ARIS

SYSTEM MONITORING

VERSION 10.0 - SERVICE RELEASE 11

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Contents

1   Text conventions

Menu items, file names, etc. are indicated in texts as follows:

- Menu items, key combinations, dialogs, file names, entries, etc. are displayed in **bold**.

- User-defined entries are shown as **<bold text in angle brackets>**.

- Example texts that are too long to fit on a single line, such as a long directory path, are wrapped to the next line by using ↵ at the end of the line.

- File extracts are shown in this font format:

  `This paragraph contains a file extract.`

- Warnings have a colored background:

  Warning

  This paragraph contains a warning.

2   Monitoring health

The monitoring of physical resources is important to keep ARIS running properly. You can monitor the system using the ACC interface (page 5) or ACC commands (page 37).

2.1   Monitor file space

Monitor the file system of the ARIS installation. When the usage exceeds 85%, increase the disk space.

If the space is consumed by normal usage of the application, for example, many databases, many documents, etc., the available disk space must be increased. Check whether disk space can be made available. You may delete out dated log files (see ARIS Cloud Controller (ACC) guide). Also check, whether heap dumps have been created. They can consume a large part of disk space. There is one directory where special attention to the free disk space is recommended (/home/ARIS/cloudagent/work/work_cloudsearch_l/rsindex/). The folder size depends on the size and the structure of the ARIS user data, actually stored in the connected database management system. We recommend increasing the available disk space, if the used space exceeds 75 % of the available disk space.

If ARIS document storage is used extensively, these runnables should be actively monitored, too. Depending on the number and size of the document items, it might be necessary to increase the available disk space regularly.

2.2   Monitoring memory usage

Every runnable has a **JAVA-Xmx** configuration parameter. It has to be monitored, if the memory usage is rising over time.

Peaks are not a problem, if they do not break the limit. If the system is suffering over a longer time, for example, the memory usage is higher than 70% for more than one hour, check for rarely occurring use cases. They might explain the high memory consumption. This can be:

- an exceptional number of parallel running Process Governance processes

- more users accessing as usual

- expensive reporting

- running database maintenance operations

- assigning user access right over the whole database etc.

If the defined limit for memory consumption is exceeded, there are two possible measures:

- Extend the heap size for the concerned runnable. This can be done in ACC with a configure command for the **JAVA-Xmx** parameter. But this step only makes sense, if enough additional memory is available.

- Scale up by increasing the resources, for example, adding a new node/runnable of the same type or assigning more memory to the virtual machine and increasing the **JAVA-Xmx** parameter for the runnable to use this memory.

For advanced ARIS server installations Software AG strongly recommends that you request an installation service by Global Consulting Services. You can order that service from your Software AG sales representative.

2.3   Monitoring CPU load

A continuous high level of CPU usage can be an indicator that it might be necessary to scale up/out the system.

For the CPU load the same arguments as for the heap usage regarding peaks are true. So if a high CPU load is detected (> 60% for more than one hour), first it should be analyzed, if short peaks or exceptional use cases are the reason. If this is the case no direct reaction is needed.

If the defined limit for CPU usage is exceeded, there are two possible measures:

- Extend the number of CPU's available for the runnable.

- Scale up by increasing the resources of the current node, for example, assigning more CPU cores to the virtual machine or scale out by adding a new node/runnable of the same type.

For advanced ARIS server installations Software AG strongly recommends that you request an installation service by Global Consulting Services. You can order that service from your Software AG sales representative.

2.4 Monitoring thread pool size

For most runnables the **ajpNumWorkerThreads** parameter and the
httpNumWorkerThreads parameter are set. Those values should be monitored.

If they regularly exceed 80% of the configuration parameter of the runnable, it has to be
scaled out by adding a new runnable of the same type.

For advanced ARIS Server installations Software AG strongly recommends that you request an
installation service by Global Consulting Services. You can order that service from your
Software AG sales representative.

2.5   Using ACC interface

The ACC interface provides the ARIS Infrastructure overview (page 7) and the Health check overview (page 21).

To have a clear picture of the states of all runnables, check whether the system works properly. Health checks can be executed instantly to identify possible issues. Use the **Health check schedules** overview (page 28) to manage the schedules that run health checks automatically (page 16). Be aware that permanent monitoring (page 19) of all nodes has an impact on system performance.

2.5.1 Open ARIS Infrastructure overview

The ARIS Infrastructure overview shows the status of the runnables of connected nodes.

Procedure

1. Make sure that the ARIS server to which you want to connect is running.

2. Open your browser and enter the URL: **http(s)://<server name>:<port>/acc/ui&tenant=master**

   for example: **https://aris10srv.eur.co.umg:1080/acc/ui&tenant=master**

   The **login** dialog of the infrastructure tenant opens. In a standard installation, the **master** tenant is the infrastructure tenant by default.

   If you are already logged in, you must log out and confirm the warning.

3. Select the interface language.

4. Enter the credentials of the **system** user or the **superuser**.

5. Click **Log in**. The **Nodes** view of the infrastructure tenant is displayed. It gives an overview of the runnables of the node.

6. Add the node if it is not on display (page 12).

The information of the node is displayed as a table (page 8). For the **Runnables** view (page 7), use the top slider. To get a clear picture of the states of all runnables, use the actions available in the **ARIS Infrastructure** overview (page 9).

The health status is shown for runnables that provide such information, after a health check was started. The checks (page 35) can be executed automatically (page 16) or on-demand (page 14). Therefore, it might take a moment before the result is shown. You can either start all health checks for single nodes (page 15), check all runnables (page 14) at once, or run all health checks for a single runnable (page 15).

2.5.1.1 How to use the Infrastructure overview

To have a clear picture of the states of all runnables, check whether the system works properly. Health checks can be executed instantly to identify possible issues. Use the **Health check schedules** overview (page 28) to manage the schedules that run health checks automatically (page 16). Be aware that permanent monitoring (page 19) of all nodes has an impact on system performance.

If you have added (page 12) nodes to the infrastructure, information related either to runnables or nodes (page 13) can be displayed.

Health checks can be run either for a single runnable (page 15), a single node (page 15), or for all connected nodes (page 14). Basic results, such as **OK**, **WARNING**, **FAILED**, or **ERROR**, are shown in both views.

2.5.1.1.1 Runnables view

The **Runnables** view displays all available runnables. For the **ABS** runnable, for example, the runnable's instance name used on each related node is shown. The color of the dot indicates the state of a runnable. If in state **STARTED**, the dot is green. The sizing **l** (large) and **m** (m) is also indicated. **java**, **appserver**, or **binary** refer to the technology used.

If the **Health** column shows no entries, the runnables health was not checked jet. **OK** indicates that the runnables work fine. If issues are reported, click the related entry in the **Health** column to find detailed information in the **Health check** overview (page 20).

2.5.1.1.2 Nodes view

The **Nodes** view lists all ARIS Servers added to the ARIS Infrastructure. You get all information as provided in the **Runnable** view (page 7), but in a more detailed way. In addition to the **Runnables** view, the state, description application type, and the related ARIS version is listed for each runnable. The color of the dot indicates the state of a runnable. If in state **STARTED**, the dot is green.

To collapse or and expand the table, click the table header of a node. If collapsed, the node name, the number of runnables, the number of detected warnings, and the ARIS Agent's status is shown.

2.5.1.1.3   Available actions (ARIS Infrastructure overview)

These actions are available in both views, the Runnables view (page 7) and the Nodes view (page 8):

▪   Enables you to open the help system, open the ARIS Tenant Management, and to log out.

▪   Add node (page 12) and

▪   Run all health checks for all nodes (page 14)

▪ You can filter displayed content using the **Type to filter...** field.

If you have activated (page 13) the **Nodes** view and click ⋮ **More**, all actions available for this node are displayed.
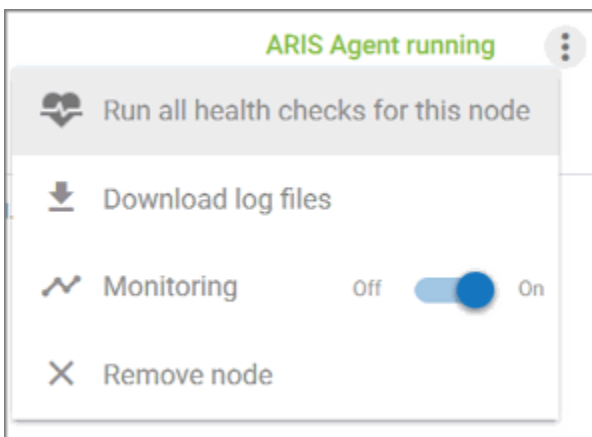
  Run all health checks for this node (page 15)

 Download all log files for this node (page 17)

  Switch monitoring on and off (page 19)

 Remove node (page 18)

If issues are reported, as in the following example for the **nyaris54srv** node, click the table header and check the issues (page 20).

If you click a row, such as **abs_l**, the **CPU load** and the **JVM heap usage** monitoring is displayed.

If you move the mouse pointer to a row, the following action buttons are faded in:

ⓘ Opens the **Parameter and Monitoring** page. The **Parameter** page lists all parameters set for the runnable.

The **Monitoring** page shows all results of the currently tracked performance metrics. Note that tracking a large number of metrics reduces overall server performance. If ARIS slows down dramatically, switch off monitoring (page 19) for the related node.
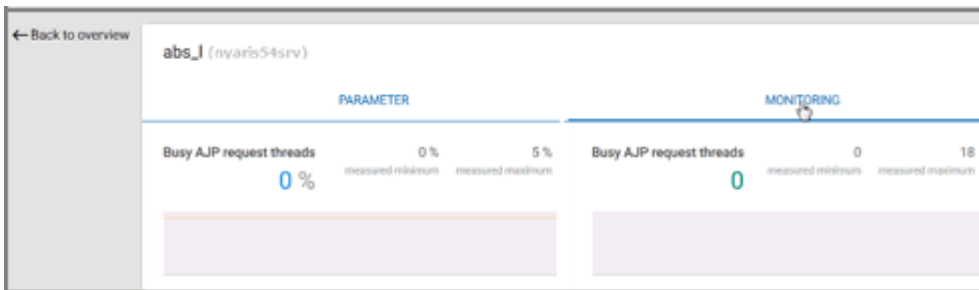
Run all health checks for this node (page 15). If a runnable contains a subset of runnables, such as the **umcadmin** runnable, which contain the **acc**, the **tm**, and the **umc** runnables, health checks can be started for the subordinate runnable, if health checks are available.

Download all log files related to the runnable (page 17).

Show results opens the **Health check overview** of this runnable.

2.5.1.1.3.1 Add node

If no ARIS Server information is displayed or an ARIS Server is missing, administrators can add missing nodes.

1. Open the ACC interface (page 5).

2. Click ⊕ **Add node**. The **Add node** dialog opens.

3. Enter the logical name of the node, as it should be displayed.

4. Enter the server name. This is the host name of the machine where the ARIS server is installed.

   You can determine the host name from the related ARIS Connect URL (see highlighted part).

   Example:

   https://**nyaris59srv**.us.my.com/#default/home

5. The used valid port is shown. Do not change that number.

6. Enter the ARIS agent user's credentials.

7. Click **Add**.

The node's information is shown.

You can change the way information is displayed (page 13).

2.5.1.1.3.1 Add node

2.5.1.1.3.2   Show Runnables view or Nodes view

All information can be displayed either related to runnables or nodes.

Prerequisite

The required nodes were added (page 12).

Procedure

1.   Click **Nodes** to list all ARIS Servers.

     You get all information as provided in the **Runnable** view (page 7), but in a more detailed
     way. In addition to the **Runnables** view, the state, description application type, and the
     related ARIS version is listed for each runnable. To collapse or and expand the table, click
     the table header of a node. If collapsed, the node name, the number of runnables, the
     number of detected warnings, and the ARIS Agent's status is shown.

2. Click **Runnables** to display all runnables available in this ARIS infrastructure. For the **ABS** runnable, for example, the runnable's instance name used on each related node is shown. The color of the dot indicates the state of a runnable. If in state **STARTED**, the dot is green. The sizing **l** (large) and **m** (m) is also indicated. **java**, **appserver**, or **binary** refer to the technology used. If the **Health** column shows no entries, the runnables health was not checked jet. **OK** indicates that the runnables work fine. If issues are reported, click the related entry in the **Health** column to find detailed information in the **Health check** overview (page 20).

ABS		
Modeling & Publishing		java appserver
Name	Node	Health
● abs_l	nyaris54srv	FAILED
● abs_l	nyaris55srv	OK
● abs_m	nyaris57srv	OK
● abs_m	nyaris59srv	ERROR

Information is displayed in the selected view.

2.5.1.1.3.3   Run all health checks for all nodes

To have a clear picture of the states of all runnables for all nodes, check whether the system works properly. You can perform the checks instantly to identify possible issues.

Prerequisite

The required nodes were added (page 12).

Procedure

1. Open the ACC interface (page 5).

2. Click 　　　 **Run all health checks for all nodes**.

The result is displayed in the **Health** column.

If you click on the result, for example, **OK**, detailed results of all performed checks (page 35) are shown. Detailed information on specific check results are available on click, as well as the JSON results.

2.5.1.1.3.4   Run all health checks for this node

To have a clear picture of the states of all runnables for this node, check whether the system works properly. You can perform the checks instantly to identify possible issues.

Prerequisite

The required nodes were added (page 12).

Procedure

1. Open the ACC interface (page 5).

2. Activate the **Nodes** view (page 13).

3. Click ⋮ **More >** ❤ **Run all healthchecks for this node**.

The result is displayed in the **Health** column.

If you click on the result, for example, **OK**, detailed results of all performed checks (page 35) are shown. Detailed information on specific check results are available on click, as well as the JSON results.

2.5.1.1.3.5   Run all health checks for this runnable

To have a clear picture of one runnable's state, check whether the system works properly. The checks can be executed instantly to identify possible issues.

Prerequisite

The required nodes were added (page 12).

Procedure

1. Open the ACC interface (page 5).

2. Activate the **Nodes** view (page 13).

3. Move the mouse pointer to the desired runnable and click ❤ **Run healthcheck**.

The result is displayed in the **Health** column.

If you click on the result, for example, **OK**, detailed results of all performed checks (page 35) are shown. Detailed information on specific check results are available on click, as well as the JSON results.

2.5.1.1.3.6   Run health checks automatically

Create schedules to run health checks automatically. This allows you to carry out extensive checks on a regular basis if possible performance influences do not have any negative effects.

Prerequisite

The required nodes were added (page 12).

Procedure

1. Open the ACC interface (page 5).

2. Click **Health check schedules**. All schedules are displayed. You can create, execute, modify, and delete health check schedules.

3. Click **Add health check schedule**. The **Add health check schedule** dialog opens.

4. Enter the name of the new schedule.

5. Enable the **Activate this schedule** check box. This will execute the schedule as defined after you have saved this schedule.

6. Enter the e-mail addresses of all recipients who are to be informed about the health check result. Add the addresses one after the other. To correct an e-mail address, delete the address and add it again.

7. Select the reason for sending e-mails.

8. Select the runnables for which you want to run scheduled health checks.

> **Warning**
>
> If you select runnables whose health checks affect system performance, ARIS may slow down for the period in which the health check is performed. Make sure that the schedules performing those health checks are executed at an appropriate time.

9. Enter the credentials of the ARIS user who will perform the planned health check. This user must have sufficient permissions, for example, similar to the permissions of the **superuser**.

10. Click **Next**. The **Specify schedule** dialog opens.

11. Select the frequency for performing the automatic health check. You can run it only once or set a specific time period for the health check to be started frequently. Select the date on which the health check will be started for the first time and the date on which it will be started for the last time. You can specify the exact time when the health check will be performed for the first and the last time. The syntax for entering the time of day is **<hh:mm>**.

12. Click **Create schedule**.

The health check schedule is saved and listed.

You can modify the schedule (page 31) if required.

2.5.1.1.3.7   Show health check results

If health checks have been performed (page 14), you can review these results.

1. Open the ACC interface (page 5).

2. Move the mouse pointer to the runnable you want to review and click the health check result in the **Health** column. The **ARIS Health check** overview (page 21) is shown. All results of the specific checks are displayed.

3. Click one of the results for more detailed information.

The test results are shown.

You can collect log files (page 17) related to each runnable or you can download all available log files.

2.5.1.1.3.8   Download log files (ACC interface)

If problems occur during operation, you can use log files to find and resolve errors. You can download zipped log files related to each runnable or you can download all available log files.

Prerequisite

The required nodes were added (page 12).

Procedure

1. Open the ACC interface (page 5).

2. Move the slider to **Nodes**. All runnables of each node are listed.

3. If you want to collect all log files of a node, click ⋮ **More >** ⬇ **Download log files**.

4. If you want to collect log files of a specific runnable, move the mouse pointer to the related row and click ⬇ **Download log files**.

A **ZIP** archive created to be opened or saved.

If you cannot solve the problems and have a maintenance agreement, please send an error description and the ZIP archives containing collected log files as well as the entire contents of the **log** and **config** directories to the ARIS Global Support via Empower (http://www.softwareag.com/premiumsupport).

2.5.1.1.3.9   Remove node

If you do not want to check the health of a node, you can remove it from the **ARIS Infrastructure** page.

Procedure

1. Open the ACC interface (page 5).

2. Activate the **Nodes** view (page 13).

3. Move the mouse pointer to the table header of the node that you want to remove.

4. Click ⋮ **More >** ✕ **Remove node**.

The node is deleted from the list.

You can add (page 12) it again, if required.

2.5.1.1.3.9   Remove node

2.5.1.1.3.10   Switch monitoring on and off

On the **Monitoring** page all results of the currently tracked performance metrics are shown on the fly. Tracking a large number of metrics reduces overall server performance. If ARIS slows down dramatically, switch off monitoring for the related node.

Procedure

1. Open the ACC interface (page 5).

2. Activate the **Nodes** view (page 13).

3. Click ⋮ **More >** ⁓ **Monitoring** and move the slider to the **Off** position.

Monitoring is switched off for this node.

To start monitoring again, move the slider to the **On** position.

If you do not want to switch off monitoring, you can run health checks using schedules (page 16).

2.5.2   Open the Health check overview

If incidents are reported, for example, in the **Nodes** view (page 8), click the table header of the related node to review the states of each runnable.

Prerequisites

You ran health checks, either automatically (page 16), on all nodes (page 14), on a single node (page 15) or for a single runnable (page 15).

Procedure

Click an entry in the **Health** column, such as **WARNING**, **FAILED**, or **ERROR**, or click ☰✓ **Show results** (page 21). You can also check runnables that are in the state **OK**.

Health
FAILED
ERROR
OK
ERROR

The **health check** overview opens. You see all results reported by performed health checks.
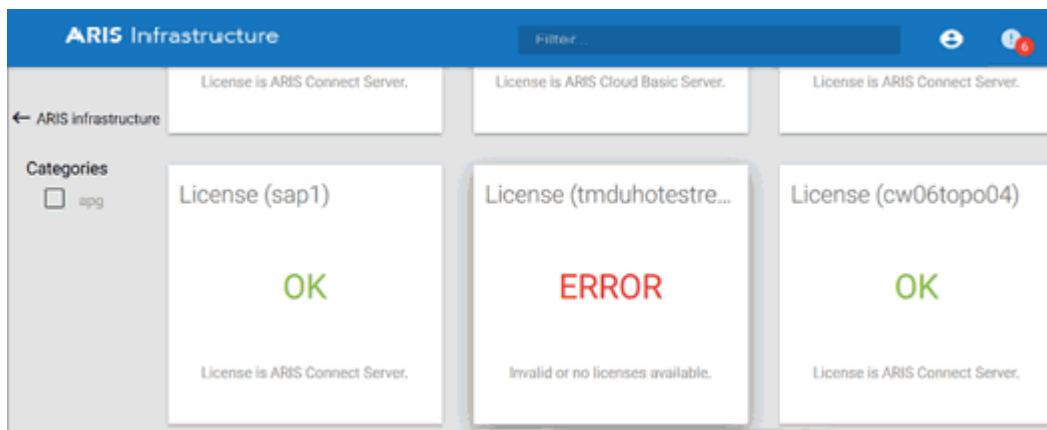
To review the incidents in detail, use the actions available in the **Health check** overview (page 22).

2.5.2.1   How to use the health check overview

If issues are reported in the Runnables view (page 7) or in the Nodes view (page 8), click the related entry in the **Health** column to find detailed information in the overview (page 20). Show results (page 21) also provides access to this page.

The **Health check** overview shows all results of performed health checks.

2.5.2.1.1 Available actions (Health check overview)

The **health check** overview shows all results detected by performed health checks.
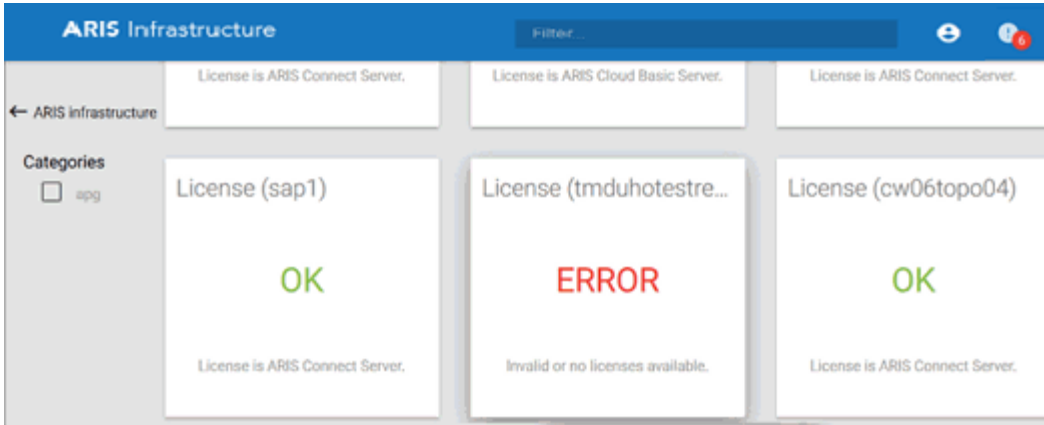
You can sort the health check results by state or in alphabetical order, using the following buttons:

Sort by state

Sort alphabetically

If you click the number in the red field, only errors and failed checks are displayed. The orange field indicates the number of health check results in the **WARNING** state.

The next example shows results that report errors and failed checks. The name of the health check and a short description are displayed for each incident.
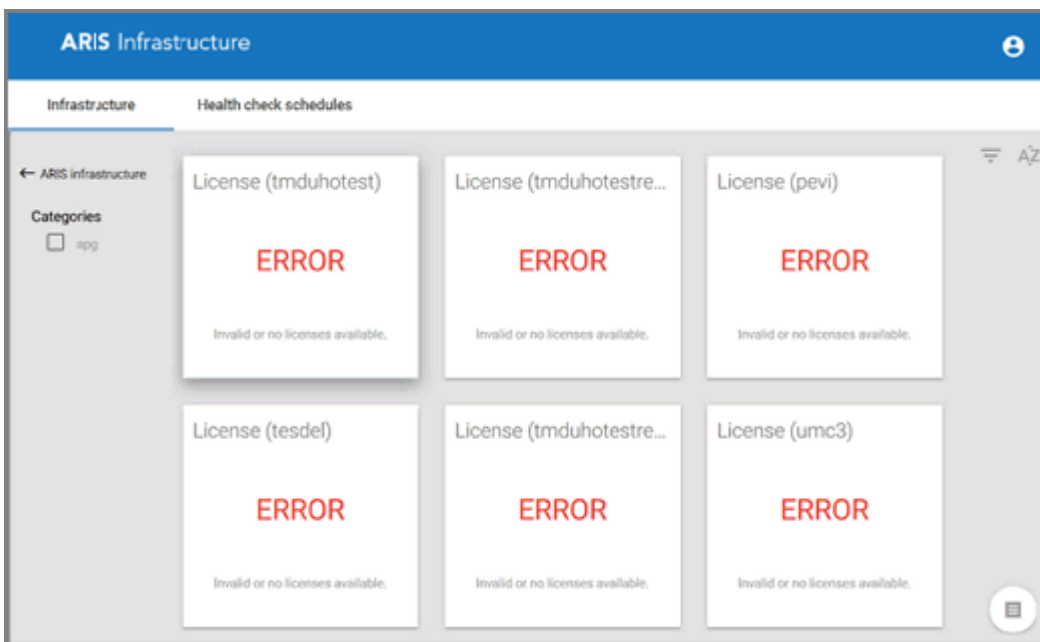
▤ **Show information for support** shows the entire JSON string returned by all health checks of this node. It is already marked so that you can copy it for further support.

If you click **ERROR** or **FAILED** in the **health check** overview, you receive more detailed information returned by the related health check. In this example, a license is missing or invalid. If you click the arrow, additional technical information is displayed.

The next example shows a failed **Read Lock** health check (page 35). This check failed because the calculated ratio is greater than the maximum value of **30**.

You can find additional information if you click the arrow to expand the dialog.

The **Show JSON data** link opens a dialog that displays the JSON string returned by this single health check.
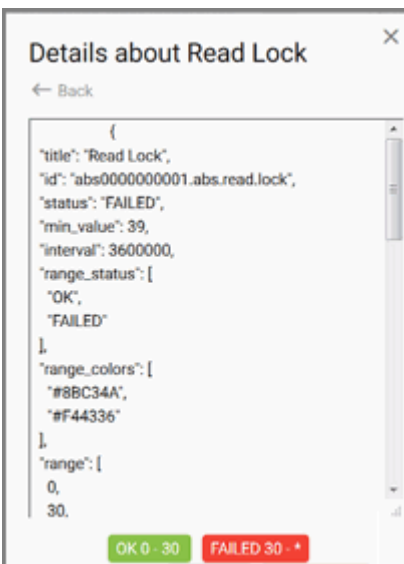
If you click ← ARIS infrastructure to open the **ARIS Infrastructure** overview (page 2), the results are still visible there. Do not use the **Back** button of your browser. Otherwise, the health check results will no longer be displayed.

2.5.2.1.1.1   Sort reported health check results

You can sort reported health check results by state or in alphabetical order.

Prerequisites

You ran health checks, either on all nodes (page 14), on a single node (page 15) or for a single runnable (page 15).

Procedure

1. Open the ARIS Health check overview (page 20). You see all results reported by performed health checks.
2. Click the required button:

    ▬ **Sort by state**

    AZ **Sort alphabetically**

The health check results are sorted as required.

You can reduce the number of displayed results by filtering (page 25) the view.

2.5.2.1.1.2   Filter reported issues and states

If many incidents are reported, you can reduce the number of reported warnings, errors and failed health check results.

Prerequisites

You ran health checks, either on all nodes (page 14), on a single node (page 15) or for a single runnable (page 15).

Procedure

1. Open the ARIS Health check overview (page 20). You see all results reported by performed health checks.
2. Click the number, for example in the red field, to only display health check results in the states **ERROR** or **FAILED**. The orange field indicates the number of health check results in the state **WARNING**.

Only health check results in the selected state are displayed.

2.5.2.1.1.3   Show information for support

You can review the entire JSON string returned by all health checks of the node.

Prerequisites

You ran health checks, either on all nodes (page 14), on a single node (page 15) or for a single runnable (page 15).

Procedure

1. Open the ARIS Health check overview (page 20). You see all results reported by performed health checks.

2. Click ▤ **Show information for support**.

The entire JSON string is marked so that you can copy it for further support.

You can also review the JSON string returned by a single health check (page 26).

2.5.2.1.1.4   Show JSON data

You can review the JSON string returned by a single health check.

Prerequisites

You ran health checks, either on all nodes (page 14), on a single node (page 15) or for a single runnable (page 15).

Procedure

1. Open the Health check overview (page 20). You see all results reported by performed health checks.

2. Click the result you want to review the JSON string for.

3. Click the **Show JSON data** link.

The JSON string is shown.

You can also review the entire JSON string returned by all health checks of the node (page 26).

2.5.3   Open Health check schedules overview

If you have [+] added health check schedules (page 16), you can run health checks automatically. This allows you to carry out extensive checks on a regular basis if possible performance influences do not have any negative effects.

Prerequisite

The required nodes were added (page 12).

Procedure

Click **Health check schedules**.

The **Health check schedules** overview opens. You can see all schedules that were added. Authorized users can manage (page 28) all ARIS Health Check schedules.

To review the incidents in detail, use the actions available in the **Health check** overview (page 22).

2.5.3.1 How to use the Health check schedules overview

If you have added (page 12) nodes to the infrastructure, information related to either runnables or nodes (page 13) can be displayed.

Health checks can be run either for a single runnable (page 15), a single node (page 15), or for all connected nodes (page 14).

If you have ⊕ added health check schedules (page 16), you can run health checks automatically. This allows you to carry out extensive checks on a regular basis if possible performance influences do not have any negative effects.

If you click a row in the list, more details of the related schedule are shown.

The overview provides the following information:

Schedule

Lists added schedules that perform health checks on selected runnables. The color of the dot indicates the status of a schedule.

Status

The color of the dot indicates the status of a schedule. If **active**, the dot is green. Active schedules are executed as defined. Gray dots indicate deactivated schedules.

Health checks

Lists the runnables for which health checks are executed.

Next start

Shows the date and time when the scheduled health checks will start the next time.

Last start

Shows the date and time of the last execution.

Last duration

Lists how long it took to perform all health checks the last time the schedule was executed.

Last result

Shows the result of the last execution. If you click this result, the related health check overview (page 22) is displayed.

These icons are available if you have selected at least one schedule.

⏱ **Activate selected schedules** (page 33)

⏱ **Deactivate selected schedules** (page 31)

🗑 **Delete selected schedules** (page 32)

💓 **Run selected schedules** (page 33)

↻ **Refresh list** (page 34)

If you move the mouse pointer to a row, the following action buttons are faded in:

✏ **Edit schedule** (page 31)

💓 **Run schedule** (page 34)

🗑 **Delete schedule** (page 32)

2.5.3.1.1   Create health check schedule

Create schedules to run health checks automatically. This allows you to carry out extensive checks on a regular basis if possible performance influences do not have any negative effects.

Prerequisite
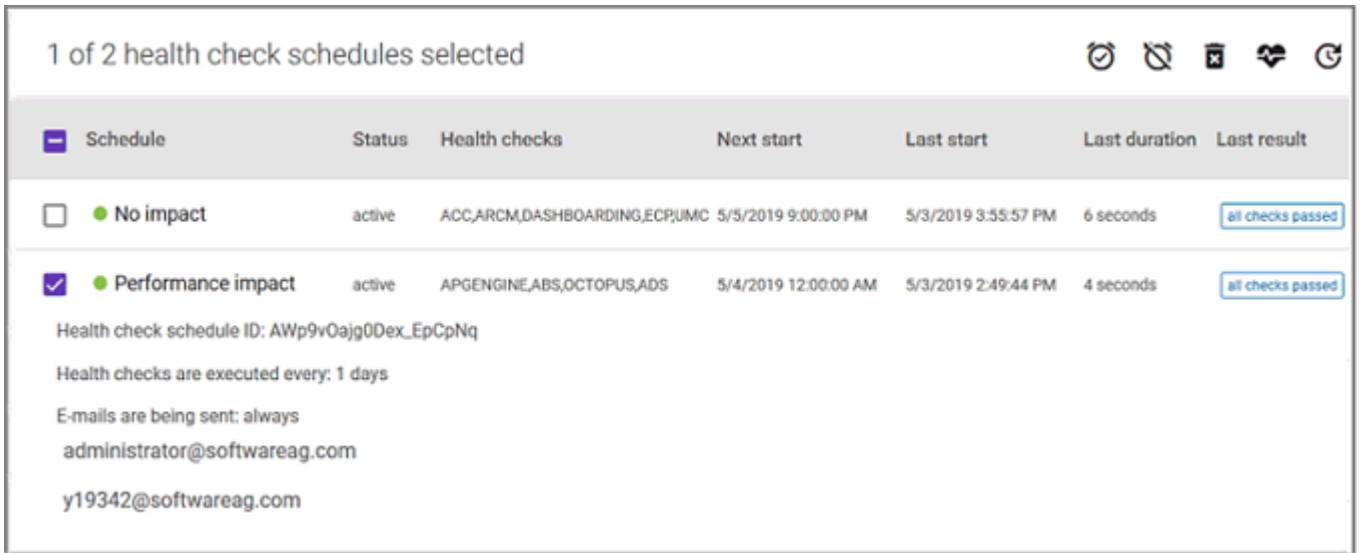
The required nodes were added (page 12).

Procedure

1. Open the ACC interface (page 5).

2. Click **Health check schedules**. All schedules are displayed. You can create, execute, modify, and delete health check schedules.

3. Click **Add health check schedule**. The **Add health check schedule** dialog opens.

4. Enter the name of the new schedule.

5. Enable the **Activate this schedule** check box. This will execute the schedule as defined after you have saved this schedule.

6. Enter the e-mail addresses of all recipients who are to be informed about the health check result. Add the addresses one after the other. To correct an e-mail address, delete the address and add it again.

7. Select the reason for sending e-mails.

8. Select the runnables for which you want to run scheduled health checks.

> **Warning**
>
> If you select runnables whose health checks affect system performance, ARIS may slow down for the period in which the health check is performed. Make sure that the schedules performing those health checks are executed at an appropriate time.

9. Enter the credentials of the ARIS user who will perform the planned health check. This user must have sufficient permissions, for example, similar to the permissions of the **superuser**.

10. Click **Next**. The **Specify schedule** dialog opens.

11. Select the frequency for performing the automatic health check. You can run it only once or set a specific time period for the health check to be started frequently. Select the date on which the health check will be started for the first time and the date on which it will be started for the last time. You can specify the exact time when the health check will be performed for the first and the last time. The syntax for entering the time of day is **<hh:mm>**.

12. Click **Create schedule**.

The health check schedule is saved and listed.

You can modify the schedule (page 31) if required.

2.5.3.1.2   Edit schedule

You can modify existing schedules.

Prerequisite

Health check schedules are available (page 30).

Procedure

1. Open the ACC interface (page 5).
2. Click **Health check schedules**. All schedules are displayed.
3. Move the mouse pointer to the schedule that you want to modify and click **⋮ More >Edit**. The **Edit schedule** dialog opens.
4. Change settings as required.
5. Enter the credentials of the ARIS user who will perform the planned health check. This user must have sufficient permissions, for example, similar to the permissions of the **superuser**.

   If you do not enter user credentials, the user name and the password is used that was specified when the schedule was created.
6. Click **Next**. The **Specify schedule** dialog opens.
7. Change settings as required and click **Save changes**.

The schedule was updated.

2.5.3.1.3   Deactivate selected schedules

You can deactivate schedules if related health checks are no longer required.

Prerequisite

Health check schedules are available (page 30).

Procedure

1. Open the ACC interface (page 5).
2. Click **Health check schedules**. All schedules are displayed.
3. Select the schedules that you want to deactivate. You can recognize active schedules by the green dot.
4. Click ⏰ **Deactivate selected schedules**.

The selected schedules are deactivated. Health checks are no longer executed.

2.5.3.1.4   Delete selected schedules

You can delete schedules if related health checks are no longer required.

Prerequisite

Health check schedules are available (page 30).

Procedure

1.   Open the ACC interface (page 5).

2.   Click **Health check schedules**. All schedules are displayed.

3.   Select the schedules that you want to delete.

4.   Click ⊠ **Delete selected schedules**. A warning is displayed.

5.   Click **Delete**.

The selected schedules are deleted.

2.5.3.1.5   Delete schedule

You can delete a schedule if related health checks are no longer required.

Prerequisite

Health check schedules are available (page 30).

Procedure

1.   Open the ACC interface (page 5).

2.   Click **Health check schedules**. All schedules are displayed.

3.   Move the mouse pointer to the schedule that you want to delete and click ⊠ **Delete schedule**. A warning is displayed.

4.   Click **Delete**.

The selected schedule is deleted.

2.5.3.1.6 Activate selected schedules

If existing schedules are deactivated, you can activate them in order to run health checks automatically again.

Prerequisite

Health check schedules are available (page 30).

Procedure

1. Open the ACC interface (page 5).
2. Click **Health check schedules**. All schedules are displayed.
3. Select the schedules that you want to activate. You can recognize inactive schedules by the gray dot.
4. Click ⊘ **Activate selected schedules**.

The selected schedules are active again. Health checks are executed as defined.

2.5.3.1.7 Run selected schedules

You can execute schedules immediately.

Prerequisite

Health check schedules are available (page 30).

Procedure

1. Open the ACC interface (page 5).
2. Click **Health check schedules**. All schedules are displayed.
3. Select the schedules that you want to execute.
4. Click 💓 **Run selected schedules**.

The selected schedules are started. Health checks are executed as defined. E-mails are sent to the responsible people.

2.5.3.1.8   Run schedule

You can execute a single schedule immediately.

Prerequisite

Health check schedules are available (page 30).

Procedure

1. Open the ACC interface (page 5).
2. Click **Health check schedules**. All schedules are displayed.
3. Move the mouse pointer to the schedule that you want to run and click ♥ **Run schedule**.

The selected schedule is started. Health checks are executed as defined. E-mails are sent to the responsible people.

2.5.3.1.9   Refresh list

You can update the content displayed in the **Health check schedules** overview.

Prerequisite

Health check schedules are available (page 30).

Procedure

1. Open the ACC interface (page 5).
2. Click **Health check schedules**. All schedules are displayed..
3. If schedules are missing, click ↻ **Refresh list**.

The page content is up to date.

2.5.4   What checks are performed?

For each runnable providing health information, a different set of checks is performed. As an example, the set performed for the **abs** runnable is described here:

▪ **Read Lock**

This check compares the average time it takes to access a synchronized resource with the average time it takes to access a non-synchronized resource on the system. From the measured times it calculates a ratio. A high ratio means that access to synchronized resources is relatively slow, which could have a negative effect on the computation speed of ARIS.

The check fails if the ratio is greater than 30. Because a large set of test data objects is necessary to accurately calculate the result, the check is executed only once an hour in the background.

▪ **Threads**

This check detects threads running longer than 5 minutes. This could indicate an infinite loop. All **AJP** and **HTTP** threads currently running are constantly monitored.

▪ **JIT Compiler**

This check detects whether the JIT compiler is active. If the JIT compiler is active, the check also monitors the state of the used code cache volume.

The check fails if the JIT compiler is not active or if the used code cache volume is at 90% of the maximum.

▪ **CPU Loop**

This check helps to identify JIT and VM performance problems. The check executes a short but extensive computation and measures the time needed to calculate the result.

The check fails if the calculation takes more than 2,5 seconds.

▪ **Documents**

This check detects whether the number of documents (revisions included) stored in ARIS document storage complies with the license in use.

Green: If the number of documents is < 40.000.

Yellow: If the number of documents is >= 40.000.

Red: The check fails if the number of documents is > 10.000.000.

▪ **Self Host Lookup**

This check identifies the host name of the machine via its IP address.

The check fails if the host name cannot be resolved or if the call takes longer than 30 milliseconds.

▪ **ZooKeeper Connection**

Checks whether the server is connected to ZooKeeper. If the server is not connected, the check fails.

- **ZooKeeper Leader**

  Ensures that there is a leading **abs** runnable instance for the abs application type registered in ZooKeeper.

- **DB Query**

  Checks whether a database connection can be created and measures the time for executing a set of standard database queries.

  The test fails if the database connection cannot be created or if the average execution time is longer than a calculated threshold.

- **DB Latency**

  This check tests whether a valid database connection can be created and measures the latency between the ARIS system and the database backend via multiple ping requests.

  The check fails if the database cannot be reached or if the average response time exceeds 300 milliseconds.

- **Database Connection Pool**

  The check detects the number of active database connections and the maximum number of active database connections in the system.

  The check fails if the number of active connections is equal to or exceeds 95% of the maximum.

- **CloudSearch Access**

  This check obtains all registered CloudSearch instances in the system and sends a ping request to them.

  The check fails if there are no CloudSearch instances registered or if no CloudSearch can be reached.

2.6 Using ACC commands

You can monitor the health of a specific runnable as well as the health of the whole system.

2.6.1 Monitor runnable's health

The **health** command determines a variety of health values for each runnable.

The exact list of health values available depends on the specific runnable. However, a few basic measurements are available to all runnables, in particular the CPU load and its memory usage. For all Java-based runnables, additional information is available.

Prerequisite

Health monitoring parameters are set (page 39).

Procedure

1. Start ARIS Cloud Controller (ACC).

2. Make sure that the runnable has been started.

3. Enter, for example: **show instance zoo_m health**

The output will look like this example:

```
Status: OK
Specified IP or host name: arissrv
Resolved IP or host name: arissrv/127.0.0.1
Agent port: 9001
Monitored Resource          Current Value  Value Range     Low Thrh.  High Thrh.  State  Last msrd. at  Msrd. evry
CPU Load                    11,36%         0,00%-100,00%   0,00%      80,00%      OK     08:05:39.844   1s 000ms
Memory Usage (Percent)      36,81%         0,00%-100,00%   0,00%      80,00%      OK     08:05:39.844   1s 000ms
Memory Usage (Megabytes)    2980MB         0MB-8097MB      0MB        0MB         OK     08:05:39.844   1s 000ms
Free Disk Space (Percent)   63,40%         0,00%-100,00%   3,00%      0,00%       OK     08:05:39.845   1s 000ms
Free Disk Space (Megabytes) 302361MB       0MB-476938MB    1000MB     0MB         OK     08:05:39.846   1s 000ms
Known used ports:
    Port  Runnable  Port Parameter
    2181  zoo_m     clientPort
    9001  (AGENT)   rest.port       DEFAULT
ACC+ arissrv>
```

The first column shows the name of the measured value and its physical unit, for example, megabytes, percent, etc.

The second column shows the current value of the health value. Note that this is not measured the moment the command is executed. The agent plugin will take measurements periodically, and this column will show the result of the last measurement.

The third column shows the range of possible values, for example, minimum and maximum value. If no minimum or maximum value can be determined or the value does not have an ordinal value scale a **-** is shown instead.

The fourth and fifth columns show the minimum and maximum values, respectively. These values were observed since the runnable or the ARIS Agent had last been restarted, but only if the health value measured has an ordinal value scale. For values measured without an ordinal value scale, - will be shown.

The sixth column shows the low or high warning thresholds for the measured value, if the measured health value has an ordinal value scale and if thresholds have been configured.

The seventh column shows the state of the measured value if the measured health value has an ordinal value scale and if a low and/or high threshold has been configured. The state can be either **OK**, **LOW** or **HIGH**. If in **LOW** or **HIGH** state, the column will also show for how long the value has been in that state already.

2.6.2   Show node

The **show node** command shows machine monitoring information concerning CPU, memory and disk usage. If a threshold is violated, it will be shown.

Prerequisite

Health monitoring parameters are set (page 39).

Procedure

1. Start ARIS Cloud Controller (ACC).

2. Make sure that the runnables have been started.

3. Enter: **show node**

The output will be in tabular format and look like this example:

```
ACC+ localhost>show node
Node localhost
Status: OK
Specified IP or host name: localhost
Resolved IP or host name: localhost/127.0.0.1
Agent port: 14000


Monitored Resource          Current Value   Value Range    Low Thrh.   High Thrh.   State   Last msrd. at   Msrd. evry
CPU Load                     0,19%           0.00%-100.00%  -           80.00%       OK      08:24:02.227    1s 000ms
Memory Usage (Percent)       58,68%          0.00%-100.00%  -           80.00%       OK      08:24:02.227    1s 000ms
Memory Usage (Megabytes)     38401MB         0MB-65442MB    -           -            OK      08:24:02.227    1s 000ms
Free Disk Space (Percent)    92,70%          0.00%-100.00%  3.00%       -            OK      08:24:02.228    1s 000ms
Free Disk Space (Megabytes)  616161MB        0MB-664685MB   1000MB      -            OK      08:24:02.228    1s 000ms

Known used ports:
  Port(s)  Runnable        Port Parameter
  443      loadbalancer_m  HTTPD.ssl.port                           Set explicitly
  ''       'mcos' m  HT''      ''                                   Set ''''  'tly
```

2.6.3 Configure health monitoring

If you use the health monitoring (page 2), using ACC, make sure to configure the system.

Procedure

1. Start ARIS Cloud Controller (ACC).

2. Enter the parameters described below.

THRESHOLDS

Thresholds for monitored values can be configured using agent configuration parameters:

Parameter	Description
monitoring.high.cpu.threshold.percent (0.0 – 1.0, default 0.8)	High CPU usage threshold (relative, in percent)
monitoring.relative.low.disk.space.warning.threshold.percent (0.0 – 1.0, default 0.03)	Low memory threshold (relative, in percent)
monitoring.absolute.low.disk.space.warning.threshold.megabytes (default 1000)	Low disk space threshold (absolute, in megabytes) **Warning** ARIS Agent not only warns against insufficient disk space. When the default value (1000 MB) is reached, all runnables are immediately shut down (killall) to avoid data inconsistencies. Runnables cannot be restarted. ARIS Agent autostart is disabled.

THRESHOLD MEASUREMENT

The measurement can be configured by the following parameters:

Parameter	Description
monitoring.interval (default 1000)	Interval in milliseconds, in which the measurement will be done.
monitoring.high.cpu.number.of.intervals. warning.threshold (default 10)	Number of measurements with CPU load above threshold before a warning state is reached
monitoring.high.mem.usage.number.of.intervals.warning.threshold (default 10)	Number of measurements with memory usage above threshold before a warning state is reached.
monitoring.low.disk.space.number.of.intervals.warning.threshold (default 10)	Number of measurements with free disk space below threshold before a warning state is reached.

MAIL NOTIFICATION

Mail notification can be configured by the following parameters:

Parameter	Description
mail.notification.enabled (default: **false**)	**true** enables automatic mailing.
mail.smtp.host	Qualified hostname or IP of the mail server.
mail.smtp.port (common: **25**)	Port of the mail server.
mail.smtp.username	User name on the mail server. If this parameter is set, the applications will implicitly enable SMTP authentication. There is **NO** dedicated parameter to explicitly enable SMTP authentication.
mail.smtp.password	Mail server password for the specified user.
mail.sender.address	Sender's e-mail address.
mail.sender.name	Sender's name.
mail.recipients	Recipient's e-mail address. This parameter is multivalued, specify several recipients separated with commas, for example: **set mail.recipients = "a@abc.com","b@abc.com"**
mail.recipients.cc	Recipient's e-mail address (**C**arbon **C**opy(CC)). This parameter is multivalued (see **mail.recipients**)

Parameter	Description
mail.on.system.events	Defining events triggering e-mail notification.
	This parameter is multivalued, specify several event types separated by comma, for example:
	set mail.on.system.events = MACHINE_STATE_CPU_LOAD_HIGH, MACHINE_STATE_
	Possible values:
	▪ MACHINE_STATE_LOW_DISK_SPACE_PERCENT
	▪ MACHINE_STATE_OK_DISK_SPACE_PERCENT
	▪ MACHINE_STATE_LOW_DISK_SPACE
	▪ MACHINE_STATE_OK_DISK_SPACE
	▪ MACHINE_STATE_CPU_LOAD_HIGH
	▪ MACHINE_STATE_CPU_LOAD_OK
	▪ MACHINE_STATE_MEMORY_USAGE_HIGH
	▪ MACHINE_STATE_MEMORY_USAGE_OK

3 Legal information

3.1 Documentation scope

The information provided describes the settings and features as they were at the time of publishing. Since documentation and software are subject to different production cycles, the description of settings and features may differ from actual settings and features. Information about discrepancies is provided in the Release Notes that accompany the product. Please read the Release Notes and take the information into account when installing, setting up, and using the product.

If you want to install technical and/or business system functions without using the consulting services provided by Software AG, you require extensive knowledge of the system to be installed, its intended purpose, the target systems, and their various dependencies. Due to the number of platforms and interdependent hardware and software configurations, we can describe only specific installations. It is not possible to document all settings and dependencies.

When you combine various technologies, please observe the manufacturers' instructions, particularly announcements concerning releases on their Internet pages. We cannot guarantee proper functioning and installation of approved third-party systems and do not support them. Always follow the instructions provided in the installation manuals of the relevant manufacturers. If you experience difficulties, please contact the relevant manufacturer.

If you need help installing third-party systems, contact your local Software AG sales organization. Please note that this type of manufacturer-specific or customer-specific customization is not covered by the standard Software AG software maintenance agreement and can be performed only on special request and agreement.

If a description refers to a specific ARIS product, the product is named. If this is not the case, names for ARIS products are used as follows:

Name	Includes
ARIS products	Refers to all products to which the license regulations of Software AG standard software apply.
ARIS Client	Refers to all programs that access shared databases by using ARIS Server.
ARIS Download Client	Refers to an ARIS Client that can be accessed using a browser.

3.2   Data protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR).

Where applicable, appropriate steps are documented in the respective administration documentation.

3.3   Disclaimer

ARIS products are intended and developed for use by persons. Automated processes, such as the generation of content and the import of objects/artifacts via interfaces, can lead to an outsized amount of data, and their execution may exceed processing capacities and physical limits. For example, processing capacities are exceeded if models and diagrams transcend the size of the modeling area or an extremely high number of processing operations is started simultaneously. Physical limits may be exceeded if the memory available is not sufficient for the execution of operations or the storage of data.

Proper operation of ARIS products requires the availability of a reliable and fast network connection. Networks with insufficient response time will reduce system performance and may cause timeouts.

If your product contains ARIS document storage, the following applies:

ARIS document storage was tested with 40.000 document items. This includes documents, document versions or folders. We recommend monitoring the number and overall size of stored document items and archiving some document items if needed.

If ARIS products are used in a virtual environment, sufficient resources must be available there in order to avoid the risk of overbooking.

The system was tested using scenarios that included 100,000 groups (folders), 100,000 users, and 1,000,000 modeling artifacts. It supports a modeling area of 25 square meters.

If projects or repositories are larger than the maximum size allowed, a powerful functionality is available to break them down into smaller, more manageable parts.

Some restrictions may apply regarding the use of process administration, ARIS Administration, ARIS document storage, and ARIS Process Board, and the generation of executable processes. Process Governance has been tested and approved for 1000 parallel process instances. However, the number may vary depending on process complexity, for example, if custom reports are integrated.

ARIS document storage was tested with 40.000 document items. This includes documents, document versions or folders. We recommend monitoring the number and overall size of stored document items and archiving some document items if needed.