: "reg_info" and "sec_info" SAP Note - Basic settings for reg_info and sec_info For more information, see on SAP Help Portal and the on the SAP Community Network. See also the white paper on SAP Security Recommendations: Securing Remote Function Calls (RFC) available at .

Users with Critical Authorizations

For more information about the following check results, see SAP Note .

Note that 25 firefighter accounts have been identified in your system. These firefighter accounts are not considered in the subsequent checks for critical authorizations.

Recommendation: Depending on your environment, review your authorization concept and use the Profile Generator (transaction PFCG) to correct roles and authorizations. You can use the User Information System (transaction SUIM) to check the results. For each check, you can review the roles or profiles that include the authorization objects listed in the corresponding section.

Critical authorizations, which allow to do anything

Super User Accounts

Users with authorization profile SAP_ALL have full access to the system. There should be a minimum of such users. The number of users with this authorization profile is stated for each client.

Authorization profile: SAP_ALL

Users Authorized to Debug / Replace

This authorization provides access to data and functions, since any authorization check that is built in ABAP can be bypassed. In addition, you can change data during processing, which may lead to inconsistent results. The specified number of users for each client have the checked authorization.

Authorization objects: Object 1: S_DEVELOPwith ACTVT=02 (change) and OBJTYPE=DEBUG

Note: If you do not want to disable development in your system, you have to exclude the authorization for OBJTYPE=DEBUG with ACTVT=02 from roles and only allow any other object type for S_DEVELOP. This means that development and debugging with visualization is still possible. You can achieve this by adding two authorizations to the object S_DEVELOP: one with all object types except for DEBUG and all activities, and another for the object type DEBUG only and all activities except for 02.

Critical authorizations, which should not be used in production

Users Authorized to Change or Display all Tables

Unauthorized access to sensitive data is possible if too many users have this authorization. The specified number of users for each client have the checked authorization.

Authorization objects: Object 1: S_TCODE with TCD=SE16, TCD=SE16N, TCD=SE17, TCD=SM30, or TCD=SM31 Object 2: S_TABU_DIS with ACTVT = 03 or 02 and DICBERCLS = *

Critical authorizations, which should only see very limited use in production

Users Authorized to Start all Reports

This authorization allows critical functions and reports that do not contain their own authorization checks to be executed. The specified number of users for each client have the checked authorization.

AUTHORIZATION OBJECTS: Object 1: S_TCODE with TCD=SA38 Object 2: S_PROGRAM with P_ACTION=SUBMIT P_GROUP=* or Object 1: S_TCODE with TCD=SE38 Object 2: S_DEVELOP with OBJTYPE=PROG OBJNAME=* ACTVT=16

Users Authorized to Reset/Change User Passwords

The following users are allowed to change and reset the passwords of users. This is very risky because any of these users could change the password and log on themselves with another user. The only consequence is that the "real user" would no longer be able to log on because the password would have been changed. However, this normally results in the password being reset, because there is a chance that the "real user" might have forgotten the correct password.

Authorization objects: Object 1: S_TCODE with TCD=SU01 or TCD=OIBB or TCD=OOUS or TCD=OPF0 or TCD=OPJ0 or TCD=OVZ5 Object 2: S_USER_GRP with ACTVT=05

Software Change and Transport Management of PRD

SAP Netweaver Application Server ABAP of PRD

Number of Transport Requests

The following diagram contains information about the number of transport requests per day that were imported into the SAP system in the last week.

Number of Transported Objects

The following diagram contains information about the number of objects per day that was imported into the SAP system in the last week.

Emergency Changes

We analyzed the number of emergency changes in system PRD in the last week.

Transport Requests with a short Transition Time

Recommendation: Transport requests with a short transition time of less than one day have occurred in the last week. These transports may not have been tested sufficiently. Make sure that they did not cause problems in production.

Failed Changes

In this check, we analyzed the number of failed changes in system PRD during the last week.

Import Errors

Recommendation: Import errors occurred in the last week. This means that transported objects or dependent objects could not be activated correctly. Make sure that these errors have been fixed in production. Import errors should already be detected during imports into the QA environment and fixed by a correction transport. Both transports must then be imported into the production system together.

Financial Data Quality

The current Financial Data Quality chapter contains essential information about the quality and consistency of your financial data.

This chapter is structured with three subchapters: “Financial Data Integrity”, “Financial Data Management”, “Reconciliation for S/4HANA”. The first two chapters are based on “quick” checks of different financial modules. The latter chapter displays the status and results of the main reconciliation checks.

It is important to understand that, due to the technical limitation of the automated data collection, we can cover only a limited result list in your system using the “quick” consistency checks. The reconciliation checks are the main sources of data for our financial data quality analysis and should be executed. These checks ensure full transparency at the consistency level of your financial data.

Financial Data Integrity

Our “quick” checks identified no inconsistencies in the area of Financial Data Integrity that require your attention.

Financial Data Management

Our “quick” checks identified no inconsistencies in the area of Financial Data Management that require your attention.

Reconciliation for S/4HANA

This section displays data from the reconciliation checks in the area of Finance.

Reconciliation of S4 System

The data displayed in this chapter is a result of execution of the FINS_REC transaction. This transaction reconciles the General Ledger. Identified inconsistencies might have a negative impact on your daily business. Please note that, when estimating the resolution effort of the identified inconsistencies, you should refer to the number of different error types, but not the total number of errors.

Refer to SAP Note for more information about the identified error types.

In your case, this transaction had not been executed or not fully executed. Please make sure to fully scan your system for possible further inconsistencies in your financial data.

Data Volume Management (DVM)

Data relevant for Data Volume Management was collected on system PRD and stored in the SDCCN download. If you gave your consent, this data has been sent to SAP for further analysis. After the analysis has finished, you can find the analysis result in SAP Support Launchpad via the link shown in the "Link to SAP Support Launchpad" column in the table below. Note: For more information about DVM cloud-based service delivery, see .

Materials Management - Inventory Management Checks

Checks for Materials Management - Inventory Management-related inconsistencies were performed in your system. Below is the summary of the checks. For checks where your action is needed, the recommendations are provided.

MM-IM - Material Document Header Inconsistencies

8 material document header related inconsistencies were found in your system.

Recommendation: All entries in table MSEG must refer to a single entry in table MKPF. If you have entries in the MSEG table which are missing corresponding entries in the table MKPF, such entries should be fixed . These inconsistencies will also have an impact if you plan to migrate your system to S/4HANA.

Check if these entries are still needed. If yes, then correct the inconsistencies. You may choose to recover missing entries from an archive or a backup. Otherwise, the orphan entries should be deleted. To check the issue in detail, run the report 'MMIM_S4SIC_CHECKS' delivered with SAP Note - MM-IM proactive consistency check (SI check) report. SAP Note - Proactive Analysis of MM-IM consistency is a prerequisite to run this report.

For more details, refer to SAP Note - Resolve findings of core ERP MM-IM S/4HANA pre checks -> section MKPF and MSEG consistency -> topic: ALL_MKPF_EXIST.

The table below shows the first 10 entries with material document header related inconsistencies in your system.

SAP HANA Database PRD

Overview

The tables below provide an overview of your current SAP HANA database configuration.

DB Version / Start Time

Technical Instances

Hardware Settings - General Data

Hardware Settings - CPU and Memory Data

Operating System Details

HANA Feature Usage

System Replication Overview

HANA Update Information

SAP HANA Stability and Alerts

SAP HANA Alerts

SAP HANA collects system information periodically and issues alerts of different priority levels according to predefined thresholds. These alerts can be used to monitor the performance and stability of the SAP HANA database. Possible alert priorities are: 1 – Information 2 – Low 3 – Medium 4 – High 5 – Statistics Server Alert

The following "Alerts" table shows SAP HANA alerts that reached at least medium priority during the monitored timeframe. It also shows how often an alert was created and the highest priority for this particular alert.

The "Recommendations" table lists recommendations for the alerts found and refers to SAP KBA Notes if available. Further details and recommendations for SAP HANA alerts are available in the relevant sections of the report.

Alerts

Recommendations

Recommendation: Monitor SAP HANA alerts in the system closely to get an overview of the SAP HANA system status. React to warnings and problems visible in the alerts in due time. If you require support, open a message on component HAN-DB*. For details, refer to the and to the SAP Note .

SAP HANA Dumps

SAP HANA dumps indicate critical situations during SAP HANA system operation.

We observed a number of dumps in your SAP HANA system. Depending on the type of dump, different actions have to be performed: Out-of-memory dumps: There are different reasons for out-of-memory

dumps. - "OOM Dump": Insufficient memory for normal operation. - "Composite OOM Dump": Expensive SQL statements in SAP HANA consume too much memory and exceed the statement limit. - "Cleanup OOM dump": This is an automatic dump to document the memory state after cleanup of an OOM situation. - "Operating System OOM Dump": This type is raised if a certain memory request cannot be fulfilled by the operating system. The root cause has to be evaluated by analyzing the related OOM diagnosis file. Open a customer incident on component HAN-DB*, if necessary. - "Process Allocation Limit OOM Dump": This type is raised if a certain memory request cannot be fulfilled by the corresponding process (e.g. indexserver or nameserver). The root cause has to be evaluated by analyzing the related OOM diagnosis file and is mostly caused by a too low limit set with parameter -> [memorymanager] -> allocationlimit. Open a customer incident on component HAN-DB*, if necessary. All other dumps: In the event of emergency dumps or crash dumps, the call stack has to be evaluated. Open a customer incident on component HAN-DB*, if necessary.

To access the long-term history of memory consumption in SAP EarlyWatch Alert Workspace, click .

SAP HANA Service Restarts

We did not find critical issues with SAP HANA service restarts.

SAP HANA DB Availability

The SAP HANA DB availability was based on the availability of the index server as logged in the daemon trace file.

No critical problems occurred regarding the availability of SAP HANA services.

SAP HANA Database Configuration

Parameter Recommendation

Some parameters are not set as recommended, or there are parameters deviating from default values.

This table highlights the parameters that were checked with regard to their impact on system performance and stability.

Important SAP HANA Parameters

Recommendation: Set the SAP HANA parameters to the recommended value in the table.

Note: The recommendation "" is assigned if a custom parameter value is equal to the SAP HANA default and therefore not explicitly required. In that case the default should be restored. Use the SQL command "ALTER SYSTEM ALTER CONFIGURATION ('', '') UNSET ('', '')". See SAP Note for details.

Be aware that for a proper tenant DB parameter setting, the parameters configured on the system DB side must also be double-checked. Otherwise, critical parameters can be set in the system DB that appear as default values on the tenant side. Default values are only reported by the parameter check if an explicit recommendation exists, therefore, critical settings can be missed by focusing only on the tenant DB parameter check.

The table "SAP HANA Parameters deviating from default" lists parameters deviating from default. These parameters do not belong to the set of recommended parameters, they represent parameters that are not set to DEFAULT value. In the list below, there might be parameters that needed to be

changed, but also parameters that were supposed to be set back to their default values (as for special settings only in certain SAP HANA revisions) but were forgotten. The purpose of this output is only to report those parameters to bring them to your attention so you can check them.

SAP HANA Parameters deviating from default

SAP HANA Workload Management

Workload management in SAP HANA allows you to balance and manage all workload types for optimal throughput and response times. The available workload management parameters limit resource consumption (e.g. CPU, threads, memory) for certain operations. The recommended values depend on available memory resources and on the number of CPU threads of the database server (also referred to as number of logical CPUs). For general information, refer to SAP Note (FAQ: SAP HANA Workload Management).

Disk Configuration

There are no disk configuration issues. Data and log data is stored on separate physical devices.

Size and Growth

Monitoring the size and growth of the HANA database is crucial for system stability and performance. In terms of stability, the growth on disk is shown. In terms of performance, the size of row and column tables as well as the size of delta areas in column tables are analyzed.

Disk Usage

The table below shows the disk occupancy with respect to the partitions and their usage types. If the percentage of free disk space falls below 10%, an intermediate action has to be performed. Otherwise, there is a risk of standstill in the SAP HANA database.

Disk Space

The graph shows the history of disk space usage.

Database Growth

The graph shows the database size and growth based on the size of data volumes. Total Size: Amount of data allocated by SAP HANA database on data volumes. Used Size: Amount of used data by SAP HANA database on data volumes.

To access the database growth chart in SAP EarlyWatch Alert Workspace, click .

Tables and Indexes

The table below displays the number of column and row tables together with their indexes.

Tables and Indexes

For some use cases in SAP CRM / ERP / SCM on SAP HANA, it can still be beneficial to use secondary indexes. This is especially true for highly selective queries on non-primary key fields. For more information, see SAP Note 1794297 (Secondary Indexes for the Business Suite on SAP HANA). This Note has three reports (ZHDB_INDEX_ANALYZE, ZHDB_INDEX_CREATE, and

ZHDB_INDEX_CHECK) to analyze and create the necessary indexes.

Size of Database Schemas

The following table lists the size of schemas in the SAP HANA database.

Size of HANA schemas

SAP HANA Row Store

Row Store Size

The table below shows the size of the SAP HANA row store. The row store contains mainly SAP Basis and application statistics tables. The rating indicates whether the technical size limit will be reached in the near future.

The size of the row store generally has a direct impact on the start-up time of the SAP HANA database. This is relevant for system start-up and for recovery. We recommend that you keep the row store at an optimum size by performing housekeeping for large Basis tables (SAP Note 2388483) and, where feasible, moving large application tables from row store to column store.

Row Store Size

Row Store Fragmentation

The following table shows the allocated size and free page ratio (fragmentation) of the row store. The term 'fragmentation' refers to unused space in the SAP HANA row store that cannot be used for technical reasons. High fragmentation can cause performance issues and longer backup times. Row store reorganization is generally recommended if the allocated row store size is larger than 10 GB and the free page ratio is greater than 30%.

Row Store Size and Fragmentation

The row store shows high fragmentation. It should be reorganized to regain unused space and avoid performance issues.

There are two ways to implement row store reorganization.

Restart time row store reorganization Row store reorganization can be performed at restart time. Since there are no active update transactions during the restart time, this reorganization achieves the maximum compression ratio.

Online row store reorganization Row store reorganization can be performed at runtime. To minimize the interference of other transactions, the relevant tables are locked exclusively and update transactions cannot be carried out on those tables. The list of affected tables is determined on the fly depending on the memory usage. As it is executed at runtime, some uncompressed row store memory may remain.

Recommendation: See SAP Note for details and carefully follow the instructions for performing a row store reorganization.

Largest Row Store Tables

The table lists the largest tables according to total disk size. The size of the memory and the number and type of LoBs are also shown. The LOBs are marked with either "H" (Hybrid) or "M" (Memory) and the number of the existing LoB columns.

For large SAP Basis tables, remove obsolete data regularly according to SAP Note .

SAP HANA Column Store

Largest Column Tables (Size)

The table lists the largest tables according to total disk size. The size of the memory and the number and type of LoBs are also shown. The LOBs are marked with either "H" (Hybrid) or "M" (Memory) and the number of the existing LoB columns.

For large SAP Basis tables, remove obsolete data regularly according to SAP Note .

Largest Non-partitioned Column Tables (Records)

The table below shows the largest non-partitioned column tables in terms of the number of records.

Largest Non-partitioned Column Tables According To Records

At least one of the tables listed above has a very high number of records and may reach the technical limit for SAP HANA (two billion records per table) in the near future. Tables with more than 300 million records are not yet critical with regard to the technical limit but table partitioning should be considered if these tables are expected to grow rapidly in the future.

Recommendation: Consider partitioning for tables that are expected to grow rapidly in order to ensure parallelization and adequate performance. We recommend that you re-partition tables before inserting mass data or while they are still small. For more information, see SAP Note or refer to the .

Note: The link to the 2 Billion Records app is only valid if you send SAP EarlyWatch Alert data to SAP. See this for details.

Largest Column Table Partitions (Records)

The table below lists the largest column table partitions in the productive schema in terms of number of entries.

Largest Partitioned Column Tables According To Records

At least one of the table partitions listed above has a high number of records and will reach the technical limit for SAP HANA (two billion records per table or partition) in the near future.

Recommendation: Consider re-partitioning tables that are expected to grow. We recommend that you re-partition tables before inserting mass data or while they are still small. For more information, see SAP Note 1650394 or refer to the SAP HANA Administration Guide (

Note: The link to the 2 Billion Records app is only valid if you send SAP EarlyWatch Alert data to SAP. See this for details.

Native Storage Extension

The table below lists tables for which Native Storage Extension or Data Archiving is configured. It also lists on which layer (table, partition, column) the page loadable is defined. If the loadable page is enabled on column level, the corresponding column names are listed. In case a table is listed multiple times, the configuration was done on multiple layers (e.g. column and partition).

The largest tables according to the disk size of the loadable page are shown in the table below. It lists the total number of partitions, the number of partitions for NSE, the total memory size (memory size in DRAM and persistent memory), the total memory size in DRAM (heap also including the loadable size of the table), the persistent memory size, the loadable size in memory, and the loadable size on disk of the tables.

SAP HANA NSE Buffer Cache

The table below lists information regarding the SAP HANA NSE Buffer Cache.

The table below shows the page behavior of the Buffer Cache.

SAP HANA Resource Consumption

The following table shows an overview of the resource consumption of the SAP HANA instances in the monitored timeframe.

HANA Instances Overview

Some of the SAP HANA hardware resources are not sufficient for the current workload. This may lead to performance and stability issues. Details of resource consumption issues are listed in the sections below.

Memory Utilization Overview for SAP HANA Instances

The following table shows the memory usage of the SAP HANA database. The table displays weekly average values for the SAP HANA memory areas:

'Memory usage of the HANA database' corresponds to the memory used by the entire SAP HANA database (comparable to 'DB used memory' in SAP HANA studio).

'Global allocation limit' is the limit for the overall memory usage of the SAP HANA instance defined by the global_allocation_limit parameter.

'Row store size' shows the average size of row store tables in SAP HANA memory.

'Column store size' shows the average size of column store tables in SAP HANA memory.

The main SAP HANA workload is handled by the SAP HANA index server. The weekly average of the hourly maximum values of the 'Memory usage of the index server' and the 'Effective allocation limit' of the index server are listed.

More detailed information about memory shortage on an SAP HANA instance is provided in the sections below.

Avg. memory usage by SAP HANA Instances

SAP HANA Instance tsls4proddbh_PRD_00

CPU Usage of SAP HANA Server

To access the CPU usage charts in SAP EarlyWatch Alert Workspace, click .

The graphics below show the average and maximum CPU consumption per hour. The data is obtained from the statistics tables of the SAP HANA database. If the average CPU consumption exceeds 75%, a YELLOW rating is assigned. If it exceeds the threshold of 90%, a RED rating is assigned.

We did not find any critical issues in this area.

Memory Usage of SAP HANA Server

To access the memory usage chart in SAP EarlyWatch Alert Workspace, click .

The following graph shows the physical memory usage during the monitored timeframe. The average and maximum memory used by SAP HANA (and possibly other processes) is compared with the available physical memory of the SAP HANA server.

No critical issues were detected in this area.

Memory Usage of SAP HANA Instance

To access the memory usage chart in SAP EarlyWatch Alert Workspace, click .

The following graph shows the memory usage of the SAP HANA database instance during the monitored timeframe. The memory used by SAP HANA on the SAP HANA host is compared with the global allocation limit of the SAP HANA instance. If the "Used SAP HANA Instance Memory" approaches the "Global Allocation Limit", data has to be unloaded from SAP HANA memory. This may affect the overall performance and stability of the SAP HANA database. The SAP HANA memory usage should not exceed 90% of the "Global Allocation Limit".

The memory consumption of the SAP HANA instance is not critical.

Memory Allocation of Tables

This graphic shows the average memory consumption for storing row and column tables, and the memory available for temporary calculations and other operations.

From a SAP HANA sizing perspective, it is recommended that the memory usage for SAP HANA tables remains below 50% of the global allocation limit.

If the memory usage for SAP HANA tables reaches 70% of the global allocation limit, the remaining memory resources for temporary calculations may be too small.

The memory remaining for working operations may become critical.

Recommendation: Monitor the SAP HANA memory consumption closely. For more information about SAP HANA memory consumption and monitoring, see the SAP HANA Administration Guide, chapter "Monitoring SAP HANA systems" at .

Memory Consumption of Indexserver

To access the memory usage chart in SAP EarlyWatch Alert Workspace, click .

The index server is the most critical component with regard to SAP HANA memory consumption and must be monitored regularly. If the memory consumption of the index server approaches the effective allocation limit, table unloads or even out-of-memory dumps may occur. The following graph shows the memory consumption of the index server in relation to its effective allocation limit.

The memory consumption of the index server was high.

This is due either to the large amount/size of loaded tables or to query processing in the SAP HANA database consuming too much memory.

Recommendation: Analyze the reason for high memory consumption of the index server and plan measures to reduce the memory consumption of the SAP HANA database.

SAP HANA Heap Consumption

In the table below, the largest heap allocators are shown for the two periods with highest memory consumption during the previous week. The heap allocator sizes are average values per hour.

We observed a memory bottleneck in the previous week, which might be caused by temporary large heap allocators belonging to different memory areas. SAP Note describes an overview of the heap allocators, as well as possible actions.

Main Memory Areas of SAP HANA

The following graph shows the top 5 consumers of SAP HANA memory. Additional allocators are summed up in the "Others" category. Refer to SAP Note - FAQ: SAP HANA Memory for a more detailed explanation of SAP HANA memory allocation.

To access the memory usage chart in SAP EarlyWatch Alert Workspace, click .

SAP HANA Workload and Performance

SAP HANA Workload

The table shows the number of SQL requests executed per second and per node (maximum 23 nodes) in your SAP HANA system in the monitored timeframe.

SAP HANA Response Times

The following graph shows the execution times of the SAP HANA system in the monitored timeframe aggregated from all SAP HANA nodes. The displayed "Execution Time" is the hourly average execution time obtained by the historized SQL Plan Cache.

Since the "Execution Time" in the SQL Plan Cache does not contain all response time parts, we also show in the graph below the "Sum Execution Time", which is the sum of the "Execution Time" plus preparation time and table load time. For more information, see .

The following graph shows the response time distribution of the SAP HANA system. The data is collected from the history data of the SQL Plan Cache.

Explanation of the SAP HANA response time shares: - Preparation time – time share for plan preparation - Open time – time share for cursor open and select - Fetch time – time share for cursor fetch - Lock wait time - lock wait time share for the plan - Table load time – time share for loading tables during plan preparation (available as of SAP HANA rev. 50)

Delta Merges

Column Tables with Largest Delta Stores

The separation into main and delta storage allows high compression and high write performance at the same time. Write operations are performed on the delta store and changes are transferred from the delta store to the main store asynchronously during delta merge. The column store automatically performs a delta merge according to several technical limits that are defined by parameters. If applications require more direct control over the merge process, the smart merge function can be used for certain tables (for example, BW prevents delta merges during data loading for performance reasons).

Largest Column Tables in terms of Delta size

Delta Merge Statistics

The SAP HANA database column store uses efficient compression algorithms to keep relevant application data in memory. Write operations on the compressed data are costly since they require the storage structure to be reorganized and the compression to be recalculated. Therefore, write operations in the column store do not directly modify the compressed data structure in the "main storage". Instead, all changes are first written into a separate data structure called "delta storage" and synchronized with the main storage at a later point in time. This synchronization operation is called a delta merge. Performance issues may occur in SAP HANA if there is a large amount of data in the delta storage, because read times from delta storage are considerably slower than reads from main storage. In addition, the merge operation on a large data volume may cause bottleneck situations, since the data to be merged is held in memory twice during the merge operation. The following graph shows the number of successful and failed delta merges in the monitored timeframe.

The following graph shows the delta merge volume from all merge types and the average delta merge time per record in the monitored timeframe:

Note: High merge duration can be a result of a high number of records to be merged or of a high-load situation in the system.

Delta Merge Errors

The following table provides an overview of the delta merge errors that occurred in the monitored timeframe. The column "Message Type" shows the level of importance of the entry.

Delta Merge Errors

The following table lists descriptions and general recommendations for delta merge errors. Additional support for error handling can be requested via a customer message on component HAN-DB if necessary.

Errors only for Information

Recommendation for error 2482: No further action is required if this occurs occasionally. If it occurs frequently: Check M_DELTA_MERGE_STATISTICS and review the smart merge cost function with SAP experts (smart_merge_decision_func parameter).

SAP HANA I/O Performance Counters

Duration of Blocking Savepoint Phase

The majority of the savepoint is performed online without holding a lock, but the finalization of the savepoint requires a lock. This step is called the "blocking savepoint phase". The graph shows the hourly average for the duration of the "blocking savepoint phase" in the monitored timeframe.

The hourly average duration of blocking savepoint phases exceeded 10 seconds during some periods of last week. While the blocking savepoint phase is running, DML operations such as INSERT, UPDATE and DELETE, and DDL operations are blocked with a ConsistentChangeLock (see SAP Note). High duration of blocking savepoint phases can be caused by I/O performance issues. For further investigation, check SAP Note and consider opening an incident message on component HAN-DB.

Administration

Diagnosis Files

During operation, the SAP HANA database service writes messages and information to log files in its trace directory. The system administrator should check these files regularly and react to error messages accordingly. A large number of files may be generated, which can take up a lot of disk space and impair performance. The following table shows the number of files contained in the trace directory.

Diagnosis Files

We recommend that you check the content of the trace folder in the SAP HANA database installation directory on a regular basis and delete any files that are no longer required.

Backup and Recovery

Log Backup

Data Backup

Number of Log Segments

This graph shows the number of log segments residing on your log volume.

We found situations where the number of log segments increased significantly. A high number of free log segments is usually a consequence of an issue in the past (for example, failing log backup or savepoint delays). Therefore, SAP HANA created additional log segments and subsequently reuses them until they are manually reclaimed. A high number of non-reusable log segments results in increased log volume consumption on disk and, in the worst case, to disk full situations.

Recommendation: Check whether log backup operation and performance are appropriate. Execute the following command in order to reclaim free log segments: ALTER SYSTEM RECLAIM LOG

Global Consistency Check Run

The tables below show your setup of the consistency check runs. We differentiate between consistency check runs executed on all levels (CHECK_TABLE_CONSISTENCY(CHECK,'NULL','NULL')) and consistency check runs executed on table level (CHECK_TABLE_CONSISTENCY(CHECK,,)) or executed by the statistics server.

Consistency Check Runs on all Levels with Action 'CHECK'

Consistency Check Runs on Table Level with Action 'CHECK'

Table Consistency Check by Statisticsserver

No global consistency check and no consistency check scheduled by the statistics server was observed during the last 32 days, or a global consistency check on table level was running for less than 50% of the tables.

Recommendation: SAP strongly recommends performing a global consistency check once in the backup cycle (at least once per month). Further information can be found in SAP Note and in the SAP HANA Admin Guide -> Managing Tables -> Table and Catalog Consistency Check. Please note that the consistency check should be performed at times when there is a low load on your system. The consistency should be checked by calling the procedure 'CHECK_TABLE_CONSISTENCY('CHECK', NULL, NULL)'. Alternatively you can schedule the check 'CHECK_TABLE_CONSISTENCY('CHECK', ,)' with a calculated list of tables.

License Information

The following table shows information about the validity of your license. The license should be permanent and valid.

License Information

Statisticsserver and Monitoring

The table below shows KPIs relevant for monitoring stability with the embedded statistics server.

Important SAP Notes for SAP HANA

The following tables list important SAP Notes for SAP HANA.

SAP Notes for SAP HANA

SAP Notes for operating system

Problematic SQL Statements in PRD

In the following table(s), SQL statement(s) are shown for which a recommendation is provided in the next section. Details can be found in the section listed.

Missing index causes expensive SQL statement

Configuration issue causes expensive SQL statement

SAP HANA SQL Statements in PRD

This section provides an overview of the "most expensive SQL statements". When possible, a recommendation is provided.

A more detailed analysis of the SQL statements (including the possibility to choose different time windows) is supported by the "Self-Service SQL Statement Tuning" (see). For general information on dealing with expensive SQL statements in SAP HANA, see .

Data Quality

A download-based SQL statement analysis can be performed.

The following table provides information about the data in the SDCC download. For details, see .

Top Statements (Elapsed Time)

This section shows the top non-internal statements according to "Total Elapsed Time". The "Total Elapsed Time" is the sum of the "Total Execution Time" and the "Total Preparation Time" from the SQL PLAN CACHE. It has a direct impact on the response time of the application calling the statement.

See the following table for details of the selection:

The selected statements - identified by their "Statement Hash" - are listed in the following table. Further details of these statements can be found in the subsections.

SQL Statement 938619e1d06635b2b252709b7ccd58af

SELECT DISTINCT

"A" . "REF_DOC" , "A" . "REF_DOC_YEAR" , "B" . "BUDAT_MKPF"

FROM

"/OPT/VIM_1ITEM" "A" INNER JOIN /* Redirected table: MSEG */ "NSDM_V_MSEG" "B" ON "A" . "MANDT" = "B" . "MANDT" AND "A"

. "REF_DOC" = "B" . "LFBNR" AND "A" . "REF_DOC_YEAR" = "B" . "MJAHR"

WHERE

"A" . "MANDT" = ? AND "A" . "DOCID" = ? WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Compatibility View Access

SAP S/4HANA Supply Chain (MM - Inventory Management) offers a simplified data model. Several tables have become obsolete and are removed. To allow existing coding to continue to work, these tables are replaced by views with the same name, known as "Compatibility Views". As a result, read access to these objects is still possible; however, performance is affected since it is now an access to a view instead of a simple table. For some general background information, see [SAP Note 2206980].

For performance-critical coding parts, we strongly recommend the code adjustments suggested in Section 2 of the SAP Note. For non-critical parts, these adjustments are optional in the short term but recommended in the long term.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement b1ee826430a30c5a298aa2631ce552c9

SELECT

"MANDT" , "MATBF" , "WERKS" , "LGORT_SID" , "CHARG_SID" , "BUDAT" , "DISUB_OWNER_CID" , "MAT_KDAUF" , "MAT_KDPOS" , "CHARG_CID" , "LBBSA_SID" , "UNRESTRICTEDSTOCK" , "QUALITYINSSTOCK" , "RESTSTOCK" , "BLOCKSTOCK" , "BLOCKSTOCKRETURN" , "MEINS" , "STOCK_QTY" , "JARHPER" , "BWTAR" , "UPTO30DAYS" , "BT31TO90DAYS" , "BT90TO180DAYS" , "ABOVE180DAYS"

FROM

/* Entity name: YMPC_WRAPPER_MATDOC */ "YMPCWRAPMD" ("P_WERKS" => ? , "P_BUDAT" => ?) "YMPC_WRAPPER_MATDOC"

WHERE

"MANDT" = ? AND (("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID"= ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?)OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" =? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND"CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID"= ?) OR ("MATBF" = ? AND "CHARG_SID" = ?)) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the

statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement e83bedba7efbf579dcddfc21eabc1b91

SELECT

"DATA"

FROM

"REPOTEXT"

WHERE

"PROGNAME" = ? AND "R3STATE" = ? AND "LANGUAGE" = ? WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

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SQL Statement 7d6c514686df80e386680d0a8a249452

SELECT

"MANDANT" , "OBJECTCLAS" , "OBJECTID" , "CHANGENR" , "TABNAME" , "TABKEY" , "FNAME" , "CHNGIND" , "TEXT_CASE" , "UNIT_OLD" , "UNIT_NEW" , "CUKY_OLD" , "CUKY_NEW" , "VALUE_NEW" , "VALUE_OLD" , "_DATAAGING"

FROM

"CDPOS"

WHERE

"MANDANT" = ? AND "OBJECTID" IN (? , ?, ? , ?, ? , ?, ? , ? , ? , ? , ? , ? , ? , ? , ? , ? , ? , ? , ? , ? , ? , ? , ? , ? , ?) AND "TABNAME" IN (N'LIKP' , N'VBAK' , N'LIPS' , N'VBAP') AND "OBJECTCLAS" IN (N'LIEFERUNG' , N'VERKBELEG') AND "CHNGIND" = N'D' WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

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Statement History (Thread Sample 'Running')

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Origin of SQL Statement

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SQL Statement ac0fbdccfb4fc58deff85309166b95c0

SELECT

"CTYP" , "VORLNR" , "VERSION" , "MKMNR"

FROM

"QCVM"

WHERE

"MANDANT" = ? AND (("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT "MKMNR"
IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA' ,
N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND"VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ?AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP"= ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' ,N'B_LSA' , N'CR_LSA' ,
N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR"IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA' ,
N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'
, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT
"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA'

, N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT"MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA' , N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT "MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA' , N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? ANDNOT "MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA' , N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ? AND NOT "MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA' , N'NI_LSA' , N'CU_LSA')) OR ("VORLNR" = ? AND "CTYP" = ? AND "VERSION" = ?AND NOT "MKMNR" IN (N'ISI_LOGO' , N'NB_LSA' , N'MO_LSA' , N'TI_LSA' , N'V_LSA' , N'B_LSA' , N'CR_LSA' , N'NI_LSA' , N'CU_LSA')) OR (

...

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

Top ACDOCA Statements (Elapsed Time)

This section shows the top non-internal statements according to "Total Elapsed Time". The "Total Elapsed Time" is the sum of the "Total Execution Time" and the "Total Preparation Time" from the SQL PLAN CACHE. It has a direct impact on the response time of the application calling the statement.

Only statements accessing table ACDOCA are shown.

See the following table for details of the selection:

The selected statements - identified by their "Statement Hash" - are listed in the following table. Further details of these statements can be found in the subsections.

SQL Statement d0ada142d46046fe6eb866bc45bf8a3f

SELECT

"LFGJA" , "LFMON" , "VERPR" , "MATNR" , "BWTAR"

FROM

/* Redirected table: MBEWH */ "MBVMBEWH" "MBEWH"

WHERE

"MANDT" = ? AND (("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR"= ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND"BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" =?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ?AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR"= ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" =? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND

"BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND"BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?)) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 2d891796478663aecce2b831bcbb9b21

SELECT

COUNT(*)

FROM

"FAAV_LINEITEMS"

WHERE

"MANDT" = ? AND "AWTYP" = ? AND "AWREF" = ? AND "AWORG" = ? AND "AWSYS" = ? AND "ANLN1" <> N" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 1cb2dc345d6d694335f129c231f1e82e

SELECT DISTINCT

"MANDT" , "KOKRS" , "BELNR" , "BUZEI" , "PERIO" , "WTGBTR" , "WOGBTR" , "WKGBTR" , "WKFBTR" , "PAGBTR" , "PAFBTR" , "MEGBTR" , "MEFBTR" , "MBGBTR" , "MBFBTR" , "LEDNR" , "OBJNR" , "GJAHR" , "WRTTP" , "VERSN" , "KSTAR" , "HRKFT" , "VRGNG" , "PAROB" , "PAROB1" , "USPOB" , "VBUND" , "PARGB" , "BEKNZ" , "TWAER" , "OWAER" , "MEINH" , "MEINB" , "MVFLG" , "SGTXT", "REFBZ" , "ZLENR" , "BW_REFBZ" , "GKONT" , "GKOAR" , "WERKS" , "MATNR" , "RBEST" , "EBELN" , "EBELP" , "ZEKKN" , "ERLKZ" , "PERNR" , "BTRKL" , "OBJNR_N1" , "OBJNR_N2" , "OBJNR_N3" , "PAOBJNR" , "BELTP" , "BUKRS" , "GSBER" , "FKBER" , "SCOPE" , "LOGSYSO" , "PKSTAR" , "PBUKRS" , "PFKBER" , "PSCOPE" , "LOGSYSP" , "DABRZ" , "BWSTRAT" , "OBJNR_HK" , "TIMESTMP", "QMNUM" , "GEBER" , "PGEBER" , "GRANT_NBR" , "PGRANT_NBR"

, "REFBZ_FI" , "SEGMENT" , "PSEGMENT" , "POSNR" , "PRCTR" ,"PPRCT" , "BUDGET_PD" , "PBUDGET_PD" , "PRODPER" , "AWTYP" , "AWKEY" , "AWSYS" , "KWAER" , "ACCAS" , "ACCASTY" , "KOSTL" , "LSTAR" , "AUFNR" , "AUTYP" , "PSPNR" , "PSPID" , "VBELN" , "VBPOSNR" , "CE4KEY" , "ERKRS" , "PACCAS" , "PACCASTY" ,"PKOSTL" , "PLSTAR" , "PAUFNR" , "PAUTYP" , "PPSPNR" , "PPSPID" , "PVBELN" , "PVBPOSNR" , "PCE4KEY" , "QUANT1" , "QUANT2" , "QUANT3" , "QUNIT1" , "QUNIT2" , "QUNIT3"

FROM

/* Redirected table: COEP */ "V_COEP" "COEP"

WHERE

"MANDT" = ? AND "KOKRS" = ? AND "BELNR" IN (? , ?) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 9c45856babfcb16e26d2fe198664c22f

SELECT

"MANDT" , "MATNR" , "BWKEY" , "BWTAR" , "LVORM" , "LBKUM" , "SALK3" , "VPRSV" , "VERPR" , "STPRS" , "PEINH" , "BKLAS" ,"SALKV" , "VMKUM" , "VMSAL" , "VMVPR" , "VMVER" , "VMSTP" , "VMPEI" , "VMBKL" , "VMSAV" , "VJKUM" , "VJSAL" , "VJVPR" ,"VJVER" , "VJSTP" , "VJPEI" , "VJBKL" , "VJSAV" , "LFGJA" , "LFMON" , "BWTTY" , "STPRV" , "LAEPR" , "ZKPRS" , "ZKDAT" ,"TIMESTAMP" , "BWPRS" , "BWPRH" , "VJBWS" , "VJBWH" , "VVJSL" , "VVJLB" , "VVMLB" ,

"VVSAL" , "ZPLPR" , "ZPLP1" , "ZPLP2" , "ZPLP3" , "ZPLD1" , "ZPLD2" , "ZPLD3" , "PPERZ" , "PPERL" , "PPERV" , "KALKZ" , "KALKL" , "KALKV" , "KALSC" , "XLIFO" , "MYPOL" , "BWPH1" , "BWPS1" , "ABWKZ" , "PSTAT" , "KALN1" , "KALNR" , "BWVA1" , "BWVA2" , "BWVA3" , "VERS1" , "VERS2" , "VERS3" , "HRKFT" , "KOSGR" , "PPRDZ" , "PPRDL" , "PPRDV" , "PDATZ" , "PDATL" , "PDATV" , "EKALR" , "VPLPR" , "MLMAA" , "MLAST" , "LPLPR" , "VKSAL" , "HKMAT" , "SPERW" , "KZIWL" , "WLINL" , "ABCIW" , "BWSPA" , "LPLPX" , "VPLPX" , "FPLPX" , "LBWST" , "VBWST" , "FBWST" , "EKLAS" , "QKLAS" , "MTUSE" , "MTORG" , "OWNPR" , "XBEWM" , "BWPEI" , "MBRUE" , "OKLAS" , "DUMMY_VAL_INCL_EEW_PS" , "OIPPINV"

FROM

/* Redirected table: MBEW */ "MBVMBEW" "MBEW"

WHERE

"MANDT" = ? AND "MATNR" = ? AND "BWKEY" = ? AND "BWTAR" = N" AND "STPRS" > CAST(0 AS DECIMAL(11,2)) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 69346611f70f086df2afb2a455766503

SELECT

"LEDNR" , "OBJNR" , "GJAHR" , "VERSN" , "WRTTP" , "KSTAR" , "HRKFT" , "VRGNG" , "PAROB" , "USPOB" , "VBUND" , "PARGB" ,"BEKNZ" , "TWAER" , "MEINH" , "BEMOT" , "BELTP" , "WTGBTR" , "WTGPER" , "WOGBTR" , "WOGPER" , "WKGBTR" , "WKGPER" , "WKFBTR" , "WKFPER" , "PAGBTR" , "PAGPER" , "PAFBTR" , "PAFPER" , "MEGBTR" , "MEGPER" , "MEFBTR" , "MEFPER" , "MUVBTR" , "MUVPER"

FROM

/* Entity name: FCO_ABR_BEL_04 */ "FCOV_ABR_BEL04" ("AKPERIO" => ? , "AKGJAHR" => ?) "FCO_ABR_BEL_04"

WHERE

"MANDT" = ? AND "OBJNR" IN (? , ?) AND "GJAHR" = ? AND "VERSN" IN (? , ?) AND "WRTTP" = N'04' AND "BEKNZ" <> N'A' WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

Top MATDOC Statements (Elapsed Time)

This section shows the top non-internal statements according to "Total Elapsed Time". The "Total Elapsed Time" is the sum of the "Total Execution Time" and the "Total Preparation Time" from the SQL PLAN CACHE. It has a direct impact on the response time of the application calling the statement.

Only statements accessing table MATDOC are shown.

See the following table for details of the selection:

The selected statements - identified by their "Statement Hash" - are listed in the following table. Further details of these statements can be found in the subsections.

SQL Statement 938619e1d06635b2b252709b7ccd58af

SELECT DISTINCT

"A" . "REF_DOC" , "A" . "REF_DOC_YEAR" , "B" . "BUDAT_MKPF"

FROM

"/OPT/VIM_1ITEM" "A" INNER JOIN /* Redirected table: MSEG */ "NSDM_V_MSEG" "B" ON "A" . "MANDT" = "B" . "MANDT" AND "A"

. "REF_DOC" = "B" . "LFBNR" AND "A" . "REF_DOC_YEAR" = "B" . "MJAHR"

WHERE

"A" . "MANDT" = ? AND "A" . "DOCID" = ? WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Compatibility View Access

SAP S/4HANA Supply Chain (MM - Inventory Management) offers a simplified data model. Several tables have become obsolete and are removed. To allow existing coding to continue to work, these tables are replaced by views with the same name, known as "Compatibility Views". As a result, read access to these objects is still possible; however, performance is affected since it is now an access to a view instead of a simple table. For some general background information, see [SAP Note 2206980].

For performance-critical coding parts, we strongly recommend the code adjustments suggested in Section 2 of the SAP Note. For non-critical parts, these adjustments are optional in the short term but

recommended in the long term.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement b1ee826430a30c5a298aa2631ce552c9

SELECT

"MANDT" , "MATBF" , "WERKS" , "LGORT_SID" , "CHARG_SID" , "BUDAT" , "DISUB_OWNER_CID" , "MAT_KDAUF" , "MAT_KDPOS" , "CHARG_CID" , "LBBSA_SID" , "UNRESTRICTEDSTOCK" , "QUALITYINSSTOCK" , "RESTSTOCK" , "BLOCKSTOCK" , "BLOCKSTOCKRETURN" , "MEINS" , "STOCK_QTY" , "JARHPER" , "BWTAR" , "UPTO30DAYS" , "BT31TO90DAYS" , "BT90TO180DAYS" , "ABOVE180DAYS"

FROM

/* Entity name: YMPC_WRAPPER_MATDOC */ "YMPCWRAPMD" ("P_WERKS" => ? , "P_BUDAT" => ?) "YMPC_WRAPPER_MATDOC"

WHERE

"MANDT" = ? AND (("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID"= ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?)OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" =? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND"CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID"= ?) OR ("MATBF" = ? AND "CHARG_SID" = ?)) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

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SQL Statement ca3a58d95faa0511223f7e57c57e3285

SELECT

"MANDT" , "MATBF" , "WERKS" , "LGORT_SID" , "CHARG_SID" , "BUDAT" , "DISUB_OWNER_CID" , "MAT_KDAUF" , "MAT_KDPOS" , "CHARG_CID" , "LBBSA_SID" , "UNRESTRICTEDSTOCK" , "QUALITYINSSTOCK" , "RESTSTOCK" , "BLOCKSTOCK" , "BLOCKSTOCKRETURN" , "MEINS" , "STOCK_QTY" , "JARHPER" , "BWTAR" , "UPTO30DAYS" , "BT31TO90DAYS" , "BT90TO180DAYS" , "ABOVE180DAYS"

FROM

/* Entity name: YMPC_WRAPPER_MATDOC_TSM */ "YMPCWRAPMDB" ("P_WERKS" => ? , "P_BUDAT" => ?) "YMPC_WRAPPER_MATDOC_TSM"

WHERE

"MANDT" = ? AND (("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID"= ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND

"CHARG_SID" = ?)OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" =? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND"CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID" = ?) OR ("MATBF" = ? AND "CHARG_SID"= ?) OR ("MATBF" = ? AND "CHARG_SID" = ?)) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

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Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement a3591253752496fbb5b23fd934e0a799

SELECT

"MATNR"

FROM

/* Redirected table: MARD */ "NSDM_V_MARD" "MARD"

WHERE

"MANDT" = ? AND "MATNR" = ? AND "WERKS" = ? AND "LGORT" = ? AND "LABST" >= ? WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 8081d474ada325a2ff0b41aacc964b66

SELECT

"WERKS" , "MATNR" , "CHARG" , "BWART" , "MBLNR" , "BUDAT_MKPF"

FROM

/* Redirected table: MSEG */ "NSDM_V_MSEG" "MSEG"

WHERE

"MANDT" = ? AND "CHARG" = ? AND "BWART" IN (N'101' , N'531' , N'561') AND "BUDAT_MKPF" >= ? WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

Statements on Top Scanned Table

This section shows the top non-internal statements according to "Total Elapsed Time". The "Total Elapsed Time" is the sum of the "Total Execution Time" and the "Total Preparation Time" from the SQL PLAN CACHE. It has a direct impact on the response time of the application calling the statement.

Only SQL Statement accessing the "top scanned table" are shown. The "top scanned table" is the table that contains the column with the highest number of "SCANNED_RECORDS" in M_CS_ALL_COLUMN_STATISTICS (see the following table). IN many cases, creating an index on that column might improve the accesses.

See the following table for details of the selection:

The selected statements - identified by their "Statement Hash" - are listed in the following table. Further details of these statements can be found in the subsections.

SQL Statement ada23372ea59c0abd82cc2ffe5bbd714

SELECT

"VBELV" , "POSNV"

FROM

"VBFA"

WHERE

"MANDT" = ? AND "VBELN" = ? AND "POSNN" = ? AND "VBTYP_N" = N'C' WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Explain Plan

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Thread Distribution

The following table shows the "thread distribution" in terms of "thread detail" and for all thread samples.

Note: Table and column scan-related thread methods contribute significantly to the load caused by this SQL statement. It might be possible to accelerate the table scan (and by doing so, the execution time of this statement) either by changing the application in order to use existing indexes of this table or by changing the current index design (see).

Recommendation: Consider creating a single column index for a column in the where clause not yet supported by an index. If more than one column meets this condition, choose the most selective field. In many cases, this will be the field with the highest value for SCANNED_RECORD_COUNT (obtained from M_CS_ALL_COLUMN_STATISTICS), in particular when specified with "=".

See the following table with the fields specified with the where clause not yet supported by a single column index.

Statement History (Elapsed Time)

The following graph shows the number of executions and the average "Elapsed Time" of the statement within the considered time interval as obtained from the monitoring view HOST_SQL_PLAN_CACHE. Note that the absence of information at a given point in time does not necessarily mean that the statement was not executed, but only that no data was found in this monitoring view.

In the graph above, significant fluctuations in the average elapsed time can be observed. Besides reasons within the application, there might also be technical reasons for these fluctuations, for example, temporary CPU or memory bottlenecks.

Statement History (All Thread Samples)

The following graph shows the number of threads, both for state "Running" and for all other thread states. Threads in state "Running" are responsible for the CPU consumption due to the statements. Non-running threads could be "idle", but might also indicate network or I/O issues or locking situations.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement c68c04a41b33a9f31691287ed2b77388

SELECT

"VBELV" , "POSNV"

FROM

"VBFA"

WHERE

"MANDT" = ? AND "VBELN" = ? AND "POSNN" = ? AND "VBTYP_N" = N'C'

ORDER BY

"VBFA" . "MANDT" , "VBFA" . "RUUID" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Explain Plan

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Thread Distribution

The following table shows the "thread distribution" in terms of "thread detail" and for all thread samples.

Note: Table and column scan-related thread methods contribute significantly to the load caused by this SQL statement. It might be possible to accelerate the table scan (and by doing so, the execution time of this statement) either by changing the application in order to use existing indexes of this table or by changing the current index design (see).

Recommendation: Consider creating a single column index for a column in the where clause not yet supported by an index. If more than one column meets this condition, choose the most selective field. In many cases, this will be the field with the highest value for SCANNED_RECORD_COUNT (obtained from M_CS_ALL_COLUMN_STATISTICS), in particular when specified with "=".

See the following table with the fields specified with the where clause not yet supported by a single column index.

Statement History (Elapsed Time)

The following graph shows the number of executions and the average "Elapsed Time" of the statement within the considered time interval as obtained from the monitoring view HOST_SQL_PLAN_CACHE. Note that the absence of information at a given point in time does not necessarily mean that the statement was not executed, but only that no data was found in this monitoring view.

In the graph above, significant fluctuations in the average elapsed time can be observed. Besides reasons within the application, there might also be technical reasons for these fluctuations, for example, temporary CPU or memory bottlenecks.

Statement History (All Thread Samples)

The following graph shows the number of threads, both for state "Running" and for all other thread states. Threads in state "Running" are responsible for the CPU consumption due to the statements. Non-running threads could be "idle", but might also indicate network or I/O issues or locking situations.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 26c09a7ce6c5ef9e6cad9845f229670b

SELECT

"VBELV" , "POSNV" , "VBELN" , "POSNN"

FROM

"VBFA"

WHERE

"MANDT" = ? AND (("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND"VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN"= ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" =? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ?AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?)OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND"VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?) OR ("VBELV" = ? AND "VBELN" = ? AND "POSNN" = ?)) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Explain Plan

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Thread Distribution

The following table shows the "thread distribution" in terms of "thread detail" and for all thread samples.

Note: Table and column scan-related thread methods contribute significantly to the load caused by this SQL statement. It might be possible to accelerate the table scan (and by doing so, the execution time of this statement) either by changing the application in order to use existing indexes of this table or by changing the current index design (see).

Recommendation: Consider creating a single column index for a column in the where clause not yet supported by an index. If more than one column meets this condition, choose the most selective field. In many cases, this will be the field with the highest value for SCANNED_RECORD_COUNT (obtained from M_CS_ALL_COLUMN_STATISTICS), in particular when specified with "=".

See the following table with the fields specified with the where clause not yet supported by a single column index.

Statement History (Elapsed Time)

The following graph shows the number of executions and the average "Elapsed Time" of the statement within the considered time interval as obtained from the monitoring view HOST_SQL_PLAN_CACHE. Note that the absence of information at a given point in time does not necessarily mean that the statement was not executed, but only that no data was found in this monitoring view.

Statement History (All Thread Samples)

The following graph shows the number of threads, both for state "Running" and for all other thread states. Threads in state "Running" are responsible for the CPU consumption due to the statements. Non-running threads could be "idle", but might also indicate network or I/O issues or locking situations.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 3b29e9d402ccfdf9219483fdd8f7d91e

SELECT

COUNT(*)

FROM

"VBFA"

WHERE

"MANDT" = ? AND "VBELV" = ? AND "POSNV" = ? AND "VBTYP_V" = N'J' AND ("VBTYP_N" = N'i' OR "VBTYP_N" = N'R') AND "BWART" = N'101' WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 6979b61a58e83eac89235d26ead77532

SELECT

COUNT(*)

FROM

"VBFA"

WHERE

"MANDT" = ? AND "VBELV" = ? AND "POSNV" = ? AND "VBTYP_V" = N'J' AND ("VBTYP_N" = N'i' OR "VBTYP_N" = N'R') AND "BWART" = N'102' WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

Top Statements (Total Memory)

This section shows the top statements according to memory consumption as obtained from the SQL PLAN CACHE. It considers the product of the number of executions and the average memory consumption per execution.

See the following table for details of the selection:

The selected statements - identified by their "Statement Hash" - are listed in the following table. Further details of these statements can be found in the subsections.

SQL Statement d6fd6678833f9a2e25e7b53239c50e9a

call _SYS_STATISTICS.STATISTICS_SCHEDULABLEWRAPPER('Timer', ?, ?, ?, ?)

Statement Impact

Known Issue

Information about this statement (as identified by its STATEMENT_HASH) can be found in the following SAP Note:

Recommendation: Check the mentioned SAP Note(s) for the recommendation concerning the statement and apply the recommendation if applicable.

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Origin of SQL Statement

Internal SQL Statement

This SQL statement was executed from an internal database connection.

SQL Statement 54a9566c2195e1ab2540c7f5d0ac6ff4

SELECT

/* Buffer Loading */ "MANDT" , "KAPPL" , "KSCHL" , "VKORG" , "KUNAG" , "KUNWE" , "WERKS" , "ZZTDCNO" , "KFRST" , "DATBI" , "DATAB" , "KBSTAT" , "KNUMH"

FROM

"A639"

WHERE

"MANDT" = ?

ORDER BY

"A639" . "MANDT" , "A639" . "KAPPL" , "A639" . "KSCHL" , "A639" . "VKORG" , "A639" . "KUNAG" , "A639" . "KUNWE" , "A639" . "WERKS" , "A639" . "ZZTDCNO" , "A639" . "KFRST" , "A639" . "DATBI" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Explain Plan

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Thread Distribution

The following table(s) shows both (if available) the "thread distribution" in terms of "thread state" and for thread samples in state "Running" (that is consuming CPU resources) the distribution of thread type and method. The information is obtained from the view HOST_SERVICE_THREAD_SAMPLES in the time interval analyzed. By this, some insight is given to the internal activities when the statement is processed, helping to understand which activities are responsible for the resource and/or time consumption.

For more information concerning threads and thread samples, see also .

The following table shows the "thread distribution" in terms of "thread detail" and for all thread samples.

Statement History (Elapsed Time)

The following graph shows the number of executions and the average "Elapsed Time" of the statement within the considered time interval as obtained from the monitoring view HOST_SQL_PLAN_CACHE. Note that the absence of information at a given point in time does not necessarily mean that the statement was not executed, but only that no data was found in this monitoring view.

Statement History (All Thread Samples)

The following graph shows the number of threads, both for state "Running" and for all other thread states. Threads in state "Running" are responsible for the CPU consumption due to the statements. Non-running threads could be "idle", but might also indicate network or I/O issues or locking situations.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Statement used for Buffer Loading

The comment /* Buffer Loading */ in the statement text shows that this SQL statement was issued to copy information from the table listed above to the table buffer. A table should be loaded only rarely and the related SQL statement should not play an important role in a productive system. This statement might be executed frequently if the table is either invalidated very often or the table is displaced from the table buffer because the configuration of the table buffer is too small.

Recommendation: In order to check whether the buffering settings for this table are adequate, check the table statistics of this table in transaction ST10 (see and). In order to check the setting for the table buffer, check the buffer statistics in ST02 for the different ABAP instances (see).

If the buffer settings are not adequate, adjust the buffer settings, or un-buffer the table. If the configuration of the table buffer is too small and sufficient physical memory is available on the host, increase the size of the table buffer.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 938619e1d06635b2b252709b7ccd58af

SELECT DISTINCT

"A" . "REF_DOC" , "A" . "REF_DOC_YEAR" , "B" . "BUDAT_MKPF"

FROM

"/OPT/VIM_1ITEM" "A" INNER JOIN /* Redirected table: MSEG */ "NSDM_V_MSEG" "B" ON "A" . "MANDT" = "B" . "MANDT" AND "A"

. "REF_DOC" = "B" . "LFBNR" AND "A" . "REF_DOC_YEAR" = "B" . "MJAHR"

WHERE

"A" . "MANDT" = ? AND "A" . "DOCID" = ? WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Compatibility View Access

SAP S/4HANA Supply Chain (MM - Inventory Management) offers a simplified data model. Several tables have become obsolete and are removed. To allow existing coding to continue to work, these tables are replaced by views with the same name, known as "Compatibility Views". As a result, read access to these objects is still possible; however, performance is affected since it is now an access to a view instead of a simple table. For some general background information, see [SAP Note 2206980].

For performance-critical coding parts, we strongly recommend the code adjustments suggested in Section 2 of the SAP Note. For non-critical parts, these adjustments are optional in the short term but recommended in the long term.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement d0ada142d46046fe6eb866bc45bf8a3f

SELECT

"LFGJA" , "LFMON" , "VERPR" , "MATNR" , "BWTAR"

FROM

/* Redirected table: MBEWH */ "MBVMBEWH" "MBEWH"

WHERE

"MANDT" = ? AND (("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR"= ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ?

AND"BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" =?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ?AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR"= ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" =? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND"BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?) OR ("MATNR" = ? AND "LFMON" = ? AND "LFGJA" = ? AND "BWTAR" = ? AND "BWKEY" = ?)) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 77658c84db4c1afd41fa26aff7df5464

SELECT

/* Buffer Loading */ "MANDT" , "KAPPL" , "KSCHL" , "WERKS" , "MATNR" , "KUNNR" , "DATBI" , "DATAB" , "KNUMH"

FROM

"A915"

WHERE

"MANDT" = ?

ORDER BY

"A915" . "MANDT" , "A915" . "KAPPL" , "A915" . "KSCHL" , "A915" . "WERKS" , "A915" . "MATNR" , "A915" . "KUNNR" , "A915" . "DATBI" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Explain Plan

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Thread Distribution

The following table(s) shows both (if available) the "thread distribution" in terms of "thread state" and for thread samples in state "Running" (that is consuming CPU resources) the distribution of thread type and method. The information is obtained from the view HOST_SERVICE_THREAD_SAMPLES in the time interval analyzed. By this, some insight is given to the internal activities when the statement is processed, helping to understand which activities are responsible for the resource and/or time consumption.

For more information concerning threads and thread samples, see also .

The following table shows the "thread distribution" in terms of "thread detail" and for all thread samples.

Statement History (Elapsed Time)

The following graph shows the number of executions and the average "Elapsed Time" of the statement within the considered time interval as obtained from the monitoring view HOST_SQL_PLAN_CACHE. Note that the absence of information at a given point in time does not necessarily mean that the statement was not executed, but only that no data was found in this monitoring view.

Statement History (All Thread Samples)

The following graph shows the number of threads, both for state "Running" and for all other thread states. Threads in state "Running" are responsible for the CPU consumption due to the statements. Non-running threads could be "idle", but might also indicate network or I/O issues or locking situations.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Statement used for Buffer Loading

The comment /* Buffer Loading */ in the statement text shows that this SQL statement was issued to copy information from the table listed above to the table buffer. A table should be loaded only rarely and the related SQL statement should not play an important role in a productive system. This statement might be executed frequently if the table is either invalidated very often or the table is displaced from the table buffer because the configuration of the table buffer is too small.

Recommendation: In order to check whether the buffering settings for this table are adequate, check the table statistics of this table in transaction ST10 (see and). In order to check the setting for the table buffer, check the buffer statistics in ST02 for the different ABAP instances (see).

If the buffer settings are not adequate, adjust the buffer settings, or un-buffer the table. If the configuration of the table buffer is too small and sufficient physical memory is available on the host, increase the size of the table buffer.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

Top Statements (Maximal Memory)

This section shows the top statements according to maximal memory consumption of a single execution. The data is obtained from the SQL PLAN CACHE.

See the following table for details of the selection:

The selected statements - identified by their "Statement Hash" - are listed in the following table. Further details of these statements can be found in the subsections.

SQL Statement 3ea62d41801822a39de258aaffcaecad

SELECT

"MSPR" . "MATNR" , "MSPR" . "WERKS" , "MSPR" . "LGORT" , "MSPR" . "CHARG" , "MSPR" . "SOBKZ" , "MSPR" . "PSPNR" , "MSSQ" . "KZBWS" , SUM("MSPR" . "PRLAB") "LABST" , SUM("MSPR" . "PRINS") "INSME" , SUM("MSPR" . "PRSPE") "SPEME" , SUM("MSPR" . "PREIN") "EINME" , SUM("MSPR" . "/CWM/PRLAB") "/CWM/LABST" , SUM("MSPR" . "/CWM/PRINS") "/CWM/INSME" , SUM("MSPR" . "/CWM/PRSPE") "/CWM/SPEME" , SUM("MSPR" . "/CWM/PREIN") "/CWM/EINME" , "MARA" . "/CWM/VALUM" "/CWM/VALUM", "MARA" . "/CWM/XCWMAT" "/CWM/XCWMAT" , "MCHA" . "BWTAR"

FROM

/* Entity name: NSDM_E_MSPR */ "NSDM_V_MSPR" "MSPR" INNER JOIN /* Entity name: NSDM_E_MSSQ_DIFF */ "NSDM_V_MSSQ_DIFF" "MSSQ" ON "MSPR" . "MANDT" = "MSSQ" .

"MANDT" AND "MSPR" . "MATNR" = "MSSQ" . "MATNR" AND "MSPR" . "WERKS" = "MSSQ" . "WERKS" AND "MSPR" . "SOBKZ" = "MSSQ" . "SOBKZ" AND "MSPR" . "PSPNR" = "MSSQ" . "PSPNR" INNER JOIN "V_MARC_MD" "MARC" ON "MSPR" . "MANDT" = "MARC" . "MANDT" AND "MARC" . "MATNR" = "MSSQ" . "MATNR" AND "MARC" . "WERKS" = "MSSQ" . "WERKS" INNER JOIN "MARA" ON "MSPR" . "MANDT" = "MARA" . "MANDT" AND "MARA" . "MATNR" = "MSSQ" . "MATNR" LEFT OUTER JOIN "MCHA" ON "MSPR" . "MANDT" = "MCHA" . "MANDT" AND "MCHA" . "MATNR" = "MSPR" . "MATNR" AND "MCHA" . "WERKS" = "MSPR" . "WERKS" AND "MCH

A" . "CHARG" = "MSPR" . "CHARG"

WHERE

"MSPR" . "MANDT" = ? AND "MSPR" . "WERKS" = ? AND (1 = 1 OR 1 = 1 OR 1 = 1 OR 1 = 1 OR 1 = 1 OR 1 = 1 OR 1 = 1 OR 1 = 1

)

GROUP BY

"MSPR" . "MATNR" , "MSPR" . "WERKS" , "MSPR" . "LGORT" , "MSPR" . "CHARG" , "MSPR" . "SOBKZ" , "MSPR" . "PSPNR" , "MSSQ" . "KZBWS" , "MCHA" . "BWTAR" , "MARA" . "/CWM/VALUM" , "MARA" . "/CWM/XCWMAT" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

High Memory Consumption

The memory consumption of this statement is relatively high when compared with the minimum "effective allocation limit" of the index server(s) as obtained from M_SERVICE_MEMORY. See the following table for details. Note that the excessive memory consumption of a single statement might impact the stability of the whole SAP HANA system. See for details and for an option to restrict the maximum memory allocated by a single statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement ea81f47ec13795eef6bb0c792e6437ee

SELECT

"MSPR" . "MATNR" , "MSPR" . "WERKS" , "MSPR" . "LGORT" , "MSPR" . "CHARG" , "MSPR" . "SOBKZ" , "MSPR" . "PSPNR" , "MSSQ" . "KZBWS" , SUM("MSPR" . "PRLAB") "LABST" , SUM("MSPR" . "PRINS") "INSME" , SUM("MSPR" . "PRSPE") "SPEME" , SUM("MSPR" . "PREIN") "EINME" , SUM("MSPR" . "/CWM/PRLAB") "/CWM/LABST" , SUM("MSPR" . "/CWM/PRINS") "/CWM/INSME" , SUM("MSPR" . "/CWM/PRSPE") "/CWM/SPEME" , SUM("MSPR" . "/CWM/PREIN") "/CWM/EINME" , "MARA" . "/CWM/VALUM" "/CWM/VALUM", "MARA" . "/CWM/XCWMAT" "/CWM/XCWMAT" , "MCHA" . "BWTAR"

FROM

/* Entity name: NSDM_E_MSPR */ "NSDM_V_MSPR" "MSPR" INNER JOIN /* Entity name: NSDM_E_MSSQ_DIFF */ "NSDM_V_MSSQ_DIFF" "MSSQ" ON "MSPR" . "MANDT" = "MSSQ" . "MANDT" AND "MSPR" . "MATNR" = "MSSQ" . "MATNR" AND "MSPR" . "WERKS" = "MSSQ" . "WERKS" AND "MSPR" . "SOBKZ" = "MSSQ" . "SOBKZ" AND "MSPR" . "PSPNR" = "MSSQ" . "PSPNR" INNER JOIN "V_MARC_MD" "MARC" ON "MSPR" . "MANDT" = "MARC" . "MANDT" AND "MARC" . "MATNR" = "MSSQ" . "MATNR" AND "MARC" . "WERKS" = "MSSQ" . "WERKS" INNER JOIN "MARA" ON "MSPR" . "MANDT" = "MARA" . "MANDT" AND "MARA" . "MATNR" = "MSSQ" . "MATNR" LEFT OUTER JOIN "MCHA" ON "MSPR" . "MANDT" = "MCHA" . "MANDT" AND "MCHA" . "MATNR" = "MSPR" . "MATNR" AND "MCHA" . "WERKS" = "MSPR" . "WERKS" AND "MCH

A" . "CHARG" = "MSPR" . "CHARG"

WHERE

"MSPR" . "MANDT" = ? AND "MSPR" . "WERKS" = ? AND (("MSPR" . "PRLAB" > ? OR "MSPR" . "PRLAB" < ?) OR ("MSPR" . "PRINS" > ? OR "MSPR" . "PRINS" < ?) OR ("MSPR" . "PRSPE" > ? OR "MSPR" . "PRSPE" < ?) OR ("MSPR" . "PREIN" > ? OR "MSPR" . "PREIN" < ?) OR ("MSPR" . "/CWM/PRLAB" > ? OR "MSPR" . "/CWM/PRLAB" < ?) OR ("MSPR" . "/CWM/PRINS" > ? OR "MSPR". "/CWM/PRINS" < ?) OR ("MSPR" . "/CWM/PRSPE" > ? OR "MSPR" . "/CWM/PRSPE" < ?) OR ("MSPR" . "/CWM/PREIN" > ? OR "MS

PR" . "/CWM/PREIN" < ?))

GROUP BY

"MSPR" . "MATNR" , "MSPR" . "WERKS" , "MSPR" . "LGORT" , "MSPR" . "CHARG" , "MSPR" . "SOBKZ" , "MSPR" . "PSPNR" , "MSSQ" . "KZBWS" , "MCHA" . "BWTAR" , "MARA" . "/CWM/VALUM" , "MARA" . "/CWM/XCWMAT" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

High Memory Consumption

The memory consumption of this statement is relatively high when compared with the minimum "effective allocation limit" of the index server(s) as obtained from M_SERVICE_MEMORY. See the following table for details. Note that the excessive memory consumption of a single statement might impact the stability of the whole SAP HANA system. See for details and for an option to restrict the maximum memory allocated by a single statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 723069d1b8560a3760f739c79d41c9a5

SELECT

"A" . "BUKRS" , "A" . "HKONT" , "A" . "WAERS" , "A" . "XBLNR" , "A" . "MONAT" , "A" . "SHKZG" , "A" . "GSBER" , "A" . "DMBTR" , "A" . "WRBTR" , "A" . "KOSTL" , "A" . "ZFBDT" , "A" . "BDIFF" , "A" . "BDIF2" , "A" . "VBUND" , "A" . "PSWSL" ,"A" . "WVERW" , "A" . "DMBE2" , "A" . "DMBE3" , "A" . "BDIF3" , "A" . "XRAGL" , "A" . "PROJK" , "A" . "XARCH" , "A" . "PSWBT" , "A" . "XNEGP" , "A" . "RFZEI" , "A" . "CCBTC" , "A" . "XREF3" , "A" . "BUPLA" , "A" . "BEWAR" , "A" . "IMKEY" ,"A" . "GRANT_NBR" , "A" . "FKBER" , "A" . "GEBER" , "A" . "PPRCT" , "A" . "BUZID" , "A" . "UZAWE" , "A" . "PGEBER" , "A" . "PGRANT_NBR" , "A" . "RE_ACCOUNT" , "A" . "KIDNO" , "A" . "GKART" , "A" . "LOGSYSTEM_SENDER" , "A" . "BELNR_SENDER" , "A" . "GJAHR_SENDER" , "A" . "BUZEI_SENDER" , "B" . "RCLNT" , "LD_REP" . "RLDNR" , "B" . "RBUKRS" , "B" . "GJAHR" , "B" .

"BELNR" , "B" . "DOCLN" , "B" . "RYEAR" , "B" . "RRCTY" , "B" . "RMVCT" , "B" . "BTTYPE" , "B" . "AWTYP" , "B" . "AWSYS" , "B" . "AWORG" , "B" . "AWREF" , "B" . "AWITEM" , "B" . "AWITGRP" , "B" . "XREVERSING" , "B" . "XREVERSED" , "B" ."XTRUEREV" , "B" . "AWTYP_REV" , "B" . "AWORG_REV" , "B" . "AWREF_REV" , "B" . "XSETTLING" , "B" . "XSETTLED" , "B" . "PREC_AWTYP" , "B" . "PREC_AWSYS" , "B" . "PREC_AWORG" , "B" . "PREC_AWREF" , "B" . "PREC_AWITEM" , "B" . "PREC_SUBTA" , "B" . "PREC_AWMULT" , "B" . "PREC_BUKRS" , "B" . "PREC_GJAHR" , "B" . "PREC_BELNR" , "B" . "PREC_DOCLN" , "B" . "SRC_AWTYP" , "B" . "SRC_AWSYS" , "B" . "SRC_AWORG" , "B" . "SRC_AWREF" , "B" . "SRC_AWITEM" , "B" . "SRC_AWSUBIT" , "B" . "XCOMMITMENT" , "B" . "RTCUR" , "B" . "RWCUR" , "B" . "RHCUR" , "B" . "RKCUR" , "B" . "RFCCUR" , "B" . "ROCUR" , "B" . "RVCUR" , "B" . "RBCUR" , "B" . "RCCUR" , "B" . "RDCUR" , "B" . "RECUR" , "B" . "RFCUR" , "B" . "RGCUR" , "B" . "RCO_OCUR" , "B" . "RUNIT" , "B" . "RVUNIT" , "B" . "QUNIT1" , "B" . "QUNIT2" , "B" . "QUNIT3" , "B" . "RACCT" , "B" . "RCNTR" , "B" ."PRCTR" , "B" . "RFAREA" , "B" . "RBUSA" , "B" . "KOKRS" , "B" . "SEGMENT" , "B" . "SCNTR" , "B" . "PPRCTR" , "B" . "SFAREA" , "B" . "SBUSA" , "B" . "RASSC" , "B" . "PSEGMENT" , "B" . "TSL" , "B" . "WSL" , "B" . "HSL" , "B" . "KSL" , "B" ."FCSL" , "B" . "OSL" , "B" . "VSL" , "B" . "BSL" , "B" . "CSL" , "B" . "DSL" , "B" . "ESL" , "B" . "FSL" , "B" . "GSL" , "B" . "KFSL" , "B" . "PSL" , "B" . "PFSL" , "B" . "CO_OSL" , "B" . "MSL" , "B" . "MFSL" , "B" . "VMSL" , "B" . "VMFSL", "B" . "QUANT1" , "B" . "QUANT2" , "B" . "QUANT3" , "B" . "DRCRK" , "B" . "POPER" , "B" . "PERIV" , "B" . "FISCYEARPER" , "B" . "BUDAT" , "B" . "BLDAT" , "B" . "BLART" , "B" . "BUZEI" , "B" . "ZUONR" , "B" . "BSCHL" , "B" . "BSTAT" , "B" . "LINETYPE" , "B" . "KTOSL" , "B" . "SLALITTYPE" , "B" . "XSPLITMOD" , "B" . "USNAM" , "B" . "TIMESTAMP" , "B" . "EPRCTR" , "B" . "RHOART" , "B" . "GLACCOUNT_TYPE" , "B" . "KTOPL" , "B" . "LOKKT" , "B" . "KTOP2" , "B" . "REBZG" , "B" . "REBZJ" , "B" . "REBZZ" , "B" . "REBZT" , "B" . "RBEST" , "B" . "EBELN" , "B" . "EBELP" , "B" . "ZEKKN" , "B" . "SGTXT" , "B" . "KDAUF" , "B" . "KDPOS" , "B" . "MATNR" , "B" . "WERKS" , "B" . "KUNNR" , "B" . "FBUDA" , "B" . "PEROP_BEG" , "B" ."PEROP_END" , "B" . "COCO_NUM" , "B" . "KOART" , "B" . "UMSKZ" , "B" . "MWSKZ" , "B" . "HBKID" , "B" . "HKTID" , "B" . "VALUT" , "B" . "XOPVW" , "B" . "AUGDT" , "B" . "AUGBL" , "B" . "AUGGJ" , "B" . "AFABE" , "B" . "ANLN1" , "B" . "ANLN2" , "B" . "BZDAT" , "B" . "ANBWA" , "B" . "MOVCAT" , "B" . "DEPR_PERIOD" , "B" . "ANLGR" , "B" . "ANLGR2" , "B" . "KALNR" , "B" . "KZBWS" , "B" . "XOBEW" , "B" . "SOBKZ" , "B" . "MAT_KDAUF" , "B" . "MAT_KDPOS" , "B" . "MAT_PS_POSID" , "B" . "MAT_LIFNR" , "B" . "BWTAR" , "B" . "BWKEY" , "B" . "BUKRS_SENDER" , "B" . "RACCT_SENDER" , "B" . "ACCAS_SENDER" , "B" . "ACCASTY_SENDER" , "B" . "HKGRP" , "B" . "CO_BELKZ" , "B" . "BELTP" , "B" . "MUVFLG" , "B" . "GKONT" , "B" . "GKOAR" , "B" . "ERLKZ" , "B" . "PERNR" , "B" . "SCOPE" , "B" . "PBUKRS" , "B" . "PSCOPE" , "B" . "AUFNR_ORG" , "B" . "UKOSTL" , "B" . "ULSTAR" , "B" . "UPRZNR" , "B" . "UPRCTR" , "B" . "ACCAS" , "B" . "ACCASTY" , "B" . "LSTAR" , "B" . "AUFNR" , "B" ."AUTYP" , "B" . "PS_POSID" , "B" . "PS_PSPID" , "B" . "NPLNR" , "B" . "NPLNR_VORGN" , "B" . "PRZNR" , "B" . "KSTRG" , "B" . "BEMOT" , "B" . "RSRCE" , "B" . "QMNUM" , "B" . "SERVICE_DOC_TYPE" , "B" . "SERVICE_DOC_ID" , "B" . "SERVICE_DOC_ITEM_ID" , "B" . "SERVICE_CONTRACT_TYPE" , "B" . "SERVICE_CONTRACT_ID" , "B" . "SERVICE_CONTRACT_ITEM_ID" , "B" . "ERKRS" , "B" . "PACCAS" , "B" . "PACCASTY" , "B" . "PLSTAR" , "B" . "PAUFNR" , "B" . "PAUTYP" , "B" . "PPS_PSP_PNR" , "B" . "PPS_POSID" , "B" . "PPS_PRJ_PNR" , "B" . "PPS_PSPID" , "B" . "PKDAUF" , "B" . "PKDPOS" , "B" . "PNPLNR" , "B" . "PNPLNR_VORGN" , "B" . "PPRZNR" , "B" . "PKSTRG" , "B" . "PSERVICE_DOC_TYPE" , "B" . "PSERVICE_DOC_ID" , "B" . "PSERVICE_DOC_ITEM_ID" , "B" . "OVERTIMECAT" , "B" . "WORK_ITEM_ID" , "B" . "ARBID" , "B" . "VORNR" , "B" . "AUFPS" , "B" . "UVORN" , "B" ."EQUNR" , "B" . "TPLNR" , "B" . "ISTRU" , "B" . "ILART" , "B" . "PLKNZ" ,

...

Statement Impact

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

High Memory Consumption

The memory consumption of this statement is relatively high when compared with the minimum "effective allocation limit" of the index server(s) as obtained from M_SERVICE_MEMORY. See the following table for details. Note that the excessive memory consumption of a single statement might impact the stability of the whole SAP HANA system. See for details and for an option to restrict the maximum memory allocated by a single statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement fa17a80f91c9a9b0481bca7fbaae941d

SELECT

"HEAD" . "BUKRS" , "ACDOCA" . "BELNR" , "ACDOCA" . "BSTAT" , "ACDOCA" . "UMSKZ" , "HEAD" . "XBLNR" , "ACDOCA" . "BLART", "ACDOCA" . "RBUSA" "GSBER" , "ACDOCA" . "ZUONR" , "ACDOCA" . "GJAHR" , "HEAD" . "MONAT" , "ACDOCA" . "BLDAT" , "ACDOCA" . "BUDAT" , "ACDOCA" . "DRCRK" "SHKZG" , "ACDOCA" . "HSL" "BWWRT" , "ACDOCA" . "RHCUR" "HWAER" , "ACDOCA" . "WSL" "WRBTR" , "ACDOCA" . "RWCUR" "WAERS" , "ACDOCA" . "LIFNR" , "ACDOCA" . "KUNNR" , "ACDOCA" . "RASSC" "VBUND" , "ACDOCA" . "SGTXT" , "HEAD" . "BKTXT" , "ACDOCA" . "KTOSL" , "ACDOCA" . "REBZG" , "ACDOCA" . "RACCT" "HKONT" , "ACDOCA" . "GKONT" , "ACDOCA" . "BSCHL" , "HEAD" . "STBLG" , "ACDOCA" . "AUGBL" , "ACDOCA" . "AUGDT" , "HEAD" . "CPUDT" , "HEAD" . "CPUTM" , "ACDOCA" . "BUZEI" , "ACDOCA" . "DOCLN" "CUSTOM_1" , "ACDOCA" . "KOART" , "ACDOCA" . "MWSKZ" , "ACDOCA" . "PS_PSP_PNR" "PROJK" , "ACDOCA" . "NPLNR" "NPLNR" , "ACDOCA" . "MATNR" , "ACDOCA" . "AWREF" , "ACDOCA" . "AWORG" , "ACDOCA" . "EBELN" ,"ACDOCA" . "EBELP" , "ACDOCA" . "GKOAR"

FROM

"ACDOCA" LEFT OUTER JOIN "BKPF" "HEAD" ON "ACDOCA" . "RCLNT" = "HEAD" . "MANDT" AND "ACDOCA" . "RBUKRS" = "HEAD" . "BUKR

S" AND "ACDOCA" . "BELNR" = "HEAD" . "BELNR" AND "ACDOCA" . "GJAHR" = "HEAD" . "GJAHR"

WHERE

"ACDOCA" . "RCLNT" = ? AND "ACDOCA" . "RLDNR" = N'0L' AND NOT ("ACDOCA" . "BLART" = ?) AND ("ACDOCA" . "AUGDT" > ? OR "ACDOCA" . "AUGDT" = ?) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

High Memory Consumption

The memory consumption of this statement is relatively high when compared with the minimum "effective allocation limit" of the index server(s) as obtained from M_SERVICE_MEMORY. See the following table for details. Note that the excessive memory consumption of a single statement might impact the stability of the whole SAP HANA system. See for details and for an option to restrict the maximum memory allocated by a single statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 323cae7ebf5dc71bce8ba1bf0eba2025

SELECT

"MCHB" . "WERKS" "WERKS" , "MCHB" . "MATNR" "MATNR" , "VBAP" . "VGBEL" "SONO" , "VBAP" . "VGPOS" "SOITEM" , "EBAN" . "BANFN" "STRNO" , "EBAN" . "BNFPO" "STRITEM" , SUM("MCHB" . "CLABS") "STK" , "MAKT" . "MAKTX" "MAKTX" , "MVKE" . "MVGR2""MVGR2" , "TVM2T" . "BEZEI" "BEZEI" , "VBAK" . "AUART" "AUART" , "EKPO" . "EBELN" "STONO" , "EKPO" . "EBELP" "STOITEM" , "EKPO" . "MENGE" "MENGE" , "VBAP" . "VBELN" "DONO" , "VBAP" . "POSNR" "DOITEM" , "VBAP" . "KWMENG" "KWMENG" , "VBAK" ."KUNNR" "KUNNR" , "KNA1" . "NAME1" "NAME1" , "EBAN" . "WERKS" "RCVPLNT" , "T001W" . "NAME1" "RCVDESC" , "KNA1" . "ORT01" "ORT01" , "VBAK" . "VKBUR" "VKBUR" , "ISDDOCPARTNERWAD" . "PERSONEXTERNALID" "EMPLOYEE" , "ISDDOCPARTNERWAD" . "PERSONFULLNAME" "EMPLOYEEFULLNAME"

FROM

/* Redirected table: MCHB */ "NSDM_V_MCHB" "MCHB" INNER JOIN "MAKT" ON "MCHB" . "MANDT" = "MAKT" . "MANDT" AND "MAKT" ."MATNR" = "MCHB" . "MATNR" INNER JOIN "MVKE" ON "MCHB" . "MANDT" = "MVKE" . "MANDT" AND "MVKE" . "MATNR" = "MAKT" . "MATNR" INNER JOIN "TVM2T" ON "MCHB" . "MANDT" = "TVM2T" . "MANDT" AND "TVM2T" . "MVGR2" = "MVKE" . "MVGR2" AND "TVM2T" . "SPRAS" = ? INNER JOIN "MARA" ON "MCHB" . "MANDT" = "MARA" . "MANDT" AND "MARA" . "MATNR" = "MCHB" . "MATNR" AND "MARA" ."MATKL" BETWEEN N'A' AND N'X' AND "MARA" . "MATNR" BETWEEN N'000000000000242533' AND N'000000000009999999' INNER JOIN /* Redirected table: MBEW */ "MBVMBEW" "MBEW" ON "MCHB" . "MANDT" = "MBEW" . "MANDT" AND "MBEW" . "MATNR" = "MCHB" . "MATNR" AND "MBEW" . "BWKEY" = "MCHB" . "WERKS" AND "MBEW" . "BKLAS" IN (N'7021' , N'7061' , N'7093') LEFT OUTER JOIN "VEPVG" ON "MCHB" . "MANDT" = "VEPVG" . "MANDT" AND "VEPVG" . "VSTEL" = "MCHB" . "WERKS" AND "VEPVG" . "AUART" = N'ZDO' LEFTOUTER JOIN "VBAP" ON "MCHB" . "MANDT" = "VBAP" . "MANDT" AND "VBAP" . "VBELN" = "VEPVG" . "VBELN" AND "VBAP" . "MATNR" = "MCHB" . "MATNR" AND "VBAP" . "WERKS" = "MCHB" . "WERKS" LEFT OUTER JOIN "VBAK" ON "MCHB" . "MANDT" = "VBAK" . "MANDT"AND "VBAK" . "VBELN" = "VBAP" . "VGBEL" AND "VBAK" . "AUART" IN (N'ZSO' , N'ZVCD') LEFT OUTER JOIN "KNA1" ON "MCHB" ."MANDT" = "KNA1" . "MANDT" AND "KNA1" . "KUNNR" = "VBAK" . "KUNNR" LEFT OUTER JOIN "ISDDOCPARTNERWAD" ON "MCHB" . "MANDT" = "ISDDOCPARTNERWAD" . "MANDT" AND "ISDDOCPARTNERWAD" . "SDDOCUMENT" = "VBAK" . "VBELN" AND "ISDDOCPARTNERWAD" . "PARTNERFUNCTION" = N'VE' LEFT OUTER JOIN "VETVG" ON "MCHB" . "MANDT" = "VETVG" . "MANDT" AND "VETVG" . "VSTEL" = "MCHB" . "WERKS" AND "VETVG" . "AUART" = N'ZWLL' LEFT OUTER JOIN "EBAN" ON "MCHB" . "MANDT" = "EBAN" . "MANDT" AND "EBAN" . "RESWK" = "MCHB" . "WERKS" AND "EBAN" . "MATNR" = "MCHB" . "MATNR" AND "EBAN" . "EBELN" = "VETVG" . "VBELN" AND "EBAN" . "BSART" = N'ZBTS' LEFT OUTER JOIN "EKPO" ON "MCHB" . "MANDT" = "EKPO" . "MANDT" AND "EKPO" . "EBELN" = "EBAN" . "EBELN" AND "EKPO" . "EBELP" = "EBAN" . "EBELP" LEFT OUTER JOIN "T001W" ON "MCHB" . "MANDT" = "T001W" . "MANDT" AND "T001W" . "WERKS"

= "EBAN" . "WERKS"

WHERE

"MCHB" . "MANDT" = ? AND "MCHB" . "WERKS" IN (? , ?) AND "MVKE" . "MVGR2" IN (? , ? , ? , ? , ? , ?) AND "MCHB" . "C

LABS" > CAST(0 AS DECIMAL(13,3))

GROUP BY

"MCHB" . "WERKS" , "MCHB" . "MATNR" , "VBAP" . "VGBEL" , "VBAP" . "VGPOS" , "EBAN" . "BANFN" , "EBAN" . "BNFPO" , "MAKT" . "MAKTX" , "MVKE" . "MVGR2" , "TVM2T" . "BEZEI" , "VBAK" . "AUART" , "EKPO" . "EBELN" , "EKPO" . "EBELP" , "EKPO" . "MENGE" , "VBAP" . "VBELN" , "VBAP" . "POSNR" , "VBAP" . "KWMENG" , "VBAK" . "KUNNR" , "KNA1" . "NAME1" , "EBAN" . "WERKS" , "T001W" . "NAME1" , "KNA1" . "ORT01" , "VBAK" . "VKBUR" , "ISDDOCPARTNERWAD" . "PERSONEXTERNALID" , "ISDDOCPARTNERWAD" . "PERSONFULLNAME" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

High Memory Consumption

The memory consumption of this statement is relatively high when compared with the minimum "effective allocation limit" of the index server(s) as obtained from M_SERVICE_MEMORY. See the following table for details. Note that the excessive memory consumption of a single statement might impact the stability of the whole SAP HANA system. See for details and for an option to restrict the maximum memory allocated by a single statement.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

Top Statements (Thread Samples)

This section shows the top statements according to the number of observed "threads" ("Number of Samples") in the SERVICE THREAD SAMPLES. A statement might occupy a high number of threads if (a) it has a long execution time, (b) it is executed very often, or (c) it has a highly parallelized execution.

In any case, it shows statements with a high resource consumption on the SAP HANA database.

See the following table for details of the selection:

The selected statements - identified by their "Statement Hash" - are listed in the following table. Further details of these statements can be found in the subsections.

SQL Statement 938619e1d06635b2b252709b7ccd58af

SELECT DISTINCT

"A" . "REF_DOC" , "A" . "REF_DOC_YEAR" , "B" . "BUDAT_MKPF"

FROM

"/OPT/VIM_1ITEM" "A" INNER JOIN /* Redirected table: MSEG */ "NSDM_V_MSEG" "B" ON "A" . "MANDT" = "B" . "MANDT" AND "A"

. "REF_DOC" = "B" . "LFBNR" AND "A" . "REF_DOC_YEAR" = "B" . "MJAHR"

WHERE

"A" . "MANDT" = ? AND "A" . "DOCID" = ? WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Compatibility View Access

SAP S/4HANA Supply Chain (MM - Inventory Management) offers a simplified data model. Several tables have become obsolete and are removed. To allow existing coding to continue to work, these tables are replaced by views with the same name, known as "Compatibility Views". As a result, read access to these objects is still possible; however, performance is affected since it is now an access to a view instead of a simple table. For some general background information, see [SAP Note 2206980].

For performance-critical coding parts, we strongly recommend the code adjustments suggested in Section 2 of the SAP Note. For non-critical parts, these adjustments are optional in the short term but recommended in the long term.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 54a9566c2195e1ab2540c7f5d0ac6ff4

SELECT

/* Buffer Loading */ "MANDT" , "KAPPL" , "KSCHL" , "VKORG" , "KUNAG" , "KUNWE" , "WERKS" , "ZZTDCNO" , "KFRST" , "DATBI" , "DATAB" , "KBSTAT" , "KNUMH"

FROM

"A639"

WHERE

"MANDT" = ?

ORDER BY

"A639" . "MANDT" , "A639" . "KAPPL" , "A639" . "KSCHL" , "A639" . "VKORG" , "A639" . "KUNAG" , "A639" . "KUNWE" , "A639" . "WERKS" , "A639" . "ZZTDCNO" , "A639" . "KFRST" , "A639" . "DATBI" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Explain Plan

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Thread Distribution

The following table(s) shows both (if available) the "thread distribution" in terms of "thread state" and for thread samples in state "Running" (that is consuming CPU resources) the distribution of thread type and method. The information is obtained from the view HOST_SERVICE_THREAD_SAMPLES in the time interval analyzed. By this, some insight is given to the internal activities when the statement is processed, helping to understand which activities are responsible for the resource and/or time consumption.

For more information concerning threads and thread samples, see also .

The following table shows the "thread distribution" in terms of "thread detail" and for all thread samples.

Statement History (Elapsed Time)

The following graph shows the number of executions and the average "Elapsed Time" of the statement within the considered time interval as obtained from the monitoring view HOST_SQL_PLAN_CACHE. Note that the absence of information at a given point in time does not necessarily mean that the statement was not executed, but only that no data was found in this monitoring view.

Statement History (All Thread Samples)

The following graph shows the number of threads, both for state "Running" and for all other thread states. Threads in state "Running" are responsible for the CPU consumption due to the statements. Non-running threads could be "idle", but might also indicate network or I/O issues or locking situations.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Statement used for Buffer Loading

The comment /* Buffer Loading */ in the statement text shows that this SQL statement was issued to copy information from the table listed above to the table buffer. A table should be loaded only rarely and the related SQL statement should not play an important role in a productive system. This statement might be executed frequently if the table is either invalidated very often or the table is displaced from the table buffer because the configuration of the table buffer is too small.

Recommendation: In order to check whether the buffering settings for this table are adequate, check the table statistics of this table in transaction ST10 (see and). In order to check the setting for the table buffer, check the buffer statistics in ST02 for the different ABAP instances (see).

If the buffer settings are not adequate, adjust the buffer settings, or un-buffer the table. If the configuration of the table buffer is too small and sufficient physical memory is available on the host, increase the size of the table buffer.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement a8eb789ee40468a3bc31c19f4e3c2733

SELECT

"EKPO" . "EBELN" , "EKPO" . "BEDNR" , "EKKO" . "BSTYP" , "EKKO" . "SUBMI"

FROM

"EKPO" INNER JOIN "EKKO" ON "EKPO" . "MANDT" = "EKKO" . "MANDT" AND "EKKO" . "EBELN" = "EKPO" . "EBELN"

WHERE

"EKPO" . "MANDT" = ? AND ("EKKO" . "SUBMI" = ? OR "EKKO" . "SUBMI" BETWEEN ? AND ? OR "EKPO" . "BEDNR" = ?) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 0afe14bc6bea35eee9d86b117185c277

SELECT

"MANDANT" , "OBJECTCLAS" , "OBJECTID" , "CHANGENR" , "TABNAME" , "TABKEY" , "FNAME" , "CHNGIND" , "TEXT_CASE" , "UNIT_OLD" , "UNIT_NEW" , "CUKY_OLD" , "CUKY_NEW" , "VALUE_NEW" , "VALUE_OLD" , "_DATAAGING"

FROM

"CDPOS"

WHERE

"MANDANT" = ? AND "OBJECTCLAS" = N'IDENTITY' AND "OBJECTID" BETWEEN ? AND ? AND "TABNAME" = N'USR04' AND "FNAME" = N'KEY' AND "CHNGIND" = N'D' WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

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Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 77658c84db4c1afd41fa26aff7df5464

SELECT

/* Buffer Loading */ "MANDT" , "KAPPL" , "KSCHL" , "WERKS" , "MATNR" , "KUNNR" , "DATBI" , "DATAB" , "KNUMH"

FROM

"A915"

WHERE

"MANDT" = ?

ORDER BY

"A915" . "MANDT" , "A915" . "KAPPL" , "A915" . "KSCHL" , "A915" . "WERKS" , "A915" . "MATNR" , "A915" . "KUNNR" , "A915" . "DATBI" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Explain Plan

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Thread Distribution

The following table(s) shows both (if available) the "thread distribution" in terms of "thread state" and for thread samples in state "Running" (that is consuming CPU resources) the distribution of thread type and method. The information is obtained from the view HOST_SERVICE_THREAD_SAMPLES in the time interval analyzed. By this, some insight is given to the internal activities when the statement is processed, helping to understand which activities are responsible for the resource and/or time consumption.

For more information concerning threads and thread samples, see also .

The following table shows the "thread distribution" in terms of "thread detail" and for all thread samples.

Statement History (Elapsed Time)

The following graph shows the number of executions and the average "Elapsed Time" of the statement within the considered time interval as obtained from the monitoring view HOST_SQL_PLAN_CACHE. Note that the absence of information at a given point in time does not necessarily mean that the statement was not executed, but only that no data was found in this monitoring view.

Statement History (All Thread Samples)

The following graph shows the number of threads, both for state "Running" and for all other thread states. Threads in state "Running" are responsible for the CPU consumption due to the statements. Non-running threads could be "idle", but might also indicate network or I/O issues or locking situations.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Statement used for Buffer Loading

The comment /* Buffer Loading */ in the statement text shows that this SQL statement was issued to copy information from the table listed above to the table buffer. A table should be loaded only rarely and the related SQL statement should not play an important role in a productive system. This statement might be executed frequently if the table is either invalidated very often or the table is displaced from the table buffer because the configuration of the table buffer is too small.

Recommendation: In order to check whether the buffering settings for this table are adequate, check the table statistics of this table in transaction ST10 (see and). In order to check the setting for the table buffer, check the buffer statistics in ST02 for the different ABAP instances (see).

If the buffer settings are not adequate, adjust the buffer settings, or un-buffer the table. If the configuration of the table buffer is too small and sufficient physical memory is available on the host, increase the size of the table buffer.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

Top Statements (CPU Peak Hour)

This section shows the top statements according to the number of observed "threads" ("Number of Samples") in the SERVICE THREAD SAMPLES. A statement might occupy a high number of threads if (a) it has a long execution time, (b) it is executed very often, or (c) it has a highly parallelized execution. In any case, it shows statements with a high resource consumption on the SAP HANA database.

For this section, the hour with the highest number of thread samples in thread state" "Running" is determined, that is, the "CPU peak hour". The top statements observed in this hour are listed and analyzed.

Hour of Maximal CPU Consumptiion

See the following table for details of the selection:

The selected statements - identified by their "Statement Hash" - are listed in the following table. Further details of these statements can be found in the subsections.

SQL Statement 938619e1d06635b2b252709b7ccd58af

SELECT DISTINCT

"A" . "REF_DOC" , "A" . "REF_DOC_YEAR" , "B" . "BUDAT_MKPF"

FROM

"/OPT/VIM_1ITEM" "A" INNER JOIN /* Redirected table: MSEG */ "NSDM_V_MSEG" "B" ON "A" . "MANDT" = "B" . "MANDT" AND "A"

. "REF_DOC" = "B" . "LFBNR" AND "A" . "REF_DOC_YEAR" = "B" . "MJAHR"

WHERE

"A" . "MANDT" = ? AND "A" . "DOCID" = ? WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates strongly with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Compatibility View Access

SAP S/4HANA Supply Chain (MM - Inventory Management) offers a simplified data model. Several tables have become obsolete and are removed. To allow existing coding to continue to work, these tables are replaced by views with the same name, known as "Compatibility Views". As a result, read access to these objects is still possible; however, performance is affected since it is now an access to a view instead of a simple table. For some general background information, see [SAP Note 2206980].

For performance-critical coding parts, we strongly recommend the code adjustments suggested in Section 2 of the SAP Note. For non-critical parts, these adjustments are optional in the short term but recommended in the long term.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the

statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement da0cae818c8fca6b540d1d5f8357432a

SELECT

"VBELV" , "VBELN" , "VBTYP_V" , "POSNN"

FROM

"VBFA"

WHERE

"MANDT" = ? AND (("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V"= N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" =? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND"ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J')OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V"= N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J') OR ("VBELN" = ? AND "ERDAT" >= ? AND "VBTYP_V" = N'J')) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Thread Distribution

The following table shows the "thread distribution" in terms of "thread detail" and for all thread samples.

Note: Table and column scan-related thread methods contribute significantly to the load caused by this SQL statement. It might be possible to accelerate the table scan (and by doing so, the execution time of this statement) either by changing the application in order to use existing indexes of this table or by changing the current index design (see).

Recommendation: Consider creating a single column index for a column in the where clause not yet supported by an index. If more than one column meets this condition, choose the most selective field. In many cases, this will be the field with the highest value for SCANNED_RECORD_COUNT (obtained from M_CS_ALL_COLUMN_STATISTICS), in particular when specified with "=".

See the following table with the fields specified with the where clause not yet supported by a single column index.

Statement History (Elapsed Time)

The following graph shows the number of executions and the average "Elapsed Time" of the statement within the considered time interval as obtained from the monitoring view HOST_SQL_PLAN_CACHE. Note that the absence of information at a given point in time does not necessarily mean that the statement was not executed, but only that no data was found in this monitoring view.

Statement History (All Thread Samples)

The following graph shows the number of threads, both for state "Running" and for all other thread states. Threads in state "Running" are responsible for the CPU consumption due to the statements. Non-running threads could be "idle", but might also indicate network or I/O issues or locking situations.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 54a9566c2195e1ab2540c7f5d0ac6ff4

SELECT

/* Buffer Loading */ "MANDT" , "KAPPL" , "KSCHL" , "VKORG" , "KUNAG" , "KUNWE" , "WERKS" , "ZZTDCNO" , "KFRST" , "DATBI" , "DATAB" , "KBSTAT" , "KNUMH"

FROM

"A639"

WHERE

"MANDT" = ?

ORDER BY

"A639" . "MANDT" , "A639" . "KAPPL" , "A639" . "KSCHL" , "A639" . "VKORG" , "A639" . "KUNAG" , "A639" . "KUNWE" , "A639" . "WERKS" , "A639" . "ZZTDCNO" , "A639" . "KFRST" , "A639" . "DATBI" WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Note: The statement as identified by its statement hash can also be found in other sections of this report:

Analysis of Where Clause

Explain Plan

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Thread Distribution

The following table(s) shows both (if available) the "thread distribution" in terms of "thread state" and for thread samples in state "Running" (that is consuming CPU resources) the distribution of thread type and method. The information is obtained from the view HOST_SERVICE_THREAD_SAMPLES in the time interval analyzed. By this, some insight is given to the internal activities when the statement is processed, helping to understand which activities are responsible for the resource and/or time consumption.

For more information concerning threads and thread samples, see also .

The following table shows the "thread distribution" in terms of "thread detail" and for all thread samples.

Statement History (Elapsed Time)

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The following graph shows the number of threads, both for state "Running" and for all other thread states. Threads in state "Running" are responsible for the CPU consumption due to the statements. Non-running threads could be "idle", but might also indicate network or I/O issues or locking situations.

Statement History (Thread Sample 'Running')

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Correlation with Index Server Resource Consumption

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Tables

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Statement used for Buffer Loading

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Recommendation: In order to check whether the buffering settings for this table are adequate, check the table statistics of this table in transaction ST10 (see and). In order to check the setting for the table buffer, check the buffer statistics in ST02 for the different ABAP instances (see).

If the buffer settings are not adequate, adjust the buffer settings, or un-buffer the table. If the configuration of the table buffer is too small and sufficient physical memory is available on the host, increase the size of the table buffer.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement 3876e9bc48476246934e1f701b04af96

SELECT

"MATNR" , "WERKS" , "LGORT" , "CHARG" , "ERSDA" , "SOBKZ" , "VBELN" , "POSNR" , "KALAB" , "KAINS" , "KASPE"

FROM

"NSDM_V_MSKA"

WHERE

"MANDT" = ? AND (("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ?AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ"= N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ?AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR (

"MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR"= ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E') OR ("MATNR" = ? AND "WERKS" = ? AND "CHARG" LIKE ? AND "SOBKZ" = N'E')) WITH RANGE_RESTRICTION('CURRENT')

Statement Impact

Analysis of Where Clause

Time Consumption

The following table gives an overview of the time consumption of the analyzed SQL statement.

Memory Consumption

The following table provides an overview of the memory consumption of the analyzed SQL statement as obtained from the monitoring view M_SQL_PLAN_STATISTICS (or – if not yet available – M_SQL_PLAN_CACHE), that is, without taking a specific time interval into account.

Statement History (Thread Sample 'Running')

The following graph shows the number of observed thread samples (in state "running") related to this SQL statement together with the contribution of those samples to all thread samples (in state "running") active in the system.

Correlation with Index Server Resource Consumption

The distribution of thread samples with the status "Running" correlates with the overall CPU or memory consumption of the system. Such a correlation indicates that this statement might be responsible for peaks in the memory or CPU consumption.

Tables

In the following, the tables involved in the SQL statement are listed (maximum of 20), sorted by the number of records.

Origin of SQL Statement

The following table shows details of the applications responsible for the statement. This information is based on the information provided by SAP HANA in the "application source" connected to the statement in the "thread samples" or the list of "prepared" or "active" statements, and is not necessarily complete.

SQL Statement f26860d87aea91b859d94199ce6b5dff

SELECT

"MANDANT" , "OBJECTCLAS" , "OBJECTID" , "CHANGENR" , "USERNAME" , "UDATE" , "UTIME" , "TCODE" , "PLANCHNGNR" , "ACT_CHNGNO" , "WAS_PLANND" , "CHANGE_IND" , "LANGU" , "VERSION" , "_DATAAGING"

FROM

"CDHDR"

WHERE

"MANDANT" = ? AND "OBJECTCLAS" = ? AND ("OBJECTID" LIKE ? OR "OBJECTID" LIKE ? AND (N'_' <> ? OR "OBJECTID" <> N''))

Statement Impact

Analysis of Where Clause

Time Consumption

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Memory Consumption

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complete.

SAP NetWeaver Gateway

Gateway Configuration

MetaData Cache Activation

The metadata cache is activated in your system as recommended.

Logging Configuration

The gateway logging configuration is set correctly on your system.

Gateway Administration

Important Periodic Jobs

The jobs based on the reports listed in the table below are important for the smooth operation of your system.

*Schedule these jobs as indicated, or more often in periods of frequent imports, depending on your use case. Take observed job duration for your system into account when tuning the schedule.

Recommendation: See the recommended schedule for the important periodic jobs listed in the table above. One or more periodic jobs important for the smooth operation of your system are not scheduled to run regularly as recommended.

UI Technologies Checks

Fiori Checks for PRD

No major problems were found with the SAP Fiori configuration or administration of your SAP S/4HANA system PRD.

Maintenance and Update Strategy for SAP Fiori Front-End Server

Your version of the SAP Fiori Front-End Server (SAP_UI) is still in maintenance by SAP. For further information on the SAP Fiori Front-End Server maintenance and upgrade strategy, refer to SAP Note .

SAPUI5 Version

Your SAPUI5 Library version is up to date as recommended. The planned end of maintenance for your SAPUI5 Library version is 31.12.2024.

SAP recommends to plan updates and upgrades with .

It is strongly recommended that you test all of your SAPUI5 applications before upgrading the SAPUI5 version in the productive system.

SAP Fiori Cache Buster Activation

You have activated the cache buster mechanism for system PRD because the ICF service /sap/bc/ui2/flp is activated in SICF.

Please note that to use the cache buster mechanism, you need to call the SAP Fiori launchpad with one of the following URLs:

You can also maintain a custom URL via an SICF external alias as described here:

Background:

Web browsers store static resources like JavaScript files, stylesheets, and images in the browser cache. When these resources are changed on the server in a software upgrade, you want the browser to load the new resources from the server rather than from the cache, without having to manually clear the browser cache.

Cache buster techniques cause Web browsers to load content from the server rather than from the browser cache when new resources are available on the server.

You can find the latest information about the cache buster for SAP Fiori components in .

HTTP/2 Support

HTTP/2 support is currently active as recommended.

The HTTP protocol is one of the most frequently used protocols on the Internet. However, HTTP/1.0 and HTTP/1.1 have some disadvantages for modern applications, in particular with respect to performance in wide-area networks. To improve these problems, their successor RFC 7540 HTTP/2 has been implemented.

For more information on HTTP/2 Support, see

Trend Analysis

This section contains the trend analysis for key performance indicators (KPIs).

Diagrams are built weekly once the EarlyWatch Alert service is activated.

In this section, a "week" is from Monday to Sunday. The date displayed is the Sunday of the week.

System Activity

The following diagrams show the system activity over time.

The "Transaction Activity" diagram below depicts transaction activity in the system over time.

- Total Activity: Transaction steps performed each week (in thousands) - Dialog Activity: Transaction steps performed in dialog task each week (in thousands) - Peak Activity: Transaction steps (in thousands) during the peak hour; this peak hour is calculated as the hour with the maximum dialog activity in the ST03 time profile divided by 5 working days per week.

(Peak Activity is absent if "Activity Data" is taken from ST03 data directly).

The "User Activity" diagram below shows the user activity on the system over time.

- Total Users: Total users that logged on in one week.

- Active Users: Users who performed more than 400 transaction steps in one week.

Response Times

The following diagrams show how the response time varies over time.

The "System Performance" diagram below shows the average response time in dialog tasks for the previous week.

The "Database Performance" diagram below shows the average DB response time in dialog tasks.

The "Top 5 transactions" diagram below shows the average response time in dialog tasks for the top 5 transactions.

The "Transaction Code" table below shows the load percentage caused by the top 5 transactions.

System Operation

The following diagram or table shows important KPIs for system operation.

Hardware Capacity

Report time frame: Service data was collected starting at 11.10.2025 04:21:19. This took 157 minutes.

You can see sample SAP EarlyWatch Alert reports on SAP Support Portal at -> Sample Reports.

For general information about SAP EarlyWatch Alert, see .

About System And Solution Manager