



ARIS Cloud Controller (ACC) **COMMAND-LINE TOOL**

Version 10.0 - Service Release 1

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1 ARIS Cloud Controller (ACC)

ACC is a command-line tool for administrating and configuring an ARIS installation. It communicates with ARIS Agents on all nodes.

To start ACC under a Windows operating system click **Start > All Programs > ARIS > Administration > Start ARIS Cloud Controller**. If you have changed agent user credentials you must enter the password.

To start ACC under a Linux operating system, execute the **acc10.sh** shell script instead. ACC is available if you have copied and installed the **aris10-acc-`<number>`** rpm file depending on the Linux operating system.

Enter **help** or **help `<command>`** to get information about the usage of the commands.

Warning

Using ACC commands will deeply affect your system. This requires profound knowledge of the technical ARIS infrastructure and environment. The required know-how can be acquired only by attending the training course **ARIS Server Installation**, available via Global Education Services. Get more details on <http://softwareag.com/training> (<http://softwareag.com/training>). If you use ACC commands without this knowledge or the services of Software AG, according to the standard Software AG software maintenance agreement we cannot guarantee proper functioning.

ARIS Cloud Controller (ACC) can be used in three modes:

- **Interactive mode (default)**

ACC runs with an interactive shell, allowing you to manually issue commands.

- **Batch mode**

Activated by specifying a command file with the **-f** command line parameter (see ACC command line parameters below). ACC will execute the commands in the file in the given sequence and exit after execution or if one of the commands fails.

A command file line starting with a **#** will be interpreted as a comment line and ignored by ACC.

- **Command mode**

You can directly pass a single command to ACC as a command line parameter. The command will be executed and ACC will exit afterwards.

When passing commands directly as an ACC command line parameter, you have to be careful when escaping strings in your command, for example, double-quote-delimited parameters. The operating system command **shell** will consume the double quotes, leaving your string parameter unescaped. So please escape the quote characters.

If you issue the command in command mode, for example:

```
set remote.repository.url="http://something.com/repo"
```

You should enter:

```
acc.bat -h localhost -u <user name> -pwd <remoteAccessPassword> set  
remote.repository.url=\"http://something.com/repo\"
```

If you enter:

```
acc.bat -h localhost -u <user name> -pwd <remoteAccessPassword> set  
remote.repository.url="http://something.com/repo"
```

ACC will return an error message, for example:

```
line 1:52 mismatched character '<EOF>' expecting '\n'  
Invalid or erroneous command "set  
remote.repository.url=http://something.com/repo ": line 1:30 extraneous input  
' :' expecting EOF  
Use "help" to display a list of available commands.
```

CONNECTING TO ACC NODES

When starting ACC in one of the three usage modes without any additional command line parameter, it will by default connect to the node, that was installed by the setup program. There are three options to specify nodes you want to control with ACC:

- You can use the **add node** command to put the individual cloud nodes under ACC's control. This requires profound knowledge of the technical ARIS infrastructure and environment. The required know-how can be acquired only by attending the training course **ARIS Server Installation**.
- Alternatively, you can list all your cloud nodes in a node file and pass this file to the ACC with the **\-n** (or **--nodefile**) command line option.
- If you only want to connect to a single node and issue commands there, you can also use the ACC's **-h** (or **--host**) command line option to directly specify the host or IP name of the node you want to control with ACC.

Enter **list** to monitor the status of all runnables. This example shows ACC of an ARIS Server 10.0.x installation for a medium number of users.

```
ACC+ arisserver>list
On node arisserver now 14 runnables are installed.
zoo_m          : STARTED (com.aris.runnables.zookeeper-run-prod-10.0.x)
postgres_m     : STARTED (com.aris.runnables.PostgreSQL-run-prod-10.0.x)
dashboarding_m : STARTED (com.aris.runnables.PostgreSQLLECP-run-prod-10.0.x)
cloudsearch_m  : STARTED (com.aris.cip.y-cloudsearch-run-prod-10.0.x)
elastic_m      : STARTED (com.aris.runnables.elasticsearch-run-prod-10.0.x)
adsadmin_m     : STARTED (com.aris.adsadmin.y-adsadmin-run-prod-10.0.x)
umcadmin_m     : STARTED (com.aris.umcadmin.y-umcadmin-run-prod-10.0.x)
loadbalancer_m : STARTED (com.aris.runnables.httpd.httpd-run-prod-10.0.x)
abs_m          : STARTED (com.aris.modeling.runnables.y-server-run-prod-10.0.x)
apg_m          : STARTED (com.aris.age.age-run-prod-10.0.x)
copernicus_m   : STARTED
                (com.aris.copernicus.copernicus-portal-server-run-prod-10.0.x)
octopus_m      : STARTED (com.aris.octopus.y-octopus_server-run-prod-10.0.x)
ecp_m          : STARTED (com.aris.runnables.ecp-run-prod-10.0.x)
simulation_m   : STARTED
                (com.aris.modeling.runnables.simulationserver.y-simuserver-run-prod-10.0.x)

ACC+ arisserver>
```

The status of all runnables represented by their instanceIDs are listed. Possible states are:

- **UNKNOWN**
The runnable state is not yet known. This state is shown directly after the agent was started.
- **STOPPED**
The runnable is currently not running.
- **STARTING**
The runnable is starting, but this process is not complete yet.
- **STARTED**
The runnable is running.
- **STOPPING**
The runnable is stopping, but this process is not complete yet.
- **DEACTIVATED**
The runnable is not in use. It has been deactivated manually and can be activated if necessary.
- **DOWN**
This runnable has started and crashed. ARIS Agent will attempt to automatically restart the runnable momentarily.
- **FAILED**
This runnable has crashed. ARIS Agent has given up trying to restart the runnable.

If a runnable does not start properly, read the **Basic Troubleshooting** guide.

RUNNABLES OF ALL ARIS SERVERS

This table lists all runnables run by ARIS Server or ARIS Publisher Server (Publisher) and the locally installed server installed by the ARIS Client Setup (LOCAL) for a medium number of users installation. That's why all runnables end with **_m**. Installations for a small or a large number of users are typified with **_s** or **_l**.

Runnables run by the server **LOCAL** are not accessible by ACC. This server is only available in combination with ARIS Client installations.

Runnable (instanceID)	ARIS Server	ARCM	Publisher	LOCAL
Runnables run by different server types				
<p>zoo_m</p> <p>Service registry</p> <p>This runnable is a server component managing the communication, configuration and status information of all available runnables and external services.</p>	X	X		X
<p>postgres_m</p> <p>Modeling database</p> <p>Internal standard database system storing all ARIS databases (modeling data) and the system databases (ARIS method, filters, templates, languages, fonts, font formats and script data).</p> <p>This database can be replaced by an external Oracle® or Microsoft® SQL database.</p>	X	X		X
<p>cloudsearch_m</p> <p>Search index</p> <p>Main full-text search and graph structure index for modeling data. It allows fast access to the data stored in the modeling database, Oracle® or Microsoft® SQL database.</p>	X	X		X
<p>elastic_m</p> <p>Document index (Elasticsearch)</p> <p>Main full-text search index for documents and collaboration data. It also stores users, user groups, and privileges of these components.</p>	X	X		X

Runnable (instanceID)	ARIS Server	ARCM	Publisher	LOCAL
adsadmin_m ARIS document storage management Server component managing ARIS document storage.	X	X		
umcadmin_m ARIS Administration/User Management Server component managing users, permissions, licenses, LDAP connectivity and SSO.	X	X		X
loadbalancer_m Load balancer Central point of entry for all ARIS clients to the entire ARIS application, typically accessed via HTTP ports 80 or 1080, or HTTPS ports 443 or 1443. It distributes the workload across the installed components.	X	X		
abs_m Modeling/publishing/reporting Main server component for modeling and operations on modeling data including report execution.	X	X		X
hds_m (optional; not by setup) Heavy-duty Server (HDS) HDS is an additional component that takes the load of running ARIS reports from your abs_<s, m or l> modeling component.	X			
cdf_m (optional; not by setup) Cloud Decoupling Framework (CDF) CDF is a queue which can be used to decouple synchronous accesses to services. It is required for communication between the abs_<s, m or l> modeling component and the hds instances.	X			
apg_m Process Governance server component. Executes processes and provides managing user interfaces.	X			

Runnable (instanceID)	ARIS Server	ARCM	Publisher	LOCAL
copernicus_m Portal Server component providing the portal in ARIS Connect.	x			
octopus_m Analysis Server component processing ad hoc analyses and queries triggered in ARIS Architect or ARIS Designer.	x			x
ecp_m Collaboration Server component of the collaboration component in ARIS Connect.	x			x
simulation_m Simulation Server component of the simulation functionality in ARIS Architect.	x			x
dashboarding_m Dashboards (ARIS Aware) Server component of the dashboarding component in ARIS Connect.	x			
businesspublisher_m ARIS Publisher server Server component of the ARIS Publisher functionality in ARIS Architect.			x	
arcm_m ARIS Risk & Compliance Manager server Server component of ARIS Risk & Compliance Manager.		x		

2 Use cases

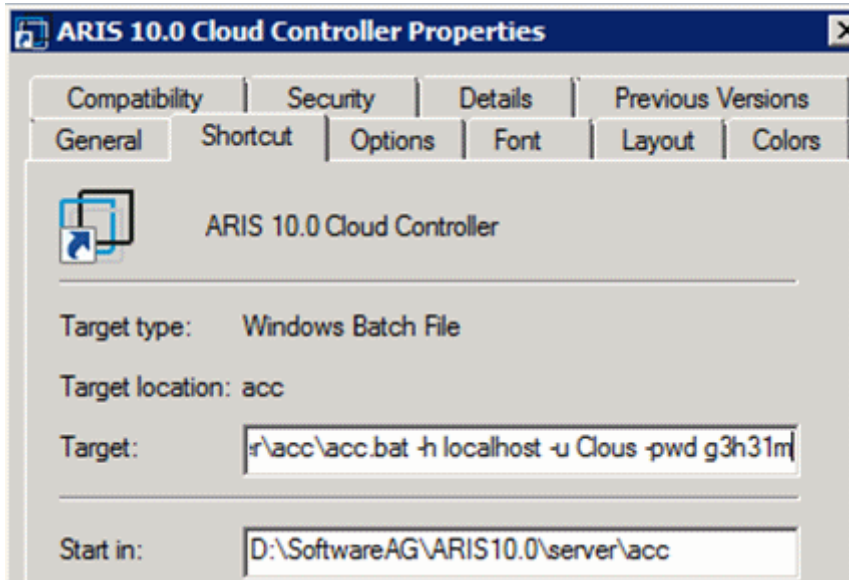
In these chapters product-related examples for configuring the system are available.

2.1 Change the default agent user's password

The ARIS Agent user has access to ARIS Cloud Controller (ACC). If you did not change the default password during the setup process you should do so manually to prevent unauthorized access.

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
2. Change the password:
set password = "<enter the new password>"
3. Stop ACC. Enter:
exit
4. Restart ACC.
5. Enter the new password.
6. If you use the **Start** icon for ARIS Cloud Controller (**Start > All Programs > ARIS > Administration > ARIS Cloud Controller**) you can change the **password** command line parameter within the **ACC** shortcut. If you do not change the password it will be prompted every time you start ACC.



If you run an ARIS server setup after you have changed the password, enter the changed credentials.

2.2 Start and stop runnables

The start modus had been selected during the setup process. If you have chosen the option **Start automatically** all runnables will be started in the right order.

Runnables can also be started and stopped independently, but most runnables will not work on their own. You must start all needed runnables in the right order.

- Enter **startall** to get all runnables started in correct order.
- Enter **start <instanceld>**, for example, **start abs_m** to start only the runnable **abs** (Modeling & Publishing (Business server))
- Enter **stopall** to stop all runnables.
- Enter **stop <instanceld>**, for example, **stop abs_m** to only stop one runnable.

If you run ARIS on a laptop (8 GB) for demonstration purposes you might want to stop runnables you do not need to ensure more memory for the system.

2.3 Deactivate runnable

Deactivation is useful, if you do not yet use a certain runnable, but maybe need it later. If you activate the runnables again, you can still use the setup program to update your ARIS version. To deactivate runnables is safer than removing or shutting them down.

A deactivated runnable cannot be started with a **start** command. They will be ignored by the **startall** command and the agent's runnable autostart.

Prerequisites

Runnables are in **STOPPED** or **FAILED** state.

Procedure

1. Start ARIS Cloud Controller (page 1).
2. To deactivate the runnable enter, for example:

```
deactivate simulation_m
```

The **simulation** runnable will not be started, until you have activated it again (page 10).

2.4 Activating runnable

You can activate runnables that have been deactivated (page 10). This is required before starting an update setup.

Procedure

1. Start ARIS Cloud Controller (page 1).
2. To activate the runnable enter, for example:

```
activate simulation_m
```

The **simulation** runnable can be started again.

2.5 Provide additional memory

If you have performed an installation for small (s), medium (m) or large (l) memory requirement, you can provide additional memory for runnables.

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
2. Enter **reconfigure <runnable> +JAVA-Xmx="<memory requirement>"**.

The affected runnables will be started after the settings have been updated.

Examples

- **reconfigure abs_s +JAVA-Xmx="1152m"**

The memory settings for the modeling runnable of an s installation will be increased to max. 1152 MB.

- **reconfigure abs_m +JAVA-Xmx="6G"**

The memory settings for the modeling runnable of an m installation will be increased to 6 GB.

2.6 Make SSL certificate available

By default, the load balancer is set to allow both unencrypted HTTP (port 80) and encrypted HTTPS/SSL (port 443) access. For SSL the SSL certificate has to fit to the load balancer's host name otherwise clients in particular web browsers will complain about an invalid certificate. Using SSL with ARIS Publisher must be configured in a different way.

OBTAINING A VALID CERTIFICATE

To use SSL you need to get a valid certificate signed by a certificate authority (CA) for the server on which the load balancer is running. Please make sure that the certificate is compatible with the Java version of all ARIS clients.

- You can buy a certificate from an official CA. Most clients in particular browsers will trust certificates signed by such a CA.
- If your company uses own CA get a certificate from this CA and add this CA to the trust store of all clients.

ADDING A VALID CERTIFICATE TO THE LOAD BALANCER

Your certificate should consist of two parts the private key used to encrypt information sent back to the client (file extension **.key**) and the server certificate (file extension **.crt**).

1. Put these two files into a ZIP file.
2. Copy this ZIP file to a local directory that can be accessed by ARIS Cloud Controller (ACC).
3. Start the ACC (page 1).
4. Stop the **loadbalancer** runnable. Enter, for example:

```
stop loadbalancer_m
```

5. Enter the ACC command **enhance loadbalancer_<s, m, or l> with sslCertificate local file "<path to the ZIP file>"**

Example:

```
enhance loadbalancer_m with sslCertificate local file "c:\\temp\\lbcert.zip".
```

If you have blanks or special characters in the path, you must put it in quotes and use a double backslash instead of a single slash. Alternatively, use single forward slashes, for example: **"c:/temp/lbcert.zip"**.

6. Start the **load balancer** runnable again. Enter, for example:

```
start loadbalancer_m
```

The SSL certificate is available.

If ARIS clients cannot perform connections to servers using SSL certification you need to provide an additional certificate (see: **Basic Troubleshooting Guide**).

2.7 Redirect ports

In case of port conflicts (see **Basic Troubleshooting Guide**) redirect the ports, for example, the default HTTP port **80** or the HTTPS port **443**.

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
2. To redirect ports to be accessed enter the command for example:

reconfigure loadbalancer_m +HTTPD.port=1080 +HTTPD.ssl.port=1443

ARIS runnables run using the redirected ports.

If runnables do not start up properly, resolve possible port conflicts.

2.8 ARIS Administration/ARIS Risk & Compliance Manager

If you have installed ARIS Risk & Compliance Manager and ARIS Server you can force ARIS Risk & Compliance Manager to use the ARIS Server's ARIS Administration.

2.8.1 Use existing ARIS document storage and ARIS Administration for ARIS Risk & Compliance Manager

After you have installed ARIS Risk & Compliance Manager this installation uses a separate set of runnables, for example, ARIS Administration or ARIS document storage. This means that the administrator has to manage users and documents. If you already use ARIS Server and have installed ARIS Risk & Compliance Manager later you can reconfigure your ARIS Risk & Compliance Manager runnable to your productive ARIS Server installation. This will make ARIS Risk & Compliance Manager available to all users of your productive system and only one ARIS document storage will be in use.

1. Start ARIS Cloud Controller (page 1) on your ARIS Risk & Compliance Manager installation.
2. To reconfigure ARIS Risk & Compliance Manager and force that runnable to use the ARIS Administration of your ARIS Server installation, enter:

```
reconfigure arcm_<s,m or l>  
zookeeper.connect.string="<ARISServer>\\:14281"
```

ARIS Risk & Compliance Manager is now accessible via the ARIS Server name, for example, **http://arisserver/arcm** by all users managed within the ARIS Administration of your productive system.

To ensure more memory for the ARIS Risk & Compliance Manager system you can shut down all other runnables or remove them.

2.9 ARIS Aware

You can make custom widgets available for ARIS Aware.

2.9.1 Make enhancements available

If you would like to use self-designed widgets, **LESS** files, or **CSS** files in your ARIS Aware dashboards you must enhance each **dashboarding** runnable of your ARIS Server installation with these files. Enhanced files are not affected by an update setup. They will be preserved.

Procedure

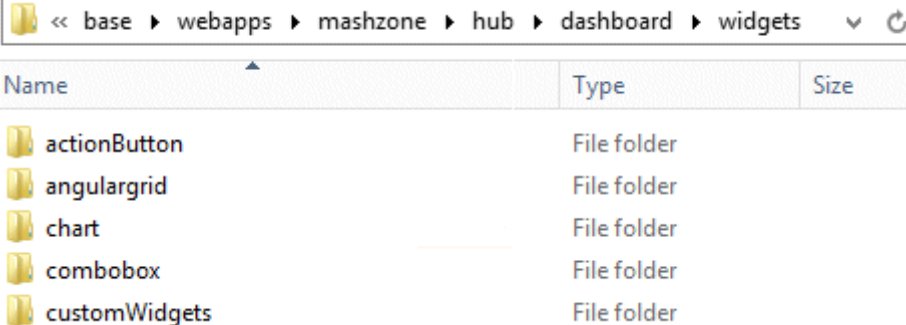
1. Start ARIS Cloud Controller (page 1).
2. To make the custom resource available enter, for example:

enhance dashboarding_m with customResource local file "C:\\mywidgets.zip"

If you have blanks or special characters in the path, you must put it in quotes and use a double backslash instead of a single slash.

The **ZIP** file including its contained folder structure is automatically extracted to the path:

%INSTANCEDDIR%\\base\\webapps\\mashzone



Name	Type	Size
actionButton	File folder	
angulargrid	File folder	
chart	File folder	
combobox	File folder	
customWidgets	File folder	

2.10 ARIS Publisher

In this chapter product-related examples for configuring the system are available.

2.10.1 Provide ARIS Publisher license files

You can provide license files for ARIS Publisher Server using ACC. All other licenses are managed by ARIS Administration.

Procedure

1. Save the zip file to a local directory that can be accessed by ARIS Cloud Controller (ACC), for example: **d:/Publisher_Server_key.zip**
2. Start ARIS Cloud Controller (ACC) (page 1).
3. Stop the **businesspublisher** runnable. Enter, for example:
stop businesspublisher_I
4. Provide the license using this command:

enhance <runnable> with license local file <path to the saved file>

Example:

**enhance businesspublisher_I with license local file
"d:\\Publisher_Server_key.zip"**

If you have blanks or special characters in the path, you must put it in quotes and use a double backslash instead of a single slash. Alternatively, use single forward slashes, for example: **"d:/Publisher_Server_key.zip"**.

5. Start the **businesspublisher** runnable. Enter, for example:
start businesspublisher_I.

The license is available.

2.10.2 Reconfigure ARIS Publisher settings

Settings entered during the setup process can be adjusted. Use the **reconfigure** ACC command (page 17) (see ARIS Cloud Controller (ACC) Command-Line Tool.pdf (../../documents/3 Installation/31 Initial installation/312 Server/3121 Basic (Single node)/ARIS Cloud Controller (ACC) Command-Line Tool.pdf) document) to change settings. When performing an update setup all modifications made manually in CFG or XML files will be lost.

In this example the Oracle connection parameters of ARIS Publisher Server will be modified and the user management of another ARIS Server will be used. Also, the connection parameters to Process Governance can be adjusted.

Procedure

1. Start ARIS Cloud Controller (page 1) on your ARIS Publisher Server.
2. Reconfigure **businesspublisher_<s,m or l>** and force that runnable to use the ARIS Administration of your ARIS Server installation.

Ensure that all values used in the **reconfigure** command, for example, for the keys **username** or **password** actually match to the values used in the <ARIS installation path>\server\bin\work\work_businesspublisher_<s, m or l>\base\webapps\businesspublisher\config\webappserver.cfg file and the **umconfig.cfg** file. If typing errors happened during the setup process the affected values must be adjusted.

For a better overview the parameters of the reconfigure command are shown with line-wraps. For execution you must enter a single-line command.

#Database connection parameters (in this example an Oracle database system is used)

```
bp.ado.database="com.idsscheer.aris.businesspublisher.application.dao.database.  
AOracleDAO"
```

```
bp.db.driver="oracle.jdbc.OracleDriver"
```

```
bp.db.url="jdbc:oracle:thin:@//oracle-srv.domain.tld:1521:oracle_sid"
```

```
bp.db.validation.query="select 1 from dual"
```

```
bp.db.username="ARISBP"
```

```
bp.db.passwd="ARISBP" (You can also enter encrypted passwords.)
```

```
bp.arisbpdata="ARISBPDATA"
```

```
bp.arisbpindex="ARISBPINDEX"
```

#ARIS Administration connection parameters

```
bp.login.module="UMCLogin"
```

"**UMCLogin**" can be found in the **webappserver.cfg** file. This parameter value switches the ARIS Publisher Server's user management to the User Management of the defined ARIS Server ARIS Administration.

```
bp.umc.server.url="http://<aris-design-or-connect-srv>.domain.tld:<port number>/umc"
```

This URL can be found in the **umcconfig.cfg** file. It directs to the user management of the ARIS Server ARIS Administration. Please enter the port number that has been used during the setup process. The **default** port number is 80 (Windows operating systems) or 1080 (page 13) (Linux operating systems).

```
bp.umc.admin.login="superuser"
```

```
bp.umc.admin.passwd="<superuser's password>"
```

The ARIS Administration user user name and password can be found in the **umcconfig.cfg** file. By default the **superuser** user has access to the user management and holds all required permissions. For security reasons, you are recommended to encrypt the password using the ARIS Server Administrator command **encrypt** (see ARIS Server Administrator Command-Line Tool.pdf (../../documents/3 Installation/31 Initial installation/312 Server/3121 Basic (Single node)/ARIS Server Administrator Command-Line Tool.pdf)).

APG

```
bp.age.host="<aris-design-or-connect-srv>.domain.tld"
```

```
bp.age.port=80
```

3. For execution enter a single-line command. For a better overview the parameters of the reconfigure command are shown with line-wraps, for example:

```
reconfigure businesspublisher_<s,m or I>
bp.ado.database="com.idsscheer.aris.businesspublisher.application.dao.database.AOracle
DAO"
bp.db.driver="oracle.jdbc.OracleDriver"
bp.db.url="jdbc:oracle:thin:@//oracle-srv.domain.tld:1521:oracle_sid"
bp.db.validation.query="select 1 from dual"
bp.db.username="ARISBP"
bp.db.passwd="ARISBP"
bp.arisbpdata="ARISBPDATA"
bp.arisbpindex="ARISBPINDEX"
bp.login.module="UMCLogin"
bp.umc.server.url="http://<aris-design-srv>.domain.tld:<port number>/umc"
bp.umc.admin.login="superuser"
bp.umc.admin.passwd="<superuser's password>"
bp.age.host="<aris-design-srv>.domain.tld"
bp.age.port=80
```

This **businesspublisher_<s, m or I>** runnable is reconfigured. Publisher users are authenticated via ARIS Administration and ARIS document storage will be available if it has been connected to the ARIS Publisher Server.

These modifications will not be affected by update setups. When performing an update setup all modifications made manually in CFG or XML files will be lost.

2.10.3 Configure the service 'Create static ARIS Publisher export' for Process Governance

Settings entered during the setup process can be adjusted. Use the **reconfigure** ACC command (page 17) (see ARIS Cloud Controller (ACC) Command-Line Tool.pdf (../../documents/3 Installation/31 Initial installation/312 Server/3121 Basic (Single node)/ARIS Cloud Controller (ACC) Command-Line Tool.pdf) document) to change settings. When performing an update setup all modifications made manually in CFG or XML files will be lost. You can configure, that the **Create - Static ARIS Publisher export** service supports the port information.

Procedure

1. Start ARIS Cloud Controller (page 1) on your <_apg_server>.
2. Enter the following command, for example:

```
reconfigure apg_m
```

```
JAVA-Dcom.idsscheer.age.serviceenabling.staticExport.wsServer="<myARIShost>:<port>/aris/apgstatic"
```

Ensure that all values used in the **reconfigure** command, for example, for the keys **username** or **password** actually match the values used in the <ARIS installation path>\server\bin\work\work_apg_<s, m or l>. If typing errors happened during the setup process the affected values must be adjusted.

This **apg_m** runnable is reconfigured.

These modifications will not be affected by update setups. When performing an update setup all modifications made manually in CFG or XML files will be lost.

2.11 Collaboration

In this chapter related examples for configuring the system are available.

2.11.1 Create synchronization user

The synchronization user serves technical purposes only. No function or license privileges are assigned to this user. The synchronization user is required for synchronization processes executed in the background of Collaboration, for example, to synchronize the user data between ARIS Administration and Collaboration.

The synchronization user is automatically generated for every newly created tenant. If the synchronization user is not available, the **system** user is used instead, provided that the default password of the **system** user was not changed. If the **system** user cannot be used, you must manually create the synchronization user using ARIS Cloud Controller. By default, the synchronization user name is `_aris_tech_user_ecp_techuser`.

Procedure

1. Start ARIS Cloud Controller (page 1).
2. To create the synchronization user enter, for example:

```
enhance umcadmin_m with createUser trigger only options tenant.name=<tenant name> tenant.user.name="<user name>" tenant.user.pwd="<user password>" affected.user="<synchronization user name>" affected.email="<synchronization user e-mail>" affected.pwd="<synchronization user password>" as.technical.user="true"  
set tenant default data for app umc ecpTechnicalUserName="<synchronization user name>" ecpTechnicalUserPassword="<synchronization user password>"
```

The user is created and made available for the **ecp** runnable.

2.11.2 Anonymize user

You can anonymize deleted Collaboration users according to GDPR.

Prerequisites

The user was deleted in ARIS Administration.

Procedure

1. Start ARIS Cloud Controller (page 1).
2. To anonymize, for example, the deleted **y4711** user on **ecp_m** enter:

invoke anonymizeUser on ecp_m anonymize.user=y4711

Activities of this Collaboration user, such as posts, comments, groups, are shown with **Anonymized user** instead with the **y4711** user name. If several users are anonymized a number is added, such as **Anonymized user 2**.

2.12 Tenant Management

In this chapter related examples for configuring the system are available.

2.12.1 Create a tenant

After the installation of ARIS Connect the **default** tenant is available. If you need additional tenants to provide different sets of databases, users, configurations or ARIS methods you can easily create tenants. If you are going to create additional tenants for ARIS10.0 in order to migrate data from ARIS 9.8.7 or later, make sure to use identical names in both ARIS versions. You can also create tenants using the ARIS Administration's command line tools or Tenant Management.

Prerequisites

- ARIS Server installation
- Users need the **User administrator** function privileges:
- If you do not use the standard database system, make sure to create additional schemes in your Oracle or Microsoft SQL database management system and assign the tenants (page 35) to these schemes (see ARIS Server Installation Guide (../../documents/3 Installation/31 Initial installation/312 Server/3121 Basic (Single node)/ARIS Server Installation - Windows.pdf)).

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
2. Enter:

create tenant <tenant name> username=<user name of a user holding the required privileges> password=<this user's password>.

For tenant names please only use up to 25 lowercase ASCII characters and numbers. The name must begin with a character. Special characters and characters, for example, in Chinese, Cyrillic or Arabic cannot be used.

Example:

create tenant test01 master.tenant.user.name = admin master.tenant.user.pwd= tenantmanager123

You can even change parameters for the new tenant. You must specify additional parameters in case you use an external database management system, for example:

**create tenant test01 dba.user="system" dba.user.pwd="manager"
dbinstanceid="db0000000000" default.tbl.space="ARISDATA"
temp.tbl.space="TEMP" schema.name=aris_<tenant ID>"
schema.pwd="*ARIS!1dm9n#yy"**

The tenant **test01** will be created.

3. The administrator must import licenses, create users and user groups and assign privileges and licenses for the **test01** tenant.
4. Start a ARIS client and log in using this tenant. The system database will be created for that tenant.

The tenant is created and can be backed up (page 25).

2.12.2 Back up a tenant

You can back up a tenant data (page 30) using the ARIS Cloud Controller (ACC). Please note that no user can work on this tenant during the backup process.

Warning

Tenant data is fully backed up only if the user executing the commands has sufficient privileges for all components in every tenant.

User administration audit events are not part of the tenant backup.

Extensions, for example, SSL certificates (page 12), SAP® Java Connector, and JDBC drivers (page 34), added using the **enhance** ACC command are not backed up.

Prerequisites

- ARIS Server installation
 - Users need the function privileges:
 - Analysis administrator
 - ARCM administrator
 - Collaboration administrator
 - Database administrator
 - Document administrator
 - License administrator
 - Process Governance administrator
 - Server administrator
 - Technical configuration administrator
 - User administrator
 - Dashboard administrator
- The function privileges depend on the license. Therefore, you may not be able to assign all of the function privileges shown.

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
2. Enter:
backup tenant <tenant name> to <pathToBackUpFile> username=<user name of a user holding the required privileges> password=<this user's password>
e. g:
backup tenant default to "f:\\\\backupDefault.acb" username=y1234 password=managery1234.

Notice the double backslashes. Alternatively, use a single forward slash.

The backup is started. The complete backup is written to one single zip file. You do not need to stop the Process Governance runnable to back up or restore Process Governance data. To avoid inconsistencies, you cannot back up or restore Process Governance data while a process is still running. During a backup or restore, Process Governance is not accessible to avoid inconsistencies.

You can restore (page 28) this tenant using this zip file. Using the **restore tenant** command will copy the content to an existing tenant. Process Governance backup archives greater than 2 GB might lead to insufficient TEMP space issue when restoring them into ARIS with Oracle back end. For such large backups, extend the temp tablespace size before restoring operation executed. You can manage tenants also using the ARIS Administration's command line tools or Tenant Management.

2.12.3 Delete a tenant

If you delete a tenant all information will be lost:

- All databases
- All user data (users, privileges and licenses)
- All ARIS document storage data including all access rights
- All Process Governance data
- All ad hoc analyses and queries

Prerequisites

- ARIS Server installation
- Users need the function privileges:

Analysis administrator

ARCM administrator

Collaboration administrator

Database administrator

Document administrator

License administrator

Process Governance administrator

Server administrator

Technical configuration administrator

User administrator

Dashboard administrator

The function privileges depend on the license. Therefore, you may not be able to assign all of the function privileges shown.

Procedure

1. Back up (page 25) the tenant in order to be able to restore (page 28) data again.
2. Start ARIS Cloud Controller (ACC) (page 1).
3. Enter:

delete tenant <Tenant name> username=<user name of a user holding the required privileges> password=<this user's password>

Deletes the specified tenant and all its associated data from the system. User name and password of an administrative user have to be specified using the parameters **master.tenant.user.name** and **master.tenant.user.pwd**, respectively.

If the optional **force** keyword is used, the security question **Are you sure?** is overridden, that is, the tenant and its data is deleted without further prompting the user.

The tenant has been deleted.

You can also manage tenants using the ARIS Administration's command line tools or Tenant Management.

2.12.4 Restore a tenant

You can restore a tenant data (page 30) or copy the content of this tenant (page 31) to a different ARIS server. You need to have access to the relevant back-up zip file containing the data of a tenant:

Warning

No user can work on this tenant during the restore process.

All current data of a running tenant will be deleted and replaced by the data of the backup file. Data related to ARIS Administration will not be deleted but merged. The tenant name and current user data will be untouched. If users were deleted after the tenant has been backed up, these users will be available again. Make sure to delete those users.

Process Governance backup archives greater than 2 GB might lead to insufficient TEMP space issue when restoring them into ARIS with Oracle back end. For such large backups, extend the temp tablespace size before restoring operation executed.

Prerequisites

- You need access to the relevant back-up zip file.

- ARIS Server installation

- Users need the function privileges:

Analysis administrator

ARCM administrator

Collaboration administrator

Database administrator

Document administrator

License administrator

Process Governance administrator

Server administrator

Technical configuration administrator

User administrator

Dashboard administrator

The function privileges depend on the license. Therefore, you may not be able to assign all of the function privileges shown.

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
2. To restore the tenant, enter:

restore tenant <tenant name> from <pathToBackupFile> username=<user name of a user holding the required privileges> password=<this user's password>

e. g:

**restore tenant default from "f:\\backupDefault.acb" username=y1234
password=managery1234.**

Notice the double backslashes. Alternatively, use a single forward slash.

The tenant will be restored.

Current data will be deleted and replaced. No user can work with this tenant during the restore process.

3. Make sure to change the standard user's passwords again.

The tenant is restored.

You can also create tenants using the ARIS Administration's command line tools or Tenant Management.

2.12.5 What data is backed up and restored?

If you back up tenants, the current state of the following data is saved in different folders in the tenant backup zip file.

Tenant data is fully backed up only if the user executing the commands has sufficient privileges for all components in every tenant. Extensions, for example, SSL certificates (page 12), SAP® Java Connector, and JDBC drivers (page 34), added using the **enhance** ACC command are not backed up. In ARIS 10 all started runnables are automatically taken into account when executing tenant backup/restore commands.

Backup/restore	Required function privileges	Component (runnable)
Data from ARIS Administration, for example, users, privileges,	User administrator Technical configuration administrator	ARIS Administration/User Management (umcadmin_<s, m, or l>)
Licenses User administration audit events are not part of the tenant backup.	License administrator	
System database Contains filters, templates, and font formats, but also ARIS Method and all evaluation scripts, macros and scheduled reports.	Server administrator	Modeling & Publishing (abs_<s, m, or l>)
ARIS databases	Database administrator	
Ad hoc analyses and queries	Analysis administrator	Analysis (octopus_<s, m, or l>)
ARIS document storage data Documents and access privileges	Document administrator Technical configuration administrator	ARIS document storage (adsadmin_<s, m, or l>)
Process Governance data	Process Governance administrator	Process Governance (apg_<s, m, or l>)
Collaboration data	Collaboration administrator	Collaboration (ecp_<s, m, or l>)
ARIS Risk & Compliance Manager data	ARCM administrator	ARIS Risk & Compliance Manager (arcm_<s, m, or l>)
Dashboards	Dashboard administrator	ARIS Aware (dashboarding_<s, m, or l>)

2.12.6 Copy a tenant to a different server

You can copy the content of a backed up tenant to a different ARIS Server. This procedure can also be used to migrate data in case of an upgrade installation. You need to have access to the relevant back-up zip file containing the data of a tenant:

- All databases
- All user data (users, privileges and licenses)
- All ARIS document storage data including all access rights
- All Process Governance data
- All ad hoc analyses and queries

Extensions, for example, SSL certificates (page 12), SAP® Java Connector, and JDBC drivers (page 34), added using the **enhance** ACC command are not backed up.

Prerequisites

- You need access to the relevant back-up zip file
- ARIS Server installation
- Users need the function privileges:

Analysis administrator

ARCM administrator

Collaboration administrator

Database administrator

Document administrator

License administrator

Process Governance administrator

Server administrator

Technical configuration administrator

User administrator

Dashboard administrator

The function privileges depend on the license. Therefore, you may not be able to assign all of the function privileges shown.

Procedure

1. Create a tenant (page 23) on the ARIS Server where the tenant will be copied to and import the licenses.
2. Start ARIS Cloud Controller (ACC) (page 1).
3. To restore Process Governance data, stop the Process Governance runnable first. To do so enter, for example:

```
stop apg_m
```

4. Enter:

```
restore tenant <Tenant name> from <pathToBackUpFile> username=<user name of a user holding the required privileges> password=<this user's password>
```

You must enter the user credentials of the server's ARIS Administration you have created the new tenant. If you are about to migrate data, you might use the standard name and password **system/manager**.

5. In case you restored Process Governance data, restart the Process Governance runnable. To do so enter, for example:

```
start apg_m
```

All data of the backup file will be copied to the new tenant. Current data will be deleted except the name of the new tenant, as well as user credentials. The current user data will be untouched. If users were deleted after the tenant has been backed up, these users will be available again. Please make sure to delete those users.

In case of a migration process the default credentials will automatically be in use. To prevent unauthorized access to the ARIS system, after installation or data migration, always change the passwords of the **arisservice** user, the **guest** user, the **system** user and the **superuser** user on all operational tenants, as well as on the infrastructure tenant (master).

You can also create tenants using the ARIS Administration's command line tools or Tenant Management.

2.12.7 Define backup folder

By default, backups are stored in the ARIS Server installation directory (`..\server\bin\work\work_umcadmin_<s, m or l>\backup`). You can define a different folder on a physical drive.

Prerequisite

You have access to ARIS Cloud Controller (ACC)

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
2. Enter, for example, **reconfigure umcadmin_m JAVA-D tm.backup.folder = "C://backups"**

If you have blanks or special characters in the path, you must put it in quotes and use a double backslash instead of a single slash.

Make sure to use a physical drive. Mapped drives cannot be accessed.

3. Exit ACC.

All backup files are saved in the backups subfolder on drive **C**.

2.12.8 Updating additional tenants

When you update the ARIS Server using the update setup, the **default** tenant's system database is updated automatically. For all additional tenants you must update the system databases with the provided database manually. If you do not update system databases, all updates, for example, concerning scripts, filters and templates will not be available.

Prerequisites

- **ARIS Server Administrator** is installed.
- You know the credentials of the superuser, or you have the Server administrator function privilege.
- You have access to the most recent system database (<**installation DVD**>/Content/SystemDB/<**ADB file**>)
- You have backed up all data that will be overwritten during the update.

Procedure

1. Click **Start > Programs > ARIS > Administration > ARIS Server Administrator 10.0** if you accepted the program group suggested by the installation program. Under a Linux operating system, execute the **arisadm.sh** shell script instead. The command prompt opens and ARIS Server Administrator is launched in interactive mode.
2. Establish a connection to the server and tenant:
syntax: **server <server name>:<port number> <tenant> <user name> <password>**
Example: **server arissrv:1080 default system manager**
3. Enter **updatesystemdb <name of ADB file on DVD>**.

The system configuration of this tenant, managing, for example, report scripts, scheduled reports, macros, semantic checks, filters, and templates, will be updated. User defined changes made in the configuration will remain.

2.13 Configure database connection

This chapter provides information on configuring ARIS Server in order to use an external database management system.

2.13.1 Provide JDBC drivers

During the setup procedures of ARIS Server or ARIS Publisher Server using Oracle or Microsoft SQL Server the JDBC driver is provided automatically. You can enhance JDBC drivers manually.

Procedure

1. Download the JDBC driver from the Microsoft or Oracle Web Sites to local directory that can be accessed by ARIS Cloud Controller (ACC).

For example: **d:\ojdbc<number>.jar**.

2. Start ARIS Cloud Controller (ACC) (page 1).
3. Stop the server runnables. Enter:

stopall.

4. Provide the JDBC driver using the **enhance** command. If you have blanks or special characters in the path, you must put it in quotes and use a double backslash instead of a single slash.
5. Example:

enhance abs_I with webappsClasspath local file "d:\\ojdbc<number>.jar"

The file has been made available. The source file can be deleted.

6. Start the server runnables. Enter:

startall

The driver is available.

2.13.2 Update external service (database clusters)

If you have performed an installation using an Oracle or Microsoft SQL database cluster you need to reconfigure the external service after the installation process.

This procedure shows an example for an Oracle database.

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
2. To connect to an Oracle cluster using a JDBC URL you may use this example:

```
update external service <dbserviceID>
url="jdbc:oracle:thin:@(DESCRIPTION=ADDRESS_LIST=(ADDRESS=(PROTOCOL
=TCP) (HOST=<virtual-ip-oracle-cluster>)(PORT = <target
port>)))(CONNECT_DATA=(SERVICE_NAME=cluster-database-name))"
driverClassName="oracle.jdbc.OracleDriver" username="<cip_app_user>"
password="<new_cip_app_pwd>" maxIdle=15 maxActive=100 maxWait=10000
removeAbandoned=false removeAbandonedTimeout=600 logAbandoned=true
defaultAutoCommit=false rollbackOnReturn=true host=<target_host>
jmxEnabled=true validationQuery="select 1 from dual" testOnBorrow=true
```

ARIS Server can be started using the Oracle cluster.

2.13.3 Configure the database connection for additional schemes

ASSIGN TENANT TO DATABASE SCHEMA

During the setup process you have created an empty Oracle or Microsoft SQL schema for an additional tenant (see ARIS Server Installation Guide (../documents/3 Installation/31 Initial installation/312 Server/3121 Basic (Single node)/ARIS Server Installation - Windows.pdf)).

Additionally created tenants must be assigned to the database schema.

1. Start ARIS Cloud Controller (ACC) (page 1).

Discover the database service ID (<dbserviceID>):

list external services

```
assign tenant <tenant name> to service <dbserviceID> com.aris.cip.db.schema = <schema name>
```

For tenant names please only use up to 25 lowercase ASCII characters and numbers. The name must begin with a character. Special characters and characters, for example, in Chinese, Cyrillic or Arabic cannot be used.

2. Create the new tenant:

```
create tenant <tenant name>
```

The new tenant is available on ARIS Server.

ADDITIONAL SETTINGS

To enable **validationQuery** for external DB connections (Oracle & Microsoft SQL) please use the correct validation query for the DBMS.

For Oracle use:

```
validationQuery="select 1 from dual" and testOnBorrow=true
```

For Microsoft SQL use:

```
validationQuery="select 1" and testOnBorrow=true
```

During registration of external service add parameters, for example, for Oracle:

```
register external service db
url="jdbc:oracle:thin:@<target_host>:<target_port>:<oracle_sid>"
driverClassName="oracle.jdbc.OracleDriver"
username="<cip_app_user>"
password="<cip_app_pwd>"
maxIdle=15
maxActive=100
maxWait=10000
removeAbandoned=false
removeAbandonedTimeout=600
logAbandoned=true
defaultAutoCommit=false
rollbackOnReturn=true
host=<target_host>
port=<target_port>
jmxEnabled=true
validationQuery="select 1 from dual"
testOnBorrow="true"
```

After the external service was already registered, for example, for Oracle:

```
update external service <dbserviceID>
url="jdbc:oracle:thin:@<target_host>:<target_port>:<oracle_sid>"
driverClassName="oracle.jdbc.OracleDriver"
username="<cip_app_user>"
password="<cip_app_pwd>"
maxIdle=15
maxActive=100
maxWait=10000
removeAbandoned=false
removeAbandonedTimeout=600
logAbandoned=true
defaultAutoCommit=false
rollbackOnReturn=true
host=<target_host>
jmxEnabled=true
validationQuery="select 1 from dual"
testOnBorrow="true"
```

ENABLE VALIDATIONQUERY FOR EXTERNAL POSTGRESQL CONNECTION

1. stopall
2. reconfigure <postgres_runnable> dbsp.validationQuery="select 1"
dbsp.testOnBorrow=true
3. startall

The database connection is configured.

2.14 Health check

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

2.14.1 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 40).

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
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:

```
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>
```

2.14.2 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 40).

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
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:

```
ACC+ arissrv>show instance zoo_m health
Health attribute      Current Value  Value Range      Min      Max      Thrh.  State
CPU load (Percent)   0,00%         0,00% - 100,00%  0,00%    1,09%    -      -
JVM Committed Heap (Megabyte) 102,75MB      0,00MB - 455,13MB 102,75MB 121,50MB -      -
JVM Committed Heap (Percent) 22,58%        0,00% - 100,00%  22,58%   26,70%   -      -
JVM Heap Usage (Megabyte) 43,13MB       0,00MB - 455,13MB 24,77MB  80,13MB  -      -
JVM Heap Usage (Percent) 9,48%         0,00% - 100,00%  5,44%    17,61%   -      -
Memory usage (Megabyte) 214,14MB      0,00MB - 16266,68MB 213,52MB 216,13MB -      -
Memory Usage (Percent) 1,32%         0,00% - 100,00%  1,31%    1,33%    -      -
Avg. latency (milliseconds) -              0ms - -          0ms      449ms    -      -
Mode                 standalone     -              -        -        -      -
Client connections   5              0 - -          5        5        6
Number of nodes      60             0 - -          60       60       60 -
```

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 column, respectively, show the minimum and maximum values, respectively, that have been observed for this measured health value since the runnable or the agent was last restarted. But only if the measured health value has an ordinal value scale. For measured values 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.

2.14.3 Configuring health monitoring

If you use the health monitoring, using ACC, make sure to configure the system.

Procedure

1. Start ARIS Cloud Controller (ACC) (page 1).
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)

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 (Carbon Copy(CC)). This parameter is multivalued (see mail.recipients)
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: <ul style="list-style-type: none"> ▪ 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

2.15 Mailing

This chapter provides information on configuring automatic mailing.

2.15.1 Configure ARIS Agent mail server connection

If only ARIS Agent is installed but no ARIS server you can activate automatic mailing in order to receive technical information from ARIS Agent. This will inform administrators, for example, about performance problems concerning ARIS Agent.

1. Start ARIS Cloud Controller (ACC) (page 1) on the machine where ARIS Agent is installed.
2. Enter the following lines one after the other.

Example:

```
set mail.notification.enabled=true  
set mail.smtp.host=mailserver.us  
set mail.smtp.port=25  
set mail.smtp.username=<user name>  
set mail.smtp.password=<password>  
set mail.recipients=aris.administrator1@company.com  
set mail.recipients.cc=aris.administrator2@company.com  
set mail.sender.address=<COMPUTERNAME>@us.co
```

ARIS Agent mail server connection is set.

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 (Carbon Copy(CC)). This parameter is multivalued (see mail.recipients)
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: <ul style="list-style-type: none"> ▪ 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
mail.on.state.change (default: FAILED)	Defining events triggering e-mail notification if a runnable is in the state FAILED .

Parameter	Description
mail.on.runnable.monitoring.events	Defining events triggering e-mail notification. This parameter is multivalued (see mail.on.system.events). Possible values: <ul style="list-style-type: none"><li data-bbox="536 394 1302 427">▪ RUNNABLE_MONITORING_HIGH_THRESHOLD_EXCEEDED<li data-bbox="536 432 1302 465">▪ RUNNABLE_MONITORING_LOW_THRESHOLD_EXCEEDED

2.15.2 Configure SMTP mail server connection

If you did not enter the SMTP server connection parameters during the setup process of a previous ARIS version you need to register your SMTP server manually.

1. Start ARIS Cloud Controller (ACC) (page 1).

2. Enter, for example:

```
register external service smtp host="YourMailServerAddressWithDomain"  
port=25
```

3. Check that setting entering:

```
list external services
```

SMTP mail server configuration is set.

You can modify SMTP configuration parameters using the **update external service** command.

Parameter	Type	Default value	Description
Host host	String		Qualified hostname or IP of the SMTP server.
Port port	Integer	25	Port of the SMTP server.
User name username	String		User name on the SMTP server. If this parameter is set, the applications will implicitly enable SMTP authentication. There is NO dedicated parameter to explicitly enable SMTP authentication.
Password password	String		Password for the user on the SMTP server.
Sender address sender.address	String		Sender's e-mail address.
TLS use.tls	Boolean	false	Specifies if SMTP server is TLS enabled.
TLS mode tls.mode	String	STARTTLS	Specifies the method used to secure the connection. Accepted values are STARTTLS and SSL . STARTTLS upgrades an initially insecure connection to an encrypted one without requiring a dedicated port for secure communication, whereas SSL immediately establishes a secured connection on a dedicated port.

2.16 Third-party document management systems (TDMS)

This chapter provides information on configuring ARIS Server in order to use an external TDMS.

2.16.1 Make TDMS available

If you want to use third-party document management systems, you must enhance the ARIS document storage runnable with a custom jar file. The system available is Microsoft® SharePoint 2013. Please contact your local Software AG sales organization (<http://softwareag.com>) TDMS.

Procedure

1. Save the custom jar file for the TDMS.
2. Start ARIS Cloud Controller (ACC) (page 1).
3. Stop the ARIS document storage runnable. Enter, for example:
stop ads_m
4. Provide the custom jar file for the third-party document management system using the **enhance** command. If you have blanks or special characters in the path, you must put it in quotes and use a double backslash instead of a single slash.

Example:

```
enhance ads_m with webappsClasspath local file "d:\\dms-adapter.jar"
```

The file has been made available. The source file can be deleted.

5. Start the ARIS document storage runnable. Enter:
start ads_m

The third-party document management system is available.

You must configure the settings for the TDMS in ARIS Administration. Refer to chapter **Manage ARIS Connect > Configure ARIS Connect > Set up Document storage > Add third-party document management system** of the ARIS Connect online help.

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 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 when working with process administration, ARIS Administration, ARIS document storage, and ARIS Process Board, and when generating 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 documents. We recommend monitoring the number and overall size of stored documents and archiving some documents if needed.