



Server Installation and Administration Guide

ARIS Platform

Version 7.2 - Service Release 2

October 2011

Copyright (C) [Software AG](#), 1992 - 2011

All rights reserved.

The contents of this publication are subject to copyright. Any changes, modifications, additions, or amendments require prior written consent from Software AG, Darmstadt. Reproduction in any form is only permitted on the condition that the copyright notice appears on each copy.

Publication or translation in any form requires prior written consent from Software AG, Darmstadt.

This manual describes the settings and features as they were at the time of print. Since manual 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 Readme file that accompanies the product. Please read this file and take the information into account when installing, setting up, and using the product.

Software AG does not control the external Web sites to which links are provided. Software AG is not responsible for the content of such Web sites or further links provided on them. External links are provided solely for your convenience and do not imply endorsement of the content of linked sites by Software AG.

"ARIS", "IDS", "ProcessWorld", "PPM", , and  are trademarks or registered trademarks of Software AG in Germany and in many other countries worldwide.

SAP NetWeaver is a trademark of SAP AG, Walldorf (Germany). All other trademarks are the property of their respective owners.

U.S. pat. D561,778, pat. D561,777, pat. D547,322, pat. D547,323, pat. D547,324

The functional scope of ARIS depends on the license key being used.

Contents

1	Legal notices	1
1.1	General	1
1.2	Virtual Machine Support	2
2	Notes on data security observance	3
2.1	Server administration	4
2.2	ARIS administration	7
3	System requirements	8
4	Installation	9
4.1	Restart installation	9
4.2	Download version or service release	10
4.3	Installation options	11
4.4	ARIS Business Server installations (Windows operating system)	13
4.4.1	Default (recommended for up to 50 users)	14
4.4.1.1	Initial installation	15
4.4.1.2	Subsequent installation	15
4.4.1.3	Update installation	15
4.4.2	User-defined (advanced installation)	16
4.4.2.1	ARIS Business Server	17
4.4.2.2	ARIS Site Administrator	17
4.4.2.3	ARIS Site Manager	17
4.4.2.4	ARIS Web Client Components	20
4.5	ARIS Business Server installations (Unix operating system)	21
4.5.1	ARIS Business Server	23
4.5.2	ARIS Business Server and ARIS Site Manager	24
4.5.3	ARIS Site Manager	25
4.5.4	ARIS Web Client Components	26
4.5.5	Uninstall	27
4.6	ARIS Process Governance Server installations (Windows operating system)	28
4.6.1	Initial installation	29
4.6.2	Update installation	31
4.6.3	Install ARIS Process Governance later	32
4.7	ARIS Process Governance Server installations (Unix operating system)	35
4.7.1	Initial installation	36
4.7.2	Update installation	38
4.8	ARIS Business Publisher Server installations	39
4.8.1	Windows	40
4.8.1.1	Update installation (standard)	40
4.8.1.2	Apache Tomcat Web Application Server under Windows	41
4.8.1.3	IBM WebSphere Application Server (WAS 6.1.0.15) unter Windows	43
4.8.1.4	SAP NetWeaver Composition Environment 7.1 under Windows	45
4.8.1.4.1	Logging	56
4.8.1.5	Use Derby database again	57
4.8.2	Solaris/Linux	58
4.8.2.1	Apache Tomcat Web Application Server under Solaris/Linux	58

4.8.2.2	IBM WebSphere Application Server (WAS 6.1.0.15) under RHELx64	61
4.9	ARIS Business Publisher Report Server installation	63
4.10	ARIS API for ARIS Toolset.....	64
4.11	ARIS Collaboration.....	64
4.12	Java Runtime Environment	65
4.13	Install the hardware key driver and enable the hardware key	65
4.14	Additional installation information and principles	66
4.14.1	ARIS Business Server - Exit a service	66
4.14.2	ARIS Platform - System architecture	66
4.14.3	ARIS Process Generator	66
4.14.4	Automatic backup	67
4.14.5	Automated installation	67
4.14.6	Particular issues - ARIS client and ARIS Business Server on the same computer	69
4.14.6.1	Installation.....	69
4.14.6.2	Uninstall	69
4.14.7	Connect document management systems (DMS)	70
4.14.8	Download version or service release.....	71
5	Administration.....	72
5.1	Database management systems	72
5.1.1	ARIS Business Server	72
5.1.1.1	Oracle database management system for ARIS Business Server.....	72
5.1.1.1.1	Set up the database.....	72
5.1.1.1.1.1	Install ARIS database objects	73
5.1.1.1.1.2	Use SQL*Plus scripts.....	73
5.1.1.1.1.2.1	Available SQL*Plus scripts.....	74
5.1.1.1.1.2.2	Run batch files install.bat/install.sh	74
5.1.1.1.1.3	Configure the installation scripts	75
5.1.1.1.1.3.1	Save LOB files separately.....	76
5.1.1.1.2	Optimize database access	77
5.1.1.1.3	Configure ARIS Business Server URL	77
5.1.1.2	MS SQL database management system for ARIS Business Server	78
5.1.1.2.1	Required programs, drivers, and scripts	78
5.1.1.2.2	Notes on installing SQL Server.....	78
5.1.1.2.3	Set up the database.....	79
5.1.1.2.3.1	Configure the installation scripts	79
5.1.1.2.3.1.1	Change the name of the database	80
5.1.1.2.3.1.2	Change the password for the login user ARIS72	80
5.1.1.2.3.1.3	Change the user name ARIS72	81
5.1.1.2.3.2	Configure ARIS Business Server URL	81
5.1.1.3	IBM DB2 database management system for ARIS Business Server ...	82
5.1.2	ARIS Business Publisher Server	84
5.1.2.1	Use Microsoft SQL database.....	84
5.1.2.2	Use an Oracle database (Tomcat)	86
5.1.2.3	Use Derby database (Tomcat)	88
5.1.2.4	Encrypt LDAP password.....	88
5.1.3	ARIS Process Governance Server.....	89

5.1.3.1	Oracle database management system for ARIS Process Governance Server.....	89
5.1.3.1.1	Set up the database.....	89
5.1.3.1.1.1	Install ARIS Process Governance database objects	89
5.1.3.1.1.2	Use SQL*Plus scripts.....	90
5.1.3.1.1.2.1	Available SQL*Plus scripts.....	90
5.1.3.1.1.2.2	Run batch files install.bat/install.sh	91
5.1.3.1.1.3	Configure the installation scripts.....	91
5.1.3.1.1.3.1	Connection data	91
5.1.3.1.1.3.2	Change tablespace names.....	92
5.1.3.1.1.3.3	Change the password for Oracle user AGE.....	93
5.1.3.1.2	Configure ARIS Process Governance Server URL.....	94
5.1.3.1.3	Back up the ARIS Process Governance database.....	94
5.1.3.1.3.1	Standard database system.....	94
5.1.3.1.3.2	Oracle database system	94
5.1.3.2	MS SQL database management system for ARIS Process Governance Server.....	95
5.1.3.2.1	Required programs, drivers, and scripts	95
5.1.3.2.2	Notes on installing SQL Server.....	95
5.1.3.2.3	Set up the database.....	96
5.1.3.2.3.1	Configure the installation scripts.....	96
5.1.3.2.3.2	Connection data (Microsoft SQL).....	97
5.1.3.2.3.3	Change the password for Microsoft SQL server user AGE.....	98
5.2	ARIS Business Publisher/ARIS IT Inventory	99
5.2.1	ARIS Business Publisher Server	102
5.2.2	Approved platforms, servers, applications, and databases	104
5.2.3	Customize configuration	108
5.2.3.1	Connect ARIS Process Governance (ARIS Business Publisher)	108
5.2.3.2	Activate/deactivate ARIS Rocket Search (ARIS Business Publisher Server).....	108
5.2.3.3	Show all groups in the Explorer tree (Publisher Server)	108
5.2.3.4	Configure automatic e-mailing	109
5.2.3.5	Connect document management systems (DMS) (ARIS Business Publisher)	109
5.2.3.6	Change e-mail address (Contact [Webmaster])	109
5.2.3.7	Change e-mail address (Contact [Process manager]).....	110
5.2.3.8	Change IP address	110
5.2.3.9	LDAP user management.....	111
5.2.3.10	Encrypt LDAP password.....	111
5.2.3.11	Update a license key.....	112
5.2.3.12	Configure matrix	113
5.2.3.13	Configure navigation carousel	114
5.2.3.14	Display news	115
5.2.3.15	Change the port number (ARIS Business Publisher Server).....	115
5.2.3.16	Make SAP Java Connector (SAPJCo) available for ARIS Business Publisher.....	116
5.2.3.17	Configure views for models.....	117
5.2.3.18	Change icons.....	117
5.2.3.19	Configure a connection to SAP systems	118
5.2.3.20	Central user management	119
5.2.4	Logging	120

5.2.5	ARIS IT Inventory backup tool	121
5.2.5.1	Examples	123
5.2.5.2	Backup file structure.....	124
5.3	ARIS Business Server.....	125
5.3.1	ARIS Business Server - Operating, database, and document management systems.....	128
5.3.2	Recommended user-related server dimensioning	130
5.3.3	Protocols used	131
5.3.3.1	ARIS Platform on the Internet/SSL	132
5.3.3.2	ARIS Platform on the intranet/VPN.....	132
5.3.4	Configure ARIS Business Server	133
5.3.4.1	Restrict number of index_backup files	136
5.3.4.2	Solve connection problems	136
5.3.4.3	Configure ARIS Business Server for hot standby system	137
5.3.4.4	Enable random session identifiers.....	137
5.3.4.5	Update the ARIS Business Server license key	137
5.3.4.6	Configure client/ARIS Business Server connection.....	138
5.3.4.7	Connect document management systems (DMS)	138
5.3.4.8	Connect ARIS document storage	139
5.3.4.9	Enable a hardware key (dongle).....	139
5.3.4.10	New database - Additional languages	140
5.3.4.11	Deactivate Report Server	141
5.3.4.12	Configure server for ARIS Process Board	141
5.3.4.13	Deactivate simulation server.....	141
5.3.4.14	Encryption of data transmission via Secure Socket Layer (SSL).....	142
5.3.4.15	Update SSL certificates	143
5.3.4.16	Adapt HTML Generator - Current database lists	143
5.3.4.17	Provide additional memory	145
5.3.5	ARIS Converter	146
5.3.6	When are placed symbols displayed (server)?.....	147
5.3.7	Logging	148
5.3.7.1	Log user logins (Account logging)	148
5.3.7.2	Log messages.....	150
5.3.7.3	Activate ARIS Notify Service	150
5.3.7.4	Log LDAP messages.....	152
5.4	ARIS Process Governance	153
5.4.1	Update the ARIS Process Governance Server license key	154
5.4.2	Change size of memory for ARIS Process Governance Server.....	155
5.4.3	Change size of minimum stack for ARIS Business Server	155
5.4.4	Configuration tool for ARIS Process Governance	156
5.4.5	Managing JMX users	161
5.4.6	Connect ARIS document storage	163
5.4.7	Recommended server dimensioning	165
5.4.8	Configure e-mail notification for administrator.....	165
5.4.9	Configure sender of ARIS Process Governance e-mails.....	166
5.4.10	Configure sender of central user management e-mails.....	167
5.4.11	Configure password policy for central user management.....	168
5.4.12	Configure pooling of connections	169
5.4.13	Use ARIS Process Governance Server with SSL.....	170
5.4.14	Start governance process from an HTML page	173
5.4.15	Define default user for services	173
5.4.16	Define default method language	174

5.4.17	Configure static export for ARIS Process Governance.....	174
5.4.18	Configure proxy for use with external Web services.....	175
5.4.19	Start batch file for export to ARIS PPM for ARIS Process Governance ...	176
5.4.20	ARIS Process Board	177
5.4.21	ARIS Process Governance logging.....	180
5.4.21.1	Configure remote logging for ARIS Process Board	180
5.4.21.2	Tomcat logging	181
5.4.22	Configure Apache Tomcat for operation with SSL	182
5.5	ARIS clients (application).....	183
5.5.1	ARIS Process Automation Architect	187
5.5.1.1	Log in to Governance Automation Models.....	187
5.5.1.2	What is included in the reference database?.....	187
5.5.2	ARIS SOA Architect	188
5.5.3	ARIS Business Rules Designer	188
5.5.4	ARIS Business Simulator	189
5.5.5	ARIS BI Modeler.....	190
5.5.5.1	Import transport request (SAP BW)	191
5.5.5.2	Make SAP Java Connector (SAPJCo) available for ARIS BI Modeler..	193
5.5.6	ARIS for SAP	194
5.5.6.1	Software/SAP systems/SAP portals	195
5.5.6.2	Configure system	196
5.5.6.2.1	SAP synchronization.....	197
5.5.6.2.1.1	Import transport request (synchronization)	198
5.5.6.2.1.2	Make SAP Java Connector (SAPJCo) available on the server side	199
5.5.6.2.1.3	Activate Web services	200
5.5.6.2.2	Start customizing transactions/views	201
5.5.6.2.2.1	Make SAP Java Connector (SAPJCo) available to clients.....	201
5.5.6.2.2.2	Import transport request (customizing)	203
5.5.6.2.3	Configure ARIS Online Guide	204
5.5.6.2.3.1	Transfer function modules	205
5.5.6.2.3.2	Modify program LSHL2U01.....	206
5.5.6.2.3.3	Specify settings.....	207
5.5.6.2.4	Use ESR contents	208
5.5.6.2.5	Configure ARIS Business Publisher Server	209
5.5.7	ARIS Business Optimizer	209
5.5.7.1	ARIS Business Optimizer evaluation scripts	209
5.5.7.2	Multi-server environment: Rule set change and rule set update	209
5.5.7.3	ARIS Business Optimizer logging	210
5.5.8	ARIS IT Architect	211
5.5.9	Maintenance tasks with an ARIS client.....	212
5.5.10	Use external Java files (ARIS clients)	212
5.5.11	Logging	213
5.5.12	Manually configure memory allocation	214
5.6	ARIS Web clients (browser mode).....	215
5.6.1	Set up ARIS clients for browser use	217
5.6.1.1	Installed files of ARIS Web clients.....	219
5.6.1.2	Language update and character sets	222
5.6.1.3	Execution as application or applet.....	222

5.6.1.4	Provide additional memory	223
5.6.1.5	Adapt HTML Generator - Current database lists	224
5.6.1.6	Installation by software distribution	226
5.6.1.6.1	Preconfigured user.cfg	227
5.6.1.6.2	Configure user.cfg	227
5.6.1.6.3	Possible settings for user.cfg	227
5.6.2	Automatically update installed ARIS Web clients	228
5.6.2.1	Preparations for the automatic update.....	228
5.6.2.2	Set up ARIS Web clients for automatic update	229
5.6.2.3	Start a second ARIS Web client	229
5.6.3	Use external Java files (ARIS Web clients)	230
5.7	ARIS Toolset/ARIS Easy Design (application)	231
5.7.1	ARIS Toolset for SAP/ARIS Easy Design for SAP.....	235
5.7.2	ARIS Simulation.....	236
5.7.3	ARIS Web Publisher.....	237
5.7.4	ARIS Connectivity for Lotus Notes.....	239
5.7.5	ARIS API: Continued use of programs from earlier ARIS versions	239
5.7.6	Use OLE automation and time control software.....	240
5.7.7	Logging	240
5.8	ARIS agent.....	241
5.8.1	What are ARIS agents for?	241
5.8.2	What tasks does an ARIS agent handle?	241
5.8.3	How to exit ARIS agents.....	241
5.9	Control login centrally with LDAP	242
5.9.1	Set up the database for LDAP server operation	243
5.9.1.1	LDAP settings for MS Active Directory (example)	244
5.9.1.1.1	Enter LDAP connection data (example)	245
5.9.1.1.2	Enter LDAP identification attributes (example)	248
5.9.1.1.3	Define LDAP user attribute mapping (example)	249
5.9.1.1.4	Enter LDAP search filter (example)	251
5.9.1.2	Map LDAP user groups	256
5.9.1.3	Import LDAP users	257
5.9.2	Error handling.....	258
5.9.3	Set ARIS Business Server for LDAP server operation with SSL	260
5.9.4	Set ARIS Business Publisher Server for LDAP server operation	261
5.9.5	Set up ARIS Process Governance for LDAP server operation with central user management.....	262
5.9.5.1	Configure jobs for LDAP synchronization	266
5.9.5.2	Configure single sign-on for ARIS Process Board	268
5.9.5.3	Use LDAP with multiple domains.....	272
5.10	Control login centrally	274
5.10.1	Set up database for central user management.....	275
5.10.1.1	Import users (central user management).....	276
5.10.1.2	Assign user groups (central user management)	277
5.10.2	Set ARIS Business Publisher Server for central user management	278
5.11	Data backup	279
5.11.1	Back up users and configuration	281
5.11.2	Automatic backup of current configuration files.....	281
5.11.3	Save method changes.....	281

5.12	Transfer data from earlier ARIS versions	282
5.12.1	Transfer exported filters, font formats, languages, and templates	284
5.12.2	Transfer item groups of the configuration	284
5.12.3	Transfer custom or modified scripts of previous ARIS versions	285
5.13	Data management with ARIS Admintool	286
5.13.1	ARIS Admintool commands	287
5.13.1.1	Backup	289
5.13.1.1.1	Example	290
5.13.1.1.2	Data backup using a batch program (batch file)	291
5.13.1.2	Backupasn	292
5.13.1.3	Backupconfig	293
5.13.1.4	Configadminpassword	293
5.13.1.5	Copy	294
5.13.1.6	Createdb	294
5.13.1.7	Dbmsspassword	295
5.13.1.8	Download	295
5.13.1.9	Delete	296
5.13.1.10	Encrypt	296
5.13.1.11	Exit	296
5.13.1.12	Help	297
5.13.1.13	Interactive	297
5.13.1.14	Kill	297
5.13.1.15	List	298
5.13.1.16	Maintain	298
5.13.1.17	Monitor	298
5.13.1.18	Password	299
5.13.1.19	Rename	299
5.13.1.20	Reorg	299
5.13.1.21	Restore	300
5.13.1.22	Restoreversioned	301
5.13.1.23	Restoreasn	302
5.13.1.24	Restoreconfig	302
5.13.1.25	Schemacontext	303
5.13.1.26	Server	303
5.13.1.27	Sessions	304
5.13.1.28	Siteadminpassword	305
5.13.1.29	Statistic	305
5.13.1.30	Status	306
5.13.1.31	Version	306
5.14	Evaluation (scripting)	307
5.14.1	Optimize memory requirements	308
5.14.2	Automatically start reports with Script Runner	309
5.14.3	Example scriptrunner.cfg	310
5.14.4	Report formats and report files	314
5.14.5	Windows API functions	315
5.14.6	Dialog variables	316
5.14.7	Nested dialogs	317
5.14.8	Icons for placed attributes	317
5.14.9	Add custom icons for macros	318
5.14.10	Transfer custom or modified scripts of previous ARIS versions	318

6	Known restrictions	319
6.1	Printers/plotters	320
6.2	Java Runtime Environment (JRE)	320
6.3	Calendar	321
6.4	Reports in PDF format	321
6.5	Software AG Designer	322
6.6	Characters.....	322
6.7	Links	323
6.8	Windows Vista Ultimate	326
6.9	Windows	326
7	Support.....	327
8	Glossary	328
9	Appendix	333
9.1	System language and locale IDs	333
9.2	Port numbers	337

1 Legal notices

1.1 General

This manual describes the settings and features as they were at the time of print. Since manual 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 Readme file that accompanies the product. Please read this file and take the information into account when installing, setting up, and using the product.

If you want to install all technical and/or business system functions without the services of 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 only describe 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, please contact your local Software AG sales organization. Please note that this type of manufacturer-specific or customer-specific change is not subject to the standard Software AG software maintenance agreement and that these changes can only be performed if you requested and agreed on them.

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 for which the license regulations of Software AG standard software development apply.
ARIS clients	Refers to all programs, e. g. ARIS Business Architect, ARIS Business Designer or ARIS Toolset/ARIS Easy Design, that access shared databases via ARIS Business Server.
ARIS Web clients (Web clients)	Refers to ARIS clients that can be started in a browser.

1.2 Virtual Machine Support

General Policy

Software AG provides for all its software the definitions of supported, documented platform configurations (referred to here just as 'supported platform') which will include specific Operating System (OS) and hardware configurations, and may include Java Virtual Machine (JVM) and database versions. Customers can use a commercially available virtualization environment for a Software AG production environment if it accurately and completely emulates one of the supported platforms.

Customers who use virtual environments are required to comply fully with their contractual terms and conditions for licensing.

Software AG tests its software for operation on the supported platforms and not specifically against all possible combinations of hardware that might comprise that platform (for example, file system, disk controllers, memory configuration, display devices and so on). Therefore, the correct expertise, provision and management of a hardware configuration to support the platform remain the responsibility of our customers, whether directly using physical hardware or a virtualization environment.

Software AG supports the virtualized environments listed in the System Requirements. You can use a different virtualized environment that accurately and completely emulates one of the supported platforms; however, if you encounter an issue, Software AG might require you to help analyze the issue by reproducing it on an actual supported platform. Software AG Global Support will refer you to our Professional Services group for guidance or recommendation about the use of virtualization software, or, if required, the best approaches for copying a system to a supported platform.

2 Notes on data security observance

We do all we can to protect your data. Please ensure that ARIS is integrated correctly in your IT environment.

In order for communication between ARIS Business Server and ARIS clients to proceed safely and reliably, protect your system from unauthorized access with a firewall.

Certain topics pertain to server administrators. You need the relevant privileges for the installation directory, in order to install and adjust the ARIS Business Server configuration.

Other adjustments are carried out by system users or administrators in ARIS Business Architect. Actions from ARIS Process Governance (page 180), ARIS Business Publisher Server (page 120), ARIS clients (page 213), and ARIS Business Optimizer (page 210) are also logged.

2.1 Server administration

Please consider all of the topics in the check list and make sure, that they are considered after the installation and creation of new databases.

- **Use the appropriate hardware and adhere to the system requirements.**
- **Start ARIS Business Server as a Windows service/Unix process under your own user account/user**
 - **Under Windows**
 - Install ARIS Business Server as a service under your own user account.
 - Create a new user account in the operating system and start ARIS Business Server as a service. This user account is allowed only limited privileges to operating system services, e.g. the file system (see table) and user management.
 - Remove this user from all of the user groups.
 - Allow the login as a service.
 - Enter your user name and password to login as a service.
 - Assign access privileges as specified in the table.
 - **Under Unix/Linux**
 - Create a new user and a user group that the available shell script is to be run with. This user is only allowed limited privileges to operating system processes, e.g. the file system (see table) and privileges.
 - Assign the new user recursively to the directory **server.<name>** as the owner.
 - Recursively remove the privileges **read (r)**, **write (w)** and **execute (x)** for groups and others (g-rwx, o-rwx) and the privileges **write (w)** and **execute (x)** for the user (u-wx).
 - Run the ARIS Business Server start and stop scripts under this user, e.g. **su - <User> -c "nohup y-serverlauncher.sh"**.
- **Make sure that ARIS Business Server can access only the specified directories.** The path data corresponds with Windows conventions. Slashes (/) are used as separators in UNIX.

Directory/File	Privilege
%TEMP%	Read (r), execute (x), write (w) (pass on to files)
<ARIS installation directory> \server	Read (r), execute (x) (pass on to files)
<ARIS installation directory> \server\accounting	Write (w) (pass on to files)
<ARIS installation directory> \server\data	Write (w) (pass on to files)
<ARIS installation directory> \server\html (can differ)	Write (w) (pass on to files)
<ARIS installation directory> \server\log	Write (w) (pass on to files)
<ARIS installation directory> \server\sysconfig	Write (w) (pass on to files)
<ARIS installation directory> \server\templates	Write (pass on to files)
<ARIS installation directory> \server\temp	Write (w) (pass on to files)
<ARIS installation directory> \server\transformationrules	Write (w) (pass on to files)
<ARIS installation directory> \server\config	Write (w) (pass on to files)
<ARIS installation directory> \server\config\dli.cfg	Write (w) (pass on to files)
<ARIS installation directory> \server\config\guidstat.cfg	Write (w)
<ARIS installation directory> \server\config\lockservice.cfg	Write (w)
<ARIS installation directory> \server\config\simusrv.cfg	Write (w)
<ARIS installation directory> \server\config\userServerSettings.cfg	Write (w)
\server\property\properties.xml	Write (w)

- **Use random session identifiers** (page 137)

Use these identifiers to increase the security of data transmission.

- **Set up a hot standby system** (page 137)

If, for security reasons, you have installed ARIS Business Server on two computers, you can quickly switch to the second system if the first computer breaks down.

- **Enable SSL encryption** (page 142)

Encrypt data transmission between ARIS Business Server and the ARIS clients.

- **Use an LDAP system for user management** (page 242)

This ensures that your internal company password security guidelines are complied with.

- **Log the data flows and actions**

The activities of ARIS Business Server are recorded (page 148) in the **log** directory of the server installation directory. If problems occur during operation, you can use the log files to find and resolve errors.

- **Pass on passwords in encrypted form only.**

To encrypt passwords use the Admintool command **encrypt** (page 296).

2.2 ARIS administration

Please consider all of the topics in the check list and make sure, that they are considered after the installation and creation of new databases.

- **Change the administrator password for every ARIS Business Server**

Change the following passwords in ARIS Business Architect (see the help page **Change the administrator password**) or by using the ARIS Admintool commands (page 287).

- SITEADMIN
- CFGADMIN
- SCRIPTADMIN
- BPADMIN

- **Change the system user's password 'system' for every database**

This system user has all access and function privileges for the database and is automatically created with every database. Change the passwords in ARIS Business Architect (see help page **Change password of own user**).

- **Create additional system users in the databases**

System users have all function and access privileges in a database. To be on the safe side, create additional system users besides the **system** system user. This way you can maintain the database even if you forget the password for the **system** user (see help page **Create system user**).

- **Back up your data regularly** (page 279)

Administrators have various options for backing up the data that is managed on an ARIS Business Server.

Currently, Java can only process files of up to a maximum of 2 GB safely. Thus, errors may occur with larger backup files (ADB) and during database recovery. If errors occur during backup or while restoring please use the backup mechanism in your database management system (DBMS).

- **Version your database content**

Versioning is used for versioning models. The benefit and purpose of archiving versions of models is to allow different versions to be accessed.

3 System requirements

Various software and hardware requirements must be met, depending on your system configuration and the ARIS products that you want to install. In some cases, minimum and recommended system requirements are specified. The minimum system requirements must be met in order for the ARIS products to work properly. Meeting the recommended system requirements will assure good performance even with large data volumes. In general, it is advisable to use up-to-date hardware taking into account the number of users who will be accessing the same ARIS Business Server (page 125).

Please refer to the chapter Administration (page 72) et sqq. for more information.

- ARIS Business Server (page 125) et sqq.
- ARIS Process Governance (page 153) et sqq.
- ARIS clients (application) (page 183) et.sqq.
- ARIS Web clients (browser mode) (page 215) et sqq.
- ARIS Business Publisher (page 99) et sqq.
- ARIS Toolset and ARIS Easy Design etc. (application) (page 231) et sqq.

Please consider the legal notices (page 1).

4 Installation

This chapter describes the requirements for individual server installations. It is assumed that you perform the installations **for the first time** using the **start.exe** startup file. You can also start individual installation programs via the corresponding **Setup.exe**.

If system files are changed during installation, you are prompted to reboot your computer after installation.

There are two ways to use the client programs, either as installed versions or in a browser (page 215). The installation is described below.

Please refer to the chapter Administration (page 72) to obtain information on additional settings required for using **ARIS products**.

Please consider the legal notices (page 1).

Please note that ARIS Platform is not an update for versions 6.x. The server and client versions can be installed and run in parallel.

4.1 Restart installation

If you re-run an installation for installed programs, the following options are provided:

- **Modify program**

Use this option to add more components and/or languages.

- **Repair program**

This option repeats an installation with the current settings. This is useful if a program file was deleted by accident, for example. **Any subsequently installed hotfixes will be deleted!**

- **Remove program**

This option uninstalls the component for which the installation program was launched.

When you perform an update, add a language (**Modify program** option), or repeat an installation (**Repair program** option), the system checks if a CFG file was changed manually. If so, a backup copy of that file is generated before the new CFG file is installed. For example, if you have modified the **arisclient.cfg** file manually, it is backed up (page 67) in the directory **<ARIS installation directory>\javaclient\backup\config**. The settings from the previous installation are retained, for example the installation path, the program group, and the languages you installed.

If you run an update installation for ARIS Business Server, all configuration changes are applied.

Warning

Please only use the file **userServerSettings.cfg** to change the configuration. This ensures that your changes are preserved in future update installations. The other ARIS Business Server configuration files are overwritten for each installation.

4.2 Download version or service release

You can download a full version of ARIS products or a service release from Software AG at any time. These files are password-protected. You can request the relevant passwords from your local Software AG sales organization (<http://www.softwareag.com>).

- Perform an update installation for ARIS Business Publisher Server only if your system has not been adjusted. Changes you made or extensions by ARIS Customized Solutions are lost during an update or subsequent installation.
- If you have installed ARIS for SAP (page 196) or ARIS BI Modeler (page 191), you need to reinstall the transport requests after a program update only if a new version is available on the installation medium.

Procedure

1. You can obtain the exact ID of your installed version from the **About** dialog of your program (**Help/About**).

The identifier at the end of the version information indicates the exact version that is installed.

2. Download the relevant files with **.zip** and **.md5** extensions from Software AG. You can use the corresponding (same name) **md5 files** (hash files) to check whether the ZIP archives have been downloaded correctly.

This is where you find the **ARIS_PLATFORM** subdirectory and the newsletters for the ARIS Service Releases in German and English.

3. Download the relevant file.

ARIS_PLATFORM directory

In this directory, you find the files for downloading a specific ARIS product and an additional subdirectory that is called **DVD** and contains the entire content of the installation media.

Example for individual installations:

- ARIS<version number>PLATFORM_<six-digit identifier>.ZIP - setup program for client installation
- ARIS<version number>SERVER_<six-digit identifier>.ZIP - setup program for ARIS Business Server (page 125)
- DBSCRIPTS_312665.ZIP - SQL *Plus scripts (page 73)

The identifiers in the file name (e.g. ARIS_7.1.0.**312665**_DVD.zip) tell you whether the files contained in the archive are more recent than the version installed on your computer.

4.3 Installation options

If you insert an ARIS installation media in your drive, the start page opens automatically. If it is not displayed automatically, click on the name of your drive in Windows Explorer and run the program **start.exe**.

Important documents are automatically created in English (always, except in an exclusively German installation) when you install ARIS Platform products. You can access these documents via **Start/Programs/ARIS Platform/Documents**.

Installation media

Installation program	Content/Components installed
Install ARIS Platform	Install products of the ARIS Platform.
Additional installations	Provides access to the server installation programs and to the installation of JRE and Adobe Acrobat Reader.
Installation Guide	Opens the Installation Guide in PDF format. This requires Adobe Acrobat Reader.
Server Installation and Administration Guide	Opens the Server Installation and Administration Guide in PDF format. This requires Adobe Acrobat Reader.
Quick Start Guide	Opens the Quick Start Guide.
Delta paper	Opens the description of differences between earlier ARIS versions and the current ARIS version.
ARIS news	Opens the ARIS news page on the Software AG home page in your Web browser.
Software AG Academy	Opens the Software AG Academy catalog with the latest information on training, workshops, and consulting services.

Additional installations

Installation program	Content/Components installed
Install ARIS Business Server	Install ARIS Business Server.
Install ARIS Business Publisher Server	Install ARIS Business Publisher Server.
Adobe Acrobat Reader	Download (http://get.adobe.com/de/reader/) the viewer for displaying PDF documents, such as the ARIS Methods Manual. Install this viewer.
Java Runtime Environment (JRE)	To use Java-based ARIS Platform products and start them via a Web browser, install SUN Java Runtime Environment (JRE) if you have not yet done so.

This information was current at the time of printing. Therefore, discrepancies may exist in Service Releases. Please read the current release information and the Readme file.

Please consider the legal notices (page 1).

4.4 ARIS Business Server installations (Windows operating system)

This chapter describes installations related to ARIS Business Server that can be performed under a Windows operating system.

All ARIS clients use ARIS Business Server to access the database server and thus work with a common data basis.

To ensure optimum load distribution and better protection against failure, more than one ARIS Business Server can be used.

The default server includes:

- ARIS Business Server
- ARIS Site Manager
- ARIS Converter
- VB report execution environment

This section describes processor, memory, system configuration, and software requirements of the various server and client computers for ARIS. For simultaneous use of other applications, a faster processor, additional memory, or system extension may be required.

Various software and hardware requirements must be met, depending on your system configuration and the ARIS products that you want to install. In some cases, minimum and recommended system requirements are specified. The minimum system requirements must be met in order for the ARIS products to work properly. Meeting the recommended system requirements will assure good performance even with large data volumes. In general, it is advisable to use up-to-date hardware taking into account the number of users who will be accessing the same ARIS Business Server (page 125).

Please refer to the chapter Administration (page 72) et sqq. for more information.

- ARIS Business Server (page 125) et sqq.
- ARIS Process Governance (page 153) et sqq.
- ARIS clients (application) (page 183) et.sqq.
- ARIS Web clients (browser mode) (page 215) et sqq.
- ARIS Business Publisher (page 99) et sqq.
- ARIS Toolset and ARIS Easy Design etc. (application) (page 231) et sqq.

Please consider the legal notices (page 1).

If you have not installed webMethods integration, but still want to use it, please contact your local sales organisation. For further information, please refer to the help of ARIS Process Automation Architect.

4.4.1 Default (recommended for up to 50 users)

Use the following procedures to install:

- ARIS Site Administrator
- ARIS Site Manager
- ARIS Business Server
- Standard database system
- ARIS Web Client Components

Procedure

1. Perform the default server installation. The standard database system is installed automatically at the same time.
2. If you want to use Java-based ARIS Platform products via a browser, please ensure that a Web server is installed on the computer and that the Web server default path points to <ARIS installation directory>\Server\HTML.
3. Install the relevant clients on the workstations.

For subsequent and update installations:

Previously used databases and filters are not affected by the installation. If you want to use the supplied demo database rather than the current one, you can copy it to your server using the Restore function.

Report scripts and macros supplied by default are reinstalled. If you changed existing reports but did not rename them, we recommend that you create backup copies and add them with modified names once the installation is complete.

If files have to be reinstalled during setup, the old files are saved in a backup directory. Therefore, they are still available after installation. The contents of the HTML directories are examples of such files.

The configuration changes that you made in the file **userServerSettings.cfg** are applied.

Tip

To install an additional language later, you must run setup again.

4.4.1.1 Initial installation

You run the standard installation of ARIS Business Server on your system for the first time.

Procedure

1. Run the setup program and select **Install ARIS Business Server** under **Additional Installations**.
2. Select **Default (recommended for up to 50 users)**.
3. Ensure that the **Install ARIS Process Governance Server** check box is cleared.

4.4.1.2 Subsequent installation

ARIS Business Server is already installed and you call the same ARIS Business Server installation program again.

Procedure

1. Run the setup program and under **Additional Installations** select **ARIS Business Server**.
2. The **Modify program** option button is already enabled.
3. Ensure that the **Install ARIS Process Governance Server** check box is cleared.

4.4.1.3 Update installation

ARIS Business Server is already installed and you call a higher version of the ARIS Business Server installation program.

In older program versions, configuration changes were entered in different files. If you run an update installation of the current version, the configuration files are converted when ARIS Business Server is started. All configuration changes are entered in the file **userServerSettings.cfg**. The configuration files are deleted. They are backed up in the backup directory.

If you install a new version of ARIS, the sample databases already installed are not updated to ensure that changes you have made are not overwritten. If you want to use the current sample databases, you have to restore these manually.

Procedure

1. Run the setup program and select **Install ARIS Business Server** under **Additional Installations**.
2. Ensure that the **Install ARIS Process Governance Server** check box is cleared.

4.4.2 User-defined (advanced installation)

This installation option allows you to install ARIS Site Manager, ARIS Business Server, and ARIS Web Client Components separately or together.

Thus, a scenario can be set up in which ARIS Business Server and the database system (ARIS Site Manager) are installed on different computers.

For scenarios in which 200 or more users work simultaneously with ARIS Platform, we recommend that you install ARIS Business Server and the database system on different computers. **This type of installation should be performed by Software AG employees only.**

Procedure

1. Ensure that the system requirements are met for all components.
2. Install a database system, or set up an existing database for work with ARIS.
3. Install ARIS Site Manager (page 17) with the corresponding option on the server computer on which you have installed your database. Continue with step 5.
4. Install ARIS Business Server (page 17) on every computer you want to use as an ARIS Business Server.

If you want to use Java-based ARIS Platform products via a browser, install ARIS Web Client Components and set up your Web server for use with ARIS Web Client Components (see chapter ARIS Web Client Components (page 20)).
5. You can import the demo database into your database system.
 - a. Start ARIS Site Administrator.
 - b. Right-click on the name of the server, and select **Restore**.
 - c. Select the ADB file of the demo database in the directory **Databases and Filters\Databases** on the installation media, and click on **Open**.

Once the database is registered with ARIS, you receive a corresponding message.

For the following procedures, it is assumed that there are no previous installations on the computer. Unlike the installations described above, user-defined options allow you to install any combination of components from **ARIS Business Server**, **ARIS Site Administrator**, **ARIS Site Manager**, and **ARIS Web Client Components**.

Tip

To install an ARIS Site, perform the installation on every computer you intend to use as an ARIS Business Server.

4.4.2.1 ARIS Business Server

Install ARIS Business Server on every computer you want to use as an ARIS Business Server.

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Click on **USER-DEFINED (ADVANCED INSTALLATION)**.
3. Disable all check boxes except the **ARIS Business Server** check box.
4. Enter the name of the computer on which ARIS Site Manager has been installed.

4.4.2.2 ARIS Site Administrator

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Ensure that the **Install ARIS Process Governance Server** check box is cleared.
3. Disable all check boxes except for the **ARIS Site Administrator** check box.

4.4.2.3 ARIS Site Manager

Warning

You may install ARIS Site Manager only once for each ARIS Site.

Connect ARIS Site Manager to a configured Oracle database instance

The database objects required for operating ARIS have already been created (page 72) (for example, using the SQL*PLUS scripts).

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Click on **USER-DEFINED (ADVANCED INSTALLATION)**, recommended for 50 or more users.
3. Disable all check boxes except the **ARIS Site Manager** check box.
4. Select the **Oracle database** option.
5. Click on **Connect to Configured Oracle Database Instance**.
6. Ensure that the **Install ARIS Process Governance Server** check box is cleared.

Connect ARIS Site Manager to an existing non-configured Oracle database instance

You already have an Oracle database, but the database objects required for operating ARIS have not been created (page 72) there yet. If you use ARIS Business Publisher, we recommend that you work with two separate Oracle databases for ARIS Business Server and ARIS Business Publisher. This keeps the two systems from competing for resources, and you achieve better performance and higher availability.

You should set the tablespaces for automatic, unlimited growth. Otherwise, you run the risk of completely exhausting the memory in the tablespaces, which may cause important functions of ARIS Business Server and ARIS Business Publisher to fail. If the option for automatic growth is not set, regular monitoring (e.g. weekly) of the Oracle instance is required to ensure that the tablespaces are manually increased on time.

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Click on **USER-DEFINED (ADVANCED INSTALLATION)**, recommended for 50 or more users.
3. Disable all check boxes except the **ARIS Site Manager** check box.
4. Select the **Oracle database** option.
5. Select **Configure and Connect Existing Oracle Database Instance**. The installation program checks whether an sqlplus command is installed and whether a link can be established to it.
6. Ensure that the **Install ARIS Process Governance Server** check box is cleared.

Connect ARIS Site Manager to Microsoft SQL Server

You set up (page 78) a new Microsoft SQL Server and prepare it for use with ARIS.

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Click on **USER-DEFINED (ADVANCED INSTALLATION)**, recommended for 50 or more users.
3. Disable all check boxes except the **ARIS Site Manager** check box.
4. Enable the **Microsoft SQL Server** option.
5. Ensure that the **Install ARIS Process Governance Server** check box is cleared.

Connect ARIS Site Manager to IBM DB2

You set up (page 82) a new DB2 server and prepare it for use with ARIS.

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Click on **USER-DEFINED (ADVANCED INSTALLATION)**, recommended for 50 or more users.
3. Disable all check boxes except the **ARIS Site Manager** check box.
4. Enable the **IBM DB2** option.
5. Ensure that the **Install ARIS Process Governance Server** check box is cleared.

4.4.2.4 ARIS Web Client Components

If you want to use ARIS via a browser, you need to install ARIS Web Client Components. ARIS Web Client Components consist of passive Web server components (e.g. HTML files) only.

For additional information on the configuration, please refer to chapter ARIS Web clients (browser mode) (page 215).

If you install ARIS Site Manager and ARIS Web Client Components in one step, the installation program enters the path to the HTML Generator in the file **setupServerSettings.cfg** of the ARIS Site Manager computer. Please only use the file **userServerSettings.cfg** to change the configuration. This ensures that your changes are preserved in future update installations. The other ARIS Business Server configuration files are overwritten for each installation.

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Disable all check boxes except **ARIS Web client components**.

The installation process generates the **\html directory** in the specified path. A path is relative within the directory so that you can change the name of the path specified during installation without any negative impact.

The first page **index_app.html** is automatically generated. The first pages **index_lan.html** and **index_ssl.html** are created if so defined in the file **UserServerSettings.cfg**. All first pages are located in the **\html** directory. The individual language versions are located in the directory **\html\<languageid>**. These pages contain the database lists that are generated by the HTML Generator whenever ARIS deletes or adds databases or changes their names.

3. Navigate to the Web Client Components installation directory using your browser. The sample file **index_app.html** is provided.

When you navigate back to the Web Client Components installation directory using your browser, the database list of the linked ARIS Site is displayed.

4. Pass the link on to users who want to work with Java-based ARIS products, for example, the link to the file **index_app.html**.

Users who click on one of the database links for the first time are prompted to enter the license key if this has not yet been configured in the file **user.cfg**.

4.5 ARIS Business Server installations (Unix operating system)

This chapter describes installations related to ARIS Business Server that can be performed under a Unix operating system.

All ARIS clients use ARIS Business Server to access the database server and thus work with a common data basis.

To ensure optimum load distribution and better protection against failure, more than one ARIS Business Server can be used.

The default server includes:

- ARIS Business Server
- ARIS Site Manager
- ARIS Converter
- VB report execution environment

This section describes processor, memory, system configuration, and software requirements of the various server and client computers for ARIS. For simultaneous use of other applications, a faster processor, additional memory, or system extension may be required.

Various software and hardware requirements must be met, depending on your system configuration and the ARIS products that you want to install. In some cases, minimum and recommended system requirements are specified. The minimum system requirements must be met in order for the ARIS products to work properly. Meeting the recommended system requirements will assure good performance even with large data volumes. In general, it is advisable to use up-to-date hardware taking into account the number of users who will be accessing the same ARIS Business Server (page 125).

Please refer to the chapter Administration (page 72) et sqq. for more information.

- ARIS Business Server (page 125) et sqq.
- ARIS Process Governance (page 153) et sqq.
- ARIS clients (application) (page 183) et.sqq.
- ARIS Web clients (browser mode) (page 215) et sqq.
- ARIS Business Publisher (page 99) et sqq.
- ARIS Toolset and ARIS Easy Design etc. (application) (page 231) et sqq.

Please consider the legal notices (page 1).

The RAM required (page 125) for reports varies greatly. If you want to run report scripts that process large quantities of database items, we recommend a 64-bit Windows installation or a Unix installation due to the upper memory limit of 1.2 GB main memory for ARIS Business Server. Please also note the information on script development (page 307).

The following installation options exist:

- ARIS Business Server and ARIS Site Manager
- Only ARIS Business Server
- Only ARIS Site Manager
- ARIS Site Manager (Unix operating system) (page 25)
- ARIS Business Server/ARIS Site (Unix operating system) (page 23)
- ARIS Business Server and ARIS Site Manager (Unix operating system) (page 24)
- ARIS Web Client Components (Unix operating system) (page 26)

If you have not installed webMethods integration, but still want to use it, please contact your local sales organisation. For further information, please refer to the help of ARIS Process Automation Architect.

4.5.1 ARIS Business Server

This section describes the installation of ARIS Business Server under a Unix operating system. The ARIS Web Client Components are installed automatically at the same time.

Tip

To install an ARIS Site, perform the installation on every computer you intend to use as an ARIS Business Server in the ARIS Site.

Prerequisite

A database instance for ARIS must have been created on the database server.

Procedure

1. Navigate to the directory **Setups/Unix Linux/ARIS Business Server** and copy the file **install_ARIS_Server_<version>.<build number>.sh** to your hard drive.
2. Switch to the directory in which the ARIS Business Server installation script is located, and enter **./install_ARIS_Server_<version>.<build number>.sh [business_server_options]** to install ARIS Business Server.

Specify the following options for the installation of ARIS Business Server:

- -aris_type BS
- -jvm <Path of the Java Runtime Environment>
- -sitemanager <Host Name of ARIS Site Manager>

3. You must enter a fully qualified name for the computer on which ARIS Site Manager is installed, for example **computerxyz.domainxyz.com**. You can start the file **install_ARIS_Server_<version>.<build number>.sh** from any directory. To do so, you need to enter the full path in front of the file name.

To change the installation path, specify the additional option **-installdir <absolute path of the desired installation directory>**.

The parameters are stored in the file **YYMMDD-HHMMDD.data.conf** in the directory **./aris7.2/setup/backup**.

The script extracts itself and stores the files in the **/aris7.2** subdirectory.

Configuration is performed automatically with the installation. At the end of the configuration, you will be prompted to enter a valid ARIS license key if you have not entered it during installation. After installation you can reconfigure the software at any time using the **configure.sh** script in the folder **aris7.2/setup**. The software is ready to run immediately. To start ARIS Business Server, use the launcher **y-serverlauncher.sh** in the directory **aris7.2**.

4.5.2 ARIS Business Server and ARIS Site Manager

This section describes the simultaneous installation of ARIS Business Server and ARIS Site Manager on a Unix operating system.

The ARIS Web Client Components are installed automatically at the same time.

Tip

To install an ARIS Site, perform the installation on every computer you intend to use as an ARIS Business Server in the ARIS Site.

Prerequisite

A database instance for ARIS must have been created on the database server.

1. Navigate to the directory **Setups/Unix Linux/ARIS Business Server** and copy the file **install_ARIS_Server_<version>.<build number>.sh** to your hard drive.
2. Switch to the directory in which the ARIS Business Server installation script is located, and enter **sh install_ARIS_Server_<version>.<build number>.sh [site_manager_options]** to install ARIS Business Server and ARIS Site Manager.

Specify the following options for the installation of ARIS Business Server and ARIS Site Manager:

- -aris_type BS_SM
- -jvm <Path of the Java Runtime Environment>
- -dbserver <Host name of the database server>
- -dbport <Port of the database server>
- -dbinstance <Name of the database instance>

You must enter a fully qualified name for the database server (such as **computerxyz.domainxyz.com**), the IP address, or another resolvable name. You can start the file **install_ARIS_Server_<version>.<build number>.sh** from any directory. To do so, you need to enter the full path in front of the file name. If

To change the installation path, specify the additional option **-installdir <absolute path of the desired installation directory>**.

To enter the license key during installation, specify the additional option **-key <server license key>**.

The parameters are stored in the file **YYMMDD-HHMMDD.data.conf** in the directory **./aris7.2/setup/backup**.

The script extracts itself and stores the files in the **/aris7.2** subdirectory.

Configuration is performed automatically with the installation. At the end of the configuration, you will be prompted to enter a valid ARIS license key if you have not entered it during installation. After installation you can reconfigure the software at any time using the **configure.sh** script in the folder **aris7.2/setup**. The software is ready to run immediately. To start ARIS Business Server, use the launcher **y-serverlauncher.sh** in the directory **aris7.2**.

4.5.3 ARIS Site Manager

Warning

You may install ARIS Site Manager only once for each ARIS Site.

Procedure

1. Navigate to the directory **Setups/Unix Linux/ARIS Business Server** and copy the file **install_ARIS_Server_<version>.<build number>.sh** to your hard drive.
2. Switch to the directory in which the ARIS Business Server installation script is located, and enter **sh install_ARIS_Server_<version>.<build number>.sh [site_manager_options]** to install ARIS Site Manager.

Specify the following options for the installation of ARIS Site Manager:

- -aris_type SM
- -jvm <path of the Java Runtime Environment>
- -dbserver <host name of the database server>
- -dbport <port of the database server>
- -dbinstance <name of the database instance>

You must enter a fully qualified name for the database server (such as computerxyz.domainxyz.com), the IP address, or another resolvable name. You can start the file **install_ARIS_Server_<version>.<build number>.sh** from any directory. To do so, you need to enter the full path in front of the file name.

To change the installation path, specify the additional option **-installdir** <absolute path of the desired installation directory>.

To enter the license key during installation, specify the additional option **-key** <server license key>.

The parameters are stored in the file **YYMMDD-HHMMDD.data.conf** in the directory **.../aris7.2/setup/backup**.

The script extracts itself and stores the files in the **/aris7.2** subdirectory.

Configuration is performed automatically with the installation. At the end of the configuration, you will be prompted to enter a valid ARIS license key if you have not entered it during installation. After installation you can reconfigure the software at any time using the **configure.sh script** in the folder **aris7.2/setup**. The software is ready to run immediately. To start ARIS Business Server, use the **launcher y-serverlauncher.sh** in the directory **aris7.2**.

4.5.4 ARIS Web Client Components

When you install ARIS Business Server on a computer with a Unix operating system, the ARIS Web Client Components are installed automatically at the same time.

ARIS Web Client Components consist of passive Web server components (e.g. HTML files) only. The first page **index_app.html** is automatically generated. The first pages **index_lan.html** and **index_ssl.html** are created if so defined (page 142) in the file **UserServerSettings.cfg**. All first pages are located in the **\html** directory. The individual language versions are located in the directory **\html\<languageid>**. These pages contain the database lists that are generated by the HTML Generator whenever ARIS deletes or adds databases or changes their names.

Warning

Please only use the file **userServerSettings.cfg** to change the configuration. This ensures that your changes are preserved in future update installations. The other ARIS Business Server configuration files are overwritten for each installation.

ARIS Web Client Components and Web server

Before your Web server can use ARIS Web Client Components, you need to specify **one** of the following settings:

- Map a drive to the WWW root of the Web server.
- Run ARIS Business Server setup on the computer where your Web server is installed. Enter the path to the WWW root. Under MS Windows, e.g., **<C:\inetpub\www_root\>**, under Unix, e.g., **</opt/ARIS7.2/server.xyzxyz/html>**.

ARIS Web Client Components and HTML Generator

The files **index.html** and **aris_database.html** are updated by the HTML Generator during runtime. For further information, please refer to the chapter **Adapt HTML Generator: Current database lists** (page 143) in the Administration Guide. The HTML Generator is configured using the files **defaultServerSettings.cfg** and **userServerSettings.cfg** of ARIS Business Server, and it uses the templates located in the directory **ARIS Business Server/templates/htmlgen**. It is launched every time a database is created, deleted, or renamed.

The following directories are created:

/lan

Default directory. It launches the ARIS Web clients as an applet and allows direct access to ARIS Business Server.

/ssl

If you select this directory for launching ARIS Web clients, the data exchange is encrypted. For further information, please refer to the chapter on **SSL encryption of data transmission via Secure Socket Layer** (page 142) in the Administration Guide.

/app

If you select this directory for launching ARIS Web clients, they are run as an application rather than an applet (for additional information, please refer to **Execution as application or applet** (page 222) in the Administration Guide).

To enable SSL encryption, open the file **userServerSettings.cfg** and add the following entry:

```
<profiles>
  <public ssl="443" />
</profiles>
<htmlgen>
  <genlist>
    <genfile target_dir="ssl" target_name="dblist.html"
database_template="aris_database_ssl.html"/>
  </genlist>
</htmlgen>
```

Please note that the output and backup paths must be modified accordingly in the **userServerSettings.cfg** file. If your work is not limited to the use of only one ARIS Business Server, you need to adjust the paths on the computer on which ARIS Site Manager is installed. Insert the following entry:

```
<htmlgen>
  <outputpath path="e:/inetpub/wwwroot/aris70"/><backuppath
path="e:/inetpub/wwwroot/aris70/backup"/>
</htmlgen>
```

For more ARIS Business Servers, adjust the file **userServerSettings.cfg** as follows:

```
<htmlgen>
  <appserver name="<Name of the computer on which ARIS Site Manager is installed"/>
  <genlist>
    <genfile target_dir="ssl" target_name="dblist.html"
database_template="aris_database_ssl.html"/>
  </genlist>
</htmlgen>
```

4.5.5 Uninstall

To uninstall one or more of the following components, you first have to exit ARIS Business Server and then delete the component.

Procedure

1. To exit ARIS Business Server, use the script **y-serverstopper.sh** under **<installation directory>/server.<numerical sequence>**.
2. Delete the folder **<installation directory>/server.<numerical sequence>**:

```
rm -r <installation directory>/server.<numerical sequence>
```

4.6 ARIS Process Governance Server installations (Windows operating system)

This chapter describes installations related to ARIS Process Governance Server that can be performed under a Windows operating system.

To use ARIS Process Governance, you must install ARIS Business Server and ARIS Process Governance Server.

We recommend to always install the same version of ARIS client and ARIS Process Governance Server in order to obtain the entire functionality.

When using an older version of ARIS Process Governance Server,

- you can model and start governance processes or update organizational charts.
- you may experience restrictions with regard to the automation of processes, process administration, central user management, ARIS document storage or Task list module in ARIS Process Automation Architect depending on the version used.

This section describes processor, memory, system configuration, and software requirements of the various server and client computers for ARIS. For simultaneous use of other applications, a faster processor, additional memory, or system extension may be required.

Server and clients should be synchronized in terms of time because otherwise, problems may occur when running a process.

You will find approved operating systems and database systems in the chapter **Administration** (page 153). The hardware and software requirements correspond to those of ARIS Business Server (page 125).

Please consider the legal notices (page 1).

4.6.1 Initial installation

You run the standard installation of ARIS Process Governance Server on your system for the first time. The setup for ARIS Process Governance Server is appended to the ARIS Business Server setup.

ARIS Business Server and ARIS Process Governance Server must be installed on the same PC. ARIS Process Governance Server does not perform any load balancing. When you use an Oracle or Microsoft SQL database with ARIS Business Server, you cannot use a standard database for ARIS Process Governance Server. Instead, you must also use an Oracle or Microsoft SQL database.

If you configure a port other than the default port 7071 for ARIS Process Governance Server, you must adapt the attribute **Server address** accordingly in the attribute type group **Process automation** of the object **ArisScriptService** in ARIS Process Automation Architect.

Default (recommended for up to 50 users)

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Check the **Install ARIS Process Governance Server** option.
3. Enable the **Standard database system** check box.

Standard and Oracle database

- Use of the database character set AL32UTF8 is mandatory.
- We recommend a block size of 8K.
- query_rewrite_enabled=true
- query_rewrite_integrity=trusted
- You have created two tablespaces: **AGEDATA** (for table data) and **AGEINDEX** (for index data).

Prerequisite

- You have created and configured an Oracle database.

We recommend that you use two separate database instances for ARIS Business Server and ARIS Process Governance Server. This keeps the two systems from competing for resources, and you achieve better performance and higher availability.

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Check the **Install ARIS Process Governance Server** option.
3. Enable the **Oracle database system** check box.

Standard and Microsoft SQL database

- Server sorting must be case-insensitive. That is, the sorting name must contain the character sequence `_CI_`. Select the server sorting `Latin1_General_CI_AI` for example.
- Select the option **SQL Server and Windows authentication mode** as server authentication.
- Set the option **Enable triggers to generate additional triggers** to **TRUE**.
- Set the timeout value for remote queries to **0**.

Prerequisite

You have set up (page 95) a new Microsoft SQL Server and prepared it for use with ARIS Process Governance.

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Check the **Install ARIS Process Governance Server** option.
3. Enable the **Microsoft SQL database** check box.

User-defined (advanced installation)

Prerequisite

You have created and configured an Oracle or Microsoft SQL database.

We recommend that you use two separate database instances for ARIS Business Server and ARIS Process Governance Server. This keeps the two systems from competing for resources, and you achieve better performance and higher availability.

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Check the **Install ARIS Business Server** option.
3. Click on **USER-DEFINED (ADVANCED INSTALLATION)**.
4. Enable the **Install ARIS Process Governance Server** check box.

4.6.2 Update installation

When performing an update installation, the configuration files **age-configuration-setup.properties** and **SpringCRModule.xml** are saved to the directory **ARISGE10\Backup<date>-<time>\config**. You must implement the changes made there in the newly installed files.

If you install a new version of ARIS, the sample databases already installed are not updated to ensure that changes you have made are not overwritten. If you want to use the current sample databases, you have to restore these manually.

If the supplied services have been updated and you want to use them, you must import them via merge from the current demo database into the database you are using.

4.6.3 Install ARIS Process Governance later

This chapter describes how you can install ARIS Process Governance Server later, if you have already installed ARIS Business Server.

If your ARIS Business Server version is older than ARIS version 7.1 Service Release 2, you must first update ARIS Business Server. Then install ARIS Process Governance Server.

If you configure a port other than the default port 7071 for ARIS Process Governance Server, you must adapt the **Server address** attribute accordingly in the **Process automation** attribute type group of the **ArisScriptService** object in ARIS Process Automation Architect.

Default (recommended for up to 50 users)

Procedure

1. In the setup program, select **Install ARIS Business Server** under **Additional Installations**.
2. Click on **Modify program**.
3. Enable the **Install ARIS Process Governance Server** check box.

Standard and Oracle database for ARIS Process Governance Server

Prerequisite

- Use of the database character set AL32UTF8 is mandatory.
- We recommend a block size of 8K.
- query_rewrite_enabled=true
- query_rewrite_integrity=trusted
- You have created two tablespaces: **AGEDATA** (for table data) and **AGEINDEX** (for index data).

Procedure

1. In the setup program, select **Additional Installations** and then **Install ARIS Business Server**.
2. Click on **Modify program**.
3. Enable the **Install ARIS Process Governance Server** check box.
4. Select the **Oracle database system** option.

Standard and Microsoft SQL database for ARIS Process Governance Server

Prerequisite

- You have set up (page 95) a new Microsoft SQL Server and prepared it for use with ARIS Process Governance.
- You have created and configured a Microsoft SQL database.

If you install a database yourself, always follow the instructions provided in the relevant installation guide.

We recommend that you use two separate database instances for ARIS Business Server and ARIS Process Governance Server. This keeps the two systems from competing for resources, and you achieve better performance and higher availability

Procedure

1. In the setup program, select **Additional Installations** and then **Install ARIS Business Server**.
2. Click on **Modify program**.
3. Enable the **Install ARIS Process Governance Server** check box.
4. Select the **MS SQL server** option.

User-defined (advanced installation)

For scenarios in which 200 or more users work simultaneously with ARIS Platform, we recommend that you install ARIS Process Governance Server and the database system on different computers. This type of installation should be performed (page 327) by Software AG employees only.

Prerequisite

- You have created and configured an Oracle or SQL database. If you install a database yourself, always follow the instructions provided in the relevant installation guide. We recommend that you use two separate database instances for ARIS Business Server and ARIS Process Governance Server. This keeps the two systems from competing for resources, and you achieve better performance and higher availability.

Oracle

- Use of the database character set AL32UTF8 is mandatory.
- We recommend a block size of 8K.
- query_rewrite_enabled=true
- query_rewrite_integrity=trusted
- You have created two tablespaces: **AGEDATA** (for table data) and **AGEINDEX** (for index data).

Microsoft SQL

- Server sorting must be case-insensitive. That is, the sorting name must contain the character sequence `_CI_`. Select the server sorting `Latin1_General_CI_AI` for example.
- Select the option **SQL Server and Windows authentication mode as server authentication**.
- Set the option **Enable triggers to generate additional triggers** to **TRUE**.
- Set the timeout value for remote queries to **0**.

Procedure

1. In the setup program, select **Additional Installations** and then **Install ARIS Business Server**.
2. Click on **Modify program**.
3. Enable the **Install ARIS Process Governance Server** check box.
4. Select the **Oracle database system** or **MS SQL server** option.

4.7 ARIS Process Governance Server installations (Unix operating system)

This chapter describes installations related to ARIS Process Governance Server that can be performed under a Unix operating system.

Please note the following:

- Server and clients should be synchronized in terms of time because otherwise, problems may occur when running a process.
- ARIS document storage is not approved under Unix. For additional information, please contact Software AG.
- You will find approved operating systems and database systems in the chapter **Administration** (page 153). The hardware and software requirements correspond to those of ARIS Business Server (page 125).
- Please consider the legal notices (page 1).

We recommend to always install the same version of ARIS client and ARIS Process Governance Server in order to obtain the entire functionality.

When using an older version of ARIS Process Governance Server,

- you can model and start governance processes or update organizational charts.
- you may experience restrictions with regard to the automation of processes, process administration, central user management, ARIS document storage or Task list module in ARIS Process Automation Architect depending on the version used.

4.7.1 Initial installation

This chapter describes installations related to ARIS Process Governance Server that can be performed under a Unix operating system (page 153). You can set up (page 262) ARIS Process Governance Server for LDAP server operation using central user management.

We recommend to have this installation performed by Software AG (<http://www.softwareag.com>) employees only. Please contact your local Software AG sales organization (<http://www.softwareag.com>).

Prerequisite

- You have installed the latest versions of JDK 1.6.0 (64-bit) and Tomcat 6.0.x (64-bit) for Solaris. The environment variable JAVA_HOME must point to this JDK (e. g.: **/home/aris/jdk1.6.0_23/**).
- ARIS Business Server must be installed on the computer on which you want to install ARIS Process Governance Server.

Procedure

1. Open the file **/tomcat/conf/server.xml** and find the tag **<Server>** (e. g.: **<Server port="8086" shutdown="SHUTDOWN">**).

2. Add the following string to this block:

```
<Listener className="com.idsscheer.age.mbeans.AJmxRemoteLifecycleListener"
rmiRegistryPortPlatform="7076" />
<Listener className="com.idsscheer.age.config.ACatalinaConfigInitializer" />
```

3. Find the subordinate tag **<Service>** (e. g.: **<Service name="Catalina">**) and add the following entries:

```
<Connector port="7071" protocol="HTTP/1.1"
connectionTimeout="20000"
redirectPort="8443"/>
```

4. Copy the **config**, **archive**, and **model** directories from your installation media under **Setups\Unix Linux\ARIS Process Governance\tomcat** to the installation directory of your Tomcat server.
5. Copy the contents of the **Setups\Unix Linux\ARIS Process Governance\tomcat\lib** directory from your installation media to the **lib** directory of your Tomcat installation.
6. Copy the file **Setups\Unix Linux\ARIS Process Governance\tomcat\bin\setenv.sh** from your installation media to the **bin** directory of your Tomcat installation.
7. Copy the contents of the **Setups\Unix Linux\ARIS Process Governance\tomcat\webapps** directory from your installation media to the **webapps** directory of your Tomcat installation.
8. In your installation directory, switch to the **/tomcat/config** directory and adapt the file **age-configuration-setup.properties**.

Enter your paths in the **log4j block** of the file. We recommend to retain the directory structure. You can use relative paths from the **bin** directory of your Tomcat installation or absolute paths.

```
log4j.logger.com.idsscheer=INFO
log4j.logger.com.idsscheer.aris.server.bl.logic.age.taskserver.dao.hibernate=
INFO
log4j.appender.file.File=../logs/age.log
log4j.appender.file.encoding=UTF-8
log4j.appender.export4ppm.File=../logs/export4ppm.log
log4j.appender.export4ppm.encoding=UTF-8
log4j.appender.ftllog.File=../logs/ftl.log
log4j.appender.ftllog.encoding=UTF-8
log4j.appender.taListLog.File=../logs/ta-list.log
log4j.appender.taListLog.encoding=UTF-8
log4j.appender.velocitylog.File=../logs/velocity.log
log4j.appender.velocitylog.encoding=UTF-8
log4j.appender.console.encoding=UTF-8
```

9. Find the string **#AGE Default config** and adapt the following lines:

```
com.idsscheer.age.container.host=<fully qualified computer name>
com.idsscheer.age.container.port=<port of ARIS Process Governance server>
```

The default port is **7071**. It is recommended to retain this port.

10. Find the string **com.idsscheer.age.ds.url=** in the block **#AGE DB Server** and configure the JDBC URL.

Use the configuration tool (page 156) to modify or encrypt the user.

Example

```
#AGE DB Server
...
com.idsscheer.age.ds.url=jdbc:oracle:thin:@Computername:1521:ARIS
...
```

11. Configure the SMTP server. Find the string **#AGE SMTP Server** and adapt the following lines:

```
com.idsscheer.age.email.from=<display name of the sender of-mails automatically
generated by ARIS Process Governance Server>
```

```
com.idsscheer.age.email.smtp.host=<fully qualified name of the SMTP server>
```

It may be necessary to configure (page 166) the rest of the block depending on your SMTP server configuration.

12. Configure the e-mail address which is to be used to announce modifications regarding users.

Find the string **#UMC general** and adapt the following line:

```
com.idsscheer.aris.umc.NotificationSender=<valid e-mail address>
```

13. Find the string **#AGE license** and configure the two following lines as follows:

```
com.idsscheer.age.license.serverKey=<your license key>
com.idsscheer.age.license.useDongle=FALSE
```

14. Find the string **#ARIS service enabling** and adapt the paths in this block. Make sure that the following directory exists or create it: **<Tomcat installation directory>/webapps/AGESTATIC**.

Please note that you must use absolute paths in the following strings:

```
com.idsscheer.age.serviceenabling.scriptrunner.serverHome=<installation
directory of ARIS Business Server>/server.<version number>
```

```
com.idsscheer.age.serviceenabling.scriptrunner.outputPath=<installation
directory of ARIS Business Server>/server.<version number>/temp
```

```
com.idsscheer.age.serviceenabling.staticExport.wsServer=http://<fully
qualified computer name>:7071/AGESTATIC
```

```
com.idsscheer.age.serviceenabling.staticExport.exportDir=<Tomcat installation
directory>/webapps/AGESTATIC
```

```
com.idsscheer.age.serviceenabling.contentrepository.configDir=<Tomcat
installation directory>/home/config
```

15. Open the file <installation directory of ARIS Business Server>/server/config/**userServerSettings.cfg** and find the string **<userServerSettings>**.
16. Underneath, insert the string **<ageserver location="http://<fully qualified host name>:<port>/age"/>** (e. g., **<ageserver location="http://myhost.mycompany.com:7071/age"/>**).
17. Start ARIS Process Governance Server. (<bin subdirectory of your Tomcat installation directory>).
18. Enter **sh ./catalina.sh start**.
19. Switch to the **logs** directory of your Tomcat installation and open the file **catalina.out**. Check whether ARIS Process Governance Server has been properly launched.

You have installed ARIS Process Governance Server under Unix, made a basic configuration, and launched your ARIS Process Governance Server in Tomcat as a Web application. Your system is now ready for operation.

4.7.2 Update installation

If you want to update an existing installation, proceed as follows.

Procedure

1. Stop Tomcat.
2. Delete the following files or directories in order to re-deploy the corresponding Web applications.

```
<APG Server Install Dir>/webapps/processboard.war
<APG Server Install Dir>/webapps/agehelp.war
<APG Server Install Dir>/webapps/aris.war
<APG Server Install Dir>/webapps/age.war
<APG Server Install Dir>/webapps/umc.war
```

```
<APG Server Install Dir>/webapps/processboard
<APG Server Install Dir>/webapps/agehelp
<APG Server Install Dir>/webapps/aris
<APG Server Install Dir>/webapps/age
<APG Server Install Dir>/webapps/umc
```

3. Restart Tomcat.

4.8 ARIS Business Publisher Server installations

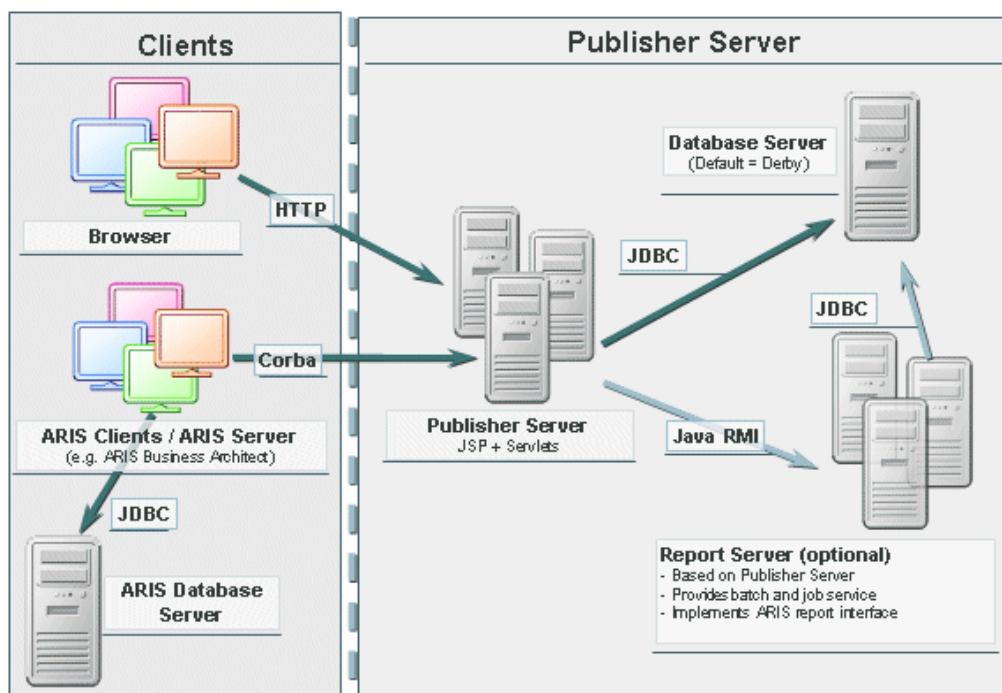
This chapter describes the standard installation of ARIS Business Publisher Server. If you require different installations, please refer to your local Software AG sales organization. Please note that this type of manufacturer-specific or customer-specific change is not subject to the standard Software AG software maintenance agreement and that these changes can only be performed if you requested and agreed on them.

ARIS Business Publisher Servers manage every Publisher export. A Publisher export is a Web application based on **J2EE**. Java Servlets and Java Server Pages (**JSP**) are used, which, in addition to a Java environment (**JDK**), require a Web application server (for example **Apache Tomcat**) as runtime environment. The data is held in a relational database system and is exchanged with the program via a JDBC interface.

The standard installation uses a **Derby** database system and **Apache Tomcat Web Application Server** for ARIS Business Publisher Server. With this database system, up to 10 users can access a Publisher export simultaneously. Swimlane models cannot be exported optimally using a Derby database. For a larger number of users, you need a different database system such as the **Oracle** (page 86) database system or **Microsoft SQL Server 2005/2008** (page 84). These are not included in the package. Depending on the ARIS Business Publisher Server license purchased, these systems enable all users to simultaneously work on a Publisher export.

After the standard installation, reports are run by ARIS Business Publisher Server. You can additionally install a Report Server (page 63) to optimize system performance when running reports.

Please consider the legal notices (page 1).



4.8.1 Windows

4.8.1.1 Update installation (standard)

During an update installation, all components are replaced with current components after you stopped ARIS Business Publisher Server. The layout files are also overwritten.

Your Tomcat installation will not be affected. It is not possible to update your Tomcat installation. If you want to use Tomcat 6.0 instead of Tomcat 5.5, you need to uninstall and then reinstall ARIS Business Publisher Server.

Warning

Perform an update installation for ARIS Business Publisher Server only if your system has not been adjusted. Changes you made or extensions by ARIS Customized Solutions are lost during an update or subsequent installation. If, for example, your system's layout files have been customized, please back up the modified files before running an update or uninstall.

Due to methodological and functional changes, you may no longer be able to open an existing Publisher export. If this happens, you must perform the exports again. The browser caches should be cleared after an update installation.

From Service Release SR 2008_10, ARIS Business Publisher Server is installed as a 64-bit application. Previously, a 32-bit emulation was installed. If you currently have a 32-bit emulation of the SR 2008_10 version and now want a 64-bit installation, you must uninstall ARIS Business Publisher Server and then reinstall it as a 64-bit application. You can run an update installation for all later versions.

When an update installation is performed, the **webappserver.cfg** file contained in **..\BPServer\tomcat\webapps\businesspublisher\config** will not be overwritten. If you require new entries for new functions, you need to specify these manually.

Procedure

1. Click on **Additional Installations**, then on **Install ARIS Business Publisher Server** and follow the instructions.
2. Enable the **Start service now** check box, if you want to start ARIS Business Publisher Server as a service as soon as you click on **Finish**.
3. If necessary, adapt the **webappserver.cfg** configuration file to make ARIS Rocket Search available (page 108) to you.

4.8.1.2 Apache Tomcat Web Application Server under Windows

This chapter describes the installation of Apache Tomcat Web Application Server 6.0 under Microsoft Windows. If you already have an Apache Tomcat Web Application Server 5.5 installed, the setup program automatically selects the corresponding setup for ARIS Business Publisher Server installation. Please consider the legal notices (page 1).

The standard installation uses a **Derby** database system with which up to 10 users can access exports simultaneously. Swimlane models cannot be exported optimally. For a larger number of users, you need a different database system such as the **Oracle** (page 86) database system or **Microsoft SQL Server 2005**. These are not included in the package. Depending on the ARIS Business Publisher Server license purchased, these systems enable all users to simultaneously work on exports.

Procedure

1. In the set up program, click on **Additional Installations** and then on **Install ARIS Business Publisher Server**.
2. Select the installation and program directory, if required.
3. Enter your license key or enable the dongle version check box.
4. Select the **ARIS Business Publisher Server** option and then enter the port number for accessing ARIS Business Publisher Server via a browser. The port number must not be used by another application (e. g. Web server).
5. Check the **ARIS APG Integration** check box, if you want to use APG and have the required ARIS Process Governance Server installed (page 28).
6. Continue with the installation process depending on the database you want to use.

Standard database

1. Select **Derby**, check the settings in the summary and click on **Next** and **Finish**.
2. Communicate the URL that allows users to access and administrators to manage every Publisher export (default: **http://<server name>:9090/businesspublisher**).

Non-configured Oracle database

Prerequisite: You have created (page 86) an Oracle database.

1. Select **Oracle**, read the info page and enter the required data on the following page.
2. Check the settings in the summary and click on **Next** and **Finish**.

Configured Oracle database

Please adjust your system as required to run ARIS Business Publisher in combination with Apache Tomcat Web application server and an Oracle database.

Prerequisite: You have created and configured (page 86) an Oracle database.

1. Select **Oracle** and enter the required data.
2. Check the settings in the summary and click on **Next** and **Finish**.

Microsoft SQL database

Please adjust your system as required to manage ARIS Business Publisher in combination with a Microsoft SQL Server 2005 database.

Prerequisite: You have installed (page 84) Microsoft SQL Server 2005 under **Microsoft Windows**.

1. Select **MS SQL** and enter the required data.
2. Check the settings in the summary and click on **Next** and **Finish**.

4.8.1.3 IBM WebSphere Application Server (WAS 6.1.0.15) unter Windows

This chapter describes the adjustments to be made for using IBM WebSphere Application Server (WAS 6.1.0.15) and the approved databases. Please consider the legal notices (page 1). If you are using IBM WebSphere Application Server, you cannot access ARIS Process Governance from exports.

Use WAS and Microsoft SQL server 2005 database

Prerequisites

- You have created and configured an MS SQL Server 2005 database.
- You have installed and adjusted IBM Websphere Application Server V6.1 for use with an MSSQL Server 2005 database.

Make the required adjustments described below under **Procedure**.

Use WAS and Oracle database

Prerequisites

- You have downloaded the file **ojdbc14.jar** from the Oracle Web Site to a directory of your choice.
- You have created and configured an Oracle database. The Oracle database is not included in the package.
- You have adjusted IBM WebSphere Application Server for use with an Oracle database.

Procedure

1. Run War deployment by selecting the path to the **businesspublisher.war** file (on installation media).
2. Enter the value **NativeLogin** in the **Alias** box under **Java Authentication and Authorization Service/JAAS - Application logins/New**.
3. In the file <installation directory>/IBM/WebSphere/AppServer/profiles/<AppSrv01>/installedApps/<ids-ID>/businesspublisher.ear/businesspublisher.war/config/**bplogin.cfg**, copy the entry
com.idsscheer.aris.businesspublisher.application.business.components.login.NativeLogin.ABPNativeLogin and paste it into the **Module class name** box (**Security/Secure administration, applications, and infrastructure/Java Authentication and Authentication Service/Application logins** and then on **NativeLogin/JAAS login modules/New**).

4. Run the file <installation

directory>\IBM\WebSphere\AppServer\profiles\<<AppSrv01>\bin\dumpNameSpace.bat and copy the entry highlighted in green:

```

30 javax.naming.Context
31 (top)/nodes/ids-5dke28k3aduNode01/servers/server1/IDSScheer/ARIS71/businesspublisher/ExportInfo
32 (top)/nodes/ids-5dke28k3aduNode01/servers/server1/IDSScheer/ARIS71/businesspublisher/WebAppInfo
33 (top)/nodes/ids-5dke28k3aduNode01/servers/server1/IDSScheer/ARIS71/businesspublisher/MethodTransfer
34 (top)/nodes/ids-5dke28k3aduNode01/servers/server1/IDSScheer/ARIS71/businesspublisher/DataTransfer
35 (top)/nodes/ids-5dke28k3aduNode01/servers/server1/IDSScheer/ARIS71/businesspublisher/GraphicTransfer
36 (top)/nodes/ids-5dke28k3aduNode01/servers/server1/IDSScheer/ARIS71/businesspublisher/TemplateTransfer

```

5. Customize the file <installation

directory>\IBM\WebSphere\AppServer\profiles\<<AppSrv01>\installedApps\<<ids-ID>\businesspublisher.ear\businesspublisher.war\config\webappserver.cfg as follows:

<license key="ARIS Business Publisher-Server key"/>

<bpserviceport value="9100"

usenameservice="true"

nameserviceprefix="/nodes/<node>/servers/<server name>"/>

Paste the content of the clipboard here.

useorblookup="true"

orblookupname="java:comb/ORB"

Ensure that a valid path to the fonts is specified, e.g.

6. <FontLocation value="C:\WINDOWS\Fonts" />

<bpservicehost value="<fully qualified name> or <IP address>"/>

7. Ensure that these values are also transferred to the file <ARIS installation

directory>\ARIS7.2\Server\config

\userServerSettings.cfg.

8. To make the transaction start available without WP setup, set the entry sap_newbpcon to "on", and save sapjco3.jar in <installation

directory>\IBM\WebSphere\AppServer\profiles\<<AppSrv01>\installedApps\<<ids-ID>\businesspublisher.ear\businesspublisher.war\layouts\extensions\sap_cxn\.

9. In the file webappserver.cfg, the database connection must be set for MSSQL or Oracle.

<dao-class

name="com.idsscheer.aris.businesspublisher.application.dao.database.AMSSQLDAO" /> or

<dao-class

name="com.idsscheer.aris.businesspublisher.application.dao.database.AOracleDAO" />

10. Customize the file <installation

directory>\IBM\WebSphere\AppServer\profiles\<<AppSrv01>\installedApps\<<CellName>\businesspublisher.ear\businesspublisher.war\config\batchserver.cfg.

Set the value of the key **name value** to the name of the batch server and the key **host value** to the IP address or the fully qualified name.

4.8.1.4 SAP NetWeaver Composition Environment 7.1 under Windows

This page describes the installation of ARIS Business Publisher Server in combination with SAP NetWeaver CE 7.10 and the approved Microsoft SQL databases. Please consider the legal notices (page 1).

If you wish to use SSL encryption, please refer to

http://help.sap.com/saphelp_nwpi71/helpdata/en/f1/2de3be0382df45a398d3f9fb86a36a/frameaset.htm

(http://help.sap.com/saphelp_nwpi71/helpdata/en/f1/2de3be0382df45a398d3f9fb86a36a/frameaset.htm)

Although a description of SAP NetWeaver CE 7.10 deployment (businesspublisher.sca) is provided below, we strongly recommend that you use SAP JSPM. Please refer to the SAP help for additional information.

Prerequisite

- Copy the file **jtds.jar** (**installation media/Setups/All OS/ARIS Business Publisher Server**) to a directory of your choice.
- You need the file **businesspublisher.sca** (**installation media/Setups/All OS/ARIS Business Publisher Server**) for SCA deployment. You can also download this file here (<ftp://ftp.softwareag.com/Support/ARIS/downloads>).
- You have created and configured an Microsoft SQL Server 2005 database (page 84).

Procedure

1. Enter the URL **<http://<SAPServerAddress>:50000/index.html>** in your browser, and click on **SAP NetWeaver Administrator**.



2. Define the database connection.

Click on **Configuration Management/Infrastructure/Application Resources**.

Welcome Administrator.

Operation Management | **Configuration Management** | Availability and Performance Management | Problem Management | SOA Management

Security | **Infrastructure** | Scenarios

Infrastructure

Adobe Document Services

The Configuration service enables you to register the Adobe Reader Rights credential that is needed to assign usage rights to PDF documents. If you require additional document security such as certification or digital signatures, you can configure further credentials. In this case you also have to install Trusted Anchors to enable the server to verify the document certification or digital signature, and Certificate Revocation Lists for identifying credentials that can no longer be trusted. The License service keeps track of all unlicensed interactive form designs in your system, until you register the license for Interactive Forms by Adobe.

Application Resources

The Application Resources plug-in provides functionality to create, manage and delete external resources such as JDBC drivers, JDBC data sources, resource adapters, connection factories and others. The administrator can view all resources or choose a specific resource type and select a resource from the resources list. He can view its details and the details of all antecedent and dependent resources.

Destinations

Applications or services can establish connections to other services. When using such connections, you need to specify

Application Modules

This is a solution that contains details of the deployed applications as well as several types of modules (e.g. - Web and EJB modules) where configuration settings can be viewed and altered.

Java Configuration Browser

Such a browser offers a detailed view of the configuration settings on the selected Java systems with all the property sheets and source files. This is an informative view only. To change the configuration of a system use the configuration editor view of the local configuration tool.

Java HTTP Provider Configuration

Virtual Host can act as several different Web servers responding to different URLs, but referring only to a single real IP address. A user can gain flexibility by providing different configuration settings for each of the virtual hosts that can be both created and configured. Logon load balancing increases the efficiency of various workgroups. To improve performance and system resource consumption users are distributed across available application servers based on the requirements of workgroup service and load sensitivity.

3. Create a JDBC driver, and upload the driver file **jtids.jar** (installation media/Setups/All OS/ARIS Business Publisher Server).

Application Resources: Overview

Home History Back Forward Personalize Help Log Off

Overview

Related Tasks

Start & Stop Java EE Applications

Application Modules

Show All Resources

Resource List

Create New Resource Deploy New JDBC Driver

New JDBC Custom DataSource

New JDBC DataSource Alias

New JMS Connection Factory Reference

New JMS Destination Reference

New JMS Ssl Agent Reference

Resource Type Owner Name Owner Type

JDBC System DataSource	JDBCResourceManager	JDBC Resource
JDBC Driver	JDBCResourceManager	JDBC Resource
JDBC Driver	JDBCResourceManager	JDBC Resource
JDBC Custom DataSource	sap.com:BP_SQL_SERVER	Java EE Application
JDBC DataSource Alias	to-je-webservices-srv Service	Java EE Application
JDBC DataSource Alias	DefaultDataSource	Java EE Application
JDBC DataSource Alias	sap.com:com.sap.slut.info	Java EE Application
JDBC DataSource Alias	to-ee-espr-lib Library	Java EE Application
JDBC DataSource Alias	com.sap.ai.af.svc Service	Java EE Application
JDBC DataSource Alias	sap.com:com.sap.jdo	Java EE Application

Possible States: Fully available Partly available Not Available Unknown

Resource Details

SAPABPDB

JDBC System DataSource

Settings

Driver Name: SYS

SQL Engine: Oper

Isolation Level: Defa

Deployer: Defa

Application Resources: Overview

Home History Back Forward Personalize Help Log Off

Show All Resources

New JDBC Driver Creation

Save Cancel

Settings

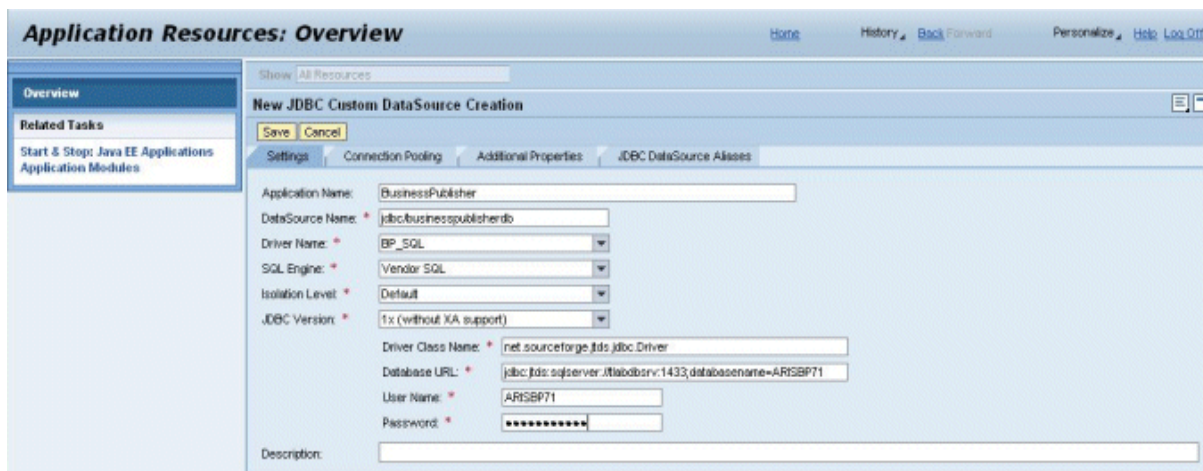
JDBC Driver Name: * MS_SQL_2005

Add New Driver File Remove Selected Driver File

File Name

jtids.jar


4. Create a JDBS Custom DataSource, and specify the following entries:



- **Application name**
Freely selectable name for the application, for example **BusinessPublisher**.
- **DataSource name**
Identifies the JNDI name for addressing the database. You have to enter **jdbc/businesspublisherdb**.
- **Driver name**
Name of the previously created driver.
- **SQL Engine**
Select **Vendor SQL** (SQL implementation of an external vendor).
- **JDBC version**
Select **Version 1.x**.
- **Driver class**
Select **net.sourceforge.jtds.jdbc.Driver** if you are using Microsoft SQL Server 2005.
- **Database URL**
Depends on the selected database instance. Syntax
jdbc:jtds:sqlserver://<host>:<port>;databaseName=<dbname> (optional
;instance=<instance>)
- **User name** and password
Depends on the database settings.
- **Description**
Optional

5. Save your settings.

6. Create an entry on the **Login Modules** tab.



Class name

com.idsscheer.aris.businesspublisher.application.business.components.login.NativeLogin.ABPNetWeaverLogin

The class may only be used once in the list.

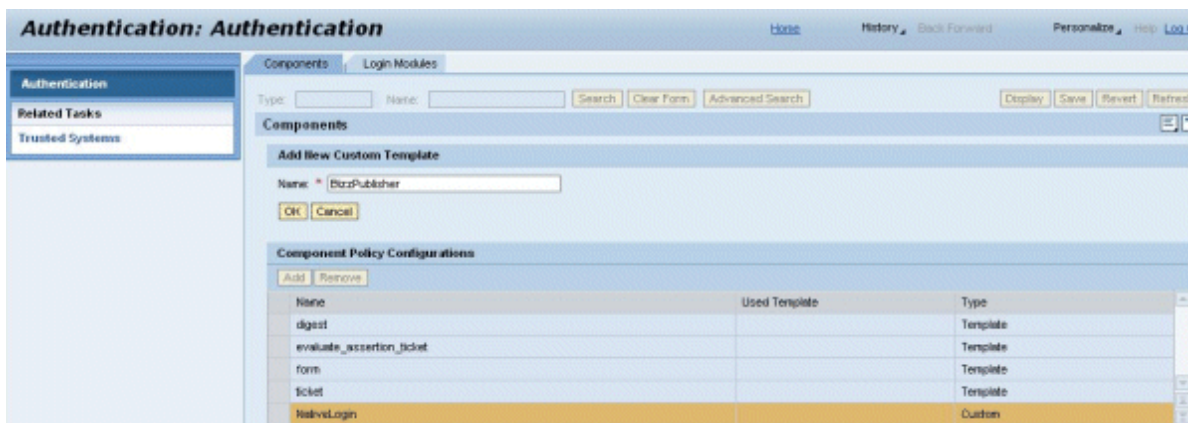
7. Create the **user** option under Details. The value of user corresponds to the account in SAP NetWeaver CE which acts as the host for ARIS Business Publisher sessions and users.



Name	Value
user	Administrator

This setup uses ARIS users from ARIS Business Publisher content. SAP NetWeaver CE also has to identify the technical user.

8. Create a custom component on the **Components** tab. The name **NativeLogin** is supplied by default. You can assign a meaningful name, for example **BizzPublisher**. You must enter this name in the **webappserver.cfg** file after deployment.



Authentication: Authentication

Home History Back Forward Personalize Help Log Out

Authentication
Related Tasks
Trusted Systems

Components Login Modules

Type: Name: Search Clear Form Advanced Search Display Save Revert Refresh

Components

Add New Custom Template

Name: * BizzPublisher

OK Cancel

Component Policy Configurations

Add Remove

Name	Used Template	Type
digest		Template
evaluate_assertion_ticket		Template
form		Template
ticket		Template
NativeLogin		Custom

9. Add the login module you created in step 6 to the new component.



Details for Selected Component

Component Name: NativeLogin
Component Type: Custom

Authentication Stack Properties

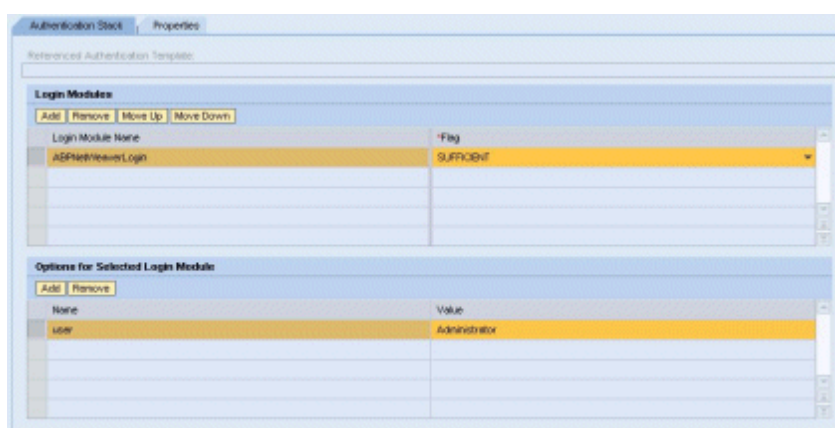
Referenced Authentication Template:

Add Login Module

Select Login Module: * ADPWeb/NeaverLogin

OK Cancel

The **SUFFICIENT** setting is copied automatically from the login module.



Authentication Stack Properties

Referenced Authentication Template:

Login Modules

Add Remove Move Up Move Down

Login Module Name	Flag
ADPWeb/NeaverLogin	SUFFICIENT

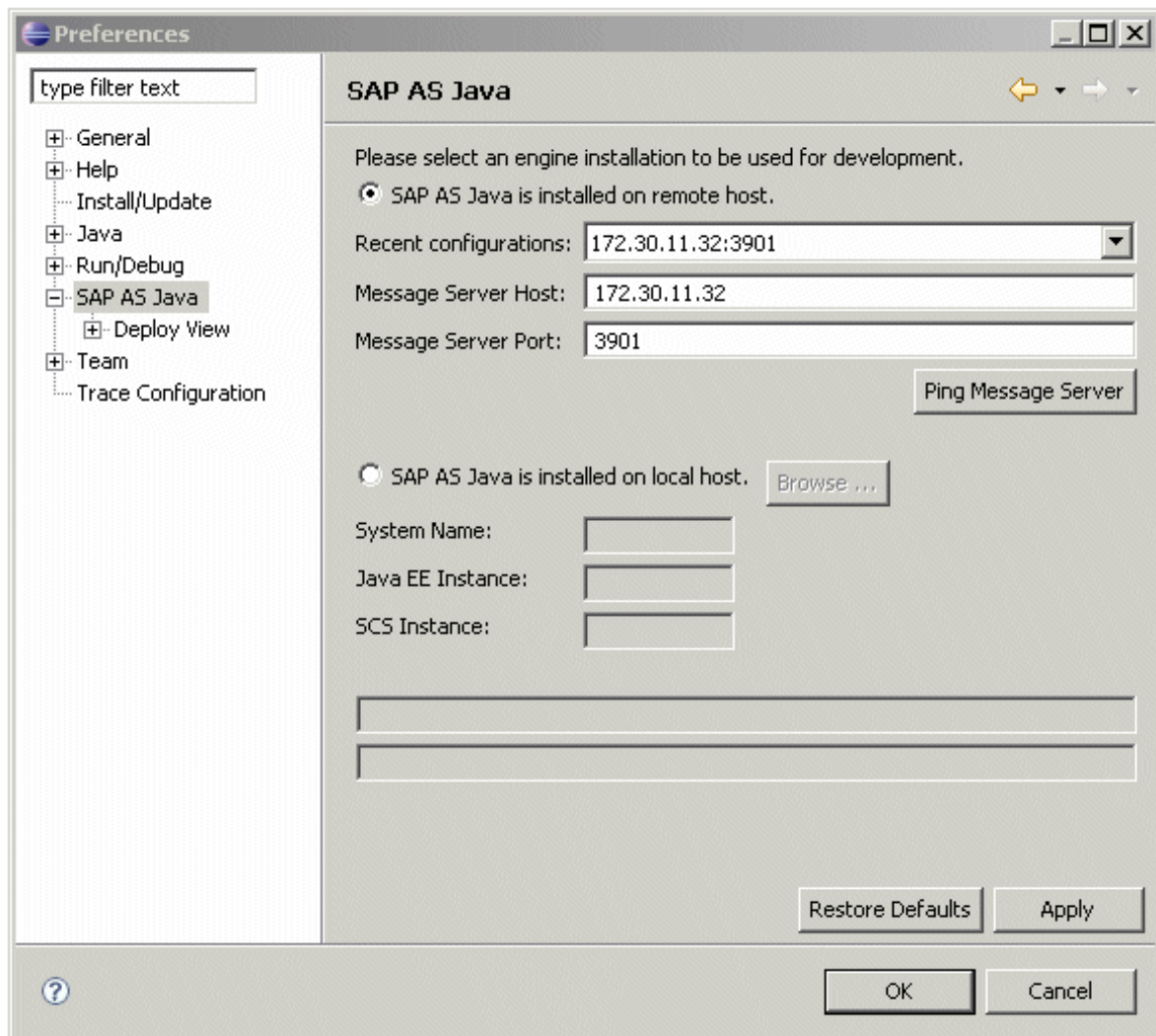
Options for Selected Login Module

Add Remove

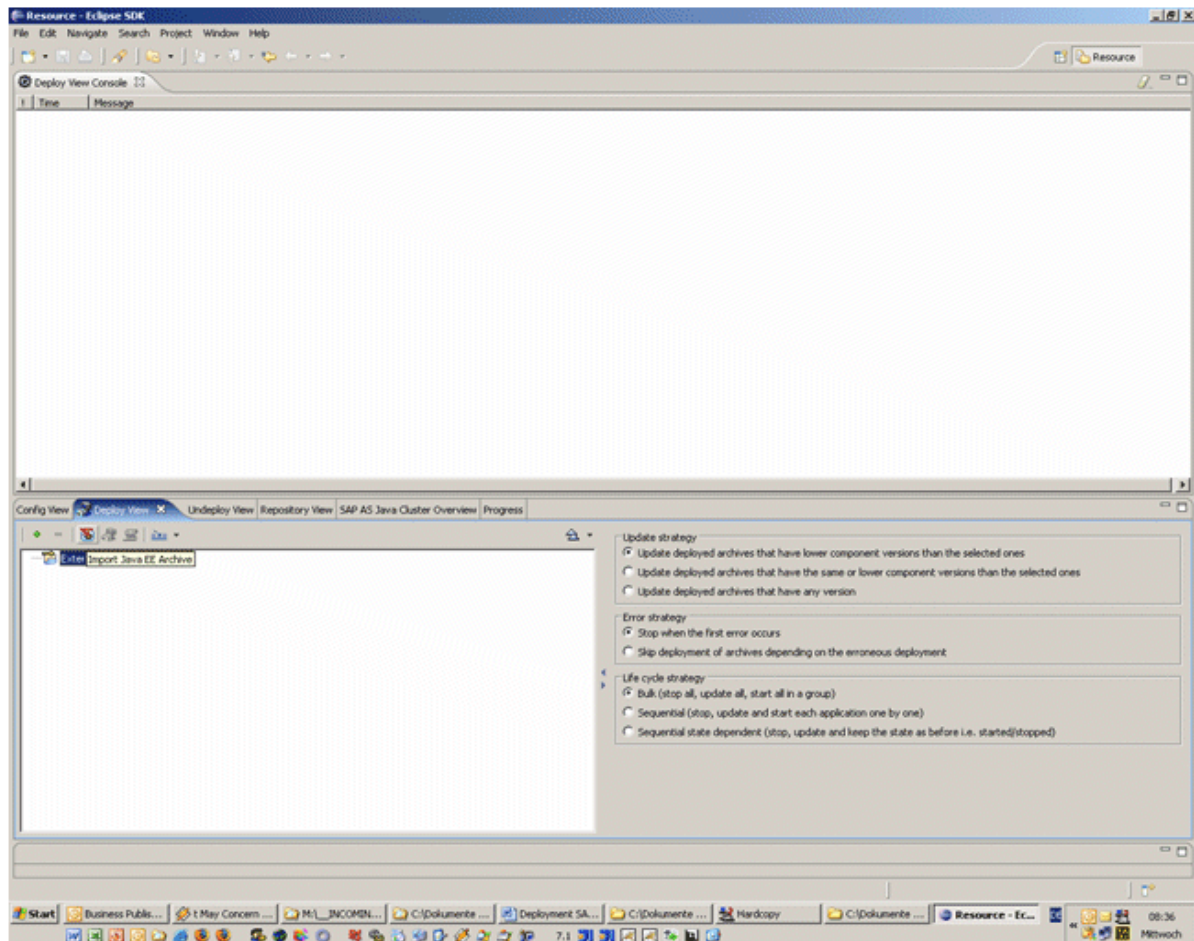
Name	Value
User	Administrator

10. Start SCA deployment using the deployment tool (DV_win32.bat), and click on **Windows/Preferences**.

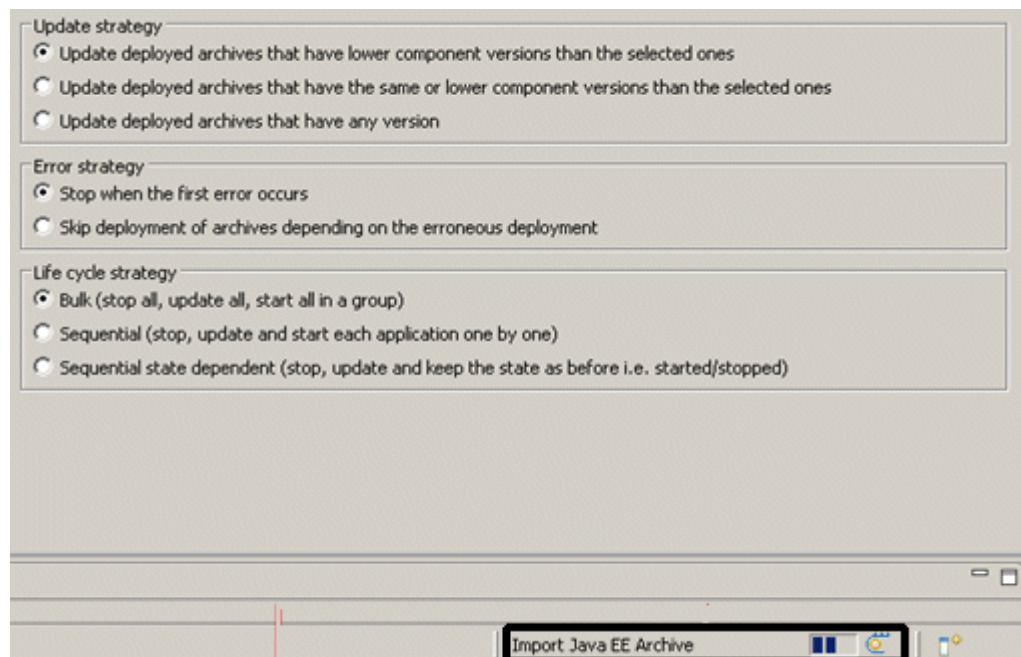
11. Click on SAP AS Java in the tree view, and enter the connection parameters.



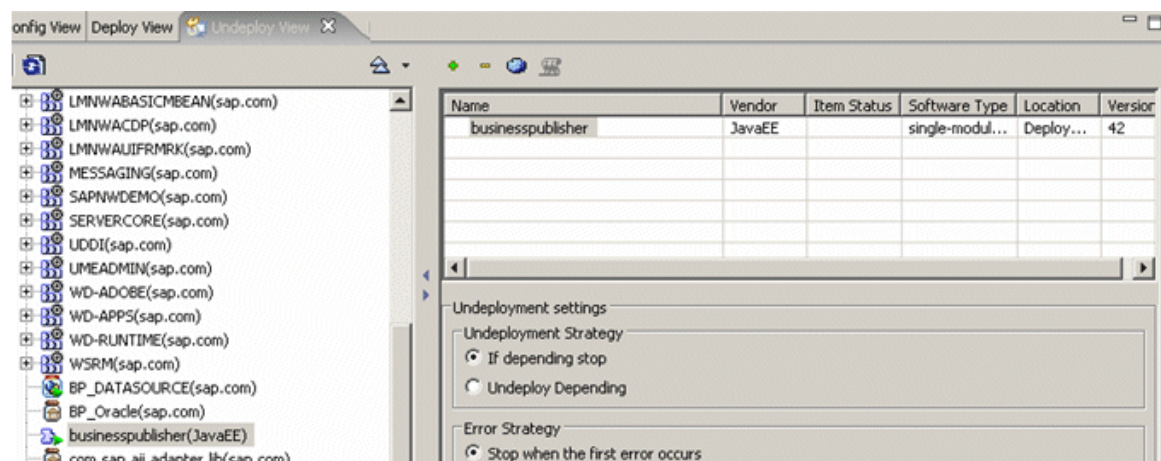
12. Log on to SAP NetWeaver, and import the SCA file.



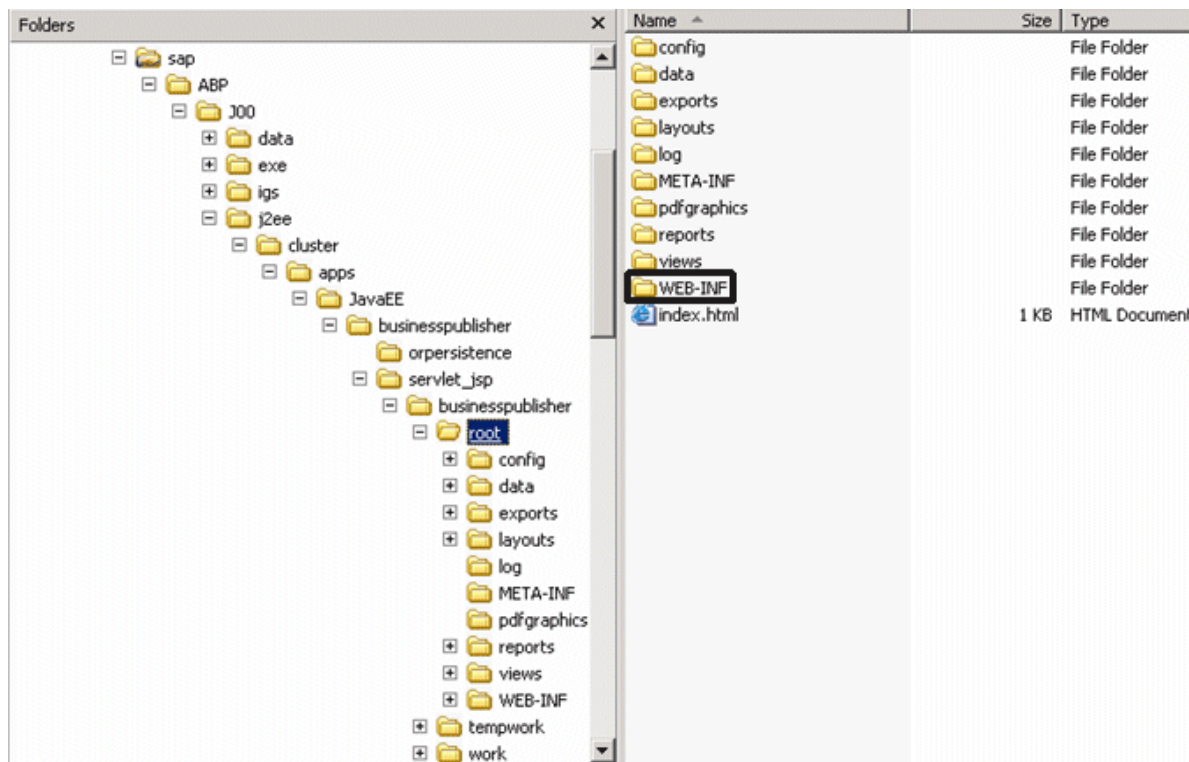
13. Please wait until the procedure is complete.



14. Start deployment, and wait until the procedure is complete.



When deployment is complete, you find the following folder structure.



Open the configuration file **../WEB-INF/web.xml**.

SAP NetWeaver CE checks the validity of this file. For each class listed as a listener, for example, a Java listener interface must be implemented.

Please delete the following entry:

com.idsscheer.aris.businesspublisher.application.web.filter.ABPScopeFilter

15. Save your changes.

16. Open the configuration file **../config/webappserver.cfg** (see folder structure in step 14).

17. Make sure that the name of the component you created in step 8 is correctly specified.

```
<!-- LoginModuleSection is the section in the JAAS-configuration-file, which is used for the login -
<!-- process. The JAAS-configuration-file can contain several sections. This setting chooses -
<!-- the active one. The other ones are being ignored. -
<!-- If the selected module contains the class ABPLdapLogin, the other settings in this <ldap>- -
<!-- section must be properly specified. If only ABPNativeLogin is used, the other settings in -
<!-- this section are ignored. -
<LoginModuleSection value="BizzPublisher"/>
```

18. Enter the license key for ARIS Business Publisher Server in the **license key** line, e.g.

<license key="C99999-YYY_Business_Publisher-V71LdeLenPdU250-YYYYX..." />

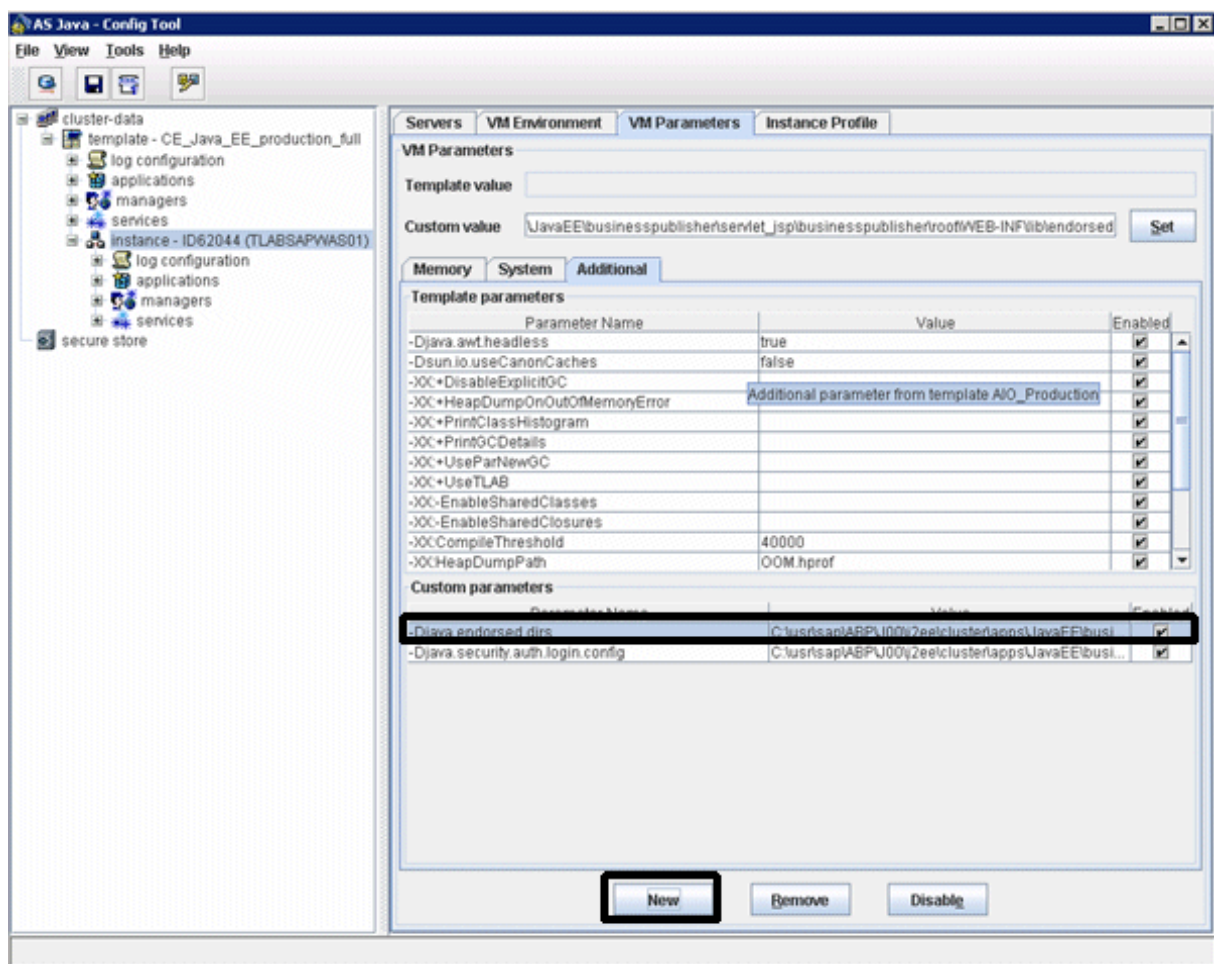
19. Modify the following entries:

<bpserviceport value="16079" usenameservice="false" nameserviceprefix=""/>

<bpservicehost value="<fully qualified name> or <IP address>"/>

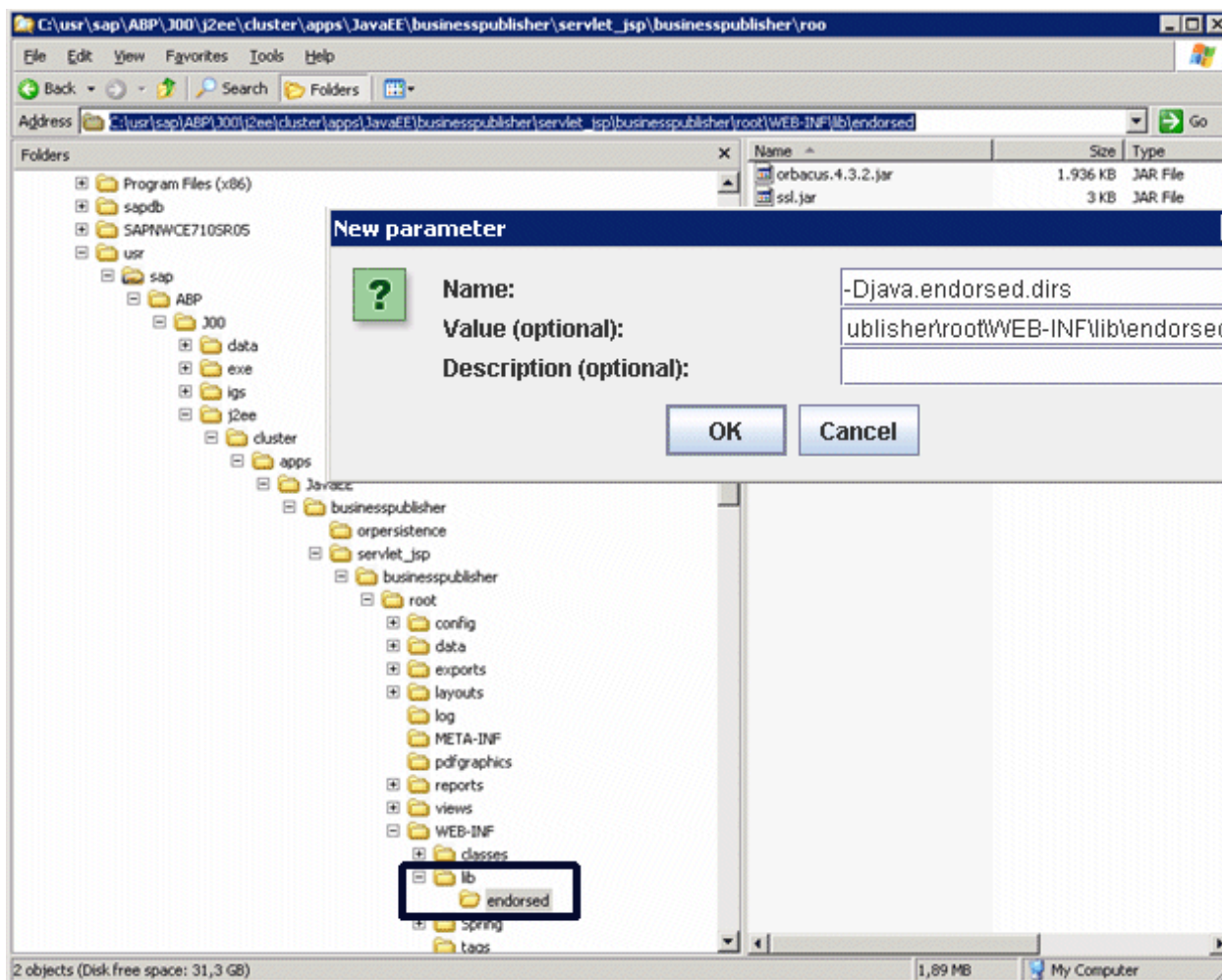
20. Save the changes, close the file, and restart the application.

21. Open the SAP NetWeaver CE configuration interface (..\j2ee\configtool\configtool.bat), click on the corresponding server in the navigation tree, activate the **VM Parameters/Additional** tab, and add a new entry in the **Custom parameters** box.



22. Enter the following values:

- Name: **-Djava.endorsed.dirs**
- Value: <path to the **lib** directory>\<path to the **endorsed** directory in which ARIS Business Publisher is deployed>



23. Customize the file **batchserver.cfg**.

Ensure that the value of the key **name value** is set to the name of the batch server and the key **host value** is set to the IP address or the fully qualified name.

24. Restart SAP NetWeaver CE and ARIS Business Publisher Server.

Users can now create exports in the **Administration** module of ARIS Business Architect for SAP. Program activities are recorded (page 56) in the log files.

The syntax of the URL for exports is as follows:

http://<SAPServerAddress:50000>/<businesspublisher>.

4.8.1.4.1 Logging

ARIS Business Publisher logs program activities in various log files. The file name consists of the name specific for the log file which is followed by the main and subsequent version (maj.min) and the build version (build).

Moreover, information is written to the standard log files (J2EE container) such as **stdout.log** and **stderr.log**.

File name	Logged activity
businesspublisher-<maj.min.build>.log	Start and stop activities. (Compare statistic-<maj.min.build>.log)
cms-<maj.min.build>.log	Activities related to CMS/DMS systems.
config-<maj.min.build>.log	Complete hardware and software configuration. Only written during start.
error-<maj.min.build>.log	General errors.
export-<maj.min.build>.log	Export information.
fatal-<maj.min.build>.log	Fatal errors that may affect system stability.
ldap-<maj.min.build>.log	Activities related to LDAP connections.
mail-<maj.min.build>.log	Activities related to e-mail server connections.
migration-<maj.min.build>.log	Compatibility information related to the current ARIS version and the previous version.
performance-<maj.min.build>.log	Information related to program performance.
report-<maj.min.build>.log	Information related to the evaluation of database contents (report).
scopes-<maj.min.build>.log	Information related to user session management.
statistic-<maj.min.build>.log	Information related to specific statistical checks (compare businesspublisher-<maj.min.build>.log).
temp-<maj.min.build>.log	Only used internally.
views-<maj.min.build>.log	Information related to dynamically created views.

4.8.1.5 Use Derby database again

This database is automatically used after the standard installation. If you have used another database after the standard installation and want to use Derby again, you need to customize the file **businesspublisher.xml**.

Procedure

1. Open the file **businesspublisher.xml** in the ARIS Business Publisher Server installation directory **..\BPServer\tomcat\conf\catalina\localhost** and ensure that the highlighted entries are specified:

```
<Context path="/businesspublisher" docBase="C://Program
Files/ARIS71/BPServer/tomcat/webapps/businesspublisher/" debug="0"
reloadable="false" crossContext="true">
<Resource name="jdbc/businesspublisherdb" auth="Container"
type="javax.sql.DataSource"
maxActive="30" maxIdle="30" maxWait="1000" initialSize="10"
username="<enter the user name>" password="<enter the password for the user (page
88)>" driverClassName="org.apache.derby.jdbc.ClientDriver"
url="jdbc:derby://localhost:16092/ARISBP;create=true;user=ARISBP"/>
</Context>
```

2. Open the configuration file
..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg.

3. Ensure that the database connection is set for **Derby**:

```
<dao-class
name="com.idsscheer.aris.businesspublisher.application.dao.database.ADerbyDAO" />
```

4.8.2 Solaris/Linux

4.8.2.1 Apache Tomcat Web Application Server under Solaris/Linux

This chapter describes the adjustments to be made for using Apache Tomcat Web Application Server on Solaris or Linux systems and the approved databases. Please consider the legal notices (page 1).

Warning

Because of a known Java error, the RMI server may not always shut down correctly when Tomcat is shut down. In this case, please determine the process ID, and end the process with the **Kill** command.

Use Tomcat and Microsoft SQL server 2005 database

(Apache Tomcat Web Application Server 6.0.29 under Solaris 5.10 en)

Prerequisite

- You have copied **jtds.jar** under **Setups/All OS/ARIS Business Publisher Server/MSSQL** to a directory of your choice.
- You have created and configured a Microsoft SQL Server 2005 database (page 84).
- You require the file **apache-tomcat-6.0.29.tar.gz** unzipped.
- The file **setenv.sh** is created in the **tomcat** installation directory.

Procedure:

1. Copy the **businesspublisher.war** file (on installation media) for WAR deployment to **apache-tomcat-6.0.29/webapps**.
2. Copy the file **orbacus.4.3.2.jar** to the Tomcat root.
3. Make the following adjustments:

```
CATALINA_HOME="/.../webapps/businesspublisher/WEB-INF/endorsed/apache-tomcat-6.0.29"
```

```
JAVA_HOME="/usr/jdk/jdk1.6.0_14"
```

```
CATALINA_OPTS="$CATALINA_OPTS
```

```
-Daris.businesspublisher.home=$CATALINA_HOME/webapps/businesspublisher
```

```
-Djava.security.auth.login.config=$CATALINA_HOME/webapps/businesspublisher
```

```
/config/bplogin.cfg -Xbootclasspath/p:/tomcat root/orbacus.4.3.2.jar -Xms128m
```

```
-Xmx1024m (32-bit) -XX:MaxPermSize=256m"
```

4. Start the server and enter the new license key (<**license key**="C99999-YY_Business_Publisher-V71LdeLenPdU250-YY.." />) in **webappserver.cfg** (**.../apache-tomcat-6.0.29/tomcat/webapps/businesspublisher/config/**).

Enter the IP address of the computer on which Tomcat is installed, e.g. <**bpservicehost value**="188.188.188.188"/>

Ensure that the database connection is set for **MSSQL**

```
( <dao-class
name="com.idsscheer.aris.businesspublisher.application.dao.database.AMSSQLDAO" />)
```

5. Create the file **businesspublisher.xml** (**businesspublisher.xml** in **<.../apache-tomcat-6.0.29/conf/catalina/localhost>**) and add the following lines:

```
<!--IDS CONTEXT -->
<Context path="/businesspublisher"
docBase=".../apache-tomcat-6.0.29/webapps/businesspublisher/" debug="0"
reloadable="false" crossContext="true">
```

If you use **jTDS.jar**:

```
<Resource name="jdbc/businesspublisherdb"
auth="Container"
type="javax.sql.DataSource"
maxActive="100" maxIdle="20" maxWait="1000"
username="<enter username>"
password="<enter password>"
driverClassName="net.sourceforge.jtds.jdbc.Driver" (for example)
url="jdbc:jtds:sqlserver://<host name>:<port number>/<database
name>;instance=<instance name>"
validationquery="Select 1 "/>
</Context>
```

If you use **sqljdbc4.jar**:

```
<Resource name="jdbc/businesspublisherdb"
auth="Container"
type="javax.sql.DataSource"
maxActive="100" maxIdle="20" maxWait="1000"
username="<enter user name>"
password="<enter password>"
driverClassName="com.microsoft.sqlserver.jdbc.SQLServerDriver" (for example)
url="jdbc:sqlserver://<host name>:<port number>/<database
name>;instance=<instance name>"/>
factory="com.idsscheer.aris.tools.databaseConnectionPool.ADatabaseSourceFactory"
validationquery="Select 1 "/>
</Context>
```

6. Customize **batchserver.cfg**

Set the value of the **name value** key to the name of the batch server.

Set the **host value** key to the IP address or the fully qualified name.

7. Copy **jtds.jar** (installation media/Setups/All OS/ARIS Business Publisher Server) to **.../apache-tomcat-6.0.29/lib**.

Use Tomcat and Oracle database

We recommend that you use two separate Oracle databases for ARIS Business Server and ARIS Business Publisher. This keeps the two systems from competing for resources, and you achieve better performance and higher availability.

Prerequisite

- You have downloaded the file **ojdbc6.jar** from the Oracle Web Site to a directory of your choice.
- You require the file **apache-tomcat-6.0.29.tar.gz** unzipped.
- The file **setenv.sh** is created in the **tomcat** installation directory.

Procedure:

Follow the instructions above up to point 4 and continue as follows:

1. In the file **weappserver.cfg**, ensure that the database connection is set for **Oracle**

```
(<dao-class
name="com.idsscheer.aris.businesspublisher.application.dao.database.AOracleDAO" />)
```
2. Create the file **businesspublisher.xml** in
 <.../apache-tomcat-/conf/Catalina/localhost> and add the following lines:


```
<Context path="/businesspublisher"
docBase=".../apache-tomcat-6.0.29/webapps/businesspublisher/" debug="0"
reloadable="false" crossContext="true">
<Resource name="jdbc/businesspublisherdb" auth="Container"
type="javax.sql.DataSource"
maxActive="100" maxIdle="100" maxWait="1000" initialSize="10"
<!-- Configure the DBCP (database connection pool) with these values.

username="user name" password="password" <!-- Enter the Oracle user name
and password here
(see Prerequisites)> -->
driverClassName="oracle.jdbc.driver.OracleDriver"
url="jdbc:oracle:thin:@servername:port:instance" <!--
url="jdbc:oracle:thin:@hostname:port:sid where you replace hostname,
port, and sid in the URL as appropriate-- >
connectionProperties="SetBigStringTryClob=true"/>
validationquery="Select 1 from dual"/>
</Context>
```
3. Copy the file **ojdbc6.jar** to **.../apache-tomcat-6.0.29/lib**.

4.8.2.2 IBM WebSphere Application Server (WAS 6.1.0.15) under RHELx64

This chapter describes the adjustments to be made using an IBM WebSphere Application Server (WAS 6.1.0.15) and the approved databases under Red Hat EL 5 x64. Please consider the legal notices (page 1). If you are using IBM WebSphere Application Server, you cannot access ARIS Process Governance from exports.

Use WAS and Microsoft SQL server 2005 database

Prerequisites

- You have created and configured an Microsoft SQL Server 2005 database.
- You have made the required settings in the IBM WebSphere administration console.

Make the required adjustments described below under **Procedure**.

Use WAS and Oracle database

Prerequisites

- You have downloaded the file **ojdbc14.jar** from the Oracle Web Site to a directory of your choice
- You have created and configured (page 86) an Oracle database. The Oracle database is not included in the package.
- You have made the required settings for using an Oracle database and ARIS Business Publisher after installation of IBM Websphere Application Server V6.1.

Procedure

1. Run War deployment by selecting the path to the **businesspublisher.war** file (on installation media).
2. Open <installation directory>\IBM\WebSphere\AppServer\profiles\<AppSrv01>\installedApps\<ids-ID>\businesspublisher.ear\businesspublisher.war\config**webappserver.cfg** and customize the file as follows:


```
<license key="ARIS Business Publisher server key"/>
<bpserviceport value="9100"
usenameservice="true"
nameserviceprefix="/nodes/<node>/servers/<server name>"/>
Paste the content of the clipboard here.
useorblookup="true"
orblookupname="java:comb/ORB"
```
3. <FontLocation value="**font directory**"/>


```
<bpservicehost value="<fully qualified name> or <IP address>"/>
```

4. Ensure that these values are also transferred to the file <ARIS installation directory>\ARIS7.2\Server\config
\userServerSettings.cfg.
5. In the file **webappserver.cfg**, ensure that the database connection is set for **MSSQL** or **Oracle**.

```
<dao-class  
name="com.idsscheer.aris.businesspublisher.application.dao.database.AMSSQLDAO" /> or  
<dao-class  
name="com.idsscheer.aris.businesspublisher.application.dao.database.AOracleDAO" />
```
6. Customize the file <installation directory>/IBM/WebSphere/AppServer/profiles/<AppSrv01>/installedApps/<CellName>/businesspublisher.ear/businesspublisher.war/config/**batchserver.cfg**.
Ensure that the value of the key **name value** is set to the name of the batch server and the key **host value** is set to the IP address or the fully qualified name.
7. Open the directory **<installation directory>/IBM/WebSphere/AppServer/profiles/<AppSrv01>/installedApps/<ids ID>/businesspublisher.ear/businesspublisher.war/WEB-INF/lib** and cut out the **xercesImpl.jar** file.
8. Add this file to the following directory:
<installation directory>/IBM/WebSphere/AppServer/profiles/<AppSrv01>/installedApps/<ids ID>/businesspublisher.ear/businesspublisher.war/WEB-INF/lib/endorsed.
9. Clear the corresponding **database of the Microsoft SQL server** or **Oracle database**.
10. Restart IBM Websphere Application Server and ARIS Business Publisher.
The system is now running with IBM WAS 6.1.0.15 in combination with a **Microsoft SQL Server 2005 database** or **Oracle database 10g**.

4.9 ARIS Business Publisher Report Server installation

This chapter describes the installation of Apache Tomcat Web Application Server 6.0 in combination with ARIS Business Publisher Report Server under Microsoft Windows. Please consider the legal notices (page 1).

After the standard installation (Derby database), reports are run by ARIS Business Publisher Server. You can additionally install a Report Server to optimize system performance when running reports.

After you have installed ARIS Business Publisher Report Server, exports are managed by ARIS Business Publisher Server and reports are run by ARIS Business Publisher Report Server.

To be able to work with ARIS Business Publisher Report Server, the same database and database server must be used as for the ARIS Business Publisher Server installation.

Tip

Instead of using the setup program, you can also customize the configuration file **batchserver.cfg**.

Procedure

1. In the set up program, click on **Additional Installations** and then on **Install ARIS Business Publisher Server**.
2. Select the installation and program directory, if required.
3. Select the **ARIS Business Publisher Report Server** option and enter the computer name or IP address of the computer on which ARIS Business Publisher Server is installed.
4. Check the **ARIS APG Integration** check box, if you want to use APG and have the required ARIS Process Governance Server installed (page 28).

For information on the following steps using the different databases see the installation procedure of ARIS Business Publisher Server (page 41).

4.10 ARIS API for ARIS Toolset

You can use ARIS API only together with ARIS Toolset.

For information on how to convert programs of earlier ARIS API versions, see chapter **ARIS API - Continued use of programs from earlier ARIS versions (page 239)**.

The required files are located on the ARIS Platform installation media in a password-protected Zip file in the **addons** directory.

If you have purchased the API license, proceed as follows.

Procedure

1. Request the password from your local Software AG sales organization.
2. Create the **API** directory in the ARIS installation directory.
3. Extract the files contained in the ZIP file into this directory.

4.11 ARIS Collaboration

ARIS Collaboration is integrated in ARIS Business Architect and ARIS Business Designer and is automatically enabled by your license key. To use this function, you need an e-mail client and Internet access.

For ARIS Collaboration, the following URLs and ports are used:

- ***.netviewer.com**
 - HTTPS port 443
 - HTTP port 80
 - TCP port 2000
 - TCP port 2377
- ***.ariscommunity.com**
 - HTTPS port 443
 - HTTP port 80

4.12 Java Runtime Environment

To use ARIS via a browser, you need SUN Java Runtime Environment (JRE).

This section describes the standard installation process. To perform a different installation, enable the **Adapted** option button during JRE installation.

JRE is also required for certain ARIS Web Publisher (page 237) export types.

Procedure

1. In the setup program, click on **Additional Installations** and then on **Install Java Runtime Environment (JRE)**.
2. Enable the **Default** option.

Install JRE in a path whose directory name does not include any spaces. Otherwise, JRE cannot be executed.

If you are using software systems that install a separate JRE: Please make sure that in the environment variables, the path of the SUN JRE is specified before the paths relating to the software systems with separate JRE. Otherwise, Java-based ARIS Platform products may not run via a browser.

4.13 Install the hardware key driver and enable the hardware key

You can specify that you want to use a hardware key instead of the license key when ARIS Business Server and ARIS Business Publisher Server are installed. You have the option to skip installation of the hardware key driver and install it at a later time. Afterward, you can run ARIS Business Server or ARIS Business Publisher Server.

Procedure

1. Switch to the directory **Addons\Hardkey** on the installation media.
2. Run the file **hldrv32.exe**.
3. Customize the file **userServerSettings.cfg** (<ARIS installation directory>\server\config).
`<licenseservice use_dongle="on"/>`

4.14 Additional installation information and principles

This chapter provides installation information and basics.

4.14.1 ARIS Business Server - Exit a service

Prerequisite

Ensure that you have the privilege to exit Windows services that have been launched on your computer.

Procedure

1. In the **Control Panel**, click on the **Management** and then on the **Services** list item.
2. Check whether the service **ARIS Server 7.2** has been started.
3. If so, right-click on the service and select **Exit**.

4.14.2 ARIS Platform - System architecture

ARIS Platform has the following components:

- ARIS Business Server
- ARIS Business Publisher Server
- Database server (standard database system or other database system)
- ARIS Platform client products
- ARIS Site Manager (includes HTML Generator and ARIS Web Report Server)
- Web server (ARIS Web Client Components)

Please note that ARIS Platform is not an update for versions 6.x. The server and client versions can be installed and run in parallel.

4.14.3 ARIS Process Generator

ARIS Process Generator enables you to transfer objects and models to Excel, to edit them there, and to return them to ARIS again. In addition, you can easily define new objects or process models of the **EPC** type in an Excel table and transfer them to ARIS databases.

In this way, even without ARIS installed, you can define processes and transfer them to an ARIS database later. After having transferred the new models you can prepare them graphically by means of automatic layout generation. In addition, you can quickly enter large quantities of data using object tables. Thus, attributes are entered and edited independently of an installed ARIS product.

Further information is available in the online help.

4.14.4 Automatic backup

When you perform an update, make changes to a program, add languages, or uninstall a component, the relevant files and directories are backed up. A selection of files is listed here to provide examples.

In a client installation under <ARIS installation directory>\backup<date> these are:

- Files from **<ARIS installation directory>\LocalServer\data** (user databases, when uninstalling)
- Directory **<ARIS installation directory>\LocalServer\sysconfig**
- Directory **<ARIS installation directory>\html**
- Directory **<ARIS installation directory>\script**

4.14.5 Automated installation

An installation that you have already carried out before can be installed in the same way on other computers using the following procedure without having to enter user data. Thus, you avoid having to specify the same settings repeatedly.

ARIS Business Server, ARIS client, and existing ARIS Business Publisher installations

Procedure

1. Run the installation program using the **setup.exe -r** command.
2. Specify your settings and complete the installation. The **-r** parameter creates the **setup.iss** file in your Windows directory.
3. Create a new directory on your hard disk and copy the files of the installation program and all its subdirectories to this new directory.
4. Copy the **setup.iss** file to the new directory, too, so that it is stored in the same location as the **setup.exe** file.
5. Copy the newly created directory to all computers on which you want to perform an identical installation.
6. Run the setup program using the **setup -s** command.

License key

There are two ways to enter a license key:

- **License key that is valid throughout the company:** In this case, the license key can be part of the installation package, i.e., entered in step two of the above procedure. The end user does not have to enter a key again.
- **License key that is not valid throughout the company:** In this case, you do not enter a license key during installation. It must be entered by the end user when starting the client for the first time.

New installation of ARIS Business Publisher

Procedure

1. Copy the file **silent.txt** to the directory where the file **setup.exe** is located.
2. Configure your installation options in the file **silent.txt**.
3. Run the installation program using the **setup.exe silent** command.

4.14.6 Particular issues - ARIS client and ARIS Business Server on the same computer

ARIS clients and ARIS Business Server use shared components that can only be installed once per computer. Therefore, you have to consider these particular issues when an ARIS client and ARIS Business Server are installed on the same computer.

If you make any changes to the ARIS client or ARIS Business Server, you need to ensure that both have the same version and are installed with the same languages after the changes:

- When you perform a version update, you need to ensure that both ARIS Business Server and the ARIS client are included.
- When you install additional languages, you need to install them for both ARIS Business Server and the ARIS client.

4.14.6.1 Installation

If you install ARIS Business Server or the ARIS client afterward, its installation directory will automatically be inserted into the directory structure (<ARIS installation directory>\server) of the first component installed. During the installation of the second component you must select the same languages as for the previous installation of the first component.

To find out which languages have been installed for ARIS Platform, run the ARIS Platform setup again and select the **Modify program** option. Installed languages are enabled on the **Select language** page. Once you have determined which languages are installed, click on **Cancel**.

4.14.6.2 Uninstall

You can uninstall ARIS Business Server (page 27) and ARIS clients individually without affecting the operability of the remaining component. The order in which they were installed is irrelevant.

- Under **Windows**, you uninstall programs using the setup program or from **Start/Control Panel/Software**.
- Under **Unix/Linux**, you uninstall ARIS Business Server or ARIS clients by deleting the relevant directories in the installation directory.

4.14.7 Connect document management systems (DMS)

To make DMSs available in ARIS Business Designer, ARIS Business Architect, and ARIS Business Publisher, you must connect and configure the systems either via the **Java Content Repository API (JCR)** or the **Content Federation Server (CFS)** from EntropySoft, and you must activate (page 138) the DMS connection in ARIS Business Server.

The installation should be performed by Software AG employees only.

Content Repository API for Java (JCR)

All information on this topic is available in

addons/DMSIntegration/Documents/Technologies/JCR - JSR 170-1.0.

Content Federation Server (CFS) from EntropySoft

If you want to use this CRF, you must install the server.

The installation program can be found on the installation media in

addons/DMSIntegration/Software/Products/EntropySoft.

The installation and administration descriptions are available in

addons/DMSIntegration/Documents/Technologies/EntropySoft/Guides.

After installation, you must connect and configure the relevant connectors to ARIS.

All connectors and the related documentation are available on the installation media in

addons/DMSIntegration/EntropySoft/Connectors/<connector>.

Ensure that the file **SpringCRModule.xml** has been copied to the directory **<ARIS installation directory>/server/config**. If you are using ARIS Business Publisher, also copy the file to the installation directory of **ARIS Business Publisher**

Server/tomcat/webapps/businesspublisher/WEB-INF/Spring/core.

Each connector (DMS product) has a separate key, which you must enter in the configuration file. This key also contains the maximum number of permitted DMS instances that can be accessed simultaneously. In the case of DMS products, no distinction is made between major and intermediate releases, i.e., there is one connector and therefore one key for EMC 5.2 and EMC 6.

The Linux and Solaris binaries of the EntropySoft Server have been deleted to reduce the footprint. Only the Windows installation is still part of the DVD image. If you need the binaries for other released systems, please download them from the ARIS Download Center <http://www.>

(/ARIS Platform <ARIS version>/ARIS Document Management System).

To connect document management systems (DMS), thorough knowledge of the respective system is required. We therefore cannot guarantee proper functioning of ARIS in combination with CFS from EntropySoft, JCR, and other DMSs. Always follow the instructions provided in the installation manuals of the relevant manufacturers. We recommend that you commission your local Software AG sales organization (<http://www.softwareag.com>) to set up the system. Please note that this type of manufacturer-specific or customer-specific change is not subject to the standard Software AG software maintenance agreement and that these changes can only be performed if you requested and agreed on them.

4.14.8 Download version or service release

You can download a full version of ARIS products or a service release from Software AG at any time. These files are password-protected. You can request the relevant passwords from your local Software AG sales organization (<http://www.softwareag.com>).

- Perform an update installation for ARIS Business Publisher Server only if your system has not been adjusted. Changes you made or extensions by ARIS Customized Solutions are lost during an update or subsequent installation.
- If you have installed ARIS for SAP (page 196) or ARIS BI Modeler (page 191), you need to reinstall the transport requests after a program update only if a new version is available on the installation medium.

Procedure

1. You can obtain the exact ID of your installed version from the **About** dialog of your program (**Help/About**).

The identifier at the end of the version information indicates the exact version that is installed.

2. Download the relevant files with **.zip** and **.md5** extensions from Software AG. You can use the corresponding (same name) **md5 files** (hash files) to check whether the ZIP archives have been downloaded correctly.

This is where you find the **ARIS_PLATFORM** subdirectory and the newsletters for the ARIS Service Releases in German and English.

3. Download the relevant file.

ARIS_PLATFORM directory

In this directory, you find the files for downloading a specific ARIS product and an additional subdirectory that is called **DVD** and contains the entire content of the installation media.

Example for individual installations:

- ARIS<version number>PLATFORM_<six-digit identifier>.ZIP - setup program for client installation
- ARIS<version number>SERVER_<six-digit identifier>.ZIP - setup program for ARIS Business Server (page 125)
- DBSCRIPTS_312665.ZIP - SQL *Plus scripts (page 73)

The identifiers in the file name (e.g. ARIS_7.1.0.**312665**_DVD.zip) tell you whether the files contained in the archive are more recent than the version installed on your computer.

5 Administration

This chapter provides information on software and hardware requirements as well as information on configuring your system.

Please consider the legal notices (page 1).

5.1 Database management systems

This chapter describes how to set up and manage databases on different database management systems.

Please consider the legal notices (page 1).

5.1.1 ARIS Business Server

5.1.1.1 Oracle database management system for ARIS Business Server

If you want to run ARIS Business Server based on Oracle as the database management system, please read the following pages.

If you need help in setting up your database server, please contact your local Software AG sales organization (page 327). Please read the information about ARIS Business Server and database approvals (page 128).

Please consider the legal notices (page 1).

5.1.1.1.1 Set up the database

We assume use of database character set **AL32UTF8**. The block size should be **8K**.

Procedure

Create two permanent tablespaces **ARISDATA** and **ARISINDEX** for the indices.

You can also assign other names for the two tablespaces. In this case, you must adjust the configuration later.

A relatively small ARIS database occupies on the order of 100 MB per tablespace. The size required for the tablespaces ultimately depends on the anticipated number of ARIS databases and their size. Since this is difficult to predict, it is best to start with 4 GB per tablespace and keep an eye on the trend toward exhausting that capacity.

5.1.1.1.1.1 Install ARIS database objects

To install the database objects that are required to operate ARIS, you can use the scripts available on the ARIS installation media under **Setups\DBMS\Oracle**. Since the scripts rely on SQL*PLUS, at least the Oracle client software must be available on the computer on which you intend to run the scripts.

The scripts create the two Oracle users **ARIS72ADM** and **ARIS72**:

ARIS72ADM

This user is only used as a schema for the database objects required by ARIS. ARIS Business Server never connects to this user. For this reason, it does not require a **CREATE SESSION** privilege. The privileges assigned to this user are:

- CREATE TABLE
- CREATE VIEW
- CREATE TRIGGER

ARIS72

This is the user that ARIS Business Server uses to access the data in the schema ARIS72ADM. The user ARIS72 itself does not have any database objects. It solely has object privileges for the database objects in the schema ARIS72ADM. The system privilege assigned to the user ARIS72 is **CREATE SESSION**.

5.1.1.1.1.2 Use SQL*Plus scripts

The scripts install the database objects required for operating ARIS in an existing Oracle database. Since the scripts rely on SQL*PLUS, at least the Oracle client software must be available on the computer on which you intend to run the scripts.

Alternatively, you can have the server setup program create the database objects.

5.1.1.1.1.2.1 Available SQL*Plus scripts

Once the Oracle database is created, you can run the scripts for importing the database objects required for operating ARIS.

The following scripts are available:

- **install.bat**
Windows batch file for running SQL*Plus scripts.
- **envset.bat**
Batch file for adjusting settings. The file **envset.bat** is called by the file **install.bat**. Before you run the scripts by calling them from **install.bat**, you must customize the configuration in the file **envset.bat**.
- **install.sh**
Bash script for running SQL*Plus scripts. To run this script under Unix, you need a bash shell.
- **envset.sh**
Bash script for adjusting settings. The file **envset.sh** is called by the file **install.sh**. Before you run the scripts by calling them from **install.sh**, you must customize the configuration in the file **envset.sh**. To run this script under Unix, you need a bash shell.
- **adminc.sql**
SQL*Plus script for creating the user **ARIS72ADM**.
- **appuserc.sql**
SQL*Plus script for creating the connection user **ARIS72**.
- **schema_aris.sql**
SQL*PLUS script for creating a procedure that establishes a table set for an ARIS database.
- **schema_bo.sql**
SQL*PLUS script for creating a procedure that establishes a table set for an ARIS Business Optimizer database.
- **basemgr.sql**
Procedures for managing ARIS or ARIS Business Optimizer databases.
- **deinstall.sql**
SQL*PLUS script for removing the users **ARIS72ADM** and **ARIS72**.

5.1.1.1.1.2.2 Run batch files install.bat/install.sh

After having customized the configuration (page 75) in the **envset.bat** (or **envset.sh**) file, you can call the batch file **install.bat** (or **install.sh**).

5.1.1.1.1.3 Configure the installation scripts

Before you run the scripts, you must adjust them to your environment. Adjustments can be made in the files **envset.bat** or **envset.sh**, which you copy from the installation media (**Setups\DBMS\Oracle**).

Connection data

Procedure

1. In the line **SET DL_ORA_BIN_PATH=**, specify the path to the directory where the Oracle binaries reside. If this path is already in the system path, you can leave the value empty.
2. In the line **SET TARGET_HOST=localhost**, enter the host name (or IP address) on which the Oracle instance is running.
3. Enter the port in the line **SET TARGET_PORT=1521**.
4. In the line **SET TARGET_SERVICE_NAME=ARIS**, enter the service name (or Oracle SID).
5. In the line **SET INSTALL_USER=system**, enter an Oracle user who has a DBA role, for example the Oracle user **SYSTEM**. Provide it with a password in the line **SET INSTALL_PWD=manager**.

Change tablespace names

Procedure

1. In the line **SET DL_TS_DATA=ARISDATA**, replace **ARISDATA**.
2. In the line **SET DL_TS_INDEX=ARISINDEX**, replace **ARISINDEX**.
You can specify another temporary tablespace in the line **SET DL_TS_TEMP=TEMP** if needed.

Change password for Oracle user ARIS72

You can change the password at any time using the ARIS function **DBMS password**. To prevent misuse, you should change it immediately. To select another password for the Oracle user **ARIS72** in advance, edit the file **envset.bat** or **envset.sh** before the scripts are used.

Procedure

1. Change the default password in the line **SET DLAPP_PWD=*ARIS!1dm9n#**.
2. For ARIS Business Server to use the new password, exit ARIS Business Server or ARIS Site Manager and open the file **Lockservice.cfg** in <ARIS installation directory>/server/config/ or in the config directory of ARIS Site Manager.
3. Change the password in line **arisadm_pwd_*=*ARIS!1dm9n#**.

The password is specified in plain text in the file Lockservice.cfg, but immediately after ARIS Business Server starts for the first time, it encrypts the password in the file Lockservice.cfg. The key arisadm_pwd_ with final underscore identifies the password as a plain text password, while the key arisadm_pwd without a final underscore identifies the encrypted password. After ARIS Business Server has been launched the arisadm_pwd_ variant is converted into the arisadm_pwd variant.

Change password for Oracle user ARIS72ADM

The user **ARIS72ADM** solely serves as a schema for data required by ARIS. ARIS Business Server only connects to the Oracle user **ARIS72**. The latter has privileges for the schema **ARIS72ADM**.

Since ARIS Business Server does not connect directly to the Oracle user **ARIS72ADM**, this user does not need a working password. The scripts give user **ARIS72ADM** an impossible password.

Change user names

Instead of **ARIS72** and **ARIS72ADM**, you can select other names for the required Oracle users. This can be useful, for example, if you want to use the same Oracle database for several installations of ARIS Business Server. In this case, please select different user names for each installation.

Procedure

1. Replace the default values in line **SET DLADM_SCHEMA=ARIS72ADM** and line **SET DLAPP_USER=ARIS72**.
2. For ARIS Business Server to use the new user names, exit ARIS Business Server or ARIS Site Manager, and open the file **Lockservice.cfg** in <ARIS installation directory>/server/config/ or in the config directory of ARIS Site Manager.
3. Find the lines **arisadm_schema=arisadm72** and **arisadm_user=aris71**, and change them to match the user names you have selected.

5.1.1.1.1.3.1 Save LOB files separately

You may want to save the LOB files in a separate tablespace:

Procedure

1. Copy the files **envset.bat** and **envset.sh** (**Setups\DBMS\Oracle**) to the hard drive of the computer on which they will be run.
2. Find the line **SET DL_TS_LOB=ARISDATA**, and replace the tablespace name **ARISDATA** with the name you want.

5.1.1.1.2 Optimize database access

You can increase performance when accessing the database.

Prerequisite

- The database schema for ARIS has been created or an existing database schema has been updated using the current scripts.
- All ARIS databases have been saved as ADB files, deleted, and restored (without overwrite mode).

Procedure

1. Exit ARIS Business Server or ARIS Site Manager, and open the file **Lockservice.cfg** in <ARIS installation directory>/server/config/ or in the config directory of ARIS Site Manager with a text editor.
2. Add **paramTable=yes**
3. Save the file, and restart ARIS Business Server or ARIS Site Manager.

5.1.1.1.3 Configure ARIS Business Server URL

For ARIS Business Server to be able to connect to your Oracle instance, you must specify the URL in the file **Lockservice.cfg** in the config directory of ARIS Site Manager.

Procedure

1. Exit ARIS Business Server or ARIS Site Manager, and open the file **Lockservice.cfg** in <ARIS installation directory>/server/config/ or in the config directory of ARIS Site Manager with a text editor.
2. Find the line **url=jdbc:oracle:thin:@host:1521:ARIS** and replace **host** with your computer name, **1521** with your port, and ARIS with the name of your instance.

5.1.1.2 MS SQL database management system for ARIS Business Server

If you want to run ARIS Business Server based on Microsoft SQL (MS SQL) as the database management system, please read the following pages.

If you need help in setting up your database server, please contact your local Software AG sales organization (page 327). Please read the information about ARIS Business Server and database approvals (page 128).

Please consider the legal notices (page 1).

5.1.1.2.1 Required programs, drivers, and scripts

To use ARIS with SQL Server on a 32-bit Windows platform, you need the following components:

- Microsoft SQL Server for installing the SQL Server on a Microsoft Server

If you want to use this server, you need to purchase it from Microsoft.

- ARIS SQL Server scripts

These scripts are located on the ARIS Platform installation CD under **Setups\DBMS\MSSQL**.

5.1.1.2.2 Notes on installing SQL Server

- Server sorting must be case-insensitive. That is, the sorting name must contain the character sequence **_CI_**. Select the server sorting **Latin1_General_CI_AI** for example.
- Select the option **SQL Server and Windows authentication mode** as server authentication.
- Set the option **Enable triggers to generate additional triggers** to **TRUE**.
- Set the timeout value for remote queries to **0**.

5.1.1.2.3 Set up the database

To install the database with the database objects that are required to operate ARIS, you can use the scripts available on the installation media under **Setups\DBMS\MSSQL**.

The scripts create an **ARIS72** database and an **ARIS72** login.

The scripts consist of the following files:

- **inst.bat**: Windows batch file for running scripts
- **deinstall.sql**: SQL script for deleting database objects from the **ARIS72** database and for deleting the **ARIS72** login.
- **drop_db.sql**: Deletes the **ARIS72** database.
- **createdb.sql**: SQL script for creating the **ARIS72** database.
- **install.sql**: SQL script for creating the **ARIS72** login and the database objects in the **ARIS72** database.
- **schema_aris.sql**: SQL script for creating a procedure that produces a table set for an ARIS database.
- **schema_bo.sql**: SQL script for creating a procedure that produces a table set for an ARIS Business Optimizer database.

Before you run the scripts by calling **inst.bat**, you must configure the **inst.bat** file.

5.1.1.2.3.1 Configure the installation scripts

Procedure

1. Edit the **inst.bat** file, and find the line
`SET MSSQL_IDS_MSSQL_LOGIN_NAME=localhost\username`
2. Replace the expression **localhost\username** with a user name that has administrative access to the database server. This user serves to run the SQL scripts.
3. Find the line
`SET MSSQL_IDS_FILEGROUP_FILE_DIR=C:\msqldata\ARIS72`
and specify the path in which the database files are to be created for the database. Ensure that the directory exists.

5.1.1.2.3.1.1 Change the name of the database

You can select another name for the database instead of ARIS72. To do this, you must edit the **inst.bat** file. You can find it on the installation media under **Setups\DBMS\MSSQL**. First copy the file to the hard drive of the computer on which it will be run.

Procedure

1. Open the file **inst.bat** with a text editor.
2. Find the line **SET MSSQL_IDS_DATABASE_NAME=ARIS72**, and change the name of the database.
3. Adjust (page 81) the URL in the **Lockservice.cfg** file of ARIS Business Server.

5.1.1.2.3.1.2 Change the password for the login user ARIS72

The default password for the login user ARIS72 is ***ARIS!1dm9n#**. You can change the password later at any time using the ARIS function **DBMS password**. To prevent misuse, you should change it immediately. To select another password for the login user ARIS72 in advance, edit the **inst.bat** file before the scripts are used.

Procedure

1. Open the file **inst.bat** with a text editor.
2. Find the line **SET MSSQL_IDS_APP_PWD=*ARIS!1dm9n#**, and change the password.
For ARIS Business Server to use the new password, you must specify it in the file **Lockservice.cfg** in the config directory of ARIS Site Manager.
3. Exit ARIS Business Server or ARIS Site Manager, and open the file **Lockservice.cfg** in <ARIS installation directory>/server/config/ or in the config directory of ARIS Site Manager with a text editor.
4. Find the line **arisadm_pwd_=*ARIS!1dm9n#**, and change it as needed.

The password is specified in plain text in the file **Lockservice.cfg**, but immediately after ARIS Business Server starts for the first time, it encrypts the password in the file **Lockservice.cfg**. The key **arisadm_pwd_** with final underscore identifies the password as a plain text password, while the key **arisadm_pwd** without a final underscore identifies the encrypted password. After ARIS Business Server has been launched the **arisadm_pwd_** variant is converted into the **arisadm_pwd** variant.

5.1.1.2.3.1.3 Change the user name ARIS72

You can select another name for required Microsoft SQL Server users instead of ARIS72.

Procedure

1. Open the file **inst.bat** with a text editor.
2. Find the line **SET MS SQL_IDS_APP_USER=ARIS72**, and replace the default value in this line with the user name you want.
3. For ARIS Business Server to use the new user names, you must specify these in the file **Lockservice.cfg** in the config directory of ARIS Site Manager.
4. Exit ARIS Business Server or ARIS Site Manager, and open the file **Lockservice.cfg** in <ARIS installation directory>/server/config/ or in the config directory of ARIS Site Manager with a text editor.
5. Find the line **arisadm_user=ARIS72**, and change it to match the user names you have selected.

5.1.1.2.3.2 Configure ARIS Business Server URL

For ARIS Business Server to connect to your Microsoft SQL instance, you may have to adapt the URL in the file **Lockservice.cfg** in the config directory of ARIS Site Manager.

Procedure

1. Exit ARIS Business Server or ARIS Site Manager, and open the file **Lockservice.cfg** in <ARIS installation directory>/server/config/ or in the config directory of ARIS Site Manager with a text editor.
2. Ensure that the settings are specified depending on the JDBC driver you are using:
 - a. If you use **jtDS.jar**:
url=jdbc\:jtds\:sqlserver://<host>\:<port>/ARIS72;instance\MSSQLSERVER
driver=net.sourceforge.jtds.jdbc.Driver
 - b. If you use **sqljdbc4.jar**:
url=jdbc\:sqlserver\\://<host>\:<Port>/ARIS72;instance\MSSQLSERVER
driver=com.microsoft.sqlserver.jdbc.SQLServerDriver
3. Replace **host** by the computer name and ARIS72 by the database name if you have chosen a different database name when customizing the scripts. If you are using a named database instance, replace MSSQLSERVER with the name of your instance.

Sometimes the name **MSSQLSERVER** does not work, although you are using a default instance. In this case, remove the expression **;instance=MSSQLSERVER** at the end of the URL.

5.1.1.3 IBM DB2 database management system for ARIS Business Server

If you want to run ARIS Business Server based on DB2 as the database management system, please read this page.

If you need help in setting up your database server, please contact your local Software AG sales organization (page 327). Please read the information about ARIS Business Server and database approvals (page 128).

Please consider the legal notices (page 1).

Procedure

1. Create an operating system user with the name **db2aris** on the DB2 host computer. ARIS Business Server uses a free DB2 database user to connect to the DB2 database.
2. Assign this user to the **DB2USERS** user group.
3. Enter the password ***ARIS!1dm9n#** for this user.

To create the DB2 database, you can use the following script after you have adapted the paths (UTF-8 is absolutely necessary). The script is located on the ARIS Platform installation media in the directory **Setups\DBMS\DB2**.

```
CREATE DATABASE ARIS AUTOMATIC STORAGE YES ON 'E:\db2data' DBPATH ON 'E:\' USING
CODESET UTF-8 TERRITORY EN;
UPDATE DB CFG FOR ARIS USING AUTO_MAINT ON;
UPDATE DB CFG FOR ARIS USING AUTO_TBL_MAINT ON;
UPDATE DB CFG FOR ARIS USING AUTO_RUNSTATS ON;
UPDATE ALERT CFG FOR DATABASE ON ARIS USING db.db_backup_req SET THRESHOLDSCHECKED
YES;
UPDATE ALERT CFG FOR DATABASE ON ARIS USING db.tb_reorg_req SET THRESHOLDSCHECKED
YES;
UPDATE ALERT CFG FOR DATABASE ON ARIS USING db.tb_runstats_req SET THRESHOLDSCHECKED
YES;
```

```
CONNECT TO ARIS;
```

```
CREATE BUFFERPOOL ARISBP IMMEDIATE SIZE 20000 AUTOMATIC PAGESIZE 8 K;
```

```
CREATE REGULAR TABLESPACE ARISDATA PAGESIZE 8 K MANAGED BY AUTOMATIC
STORAGE EXTENTSIZE 8 OVERHEAD 12.67 PREFETCHSIZE 8 TRANSFERRATE 0.18 BUFFERPOOL
ARISBP DROPPED TABLE RECOVERY OFF;
CREATE REGULAR TABLESPACE ARISINDEX PAGESIZE 8 K MANAGED BY AUTOMATIC
STORAGE EXTENTSIZE 8 OVERHEAD 12.67 PREFETCHSIZE 8 TRANSFERRATE 0.18 BUFFERPOOL
ARISBP DROPPED TABLE RECOVERY OFF;
CREATE LARGE TABLESPACE ARISLOB PAGESIZE 4 K MANAGED BY AUTOMATIC STORAGE
EXTENTSIZE 8 OVERHEAD 12.67 PREFETCHSIZE 8 TRANSFERRATE 0.18 BUFFERPOOL
IBMDEFAULTBP;
CREATE SYSTEM TEMPORARY TABLESPACE ARISTEMP PAGESIZE 8 K MANAGED BY AUTOMATIC
STORAGE EXTENTSIZE 8 OVERHEAD 12.67 PREFETCHSIZE 8 TRANSFERRATE 0.18 BUFFERPOOL
ARISBP;
```



```
UPDATE DATABASE CONFIGURATION USING LOGSECOND 40 IMMEDIATE;  
UPDATE DATABASE CONFIGURATION USING LOGFILSIZ 5000 DEFERRED;  
GRANT CONNECT ON DATABASE TO USER db2aris;  
GRANT CREATETAB ON DATABASE TO USER db2aris;  
GRANT USE OF TABLESPACE ARISDATA TO USER db2aris;  
GRANT USE OF TABLESPACE ARISINDEX TO USER db2aris;  
GRANT USE OF TABLESPACE ARISLOB TO USER db2aris;  
  
CREATE SCHEMA db2aris AUTHORIZATION db2aris;  
  
CONNECT RESET;
```

Note

The default password for this user is ***ARIS!1dm9n#**. To prevent misuse, you should change it immediately.

To use a different database name, user name, or password, you have to change these entries in the configuration file **Lockservice.cfg** (...installation directory/server/config).

To change the entries, replace the following values:

- arisadm_user=db2aris
- arisadm_schema=db2aris
- url=jdbc:db2://myhost:50000/ARIS
- arisadm_pwd_=***ARIS!1dm9n#**

You can only change the password here. The DBMS password cannot be changed in the program interface.

Once you have defined the password and started ARIS Business Server, the password entered in the file is automatically encrypted to prevent misuse. The key is also renamed from **arisadm_pwd_** (unencrypted) to **arisadm_pwd** (encrypted).

If you want to change the password afterward, you first have to rename the **arisadm_pwd** key to **arisadm_pwd_** again and enter the new password directly after =. The password is automatically encrypted after restart.

5.1.2 ARIS Business Publisher Server

Please read this section if you performed the standard installation of ARIS Business Publisher Server and want to use an Oracle or Microsoft SQL database instead of the Derby database. For additional information, see chapter **ARIS Business Publisher** (page 39).

If you install a database yourself, always follow the instructions provided by the respective manufacturer, or contact your local Software AG sales organization (<http://www.softwareag.com>). Please consider the legal notices (page 1).

5.1.2.1 Use Microsoft SQL database

Please adjust the system as required to manage ARIS Business Publisher in combination with a Microsoft SQL Server database.

Prerequisites

- The file **create_db.sql** (installation media/Setups/All OS/ARIS Business Publisher Server) is copied to a directory of your choice.
- You have installed Microsoft SQL Server under **Microsoft Windows**. Microsoft SQL Server is not included in the package.

Procedure

1. Open the **Server properties** dialog.
2. On the **Security** tab, select the **SQL Server and Windows authentication mode** option.
3. Create a database using the script **create_db.sql**.

- a. Open the script for editing.
- b. Adjust the path to the database file. Ensure that the path has been created before you run the script.

If you specify or encode the database name, user name, and password you must also customize the configuration files **businesspublisher.xml** and **webappserver.cfg**.

- c. Ensure that **Latin1_General_CI_AI** sorting is selected for the COLLATE statement.

The script creates the specified data groups. If you have changed the names in the script, you must also change them in the configuration file **businesspublisher.xml**.

ARISBPDATA: contains all database objects

ARISBPINDEX: contains all index data

- d. Copy the required JDBC driver **jTDS.jar** or **sqljdbc4.jar** from the installation media (**Setups/All OS/ARIS Business Publisher Server/**) to the Tomcat installation directory under **common/lib**.

4. Customize the configuration file

..\BPServer\tomcat\conf\catalina\localhost\businesspublisher.xml as follows:

If you use **jTDS.jar**:

```
<Resource name="jdbc/businesspublisherdb"
auth="Container"
type="javax.sql.DataSource"
maxActive="100" maxIdle="20" maxWait="1000"
username="<enter username>"
password="<enter password (page 88)>"
driverClassName="net.sourceforge.jtds.jdbc.Driver"
url="jdbc:jtds:sqlserver://<hostname>:<portnumber>/<database
name>;instance=<instancename>"
validationquery="Select 1 " />
</Context>
```

If you use **sqljdbc4.jar**:

```
<Resource name="jdbc/businesspublisherdb"
auth="Container"
type="javax.sql.DataSource"
maxActive="100" maxIdle="20" maxWait="1000"
username="<enter username>"
password="<enter password (page 88)>"
driverClassName="com.microsoft.sqlserver.jdbc.SQLServerDriver"
url="jdbc:sqlserver://<hostname>:<portnumber>/<database
name>;instance=<instancename>" />
    factory="com.idsscheer.aris.tools.databaseConnectionPool.ADatabaseSourceF
actory"
validationquery="Select 1 " />
```

5. Customize the configuration file

..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg.

Ensure that the entries in the following line are correct:

```
<bp-mssql schema="ARISBPDATA" filegroup-data="ARISBPDATA"
filegroup-index="ARISBPINDEX" />
```

If you have changed the names in the script, you must adjust them here.

6. Ensure that the database connection is set for **MSSQL**.

```
<dao-class
name="com.idsscheer.aris.businesspublisher.application.dao.database.AMSSQLDAO
" />
```

Tip

For additional information about Microsoft SQL Server, visit

<http://support.microsoft.com/kb/914277/en-us>

(<http://support.microsoft.com/kb/914277/en-us>).

5.1.2.2 Use an Oracle database (Tomcat)

Please adjust your system as required to run ARIS Business Publisher in combination with Apache Tomcat Web application server and an Oracle database.

Prerequisite

- You have created an Oracle database and configured it as follows. If you install a database yourself, always follow the instructions provided in the Oracle Installation Guide. We recommend that you use two separate Oracle databases for ARIS Business Server and ARIS Business Publisher. This keeps the two systems from competing for resources, and you achieve better performance and higher availability.
- Use of the database character set **AL32UTF8** is mandatory.
- We recommend a block size of 8K.
- `query_rewrite_enabled=true`
- `query_rewrite_integrity=trusted`
- You have created two tablespaces: **ARISBPDATA** (for table data) and **ARISBPINDEX** (for index data). To use other names or existing tablespaces, you must customize the configuration file **webappserver.cfg** (see below). We recommend that you set the tablespaces for automatic, unlimited growth. Otherwise, you run the risk of completely exhausting the memory in the tablespaces, which may cause important functions of ARIS Business Server and ARIS Business Publisher to fail. If the option for automatic growth is not set, regular monitoring (e.g. weekly) of the Oracle instance is required to ensure that the tablespaces are manually increased on time.
- You have created an Oracle user that ARIS Business Publisher can use to connect to the database. The name of the Oracle user is assumed to be **ARISBP**. You can select any password. Enter it - coded or unencoded - in the configuration file **businesspublisher.xml** (see below). If you prefer another name, change the name there as well:

CREATE USER ARISBP IDENTIFIED BY ARISBP;

- The Oracle user must have the following privileges
`GRANT CREATE SESSION TO ARISBP;`
`GRANT ALTER SESSION TO ARISBP;`
`GRANT CREATE TABLE TO ARISBP;`
`GRANT CREATE VIEW TO ARISBP;`
`GRANT QUERY REWRITE TO ARISBP;`
`ALTER USER ARISBP QUOTA UNLIMITED ON ARISBPDATA;`
`ALTER USER ARISBP QUOTA UNLIMITED ON ARISBPINDEX;`
 - We recommend that you turn off the Oracle recycle bin because large quantities of tables accumulate there when exports are deleted.

Procedure

1. Open the file **businesspublisher.xml** in the ARIS Business Publisher Server installation directory **..\BPServer\tomcat\conf\catalina\localhost**.
2. Ensure that the following entries are specified:


```
<Context path="/businesspublisher" docBase="C://Program
Files/ARIS71/BPServer/tomcat/webapps/businesspublisher/" debug="0" reloadable="false"
crossContext="true">
<Resource name="jdbc/businesspublisherdb" auth="Container"
type="javax.sql.DataSource"
    maxActive="30" maxIdle="30" maxWait="1000" initialSize="10"
    <!-- Configure the DBCP (database connection pool) with these values. For an explanation
of these values, go to:
    http://jakarta.apache.org/commons/dbcp/configuration.html
    (http://jakarta.apache.org/commons/dbcp/configuration.html)-->
    username="ARISBP" password="ARISBP" <!-- where you use (page 88) the
Oracle user name and password
    (see Prerequisites)> -->
    driverClassName="oracle.jdbc.driver.OracleDriver"
    url="jdbc:oracle:thin:@localhost:1521:ARISBP" <!--
url="jdbc:oracle:thin:@hostname:port:sid where you replace hostname,
    port, and sid in the URL as appropriate-- >
    connectionProperties="SetBigStringTryClob=true"/>
    validationquery="Select 1 from dual"/>
</Context>
```
3. Open the file ARIS Business Publisher Server installation directory **..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg**.
4. Ensure that the following entries are correctly specified:


```
<bp-oracle tablespace-data="ARISBPDATA" tablespace-index="ARISBPINDEX" />
```

If you have decided to use other tablespace names (see Prerequisite), please specify them here.
5. Ensure that the database connection is set for **Oracle** here:


```
<dao-class
name="com.idsscheer.aris.businesspublisher.application.dao.database.AOracleDAO" />
```
6. Ensure that the JDBC driver **ojdbc6.jar** exists (download from Oracle Web Site) in the ARIS Business Publisher Server installation directory **..\BPServer\tomcat\common\lib**. We assume that you are using version **10.2.0.3**.

5.1.2.3 Use Derby database (Tomcat)

This database is automatically used after the standard installation. If you have used another database after the standard installation and want to use Derby again, you need to customize the file **businesspublisher.xml**.

Procedure

1. Open the file **businesspublisher.xml** in the ARIS Business Publisher Server installation directory **..\BPServer\tomcat\conf\catalina\localhost** and ensure that the highlighted entries are specified:

```
<Context path="/businesspublisher" docBase="C://Program
Files/ARIS71/BPServer/tomcat/webapps/businesspublisher/" debug="0"
reloadable="false" crossContext="true">
<Resource name="jdbc/businesspublisherdb" auth="Container"
type="javax.sql.DataSource"
maxActive="30" maxIdle="30" maxWait="1000" initialSize="10"
username="<enter the user name>" password="<enter the password for the user (page
88)>" driverClassName="org.apache.derby.jdbc.ClientDriver"
url="jdbc:derby://localhost:16092/ARISBP;create=true;user=ARISBP"/>
</Context>
```

2. Open the configuration file
..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg.
3. Ensure that the database connection is set for **Derby**:

```
<dao-class
name="com.idsscheer.aris.businesspublisher.application.dao.database.ADerbyDAO
" />
```

5.1.2.4 Encrypt LDAP password

To prevent misuse, you can encrypt this password and enter it in the configuration file.

1. Open the file **businesspublisher.xml** in the ARIS Business Publisher Server installation directory **..\BPServer\tomcat\conf\catalina\localhost** and find the entry **username=""**.

The default entries are as follows:

username="ARISBP"

password="ARISBP"

2. Copy the password, e.g. **ARISBP** to the clipboard.
3. Encrypt (page 296) the password using the ARIS Admintool command **Encrypt**.
4. Paste the encrypted password to the configuration file, e.g.:

username="ARISBP"

password="{crypted}25f553fba171ea45b4d0168f29329c5b"

5. Save the change and restart ARIS Business Publisher Server.

5.1.3 ARIS Process Governance Server

5.1.3.1 Oracle database management system for ARIS Process Governance Server

If you want to run ARIS Process Governance Server based on Oracle as the database management system, please read the following pages.

To set up your database server, we recommend that you make use of the Software AG installation support (page 327). Please read the information about ARIS Process Governance and database approvals. Please consider the legal notices (page 1).

5.1.3.1.1 Set up the database

We assume use of database character set **AL32UTF8**. The block size should be **8K**.

Procedure

Create two permanent tablespaces **AGEDATA** and **AGEINDEX** for the indices.

The required size of tablespaces depends on the number of processes to be executed and their size. Since this is difficult to predict, it is best to start with 4 GB per tablespace and keep an eye on the trend toward exhausting that capacity.

You can also assign other names for the two tablespaces. In this case, you must later adapt the configuration.

5.1.3.1.1.1 Install ARIS Process Governance database objects

To install the database objects that are required to operate ARIS Process Governance, you can use the scripts available on the ARIS installation media under **Setups\DBMS GE\Oracle**. Since the scripts rely on SQL*PLUS, at least the Oracle client software must be available on the computer on which you intend to run the scripts.

The scripts create the Oracle user **AGE**.

This user serves as a schema for the database objects required by ARIS Process Governance. ARIS Process Governance Server also relies on this user to access data in the **AGE** schema.

The privileges assigned to this user are:

- CREATE TABLE
- CREATE VIEW
- CREATE TRIGGER
- CREATE SESSION

5.1.3.1.1.2 Use SQL*Plus scripts

The scripts install the database objects required for operating ARIS Process Governance in an existing Oracle database. Since the scripts rely on SQL*PLUS, at least the Oracle client software must be available on the computer on which you intend to run the scripts.

5.1.3.1.1.2.1 Available SQL*Plus scripts

Once the Oracle database is created, the scripts that import the database objects required for operating ARIS Process Governance can be run.

The following scripts are available:

- **install.bat**
Windows batch files for running SQL*Plus scripts.
- **envset.bat**
Batch files for adjusting settings. The file **envset.bat** is called by the file **install.bat**.
Before you run scripts by calling them from **install.bat** (or **install.sh**), you must customize configurations in the file **envset.bat** (or **envset.sh**).
- **install.sh**
Bash script for running SQL*Plus scripts. To run this script under Unix, you need the bash shell.
- **envset.sh**
Bash script for adjusting settings. The file **envset.sh** is called by the file **install.sh**. To run this script under Unix, you need the bash shell.
- **appuserc.sql**
SQL*Plus script for creating the user **AGE**.
- **ts.sql**
SQL*Plus script for creating the table set for the ARIS Process Governance task server.
- **umc.sql**
SQL*Plus script for creating the table set for central user management.
- **xe.sql**
SQL*Plus script for creating the table set for the ARIS Process Governance execution engine.
- **deinstall.sql**
SQL*Plus script for deleting the user **AGE**

5.1.3.1.1.2.2 Run batch files install.bat/install.sh

If you have customized configurations (page 91) in the **envset.bat** file (or **envset.sh**), you can call the batch file **install.bat** (or **install.sh**).

5.1.3.1.1.3 Configure the installation scripts

Before you run the scripts, you must adjust them to your environment. Adjustments can be made in the file **envset.bat** or **envset.sh**, which you find on the installation media under **Setups\DBMS GE\Oracle**.

5.1.3.1.1.3.1 Connection data

Use the configuration tool for ARIS Process Governance.

The configuration tool for ARIS Process Governance is a batch file for configuring ARIS Process Governance.

If you want to change the password that ARIS Process Governance Server uses to log in to the database, you first have to change it on the database side and then use the configuration tool, because the passwords defined are encrypted.

You can also specify all other configurations manually in the relevant configuration files.

You will find the batch file under **%ARISGEHOME10%\y-arisgeadmin.bat** for a Windows operating system and under **<installation directory>/y-arisgeadmin.sh** for a Unix operating system. The edited values are saved in the file

%ARISGEHOME10%\config\age-configuration.properties resp. **<installation directory>/config/age-configuration.properties**.

You must be connected to the ARIS Process Governance database or, if this is not possible, you must use the option **--offline true**.

The following procedures apply to a Windows operating system. They can also be run from a Unix shell. For Unix, you need to use the file **y-arisgeadmin.sh** instead of **y-arisgeadmin.bat**.

Procedure

1. Shut down ARIS Process Governance Server.
2. Use a database administration tool, e.g., SQL*Plus to change the password for the database user **AGE**.
3. Open a DOS box (**Start/Run/cmd**).
4. Switch to the directory **%ARISGEHOME10%** for Windows operating system or the **<installation directory>** for a Unix operating system.
5. Enter **y-arisgeadmin.bat ora-config --host <computer name> --port <port to be used> --sid <database SID> --offline true --user <user name for database user> --password <password for database user>**.

6. Configure either the registry key (ARIS Process Governance Server installed as a service) or the file `y-arisgeserver.bat` (ARIS Process Governance Server not installed as a service).

ARIS Process Governance Server installed as a service:

- a. Search for **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\ARIS GE Server 1.0** in the registry of the PC on which ARIS Process Governance Server is installed.
- b. Open the key **ImagePath**, and add **nosybase** to the end of the key.
- c. Click on **OK**, and close the registry.

ARIS Process Governance Server not installed as a service:

Open the file **ARISGE1.0\y-arisgeserver.bat**, and search for the line **call SybaseScripts\DBStart.bat**. Either delete this line, or comment it out by writing the string **REM + space** in front of it.

7. Restart ARIS Process Governance Server.

You have configured the connection to the Oracle database. A new configuration file is created with the name **age-configuration.properties**, and any changes made are saved to this file.

Tip

You can also use the following abbreviated forms:

- `--p` for `--password`
- `--h` for `--host`
- `--s` for `--sid`, or `--sn` for `--serviceName`, or `--db` for `--databaseName`
- `--P` for `--Port`
- `--u` for `--user`

5.1.3.1.1.3.2 Change tablespace names

If you have assigned other names to the tablespaces (page 89), you must customize the files **envset.bat** and **envset.sh**. You can find them on the installation media under **Setups\DBMS GE\Oracle**. First copy these files to the hard drive of the computer on which they will be run.

Procedure

1. Open the file **envset.bat** or **envset.sh** with a text editor.
2. Find the line **SET DL_TS_DATA=AGEDATA**, and replace the tablespace name AGEDATA with the one you selected.
3. Find the line **SET DL_TS_INDEX=AGEINDEX**, and replace the tablespace name AGEINDEX with the one you selected.

You can specify another temporary tablespace in the line **SET DL_TS_TEMP=TEMP** if needed.

5.1.3.1.1.3.3 Change the password for Oracle user AGE

The default password for the database user **AGE** is **SQL**. To prevent misuse, you should change it immediately.

Procedure

1. Shut down ARIS Process Governance Server.
2. Use a database administration tool, e.g., SQL*Plus to change the password for the database user **AGE**.
3. In the command line, switch to **ARISGE1.0\tomcat\bin**.
4. Enter **y-arisgeadmin.bat ora-config --offline true ---password <password for database user>**.
5. Restart ARIS Process Governance Server.

A new configuration file is created with the name **age-configuration.properties**, and any changes made are saved to this file.

Tip

To select another password for the database user **AGE** in advance, edit the file **envset.bat** or **envset.sh** before using the scripts.

5.1.3.1.2 Configure ARIS Process Governance Server URL

ARIS Process Governance Server can only connect to your Oracle instance if you specify the URL in the file **age-configuration.properties** in the directory **ARISGE1.0\config**.

Procedure

1. Exit ARIS Business Server or ARIS Site Manager, and open the file **Lockservice.cfg** in <ARIS installation directory>/server/config/ or in the config directory of ARIS Site Manager with a text editor.
2. Open the file **age-configuration-setup.properties** in the directory **ARISGE1.0\config** with a text editor.
3. Find the line **com.idsscheer.age.ds.url=jdbc:oracle:thin:@host:1521:AGE** and copy this string.
4. Open the file **age-configuration.properties** in the directory **ARISGE1.0\config** with a text editor.
5. Insert the line **com.idsscheer.age.ds.url=jdbc:oracle:thin:@host:1521:AGE**, and replace **host** with your computer name, **1521** with your port, and **AGE** with the name of your database instance.

5.1.3.1.3 Back up the ARIS Process Governance database

5.1.3.1.3.1 Standard database system

We recommend that you regularly back up your ARIS Process Governance database.

Procedure

1. Shut down ARIS Process Governance Server.
2. Exit ARIS Business Server.
3. Back up the directory **ARISGE1.0\data** or its contents on a suitable media.

5.1.3.1.3.2 Oracle database system

Oracle functionality (dump) is used to back up the ARIS Process Governance database under Oracle. For this purpose, contact your system administrator.

5.1.3.2 MS SQL database management system for ARIS Process Governance Server

If you want to run ARIS Process Governance Server based on Microsoft SQL (MS SQL) as the database management system, please read the following pages.

To set up your database server, we recommend that you make use of the Software AG installation support (page 327). Please read the information about ARIS Process Governance and database approvals. Please consider the legal notices (page 1).

5.1.3.2.1 Required programs, drivers, and scripts

To use ARIS with SQL Server on a 32-bit Windows platform, you need the following components:

- Microsoft SQL Server for installing the SQL Server on a Microsoft Server

If you want to use this server, you need to purchase it from Microsoft.

- ARIS SQL Server scripts

The scripts are located on the ARIS Platform installation media in the directory

Setups\DBMS GE\MSSQL.

5.1.3.2.2 Notes on installing SQL Server

- Server sorting must be case-insensitive. That is, the sorting name must contain the character sequence **_CI_**. Select the server sorting **Latin1_General_CI_AI** for example.
- Select the option **SQL Server and Windows authentication mode** as server authentication.
- Set the option **Enable triggers to generate additional triggers** to **TRUE**.
- Set the timeout value for remote queries to **0**.

5.1.3.2.3 Set up the database

To install the database with the database objects that are required to operate ARIS, you can use the scripts available on the installation media in the directory **Setups\DBMS GE\MSSQL**.

The scripts create an **ARISGE10** database and an **AGE** login.

The scripts consist of the following files:

- **inst.bat**: Windows batch file for running scripts
- **deinstall.sql**: SQL script for deleting database objects from the **ARISGE10** database and the **AGE** login.
- **drop_db.sql**: Deletes the **ARISGE10** database.
- **createdb.sql**: SQL script for creating the **ARISGE10** database.
- **install.sql**: SQL script for creating the **AGE** login and the database objects in the **ARISGE10** database.
- **schema_age.sql**: SQL script for creating a procedure that produces a table set for an ARIS Process Governance database.

Before you run the scripts by calling **inst.bat**, you must configure the **inst.bat** file.

5.1.3.2.3.1 Configure the installation scripts

Procedure

1. Edit the **inst.bat** file, and find the line
`SET MSSQL_IDS_MSSQL_LOGIN_NAME=localhost\username`
2. Replace **localhost\username** with a user name that has administrative access to the database server. This user serves to run the SQL scripts.
3. Find the line
`SET MSSQL_IDS_FILEGROUP_FILE_DIR=C:\msqldata\ARISGE10`
and specify the path in which the database files are to be created for the database. Ensure that the directory exists.

5.1.3.2.3.2 Connection data (Microsoft SQL)

Procedure

1. Shut down ARIS Process Governance Server.
2. Use a database administration tool, e.g., SQL*Plus to change the password for the database user **AGE**.
3. Open a DOS box (**Start/Run/cmd**).
4. Switch to the directory **ARISGE1.0\tomcat\bin**.
5. Enter **y-arisgeadmin.bat sqlserver-config --host <computer name> --port <port to be used> --databaseName <name of database> --offline true --user <user name for database user> --password <password for database user>**.
6. Start ARIS Process Governance Server.

You have configured the connection to the Microsoft SQL database. A new configuration file is created with the name **age-configuration.properties**, and any changes made are saved to this file.

Tip

You can also use the following abbreviated forms:

- --p for --password
- --h for --host
- --s for --sid, or --sn for --serviceName, or --db for --databaseName
- --P for --Port
- --u for --user

5.1.3.2.3.3 Change the password for Microsoft SQL server user AGE

The default password for the database user **AGE** is **SQL**. To prevent misuse, you should change it immediately.

Procedure

1. Shut down ARIS Process Governance Server.
2. Use a database administration tool, e.g., SQL*Plus to change the password for the database user **AGE**.
3. In the command line, switch to **ARISGE1.0\tomcat\bin**.
4. Enter **y-arisgeadmin.bat sqlserver-config --offline true ---password <password for database user>**.
5. Restart ARIS Process Governance Server.

A new configuration file is created with the name **age-configuration.properties**, and any changes made are saved to this file.

Tip

To select another password for the database user **AGE** in advance, edit the file **envset.bat** or **envset.sh** before importing the scripts.

5.2 ARIS Business Publisher/ARIS IT Inventory

This chapter describes the system requirements and configuration.

Please consider the legal notices (page 1).

ARIS Business Publisher Server

Hardware	Up to 750 simultaneous users	Up to 100 simultaneous users	Up to 50 simultaneous users
Processor	2 Intel Xeon 5.X 6c or more recent	Dual Intel Xeon 5.X or more current	Dual Intel Xeon 5.X or more current
RAM	64 GB	8 GB	4 GB
Controller	SAS/SATA with RAID 0 option	SAS/SATA with RAID 0 option	SAS/SATA with RAID 0 option
Hard disk	Rapid RAID array 15.000 rpm	Rapid RAID array 15.000 rpm	Rapid RAID array 15.000 rpm

The operating systems depend on the database systems (page 104) used.

Network connection

- Web application server to database server: Integration in a 1000 MBit network
- Client connection: Internet connection

After the standard installation, reports are run by ARIS Business Publisher Server. You can additionally install a Report Server (page 63) to optimize system performance when running reports.

Computers of the Publisher export users

Software	Details
Operating system	<ul style="list-style-type: none"> Windows 7 (Business, Ultimate) + Service Packs Windows Vista (Business, Ultimate; 32-bit) Windows XP Professional + Service Packs
Browser	<ul style="list-style-type: none"> Microsoft Internet Explorer versions 6, 7, 8 (SR 2010_5 or higher), and 9 (32-bit) (SR 2011_02) Firefox 1.x, 2.x (SR 2008_9 or higher), 3.x (SR 2010_5 or higher), and 6.x (SR 2011_02) <p>While Software AG has not approved the use of later versions, it is highly unlikely that they cannot be used. However, we cannot guarantee that links will work correctly.</p> <p>Security settings (Microsoft Internet Explorer)</p> <p>If Java Runtime Environment (JRE) is not yet installed and needs to be downloaded, you need to specify settings in the Tools/Internet Options/Security/Custom Level menu in Microsoft Internet Explorer.</p> <p>Adjust your browser settings to ensure that the following actions are permitted:</p> <ul style="list-style-type: none"> Running ActiveX controls and plug-ins Downloading signed ActiveX controls Executing JavaScript Pop-ups are permitted in the domain in which the ARIS Business Publisher is running. <p>If pop-ups are blocked, report output cannot be displayed in PDF format.</p>
JRE	<ul style="list-style-type: none"> The following are approved: (page 104) Java Runtime Environment (JRE) from 1.5.0_08 and 1.6.0.X (from 1.6.0_19 (page 320)) and patches that are in the public domain (Java SE on the SUN home page - except Java SE for Business) and generally released by SUN. 1.6.0X only for 64-bit (page 104) (not for ARIS IT Inventory) To display different character sets (Japanese, Arabic, Cyrillic, etc.), the corresponding file in the directory <JRE installation directory>\<version>\lib must be named font.properties. For example, if you wish to display Japanese characters, you must rename the font.properties.ja file to font.properties.

Software	Details
Output	<p>If, for example, you want to output documents in PDF format using Microsoft Word or Microsoft Excel, you must have Adobe Reader and Microsoft Office version 2000 or higher installed. If you use reports to import data from Excel tables, please ensure that the tables have been saved in XLS format. If pop-up blockers are activated for the domain, it may not always be possible to open report output in PDF format from a Publisher export.</p> <p>In addition, all applications that are linked in your models should be installed.</p>
ARIS for SAP functionality	<p>The connection to your SAP systems is configured with wpsetup.exe by default. If you keep this configuration, you do not need to adapt the configuration file webappserver.cfg. To use the connection without wpsetup.exe, you must provide files and adapt (page 118) the configuration file.</p> <p>Users require a local SAP GUI for Windows installation (version 7.1 or 7.2) for the functionality Run transaction.</p>

5.2.1 ARIS Business Publisher Server

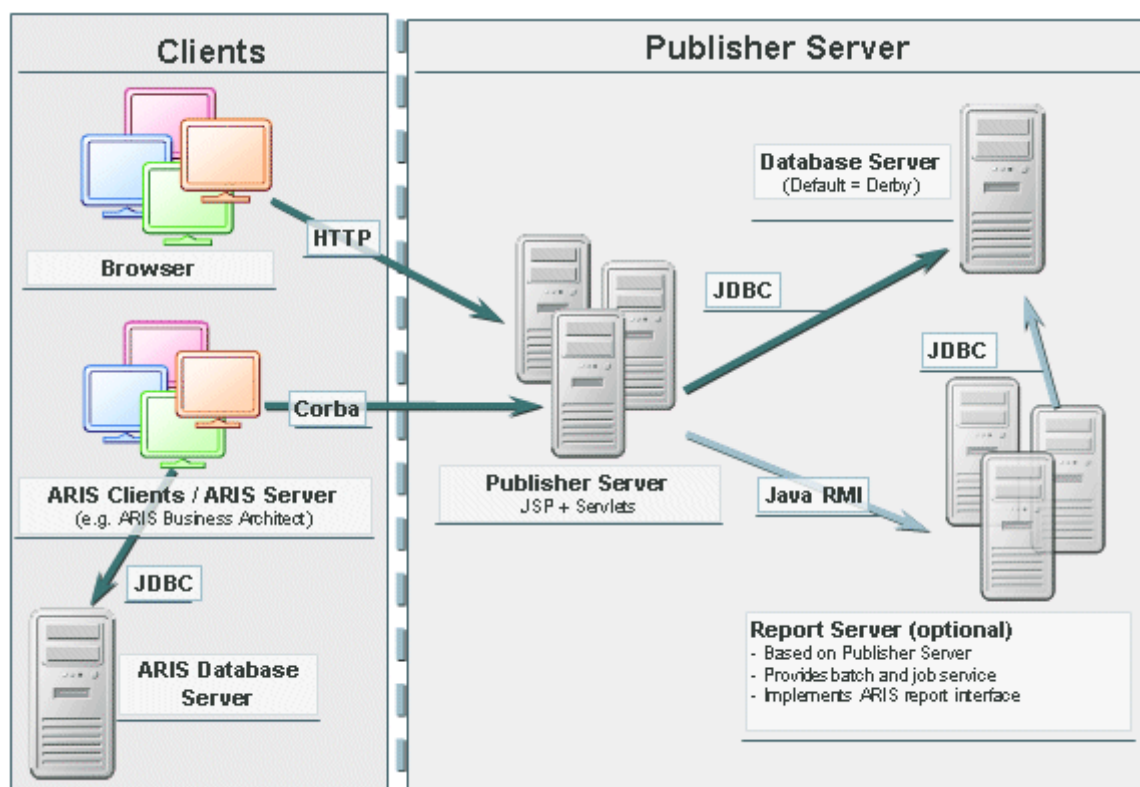
ARIS Business Publisher is integrated in the **Administration** module of ARIS Business Architect and ARIS Business Architect for SAP. With these products, administrators can create exports of your ARIS databases after you have installed ARIS Business Publisher Server.

ARIS Business Publisher Servers manage every Publisher export. A Publisher export is a Web application based on **J2EE**. Java Servlets and Java Server Pages (**JSP**) are used, which, in addition to a Java environment (**JDK**), require a Web application server (for example **Apache Tomcat**) as runtime environment. The data is held in a relational database system and is exchanged with the program via a **JDBC** interface.

The standard installation uses a **Derby** database system and **Apache Tomcat Web Application Server** for ARIS Business Publisher Server. With this database system, up to 10 users can access a Publisher export simultaneously. Swimlane models cannot be exported optimally using a Derby database. For a larger number of users, you need a different database system such as the **Oracle** (page 86) database system or **Microsoft SQL Server 2005/2008** (page 84). These are not included in the package. Depending on the ARIS Business Publisher Server license purchased, these systems enable all users to simultaneously work on a Publisher export.

After the standard installation, reports are run by ARIS Business Publisher Server. You can additionally install a Report Server (page 63) to optimize system performance when running reports.

Please consider the legal notices (page 1).



If you retain the settings of the installation program when you use the standard installation of ARIS Business Publisher Server, the context path and the free port to the Web server are entered automatically.

To use a server other than Apache Tomcat Web Application Server, please follow the installation instructions (page 39).

5.2.2 Approved platforms, servers, applications, and databases

Tested and approved combinations are listed in the tables below. Please consider the legal notices (page 1).

Tested Web application servers

Platform	Web Application Server			
	IBM WebSphere 6.1.0.15 or higher (1, 7)	TomCat 5.5.x (32/64-bit)	TomCat 6.0.x (32/64-bit) (8)	SAP NetWeaver 7.10 CE (6)
Windows Server 2003 SP1, SP2 (32/64-bit)	Yes	Yes	Yes	No
Windows Server 2003 SP2, R2 SP2 (32/64-bit)	Yes	Yes	Yes	Yes
Windows Server 2008 (32/64-bit) + R2	No	Yes	Yes	No
Sun Solaris 9, 10 (1, 2, 3)	Only Solaris 10	Only 32-bit	Only Solaris 10 64-bit	No
Red Hat Enterprise (1, 4) Linux 4	No	Only 32-bit	No	No
Red Hat Enterprise (1, 5) Linux 5	Yes	Yes	Yes 64-bit	No
VMWare ESX 3.x and 4.0	Yes	Yes	Yes	No

(1) Installation by Software AG (<http://www.softwareag.com>) employees only. Please contact your local Software AG sales organization. Please note that this type of manufacturer-specific or customer-specific change is not subject to the standard Software AG software maintenance agreement and that these changes can only be performed if you requested and agreed on them.

(2) Tested with Sparc processors

(3) Tested with Intel Xeon processors

(4) Tested with Red Hat ES 4

(5) Tested with Red Hat ES 5 (x64)

- (6) Tested with Microsoft SQL Server 2005 Enterprise Edition as RDBMS for SAP NetWeaver 7.10 CE
- (7) Not approved for ARIS IT Inventory
- (8) With new installation only

Tested Web servers

Platform	Web server	
	Apache 2.0.x	Apache 2.2.x
Windows Server 2003 SP1, SP2 (32/64-bit)	Yes	Yes
Windows Server 2003 SP2, R2 SP2 (32/64-bit)	Yes	Yes

Tested database systems

Platform	Database system				
	Derby (10 users max.)	Oracle 10.1/10.2/1 1.x (32/64-bit) (6)	Oracle Express (32-bit) (7)	Microsoft SQL Server 2005 (32/64-bit)	Microsoft SQL 2008 Enterprise Edition. R2 (2)
Windows Server 2003 SP1, SP2, R2 SP2 (32/64-bit)	Yes	Yes	Yes	Yes	Yes
Windows Server 2008 (32/64-bit) +R2	No	Yes	No	Yes	Yes
Sun Solaris 9, 10 (1, 2, 3)	No	Yes	No	No	No
Red Hat Enterprise (1, 4) Linux 4	No	Yes	No	No	No
HP UX 11 (64-bit) (1)	No	Yes	No	No	No
Red Hat Enterprise (1, 5) Linux 5	No	Yes	Yes	No	No
VMWare ESX 3.5	No	Yes	No	No	No

(1) Installation by Software AG (<http://www.softwareag.com>) employees only. Please contact your local Software AG sales organization. Please note that this type of manufacturer-specific or customer-specific change is not subject to the standard Software AG software maintenance agreement and that these changes can only be performed if you requested and agreed on them.

(2) Tested with Sparc processors

(3) Tested with Intel Xeon processors

(4) Tested with Red Hat ES 4

(5) Tested with Red Hat ES 5 (x64)

(6) With Oracle version **10.2.0.3.0**, it may not be possible to delete exports. In this case, please install Oracle 10.2.0.4.0.

(7) Not approved for ARIS IT Inventory

Tested document management systems (CFS server 4.5.X)

It is not recommended to use CFS server 3.7.X.

- Alfresco 2.0 or higher
- EMC Documentum Content Server 5.2.5 or higher
- Lotus Notes (read-only) 6.5.4 or higher, 7.0, 8.0
- Microsoft SharePoint 2007
- Microsoft SharePoint Object Model connector (Microsoft Office SharePoint Server 2007)
- Windows SharePoint Services 3.0 (WSS 3.0)
- Microsoft SharePoint Server 2010
- Microsoft SharePoint Foundation 2010
- Open Text Livelink 9.2 SP1 or higher
- Open Text eDOCS 5.1.0.5 and 5.2.1 (formerly Hummingbird DM)
- Oracle UCM 10 or higher (Stellent 7.5)
- Xerox DocuShare 4.0 or higher

Tested document management systems (JRC)

- Jackrabbit 1.x (not suitable for live environments)

5.2.3 Customize configuration

This chapter describes how to customize ARIS Business Publisher Server according to your needs.

5.2.3.1 Connect ARIS Process Governance (ARIS Business Publisher)

You can start governance processes from a Publisher export and provide feedback. The **ARIS Process Governance** module and the **Start governance process** pop-up menu are only available in the Publisher export if you are using the **ARIS Process Governance** product and have configured your ARIS Business Publisher server.

If you are using IBM WebSphere Application Server, you cannot access ARIS Process Governance from exports.

Procedure

1. In \BPServer\tomcat\webapps\businesspublisher\config**webappserver.cfg**, specify the connection data in the **<governance> key**.
2. Restart ARIS Business Publisher Server.

5.2.3.2 Activate/deactivate ARIS Rocket Search (ARIS Business Publisher Server)

If you have run an update installation, the ARIS Rocket Search is available to you only after you have adapted the configuration file.

Procedure

In the file.. \bpserver\tomcat\webapps\businesspublisher\config**webappserver.cfg**, add.

```
<rocketSearch>  
<engine value="on"/>  
</rocketSearch>
```

You can reactivate the previous standard search by setting the **engine value** value to **off**.

5.2.3.3 Show all groups in the Explorer tree (Publisher Server)

By default, only groups containing at least one item are displayed in exports. To display empty groups as well in the Explorer tree, change the corresponding setting in the configuration file.

Procedure

1. Open \BPServer\tomcat\webapps\businesspublisher\config**webappserver.cfg** and change **<switch value="off"/>** to **on**.
2. Restart Publisher Server.

5.2.3.4 Configure automatic e-mailing

If you reset passwords, for example, automatic e-mails containing the initial passwords are sent to the appropriate users.

Procedure

1. Open `..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg` and configure the mail server settings under **<badmin>**.
2. Restart ARIS Business Publisher Server.

5.2.3.5 Connect document management systems (DMS) (ARIS Business Publisher)

If you want to connect document management systems, copy the configuration file **SpringCRModule.xml** to the installation directory of your ARIS Business Publisher Server.

Prerequisite

You have set up (page 70) a DMS.

Procedure

1. Copy the file `<ARIS installation directory>/server/config/SpringCRModule.xml` from the corresponding ARIS Business Server to `<ARIS Business Publisher Server installation directory>/tomcat/webapps/businesspublisher/WEB-INF/Spring/core`.
2. Restart ARIS Business Publisher Server.

5.2.3.6 Change e-mail address (Contact [Webmaster])

By default, an example address is used for the **Contact [Webmaster]** function in the **Explorer** module.

Procedure

1. Open the file `\BPServer\tomcat\webapps\businesspublisher\layouts\default\config\layout.cfg.xml` and change the address in the **<responsible email="name@company.com"/>** entry.
2. Restart ARIS Business Publisher Server.

5.2.3.7 Change e-mail address (Contact [Process manager])

Web export users can send feedback to process managers with the **Contact [Process manager]** function in the **Explorer** module. By default, the address specified for the current user is used here.

In order to use the e-mail address specified in the **Person responsible** model attribute, please do the following:

Prerequisite

- Make sure that the **Person responsible** model attribute is specified for each process with the correct e-mail address.

Procedure

1. Add **1584** to **<attr feedbackAttributeNr=** in
 \BPServer\tomcat\webapps\businesspublisher\layouts\default\config\layout.cfg.xml.
2. Restart ARIS Business Publisher Server.

Tip

If you use a user-defined attribute type to specify the e-mail address of a process manager, we recommend to define it independent of the language. This ensures that an e-mail address is automatically entered in all languages. Please enter the GUID instead of the attribute type number for user-defined attribute types. You can find the GUID on the properties page of the attribute type in the **Administration** module (Conventions/Method/Attribute types).

5.2.3.8 Change IP address

If you have installed ARIS Business Publisher Server on an external computer rather than locally, you must enter the IP address of the external computer in the configuration file.

Procedure

1. Open the file `..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg` and change the value for the IP address of the computer on which ARIS Business Publisher Server is installed, e.g. `<bpservicehost value="172.30.111.123"/>`
2. Restart ARIS Business Publisher Server.

5.2.3.9 LDAP user management

If you manage users via an LDAP system, authentication is performed using this system. To map LDAP user groups to ARIS user groups, you need to customize the configuration file.

Procedure

1. Open `..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg` and specify the required **<ldap>** settings.
2. Restart ARIS Business Publisher Server.

Warning

If your LDAP server is set up so that it allows anonymous authentication (unauthenticated bind mechanism), users may be able to log in without a password.

You can use the administration interface for exports to encrypt (page 111) the password of the LDAP user specified here. Copy the encrypted password to this file and restart the server.

5.2.3.10 Encrypt LDAP password

If users are authenticated via LDAP, a default user and the related password must be entered in the configuration file **webappserver.cfg**. To prevent misuse, you can encrypt this password and enter it in the configuration file.

1. Log in to the Publisher export.
2. Click on **Information** ⓘ and then on the **Encrypt LDAP password** link in the **Other** box.
3. Enter the password to be encrypted, and click on **Encrypt LDAP password**.
4. Copy the encrypted password to the clipboard.
5. Open the file `..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg` and find **<ldapdefaultpwd value="password"/>** and paste the copied password as a value between the quotation marks.
6. Find **<ldappwdencrypted value="false"/>** and change the value from **false** to **true**.
7. Restart ARIS Business Publisher Server.

5.2.3.11 Update a license key

The license key or hardware key (page 65) for ARIS Business Publisher Server also controls the number of users who can simultaneously access a Publisher export. Due to the named user license concept, each user needs a single-user license. This is also valid for anonymous access. The license key was entered when ARIS Business Publisher Server was installed.

You need to update the license key, e.g. if you have purchased a new license key that allows a larger number of users. You can identify the license key by the **Pd** and **Uxx** (number of users allowed) codes, e.g. C99999-YYY_Business_Publisher-V71LdeLenPdU250-YYYYX...

Procedure

1. Open the file `..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg` and enter the new license key, e.g.

```
<license key="C99999-YYY_Business_Publisher-V71LdeLenPdU250-YYYYX..."/>.
```

2. Exit ARIS Business Publisher Server and restart ARIS Business Publisher Server.

5.2.3.12 Configure matrix

In the **Matrix** module, you can create matrices of one or several models. This allows you to examine various aspects of object relations. You can configure (page 113) the selection of available aspects, the objects (object families) used in aspects, and the graphical representation. The following configuration files control matrix functions and layout:

File	Description
aspect_matrix.xml	Defines the object types included in the aspects. Please refer to the Method help (Help/Method help) for the API names of object types.
connectionTypeFamilies.xml	Defines connection families that are included in aspects.
templates.xml	Defines the model and connection types included in aspects. Similar connection types are grouped into families. The families are defined in the file connectionTypeFamilies.xml .

If you change the configuration file, please note the XML structure. Please use the default layout of the matrix as a guide.

We recommend that you ask ARIS Customized Solutions to change your configuration.

Procedure

1. Open the relevant configuration file under **..\tomcat\webapps\businesspublisher\views\matrix** and change it according to your requirements.
2. Exit and then restart ARIS Business Publisher Server.

5.2.3.13 Configure navigation carousel

To display the navigation carousel in exports, a structuring model must be modeled in the database.

Ensure that the configuration file <ARIS Business Publisher Server installation directory>\tomcat\webapps\businesspublisher\layouts\default\config**aspectOrientedEntry.cfg.xml** is configured for evaluation (page 114) of the modeled structuring model. This setting is selected by default. You do not have to customize this file unless it has been changed after installation.

Procedure

Ensure that the values of the keys are specified as follows:

```
<aoeDefinition exportName="*"
isVisible="true"
and
<aoeDefinition exportName="no export"
isVisible="true"
```

Changes to this file take effect immediately without restarting ARIS Business Publisher Server.

Tip

You can also offer the navigation carousel without a structuring model. ARIS Customized Solutions will be pleased to help you with the implementation.

5.2.3.14 Display news

The **News** section in the **Home** module is used in the standard export as an example. If you have knowledge of RSS feed and XML programming, you can insert links in this area.

Procedure

1. Open the file

\BPServer\tomcat\webapps\businesspublisher\layouts\default\config\layout.cfg.xml, and enter the URL for your RSS feed in the **<news basename="news">** area.

```
<news basename="news">
  <!-- TODO synchronize access to feed-xml -->
  <url proto="http"
    location="<Your URL, e. g.
"http://www.ariscommunity.com/group/aris-bpm-blog/feed/teaser">"
    proxyAddress="<Your proxy address, e.g. "hades.company.com">"
    proxyPort="<Your proxy port>"
    refresh="600"/>
</news>
```

Tip

The **News** area can be customized to meet your requirements. ARIS Customized Solutions will be pleased to help you with the implementation. For example, you can keep a list of links to the models or objects that have been changed or created since a specific date.

5.2.3.15 Change the port number (ARIS Business Publisher Server)

The installation program enters the port **9090** by default. To use another free port on your Web server, you need to enter the required port in the **Tomcat Server Port** box.

Procedure

1. Open the file ..\BPServer\tomcat\conf\server.xml and change the value for the port number in **<Connector port="9090" />**.
2. Restart ARIS Business Publisher Server.

5.2.3.16 Make SAP Java Connector (SAPJCo) available for ARIS Business Publisher

The connection to your SAP systems is configured **with** wpsetup.exe by default. If you keep this configuration, you do not need to adapt the configuration file **webappserver.cfg**. To use the connection **without** wpsetup.exe, you must provide files and adapt (page 118) the configuration file.

Users require a local SAP GUI for Windows installation (version **7.1** or **7.2**) for the functionality **Run transaction**.

Using the Web service URL, you can open the SAP documentation without SAP GUI installation. From ARIS 7.2 SR 2 you need the connector **SAP JCo 3.0.7** or a higher version of **SAP JCo 3.0.x** (**sapjco3.jar/sapjco3.dll**) in order to allow the program to connect to the SAP system and provide all functions.

For licensing reasons, JCo may not be automatically installed during installation.

Procedure

1. Download **SAP JCo 3** appropriate for your operating system and for the runtime environment (JRE) used from the SAP Service Marketplace (<http://service.sap.com/connectors>).
2. Depending on your installation, copy the file **sapjco3.jar** to the corresponding <ARIS Business Publisher Server directory **..\layouts\extensions\sap_cxn**.
3. Copy the file **sapjco3.dll** next to the Windows system libraries on each Client Windows PC. For information on JRE version and Windows system, refer to the table below. If you are using a different operating system, such as Solaris, please refer to the appropriate download package from SAP AG.
4. Ensure that the file **SAPLOGON.INI** is available for all users.

If you have correctly provided SAP Java Connector **SAP JCo 3.0.x** but have installed older runtime libraries of Visual Studio 2005 C/C++, you may have to update (<http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=766a6af7-ec73-40ff-b072-9112bab119c2>) the Microsoft Active Template Library (ATL). Please consider the SAP notes **1077727** and **1375494** on the SAP Service Marketplace (<http://service.sap.com/connectors>).

JCo and JRE	Windows	Processor	DLL	Windows installation directory
32-bit	32-bit	x86	sapjco3.dll	\system32
32-bit	64-bit	x86	sapjco3.dll	\SysWOW64
64-bit	64-bit	x86	sapjco3.dll	\system32
64-bit	64-bit	Itanium	sapjco3.dll	\system32

5.2.3.17 Configure views for models

The number of views available to users as links in the **Contents** module varies according to the system configuration and model types. Administrators can change the links available for selection.

If you change configuration files, please note the XML structure. We recommend that you ask Software AG to change your configuration.

Procedure

1. Open the file
 `..\tomcat\webapps\businesspublisher\views\visualisation\default_visualisation.xml` and change the file according to your requirements.
2. Exit and then restart ARIS Business Publisher Server.

5.2.3.18 Change icons

Icons are used for linked files saved in the **icons** subdirectory of your ARIS Business Publisher Server installation directory. Icons of Microsoft Office products and many other applications and systems, e.g., Windows system files, Web environment, Acrobat Reader, audio, video, Lotus Notes, etc., are displayed automatically. For these applications, you do not need any icons in the directory mentioned above unless you want to use your own icons.

You can change icons or add new ones. To create and edit icons in ICO format, you need a suitable application. Assign file names that conform with the extension of the relevant application.

To create icons that represent bitmap graphics, Lotus Notes or text files, for example, save the graphics under the names **bmp.ico**, **nsf.ico**, and **txt.ico**.

5.2.3.19 Configure a connection to SAP systems

If you want to run transactions from a Publisher export and open the project documentation from SAP Solution Manager without using **wpsetup.exe**, you need to customize the configuration file.

Prerequisites

- You have access privileges for the ARIS Business Publisher Server installation directory.
- The file **wpsetup.exe** has been run on all computers. This file is located in the directory **ARIS Web Publisher/WPSetup** on the installation media. If necessary, contact your system administrator.
- With program version **ARIS7.1 SR2009_5** and higher you can connect to SAP systems without using the file **wpsetup.exe**. In this case, the Business Publisher administrator must customize the file **webappserver.cfg** and provide (page 116) all required files.
- Ensure that users register the required SAP servers. You can register these using the file **SAPLOGON.INI**.
- Ensure that the users have been created in the SAP system and have RFC privileges. No distinction is made between users and technical users. If you use SAP routers, you also need to define the corresponding access privileges for the users. The special SAP ports **sapgw00 3300/tcp** and **sapdp00 3200/tcp** must be enabled in the Windows Services file of the client computer (C:\Windows\ system32\ drivers\ etc\services) and when using SAP routers because they are responsible for the RFC access of the SAP system. In general, these ports are added to the Services file automatically during SAP GUI installation. If several SAP systems are connected, additional ports need to be enabled to accommodate the systems. By default, the syntax for a port number is as follows **3300** plus the **<SAP system number>** being used. If, for example, the system number is **03**, the port number **3303** must be activated.

If you are using **wpsetup.exe** and the dialog is not displayed correctly when starting SAP transactions from a Publisher export, open the Java Control Panel and disable the **Enable the next-generation Java Plug-in** check box under **Java Plug-in** on the **Advanced** tab.

Procedure

1. Open the file `..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg` and find the **<sap_connectivity>** tag.
 - a. Set the value `<switch value="on"/>` to provide the pop-up menus **Run transaction** and **Solution Manager documentation**.
 - b. Set the value `<switch value="off"/>` in order not to provide these pop-up menus.
2. Find the **<sap_storepassword>** tag. The following settings are taken into account only if you connect to SAP systems using **wpsetup.exe**.
 - a. Set the value `<switch value="on"/>` to save the password for further sessions.
 - b. Set the value `<switch value="off"/>`. When a user selects the pop-up menus **Run transaction** or **Solution Manager documentation**, the login for further actions is performed automatically.

3. Find the **<sap_newbpcon>** tag.

- a. Set the value **<switch value="on"/>** in order to establish a connection to SAP systems without **wpsetup.exe**. This option is available from SR_2009_5.

If you select this setting, you must subsequently provide files (page 116).

- b. Set the value **<switch value="off"/>** if you want to continue using **wpsetup.exe** (default setting).

Please ensure that a local SAP GUI for Windows installation exists on all client computers. To run transactions, you need one of the following SAP systems in one of the following languages: **German (de)**, **English (en)**, **French (fr)**, **Spanish (sp)**, or **Japanese (ja)**:

The file **wpsetup.exe** must be executed on all computers. This file is located in the directory **ARIS Web Publisher/WPSetup** on the installation media.

4. Save the changes and restart ARIS Business Publisher Server.

After you exported the database content, users can run SAP transactions, for example.

5.2.3.20 Central user management

If you have installed ARIS Process Governance, you can use central user management to authenticate users. Only the user name and password are verified. Imported users are granted function and access privileges through the associated user groups in the database.

Users from central user management must be imported into the database to enable them to log in. In the database properties under **Authentication/Authentication system** you can define that every authenticated user is automatically created as a user in the database during the first login.

Procedure

1. Open the file `..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg`.
2. Find the **<LoginModuleSection value=** tag and change it as follows:
`<LoginModuleSection value="UMCLogin"/>`
3. Open the file `..\BPServer\tomcat\webapps\businesspublisher\config\umcconfig.cfg` and specify the required settings of the **<umcproviderurl value=""** tag (see **<ldap>** section).
4. Restart ARIS Business Publisher Server.

5.2.4 Logging

Activities such as imports from ARIS IT Inventory, as well as errors are logged in different files depending on the component, e.g. **inventoryImport-<Version.Build>_0.log**. If problems occur during operation, you can use the log files to find and resolve errors. If you cannot solve the problems and have a maintenance agreement, please send an error description and the entire contents of the **log** and **config** directories as ZIP files to your local Software AG sales organization. The log file names and the logging configuration are defined in the file...\\tomcat\\conf**logging.cfg**.

If ARIS Business Publisher Server is installed under Windows (by default under C:\\Program Files\\ARIS7.2\\BPServer), the following files are located in the ARIS Business Publisher Server installation directory:

- ...\\tomcat\\conf
 - ...\\tomcat\\logs
 - ...\\tomcat\\webapps\\businesspublisher\\config
 - ...\\tomcat\\webapps\\businesspublisher\\
 - ...\\tomcat\\webapps\\businesspublisher\\WEB-INF\\web
- and if available:
- ...\\derby\\derby.log
 - ...\\ARIS7.1\\BPServer\\tomcat\\webapps\\businesspublisher\\layouts\\<customized layout>\\config\\CustomizedSolutionsInfo.txt

If ARIS Business Publisher Server is installed under UNIX/Linux, the following files are located in the ARIS Business Publisher Server installation directory:

- .../apache-tomcat-<1.2.34>/conf
 - .../apache-tomcat-<1.2.34>/logs
 - .../apache-tomcat-<1.2.34>/webapps/businesspublisher/config
 - .../apache-tomcat-<1.2.34>/webapps/businesspublisher/log
 - .../apache-tomcat-<1.2.34>/webapps/businesspublisher/WEB-INF/web.xml
- and if available:
- .../apache-tomcat-<1.2.34>/webapps/businesspublisher/layouts/<customized layout>/config/CustomizedSolutionsInfo.txt

Activities and errors between ARIS Business Publisher Server and ARIS Business Server are logged in the file **businesspublisher_0.txt** in the LOG directory (page 148) for ARIS Business Server.

5.2.5 ARIS IT Inventory backup tool

ARIS IT Inventory backup tool is a small Java-based tool which allows to back up and restore ARIS IT Inventory-specific database contents. The file **CacheCtl.jar** is stored on the installation media under **..Addons\ARIS IT Inventory**.

The contents to be backed up or restored are unapproved changes and approved changes.

The program is invoked as follows:

```
java -classpath <classpathToDBDriver>;cachectl.jar  
com.idsscheer.aris.itinventory.tools.cachectl.CacheCtl <mode> <cache> <export>  
<config> [<backup file>]
```

Parameters

classpathToDBDriver

Full or relative path to db driver, which is defined in configuration.

mode

- **backup**

All changes for the export with the given name are saved to the given file.

- **restore**

All changes for the export with the given name are loaded from the given file.

- **clean**

All invalid changes (object or user references do not exist anymore) for the given export are removed from the data base.

- **remove**

Removes all changes for the given export.

cache

- **all**

Selects all caches.

- **stage**

Selects all unapproved changes.

- **release**

Selects all approved changes which were not yet imported.

- **import**

Selects all changes which were imported but not yet re-exported.

export

Name of the Business Publisher export to operate on.

config

Path to the **businesspublisher.xml** of the Business Publisher installation.

Alternatively, if the tool is used on a different machine, a configuration file can be created manually and be specified as config instead of the **businesspublisher.xml**. For the default Derby db this config file would look like this:

```
<cacheCtlConfig>
  <Resource
    name="jdbc/businesspublisherdb"
    username="ARISBP"
    password="ARISBP"
    driverClassName="org.apache.derby.jdbc.ClientDriver"
    url="jdbc:derby://localhost:16060/ARISBP;create=true;user=ARISBP"/>
</cacheCtlConfig>
```

file name

Name of the file to save changes to or load changes from. Only used in backup and restore modes.

5.2.5.1 Examples

Simple Backup

To backup all changes of the UMG export into a file named **backup.xml**, type:

```
java -classpath <classpathToDBDriver>;cachectl.jar  
com.idsscheer.aris.itinventory.tools.cachectl.CacheCtl  
backup all UMG D:\tomcat\conf\catalina\localhost\businesspublisher.xml backup.xml
```

Recovery

To restore this backup in case of data base corruption:

```
java -classpath <classpathToDBDriver>;cachectl.jar  
com.idsscheer.aris.itinventory.tools.cachectl.CacheCtl  
restore all businesspublisher.xml backup.xml
```

Clean up

When the exported UMG data base has been heavily modified within ARIS (many existing objects have gone) a clean up will remove all unapproved changes which have become invalid: (all others will be detected and logged by the import):

```
java -classpath <classpathToDBDriver>;cachectl.jar  
com.idsscheer.aris.itinventory.tools.cachectl.CacheCtl  
clean stage businesspublisher.xml
```

5.2.5.2 Backup file structure

The backup file uses a simple non-standardized XML format. It has row elements containing one element for each row in the database. This means the file format adapts to the database table definition.

The order for all entries is defined by the order in which they are returned by the database:

```
<?xml version="1.0" encoding="UTF-8"?>
<backup>
  <row>
    <CHANGEGUID>ebbb9400-1cff-11dd-6799-97f9bd3fb309</CHANGEGUID>
    <SETID>1</SETID>
    <USERGUID>f8b7efe0-3606-11dc-5499-ed4dd5efb40f</USERGUID>
    <OBJECTGUID>b6c03f13-055a-11dc-13e6-c6elf326a7cd</OBJECTGUID>
    <OBJECTTYPE>system</OBJECTTYPE>
    <PROPERTY>integratedDesktopEnvironment</PROPERTY>
    <LOCALEID>0</LOCALEID>
    <CHANGEDATE>1210252138816</CHANGEDATE>
    <GUIDVALUE>b799396c-055a-11dc-13e6-c6elf326a7cd</GUIDVALUE>
    <LONGVALUE>0</LONGVALUE>
    <DOUBLEVALUE>0.0</DOUBLEVALUE>
    <SHORTSTRINGVALUE/>
    <SHORTVALUESEPARATORLESS/>
    <VALUE/>
    <VALUESEPARATORLESS/>
    <DOCUMENTBLOB/>
    <OPERATIONID>1</OPERATIONID>
  </row>
  <row>
    <CHANGEGUID>ebbb9401-1cff-11dd-6799-97f9bd3fb309</CHANGEGUID>
    <SETID>1</SETID>
    <USERGUID>f8b7efe0-3606-11dc-5499-ed4dd5efb40f</USERGUID>
    <OBJECTGUID>b6c03f13-055a-11dc-13e6-c6elf326a7cd</OBJECTGUID>
    <OBJECTTYPE>system</OBJECTTYPE>
    <PROPERTY>criticality</PROPERTY>
    <LOCALEID>0</LOCALEID>
    <CHANGEDATE>1210252138816</CHANGEDATE>
    <GUIDVALUE/>
    <LONGVALUE>4756</LONGVALUE>
    <DOUBLEVALUE>0.0</DOUBLEVALUE>
    <SHORTSTRINGVALUE/>
    <SHORTVALUESEPARATORLESS/>
    <VALUE/>
    <VALUESEPARATORLESS/>
    <DOCUMENTBLOB/>
    <OPERATIONID>1</OPERATIONID>
  </row>
</backup>
```

5.3 ARIS Business Server

All ARIS clients use ARIS Business Server to access the database server and thus work with a common data basis.

To ensure optimum load distribution and better protection against failure, more than one ARIS Business Server can be used.

The default server includes:

- ARIS Business Server
- ARIS Site Manager
- ARIS Converter
- VB report execution environment

ARIS Business Server saves configuration data at the operating system level. We strongly recommend protection at the operating system level to minimize the risk of data misuse.

Please consider the legal notices (page 1).

The system requirements depend on the number of users (1 GB main memory for 50 users) and use of certain features.

Hardware	Recommended	Minimum
Processor	Intel® Xeon® 5500 processor series, Quad-Core Intel® Xeon®	Intel® Xeon® 5500 processor series, Quad-Core Intel® Xeon®
Memory	64-bit system 64 GB RAM	64-bit system 16 GB RAM

ARIS Business Server does not support NAT (Network Address Translation) by default.

Software	Details
Operating systems	Depends on the database systems used.
Network	High-speed network (≥ 100 Mbit) between database server and ARIS Business Server.
JRE	<p>Windows</p> <ul style="list-style-type: none"> ▪ If you have ARIS Business Server installed and start ARIS Platform products as programs, an internal JRE version is automatically used. You do not need to install JRE separately. If you have already installed a JRE, your installation is not used by ARIS. ▪ Your JRE installation is only used if you start ARIS Platform products from your browser. ▪ The following versions are approved: Java Runtime Environment (JRE) 1.5.0_08 and subsequent patches, as well as 1.6.0_04 and subsequent patches that are in the public domain (Java SE on the SUN home page except Java SE for Business) and generally released by SUN. ▪ To display different character sets (Japanese, Arabic, Cyrillic, etc.), the corresponding file in the directory <JRE installation directory>\<version>\lib must be named font.properties. For example, if you wish to display Japanese characters, you must rename the font.properties.ja file to font.properties. ▪ SUN renamed the JRE versions. JRE 1.5.0_08 is now called JRE 5.0, Update 8. Approvals are also valid for subsequent updates. ▪ ARIS products are tested using the JRE that is current at the time of release. ▪ If JRE 1.5.0_08 and subsequent patches have been approved for an ARIS product, the approval is valid for both JRE 1.5.0_08 and JRE 1.5.0_09 and also for any subsequent patch levels in the Java SE public domain (that is, except Java SE for Business) on the SUN home page. SUN Microsystems guarantees compatibility between the JRE patch levels. Therefore, the ARIS approvals for JREs are valid for all patch levels of a version. ▪ If you are using JRE 1.6 update 3 or an older version, copy the file jaxb-api.jar from the directory <Web Client Components>\lib to the directory <Java JRE installation directory>/endorsed, e.g., C:\Program Files\Java\<current JRE>\lib\endorsed. ▪ If the directory endorsed does not exist, you must create it. Please note that you must repeat this procedure for every update of version 3 or older. We therefore recommend installation of version 4 or higher.

	<ul style="list-style-type: none"> ▪ If you have Java 6 update 10 installed, problems may occur despite better performance. Depending on your graphics card and driver configuration, installation of Java 6 update 10 may cause delays in the Designer and Matrices modules. ▪ In this case, use the following command line entry to start the program: ▪ Dsun.java2d.d3d=false ▪ Unix ▪ ARIS Business Server requires JRE 1.6. Please first install the appropriate JRE 1.6 for your operating system.
Protocols (pageFehler! Textmarke nicht definiert.)	<p>The data exchange between browser-capable ARIS clients and ARIS Business Server can also be encrypted with SSL (1024-bit RSA) and exchanged via the IIOP protocol.</p> <p>SSL capability is already integrated into ARIS and only needs to be activated (page 164) when needed.</p> <p>If ARIS clients within the intranet or in a VPN environment (Virtual Private Network) access ARIS Business Server, no firewall is required.</p> <p>Communication between clients and ARIS Business Server takes place via the CORBA protocol IIOP (Internet Inter Object Request Broker Protocol).</p>
Output	<p>If, for example, you want to output documents in PDF format using Microsoft Word or Microsoft Excel, you must have Adobe Reader and Microsoft Office version 2000 or higher installed. If you use reports to import data from Excel tables, please ensure that the tables have been saved in XLS format. If pop-up blockers are activated for the domain, it may not always be possible to open report output in PDF format from a Publisher export.</p> <p>In addition, all applications that are linked in your models should be installed.</p>

5.3.1 ARIS Business Server - Operating, database, and document management systems

Please note that a 32-bit operating system can only handle about 3.25 GB RAM.

We support the integration of databases of the versions listed in the table below only as long as they are supported by the respective manufacturer.

Please consider the legal notices (page 1).

Approved combinations

	Standard database system (1, 3)	Oracle 10.1, 10.2, and 11.x (2) (32/64-bit)	Microsoft SQL 2005 Enterprise Edition (2)	Microsoft SQL 2008 Enterprise Edition. R2 (2)	IBM DB2 UDB 9.5 (2)
Windows XP Pro + SPs (32-bit) (6, 9)	Yes	Yes	Yes	Yes	Yes
Windows Server 2003 SP1, 2 + R2 SP2 (6) (32/64-bit)	Yes	Yes	Yes	Yes, not SP1	Yes
Windows Server 2008 (6) (64-bit)	Yes	Yes	Yes	Yes	Yes
HP UX 11 (64-bit) (7, 8)	No	Yes	No	No	No
Sun Solaris 9, 10 (4, 8)	No	Yes	No	No	No
Linux (5, 8)	No	Yes	No	No	No
VMWare ESX 3.x and 4.0	Yes	Yes	Yes	Yes	Yes

(1) ARIS standard platform, database license included in the ARIS Business Server license.

(2) Database must be provided by the customer.

(3) We recommend 1 GB as the maximum size of all databases. The sum of *.db files in all data subfolders should not exceed this size.

- (4) Tested with SPARC + Intel processors
- (5) Tested with RedHat ES 5 (64-bit)
- (6) Itanium processors have not been approved for ARIS Process Platform installations on Windows systems.
- (7) Tested with PA-RISC9
- (8) Installation by Software AG (<http://www.softwareag.com>) employees only. Please contact your local Software AG sales organization. Please note that this type of manufacturer-specific or customer-specific change is not subject to the standard Software AG software maintenance agreement and that these changes can only be performed if you requested and agreed on them.
- (9) Incl. all the manufacturer's service packs

Tested document management systems (CFS server 4.5.X)

It is not recommended to use CFS server 3.7.X.

- Alfresco 2.0 or higher
- EMC Documentum Content Server 5.2.5 or higher
- Lotus Notes (read-only) 6.5.4 or higher, 7.0, 8.0
- Microsoft SharePoint 2007
- Microsoft SharePoint Object Model connector (Microsoft Office SharePoint Server 2007)
- Windows SharePoint Services 3.0 (WSS 3.0)
- Microsoft SharePoint Server 2010
- Microsoft SharePoint Foundation 2010
- Open Text Livelink 9.2 SP1 or higher
- Open Text eDOCS 5.1.0.5 and 5.2.1 (formerly Hummingbird DM)
- Oracle UCM 10 or higher (Stellent 7.5)
- Xerox DocuShare 4.0 or higher

Tested document management systems (JRC)

Jackrabbit 1.x (not suitable for live environments)

Installation of DMS by Software AG (<http://www.softwareag.com>) employees only.

5.3.2 Recommended user-related server dimensioning

The following table provides an overview of the server configurations that we recommend depending on the current number of users with access.

Using the recommended sizes enables good system performance. Please note that a 32-bit operating system can only handle about 3.25 GB RAM.

The servers must work within a network that runs at a transmission speed of at least 100 Mbits.

Number of users	Server scenario	Business Server	Database server
1 - 50	Single server	Quantity: 1 CPU: 2 Main memory: 64-bit system (16 GB RAM)	DBMS: Standard database system
51 - 100	Business Server site	Quantity: 1 CPU: 4 Main memory: 64-bit system (32 GB RAM)	DBMS: External systems
101 - 200	Business Server site	Quantity: 1 CPU: 4 Main memory: 64-bit system (64 GB RAM)	DBMS: External systems
201 - 400	Business Server site (2)	Quantity: 2 CPU: 4 Main memory: 64-bit system (64 GB RAM)	DBMS: External systems
n(1) * 200	Business Server site (2)	Quantity: n (1) CPU: 4 Main memory: 64-bit system (64 GB RAM)	DBMS: External systems

(1) n stands for a number of Business Server sites greater than 1. The RAM required for reports varies greatly. Therefore, we recommend that you run these under UNIX or on a 64-bit system.

(2) Please contact Software AG (<http://www.softwareag.com>).

5.3.3 Protocols used

Different protocols are used for communication depending on the equipment level. ARIS requires a fully functional TCP/IP infrastructure. For the full equipment level, TCP/IP, IIOP (CORBA), and HTTP are required. If ARIS clients within the intranet or in a VPN environment (Virtual Private Network) access ARIS Business Server, no firewall is required. Communication between clients and ARIS Business Server takes place via the CORBA protocol IIOP (Internet Inter Object Request Broker Protocol).

The data exchange between browser-capable ARIS clients and ARIS Business Server can also be encrypted with SSL (1024-bit RSA) and exchanged via the IIOP protocol.

SSL capability is already integrated into ARIS and only needs to be activated (page 142) when needed.

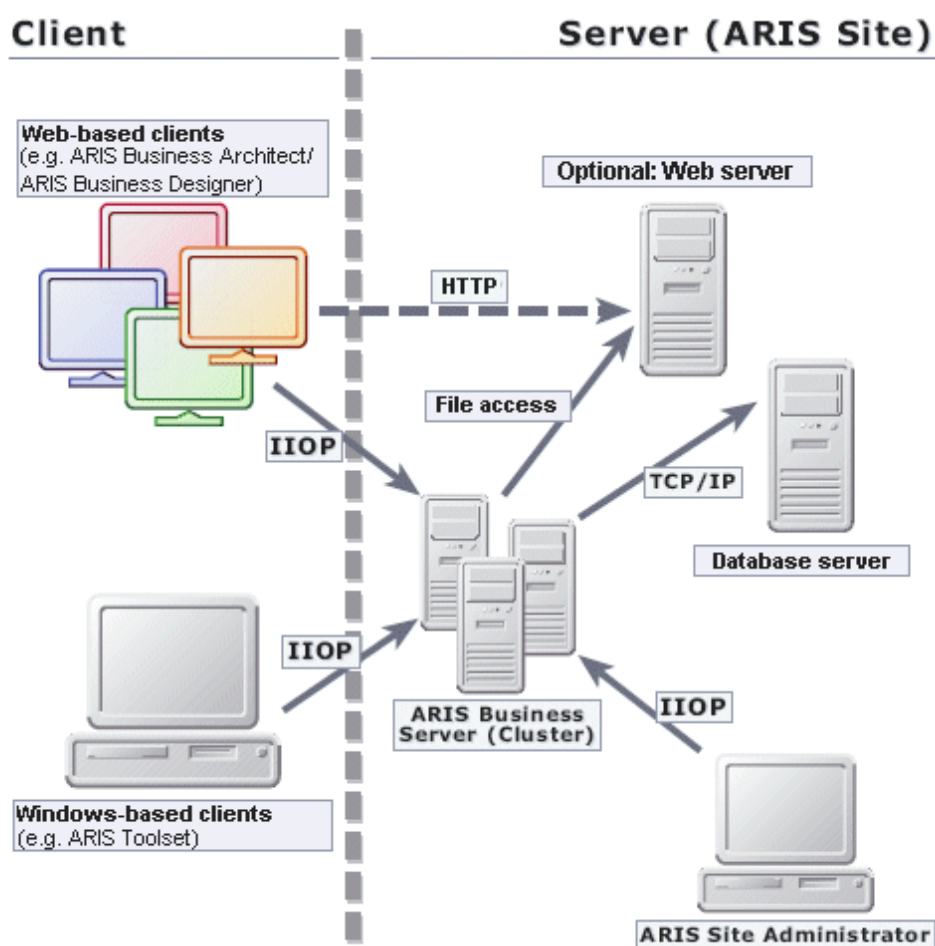


Abbildung 1: Protocols used

5.3.3.1 ARIS Platform on the Internet/SSL

The data exchange between browser-capable ARIS clients and ARIS Business Server can also be encrypted with SSL (1024-bit RSA) and exchanged via the IIOP protocol.

SSL capability is already integrated into ARIS and only needs to be activated (page 142) when needed.

5.3.3.2 ARIS Platform on the intranet/VPN

If ARIS clients within the intranet or in a VPN environment (Virtual Private Network) access ARIS Business Server, no firewall is required. Communication between clients and ARIS Business Server takes place via the CORBA protocol IIOP (Internet Inter Object Request Broker Protocol).

5.3.4 Configure ARIS Business Server

During the installation process, the following files are created among others in the directory <ARIS installation directory>/server/**config**:

- **defaultServerSettings.cfg**
Contains all default settings in an XML structure. This file is overwritten for each subsequent setup.
- **setupServerSettings.cfg**
Contains all settings that you specified during installation, e.g. the paths. This file is overwritten for each subsequent setup.
- **userServerSettings.cfg**
Contains all configuration changes that you have made after installation. This file is not overwritten. If you run subsequent setups, your configuration changes are preserved.
In older program versions, configuration changes were entered in different files. If you run an update installation of the current version, the configuration files are converted when ARIS Business Server is started. All configuration changes are entered in the file **userServerSettings.cfg**. The configuration files are deleted. They are backed up in the backup directory.

You enter all configuration changes as XML tags in the file <ARIS installation directory>\server\config**userServerSettings.cfg**. This allows you to change all default settings according to your requirements. Ensure that you enter the attributes in the correct XML structure. You find the XML structure and all default attributes in the file **defaultServerSettings** in the same directory. Please only change the file **userServerSettings.cfg**. These changes are not overwritten in an ARIS Business Server update.

If ARIS Business Server does not start properly after the configuration has been changed, check the XML structure of the file **userServerSettings.cfg**. Once you have corrected or deleted incorrect entries, the related changes are undone when you restart the server, and the default settings of these attributes are used.

To configure the locally installed server LOCAL, please adapt the file <ARIS installation directory>\localServer\config**userServerSettings.cfg**.

Changes to the server configuration are not logged.

You need to change this configuration file if, for example,

- you want to change the behavior of the HTML Generator (page 143).
- you want to configure the connections between the clients, ARIS Business Server, and ARIS Site Manager.
- an e-mail is to be sent automatically to an address of your choice (page 150) in response to errors and warnings reported by ARIS Business Server.
- you wish to use SSL software.

- the computer on which you have installed ARIS Business Server has two network cards (page 136).
- you have to change ports as a result of a port conflict with external software.
- if you want to enable a detailed, line-by-line debug output for the Report Server.
- If you want to run VB scripts
- If you want to start the program with a hardware key (page 65) (dongle) in the future

You always need to restart ARIS Business Server after you have changed the configuration file.

Configure ARIS Business Server for hot standby system

If, for security reasons, you have installed ARIS Business Server on two computers, you can quickly switch to the second system if the first computer breaks down. This requires communication via a computer-independent DNS name, e.g., **businessserver**.

Ensure that the DNS name used can be resolved by the DNS system.

```
<profiles>
<public options="--host <DNS name>" />
</profiles>
```

Enable random session identifiers

```
<sessions random_id_generation="on" />
```

Update the ARIS Business Server license key

```
<licenseservice key="<new license key>" />
```

Configure client/ARIS Business Server connection

While each client pings ARIS Business Server every 25 seconds, the following setting causes ARIS Business Server to check every 90 seconds (value in milliseconds) which client is still connected. This entry determines the period within which a user can contact ARIS Business Server via the client without having to log in again.

```
<appservertimer timeout_interval="60000" />
</appservertimer>
```

New database - Additional languages

Using the **readonly_properties.xml** file, you can specify which database languages are automatically created when creating databases. Find the file

- for the local database system under **<ARIS installation directory>\LocalServer\property**.
- for the ARIS Server under **<ARIS installation directory>\server\property**.

If you want to use country-specific special characters, they must be entered with UTF-8 encoding. Please use an UTF-8-enabled editor to encode country-specific special characters.

Procedure

1. In the file **readonly_properties.xml**, select a language text block, e.g. the Spanish block:


```

1. <property key="dbinitlanguages.es.commonfontbold"
   datatype="BOOL">false</property>
2. <property key="dbinitlanguages.es.stdfontstyle"
   datatype="STRING">Standard</property>
3. <property key="dbinitlanguages.es.maingroupname" datatype="STRING">Main
   group</property>
4. <property key="dbinitlanguages.es.dialogfontsize"
   datatype="LONG">8</property>
5. <property key="dbinitlanguages.es.commonfontsize"
   datatype="LONG">10</property>
6. <property key="dbinitlanguages.es.codepage" datatype="LONG">1252</property>
7. <property key="dbinitlanguages.es.charset" datatype="LONG">0</property>
8. <property key="dbinitlanguages.es.commonfontname"
   datatype="STRING">Arial</property>
9. <property key="dbinitlanguages.es.lcid" datatype="LONG">1033</property>
```
2. Copy the text block to the clipboard and paste it at the end of the file.
3. Make changes according to your requirements.

Provide additional memory

If you use memory-intensive applications, such as an XML import or Fast Merge, we recommend that you provide additional memory to the local server LOCAL and ARIS Business Server.

Ensure that the hardware requirements are met.

LocalServer

In the file **local.cfg** (<ARIS installation directory>/LocalServer/config):

```
maxMem=1024m
```

Server

In the file **userServerSettings.cfg** (<ARIS installation directory>/Server/config):

```

<jre>
<maxMem server="1024m" />
</jre>
```

5.3.4.1 Restrict number of index_backup files

When HTML Generator creates a new **index_lan.html** file, the existing **index.html** file is saved as **index_backup (<date time>).zip** under the specified backup path. The backup path is specified in the **<htmlgen>** section. You can decide how frequently the backup files (except the current ones) are to be deleted. The interval is defined in days. In the following example, the entry specifies that index_backup files are deleted after seven days.

Procedure

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<htmlgen>  
<backupperiod period="7"/>  
</htmlgen>
```

If you want to change the path, enter the following, for example:

```
<backuppath path="e:/wwwroot/aris71/backup"/>
```

2. Restart ARIS Business Server.

5.3.4.2 Solve connection problems

If connection problems occur between ARIS clients and ARIS Business Server, please adjust the **userServerSettings.cfg** file depending on the existing connection problems.

Configure public connection

If problems occur with the domain name system (**DNS**) and you thus, wish to configure ARIS Business Server for operation via IP addresses, make the following adjustments:

```
<profiles>  
  <public options="--host <IP address of the network card>" />  
</profiles>
```

Configure multiple connection

If the computer that ARIS Business Server is installed on has multiple network cards and not all ARIS clients can connect, enter the IP address/name of the network card over which data transmission should occur:

```
<profiles>  
  <public options="--host <IP address of the network card>" />  
  <agent options="--host <IP address of the network card>" />  
</profiles>
```

5.3.4.3 Configure ARIS Business Server for hot standby system

If, for security reasons, you have installed ARIS Business Server on two computers, you can quickly switch to the second system if the first computer breaks down. This requires communication via a computer-independent DNS name, e.g., **businessserver**.

Ensure that the DNS name used can be resolved by the DNS system.

Procedure

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<profiles>  
    <public options="--host <DNS name>" />  
</profiles>
```

2. Restart ARIS Business Server.

5.3.4.4 Enable random session identifiers

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<sessions random_id_generation="on" />
```

2. Restart ARIS Business Server.

5.3.4.5 Update the ARIS Business Server license key

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<licenseservice key="<new license key>" />
```

2. Restart ARIS Business Server.

5.3.4.6 Configure client/ARIS Business Server connection

While each client pings ARIS Business Server every 25 seconds, the following setting causes ARIS Business Server to check every 90 seconds (value in milliseconds) which client is still connected. This entry determines the period within which a user can contact ARIS Business Server via the client without having to log in again.

Procedure

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<appservertimer timeout_interval="60000" />
</appservertimer>
```

2. Restart ARIS Business Server.

5.3.4.7 Connect document management systems (DMS)

On the client side, document management systems are configured in the **Administration** module of ARIS Business Architect. The document management systems (page 163) configured there can be accessed in ARIS Business Designer to insert document links, upload documents to a document management system, and browse documents. The DMS is also available in ARIS Business Publisher if you activate the connection as follows:

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<dmsintegration state="on" />
```

2. Restart ARIS Business Server.

You can use a DMS after you have installed (page 70) and configured all required DMS components.

Tip

To increase the maximum number of entries in the search results list to 10,000, insert the following in the file **user.cfg** (page 227):

```
userdata type="dmssearch:MaximumResults" value="10000"/>
```


5.3.4.8 Connect ARIS document storage

If you use ARIS Process Automation Architect and wish to manage a document in ARIS document storage you must adjust the configuration file. ARIS document storage is configured on the client side in the **Administration** module in ARIS Process Automation Architect.

Procedure

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<dmsintegration state="on" />
```

2. Restart ARIS Business Server.

You can also use external document management systems (page 138).

ARIS Process Governance offers an operating system service called **ARIS Document Storage 1.0**. This service depends on **ARIS Governance Engine Server 1.0** and is automatically started or stopped. To ensure trouble-free operation, please do not change either state or autorun type of **ARIS Document Storage 1.0**.

5.3.4.9 Enable a hardware key (dongle)

If ARIS Business Server has not been set for use with a hardware key (dongle) during installation and you would like to do so at a later time, you must install the hardware key driver (page 65) and enable the hardware key.

Procedure

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<licenseservice use_dongle="on" />
```

2. Restart ARIS Business Server.

The license key is no longer checked at startup; the hardware key is checked instead.

5.3.4.10 New database - Additional languages

Using the **readonly_properties.xml** file, you can specify which database languages are automatically created when creating databases. Find the file

- for the local database system under **<ARIS installation directory>\LocalServer\property**.
- for the ARIS Server under **<ARIS installation directory>\server\property**.

If you want to use country-specific special characters, they must be entered with UTF-8 encoding using an UTF-8-enabled editor.

Procedure

1. In the file **readonly_properties.xml**, select a language text block, e.g. the Spanish block:


```

1. <property key="dbinitlanguages.es.commonfontbold"
datatype="BOOL">false</property>
2. <property key="dbinitlanguages.es.stdfontstyle"
datatype="STRING">Standard</property>
3. <property key="dbinitlanguages.es.maingroupname" datatype="STRING">Main
group</property>
4. <property key="dbinitlanguages.es.dialogfontsize"
datatype="LONG">8</property>
5. <property key="dbinitlanguages.es.commonfontsize"
datatype="LONG">10</property>
6. <property key="dbinitlanguages.es.codepage" datatype="LONG">1252</property>
7. <property key="dbinitlanguages.es.charset" datatype="LONG">0</property>
8. <property key="dbinitlanguages.es.commonfontname"
datatype="STRING">Arial</property>
9. <property key="dbinitlanguages.es.lcid" datatype="LONG">1033</property>
```
2. Copy the text block to the clipboard and paste it at the end of the file.
3. If required, change the name of the default language font in row 2 (**Standard** is the default value in the Spanish language text block).
4. Change the name of the main group in row 3, if necessary (**Main group** is the default value in the Spanish language text block).
5. Modify the codepage entry in row 6, if necessary (codepage **1252** is the default value in the Spanish language text block).
6. Change the general font name in row 8, if necessary (**Arial** is the default value in the Spanish language text block).
7. Modify the locale ID in row 9, if necessary (locale ID **1034** is the default value in the Spanish language text block).

5.3.4.11 Deactivate Report Server

The Report Server is running by default. If you do not want to run any VB scripts on ARIS Business Server, you can deactivate the Report Server. As a result, fewer system resources are needed and system performance improves. You can always run VB scripts locally.

Procedure

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<reportserver active="false" />
```

2. Restart ARIS Business Server.

5.3.4.12 Configure server for ARIS Process Board

Configure connection to ARIS Process Board

If you did not configure the ports for ARIS Process Board during installation of ARIS Business Server or if you want to change them later, follow the instructions.

Procedure

1. Shutdown ARIS Business Server.
2. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<ageserver location="http://<Qualified computer name>:7071/age"/>  
</ageserver>
```

3. Restart ARIS Business Server.

5.3.4.13 Deactivate simulation server

The simulation server is running by default. If you are not using ARIS Business Simulator on an ARIS Business Server, you can deactivate the simulation server. As a result, fewer system resources are needed and system performance improves.

Procedure

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<simuserver active="false" />
```

2. Restart ARIS Business Server.

5.3.4.14 Encryption of data transmission via Secure Socket Layer (SSL)

Using SSL (1024-Bit RSA) you can exchange encrypted data between the ARIS clients and ARIS Business Server. SSL capability is already integrated in ARIS.

If you have installed ARIS Business Server on a Unix operating system and have enabled SSL encryption, ARIS Business Server must run under the **root** account.

Procedure

1. Ensure that the system date matches the current date. This ensures that the validity of the SSL certificates (page 143) is checked correctly. These certificates can only be used to exchange data between Java-based products and ARIS Business Server.
2. Open the file <ARIS installation directory>\server\config**userServerSettings.cfg** and insert the following:

```
<profiles>
  <public ssl="443" />
</profiles>
<htmlgen>
  <genlist>
    <genfile target_dir="ssl" target_name="dblist.html"
database_template="aris_database_ssl.html"/>
  </genlist>
</htmlgen>
```

If the default port **16070** is already in use, you can use any other port that is available.

```
<profiles>
  <public port="<available port number>" />
</profiles>
```

3. Restart ARIS Business Server.

From now on, use **index_ssl.html** as the start file for the databases. (Under **%ARIShome72%server\html**)

Warning

Please only use the file **userServerSettings.cfg** to change the configuration. This ensures that your changes are preserved in future update installations. The other ARIS Business Server configuration files are overwritten for each installation.

5.3.4.15 Update SSL certificates

Ensure that the certificates installed for your ARIS Business Server are up to date.

Automatic installation

The SSL certificates are automatically updated when you use the patch setup. Besides the patch setup (<http://aris.softwareag.com>), you continue to use the hotfix package as a ZIP file. Using this ZIP file, the hotfix package can be installed with the **Silent install** option.

Manual installation

Procedure

1. Download the SSL certificate **upCert_SSL_<program version>** from our server (<http://aris.softwareag.com>). Ensure that your program version matches the one of this certificate.
2. Exit ARIS Business Server and copy the file **ssl.jar** to the **endorsed** directory of your ARIS Business Server installation.
3. Restart ARIS Business Server.

5.3.4.16 Adapt HTML Generator - Current database lists

HTML Generator creates all index files and the file **aris_database.html** for the Web Client Components. It updates the access files whenever databases are created, renamed, or deleted. You can use the file **userServerSettings.cfg** (server\config directory) to control its behavior.

In a default server installation, the HTML Generator is switched on and generates the **index.html** files in the directory **C:\<default directory>\ARIS7.2\server\html**. If you accept all default values during installation, this directory will always contain a current, executable Web Client Components directory that you can copy directly to your Web server.

A dialog prompts you to specify where the HTML Generator is to be installed.

The **htmlgen** section of the file **defaultServerSettings.cfg** contains the path in which the created files are saved. A language ID is entered in this section for each of the interface languages installed on the ARIS Business Server. For each of these IDs, HTML Generator creates an **index_1an.html** file in the Web Client Components structure:

```
<htmlgen>
  <language list default="de">
    <language tag="de"/>
    <language tag="en"/>
    <language tag="ja"/>
  </language list>
<!-- Please edit only these paths for HTMLgenerator configuration -->
  <output path="C:/wwwroot/ARIS7.2"/>
</htmlgen>
```

You can run the HTML Generator manually at any time by executing the **htmlgen.bat** file in the ARIS Business Server directory.

To enable SSL encryption, open the file **userServerSettings.cfg** and add the following entry:

```
<profiles>
  <public ssl="443" />
</profiles>
<htmlgen>
  <genlist>
    <genfile target_dir="ssl" target_name="dblist.html"
database_template="aris_database_ssl.html"/>
  </genlist>
</htmlgen>
```

Please note that the output and backup paths must be modified accordingly in the **userServerSettings.cfg** file. If your work is not limited to the use of only one ARIS Business Server, you need to adjust the paths on the computer on which ARIS Site Manager is installed. Insert the following entry:

```
<htmlgen>
  <outputpath path="e:/inetpub/wwwroot/aris70"/><backuppath
path="e:/inetpub/wwwroot/aris70/backup"/>
</htmlgen>
```

For more ARIS Business Servers, adjust the file **userServerSettings.cfg** as follows:

```
<htmlgen>
  <appserver name="<Name of the computer on which ARIS Site Manager is installed"/>
  <genlist>
    <genfile target_dir="ssl" target_name="dblist.html"
database_template="aris_database_ssl.html"/>
  </genlist>
</htmlgen>
```

Warning

Please only use the file **userServerSettings.cfg** to change the configuration. This ensures that your changes are preserved in future update installations. The other ARIS Business Server configuration files are overwritten for each installation.

5.3.4.17 Provide additional memory

If you use memory-intensive applications, such as an XML import or Fast Merge, we recommend that you provide additional memory to the local server **LOCAL** and ARIS Business Server.

To provide additional memory, you need to ensure that the hardware requirements are met.

LocalServer

In the file **local.cfg** (<ARIS installation directory>/LocalServer/config), change the value in bold:

```
maxMem=1024m
```

Server

Insert the following lines in the file **userServerSettings.cfg** (<ARIS installation directory>/Server/config):

```
<jre>  
    <maxMem server="1024m" />  
</jre>
```

5.3.5 ARIS Converter

ARIS Converter is the program for converting data of **ARIS 6.2** and higher to work with **ARIS 7.2**, regardless of the server platform and database management system used. The 7.2 conversion enables you to transfer databases of a different product version. For example, if you created a user database under Oracle for **ARIS 7.2**, you can use **ARIS Converter** to specify that this database be transferred to your local ARIS installation with the standard database system. If you have memory problems when converting large databases (see the file **serverout.log** in the directory **<ARIS installation directory>\LocalServer\log** or **<ARIS installation directory>\server\log**), you can specify in the file **userServerSettings.cfg** (directory **<ARIS installation directory>\LocalServer\config**) or in the file **local.cfg** (directory **<ARIS installation directory>\server\config**) that more memory (page 223) be allocated for database conversion.

As a rule, all applications from which COM objects are used in ARIS databases must be installed on the computer you use for converting databases. Databases containing links to Microsoft Word and Microsoft Excel documents can be converted only if Microsoft Word and Microsoft Excel version 2000 or higher are installed.

The system requirements (page 125) depend on the relevant usage scenario.

In case of doubt, please contact your local Software AG sales organization.

5.3.6 When are placed symbols displayed (server)?

If you run reports or create a Publisher export, the icons that are saved in the **icons** subdirectory in the installation directory of your ARIS Business Server are used for linked files. Icons of Microsoft Office products are automatically displayed. For these applications, you do not need any icons in the directory noted above unless you want to use your own icons.

You can change icons or add new ones. To create and edit icons in ICO format, you need a suitable application. Assign file names that conform with the extension of the relevant application.

To create icons that represent bitmap graphics, Lotus Notes or text files, for example, save the graphics under the names **bmp.ico**, **nsf.ico**, and **txt.ico**.

Added icons are immediately available. Once you have changed icons, you must restart ARIS Business Server.

5.3.7 Logging

The activities of ARIS Business Server are recorded in the **log** directory of the server installation directory. If problems occur during operation, you can use the log files to find and resolve errors. If you cannot solve the problems and have a maintenance agreement, please send an error description and the entire contents of the **log** and **config** directories as ZIP files to your local Software AG sales organization.

If you are working in the local database system LOCAL, the log files are located in the directory <path to installation directory>\ARIS7.2\LocalServer\log.

If you are working with ARIS Business Server, the log files are located in the directory <path to installation directory>\ARIS7.2\server\log.

Tip

You can use the Admintool command **Download** (page 295) to automatically generate all files as a ZIP file.

If you have enabled (page 148) extended logging for the login data, the logged information is contained in the log file <ARIS installation directory>\server\accounting**arisaccountlog.xml**.

5.3.7.1 Log user logins (Account logging)

Logging is disabled by default. Use this setting to log login procedures for an ARIS Business Server after the connection has been terminated.

Procedure

1. Open the file <ARIS installation directory>\server\config**userServerSettings.cfg** and insert the following:

```
<accounting state="on" level="MINIMAL" />
```

2. Restart ARIS Business Server.

In the log file <ARIS installation directory>\server\accounting**arisaccountlog.xml** basic information is recorded. Which ARIS client was connected to the ARIS Business Server at which time is logged. This helps you, for example, to determine the number of licences being used.

Sample file (MINIMAL)

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<!DOCTYPE arisaccounting (View Source for full doctype...)>
- <arisaccounting>
- <session>
<login>2010-06-26T11:39:15</login>
<logout>2010-08-18T14:40:14</logout>
<clientlicense><License key></clientlicense>
<clientid>c557a190-3348-11de-5656-001d09f09839</clientid>
</session>
- <session>
<login>2010-08-18T14:49:09</login>
<logout>2010-08-18T14:50:15</logout>
<clientlicense><License key></clientlicense>
<clientid>b3b1ff70-0107-11df-026c-005056000010</clientid>
</session>
</arisaccounting>
```

To switch on extended logging, please enter the value **"DETAILED"** for the parameter **level**. For each user, detailed information is logged in the log file <ARIS installation directory>\server\accounting**arisaccountlog.xml**. It is logged, which user logged in and out at what time. In doing so, the computer name, IP address, database used, and the type of client are recorded.

Sample file (DETAILED)

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<!DOCTYPE arisaccounting (View Source for full doctype...)>
- <arisaccounting>
- <session>
<dbserver>ArisServer</dbserver>
<database>DemoDB-United Motors Group</database>
<user>rkl</user>
<login>2010-08-18T15:34:58</login>
<logout>2010-08-18T15:35:05</logout>
<clienttype>WEB</clienttype>
<filter>dd838074-ac29-11d4-85b8-00005a4053ff</filter>
<clientip>123.45.67.890</clientip>
<clienthost>pcrkl-12.co.ids-scheer.com</clienthost>
<clientlicense><License key></clientlicense>
<clientid>c557a190-3348-11de-5656-001d09f09839</clientid>
</session>
- <session>
<dbserver>ArisServer</dbserver>
<database>DemoDB-United Motors Group</database>
<user>system</user>
<login>2010-08-18T15:34:46</login>
<logout>2010-08-18T15:35:12</logout>
<clienttype>WEB</clienttype>
<filter>dd838074-ac29-11d4-85b8-00005a4053ff</filter>
<clientip>172.30.11.202</clientip>
<clienthost>pcabc.co.ids-scheer.com</clienthost>
<clientlicense><License key></clientlicense>
<clientid>c547a190-3148-11de-5666-001d09f09839</clientid>
</session>
</arisaccounting>
```

5.3.7.2 Log messages

Logging is disabled by default. Use this setting to log information of ARIS Business Server. Enable logging if the system does not work properly.

Procedure

1. Open the file <ARIS installation directory>\server\config**userServerSettings.cfg** and insert the following:

```
<startmode debugoutput="on" debuglevel="ALL" />
```

2. Restart ARIS Business Server.

Tip

If you enter the following, only information is output:

```
<startmode debugoutput="on" debuglevel="INFO" />
```

5.3.7.3 Activate ARIS Notify Service

Administrators of ARIS sites can have messages sent by the ARIS notify service when problems arise. It is possible to notify (page 150) several administrators at the same time.

In the file **userServerSettings.cfg**, you can specify that an e-mail be sent to an e-mail address of your choice when the behavior of the ARIS site triggers warnings or error messages. The e-mail contains the zipped files of the log and config directories. You can toggle the notification mode by setting the **state** value.

Prerequisite

The **username** account (see the following example) must exist on your e-mail server.

Procedure

1. Open the file <ARIS installation directory>\server\config**userServerSettings.cfg** and insert the following:

Example

```
<adminagent>
  <mailing
    state="on"
    language ="en"
    warnings ="on"
    username="adminservice"
    address="adminservice@yourcompany.com">
    <recipient address="adminservice@yourcompany.com" />
  </mailing>
</adminagent>
```

2. Restart ARIS Business Server.

Warnings or error messages are sent by e-mail to the administrators.

Please refer to the table below for possible values.

Entry	Value	Meaning
state	on	The mail function is switched on.
	off	The mail function is switched off.
language	en	Contains the relevant language code.
warnings	on	E-mails will be sent for warnings and errors.
	off	E-mails will be sent only for errors.
username	adminservice	Name of the e-mail sender.
address	adminservice@yourcompany.com	Address of the e-mail sender.
recipient address	adminservice@yourcompany.com	Address of the e-mail recipients. You can insert a list of addresses here.

5.3.7.4 Log LDAP messages

Logging of LDAP messages is disabled by default. Use this setting to log all queries bidirectionally and record results and errors.

Enable logging for each ARIS Business Server if there are problems (page 258) with the LDAP settings and the system does not work properly.

Procedure

1. Open the file <ARIS installation directory>\server\config\logging.cfg.
2. Search for the following expression that is commented out:

```
<!-- uncomment for enabling LDAP debug logging
<logger name="com.idsscheer.aris.server.common.ldap"
  useparent="false" clean="true">
  <level name="ALL"/>
  <handler type="file"
    pattern="{logfilepath}/ldapintegration_%g.log"
    append="true"
    limit="20480000" count="2">
    <formatter type="pattern" pattern="%d{ISO8601}
      %m%n%C.%M%n%e%n"/>
  </handler>
</logger>
-->
```

3. Remove the comment out signs for the following expression:

```
<logger name="com.idsscheer.aris.server.common.ldap"
  useparent="false" clean="true">
  <level name="ALL"/>
  <handler type="file"
    pattern="{logfilepath}/ldapintegration_%g.log"
    append="true"
    limit="20480000" count="2">
    <formatter type="pattern" pattern="%d{ISO8601}
      %m%n%C.%M%n%e%n"/>
  </handler>
</logger>
```

4. Restart ARIS Business Server.

All messages are output in the log file <ARIS installation directory>\server\log\ldapintegration_*.log.

5.4 ARIS Process Governance

This chapter describes, among other things, the configuration and licensing of ARIS Process Governance. You will find approved operating systems and database systems in the chapter **Administration** (page 153). The hardware and software requirements correspond to those of ARIS Business Server (page 125).

ARIS Process Governance clients access ARIS Process Governance Server. The ARIS Process Governance Server package includes Web services and script services that you can use to automate your processes.

We cannot guarantee proper functioning of Web services that have not been provided with ARIS Process Governance. Web services must comply with WS-I Basic Profile 1.0.

Server and clients should be synchronized in terms of time because otherwise, problems may occur when running a process.

If you want to use ARIS Process Governance, the following operating and database system platforms also apply to ARIS Business Server. Please consider the legal notices (page 1).

We support the integration of databases of the versions listed in the table below only as long as they are supported by the respective manufacturer.

Approved combinations (operating system/database system)

using Tomcat 6.0.18 (32/64-bit) (1)

	Standard database system (1.3)	Oracle 10g, 11i (2)	Microsoft SQL 2005 Enterprise Edition (32/64-bit)(2)
Windows Server 2003 SP1,2 + R2 SP2 (5) (32/64-bit) (1)	Yes	Yes	Yes
Windows Server 2008 (64-bit) (1)	Yes	Yes	Yes
Solaris 5.10 Sparc (6, 7)	No	Yes	No
VMWare ESX 3.5 + 4.0 (1)	Yes	Yes	Yes

(1) CouchDB for ARIS document storage (page 163) 32-bit only and for Windows platforms only

(2) ARIS standard platform, database license included in the ARIS Business Server license.

(3) Database must be provided by the customer.

(4) We recommend a maximum database size of 1 GB.

(5) Itanium processors have not been approved for ARIS Process Platform installations on Windows systems.

(6) Apache Tomcat 6.0.18 (64-bit)

(7) Installation by Software AG (<http://www.softwareag.com>) employees only. Please contact your local Software AG sales organization. Please note that this type of manufacturer-specific or customer-specific change is not subject to the standard Software AG software maintenance agreement and that these changes can only be performed if you requested and agreed on them.

5.4.1 Update the ARIS Process Governance Server license key

Since the number of active ARIS Process Governance users may differ from the number of ARIS users, ARIS Process Governance Server requires separate licensing.

You can only convert a process into an executable process if the number of active users does not exceed the number of users specified in the license key. If the number of active users exceeds the number specified in the license key, you can either reduce the number of active users or extend the scope of your license.

The ARIS Process Governance Server license key is entered during installation. You can change it later in the file **age-configuration.properties** under **<Installation path>\ARISGE1.0\config**.

Procedure

1. Shut down ARIS Process Governance Server.
2. Open the file **age-configuration-setup.properties** in the path **<Installation path>\ARISGE1.0\config**.
3. Find the **com.idsscheer.age.license.serverKey** string and copy it completely.
4. Open the file **age-configuration.properties** in the path **<Installation path>\ARISGE1.0\config**.
5. Insert the string you copied there.
6. Enter the new license key.
7. Restart ARIS Process Governance Server.

You have changed the ARIS Process Governance Server license key.

Note

You must restart ARIS Process Governance Server for the change to take effect.

Tip

You can also use the ARIS Process Governance configuration tool (page 156).

5.4.2 Change size of memory for ARIS Process Governance Server

During installation, setup automatically uses the memory physically available to determine and allocate memory. However, you can manually change the memory size after installation.

The way you do this depends on whether ARIS Process Governance Server is installed as a service or launched using a batch file.

When running ARIS Process Governance Server on a 32-bit operating system, you can allocate a maximum of 1024 MB heap space to the JVM. On 64-bit operating systems, the heap size is only limited by the hardware resources. The **Xms** entry specifies the minimum, the **Xmx** entry the maximum memory size.

ARIS Process Governance Server installed as a service

Using the registry editor on the computer on which ARIS Process Governance Server is installed, edit the **Image Path** key and adapt the value of the **-J-Xmx** parameter (e.g. to **4096m**) under **\\HKEY_LOCAL_MACHINE\\System\\CurrentControlSet\\services\\ARIS GE Server 1.0**.

ARIS Process Governance Server launched using a batch file

Set the numerical value in the **Xmx** entry to the desired value:

Windows operating system

in the file ARISGE1.0\\tomcat\\bin**setenv.bat**

Unix operating system

in the file ARISGE1.0\\tomcat\\bin**setenv.sh**

5.4.3 Change size of minimum stack for ARIS Business Server

During installation, setup automatically uses the memory physically available to determine and allocate memory. If you want to automate models of the **Value-added chain diagram** type with many assignment levels, you must change the default settings.

Procedure

1. Stop ARIS Business Server.
2. Open the file **<server directory of your installation>\\config\\userServerSettings.cfg** (e.g., **C:\\Program Files\\ARIS7.2\\server\\config\\userServerSettings.cfg**).
3. Add the following entry:

```
<jre>
  <runoptions>
    <option>-Xss512k</option>
  </runoptions>
</jre>
```

4. Start ARIS Business Server.

You can automate models of the **Value-added chain diagram** type with many assignment levels.

5.4.4 Configuration tool for ARIS Process Governance

The configuration tool for ARIS Process Governance is a batch file for configuring ARIS Process Governance.

If you want to change the password that ARIS Process Governance Server uses to log in to the database, you first have to change it on the database side and then use the configuration tool, because the passwords defined are encrypted.

You can also specify all other configurations manually in the relevant configuration files.

You will find the batch file under **%ARISGEHOME10%\y-arisgeadmin.bat** for a Windows operating system and under **<installation directory>/y-arisgeadmin.sh** for a Unix operating system. The edited values are saved in the file

%ARISGEHOME10%\config\age-configuration.properties resp. **<installation directory>/config/age-configuration.properties**.

You must be connected to the ARIS Process Governance database or, if this is not possible, you must use the option **--offline true**.

The following procedures apply to a Windows operating system. They can also be run from a Unix shell. For Unix, you need to use the file **y-arisgeadmin.sh** instead of **y-arisgeadmin.bat**.

Note

You must restart ARIS Process Governance Server for the change to take effect.

Enter or change license key

Procedure

1. Save or copy a valid license key to a file on your hard disk or insert the media containing the file with the valid license key into an accessible drive.
2. Open a DOS box (**Start/Run/cmd**).
3. Enter **y-arisgeadmin.bat license --install <file name>** for a Windows or **y-arisgeadmin.sh license --install <file name>** for a Unix operating system.

You have entered or changed a license key.

Display license information

Procedure

1. Open a DOS box (**Start/Run/cmd**).
2. Enter **y-arisgeadmin.bat license --info** for a Windows or **y-arisgeadmin.sh license --info** for a Unix operating system.

The license information is printed to the default printer.

Manage governance processes from the command line

You can transform processes into executable processes (deploy) or undo this process (undeploy). In addition, you can display all governance processes (list).

Import executable processes

Procedure

1. Open a DOS box (**Start/Run/cmd**).
2. Enter **y-arisgeadmin.bat apg --deploy --file--<file name>** or **y-arisgeadmin.bat apg --deploy --url--<URL of the file>**.

Example:

y-arisgeadmin.bat apg --deploy --file process.zip for a Windows operating system

y-arisgeadmin.sh apg --deploy --file process.zip for a Unix operating system

You have imported a governance process.

Export executable processes

Procedure

1. Open a DOS box (**Start/Run/cmd**).
2. Enter **y-arisgeadmin.bat apg --undeploy --guid <GUID of the process>** or **y-arisgeadmin.bat apg --undeploy --url <URL of the process>**.

Example:

y-arisgeadmin.bat apg --undeploy --guid 2FvCtJP8TAySbhP4tGaFHw==

for a Windows operating system

y-arisgeadmin.sh apg --undeploy --guid 2FvCtJP8TAySbhP4tGaFHw== for a Unix operating system

You have exported a governance process.

Output list of processes

Procedure

1. Open a DOS box (**Start/Run/cmd**).
2. Enter **y-arisgeadmin.bat apg --list --url <URL of the processes>**.

Example:

y-arisgeadmin.bat apg --list --url http://example_url:7071/age

for a Windows operating system

y-arisgeadmin.sh apg --list --url http://example_url:7071/age for a Unix operating system

You have listed all processes under the specified URL.

Configure database connection

Oracle database

Procedure

1. Shut down ARIS Process Governance Server.
2. Use a database administration tool, e.g., SQL*Plus to change the password for the database user **AGE**.
3. Open a DOS box (**Start/Run/cmd**).
4. Switch to the directory **%ARISGEHOME10%** for Windows operating system or the **<installation directory>** for a unix operating system.
5. Enter **y-arisgeadmin.bat ora-config --host <computer name> --port <port to be used> --sid <database SID> --offline true --user <user name for database user> --password <password for database user>**.
6. Configure either the registry key (ARIS Process Governance Server installed as a service) or the file **y-arisgeserver.bat** (ARIS Process Governance Server not installed as a service).

ARIS Process Governance Server installed as a service:

- a. Search for **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\ARIS GE Server 1.0** in the registry of the PC on which ARIS Process Governance Server is installed.
- b. Open the key **ImagePath**, and add **nosybase** to the end of the key.
- c. Click on **OK**, and close the registry.

ARIS Process Governance Server not installed as a service:

Open the file **ARISGE1.0\y-arisgeserver.bat**, and search for the line **call SybaseScripts\DBStart.bat**. Either delete this line, or comment it out by writing the string **REM + space** in front of it.

7. Restart ARIS Process Governance Server.

You have configured the connection to the Oracle database. A new configuration file is created with the name **age-configuration.properties**, and any changes made are saved to this file.

Standard database system

Procedure

1. Shut down ARIS Process Governance Server.
2. Use a database administration tool, e.g., SQL*Plus to change the password for the database user **AGE**.
3. Open a DOS box (**Start/Run/cmd**).
4. Switch to the directory **ARISGE1.0\tomcat\bin**.
5. Enter **y-arisgeadmin.bat syb-config --host <computer name> --port <port to be used> --serviceName <service name of database> --offline true --user <user name for database user> --password <password for database user>**.

6. If you had previously configured a database other than Sybase, adapt either the registry key (ARIS Process Governance Server installed as a service) or the file y-arisgeserver.bat (ARIS Process Governance Server not installed as a service).

ARIS Process Governance Server installed as a service:

- a. Search for **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\ARIS GE Server 1.0** in the registry of the PC on which ARIS Process Governance Server is installed.
- b. Open the key **ImagePath**, and remove **nosybase** at the end of the key.
- c. Click on **OK**, and close the registry.

ARIS Process Governance Server not installed as a service:

Open the file **ARISGE1.0\y-arisgeserver.bat**, and search for the string **call SybaseScripts\DBStart.bat**. Delete the string **REM + space**. If you cannot find the string **call SybaseScripts\DBStart.bat**, add it as a new line.

7. Start ARIS Process Governance Server.

You have configured the connection to the Sybase database. A new configuration file is created with the name **age-configuration.properties**, and any changes made are saved to this file.

Microsoft SQL database

Procedure

1. Shut down ARIS Process Governance Server.
2. Use a database administration tool, e.g., SQL*Plus to change the password for the database user **AGE**.
3. Open a DOS box (**Start/Run/cmd**).
4. Switch to the directory **ARISGE1.0\tomcat\bin**.
5. Enter **y-arisgeadmin.bat sqlserver-config --host <computer name> --port <port to be used> --databaseName <name of database> --offline true --user <user name for database user> --password <password for database user>**.
6. Configure either the registry key (ARIS Process Governance Server installed as a service) or the file y-arisgeserver.bat (ARIS Process Governance Server not installed as a service).

ARIS Process Governance Server installed as a service:

- a. Search for **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\ARIS GE Server 1.0** in the registry of the PC on which ARIS Process Governance Server is installed.
- b. Open the key **ImagePath**, and add **nosybase** to the end of the key.
- c. Click on **OK**, and close the registry.

ARIS Process Governance Server not installed as a service:

Open the file **ARISGE1.0\y-arisgeserver.bat**, and search for the line **call SybaseScripts\DBStart.bat**. Either delete this line, or comment it out by writing the string **REM + space** in front of it.

7. Start ARIS Process Governance Server.

You have configured the connection to the Microsoft SQL database. A new configuration file is created with the name **age-configuration.properties**, and any changes made are saved to this file.

Tip

You can also use the following abbreviated forms:

- --p for --password
- --h for --host
- --s for --sid, or --sn for --serviceName, or --db for --databaseName
- --P for --Port
- --u for --user

Customize ARIS Process Governance configuration

Customize your ARIS Process Governance configuration.

Procedure

1. Open a DOS box (**Start/Run/cmd**).
2. Enter **y-arisgeadmin.bat edit key <key> --value <associated value>**.

You have changed any key-value pair.

5.4.5 Managing JMX users

JMX Server Configuration

The JMX server configuration is located under **%ARISGEHOME10%\config\jmxserver**. The default user name is **admin** and the default password is **jmxadmin**, which can be used in any JMX enabled management console. We strongly recommend to change the default password for the **admin** user.

There are three configuration files: **users.properties**, **access.properties** and **management.properties**.

users.properties

Contains the database of users in the following format: **username=password**, where password is encrypted - e. g. **admin=1e629435cc09d1fa5a5ac50621f53fba**.

In the **%ARISGEHOME10%\config\jaas.config** file, the following must be set:

com.idsscheer.age.config.jaas.properties.users=../config/jmxserver/users.properties

access.properties

Contains the database of access rules in the following format: **username=rule**, e. g. **admin=readwrite**. possible values for the access rules are **readwrite** or **readonly**.

management.properties

Contains the configuration properties for the JMX server, where **AgeJmxLogin JAAS** is the login module, which is defined in the **%ARISGEHOME10%\config\jaas.config** file.

Example for the management.properties file

```
com.sun.management.jmxremote.authenticate=true
com.sun.management.jmxremote.login.config=AgeJmxLogin
com.sun.management.jmxremote.ssl=false
com.sun.management.jmxremote.ssl.need.client.auth=false
com.sun.management.jmxremote.registry.ssl=false
com.sun.management.jmxremote.access.file=config/jmxserver/access.properties
```

Manage JMX users using y-arisgeadmin.bat

Please note, that y-arisgeadmin.bat is used in a Windows environment and y-arisgeadmin.sh in a Unix environment. The procedures below refer to a Windows environment but are also valid for a Unix environment.

Create user

Using a prompt, enter **y-arisgeadmin.bat jmx --useradd --user <user name> --password <password> --rights <access right>**

By default, the access right **readwrite** is used. but you can set this right to **readonly**.

In case you are using not the default jmx server location, you have to define this as follows:

--users config\jmxserver\users.properties --access config\jmxserver\access.properties.

Modify user

Using a prompt, enter **y-arisgeadmin.bat jmx --usermod --user <user name> --password <password> --rights <access right>**

By default, the access right **readwrite** is used. but you can set this right to **readonly**.

In case you are using not the default jmx server location, you have to define this as follows:

--users config\jmxserver\users.properties --access config\jmxserver\access.properties.

Delete user

Using a prompt, enter **y-arisgeadmin.bat jmx --userdel --user <user name>.**

In case you are using not the default jmx server location, you have to define this as follows:

--users config\jmxserver\users.properties --access config\jmxserver\access.properties.

JMX configuration client API

The **%ARISGEHOME%\config\jmxclient** directory contains the configuration to configure the API client.

- The port which is used for the JMX server is configured in **property com.idsscheer.age.config.client.port**. The default port is **7076**. It must correspond to the value in the **rmiRegistryPortPlatform** attribute of **com.idsscheer.age.mbeans.AJmxRemoteLifecycleListener** for the listener class which is defined in **%ARISGEHOME%\tomcat\conf\server.xml**.

Add the line <Listener

className="com.idsscheer.age.mbeans.AJmxRemoteLifecycleListener"

rmiRegistryPortPlatform="7076" /> in the **%ARISGEHOME%\tomcat\conf\server.xml** file.

- The user name, which is used to log in to the jmx server is configured in **com.idsscheer.age.config.client.username**. The default value is **jmxclient**. The user names must correspond to the user names in the **users.properties** file.
- The password, which is used to log in to the jmx server is configured in **com.idsscheer.age.config.client.password**. The password must correspond to the passwords in the **users.properties** file.

5.4.6 Connect ARIS document storage

ARIS document storage is configured on the client side in the **Administration** module in ARIS Process Automation Architect.

Procedure

1. Open the file <ARIS installation directory>\server\config\userServerSettings.cfg and insert the following:

```
<dmsintegration state="on" />
```

2. Restart ARIS Business Server.

You can also use external document management systems (page 138).

ARIS Process Governance offers an operating system service called **ARIS Document Storage 1.0**. This service depends on **ARIS Governance Engine Server 1.0** and is automatically started or stopped. To ensure trouble-free operation, please do not change either state or autorun type of **ARIS Document Storage 1.0**.

Configure jobs for ARIS document storage

You can configure jobs for ARIS document storage, which are executed regularly at a defined time. You can define when such a job should be executed. The time in the strings must be a CRON expression (page 329).

Procedure

1. Open the file <ARIS Process Governance Server installation directory>\config\age-configuration-setup.properties.
2. Find the string **com.idsscheer.aris.ads.batch.fire** and enter the time at which a lock should be automatically removed - e. g. **com.idsscheer.aris.ads.batch.fire=0 0 2 * * ?**, if a job should run every night at 2:00 a.m..

Using WebDAV with ARIS document storage

Server

The WebDAV interface is enabled by default and does not require any additional server configuration. The interface is available at the following endpoint address: **http://<ARIS Process Governance server>:<port>/ads/webdav**.

Client

In general, the users at the client computers simply have to map the relevant network drive. Depending on the operating system version, the WebDAV client might not allow the use of basic authentication. Enable basic authentication for the clients to use ARIS document storage as a WebDAV share.

Procedure

1. Open the registry editor.
2. Browse to
\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\WebClient\Parameters and find the DWORD entry named **BasicAuthLevel**. If it does not exist, create it.
3. Change the value of this entry to a hexadecimal value of **2**.
4. For operating systems older than Microsoft Windows 7, additionally find the DWORD entry named **UseBasicAuth**. If it does not exist, create it.
5. Change the value of this entry to a hexadecimal value of **1**.
6. Restart Microsoft Windows.

5.4.7 Recommended server dimensioning

ARIS Business Server and ARIS Process Governance Server are installed on the same computer.

Hardware

Hardware	Recommended	Minimum
Processor	Intel® Xeon® 5500 processor series, Quad-Core Intel® Xeon®	Intel® Xeon® 5500 processor series, Quad-Core Intel® Xeon®
Memory	64-bit system 64 GB RAM	64-bit system 16 GB RAM

5.4.8 Configure e-mail notification for administrator

If an error occurs with an automated process function, it is possible to notify an ARIS Process Governance administrator by e-mail.

Procedure

1. Shut down ARIS Process Governance Server.
2. Open the configuration file in the directory **<ARIS installation directory> \ARISGE1.0\config\age-configuration.properties**.
3. Add the following block:

```
com.idsscheer.age.admin.address = <e-mail address of administrator>
com.idsscheer.age.errorNotification.toPA.enable = true
com.idsscheer.age.errorNotification.toAGEAdmin.enable = true
```

4. Restart ARIS Process Governance Server.

The actual error message will be contained in a text file attached to the e-mail.

The user name of the **system** user cannot be changed. Neither can the option **Assign process administrator privileges** be disabled. If you want to set up an e-mail address for the **system** user, please start ARIS Process Automation Architect and specify this setting in central user management.

5.4.9 Configure sender of ARIS Process Governance e-mails

You must configure e-mail notification, if you did not configure it during installation or if you want to change it later.

The user name of the **system** user cannot be changed. Neither can the option **Assign process administrator privileges** be disabled. If you want to set up an e-mail address for the **system** user, please start ARIS Process Automation Architect and specify this setting in central user management.

The two following strings are specified during installation:

- com.idsscheer.age.email.from
- com.idsscheer.age.email.smtp.host

Configure sender

Procedure

1. Shut down ARIS Process Governance Server.
2. Copy the block **#AGE SMTP Server** from <ARIS installation directory>\ARISGE1.0\config\age-configuration-setup.properties and paste it to <ARIS installation directory>\ARISGE1.0\config\age-configuration.properties.

Specify your settings:

```
#AGE SMTP Server
com.idsscheer.age.email.from=<sender@smtp.com>
com.idsscheer.age.email.smtp.host=<your.smtp.host.com>
#com.idsscheer.age.email.smtp.userName=<smtp user>
#com.idsscheer.age.email.smtp.password=<password of smtp user>
com.idsscheer.age.email.smtp.startTls=false
com.idsscheer.age.email.smtp.auth=false
```

If your SMTP server requires authentication, configure the following:

```
com.idsscheer.age.email.smtp.userName=<smtp user>
com.idsscheer.age.email.smtp.password=<password of smtp user>
com.idsscheer.age.email.smtp.auth=true
```

If you want to use a secure SMTP communication, configure the following:

```
com.idsscheer.age.email.smtp.startTls=true
```

3. Restart ARIS Process Governance Server.

The above settings are now used for e-mails that are automatically sent by ARIS Process Governance Server when a governance process is executed.

Encrypt passwords

If your SMTP Server requires authentication and you want to encrypt the passwords, configure the following:

```
y-arisgeadmin.bat edit --key com.idsscheer.age.smtp.password --value <your smtp
server password> --password true
```

5.4.10 Configure sender of central user management e-mails

You can subsequently change the sender of e-mails that are automatically generated by central user management, e.g. when creating or activating users.

The two following strings are specified during installation:

- com.idsscheer.aris.umc.notification.smtp.host
- com.idsscheer.aris.umc.NotificationSender

Configure sender

Procedure

1. Shut down ARIS Process Governance Server.
2. Copy the block **# UMC NOTIFICATIONS** from <ARIS installation directory>\ARISGE1.0\config\age-configuration-setup.properties and paste it to <ARIS installation directory>\ARISGE1.0\config\age-configuration.properties and specify your settings, e.g. your SMTP host and the sender e-mail address. Please note that any sender address added has to be a valid e-mail address.

```
#####
##
# UMC NOTIFICATIONS
#####
##
# Enable debug output
com.idsscheer.aris.umc.notification.debug=false
# Maximum number of messages in send queue
com.idsscheer.aris.umc.notification.queue=100
# SMTP host
com.idsscheer.aris.umc.notification.smtp.host=<your.smtp.host.com>
# Password used for authentication
com.idsscheer.aris.umc.notification.smtp.password=<smtp user's password>
# SMTP port
com.idsscheer.aris.umc.notification.smtp.port=25
# Timeout for connection to SMTP server (ms)
com.idsscheer.aris.umc.notification.smtp.timeout=5000
# Authenticate to SMTP server
com.idsscheer.aris.umc.notification.smtp.useAuth=false
# Username used for authentication
com.idsscheer.aris.umc.notification.smtp.userName=<smtp user>
# Use TLS for connection to SMTP server
com.idsscheer.aris.umc.notification.smtp.useTLS=false
# Send notifications if user becomes inactive
com.idsscheer.aris.umc.NotificationOnInactive=true
# Sender address of emails
com.idsscheer.aris.umc.NotificationSender=process_governance
# Maximum number of threads used for sending notifications
com.idsscheer.aris.umc.NotificationThreads=10
```

3. Restart ARIS Process Governance Server.

The above settings are now used for e-mails that are automatically sent by central user management.

Encrypt passwords

If your SMTP Server requires authentication and you want to encrypt the passwords, configure the following:

```
y-arisgeadmin.bat edit --key com.idsscheer.age.smtp.password --value <your smtp  
server password> --password true
```

5.4.11 Configure password policy for central user management

You can define password policies for the central user management users.

Procedure

1. Shut down ARIS Process Governance Server.
2. Copy the block **# UMC PASSWORD POLICY** from <ARIS installation directory>\ARISGE1.0\config**age-configuration-setup.properties** and paste it to <ARIS installation directory>\ARISGE1.0\config**age-configuration.properties**.
3. Define the password policies, e.g. required password length, usage of special characters or numbers.
4. Restart ARIS Process Governance Server.

5.4.12 Configure pooling of connections

Pooling connections means to keep existing connections for re-use. Reusing a connection from a pool of available connections increases the performance of operations within a network because it takes less time than opening a new network connection.

Central user management supports the pooling of connections to an LDAP system.

Procedure

1. Shut down ARIS Process Governance Server.
2. Open the configuration file in the directory **<ARIS installation directory>\ARISGE1.0\config\age-configuration.properties**.
3. Add the line **com.idsscheer.aris.umc.ldap.auth.only=true**.

You can make the following additional configurations to specify the pooling of connections:

com.sun.jndi.ldap.connect.pool.timeout

Enter an integer to define the milliseconds that a non-used connection is to be kept before it is closed and removed. The default is **no timeout**.

com.sun.jndi.ldap.connect.pool.protocol

Enter a list of connection types, separated by whitespaces, for which you want to activate pooling. Such separators include, e.g., spaces, tabs, or Enter. The default is **plain** (com.sun.jndi.ldap.connect.pool.protocol="plain").

com.sun.jndi.ldap.connect.pool.prefsize

Enter an integer to define how many connections are to be supported simultaneously. There is no default.

com.sun.jndi.ldap.connect.pool.maxsize

Enter an integer to define the maximum number of connections to be supported. There is no default for the maximum number.

com.sun.jndi.ldap.connect.pool.initsize

Enter an integer to define the initial number of connections. The default is one connection (com.sun.jndi.ldap.connect.pool.initsize=1).

com.sun.jndi.ldap.connect.pool.debug

Enter a string to define the debug settings, e. g., **fine** or **all**.

com.sun.jndi.ldap.connect.pool.authentication

Enter a list of authentication types, separated by whitespaces, for which you want to activate pooling. Such separators include, e.g., spaces, tabs, or Enter. The default is **none simple** (com.sun.jndi.ldap.connect.pool.authentication="none simple").

4. Restart ARIS Process Governance Server.

You have configured central user management to enable the pooling of connections to an LDAP system.

5.4.13 Use ARIS Process Governance Server with SSL

You can encrypt communication between ARIS Process Automation Architect and ARIS Process Governance Server using SSL (**S**ecure **S**ocket **L**ayer). To do so, you need to configure ARIS Process Governance Server, ARIS Business Server, ARIS Process Automation Architect, and the browser used for ARIS Process Board.

General SSL authentication

ARIS Process Governance Server

Procedure

1. Shut down ARIS Process Governance Server.
2. Copy the KeyStore file of your SSL server (e. g.: sslkeystore of ARIS Business Server) to the **%ARISGEHOME%\config** directory.
3. Open the file **%ARISGEHOME10%\tomcat\conf\server.xml** and add the following lines:

```
<Connector port="7072"
    protocol="HTTP/1.1"
    SSLEnabled="true"
    connectionTimeout="20000"
    maxThreads="1500"
    scheme="https"
    secure="true"
    clientAuth="false"
    sslProtocol="TLS"
    keyAlias="idscert"
    keystoreFile="../../config/sslkeystore"
    keypass="sirasdi" />
```

4. Restart ARIS Process Governance Server.

SSL is not used for the internal communication of ARIS Process Governance Server. Therefore, please do not disable the default port 7071. If you want to make sure that your clients do always use secure connections, block connections arriving at port 7071 using a firewall.

If you are using a Unix operating system (page 153), you need to operate ARIS Process Governance Server in the **root** user context in order to be able to use the SSL port **443** of the Unix operating system.

ARIS Business Server

Procedure

1. Stop ARIS Business Server.
2. Open the file **%ARISHOME71%/server/config/userServerSettings.xml** and add the following line:

```
<ageserver location="https://<fully qualified host name>:<SSL_port>/age"/>
```

3. Save the file and restart ARIS Business Server.

ARIS Process Automation Architect

Procedure

1. Exit ARIS Process Automation Architect.
2. Copy the TrustStore file of your SSL client to the **%ARISHOME71%\JavaClient\config** directory.
3. Restart ARIS Process Automation Architect.

The client checks the server certificate against the list of certificates in its TrustStore file. When an SSL connection is established, the TrustStore on the client side trusts the server certificate.

For mutual SSL authentication, the server must also trust the certificate of the client. If you modify the TrustStore of the server, you must first stop the server, then configure and restart it.

Mutual SSL authentication

For mutual SSL authentication, you need to have a key in your client keystore. The client keystore is a file containing the client keys and certificates. In the case of the attribute setting **clientAuth=true**, ARIS Process Governance Server will not accept the connection until it receives a valid certificate chain from the client. Establishing the connection fails if the client does not have a valid certificate. Configure ARIS Process Automation Architect and your browser.

ARIS Process Automation Architect

Prerequisite

- You have installed an ARIS client.

Procedure

1. Exit ARIS Process Automation Architect.
2. Copy the TrustStore file of your SSL client to the **%ARISHOME71%\JavaClient\config** directory.
3. Restart ARIS Process Automation Architect.

Mozilla Firefox 4.x

Procedure

1. Click on **Tools/Options**, select **Advanced** and then the **Encryption** tab.
2. Click on **View Certificates** and then on **Import**.
3. Select the client certificate you want to import. Please note that the certificate must be valid and have the **PKCS#12** format.

Internet Explorer 8.x

Procedure

1. Select **Tools/Internet Options** and activate the **Content** tab.
2. Click on **Certificates** and then on **Import**. Please note that the certificate must be valid and have the **PKCS#12** format.

The wizard guides you through the following steps.

Self-signed certificates

We recommend that you only use certificates that are signed by a certification authority for digital certificates that are contained in the list of certificates of your JDK. Otherwise, you can also add self-signed certificates manually.

Procedure

1. Use the JDK keytool to generate a key pair that consists of a private and a public key for the server.
2. Open a DOS box (**Start/Run/cmd**) or a Unix shell.
3. Enter the following line:

```
keytool.exe -genkey -keyalg RSA -keysize 1024 -alias idscert -keystore sslkeystore
```

4. Follow the instructions displayed.

5. **Optional:** Export a certificate request for a certification authority. To do this, enter the following line:

```
keytool.exe -certreq -alias idscert -file certrequest.csr
```

6. Generate a self-signed certificate. To do this, enter the following line:

```
keytool.exe -selfcert -alias idscert -validity 999
```

7. Import the server certificate into your client by entering the following line:

```
keytool.exe -importcert -alias idscert -file server.cer -keystore  
%JAVA_HOME%\jre\lib\security\cacerts
```

Error handling

Error message	Handling
This connection is untrusted	The name of the certificate sent by ARIS Process Governance Server does not match the name or the IP address of the server specified in the URL. In this case, you can add the name of the server to the existing certificate or use a different certificate for ARIS Process Governance Server.
java.security.cert.CertificateException: No name matching localhost found	Use the fully qualified host name of ARIS Process Governance in the file userServerSettings.xml and compare this name with the name defined in the certificate.
sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target	The client does not trust the certificate of the certification authority. You can add the certification authority to the file %ARISHOME71%\JavaClient\jre\lib\security\cacerts .

5.4.14 Start governance process from an HTML page

You can start governance processes that are not connected as context to a group, model, or object from an HTML page if you use **ARIS Process Governance** and if a correspondingly configured Web page exists on your intranet. We recommend that you ask ARIS Customized Solutions to configure such a page.

5.4.15 Define default user for services

By default, the user **arisservice** is used to execute services. If you want to execute services within a different user context, you can specify your own user for automatic service execution.

Procedure

1. Shut down ARIS Process Governance Server.
2. Open the following file: **%ARISGEHOME10%\config\age-configuration.properties**.
3. Add the following lines:

```
com.idsscheer.aris.umc.arisservice.Username=<desired user name>  
com.idsscheer.aris.umc.arisservice.CreateIfMissing=<True or False>
```

If you set **com.idsscheer.aris.umc.arisservice.CreateIfMissing=True** the user is automatically created in central user management when starting ARIS Process Governance Server.

If you do not use central user management, you must create the desired user in the database. If you are running ARIS Process Governance together with LDAP, you can create this user in LDAP user management and then import it from there.

4. Restart ARIS Process Governance Server.
5. Activate the **Designer** module in ARIS Process Automation Architect.
6. Activate the **Automation** tab and right-click on **Services**.
7. Select **Change default password** and enter the password for the new default user for services.

Services are now executed within the user context of the newly created user.

5.4.16 Define default method language

You can define the default method language. The default method language after installation is English (USA).

Procedure

1. Shut down ARIS Process Governance Server.
2. Open the following file:
%ARISGEHOME10%\config\age-configuration-setup.properties and find the string **com.idsscheer.age.serviceenabling.scriptrunner.defaultLanguage=en_US**.
3. Copy this line and open the following file:
%ARISGEHOME10%\config\age-configuration.properties.
4. Add the string and define the default method language, e.g., en_EN for English (United States):
com.idsscheer.age.serviceenabling.scriptrunner.defaultLanguage=en_EN
5. Restart ARIS Process Governance Server.

You have changed the default method language. Users can define the method language individually in ARIS Process Automation Architect.

5.4.17 Configure static export for ARIS Process Governance

You can use static exports via Web service. The default specifications are automatically entered in the configuration file for ARIS Process Governance by setup. If you want to change this setting, you need to change the configuration file.

Please note that you must use double backslashes for path data.

Procedure

1. Open the file **age-configuration.properties** under **%ARISGEHOME10%\config**.
2. Change the property entries according to your needs:
If you don't want to use the default port **7071**, define your port in the following line.
com.idsscheer.age.serviceenabling.staticExport.wsServer=http://<ARIS Process Governance server>:<port number>/<directory used for publications>
3. Define the directory used for publications:
com.idsscheer.age.serviceenabling.staticExport.exportDir= <installation directory of ARIS Process Governance server>\\tomcat\\webapps\\<directory used for publications>

5.4.18 Configure proxy for use with external Web services

Configure your proxy if you want to use external Web services stored outside your local company network.

Procedure

1. Open the file **ARISGE1.0\tomcat\conf\catalina.properties** with a text editor.
2. Specify the following configuration:

```
http.proxyHost=<your proxy server>  
http.proxyPort=<your proxy server port>  
http.nonProxyHosts=localhost|127.0.0.1|
```

You have now configured your proxy for use with external Web services.

5.4.19 Start batch file for export to ARIS PPM for ARIS Process Governance

To perform process monitoring, you have to export the relevant data by using a batch file and make it available to ARIS PPM for ARIS Process Governance.

Data of objects of the **Human task** type is exported.

Procedure

1. You can start the batch file **export4ppm.bat** manually or by using Windows Scheduler (AT command). You find the file in the path **ARISGE1.0**.

If you do not explicitly enter a date, the current date is used.

2. Open a DOS window (**Start/Run/cmd**).
3. Navigate on your hard disk to where the batch file is stored.
4. Start the batch file manually using the following parameters: **export4ppm -f -s -e**.

f: File name of the target file to which the data will be written.

s: Start date for the exported data, rounded to the start of the day.

e: End date for the exported data, rounded to the end of the day.

Enter the start or end date exactly in the following format: **yyyy-MM-dd**.

Example: 2010-11-22

If you do not specify a start date but only an end date, all data from the start of the process to the specified end date will be exported.

If you do not specify an end date but just a start date, all data from the database will be exported.

If you do not specify any date, all processes of the current day will be exported.

File names can contain absolute or relative paths. If you want to use spaces, you need to place the path names in quotation marks.

Example: "d:\tmp\age data.xml"

5. Save the file in the **<ARIS PPM for ARIS Process Governance installation directory of >\custom\ppm4APG\data\APG**. You have to replace the content in angle brackets with your installation paths.

When the data for ARIS PPM for ARIS Process Governance is ready, you must import it into ARIS PPM for ARIS Process Governance. It is then available for further analysis in ARIS PPM for ARIS Process Governance and ARIS Performance Dashboard. For detailed information on how to import data in ARIS PPM for ARIS Process Governance, please refer to the documentation provided.

Tip

You can also specify the path of the data directly in the file name; the data is then directly saved in the correct directory.

5.4.20 ARIS Process Board

ARIS Process Board is automatically installed when you install ARIS Process Governance Server.

System requirements

For ARIS Process Board, you need version 10 of Adobe Flash Player.

Microsoft Internet Explorer versions 6, 7, 8 (SR 2010_5 or higher) and 9 (32-bit) (SR 2011_02), Firefox 3.x, 4.x, 6.x, and 7.x (SR 2011_02) are approved.

Configure ARIS Process Board appearance

You can specify the colors, logos, and font formats of ARIS Process Board. Such changes remain unaffected in case of a reinstallation.

Procedure

1. Open <ARIS installation directory>\ARISGE1.0\config\processboard\pb_styles.xml.
2. Find the string **<styleDeclarations active="false">** and set the value to **true**.
3. Specify colors, logos, and font formats according to your requirements and save the file.

The colors are HTML-coded - **#000000** defines the color **black**, for example.

Configure selectable languages for ARIS Process Board

It is possible to specify which locales are displayed in the list of selectable languages.

Procedure

1. Open the ARIS Process Board configuration file
(%ARISGEHOME10%\config\processboard\apb-configuration.xml).
All supported locales are listed by default in the configuration file.
2. Remove the locales you do not want to use.
 - If the configuration file contains the operating system's locale, it will be selected by default.
 - If the configuration file does not contain the operating system's locale, the first locale specified in the list will be selected.
 - If the configuration file does not contain any locales, the English (US) locale will be used by default (the xml locales element is empty).

Single sign-on

Single sign-on can be used (page 268) only in combination with LDAP.

SSL URL

If you are using SSL, you need to add the following line to

%ARISGEHOME10%\config\age-configuration.properties:

com.idsscheer.age.taskList.address=https://<fully qualified APG server host name>:<APG Server SSL port>/processboard

Configure port for ARIS Process Board

If you did not configure the port for ARIS Process Board during installation or if you want to change it, you must specify the following settings.

Procedure

1. Open the file <ARIS installation directory>\ARISGE1.0\config\age-configuration-setup.properties.
2. Copy the string **com.idsscheer.age.container.port**.
3. Paste it to the file <ARIS installation directory>\ARISGE1.0\config\age-configuration.properties.
4. Specify the port here: **com.idsscheer.age.container.port=<user-defined port>**
5. Adapt the port in the following files:
 - <ARIS installation directory>\tomcat\conf\server.xml
 <Connector port="6071" protocol="HTTP/1.1" connectionTimeout="20000" maxThreads="1500" redirectPort="8443" />
 - <ARIS installation directory>\config\SpringCRModule.xml
 <constructor-arg index="0" value="http://localhost:6071/ads" />
 - <ARIS installation directory>\server\config\SpringCRModule.xml
 <constructor-arg index="0" value="http://localhost:6071/ads" />
6. Configure ARIS Business Server using the file <ARIS installation directory>\server\config\userServerSettings.cfg.
7. Adapt the following line: **<ageserver location="http://<full computer name>:<user-defined port>/age"/>**
8. In ARIS Process Automation Architect (**Designer** module), log in to the required database.
9. Select the **Automation** tab and right-click on the **ARIS Business service** node.
10. Click on **Attributes** and enter the modified port in the **Server address** box.
11. Adapt the port for the **ARIS document storage service** node in the same way.
12. If you are using ARIS Business Publisher, you must adapt the port in the file <ARIS installation directory>\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg accordingly.

Call ARIS Process Board

The following URL (page 332) is used to call ARIS Process Board in the browser:

<http://<server name>:7071/processboard>

If you have an e-mail integration, this link is automatically sent to a new user when activated. If you do not use e-mails, you need to communicate the link to all users.

User management via LDAP

If you use central user management with LDAP in ARIS Process Board, users cannot change their passwords there themselves and cannot request a new password at login. Passwords can only be changed in the LDAP system.

5.4.21 ARIS Process Governance logging

ARIS Process Governance consists of several individual components. All these components log their activities in different log files.

The logging from ARIS Process Governance Server is preconfigured in the file <installation directory of ARIS Process Governance Server>\config**age-configuration-setup.properties**. If you want to modify logging, copy the relevant lines from this file to <installation directory of ARIS Process Governance Server>\config**age-configuration.properties** and adapt it there.

The following log files are available:

- <Installation directory of ARIS Process Governance Server>\log**output.log**.
This log file represents the console log. If ARIS Process Governance Server is installed as a service, the logging is written in this file.
- <Installation directory of ARIS Process Governance Server>\log**error.log**.
This log file represents the console log. If error messages occur when starting the ARIS Process Governance Server service they are logged in this log file.

5.4.21.1 Configure remote logging for ARIS Process Board

ARIS Process Board cannot access local data and system resources from the workspace. Therefore, the required log messages will be sent to the remote server of ARIS Process Board. During logging the error level to be logged must be configured, and the class that causes the event can be configured.

Procedure

1. Stop Tomcat.
2. Open the file \ARISGE1.0\tomcat\webapps\processboard**apb-log-config.xml**.
3. Configure the logging level. Log messages can be configured for error levels and filters. Valid error levels are:
 - debug
 - info
 - warn
 - error
 - fatal

Example

```
<log:target level="info">
  <log:filter>Main</log:filter>
  <log:filter>com.idsscheer.aris.age.ftl.*</log:filter>
  <log:filter>com.idsscheer.age.webclient.*</log:filter>
</log:target>
```

You have configured the file **ftl.log** in the directory **ARISGE1.0\tomcat\logs**. The default log level is **info**.

If problems occur during operation, you can use the log files to find and resolve errors. If you cannot solve the problems and have a maintenance agreement, please send an error description and the entire contents of the **log** and **config** directories as ZIP files to your local Software AG sales organization.

5.4.21.2 Tomcat logging

The log function from Apache Tomcat is configured in the file <installation directory of ARIS Process Governance Server>\tomcat\conf**logging.properties**.

The logging from ARIS Process Governance Server is configured in the file <installation directory of ARIS Process Governance Server>\config**age-configuration.properties**.

The following log files are available:

- **age.log** (tomcat\logs). This file aggregates the log messages of all components from ARIS Process Governance Server except the central user management and ServiceEnabling. This file is the main log file that, in the case of an error, provides initial information about possible causes. During system operation the log level should not be set higher than **info** due to performance reasons. In the case of an error, the log level can be set to **debug** to receive more information about possible causes.
- **catalina.<date>.log** (tomcat\logs). Debug information, especially pertaining to the server start, is logged in this file.
- The file **ta-list.log** in the directory **tomcat\logs**. If the log level is set to **Info** the file is always empty. If the log level is set to **Debug**, all technical requests are logged on the task list.
- **umc.log.<number>** (tomcat\logs). The default log level is **info**. The following log levels exist: **All**, **Off**, **Warning**, **Info**, **Severe**, **Config**, and **Fine**.

All activities from the central user management are logged. A new log file is created every time ARIS Process Governance Server is started and the number at the end of the name of the old log files is increased. If the number of rows in the log file exceeds a configured value, a new file is created and the number at the end of the name of the old files is increased.

The most recent log file always has the ending **0**.

- **velocity.log** (tomcat\logs).

Log messages due to problems displaying e-mail content are stored in this file.

If problems occur during operation, you can use the log files to find and resolve errors. If you cannot solve the problems and have a maintenance agreement, please send an error description and the entire contents of the **<ARIS Process Governance Server installation directory>\log** and **<ARIS Process Governance Server installation directory>\tomcat\logs** directories as ZIP files to your local Software AG sales organization (<http://www.softwareag.com>).

5.4.22 Configure Apache Tomcat for operation with SSL

You can configure Apache Tomcat for operation with Secure Socket Layer (SSL) encryption. For information about setting up Tomcat for operation with SSL, refer to the home page of the manufacturer (<http://tomcat.apache.org/tomcat-6.0-doc/ssl-howto.html>).

This information was current at the time of printing. Therefore, discrepancies may exist in Service Releases. Please read the current release information and the Readme file.

5.5 ARIS clients (application)

All programs, such as ARIS Business Architect or ARIS Business Designer, which you start as an application and not in browser mode (page 215), are referred to as ARIS clients. All ARIS clients use ARIS Business Server to access the database server and thus work with a common data basis. ARIS Toolset and ARIS Easy Design are exceptions, which is why the configuration of these products is described in a separate chapter (page 231).

This section describes the processor, memory, system configuration, and software requirements of the various client computers. Furthermore, you will find information on the system configuration. The ARIS Platform products mentioned in other sections must meet additional requirements.

For simultaneous use of other applications, a faster processor, additional memory, or system extension may be required.

Depending on the application scenario, large databases or models and the use of comprehensive macros may result in extended runtimes. ARIS clients and ARIS Web clients then require more RAM. More RAM is also required for automatic spell checking when more than two languages are used.

By default, memory allocation takes place automatically and can however, be manually (page 214) configured.

In some cases, minimum and recommended system requirements are specified. The minimum system requirements must be met in order for the ARIS products to work properly. Meeting the recommended system requirements will assure good performance even with large data volumes. In general, it is advisable to use up-to-date hardware taking into account the number of users who will be accessing the same ARIS Business Server (page 125). More RAM may improve runtime behavior.

The table shows the requirements that apply for many clients. Additional requirements must be met for some programs. Find out about specific requirements in the relevant sections.

Hardware

Hardware	Recommended	Minimum
Processor	Intel Core 2; 2,33 GHz	Intel Core 2; 2,33 GHz
RAM	Client installation with and without local database system: 4 GB RAM	<ul style="list-style-type: none"> Client installation without local database system: 2 GB RAM Client installation with local database system: 4 GB RAM
Bandwidth	100 MBit/s	128 KBit/s. Lower bandwidths are possible. However, lower bandwidths can result in reduced performance.
Hard disk	2 GB For single-user installation: sufficient disk space for each user database.	2 GB For single-user installation: sufficient disk space for each user database.

Software

Software	Details
Operating systems	<ul style="list-style-type: none"> Windows 7 Professional & Ultimate (ARIS clients 32/64-bit; ARIS Web clients 32-bit) + Service Packs Windows XP Professional + Service Packs <p>Using ARIS for SAP you need to install the Microsoft ATL patch (http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=766a6af7-ec73-40ff-b072-9112bab119c2) (http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=766a6af7-ec73-40ff-b072-9112bab119c2). See SAP note 1077727 (logon required). Otherwise SAP JCo 3.0.x might not work properly.</p> <ul style="list-style-type: none"> Windows Vista (Business, Ultimate; 32-bit) + Service Packs Not for the Simulation component in ARIS Toolset Windows Server 2008 (64-bit) VB reports cannot be used with COM objects. Windows Server 2008 (32-bit) + Service Packs Linux Red Hat ES5 (32/64-bit) Only for installed ARIS clients without local server LOCAL. Citrix XenApp Server 5.0 Only for installed ARIS clients without local server LOCAL. We recommend that the installation be performed only by your local sales organization (http://www.softwareag.com).
Browser	<ul style="list-style-type: none"> Microsoft Internet Explorer, versions 6 to 9 Firefox 3.x, 6.x and 7.x <p>Security settings (Microsoft Internet Explorer)</p> <p>If Java Runtime Environment (JRE) is not yet installed and needs to be downloaded, you need to specify settings in the Tools/Internet Options/Security/Custom Level menu in Microsoft Internet Explorer.</p> <p>Adjust your browser settings to ensure that the following actions are permitted:</p> <ul style="list-style-type: none"> Running ActiveX controls and plug-ins Downloading signed ActiveX controls Executing JavaScript Pop-ups are permitted in the domain in which the ARIS Business Publisher is running. <p>If pop-ups are blocked, report output cannot be displayed in PDF format.</p>

Software	Details
JRE	<p>If you have ARIS Business Server installed and start ARIS Platform products as programs, an internal JRE version is automatically used. You do not need to install JRE separately. If you have already installed a JRE, your installation is not used by ARIS.</p> <p>Your JRE installation is only used if you start ARIS Platform products from your browser.</p> <ul style="list-style-type: none"> ▪ To display different character sets (Japanese, Arabic, Cyrillic, etc.), the corresponding file in the directory <JRE installation directory>\<version>\lib must be named font.properties. For example, if you wish to display Japanese characters, you must rename the font.properties.ja file to font.properties.
Output	<p>If, for example, you want to output documents in PDF format using Microsoft Word or Microsoft Excel, you must have Adobe Reader and Microsoft Office version 2000 or higher installed. If you use reports to import data from Excel tables, please ensure that the tables have been saved in XLS format. If pop-up blockers are activated for the domain, it may not always be possible to open report output in PDF format from a Publisher export.</p> <p>In addition, all applications that are linked in your models should be installed.</p>
LDAP	<p>ARIS supports LDAP. Windows Server 2003 Active Directory has been tested; therefore, the documentation refers to that system.</p>
Multi-monitor operation	<p>ARIS products are approved for multi-monitor operation.</p>

5.5.1 ARIS Process Automation Architect

The following versions are approved:

Java Runtime Environment (JRE) 1.6.0_04 and subsequent patches that are in the public domain (Java SE on the SUN home page except Java SE for Business) and generally released by SUN.

SUN renamed the JRE versions. JRE 1.6.0_04 is now called JRE 6.0, Update 4. Approvals are also valid for subsequent updates.

5.5.1.1 Log in to Governance Automation Models

The reference database **Governance Automation Models** (page 187) is a sample database for governance processes. The database cannot be changed.

Log in to the reference database **Governance Automation Models**.

Procedure

1. Open your ARIS Process Automation Architect, if necessary.
2. Right-click on the reference database **Governance Automation Models**. The Log in dialog opens.
3. Enter **system** as the user name and **manager** as the password.

You are now logged in to the reference database **Governance Automation Models**.

5.5.1.2 What is included in the reference database?

The ARIS Process Governance package includes the **Governance Automation Models** reference database, which is installed automatically.

This database can be edited. It makes it easier for you to model your own processes for execution. You also have the option of customizing the models that are available in the **Governance Automation Models** reference database if they are suitable for your purposes.

5.5.2 ARIS SOA Architect

With ARIS SOA Architect, you can create models of the EPC type in your usual ARIS environment, and transform them into BPMN models or models of the **BPEL process** type. You can also create, edit, manage, and export BPMN models, or models of the **BPEL process** type directly, and then import and use them in application systems.

5.5.3 ARIS Business Rules Designer

ARIS Business Rules Designer is integrated in ARIS Business Architect and ARIS Business Designer and is automatically enabled by your license key if you have purchased this program. With ARIS Business Rules Designer, you can describe business rules and integrate them into business processes. Patented technologies help you find critical problems, e.g. completeness or contradictions in rules. You can test the rules using sample data. You can export the optimized rules as a Web service, for example, and run them automatically using a rule engine.

The module for ARIS Business Rules Designer is called **Rules** and is used to

- model rules,
- test rules (check results using test data), and
- analyze them (check the decision for logical plausibility, i.e. uniqueness, completeness, logical loops).

For further information, please refer to the **Rule Language Guide** and **Rule Modeling Guide**. You find these in the **Docs** folder on the installation media.

ARIS Business Rules Designer supports the same platforms as ARIS Business Server (see Administration Guide).

5.5.4 ARIS Business Simulator

ARIS Business Simulator is integrated in ARIS Business Architect and is automatically enabled by your license key if you have purchased this program.

ARIS Business Simulator is used for process analysis and process optimization. Based on process models and organizational structures, the simulation enables a comparison of actual and target processes in respect of practicability and efficiency. The focus can also be laid on costs, execution time or resource usage. This answers questions on throughput times, weak points, bottlenecks, resource requirements, etc.

ARIS Business Simulator includes the following model types:

- EPC
- EPC (material flow)
- EPC (column display)
- EPC (row display)
- EPC (table display)
- EPC (horizontal table display)
- PCD
- PCD (material flow)
- Office process
- Industrial process
- Schedule/Composite schedule
- Business process diagram (BPMN 1.x)
- BPMN allocation diagram

The following model types are included without having to be explicitly selected.

- Event diagrams that have been assigned to events
- Function allocation diagrams that have been assigned to functions
- Organizational charts that have been assigned to human resources
- Business controls diagrams that have been assigned to risks or controls

ARIS Business Simulator supports the same platforms as ARIS Business Server (see Administration Guide). If you use Oracle Light as a database, ARIS Business Simulator accesses the Oracle Light instance.

- If you use ARIS Business Simulator, you need at least 1 GB RAM for a 32-bit system. 64-bit systems need at least 2 GB RAM.
- If you use ARIS Business Simulator, 30% of main memory is automatically reserved for simulation. You need at least 1 GB RAM for a 32-bit system. 64-bit systems need at least 2 GB RAM.

5.5.5 ARIS BI Modeler

You can use ARIS BI Modeler in combination with ARIS Business Architect for SAP and ARIS Business Architect. The following adjustments are required:

- Enter the license key for ARIS BI Modeler.
- Transfer the current transport request (page 191).
- Provide SAP Java Connector (page 193).
- Ensure that the required software and SAP systems are available.

System requirements

Please ensure that all computers meet the following requirements:

- Access to SAP BW 7.0 in **German (de)**, **English (en)**, or **French (fr)**
- SAP Java Connector (JCo) (page 193) **2.13, 2.15, 2.16, 2.18** or a higher 2.x version is available
- The file **saplogon.ini** is available or SAP GUI for Windows is installed locally (version 7.1 or 7.2)
- The transport request was transferred (page 191).

Privileges

The **S_BW_RFC** object is required in the SAP system.

To download query files in PDF format and make them available in ARIS, please share a directory that ARIS Business Server can also access.

5.5.5.1 Import transport request (SAP BW)

To enable data exchange between **ARIS** and SAP BW, you must import the current transport requests into the SAP system.

The files of the workbench transport request are located on the installation media under **Addons\ARIS BI Modeler\ABAP\workbench transport request**, and the files of the customizing transport request on the installation media under **Addons\ARIS BI Modeler\ABAP\customizing transport request**.

Note

If you reimport the transport request in order to update it, you should first delete the contents of the following tables:

- YARIS_OBJ_ZUO
- YARIS_OBJCHILDBZ
- YARIS_OBJOBJ_NM
- YARIS_OBJ_ATTR

Procedure

1. Import the workbench transport requests in the SAP system before importing the customizing transport requests. To do this, perform the following steps:
2. Copy the file **K<number>.<SAP system SID>** to the directory **\sapmnt\trans\cofiles**.
3. Copy the file **R<number>.<SAP system SID>** to the directory **\sapmnt\trans\data**. The directory **sapmnt** normally corresponds to the directory **\usr\sap**. If you cannot find the **cofiles** and **data** directories under the specified paths, you can determine the correct path using the **DIR_TRANS** variable. To do this, log on to the desired SAP system, and run transaction **AL11**.

To transfer the transport request to the SAP system using the command line program **TP.EXE**, enter the following commands in the specified sequence:

- a. **TP addtobuffer <SAP system SID>K<number> [target system SID]**
- b. **TP import <SAP system SID>K<number> [client on target system]**

The transport request has been transferred.

You can also execute the transport request using the transaction **STMS**.

1. Log on to the relevant SAP system as a system administrator.
2. Execute transaction **STMS**. This takes you to the Transport Management System.
3. Click on **Import overview**.
4. Double-click on the relevant SAP system. This takes you to the import queue.
5. In the menu, select **Add-ons/Other requests/Append**. The **Append transport request to import queue** dialog opens.

6. Enter **<SAP system SID>K<number>** and confirm. You return to the import overview.
 7. Select the transport request.
 8. In the menu, select **Request/Import**. The **Import request** dialog opens.
 9. Enter the relevant target client and confirm via **F8** or **Start import**.
- The transport request has been transferred.

5.5.5.2 Make SAP Java Connector (SAPJCo) available for ARIS BI Modeler

From ARIS 7.2 SR 2 you need the connector **SAP JCo 3.0.7** or a higher version of **SAP JCo 3.0.x** (**sapjco3.jar/sapjco3.dll**) in order to allow the program to connect to the SAP system and provide all functions.

For licensing reasons, JCo may not be automatically installed during installation.

Procedure

1. Download **SAP JCo 3** appropriate for your operating system and for the runtime environment (JRE) used from the SAP Service Marketplace (<http://service.sap.com/connectors>).
2. Copy the **sapjco3.jar** file to **<ARIS installation directory>\server\lib** and/or **<ARIS installation directory>\LocalServer\lib**. Ensure that you copy the bit version that corresponds to the JRE installed.
3. Copy the file **sapjco3.dll** next to the Windows system libraries. The ARIS client automatically installs the 32-bit JRE version.

For information on JRE version and Windows system, refer to the table below. If you are using a different operating system, such as Solaris, please refer to the appropriate download package from SAP AG.

4. Restart your ARIS server.

If you have correctly provided SAP Java Connector SAP JCo 3.0.x but have installed older runtime libraries of Visual Studio 2005 C/C++, you may have to update the Microsoft Active Template Library (ATL). Please consider the SAP notes 1077727 and 1375494 on the SAP Service Marketplace.

JCo and JRE	Windows	Processor	DLL	Windows installation directory
32-bit	32-bit	x86	sapjco3.dll	\system32
32-bit	64-bit	x86	sapjco3.dll	\SysWOW64
64-bit	64-bit	x86	sapjco3.dll	\system32
64-bit	64-bit	Itanium	sapjco3.dll	\system32

5.5.6 ARIS for SAP

ARIS for SAP products are part of the ARIS Implementation Platform. The following features are available in different products.

Ensure that after installation all features are enabled (page 196) that your company requires.

Functionality	Product
ARIS Connectivity for SAP (page 201)	ARIS Business Architect for SAP ARIS Business Designer for SAP ARIS Toolset for SAP ARIS Easy Design for SAP
SAP synchronization (page 197)	ARIS Business Architect for SAP ARIS Business Designer for SAP ARIS Toolset for SAP ARIS Easy Design for SAP
ARIS Online Guide (page 204)	ARIS Business Architect for SAP ARIS Business Designer for SAP
SAP NetWeaver Portal (page 195)	ARIS Business Architect for SAP ARIS Business Designer for SAP
ARIS Connectivity for ESR (page 208)	ARIS Business Architect for SAP

5.5.6.1 Software/SAP systems/SAP portals

Please ensure that a local SAP GUI for Windows installation exists on all client computers. To run transactions, you need one of the following SAP systems in one of the following languages:

German (de), English (en), French (fr), Spanish (sp), or Japanese (ja):

- Local SAP GUI for Windows installation, version 7.1 to 7.2
- SAP R/3 4.6 c or d, 4.7
- ECC 5.0/ECC 6.0 (de, en, fr, sp, ja)
- SAP JCo (page 201) on every client computer

For Solution Manager synchronization, you also need SAP Java Connector **2.13, 2.15, 2.16, 2.18**, or a higher 2.x version. It must be installed on your ARIS Business Server or local server. To perform Solution Manager synchronization, you need SAP Solution Manager, version **3.2 or 4.0/7.0/7.1**, with the languages **German (de), English (en), French (fr), Spanish (sp)**, and/or **Japanese (ja)**. Shortcuts are supported by SAP synchronization. SAP Solution Manager provides these only in version **4.0 SP 15** or higher.

ARIS Online Guide

- Local SAP GUI for Windows installation, version 7.1 to 7.2
- SAP R/3 4.6 c or d, 4.7
- ECC 5.0/ECC 6.0 (de, en, fr, sp, ja)
or SAP Solution Manager 3.2 or 4.0/7.0/7.1

SAP NetWeaver Portal

To edit portal elements in the program, you need EP7 with SP13 or higher.

SAP ESR connectivity

To connect to SAP Enterprise Service Repository (SAP ESR), you must have one of the following product versions and ESR:

- SAP enhancement package 1 for SAP NetWeaver Composition Environment 7.1 (Support Package Stack 1)
- SAP enhancement package 1 for SAP NetWeaver Process Integration 7.1 (Support Package Stack 1)

5.5.6.2 Configure system

To be able to work properly with the products once they have been installed, please note the following:

- Ensure that a local SAP GUI installation for Windows exists on all computers on which the products **ARIS Toolset for SAP**, **ARIS Business Architect for SAP**, **ARIS Easy Design for SAP**, and **ARIS Business Designer for SAP** are installed.
- For the products **ARIS Business Architect for SAP** and **ARIS Business Designer for SAP**, you need SAP Java Connector (**sapjco3.jar**, **sapjco3.dll**). This connector is used to create an RFC connection to the SAP system using SAP access parameters. For licensing reasons, it may not be installed automatically.
- When using ARIS Business Publisher, you must configure the connection to SAP systems (page 118).

Depending on the features you provide, you must customize the system.

- Use SAP synchronization (page 197)
- Use customizing transactions/views (page 201)
- Use ARIS Online Guide (page 204)
- Use ESR contents (page 208)
- Ensure that the users have been created in the SAP system and have RFC privileges. No distinction is made between users and technical users. If you use SAP routers, you also need to define the corresponding access privileges for the users. The special SAP ports **sapgw00 3300/tcp** and **sapdp00 3200/tcp** must be enabled in the Windows Services file of the client computer (C:\Windows\ system32\ drivers\ etc\services) and when using SAP routers because they are responsible for the RFC access of the SAP system. In general, these ports are added to the Services file automatically during SAP GUI installation. If several SAP systems are connected, additional ports need to be enabled to accommodate the systems. By default, the syntax for a port number is as follows **3300** plus the **<SAP system number>** being used. If, for example, the system number is **03**, the port number **3303** must be activated.
- Register the SAP servers you want to access. You can register these SAP servers using the file **SAPLOGON.INI**.

5.5.6.2.1 SAP synchronization

SAP synchronization is available to you for data synchronization between **ARIS** and **SAP Solution Manager** in both directions.

- If you want to run the SAP synchronization you need SAP Solution Manager and access to the file **saplogon.ini**.
- Ensure that the current transport request (page 198) has been imported in the SAP Solution Manager system that you want to use for synchronization.
- Ensure that SAP Java Connector is available. For licensing reasons, SAP Java Connector cannot be supplied as part of the package. Please download SAP Java Connector (page 199) for the relevant operating system.
- Ensure that the Web services (page 200) for the repository/scenario transfer are enabled in your SAP system and properly configured.

If you are using SAP Solution Manager synchronization in ARIS for SAP, we recommend that you provide additional memory for the local server **LOCAL** and ARIS Business Server. This is especially advisable if you synchronize large amounts of data. Depending on the amount of data more memory than that recommended below might be needed in some cases.

If you use memory-intensive applications, such as an XML import or Fast Merge, we recommend that you provide additional memory to the local server **LOCAL** and ARIS Business Server.

To provide additional memory, you need to ensure that the hardware requirements are met.

LocalServer

In the file **local.cfg** (**<ARIS installation directory>/LocalServer/config**), change the value in bold:

```
maxMem=1024m
```

Server

Insert the following lines in the file **userServerSettings.cfg** (**<ARIS installation directory>/Server/config**):

```
<jre>  
    <maxMem server="1024m" />  
</jre>
```

5.5.6.2.1.1 Import transport request (synchronization)

To ensure that SAP synchronization between **ARIS** and **SAP Solution Manager** is available, you must import (page 198) the current transport request in the SAP Solution Manager system. You find the transport request on the installation media under **Addons\ARIS for SAP\ABAP\Solution Manager**. The function modules are created in the **ZIDS_ARIS_SOLAR** package.

Procedure

1. Copy the file **K<number>.<SAP system SID>** from the directory **Addons\ARIS for SAP\ABAP\Solution Manager** of the ARIS Platform installation media to the directory **\sapmnt\trans\cofiles**.
2. Copy the file **R<number>.<SAP system SID>** from the directory **Addons\ARIS for SAP\ABAP\Solution Manager** of the ARIS Platform installation media to the directory **\sapmnt\trans\data**. The sapmnt directory usually corresponds to the directory **\usr\sap**. If you cannot find the **cofiles** and **data** directories under the specified paths, you can determine the correct path using the **DIR_TRANS** variable. To do this, log on to the relevant SAP Solution Manager system and execute transaction **AL11**.

To transfer the transport request to the SAP system using the command line program **TP.EXE**, enter the following commands in the specified sequence:

- a. **TP addtobuffer <SAP system SID>K<number> [target system SID]**
- b. **TP import <SAP system SID>K<number> [client on target system]**

You can also execute the transport request using the transaction **STMS**.

Procedure

1. Log on to the relevant SAP Solution Manager system as system administrator.
2. Execute transaction **STMS**. This takes you to the Transport Management System.
3. Click on **Import overview**.
4. Double-click on the relevant SAP Solution Manager system. This takes you to the import queue.
5. In the menu, select **Add-ons/Other requests/Append**. The **Append transport request to import queue** dialog opens.
6. Enter **<SAP system SID>K<number>** and confirm. You return to the import overview.
7. Select the transport request.
8. In the menu, select **Request/Import**. The **Import request** dialog opens.
9. Enter the relevant target client and confirm via **F8** or **Start import**.

5.5.6.2.1.2 Make SAP Java Connector (SAPJCo) available on the server side

From ARIS 7.2 SR 2 you need the connector **SAP JCo 3.0.7** or a higher version of **SAP JCo 3.0.x** (**sapjco3.jar/sapjco3.dll**) to use SAP synchronization or <ARIS_BI_Modeler>.

Procedure

1. Download **SAP JCo 3** appropriate for your operating system and for the runtime environment (JRE) used from the SAP Service Marketplace (<http://service.sap.com/connectors>).
2. Copy the file **sapjco3.dll** next to the Windows system libraries. The ARIS client automatically installs the 32-bit JRE version.

For information on JRE version and Windows system, refer to the table below. If you are using a different operating system, such as Solaris, please refer to the appropriate download package from SAP AG.

3. Copy the **sapjco3.jar** file to <ARIS installation directory>\server\lib and/or <ARIS installation directory>\LocalServer\lib.
4. Restart your ARIS server.

If you have correctly provided SAP Java Connector **SAP JCo 3.0.x** but have installed older runtime libraries of Visual Studio 2005 C/C++, you may have to update (<http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=766a6af7-ec73-40ff-b072-9112bab119c2>) the Microsoft Active Template Library (ATL). Please consider the SAP notes **1077727** and **1375494** on the SAP Service Marketplace (<http://service.sap.com/connectors>).

To use the functions **Start transaction**, **Customizing**, **Solution Manager-Display Solution Manager blueprint** or **Display Solution Manager configuration**, make SAP JCo 3.0.x available to clients (page 201).

JCo and JRE	Windows	Processor	DLL	Windows installation directory
32-bit	32-bit	x86	sapjco3.dll	\system32
32-bit	64-bit	x86	sapjco3.dll	\SysWOW64
64-bit	64-bit	x86	sapjco3.dll	\system32
64-bit	64-bit	Itanium	sapjco3.dll	\system32

5.5.6.2.1.3 Activate Web services

To properly transfer repositories and scenarios from the SAP system to ARIS databases, you must enable Web services.

Web services are services that provide functions usually via the Internet protocol **http**. Web services are called via URL. A URL consists of a host, a port, and a path (URI) such as

`http://solutionmanager:8000/sap/bc/solman/bpr?sap-client=100`

Syntax

`<protocol type>://<host name>:<port number>/<URI>?sap-client=<CLIENT>`

The host name could be **solutionmanager**, for example. The port number is **8000** and the path (URI) is **/sap/bc/solman/bpr**. The client is the SAP system client.

For SAP Solution Manager 3.2, you need Support Package **06**. Additional information is available in the SAP Service Marketplace.

Procedure

1. Start **SAP Solution Manager** and call transaction **SICF**.
2. Right-click on **default_host/sap/bc/solman**, for example, and select **Enable service**. When the service is enabled, additional subgroups are visible.

Enabling reveals the URI of the Web service. In this case, it is **/sap/bc/solman/bpr**. The protocol type is **http**. If you right-click on **bpr** and select **Display service**, the URI is displayed in the **ICF path** box and the protocol type on the **Service data/Security requirements** tab.

The **Default** option corresponds to the protocol type **http**, while the **SSL** option corresponds to the protocol type **https**. To use SSL, you need a valid certificate.

You can also adjust the URL with the 'External aliases' function

Procedure

1. Start SAP Solution Manager, and call the **SICF** transaction.
2. Click on the **External aliases** button.
3. Select a host and create a new external alias (**F5**). You can adjust the path in the **External alias** box.
4. Activate the **Service data** tab. You can adjust the protocol type in the **Security requirements** box.

The **Default** option corresponds to the protocol type **http**, while the **SSL** option corresponds to the protocol type **https**. To use **SSL**, you need a valid certificate.

5. Activate the **Target item** tab. Select the **bpr** node for the Business Process Repository. The previous steps revealed the protocol type and the path of the Web service URL.
6. Call the **SMICM** transaction to determine the port and host name. To list the available ports, click on **Go to/Services** in the main menu.

All ports for the different protocol types are displayed. If a protocol is missing or inactive (**Active** column), inform your system administrator.

Use this information to form the URL.

5.5.6.2.2 Start customizing transactions/views

To start customizing transactions and call customizing views, ensure that the current transport request (page 203) for SAP Customizing has been imported in the SAP system.

You need a local SAP GUI for Windows installation, the current SAP Java Connector (page 201), and **ARIS Business Architect for SAP** or **ARIS Business Designer for SAP**.

5.5.6.2.2.1 Make SAP Java Connector (SAPJCo) available to clients

You need **SAP JCo 3.0.7** or a higher version of **SAP JCo 3.0.x** (**sapjco3.jar/sapjco3.dll**) to start the following functions from ARIS Business Architect for SAP and ARIS Business Designer for SAP:

- Run transaction (client)
- Display Solution Manager blueprint (client)
- Display Solution Manager configuration (client)
- Solution Manager documentation (client)
- Customizing (client)
- SAP synchronization (server (page 199))

Procedure

1. Download **SAP JCo 3** appropriate for your operating system and for the runtime environment (JRE) used from the SAP Service Marketplace (<http://service.sap.com/connectors>).
2. Copy the file **sapjco3.dll** next to the Windows system libraries. The ARIS client automatically installs the 32-bit JRE version.

For information on JRE version and Windows system, refer to the table below. If you are using a different operating system, such as Solaris, please refer to the appropriate download package from SAP AG.

3. Copy the **sapjco3.jar** file to the **lib** directory.

Default server installation in browser mode

- a. If you are using the products in browser mode and have performed a default server installation, the directory is located under **<ARIS installation directory>\server\html\lib**.

User-defined server installation in browser mode

- b. If you are using the products in browser mode and have performed a user-defined installation, the directory is located under **<wwwroot>\<ARIS installation directory>\lib**.

Product as application

- c. If you start ARIS as an application, that is, not in browser mode, an internal 32-bit JRE will be used independently of the bundled JREs installed locally. Copy the file **sapjco3.jar** to the following directory manually or by software distribution: **<ARIS installation directory>\javaclient\lib**.

4. Restart ARIS.

If you have correctly provided SAP Java Connector **SAP JCo 3.0.x** but have installed older runtime libraries of Visual Studio 2005 C/C++, you may have to update (<http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=766a6af7-ec73-40ff-b072-9112bab119c2>) the Microsoft Active Template Library (ATL). Please consider the SAP notes **1077727** and **1375494** on the SAP Service Marketplace (<http://service.sap.com/connectors>).

If you want to use the **SAP synchronization** function, please make SAP Java Connector available on the server (page 199).

JCo and JRE	Windows	Processor	DLL	Windows installation directory
32-bit	32-bit	x86	sapjco3.dll	\system32
32-bit	64-bit	x86	sapjco3.dll	\SysWOW64
64-bit	64-bit	x86	sapjco3.dll	\system32
64-bit	64-bit	Itanium	sapjco3.dll	\system32

5.5.6.2.2.2 Import transport request (customizing)

To be able to start customizing transactions and call customizing views from ARIS, you must import the current transport request into the SAP system. You find the transport request on the ARIS Platform installation media under **Addons\ARIS for SAP\ABAP\Customizing**. The function module **Z_VIEW_MAINTENANCE_CALL** is created in the function group **ZARIS**. This function group is assigned to the development class **ZIDS_ARIS**.

Procedure

1. Copy the file **K<number>.<SAP system SID>** from the directory **Addons\ARIS for SAP\ABAP\Customizing** of the ARIS Platform installation media to the directory **\sapmnt\trans\cofiles**.
2. Copy the file **R<number>.<SAP system SID>** from the directory **Addons\ARIS for SAP\ABAP\Customizing** of the installation media to the directory **\sapmnt\trans\data**.
The directory **sapmnt** normally corresponds to the directory **\usr\sap**. If you cannot find the **cofiles** and **data** directories under the specified paths, you can determine the correct path using the **DIR_TRANS** variable. To do this, log on to the desired SAP system, and run transaction **AL11**.

To transfer the transport request to the SAP system using the command line program **TP.EXE**, enter the following commands in the specified sequence:

- a. **TP addtobuffer <SAP system SID>K<number> [target system SID]**
- b. **TP import <SAP system SID>K<number> [client on target system]**

You can also execute the transport request using the transaction **STMS**:

Procedure

1. Log on to the relevant SAP system as a system administrator.
2. Execute transaction **STMS**. This takes you to the Transport Management System.
3. Click on **Import overview**.
4. Double-click on the relevant SAP system. This takes you to the import queue.
5. In the menu, select **Add-ons/Other requests/Append**. The **Append transport request to import queue** dialog opens.
6. Enter **<SAP system SID>K<number>** and confirm. You return to the import overview.
7. Select the transport request.
8. In the menu, select **Request/Import**. The **Import request** dialog opens.
9. Enter the relevant target client and confirm via **F8** or **Start import**.

5.5.6.2.3 Configure ARIS Online Guide

SAP system administrators can use ARIS Online Guide to make help on company-specific transactions available for users of SAP systems alongside the R/3 help. For example, ARIS Online Guide gives you access to documents that were created during customizing or later to explain complex processes.

- If you plan to use ARIS Online Guide in the Windows environment, you must first run the ARIS Online Guide setup and then make adjustments to your SAP system. The setup is located on the installation media in the **\Setups\Windows\ARIS Online Guide Client** directory. In addition, a SAP GUI must be installed on the computers.
- To be able to publish the database using **ARIS Business Publisher** or **ARIS Web Publisher**, these products must be enabled and configured.
- An executable version of the SAP GUI and an approved Web browser must be installed.
- The required documents and configuration file must be prepared and provided using **ARIS for SAP**. Additional information is available under (**Help/Help topics/ARIS Business Architect for SAP/Procedure**).

Once you have executed the client setup and made the created HTML documents available in the SAP system, your SAP system administrator must implement the transactions **ZEXTHLPADM**, **ZEXTHLPUSR**, and **ZEXTHLP** in the SAP system and adapt the Web server.

To do so, please adjust the following:

1. Import required function modules (page 205).
2. Modify program **LSHL2U01** (page 206).
3. Specify settings (page 207).

5.5.6.2.3.1 Transfer function modules

A transport request is executed to import the required function modules. The current transport request is located on the installation medium in the directory specified.

Procedure

1. Copy the file **K<number>.<SAP system SID>** from the directory **Addons\ARIS for SAP\ABAP\ARIS Online Guide** of the installation media to the directory **\sapmnt\trans\cofiles**.
2. Copy the file **R<number>.<SAP system SID>** from the directory **Addons\ARIS for SAP\ABAP\ARIS Online Guide** of the installation media to the directory **\sapmnt\trans\data**. The directory **sapmnt** normally corresponds to the directory **\usr\sap**. If you cannot find the **cofiles** and **data** directories under the specified paths, you can determine the correct path using the **DIR_TRANS** variable. To do this, log on to the desired SAP system, and run transaction **AL11**.

To transfer the transport request to the SAP system using the command line program **TP.EXE**, enter the following commands in the specified sequence:

- a. **TP addtobuffer <SAP system SID>K<number> [target system SID]**
- b. **TP import <SAP system SID>K<number> [client on target system]**

You can also execute the transport request using the transaction **STMS**.

Procedure

1. Log on to the relevant SAP system as a system administrator.
2. Execute transaction **STMS**. This takes you to the Transport Management System.
3. Click on **Import overview**.
4. Double-click on the relevant SAP system. This takes you to the import queue.
5. In the menu, select **Add-ons/Other requests/Append**. The **Append transport request to import queue** dialog opens.
6. Enter **<SAP system SID>K<number>** and confirm. You return to the import overview.
7. Select the transport request.
8. In the menu, select **Request/Import**. The **Import request** dialog opens.
9. Enter the relevant target client and confirm via **F8** or **Start import**.

Then assign each of the transactions **ZEXTHLPADM**, **ZEXTHLPUSR**, and **ZEXTHLP** a new or existing authorization object.

If you create any new authorization objects, you must include them in suitable authorization profiles.

5.5.6.2.3.2 Modify program LSHL2U01

After you have imported the required function modules, you must modify the SAP standard function **HELP_START** in program **LSHL2U01**.

Note

To do this, you need a developer key and possibly an object key. You can obtain these keys via **OSS**.

Procedure

1. If required, log on to the relevant SAP system.
2. Execute transaction SE38.
3. Insert the required code at the start of the program. A program might begin as follows:

```
data: l_action like sy-xcode.      " *17i
data: l_error_msg like iwerrormsg.  " DHB
data: exit_flg.
data: save_help_info_call like help_infos-call.
data: ihelpinfo type help_info.
---Please insert the following modification here: ---
{  INSERT      SOLK<number>                      1
*----- CALL MODIFICATION ARIS Online Guide
DATA: loaded type c,
      bothhelp type c.
if help_infos-call cn 'TMV'.
  call function 'Z_START_ARISHHELP'
    exporting
      i_program = help_infos-program
    changing
      bothhelpx = bothhelp
      helploaded = loaded.
  if bothhelp ne 'X' and loaded = 'X'.
    exit.
  endif.
endif.
***** end of insertion*****
*}  INSERT
---Additional code. ---
```

Note

After you have imported support packages into the SAP system, this modification may be missing in some cases. The F1 help call of ARIS Online Guide is no longer available then. In this case, repeat steps 1-3.

5.5.6.2.3.3 Specify settings

Once you have imported the required function modules and modified the SAP standard function **HELP_START**, you can use the transactions **ZEXTHLPADM**, **ZEXTHLPUSR**, and **ZEXTHLP** to specify various settings for the ARIS Online Guide in the SAP system.

What is the ZEXTHLPADM transaction used for?

SAP system administrators use the **ZEXTHLPADM** transaction to specify default settings that all users of the client can adopt. Users can specify their own settings with the **ZEXTHLPUSR** transaction.

- If you plan to make only the help from ARIS Online Guide available to the above user, enable the **Use ARIS Online Guide** check box in the **ARIS Online Guide - Global settings** dialog.
- To provide user access to the ARIS Online Guide help in addition to the F1 help that is available in the SAP system by default, enable the **Display standard R/3 help in addition to ARIS Online Guide** check box.

In the **Path to file onlineguide.ini** field, enter the path to the folder in which the file <Name of the ARIS Online Guide configuration file> is saved.

What is the ZEXTHLPUSR transaction used for?

Each of the client's users can use the **ZEXTHLPUSR** transaction to customize the settings specified by the SAP system administrator with the **ZEXTHLPADM** transaction.

You can specify the following settings in the **ARIS Online Guide - User-specific settings** dialog:

- Activate only the ARIS Online Guide help
- Activate the ARIS Online Guide help in addition to the standard F1 help
- Enter the path to the configuration file of the ARIS Online Guide.

If you have changed the default settings that the system administrator specified and want to reactivate them, click on **Restore default**.

What is the ZEXTHLP transaction used for?

Each of the client's users can use the **ZEXTHLP** transaction to activate the ARIS Online Guide the next time F1 help is called.

If a user has executed this transaction and presses the **F1** key, the ARIS Online Guide help is displayed with the settings specified via the **ZEXTHLPADM** and **ZEXTHLPUSR** transactions. If the user presses the **F1** key again, the standard F1 help of the SAP system is displayed again.

5.5.6.2.4 Use ESR contents

ARIS Connectivity for ESR enables users to connect to ESR servers and access their contents in read-only mode. In addition, ESR objects of the types **Deployment unit**, **Process component**, **Service interface**, **Operation**, or **Business object** can be transferred to ARIS databases for further use. Users can enter service requests here, which are then implemented. Implementation is possible from ESR version 7.11 SP2, i.e., after the **Service request ID** attribute is available. For users to be able to connect to ESR servers, you must copy the required JAR files to the installation directory. For licensing reasons, they may not be installed automatically.

Prerequisites

To connect to SAP Enterprise Service Repository (SAP ESR), you must have one of the following product versions and ESR:

- SAP enhancement package 1 for SAP NetWeaver Composition Environment 7.1 (Support Package Stack 1)
- SAP enhancement package 1 for SAP NetWeaver Process Integration 7.1 (Support Package Stack 1)

Procedure

1. Open the ESR server directory **usr\sap\<engine version>\JC40\j2ee\j2eeclient**.
2. Copy the files **sap.com~tc~exception~impl.jar**, **sap.com~tc~je~clientlib~impl.jar**, **sap.com~tc~je~leanClient.jar** and **sap.com~tc~logging~java~impl.jar**.
3. Depending on whether users start the product in a browser or as an application, the files have different target directories.
 - a. If you are using the products in browser mode and have performed a default server installation, the directory is located under **<ARIS installation directory>\server\html\lib**.
 - b. If you are using the products in browser mode and have performed a user-defined installation, the directory is located under **<wwwroot>\<ARIS installation directory>\lib**.
 - c. If you start products as an application, that is, not in browser mode, save the copied files to ARIS installation directory **\JavaClient\lib** manually or by software distribution.

The feature is available after system restart.

5.5.6.2.5 Configure ARIS Business Publisher Server

The connection to your SAP systems is configured **with** wpsetup.exe by default. If you keep this configuration, you do not need to adapt the configuration file **webappserver.cfg**. To use the connection **without** wpsetup.exe, you must provide files and adapt (page 118) the configuration file.

Users require a local SAP GUI for Windows installation (version **7.1** or **7.2**) for the functionality **Run transaction**.

5.5.7 ARIS Business Optimizer

ARIS Business Optimizer is a product that can be installed alone or in combination with other ARIS Platform products.

5.5.7.1 ARIS Business Optimizer evaluation scripts

In the **Scripts** module of **ARIS Business Optimizer**, you can manage the ARIS Business Optimizer evaluation scripts. This applies to scripts in your local standard database system (client installation) and scripts on other ARIS servers (default server or user-defined server).

5.5.7.2 Multi-server environment: Rule set change and rule set update

If you use ARIS Business Optimizer in a multi-server environment, you need to consider the following when changing or updating a rule set:

ALL Business Server instances that are installed must be supplied with the new rule sets (when they were changed) or the updated rule sets (when they were updated), i.e., the new or changed rule sets must be installed on EACH of the Business Server instances.

Warning

If this is not observed, ARIS Business Optimizer users work with rule sets that have the same name but are actually different.

Rule set change

- The new rule set is installed on one ARIS Business Server only.
- As the data load is optimized via a dispatch mechanism, login directs one user to the ARIS Business Server containing the new rule set, and the next to the server not containing the new rule set.
- As a consequence, the second user can neither view nor use the new rule set.

Rule set update

- The rule set of only one ARIS Business Server is updated.
- As the data load is optimized via a dispatch mechanism, login directs one user to the ARIS Business Server whose rule set was updated, and the next to the server providing the previous version of the rule set.
- As a consequence, one user applies the current rule set, while the other uses the previous one.

This also applies to ARIS Business Optimizer reports and ARIS Business Optimizer templates in a multi-server environment.

5.5.7.3 ARIS Business Optimizer logging

ARIS Business Optimizer logs program activities in various log files. General program activities are logged in the **clientlog file**. This file is created anew every day with the date being appended to its name. For example, the clientlog file from March 20, 2010 is named **clientlog_100320.log**. It is saved in the directory **C:\Documents and Settings\<user>\ARIS72\log**.

When a data transfer is performed, the file **BO_0_0.log** is created in the program directory, e.g., **C:\Program Files\ARIS7.2\server\log\bo**. A merge is logged in the same directory, but in the file **BO_MERGE0_0.log**. The ARIS Business Optimizer log file records the data transfer from an **ARIS database**, while the ARIS Business Optimizer merge log file records which data and/or structures are overwritten and which are retained.

Once these log files exceed 5 MB, a new file is created with the number of the file name being increased by one. Example: **BO_1_0.log** and **BO_MERGE1_0.log**. When the number of created files reaches 20 for each type, the first one is overwritten. This ensures that a maximum of 200 MB is required for logging both activities. To view the most recent log, open the file with the current date.

5.5.8 ARIS IT Architect

ARIS IT Architect is a product that can be installed alone or in combination with other ARIS Platform products.

Depending on the application scenario, large databases or models and the use of comprehensive macros may result in extended runtimes. ARIS clients and ARIS Web clients then require more RAM. More RAM is also required for automatic spell checking when more than two languages are used.

By default, memory allocation takes place automatically and can however, be manually (page 214) configured.

Note

During automatic memory allocation, manual settings specified for ARIS clients (launcher.cfg) and ARIS Web clients (arisloader.cfg) are ignored.

To configure memory allocation manually, you must adjust the configuration files:

- **ARIS clients**

(<ARIS installation directory>\JavaClient\config**launcher.cfg**)

- **ARISWeb clients**

(<Installation directory>/server/html/config/**arisloader.cfg**.)

Procedure

1. In the **<jvmParams** entry, insert:

```
AutomaticMemoryManagement="false"
```

This enables manual configuration of the JVM parameters.

2. Adjust the memory size, e.g.:

```
jvmOptions="-Xmx512m;-Xms64m;-XX:NewSize=32m;-XX:MaxNewSize=64m;-XX:MaxPermSi  
ze=156m;-Dsun.java2d.d3d=false />
```

After you restart the client your settings are transferred. Automatic memory allocation is deactivated.

5.5.9 Maintenance tasks with an ARIS client

To use an ARIS client for maintenance tasks, you need a special license key. In this case, please contact Software AG.

Special licensing feature

Warning

A maintenance license key may only be used for an ARIS client with which you carry out maintenance tasks, perform automatic exports with ARIS Web Publisher, or generate reports. Modeling with this ARIS client is not permitted.

5.5.10 Use external Java files (ARIS clients)

You can make Java files available to ARIS clients and ARIS Web clients (page 230).

Procedure

Create the subdirectory **endorsed** in the ARIS installation directory/javaclient and copy the Java file into this directory.

5.5.11 Logging

The program activities are logged in the directory <system drive>:\Documents and Settings\<user>\ARIS71\log. Different files are created, depending on the action and the program functions installed.

The list below contains some sample files:

- **clientlog_<jjmmtt>.log**

Logs general connection information and actions.

- **consolidation.log**

Logs the actions and result of consolidation, and collects errors and problems that have occurred.

- **Merge.log**

Logs the actions and result of merge procedures.

The merge options and the settings you specified for conflict resolution are listed. Any errors and problems that have occurred are also listed.

- **versioning.log**

Logs the actions and result of versioning processes.

- **copy.log**

Logs problems that occurred, e.g., when creating occurrence copies, and lists the corresponding solution to the problem.

- **exception_<jjmmtt>.log**

Collects unexpected errors that could not be solved by the program, e.g., problems connecting to a database server.

If a log file could not be transferred to this directory, you will receive a message. This file is located either in the server's (page 148) log directory, in the installation directory <system drive>:\Program Files\ARIS71\log, or in the installation directory <system drive>:\Program Files\ARIS71\JavaClient\log.

Note

If problems occur during operation, you can use the log files to find and resolve errors. If you cannot solve the problems and have a maintenance agreement, please send an error description and the entire contents of the **log** and **config** directories as ZIP files to your local Software AG sales organization.

5.5.12 Manually configure memory allocation

Depending on the application scenario, large databases or models and the use of comprehensive macros may result in extended runtimes. ARIS clients and ARIS Web clients then require more RAM. More RAM is also required for automatic spell checking when more than two languages are used.

By default, memory allocation takes place automatically and can however, be manually (page 214) configured.

Note

During automatic memory allocation, manual settings specified for ARIS clients (launcher.cfg) and ARIS Web clients (arisloader.cfg) are ignored.

To configure memory allocation manually, you must adjust the configuration files:

- **ARIS clients**

(<ARIS installation directory>\JavaClient\config\launcher.cfg)

- **ARISWeb clients**

(<Installation directory>/server/html/config/arisloader.cfg.)

Procedure

1. In the **<jvmParams** entry, insert:

```
AutomaticMemoryManagement="false"
```

This enables manual configuration of the JVM parameters.

2. Adjust the memory size, e.g.:

```
jvmOptions="-Xmx512m;-Xms64m;-XX:NewSize=32m;-XX:MaxNewSize=64m;-XX:MaxPermSi  
ze=156m;-Dsun.java2d.d3d=false />
```

After you restart the client your settings are transferred. Automatic memory allocation is deactivated.

5.6 ARIS Web clients (browser mode)

This section describes the requirements and the setup, setting options, and execution modes for starting ARIS Platform products via your browser (as Web clients) rather than starting them as applications.

Make sure that one of the approved JRE versions is installed on all computers and the specific system requirements are met.

Browser

- Microsoft Internet Explorer version 6 to 9
- Firefox 3.x, 6.x, and 7.x

JRE

- The following versions are approved: Java Runtime Environment (JRE) 1.5.0_08 and subsequent patches, as well as 1.6.0_04 and subsequent patches that are in the public domain (Java SE on the SUN home page except Java SE for Business) and generally released by SUN.
- To display different character sets (Japanese, Arabic, Cyrillic, etc.), the corresponding file in the directory **<JRE installation directory>\<version>\lib** must be named **font.properties**. For example, if you wish to display Japanese characters, you must rename the **font.properties.ja** file to **font.properties**.
- If you are using Windows Vista, you require Java Runtime Environment 1.6 update 10 or higher.

The file **aris_database.html** enables you to open databases and models with Java-based products. To use the Java-based products, an approved JRE (page 125) is required.

Warning

Install the JRE in a path whose directory name does not include any spaces. Otherwise, the JRE cannot be executed.

If none of the required JREs is installed, the system redirects you to SUN's Internet address for JRE installation:

```
if (NN) { document.writeln('<EMBED \
WIDTH = "100%" HEIGHT = "100%" \
pluginspage="http://java.sun.com/products/plugin/1.4/plugin-install.html" \
scriptable=false \'); }
else { document.writeln('<OBJECT
classid="clsid:8AD9C840-044E-11D1-B3E9-00805F499D93" \
WIDTH = "100%" HEIGHT = "100%" \
codebase="http://java.sun.com/products/plugin/1.4/jinstall-14-win32.cab#Version=
1,3,1,0">');
}
```

However, you can also delete the Internet address or replace it with the address of the Web Client Components.

The JRE setup program is located in the directory **addons\java runtime environment**.

Tip

Information on the JRE plug-in is available on the Sun (<http://java.sun.com/>) Web page.

Note

SUN renamed the JRE versions. JRE 1.5.0_08 is now called JRE 5.0, Update 8. Approvals are also valid for subsequent updates.

ARIS products are tested using the JRE that is current at the time of release.

- If JRE 1.5.0_08 and subsequent patches have been approved for an ARIS product, the approval is valid for both JRE 1.5.0_08 and JRE 1.5.0_09 and also for any subsequent patch levels in the **Java SE** public domain (that is, except Java SE for Business) on the SUN home page. SUN Microsystems guarantees compatibility between the JRE patch levels. Therefore, the ARIS approvals for JREs are valid for all patch levels of a version.
- If you are using JRE 1.6 update 3 or an older version, copy the file **jaxb-api.jar** from the directory **<Web Client Components>\lib** to the directory **<Java JRE installation directory>\endorsed**, e.g., **C:\Program Files\Java\<current JRE>\lib\endorsed**.
If the directory **endorsed** does not exist, you must create it. Please note that you must repeat this procedure for every update of version 3 or older. We therefore recommend installation of version 4 or higher.
- If you have Java 6 update 10 installed, problems may occur despite better performance. Depending on your graphics card and driver configuration, installation of Java 6 update 10 may cause delays in the **Designer** and **Matrices** modules.

In this case, use the following command line entry to start the program:

-Dsun.java2d.d3d=false

IIS 6.0 on Windows Server 2003

If you installed Internet Information Server 6.0 (IIS 6.0) with default settings, please proceed as follows to display the files listed below.

Procedure

- ARIS Business Architect: Register the **cfg** MIME type with the Web server. Only then can the **arisloader.cfg** file be used.
- Web Publisher exports: For the Web site on which the Web Publisher exports will run, enter the **text/html** MIME type for the **properties** file type. This allows Web Publisher export files to be identified.

5.6.1 Set up ARIS clients for browser use

This section provides you with information on the setup, setting options, and execution modes that are relevant for using ARIS Platform products in a browser environment.

Warning

Please only use the file **userServerSettings.cfg** to change the configuration. This ensures that your changes are preserved in future update installations. The other ARIS Business Server configuration files are overwritten for each installation.

ARIS Web Client Components and Web server

Before your Web server can use ARIS Web Client Components, you need to specify **one** of the following settings:

- Map a drive to the WWW root of the Web server.
- Run ARIS Business Server setup on the computer where your Web server is installed. Enter the path to the WWW root. Under MS Windows, e.g., **<C:\inetpub\www_root\>**, under Unix, e.g., **</opt/ARIS7.2/server.xyzxyz/html>**.

ARIS Web Client Components and HTML Generator

The files **index.html** and **aris_database.html** are updated by the HTML Generator during runtime. For further information, please refer to the chapter **Adapt HTML Generator: Current database lists** (page 143) in the Administration Guide. The HTML Generator is configured using the files **defaultServerSettings.cfg** and **userServerSettings.cfg** of ARIS Business Server, and it uses the templates located in the directory **ARIS Business Server/templates/htmlgen**. It is launched every time a database is created, deleted, or renamed.

The following directories are created:

/lan

Default directory. It launches the ARIS Web clients as an applet and allows direct access to ARIS Business Server.

/ssl

If you select this directory for launching ARIS Web clients, the data exchange is encrypted. For further information, please refer to the chapter on **SSL encryption of data transmission via Secure Socket Layer** (page 142) in the Administration Guide.

/app

If you select this directory for launching ARIS Web clients, they are run as an application rather than an applet (for additional information, please refer to **Execution as application or applet** (page 222) in the Administration Guide).

To enable SSL encryption, open the file **userServerSettings.cfg** and add the following entry:

```
<profiles>
  <public ssl="443" />
</profiles>
<htmlgen>
  <genlist>
    <genfile target_dir="ssl" target_name="dblist.html"
database_template="aris_database_ssl.html"/>
  </genlist>
</htmlgen>
```

Please note that the output and backup paths must be modified accordingly in the **userServerSettings.cfg** file. If your work is not limited to the use of only one ARIS Business Server, you need to adjust the paths on the computer on which ARIS Site Manager is installed. Insert the following entry:

```
<htmlgen>
  <outputpath path="e:/inetpub/wwwroot/aris70"/><backuppath
path="e:/inetpub/wwwroot/aris70/backup"/>
</htmlgen>
```

For more ARIS Business Servers, adjust the file **userServerSettings.cfg** as follows:

```
<htmlgen>
  <appserver name="<Name of the computer on which ARIS Site Manager is installed"/>
  <genlist>
    <genfile target_dir="ssl" target_name="dblist.html"
database_template="aris_database_ssl.html"/>
  </genlist>
</htmlgen>
```


5.6.1.1 Installed files of ARIS Web clients

By default, the files you need for downloading the ARIS Web clients to your computer are installed in the directory **%ARISHome72%server/html/lib**. You need the downloaded JAR files to run the Web clients. The file **arisloader.cfg** is saved in the directory **%ARISHome72%server/html/config**. This file controls the download if you click on a database shortcut on the home page.

Please do not use any country-specific special characters in the paths.

The file **arisloader.cfg** is saved by ARIS Business Server only. ARIS clients evaluate it.

The entry **-Duser.home**, which was previously specified in the **jvmOptions**, is replaced with the new variable **UserConfigPath** and can be used like the variable **DownloadClientPath**. You can no longer use environment variables for **jvmOptions**. You can now enter more than one environment variable for both variables, e.g.:

UserConfigPath=%PROGRAMFILES%\%USERNAME%

Here are some examples of entries in the **arisloader.cfg** file:

```
# Versioninfo
#   ARIS_Version=7.2.0.260956
#   File_Version=1

# Use variable DownloadClientPath to override the default directory where the files
# of the ARIS Download Client are stored
# Sample:
# DownloadClientPath=C:\ARIS Download Client
DownloadClientPath=
# Main Start Class
jvmOptions=-Xms64m -Xmx256m -XX:NewSize=32m -XX:MaxNewSize=64m

# External Libraries

jar=CcConfig.jar
jar=CcLicense.jar
jar=CcSaxpath-1.0.jar
jar=ChartDirector.jar
jar=CnvConnect.jar
jar=CorticonFoundationAPI.jar
jar=JimiProClasses.jar
jar=activation.jar
jar=ant-launcher.jar
jar=ant.jar
jar=antlr.jar
jar=bsscjhrr.jar
jar=castor-1.0.5.jar
jar=commons-collections-3.2.jar
jar=commons-configuration-1.3.jar
jar=commons-dbc-1.2.1.jar
jar=commons-discovery.jar
jar=commons-lang-2.2.jar
jar=commons-logging.jar
jar=commons-pool-1.3.jar
```

```
jar=ejb20.jar:ignore
jar=iText-2.0.7.jar
jar=iTextAsian.jar
jar=jaxb.jar
jar=jdo2-api-2.0.jar
jar=jdom.jar
jar=jh.jar
jar=jide-develop.jar
jar=js.jar
jar=log4j-1.2.14.jar
jar=luce-analyzers-2.2.0.jar
jar=luce-core-2.2.0.jar
jar=luce-highlighter-2.2.0.jar
jar=mail.jar
jar=ociplugins.1.0.0.jar
jar=orbacus.4.3.2.jar
jar=org.eclipse.core.resources_3.2.2.R32x_v20061218.jar
jar=org.eclipse.core.runtime_3.2.0.v20060603.jar
jar=org.eclipse.emf.common_2.2.1.v200705141058.jar
jar=org.eclipse.emf.ecore.change_2.2.1.v200705141058.jar
jar=org.eclipse.emf.ecore.xmi_2.2.3.v200705141058.jar
jar=org.eclipse.emf.ecore_2.2.3.v200705141058.jar
jar=org.eclipse.emf.edit_2.2.2.v200705141058.jar
jar=org.eclipse.equinox.common_3.2.0.v20060603.jar
jar=org.eclipse.osgi_3.2.2.R32x_v20070118.jar
jar=poi-3.0.2.jar
jar=qname.jar
jar=simulationstepcache-1.0.0.jar
jar=tools.jar
jar=wsdl4j.jar
jar=xercesImpl.jar
jar=xml-apis.jar
jar=y-annotations-1.jar
jar=y-graphics-3.jar
jar=y-graphlayout-2.jar
jar=y-guiframework-6.jar
jar=y-lipo-1.jar
jar=y-reportdesigner-client-2.jar
jar=y-reportdesigner-common-2.jar
jar=y-reportexecution-2.jar
jar=y-utils-2.jar
jar=y.jar
jar=CorticonFoundationI18n.jar
jar=sap.com~tc~exception~impl.jar:optional
jar=sap.com~tc~je~clientlib~impl.jar:optional
jar=sap.com~tc~je~leanClient.jar:optional
jar=sap.com~tc~logging~java~impl.jar:optional
jar=sapjco3.jar:optional

# ARIS Client jars
jar=arismethod.jar
jar=cl_locale.jar
jar=cl_locale_de.jar
jar=cl_locale_en.jar
jar=client.jar
```

The **DownloadClientPath** entry or the **ARISHome72** environment variable specifies the directory on your computer to which the files for Java-based products are copied after startup.

- If the **DownloadClientPath** entry is specified, the files are stored in the specified path and the environment variable is ignored.
- If the **DownloadClientPath** entry is not specified, the environment variable is evaluated. For the **ARISHome72** variable, setup enters the path to the ARIS installation directory.
- If the **DownloadClientPath** entry is not specified and the **ARISHome72** environment variable is not set, the files are stored in the **ARIS72** subdirectory of the user profile (%USERPROFILE%).

5.6.1.2 Language update and character sets

A language update for the Web Client Components and ARIS Server enters the language resource files in the **arisloader.cfg** file. As a result, a language update is performed automatically when a Java-based product opens a database.

To display different character sets (Japanese, Arabic, Cyrillic, etc.), the corresponding file in the installation directory must be called **font.properties**.

For example, if you wish to display Japanese characters, you must rename the **font.properties.ja** file to **font.properties**.

5.6.1.3 Execution as application or applet

We recommend that you run ARIS Web clients as an application to prevent errors caused by your browser. You can install ARIS clients, or launch them as an application via a browser as described below.

During installation, the directory **\template\htmlgen** is created in which the files **aris_database_lan.html** (index_lan.html) and **aris_database_app.html** (index_app.html) are stored.

The lines for starting ARIS clients differ as follows:

File **aris_database_lan.html** (index_lan.html) for starting ARIS clients as applets:

```
var appletmode = (args['appletmode'] ? args['appletmode'] : "applet");
```

File **aris_database_app.html** (index_app.html) for starting ARIS clients as an application:

```
var appletmode = (args['appletmode'] ? args['appletmode'] : "javaapp");
```

Warning

If you start a Web client via Internet Explorer, for example ARIS Business Architect, the Java call remains open in the background. As a result, you may not be able to start a second Web client.

Even if you are able to start multiple Web clients, we recommend that you start only one Web client at a time because simultaneous access of multiple Web clients to one Java instance may lead to loss of data and program crashes.

5.6.1.4 Provide additional memory

If you start ARIS clients as applets, you can provide additional memory for them. This is recommended if you use memory-intensive, user-defined symbols in your databases, for example. We recommend to use JRE 6 update 17 or 18 (page 320)

This setting affects all ARIS clients.

Procedure

In the Java control panel, change the Java applet runtime settings by entering the required Java runtime parameters for the JRE version you are using. To provide 256 MB of memory (recommended), enter **-Xmx256m**.

5.6.1.5 Adapt HTML Generator - Current database lists

HTML Generator creates all index files and the file **aris_database.html** for the Web Client Components. It updates the access files whenever databases are created, renamed, or deleted. You can use the file **userServerSettings.cfg** (server\config directory) to control its behavior.

In a default server installation, the HTML Generator is switched on and generates the **index.html** files in the directory **C:\<default directory>\ARIS7.2\server\html**. If you accept all default values during installation, this directory will always contain a current, executable Web Client Components directory that you can copy directly to your Web server.

A dialog prompts you to specify where the HTML Generator is to be installed.

The **htmlgen** section of the file **defaultServerSettings.cfg** contains the path in which the created files are saved. A language ID is entered in this section for each of the interface languages installed on the ARIS Business Server. For each of these IDs, HTML Generator creates an **index_lan.html** file in the Web Client Components structure:

```
<htmlgen>
  <language list default="de">
    <language tag="de"/>
    <language tag="en"/>
    <language tag="ja"/>
  </language list>
<!-- Please edit only these paths for HTMLgenerator configuration -->
  <outputpath path="C:/wwwroot/ARIS7.2"/>
</htmlgen>
```

You can run the HTML Generator manually at any time by executing the **htmlgen.bat** file in the ARIS Business Server directory.

To enable SSL encryption, open the file **userServerSettings.cfg** and add the following entry:

```
<profiles>
  <public ssl="443" />
</profiles>
<htmlgen>
  <genlist>
    <genfile target_dir="ssl" target_name="dblist.html"
    database_template="aris_database_ssl.html"/>
  </genlist>
</htmlgen>
```

Please note that the output and backup paths must be modified accordingly in the **userServerSettings.cfg** file. If your work is not limited to the use of only one ARIS Business Server, you need to adjust the paths on the computer on which ARIS Site Manager is installed. Insert the following entry:

```
<htmlgen>
  <outputpath path="e:/inetpub/wwwroot/aris70"/><backuppath
  path="e:/inetpub/wwwroot/aris70/backup"/>
</htmlgen>
```

For more ARIS Business Servers, adjust the file **userServerSettings.cfg** as follows:

```
<htmlgen>
  <appserver name="<Name of the computer on which ARIS Site Manager is installed"/>
    <genlist>
      <genfile target_dir="ssl" target_name="dblist.html"
database_template="aris_database_ssl.html"/>
    </genlist>
  </htmlgen>
```

Warning

Please only use the file **userServerSettings.cfg** to change the configuration. This ensures that your changes are preserved in future update installations. The other ARIS Business Server configuration files are overwritten for each installation.

5.6.1.6 Installation by software distribution

Warning

As a consequence of changing the standard installation as described in this section, updates or other changes by the ARIS installation program are no longer possible. They would have to be made manually.

In general, the following applies: The file **cid.bin** must not be distributed because all clients will otherwise be identified as one and the same client. Since the file is newly created when the client is started, there is no need to distribute it.

After starting ARIS products, you will find the **cid.bin** file in the **ARIS72** subdirectory of the user profile (%USERPROFILE%).

You can copy the JAR files of a Java-based product from the directory

ARIS7.2/DownloadClient to a directory on the client computer via software distribution. In the file **arisloader.cfg** (page 219), you can then assign the **ARISHome72** environment variable to the **DownloadClientPath=** entry for this path.

5.6.1.6.1 Preconfigured user.cfg

After a new installation, the internal **user.cfg** file is used at the first start. This file ensures that the user has to enter the license key for the Web client after starting the program.

If ARIS Business Architect finds the **user.cfg** file in the **config** directory of your Web Client Components installation, this file will be used instead of the preconfigured file **user.cfg** (page 227).

Procedure

1. Switch to the **config** directory of your Web Client Components installation.
2. Open the file **user.cfg** with a text editor, enter your data (page 227) and save the file.

The first time a user launches Java-based products, your settings will be used. When a user used Java-based products prior to changing the **user.cfg** file, the **user.cfg** and **user.tmp** file must be deleted. They reside in the **ARIS72** subdirectory of the user profile (%USERPROFILE%) on the user's computer.

5.6.1.6.2 Configure user.cfg

If ARIS Business Architect finds the **user.cfg** or **user.tmp** file in the **config** directory of your Web Client Components installation, it uses this file instead of the preconfigured file (page 227) **user.cfg**.

Procedure

1. Switch to the **config** directory of your Web Client Components installation.
2. Open the file **user.cfg**, enter your data (page 227), and save the file under the name **user.cfg**. You can update these files simultaneously via software distribution.

5.6.1.6.3 Possible settings for user.cfg

You can specify the following settings in the **user.cfg** file:

- You specify configuration settings, such as the default filter or grid width, or you change the maximum number of search results.
- You can set up sample Java-based products and copy the generated **user.cfg** file to the directory **<installation directory>\server\html\config\oem01**. You must delete the session ID in that case.

5.6.2 Automatically update installed ARIS Web clients

You can set up a virtual directory on your Web server that the installed ARIS Web clients can access to download newer versions. If you update the virtual directory on your Web server by running a patch setup, the ARIS Web clients will automatically download the current files when the setup is run.

The automatic update is only performed for ARIS clients. Local standard database system installations are not updated.

5.6.2.1 Preparations for the automatic update

To perform an automatic update, create a virtual directory on your Web server for which you enable client access.

Procedure

1. Install the Web client components (under Windows (page 20) or UNIX (page 26)) on your Web server.
2. Create a virtual directory that is mapped to the installation directory of the installed Web Client Components. Assign a name to the Web directory, e.g., **ARIS_autoupdate**.
3. Test the auto-update URL, such as `http://WebServer/ARIS_autoupdate`, by entering **`http://WebServer/ARIS_autoupdate/config/arisloader.cfg`** in any Web browser. If the content of the file **`arisloader.cfg`** is displayed, continue with the next step.

Communicate the URL, in our example **`http://WebServer/ARIS_autoupdate`**.

If you update the ARIS Web Client components of your Web server using a patch setup, the ARIS Web clients you set up will automatically download the updated files at the next startup.

5.6.2.2 Set up ARIS Web clients for automatic update

For installed ARIS Web clients, ARIS Business Architect, ARIS Business Designer, ARIS Business Designer for SAP, ARIS Business Architect for SAP and ARIS UML Designer etc., you can configure the system to search a URL for current program files at startup. If current files are available, they will be downloaded.

Procedure

1. Start the Web client and click on **View/Options**.
2. In the tree view, click on **Automatic updates**.
3. Enable the **Enable automatic updates** check box.
4. Enter the URL for the automatic ARIS update, in our example **http://WebServer/ARIS_autoupdate**.
5. Enable the Test connection check box.

Click on **OK** to close the options. If a connection cannot be established, you receive a corresponding message. In this case, correct the URL.

Every time the Web client is started, the specified URL is checked for updated program files. If any are available, they can be downloaded.

5.6.2.3 Start a second ARIS Web client

If you start ARIS Business Architect in the browser, for example, the Java applet runs in the background in Internet Explorer. But if you try to start a second ARIS Web client in the same manner, e.g. ARIS Business Optimizer, the Java applet that is still active prevents it.

To open the second ARIS Web client, you must close the browser, which terminates the Java applet, and open the browser again. You can then start ARIS Business Optimizer in the browser.

5.6.3 Use external Java files (ARIS Web clients)

You can make Java files available to ARIS clients (page 212) and ARIS Web clients.

Procedure

1. Create the subdirectory **endorsed** in the installation directory of the Web client components (<Installation directory>/server/html/) and copy the Java file into this directory.
2. Open the file <Installation directory>/server/html/config/**arisloader.cfg** and insert the entries in the following syntax:.

```
jar=[file name].jar:[optional|]extendCP|endorsed
```

5.7 ARIS Toolset/ARIS Easy Design (application)

ARIS Toolset and ARIS Easy Design will no longer be installed from this version. The products will be updated, if necessary, only if an update installation is performed.

The products associated with ARIS Toolset and ARIS Easy Design are always started as applications. These ARIS clients also use ARIS Business Server to access the database server and thus work with a common data basis.

This section describes the processor, memory, system configuration, and software requirements of the various client computers. For simultaneous use of other applications, a faster processor, additional memory, or system extension may be required.

Depending on the application scenario, e.g. Merge or Simulation (page 236), large databases may cause extended runtimes. Use of report, backup and restore functions may require more RAM. On the other hand, if more RAM is available than listed below, runtime behavior might improve. In some cases, minimum and recommended system requirements are specified. The minimum system requirements must be met in order for the ARIS products to work properly. Meeting the recommended system requirements will assure good performance even with large data volumes. In general, it is advisable to use up-to-date hardware taking into account the number of users who will be accessing the same ARIS Business Server (page 125).

The table shows the requirements that apply for ARIS Toolset and ARIS Easy Design. For some programs, such as ARIS Toolset for SAP/ARIS Easy Design for SAP (page 235) or ARIS Web Publisher (page 237), additional requirements must be met. Find out about specific requirements in the relevant sections.

Hardware

Hardware	Recommended	Minimum
Processor	Intel Pentium IV 2.4 GHz	Intel Pentium IV 2.0 GHz
RAM	Client installation with and without local database system: 1 GB RAM	<ul style="list-style-type: none"> Client installation without local database system: 256 MB RAM Client installation with local database system: 512 MB RAM
Bandwidth	128 k	56 k. Lower bandwidths are possible. However, lower bandwidths can result in reduced performance.
Hard disk	375 MB For single-user installation: sufficient disk space for each user database.	375 MB For single-user installation: sufficient disk space for each user database.
Network communication	TCP/IP (page 131)	TCP/IP

Software

Software	Details
Operating systems	Windows XP Professional + Service Packs
Browser	<ul style="list-style-type: none"> Microsoft Internet Explorer versions 6, 7, 8 (SR 2010_5 or higher) and 9 (32-bit) (SR 2011_02) Firefox 1.x, 2.x (SR 2008_9 or higher), 3.x (SR 2010_5 or higher), 6.x and 7.x (SR 2011_02) <p>Security settings (Microsoft Internet Explorer)</p> <p>If Java Runtime Environment (JRE) is not yet installed and needs to be downloaded, you need to specify settings in the Tools/Internet Options/Security/Custom Level menu in Microsoft Internet Explorer.</p> <p>Adjust your browser settings to ensure that the following actions are permitted:</p> <ul style="list-style-type: none"> Running ActiveX controls and plug-ins Downloading signed ActiveX controls Executing JavaScript Pop-ups are permitted in the domain in which the ARIS Business Publisher is running. If pop-ups are blocked, report output cannot be displayed in PDF format.
JRE	<p>If you have ARIS Business Server installed and start ARIS Platform products as programs, an internal JRE version is automatically used. You do not need to install JRE separately. If you have already installed a JRE, your installation is not used by ARIS.</p> <p>Your JRE installation is only used if you start ARIS Platform products from your browser.</p> <p>To display different character sets (Japanese, Arabic, Cyrillic, etc.), the corresponding file in the directory <JRE installation directory>\<version>\lib must be named font.properties. For example, if you wish to display Japanese characters, you must rename the font.properties.ja file to font.properties.</p>

Software	Details
Output	<p>If, for example, you want to output documents in PDF format using Microsoft Word or Microsoft Excel, you must have Adobe Reader and Microsoft Office version 2000 or higher installed. If you use reports to import data from Excel tables, please ensure that the tables have been saved in XLS format. If pop-up blockers are activated for the domain, it may not always be possible to open report output in PDF format from a Publisher export.</p> <p>In addition, all applications that are linked in your models should be installed.</p>
LDAP	ARIS supports LDAP. Windows Server 2003 Active Directory has been tested; therefore, the documentation refers to that system.
Multi-monitor operation	ARIS products are approved for multi-monitor operation.

5.7.1 ARIS Toolset for SAP/ARIS Easy Design for SAP

Please ensure that a local SAP GUI for Windows installation exists on all client computers. To run transactions, you need one of the following SAP systems in one of the following languages:

German (de), English (en), French (fr), Spanish (sp), or Japanese (ja):

- Local SAP GUI for Windows installation, version 7.1 to 7.2
- SAP R/3 4.6 c or d, 4.7
- ECC 5.0/ECC 6.0 (de, en, fr, sp, ja)

For Solution Manager synchronization, you also need SAP Java Connector **2.13, 2.15, 2.16, 2.18**, or a higher 2.x version. It must be installed on your ARIS Business Server or local server.

To perform Solution Manager synchronization, you need SAP Solution Manager, version **3.2** or **4.0/7.0/7.1**, with the languages **German (de), English (en), French (fr), Spanish (sp)**, and/or **Japanese (ja)**.

5.7.2 ARIS Simulation

In addition to the system requirements of ARIS Toolset, ARIS Simulation requires:

Main memory

128 MB RAM (in addition to the 256 MB RAM recommended for ARIS Toolset) (To use ARIS under Windows XP Professional, the minimum system requirement is 160 MB RAM)

5.7.3 ARIS Web Publisher

System requirements for computers used to create Web Publisher exports

In addition to the system requirements for ARIS Toolset, ARIS Web Publisher requires:

File system

Recommended: NTFS. NTFS is required for larger exports (large number of files).

Platform

Web Publisher exports are platform-independent. Certain actions can only be performed under Microsoft Windows (e.g. running transactions and running Lotus Notes).

Intranet publishing

If you are sharing your Web Publisher exports on the intranet, we recommend that you publish the files on a WWW server rather than a file server.

System requirements for computers used to display Web Publisher exports

System font

Small fonts

Browser

Microsoft Internet Explorer version 6.0 + Service Pack 2. JavaScript must be enabled.

While Software AG has not approved the use of later versions, it is highly unlikely that they cannot be used.

Java Virtual Machine (JVM)

Version 1.1.4 for Internet Explorer for the Java GIF and Java JPG export types with user-defined tree view.

If the installed Web browser does not include JVM 1.1.4 or higher (e.g. Internet Explorer version 6.0 under Windows XP), the program must be installed later.

Java Runtime Environment (JRE)

1.5.0X and subsequent patches from the public domain for Internet Explorer, for the Java WMF export type with complete tree view

You do not need JRE for the following export types:

- Java GIF/JPG exports with user-defined tree view
- HTML export with user-defined tree view

SAP transactions and R/3 help, as well as Lotus Notes links

If you want to run R/3 transactions, R/3 help, or Lotus Notes from your Web Publisher export, please execute the file **wpsetup.exe**. This file is located in the directory **ARIS Web Publisher/WPSetup** on the installation media. You can also provide the file on the intranet. This enables all employees to run the file themselves. You find an installation description in the **Procedure** area of the **ARIS Web Publisher** online help.

You also need:

- Local SAP GUI installation, versions 6.20 to 6.40
- Lotus Notes version 4.5 or higher

WWW server (for role-based access to web exports)

- Microsoft Internet Information Server 4.0 or 5.0, each with active component, either ASP or PERL
- Apache Web Server 1.3.6 and Apache HTTP Server 2.0 under Windows with active component, either ASP or PERL

WWW server (without role-based access to web exports)

You can use any Web server because no active components are required. The Web servers listed under **WWW server (for role-based access to exports)** have been tested.

5.7.4 ARIS Connectivity for Lotus Notes

To use this functionality, you must install Lotus Notes version 4.5 or higher.

5.7.5 ARIS API: Continued use of programs from earlier ARIS versions

ARIS API is located in the **addons\API** folder of the installation media as a password-protected ZIP file.

You will receive the required password to unzip the file after purchase.

Unpack the file to <ARIS installation directory>\API.

ARIS API programs of ARIS Toolset version 5.x

You can continue to use programs you created with **ARIS API 5.x** and **6.x** after they have been recompiled with the new header files (*.h) and libraries (*.lib).

To ensure trouble-free operation, the applications (*.exe) created with **ARIS API** should reside in the **ARIS 7.2** installation directory.

To place ARIS API applications in other directories, the path to the **ARIS 7.2** installation directory must be added to the path variable.

The **GUID_REP_COMPLIANCE_ATS** mode (in **ArisDatabaseMode**) is no longer supported. From **ARIS API 6**, only one format is available for representing GUID values. The representation of the GUID is identical to the one located under **Specified Attributes** (ARIS Toolset: **Properties/Attributes/Specified Attributes**. ARIS Business Architect: **Properties/Information**).

The format has changed for the filter keys that are used in the **ArisConfigInit()** API function. Previous keys (e.g. **FULLMETHOD** or **EASYFILTER**) are no longer recognized. Instead, you need to use the new keys. The new keys consist of the GUID of the desired filter.

Example

Initialization of the entire method:

```
ArisConfigInit( hDatabase,
  "DD838074-AC29-11D4-85B8-00005A4053FF", &Error );
```

In the ARIS **Configuration Wizard**, you can look up which GUID belongs to which configuration filter.

5.7.6 Use OLE automation and time control software

If you work with the following components and intend to use OLE automation and time control software, Windows Scripting Host must be installed on your computer.

- ARIS Merge
- ARIS Report
- ARIS Analysis
- ARIS Semantic check
- ARIS Web Publisher
- XML Export and Import

Tip

If you are using Windows XP or 2003 with Internet Explorer version 6.0 or higher, you do not need to install Windows Scripting Host separately. It is already included in these operating systems.

5.7.7 Logging

Program activities are logged. If problems occur during operation, you can use the log files to find and resolve errors. If you cannot solve the problems and have a maintenance agreement, please send an error description and the entire contents of the **log** and **config** directories as ZIP files to your local Software AG sales organization.

If you have used SAP Synchronization, you will find the following files in the ARIS installation directory:

...\log\SolutionManagerLog.txt

...\log\SynchroSolutionManager.log

5.8 ARIS agent

The following section describes how the agent-based system in ARIS supports you in diagnosing and restoring ARIS services.

5.8.1 What are ARIS agents for?

The ARIS agent system autonomously monitors and, in particular, starts and stops ARIS Business Server processes and all dependent services.

Within the system, an ARIS agent monitors and manages all ARIS Business Server processes and the associated ARIS services that are installed on one computer:

- y-simusrv.exe
- reportserver.exe
- y-server.exe
- y-adminagent.exe or y-adminagentsvc.exe (service)
- y-arisservr.exe (**LOCAL** server)
- dbsrv10.exe (Standard Database System of server **LOCAL**)

Administrators of ARIS sites can have messages sent by the ARIS notify service when problems arise. It is possible to notify (page 150) several administrators at the same time.

In the file **userServerSettings.cfg**, you can specify that an e-mail be sent to an e-mail address of your choice when the behavior of the ARIS site triggers warnings or error messages. The e-mail contains the zipped files of the log and config directories. You can toggle the notification mode by setting the **state** value.

5.8.2 What tasks does an ARIS agent handle?

An ARIS agent mainly performs the following tasks:

- Determining and providing ARIS service information
- Monitoring ARIS services by querying them at regular intervals (ping)
- Shutting down or rebooting ARIS services (automatically or after prompting)

You can provide notifications (page 150) for activities using the ARIS agent

5.8.3 How to exit ARIS agents

Shutting down ARIS Business Server correctly will also shut down the ARIS agent and all ARIS services. To do so, either open the DOS window for ARIS Business Server and press **Ctrl + C**, or shut down the service.

5.9 Control login centrally with LDAP

If you want the user login to meet higher security requirements than the standard user management via the ARIS database, we recommend that you set up (page 242) LDAP (Lightweight Directory Access Protocol) authentication. This also simplifies administration (page 243). You only have to create user groups in the database and assign access and function privileges to them. User names and passwords are maintained in the LDAP system only.

On the **Properties - Database/Authentication/Authentication system** page, you can define that every authenticated user is automatically imported (page 276) into the database during the first login.

If LDAP authentication is enabled (page 243), users that have been created in the database can no longer log in. The system user **system** is an exception. Unlike all other users, the system user **system** is never authenticated via the LDAP system. If the LDAP servers are down and databases cannot be accessed, you can still log in as the user **system**.

Make sure that user names in the LDAP system contain only valid characters and that users use secure passwords. Alphanumeric characters, spaces, and the following characters are allowed in user names:

@ . - _ ! " § \$ % & / () = ? * + # < > , ; :

Due to significant differences in the various LDAP systems, no general configuration and connection description can be provided. Applicable restrictions and parameters depend on the particular system used. To connect LDAP, comprehensive knowledge of the relevant system is required.

We therefore cannot guarantee proper functioning of ARIS in combination with different LDAP systems. Windows Server 2003 Active Directory (page 244) has been tested and approved; therefore, the documentation refers to that system. Please consider the legal notices (page 1). To authenticate users via LDAP, you need to install an LDAP server and adjust (page 243) your databases. The LDAP server software can be downloaded free of charge from the Internet or purchased.

ARIS supports LDAP. Windows Server 2003 Active Directory has been tested; therefore, the documentation refers to that system.

Tip

- More detailed information is available in **Help/Help topics/Manage/Databases/Procedure/User management (LDAP)** et sqq.
- You can resolve problems (page 258) with the LDAP connection faster if you enable (page 152) LDAP logging.

Prerequisite

- You have installed an LDAP server.

Procedure

1. Create user groups in the **Administration** module.

2. Assign function and access privileges to the user groups.
3. Set up (page 243) the database for LDAP operation.

5.9.1 Set up the database for LDAP server operation

To enable user authentication via your LDAP system, you must change database properties. You can resolve possible problems with the LDAP connection faster if you enable (page 152) LDAP logging.

Prerequisite

- The LDAP server has been launched.
- You have created user groups in the databases and assigned function and access privileges to them.

Change database properties

Procedure

1. On the **Properties** page of the database, enable the **LDAP system** option.
2. Enable the **Automatically import users at login** check box, and select a user group if applicable.

As a result, authenticated users are automatically created as users in the database during their first login.

If you do not select this option, you need to import (page 257) LDAP users into the database manually.
3. Specify (page 245) the data on all the pages below **LDAP system**. The program is unable to verify whether your entries are correct. Follow the instructions in the dialogs.
4. Map LDAP user groups to ARIS user groups.

From now on, authentication is only possible via the LDAP system. With the exception of the user **system**, users created exclusively in databases can no longer log in.

5.9.1.1 LDAP settings for MS Active Directory (example)

For the proper functioning of ARIS in combination with Windows Server 2003 Active Directory (AD), your LDAP server must be launched and all data correctly specified on the **Properties - Database/Authentication system/LDAP system** pages.

Prerequisite

- You have the **Database management** function privilege or are logged in as system user.
- The LDAP server has been launched.
- You have created user groups in the databases and assigned function and access privileges to them.

Procedure

1. Click on **Administration** in the **Modules** bar, and log in to the database.
2. Right-click on the database, and select **Properties**.
3. Click on the **Authentication/Authentication system** page on the **Selection** tab.
4. Enable the **LDAP system** option.
5. Enable the **Automatically import users at login** check box, and select a user group if applicable.
If you do not select this option, you need to import (page 257) LDAP users into the database manually.
6. Specify the data on all pages below **LDAP system**.
 - a. Connection data (page 245)
 - b. Identification attributes (page 248)
 - c. User attribute mapping (page 249)
 - d. Filter(s) (page 251)

In the future, users will be authenticated via MS Active Directory. The program is unable to verify whether your entries are correct.

5.9.1.1.1 Enter LDAP connection data (example)

Enter the data required for connecting to the LDAP system.

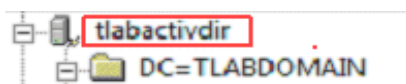
Prerequisite

You have the **Database management** function privilege or are logged in as system user.

- The LDAP server has been launched.
- You have created user groups in the databases and assigned function and access privileges to them.
- The database has been set up (page 244) for LDAP authentication.

Procedure

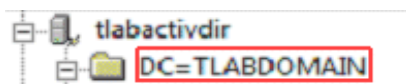
1. Open the database properties in the **Administration** module, and click on the **Authentication/LDAP system/Connection** page on the **Selection** tab.
2. Enter the address of your LDAP server in the **Address** box.
You can enter a DNS name, an IP address, or a WINS name, e.g., **tlabactivedir**.
In the LDAP tree you find the entry:



3. Enter the address of another LDAP server, if available, in the **Alternative address** box.
This address is used if the LDAP server you entered in the **Address** box cannot be accessed.
You can enter a DNS name, an IP address, or a WINS name, e.g., **tlabactivedir2**.
4. Enable SSL encryption, if required, and enter the port number of the selected LDAP server.
5. In the **Base DN** box, enter the fully qualified name of the branch in the LDAP tree that is used as the basis for search queries.

In this example, enter: **DC=TLABDOMAIN**.

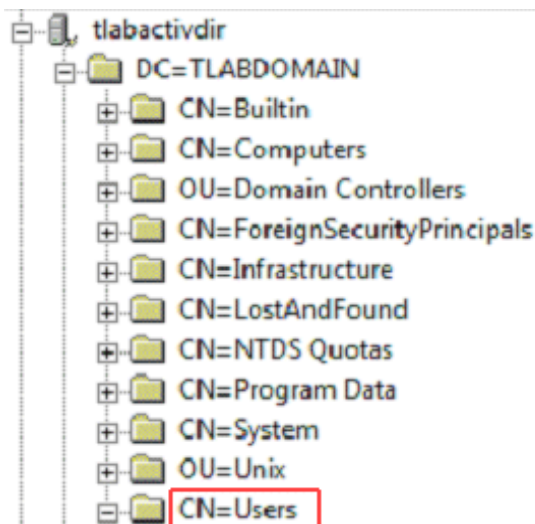
In the LDAP tree you find the entry:



6. In the **User base DN** box, enter the fully qualified name of the branch in the LDAP tree that is used as the basis for search queries to determine users.

In this example, enter: **CN=Users**.

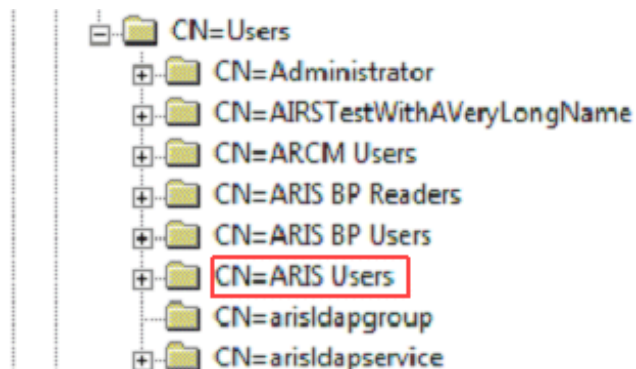
In the LDAP tree you find the entry:



7. In the **User group base DN** box, enter the fully qualified name of the branch in the LDAP tree that is used as the basis for search queries to determine user groups.

In this example, enter: **CN=ARIS Users**.

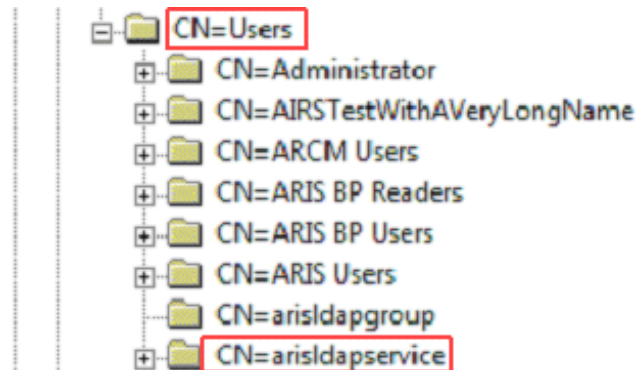
In the LDAP tree you find the entry below **CN=Users**:



8. In the **User DN** box, enter the individual, fully qualified part of the service user's user identification that ARIS uses to log in to the LDAP server. It can be used for read-only access to the LDAP server, for example.

In this example, enter: **CN=arisdapservice, CN=Users**.

9. In the LDAP tree you find the entry below **CN=Users**:



10. Enable the **Append base DN** check box, and enter the password for the LDAP user account. The connection to MS Active Directory can be established. Ensure that all required data is specified (page 244).

5.9.1.1.2 Enter LDAP identification attributes (example)

Define the attributes that LDAP is to use for authentication. Most LDAP systems identify users and user groups by their fully qualified name (DN = **D**istinguished **N**ame). If the organizational structure is changed and the user DNs also change as a result, the users can no longer be uniquely assigned. For this reason, some LDAP systems use constant attributes to ensure unique user mapping.

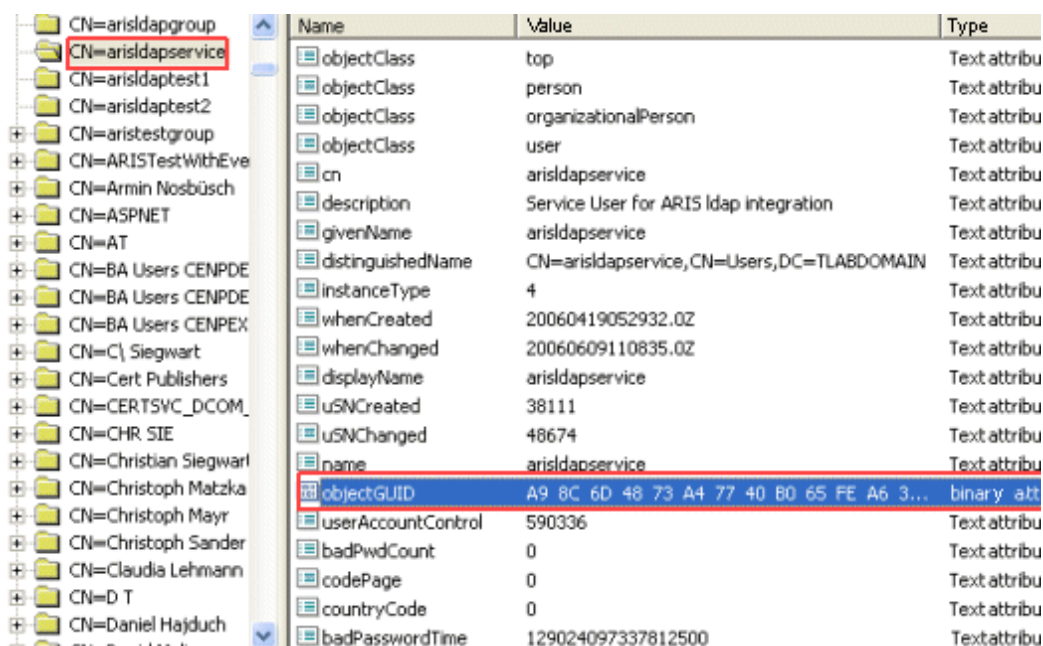
Prerequisite

- You have the **Database management** function privilege or are logged in as system user.
- The LDAP server has been launched.
- You have created user groups in the databases and assigned function and access privileges to them.
- The database has been set up (page 244) for LDAP authentication.

Procedure

1. Open the database properties in the **Administration** module, and click on the **Authentication/LDAP system/Identification attributes** page on the **Selection** tab.
2. In the **LDAP user ID** and **LDAP group ID** boxes enter the LDAP attribute **objectGUID** that is used to uniquely identify users and user groups.
3. Enter the value **objectGUID**; in the **Binary attributes** box. This transfers this attribute in binary. By default, Active Directory transfers this attribute as a text attribute.

In the LDAP tree and tables you find the attribute:



Name	Value	Type
objectClass	top	Text attribu
objectClass	person	Text attribu
objectClass	organizationalPerson	Text attribu
objectClass	user	Text attribu
cn	arisldapservice	Text attribu
description	Service User for ARIS ldap integration	Text attribu
givenName	arisldapservice	Text attribu
distinguishedName	CN=arisldapservice,CN=Users,DC=TLABDOMAIN	Text attribu
instanceType	4	Text attribu
whenCreated	20060419052932.0Z	Text attribu
whenChanged	20060609110835.0Z	Text attribu
displayName	arisldapservice	Text attribu
uSNCreated	38111	Text attribu
uSNChanged	48674	Text attribu
name	arisldapservice	Text attribu
objectGUID	A9 8C 6D 48 73 A4 77 40 B0 65 FE A6 3...	binary att
userAccountControl	590336	Text attribu
badPwdCount	0	Text attribu
codePage	0	Text attribu
countryCode	0	Text attribu
badPasswordTime	129024097337812500	Text attribu

The identification attributes have been entered. Ensure that all required data is specified (page 244).

5.9.1.1.3 Define LDAP user attribute mapping (example)

To ensure that users can be uniquely mapped in both systems, assign the corresponding ARIS attributes to LDAP attributes. These attributes are specified automatically in the database during the user import.

Prerequisite

- You have the **Database management** function privilege or are logged in as system user.
- The LDAP server has been launched.
- You have created user groups in the databases and assigned function and access privileges to them.
- The database has been set up (page 244) for LDAP authentication.

Procedure

1. Open the database properties in the **Administration** module, and click on the **Authentication/LDAP system/User attribute mapping** page on the **Selection** tab.
2. In the LDAP column enter the attributes from the LDAP system that are to be specified automatically for the ARIS attributes during the user import.

The **Name** attribute for the user names that users use to log in must always be assigned to a valid LDAP attribute, e.g., **<sAMAccountName>**. This must be the same attribute that you use on the **Filter** page in the **Log in** box. You can map the LDAP attributes **<streetAddress>**, **<postalCode>**, or **<city>** to the **Address** ARIS attribute in MS Active Directory, for example. Each LDAP attribute is placed in angle brackets. You can use any separators except **<>** to separate multiple LDAP attributes. Language-dependent LDAP attributes are saved in the language that you used when logging in.

Address	
Description/definition	<description>
Image	
Distinguished name	<distinguishedName>
E-mail address	<mail>
Company	<company>
Homepage	
Identifier	
Name	<sAMAccountName>
Organizational unit	<department>
Phone number	<telephoneNumber>
Full name	<cn>

In the LDAP tree and tables you find the attribute:

CN=arisldapgroup	Name	Value	Type
CN=arisldapservice	lastLogoff	0	Text attribu
CN=arisldaptest1	lastLogon	129024098389375000	Text attribu
CN=arisldaptest2	pwdLastSet	127898981729062500	Text attribu
CN=aristestgroup	primaryGroupID	513	Text attribu
CN=ARISTestWithEvenLongerName1	objectSid	01 05 00 00 00 00 ...	binary attrib
CN=Armin Nosbüsch	accountExpires	9223372036854775807	Text attribu
CN=ASPNET	logonCount	17	Text attribu
CN=AT	sAMAccountName	arisldapservice	Text attribu
CN=BA Users CENPDELSC	sAMAccountType	805306368	Text attribu
CN=BA Users CENPDELSCSUP	userPrincipalName	arisldapservice@TLAB...	Text attribu
CN=BA Users CENPEXLAN			

The user attributes are mapped between ARIS and MS Active Directory. Ensure that all required data is specified (page 244).

5.9.1.1.4 Enter LDAP search filter (example)

Specify LDAP search filter criteria. Using these criteria, users are identified during login or for the user import and are given the corresponding access privileges via their user group membership.

Prerequisite

- You have the **Database management** function privilege or are logged in as system user.
- The LDAP server has been launched.
- You have created user groups in the databases and assigned function and access privileges to them.
- The database has been set up (page 244) for LDAP authentication.

Procedure

1. Open the database properties in the **Administration** module, and click on the **Authentication/LDAP system/Filter** page on the **Selection** tab.
2. Enter the following search query in the **Log in** box:

(&(sAMAccountName={0})(objectClass=user)(memberOf=CN=arisldapgroup,CN=Users,DC=TLABDOMAIN))

Users are identified and automatically logged in during database login in the LDAP system if the following three requirements are all met:

a. **(sAMAccountName={0})**

The LDAP attribute **sAMAccountName** and the ARIS attribute for the user name with which users log in (variable **{0}**) must be identical. This must be the same attribute you assigned to the ARIS attribute **Name** on the **User attribute mapping** page.

b. **(objectClass=user)**

Object class **objectClass** must have the value **user** in the LDAP system.

c. **(memberOf=CN=arisldapgroup,CN=Users,DC=TLABDOMAIN)**

The LDAP user must be assigned to LDAP group **arisldapgroup**.

In the LDAP table you find the attributes:

Name	Value
objectClass	top
objectClass	person
objectClass	organizationalPerson
objectClass	user
cn	arisdaptest1
description	Test user for ARIS ldap integration
givenName	arisdaptest1
distinguishedName	CN=arisdaptest1,CN=Users,DC=TLABDOMAIN
instanceType	4
whenCreated	20060419053150.0Z
whenChanged	20080930095142.0Z
displayName	arisdaptest1
uSNCreated	38119
memberOf	CN=aris ldap group with blanks,CN=Users,DC=...
memberOf	CN=aristestgroup,CN=Users,DC=TLABDOMAIN
memberOf	CN=arisdapgroup,CN=Users,DC=TLABDOMAIN
uSNChanged	166295
name	arisdaptest1
objectGUID	E5 86 A8 DC DA 03 9E 47 BA 4B 0D 72 ...
userAccountControl	590336
badPwdCount	0
codePage	0
countryCode	0
badPasswordTime	128805817957187500
lastLogoff	0
lastLogon	128980209459218750
pwdLastSet	128672419026562500
primaryGroupID	513
objectSid	01 05 00 00 00 00 00 05 15 00 00 00 C...
accountExpires	9223372036854775807
logonCount	26
sAMAccountName	arisdaptest1
sAMAccountType	805306368
userPrincipalName	arisdaptest1@TLABDOMAIN

3. Enter the following search query in the **Import users** box:

(&(objectClass=user)(memberOf=CN=arisdapgroup,CN=Users,DC=TLABDOMAIN))

This creates the list of users, which you can import (page 257) into the database manually. If you enable the **Automatically import users at login** check box on the **Authentication/Authentication system** page, users that do not yet exist in the database are created automatically.

The search query returns a list of all LDAP users for which the following requirements are met:

a. **(&(objectClass=user))**

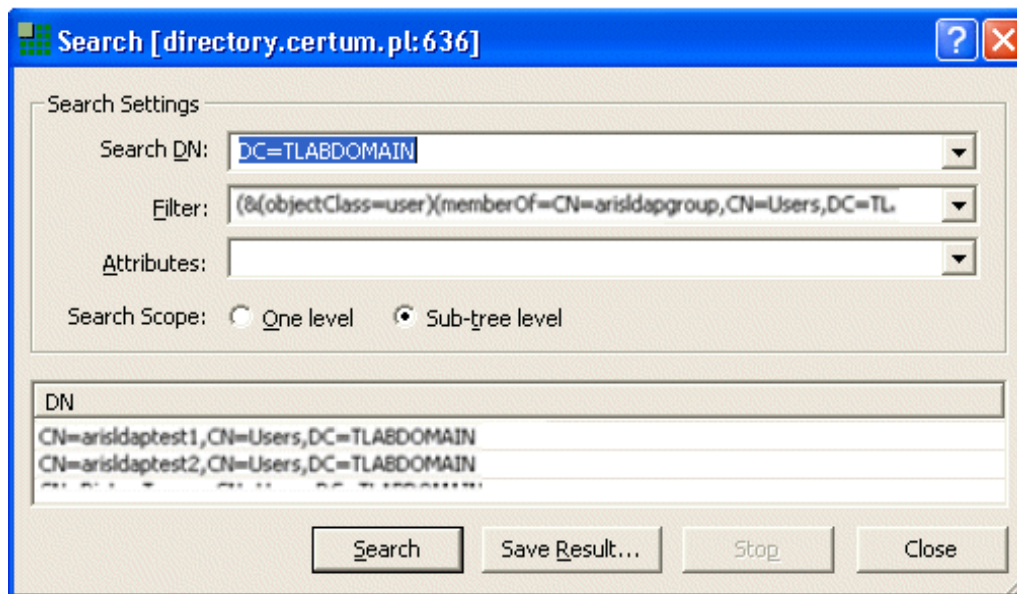
Object class **objectClass** must have the value **user** in the LDAP system.

b. **(memberOf=CN=arisdapgroup,CN=Users,DC=TLABDOMAIN)**

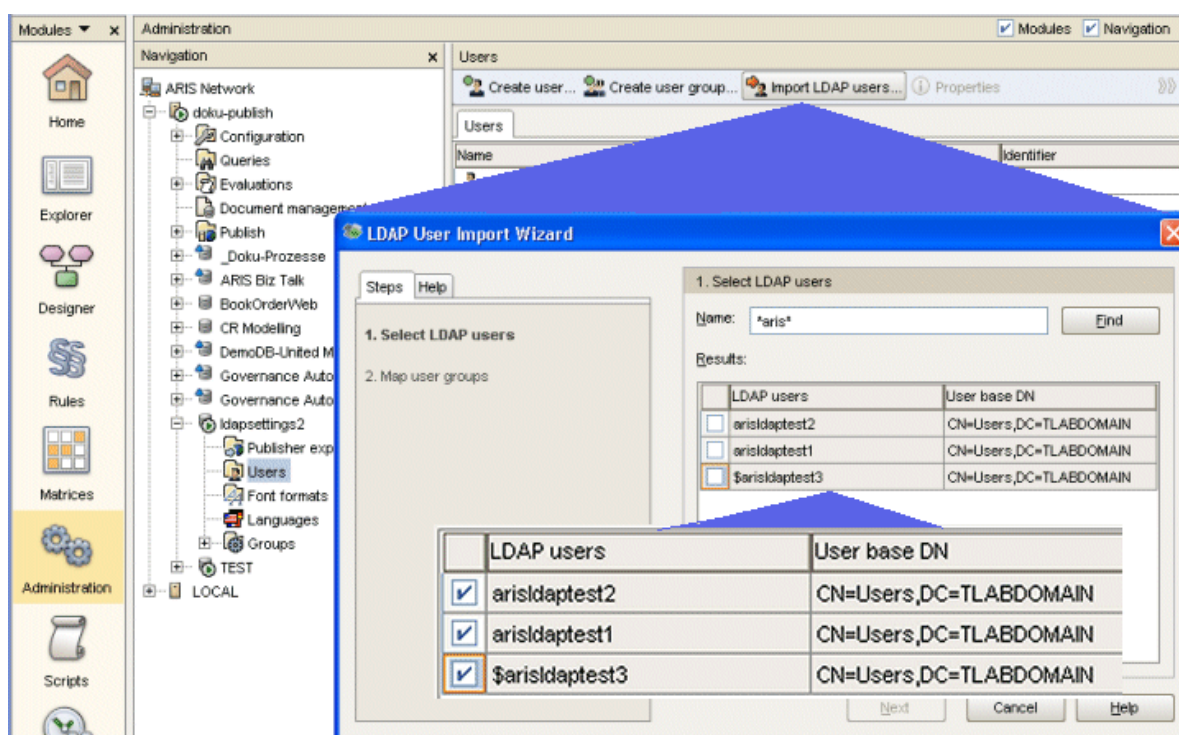
The LDAP user must be assigned to LDAP group **arisdapgroup**.

c. The search criteria defined in the **Log in** box must be met.

The users are determined in the LDAP system:



They are displayed in ARIS if you import (page 257) users manually.



4. Enable the **Map user groups** option.

This determines the LDAP user groups to which a user belongs and the groups to which the user belongs in ARIS. This group membership is used to assign access privileges to users.

Depending on your LDAP system, you determine group membership using either LDAP user groups or LDAP users. If, unlike MS Active Directory, your LDAP system can only determine group membership via the user himself, please select the **Via LDAP users** option, and enter

the value that can be used to determine the group membership, e.g., **memberOf**, in the **Attribute** box.

5. Enter the following search query in the **Via LDAP groups** box:

(&(cn=*arisldap*)(objectClass=group)(member={0}))

The search query returns a list of all LDAP user groups to which a user belongs. The following requirements must be met:

- a. **(cn=*arisldap*)**

The LDAP attribute **CN** must contain the component **arisldap**.

- b. **(objectClass=group)**

Object class **objectClass** must have the value **group** in the LDAP system.

- c. **(member={0})**

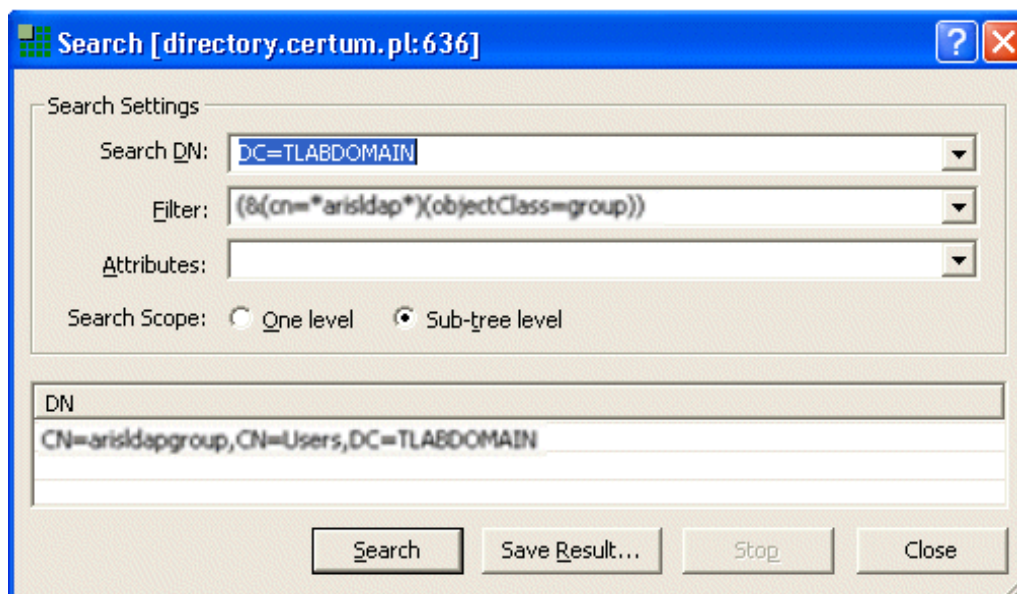
The LDAP attribute **member** must match the Distinguished Name (DN) (variable **{0}**) from LDAP. The Distinguished Name (DN) of the corresponding LDAP user is determined using the search filter in the **Log in** box.

This search filter is closely related to the filter in the **Mapping** box.

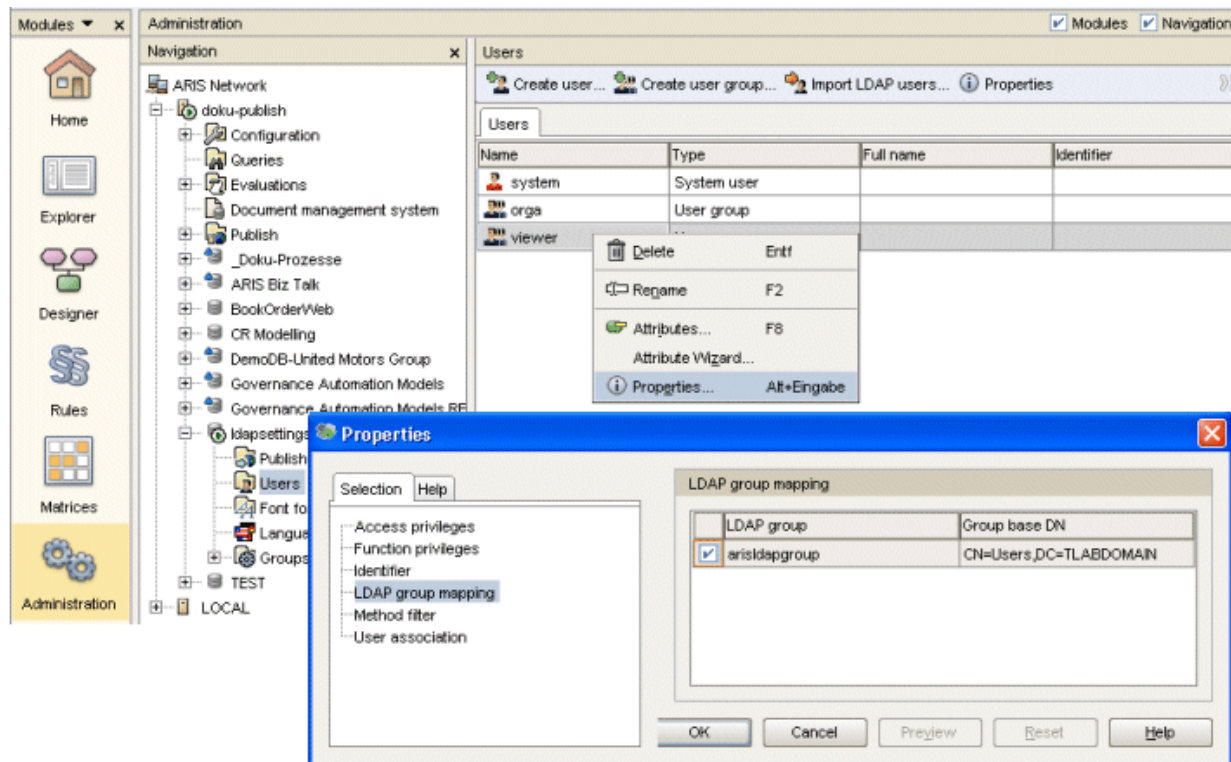
6. Enter the following search query in the **Mapping** box:

(&(cn=*arisldap*)(objectClass=group))

The users are determined in the LDAP system:



The search query returns a list of all LDAP user groups that you can map to ARIS user groups on the **LDAP group mapping** properties page.



The search filters have been entered. Ensure that all required data is specified (page 244).

5.9.1.2 Map LDAP user groups

User mapping is done via LDAP. All privileges assigned to the ARIS user groups are automatically assigned to the LDAP users.

Prerequisite

- You have the **User management** function privilege.
- You have correctly specified (page 245) all data on the **Properties - Database/Authentication/LDAP system** pages.

Procedure

1. Click on **Administration** in the **Modules** bar, and log in to the database.
2. Click on the **User** database item.
3. Right-click on the relevant user group on the **User** tab, and select **Properties**.
4. Click on **LDAP group mapping** on the **Selection** tab, and enable the check boxes for the LDAP groups whose members you want to map to this user group. The LDAP groups are uniquely identified by the entries in the **LDAP group** and **LDAP group base DN** column.
This displays all LDAP groups that have been identified by the search query (page 251) in the **Mapping** box on the **Properties - Database/Authentication/LDAP system/Filter** page.
5. Click on **OK**.

In this way, all users from the LDAP system who are mapped to an LDAP group in LDAP are automatically mapped to the ARIS user group.

5.9.1.3 Import LDAP users

Users can be authenticated centrally using an LDAP server. Only the user name and password are verified using LDAP. Imported users are granted function and access privileges through the mapped user groups.

For LDAP users to be able to log in, they must be created as users in the database. On the **Properties - Database/Authentication/Authentication system** page, you can define that every authenticated user is automatically imported (page 276) into the database during the first login.

Prerequisite

- You have the **User management** function privilege.
- You have correctly specified all data on the **Properties - Database/Authentication/LDAP system** pages and selected (page 243) LDAP as the authentication system.

Make sure that user names in the LDAP system contain only valid characters and that users use secure passwords. Alphanumeric characters, spaces, and the following characters are allowed in user names:

- @ . - _ ! " § \$ % & / () = ? * + # < > , ; :

Procedure

1. Click on **Administration** in the **Modules** bar, and log in to the database.
2. Click on the **Users** database item and then on the **Import users** button.
The wizard opens.
3. Follow the instructions in the wizard. Help on using wizards and dialogs is available directly in the user interface. If you activate the **Help** tab (F1) instead of the **Steps** tab in the wizard, you are assisted in entering information.

The users have been created in the database. They can only be used for authentication against LDAP and therefore cannot change their passwords.

5.9.2 Error handling

Below, you will find the solution to frequently recurring configuration problems. If a message of the following type is output, we recommend that you customize (page 133) the configuration file <ARIS installation directory>\server\config\userServerSettings.cfg for each ARIS Business Server:

The LDAP system logs actions, errors, and messages in the file <ARIS installation directory>\server\log\ldapintegration_*.log. Make sure that logging for LDAP messages has been enabled (page 152).

Message: Timeout

```
<ldap pagesize="0" referral="" connect_timeout="<Timeout in ms>" />
```

Increasing the **connect_timeout** parameter in milliseconds allows the wait time for establishing a connection to be adjusted.

Message: Paged results

```
2008-10-29T09:51:46,429
```

The search request has too many results.

```
com.company.aris.server.common.ldap.ALdapSearchExecutor.search
javax.naming.SizeLimitExceededException: [LDAP: error code 4 - Sizerlimit Exceeded];
remaining name
```

```
...
```

```
<ldap pagesize="1000" />
```

1000 is the maximum value for the approved LDAP system **MS Active Directory**.

Enter the maximum value of your LDAP system.

Message: Follow referrals

```
2008-10-29T09:51:46,429
```

```
com.company.aris.server.common.ldap.ALdapSearchExecutor.search
javax.naming.PartialResultException: Unprocessed Continuation Reference(s);
remaining name
```

```
...
```

Your LDAP system refers to other LDAP references that cannot currently be followed.

```
<ldap referral="follow" />
```

If LDAP references are to be ignored, enter the following value:

```
<ldap referral="ignore" />
```

Message: Unknown host exception

```
2008-10-29T10:49:16,157
```

You are probably using MS Active Directory as LDAP and AD is returning a root domain name as it's DNS server name.

If the server is not using AD supplied DNS resolution, it will probably have problems with the URL returned for referrals.

Edit the server's 'hosts' file and add a line '<IP of schulsrvdb1> academyids.de' will solve the problem.

```
com.company.aris.server.common.ldap.ALDAPSearchExecutor.search
javax.naming.PartialResultException [Root exception is
javax.naming.CommunicationException: academyids.de:389 [Root exception is
java.net.UnknownHostException:
academyids.de]]javax.naming.CommunicationException: academyids.de:389 [Root
exception is java.net.UnknownHostException: academyids.de]]
...
```

If an item other than **OU** (specific organizational unit) is searched for, this can lead to LDAP references. The AD (Active Directory) server then returns a repeated search query to the clients. The following situation may then lead to problems:

If your AD server is called **dcl.company.com** and your connection URL references this server, AD sends a reference to the name **company.com**. If the server does not use the DNS resolution, the URL cannot be resolved.

Configure the file **/etc/hosts** for the AD server so that the domain name **company.com** is assigned to one or all AD servers.

5.9.3 Set ARIS Business Server for LDAP server operation with SSL

Procedure

1. Install the LDAP server you want to use. Always refer to your LDAP system documentation because installation varies from system to system.
 2. Obtain the SSL certificate for your LDAP system. To do so, consult your LDAP system documentation.
 3. Import the certificate using the program **Keytool.exe**. The program is located in the directory **ARIS server installation directory>\server\jre\bin**.
 4. Enter the path to the ARIS server installation directory as the keystore parameter. Example: You have installed ARIS Server in the directory **C:\Program Files\ARIS 71\server**. The program could be called as follows: Please note that you need to replace the terms in angle brackets (< >) with the actual terms without angle brackets:

```
keytool.exe -keystore C:\Program Files\ARIS 71\server\jre\lib\security\cacerts -storepass changeit -import -alias <dc> -file <path>\<certificate file>
```

Now you need to specify the following settings for each database whose users are to log in using the LDAP server.
 5. Click on **Administration** in the **Modules** bar, and log in to the database.
 6. Right-click on the name of the database, and select **Properties**.
 7. Click on the **Authentication/LDAP system/Connection** page on the **Selection** tab.
 8. Enable the **Use SSL** check box and ensure that the correct value is specified in the **Port** box.
- The connection to the LDAP system is established via SSL.

5.9.4 Set ARIS Business Publisher Server for LDAP server operation

If you manage users via an LDAP system, authentication is performed using this system. To enable the ARIS Business Publisher administrator to map LDAP user groups to ARIS user groups, you need to customize the configuration file.

Procedure

1. Open the file **webappserver.cfg**
(..\BPSTomcat\webapps\businesspublisher\config\).
2. Find the **<ldap>** tag. In this section, configure the login using an LDAP system.
3. Save the changes and restart ARIS Business Publisher Server.

The ARIS Business Publisher administrator can now map ARIS user groups to LDAP user groups.

Warning

If your LDAP server is set up so that it allows anonymous authentication (unauthenticated bind mechanism), users may be able to log in without a password.

You can use the administration interface for exports to encrypt (page 111) the password of the LDAP user specified here. Copy the encrypted password to this file and restart the server.

5.9.5 Set up ARIS Process Governance for LDAP server operation with central user management

You can set up ARIS Process Governance Server for LDAP server operation using central user management. You can also set up ARIS Business Server for central user management if ARIS Process Governance is installed and running. The configuration is done in the same way.

Procedure

1. Open the file **age-configuration-setup.properties** in the directory **\ARISGE1.0\config**.
2. Find the string **# UMC ldap** and copy it.
3. Open the file **age-configuration.properties** in the directory **\ARISGE1.0\config**.
4. Paste the string **# UMC ldap** and configure the following:

```
# UMC ldap
com.idsscheer.aris.umc.ldap.active=true
com.idsscheer.aris.umc.ldap.url=ldap://activdir:389
com.idsscheer.aris.umc.ldap.backup.url=
com.idsscheer.aris.umc.ldap.service.user=ldapservice
com.idsscheer.aris.umc.ldap.service.pwd=ldapservice
com.idsscheer.aris.umc.ldap.searchbase=CN\=Users\,DC\=DOMAIN
com.idsscheer.aris.umc.ldap.user.searchbase=
com.idsscheer.aris.umc.ldap.role.searchbase=
com.idsscheer.aris.umc.ldap.unit.searchbase=
com.idsscheer.aris.umc.ldap.referral=
com.idsscheer.aris.umc.ldap.pagesize=0
```

5. If you have a backup system for your LDAP system and the backup system automatically takes over the functionality of the primary system if the latter fails, configure the path to the backup system.

```
com.idsscheer.aris.umc.ldap.backup.url=<Backup system URL>
```

6. If you have saved users, roles, or organizational units in subdirectories, configure the following lines:

```
com.idsscheer.aris.umc.ldap.user.searchbase=<Path to users>
com.idsscheer.aris.umc.ldap.role.searchbase=<Path to roles>
com.idsscheer.aris.umc.ldap.unit.searchbase=<Path to organizational units>
```

7. If you want to allow that references of users to other directories are tracked, configure the following:

```
com.idsscheer.aris.umc.ldap.referral=follow
```

If you want to prohibit this, configure the following:

```
com.idsscheer.aris.umc.ldap.referral=ignore
```

If you leave this entry blank, references are not tracked.

- We recommend that you set up the central user management of ARIS Process Automation Architect again before you switch to resp. disable LDAP.
- If you have set up ARIS Process Governance Server for LDAP server operation, all commas and equal signs in domain names in the file **age-configuration.properties** must be masked by a backslash (\).

Example

```
com.idsscheer.aris.umc.ldap.service.user=CN\=administrator\,CN\=users\,DC\=com
com.idsscheer.aris.umc.ldap.searchpath=CN\=users\,DC\=com
```

Configure SSL communication between ARIS Process Governance and LDAP server

Prerequisite

- The LDAP server has a valid SSL certificate and has enabled LDAPS.
- Central user management trusts the LDAP server (SSL certificate of the LDAP server or of the certificate authority is available in the JRE database of the trusted certificates).

You can configure SSL by specifying an LDAPS URL.

Procedure

1. In the **%ARISGEHOME10%** directory, open the **age-configuration.properties** file, enable LDAPS and configure the LDAPS server and port. The default LDAPS port for Microsoft Active Directory is **636**.

```
com.idsscheer.aris.umc.ldap.url=ldaps://<myldapserver>:<myport>
```

2. Central user management must trust the LDAP server used. We therefore recommend to equip the LDAP server with an SSL certificate that is signed by a public certificate authority. There is no further user interaction required if your certificate is signed by a certificate authority that is already available in the list trusted by your JRE. Self-signed certificates need to be manually installed into the list of your JRE.

Import the server certificate into your JRE (for central user management).

```
keytool.exe -importcert -file <mycertificate> -keystore
%JAVA_HOME%\jre\lib\security\cacerts
```

The default password is **changeit**.

Encrypt password of LDAP service user

For security reasons, the password of the LDAP service user can be encrypted.

Procedure

1. Stop ARIS Process Governance Server.
2. Open a DOS box and navigate to the directory **ARISGE1.0**.
3. Execute the following command using your LDAP service user password:


```
%ARISGEHOME10%\y-arisgeadmin.bat ldap --offline true --user <your LDAP service user> --password <your LDAP service user password>
```
4. Start ARIS Process Governance Server.

The plain text password in the file **age-configuration.properties** has been overwritten.

Allow login to ARIS Process Governance for LDAP users only

If you want to allow login to ARIS Process Automation Architect and ARIS Process Board for LDAP users only, configure the following:

Procedure

1. Open the file **age-configuration.properties** in the directory **<\ARISGE1.0\config>**.
2. Add the string **com.idsscheer.aris.umc.ldap.auth.only=true** .

Enable caching

Caching can be enabled to improve performance and prevent the LDAP system and ARIS from synchronizing too frequently (timeout problem).

The following elements are cached:

- Persons
- User roles
- Organizational units

Empty cache

There are four ways to empty the cache:

- Using a configurable timeout
- Using an API call that changes the internal status (update/insert/delete/deploy)
- Using an explicit API call by the user to delete the cache
- Using the definition of a maximum number of elements (maxElements). The oldest entries are deleted first.

Configuration

The following configuration parameters are available:

- **com.idsscheer.aris.umc.cache.active=true**
Enables caching
- **com.idsscheer.aris.umc.cache.maxElements=500**
Defines the maximum number of cached elements
- **com.idsscheer.aris.umc.cache.timeToLive=43200**
Defines how long an element is valid. The time is specified in seconds.
- **com.idsscheer.aris.umc.cache.timeToIdle=43200**
Defines how long an element may be inactive before it is deleted from the cache. The time is specified in seconds.

Specify recursion depth of LDAP elements to be imported

Central user management (page 275) supports LDAP connections. If you want to use roles based on LDAP groups from the organizational chart, you can specify the recursion depth of the imported LDAP elements. The default setting of the recursion depth is **one** - i.e., only direct members (subgroups, persons) included in the organizational chart are imported into central user management.

If all dependent persons and subgroups of the modeled role are to be imported you need to set the recursion depth to **zero**.

Procedure

1. Open the file: %ARISGEHOME10%\config**age-configuration.properties**.
2. Find the string
Recursion depth (1=default, 0=all)

LDAP search filter syntax

You can also use the LDAP search filter syntax to import LDAP users into central user management.

Procedure

1. Add **com.idsscheer.aris.umc ldap.filter.person=**
to the file %ARISGEHOME10%\config**age-configuration-setup.properties**:

The search expression is added to the LDAP search query and limits the result. Please adhere to the LDAP query syntax.

Example

com.idsscheer.aris.umc ldap.filter.person=(&(username=muell*))

5.9.5.1 Configure jobs for LDAP synchronization

If you are operating an LDAP server together with ARIS Process Governance, you can configure a batch job that synchronizes your system with the LDAP server at a certain time. You have the following configuration options:

String	Description	Possible values
com.idsscheer.aris.umc.ldap.sync.periodic.active	Determines whether the batch job is to be executed.	True or False , the default value is False
com.idsscheer.aris.umc.ldap.sync.periodic.fire	Determines when the batch job is to be executed	CRON (page 329) expression (Daily, 3am is preset)
com.idsscheer.aris.umc.ldap.sync.periodic.orgunits	Determines whether the batch job is to synchronize organizational units	True or False , the default value is True
com.idsscheer.aris.umc.ldap.sync.periodic.roles	Determines whether the batch job is to synchronize roles.	True or False , the default value is True
com.idsscheer.aris.umc.ldap.sync.periodic.persons	Determines whether the batch job is to synchronize persons.	True or False , the default value is True

Procedure

1. Open the file **age-configuration.properties** in the directory **%ARISGEHOME10%\config**, e.g., **C:\Program Files\ARISGE1.0\config**.
2. Enter the relevant string from the above table.

Execute synchronization job

You can trigger the job for LDAP synchronization manually. The following parameters are available:

Parameter (long form)	Parameter (short form)	Description
--help	-h	Displays the possible parameters
--listeningport <port>	-l <port>	Listening port of central user management (page 274)
--orgunits	-o	Organizational units are synchronized
--persons	-p	Persons are synchronized
--roles	-r	Roles are synchronized

Windows operating system

Procedure

1. Open a DOS box.
2. Navigate to the directory **%ARISGEHOME10%**, e.g. **C:\Program Files\ARISGE1.0**.
3. Enter **y-ldapsync.bat** with the relevant parameters - for example, **y-ldapsync.bat -o -u -p 7071**. In this example, the listening port is the default port **7071**.

Unix operating system

Procedure

1. Open a Unix shell.
2. Navigate to the installation directory of your Tomcat server.
3. Enter **y-ldapsync.sh** with the relevant parameters - for example, **y-ldapsync.sh -o -u -p 7071**. In this example, the listening port is the default port **7071**.

5.9.5.2 Configure single sign-on for ARIS Process Board

If you are using MS Active Directory, you can configure SSO (single sign-on) (page 331) for ARIS Process Board. This enables access to ARIS Process Board as soon as a user has logged in once to the domain.

Prerequisite

Server

- Central user management (page 274) is configured (page 262) for LDAP server operation.
- Users who want to work with SSO have a valid user account in the Microsoft Active Directory.
- The users exist in central user management (page 274).
- The users are active users (page 154) of ARIS Process Governance.
- Microsoft Active Directory supports a Kerberos-based authentication (default) and the service principal name of ARIS Process Governance server is entered in the following format:
HTTP/<hostname>, e.g. **HTTP/mypc01.my.domain.com**.

Client

- The client computers and ARIS Process Governance Server are connected to the same MS Active Directory.
- The browser used supports a Kerberos-based authentication.
- The browser has been configured accordingly.

Server configuration

You need to configure SSO for ARIS Process Governance Server. In case a property of the Microsoft Active Directory was changed, you have to delete the Kerberos tickets cache on the client machines.

Procedure

1. Open the file **age-configuration.properties** in the directory **\ARISGE1.0\config**.
2. To activate SSO, insert the following string:
`com.idsscheer.aris.umc.kerberos.active=true`
3. Specify the location where the Kerberos configuration file is to be saved:
`com.idsscheer.aris.umc.kerberos.config = <location of the Kerberos configuration file>`
By default, this file is located in the installation directory of the Kerberos server under **./config/Kerberos/krb5.conf**.
4. Specify the storage location and name of the Keytab file to authenticate at the **Key Distribution Center (KDC)**. The Keytab file contains key Kerberos principal pairs that are encrypted. These are used to enable KDC authentication without human intervention:
`com.idsscheer.aris.umc.kerberos.keyTab=<location of the Kerberos keytab file>`
By default, this file is located in the installation directory of the Kerberos server under **./config/Kerberos/krb-umc.keytab**.

Please store the Kerberos keytab file in a protected folder to prevent unauthorized access.

5. Configure the LDAP service user for Kerberos:

```
com.idsscheer.aris.umc.kerberos.servicePrincipalName=<User name of LDAP user for Kerberos>
```

6. Configure the realm for the Kerberos service. Enter the fully qualified name of the domain in uppercase:

```
com.idsscheer.aris.umc.kerberos.realm=<fully qualified name of domain>
```

If the service principal name in the keytab is e.g. **mypc01@MY.DOMAIN.COM** then the values of the properties **com.idsscheer.aris.umc.kerberos.servicePrincipalName** must contain the service principal name specified in the keytab (**mypc01**) and **com.idsscheer.aris.umc.kerberos.realm** must contain its fully qualified domain (**MY.DOMAIN.COM**). The keytab can be displayed by executing **ktab.exe -l -k <keytab file>**.

7. Configure the fully qualified name of the KDC to be used:

```
com.idsscheer.aris.umc.kerberos.kdc=<Fully qualified name of KDC>
```

8. **Optional:** Configure a list of IP addresses for which you want to enable SSO (**whitelist**):

```
com.idsscheer.aris.umc.kerberos.whitelist=<location and name of the whitelist>
```

Each entry in the list must begin in an individual line:

Example

```
192.168.100.1
192.168.100.*
10.0.0.*
#Allow all IPs
*.*.*.*
```

By default, this file is located in the installation directory of the ARIS Process Governance server under **./config/Kerberos/krb-ip-whitelist.conf**.

9. **Optional:** Configure the debug mode for Kerberos operations:

```
com.idsscheer.aris.umc.kerberos.debug=true
```

Example

```
com.idsscheer.aris.umc.kerberos.active=true
com.idsscheer.aris.umc.kerberos.config=/etc/krb5.conf
com.idsscheer.aris.umc.kerberos.keyTab=C:/safePlace/krb-umc.keytab
com.idsscheer.aris.umc.kerberos.whitelist=./config/Kerberos/krb-ip-whitelist.conf
com.idsscheer.aris.umc.kerberos.servicePrincipalName=mypc01
com.idsscheer.aris.umc.kerberos.realm=MY.DOMAIN.COM
com.idsscheer.aris.umc.kerberos.kdc=mykdc01.my.domain.com
com.idsscheer.aris.umc.kerberos.whitelist=./config/Kerberos/krb-ip-whitelist.conf
com.idsscheer.aris.umc.kerberos.debug=false
```

Client configuration

Configure the browser settings to allow SSO for ARIS Process Board. SSO has been tested using the following browsers:

- Microsoft Internet Explorer (version 6 or higher)
- Firefox

You must purge the Kerberos tickets cache of each client to avoid obsolete tickets in case a property of the Microsoft Active Directory was changed. Delete the Kerberos ticket cache by executing **klist.exe purge**. The cache can also be purged by logging off from the domain if this tool is not available on the client machine.

Microsoft Internet Explorer

Microsoft Internet Explorer supports Kerberos authentication only if ARIS Process Governance Server is a component of your local intranet.

Procedure

1. Launch Microsoft Internet Explorer.
2. Select **Tools/Internet Options**.
3. Activate the **Security** tab and click on **Local Intranet**.
4. Click on the **Sites** button and then on the **Advanced** button.
5. Add the URL for the ARIS Process Governance server that has been configured for SSO. Add both the DNS host name and the IP address for ARIS Process Governance Server.
6. Disable **Require server verification (https:) for all sites in this zone**.
7. Click on **Close** and then on **OK**.
8. Click on the **Custom level** button and make sure that no user-defined settings impede your new settings.
9. Scroll to the **User Authentication** section. Check whether **Automatic logon only in Intranet zone** is activated.
10. Click on **OK** to close the dialogs.
11. Close and restart Microsoft Internet Explorer.

Mozilla Firefox

In Mozilla Firefox, you can define trusted pages via the computer name, IP address, or combinations of both. You can also use wildcards.

Procedure

1. Launch Mozilla Firefox.
2. Enter **about:config** in the address bar and press the Enter key. If a message is displayed, confirm it.
3. Enter **network.negotiate** in the **Filter** bar and press the Enter key.
4. Double-click on **network.negotiate-auth.trusted-uris**.

5. Enter the computer name or IP address of the ARIS Process Governance Server that has been configured for SSO and click on **OK**.
6. Close and restart Mozilla Firefox.

If you want to use a stronger encryption than AES 128bit and if this is legally permitted in your country, replace the supplied JCE policy files of the JDK for ARIS Process Governance Server with the **Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files 6** <http://www.oracle.com/technetwork/java/javase/downloads/index.html>. This allows an unlimited key length.

If you cannot replace the policy files, but still want to use SSO, you must use a procedure that is supported by JDK for the encryption of Kerberos tickets (e.g., AES 128bit).

5.9.5.3 Use LDAP with multiple domains

You can set up ARIS Process Governance Server for LDAP server operation using multiple domains.

Prerequisite

You have specified your primary LDAP system in the file **ARISGE1.0\config\age-configuration.properties**.

Procedure

1. Open the file **ARISGE1.0\config\age-configuration.properties** and add the following string:
`com.idsscheer.aris.umc.ldap.multidomain.active=true`
2. Open the file **ldap-configuration.xml** in the directory **\ARISGE1.0\config**.
3. Find the string **<connection>** and configure the LDAP servers in your domains. The example shows the configuration of three LDAP connections:

Example

```
<connection>
  <url>ldap://ldapserver1:389</url>
  <backupUrl></backupUrl>
  <username>ldapservice</username>
  <password>ldapservice</password>
  <searchPath>OU\=AGE,DC\=LDAPDOMAIN</searchPath>
  <userSearchPath></userSearchPath>
  <roleSearchPath></roleSearchPath>
  <unitSearchPath></unitSearchPath>
</connection>
<connection>
  <url>ldap://ldapserver2:390</url>
  <backupUrl></backupUrl>
  <username>ldapservice</username>
  <password>ldapservice</password>
  <searchPath>OU\=AGE,DC\=LDAPDOMAIN2</searchPath>
  <userSearchPath></userSearchPath>
  <roleSearchPath></roleSearchPath>
  <unitSearchPath></unitSearchPath>
</connection>
<connection>
  <url>ldap://ldapserver3:391</url>
  <backupUrl></backupUrl>
  <username>ldapservice</username>
  <password>ldapservice</password>
  <searchPath>OU\=AGE,DC\=LDAPDOMAIN3</searchPath>
  <userSearchPath></userSearchPath>
  <roleSearchPath></roleSearchPath>
  <unitSearchPath></unitSearchPath>
</connection>
```

4. If you have backup systems for your LDAP systems and the backup systems automatically take over the functionality of the primary systems, configure the paths to the backup systems.
5. `<backupUrl><URL of the respective backup system></backupUrl>`

6. If you have saved users, roles, or organizational units in subdirectories, configure the following lines:

```
<userSearchPath><Path to users></userSearchPath>  
<roleSearchPath><Path to roles></roleSearchPath>  
<unitSearchPath><Path to organizational units></unitSearchPath>
```

5.10 Control login centrally

If you have installed ARIS Process Governance, you can use central user management to authenticate users. Only the user name and password are verified. Imported users are granted function and access privileges through the associated user groups in the database.

Users from central user management must be imported into the database to enable them to log in. In the database properties under **Authentication/Authentication system** you can define that every authenticated user is automatically created as a user in the database during the first login.

Prerequisite

- You have the **Database management** function privilege or are logged in as system user.
- You have the **User management** function privilege.
- You have installed ARIS Process Governance or entered the license key for the Software AG Designer integration.

Procedure

1. Create user groups in the **Administration** module.
2. Assign function and access privileges to the user groups.
3. Set up (page 275) the database for central user management.

User authentication now occurs with the help of the users managed by ARIS Business Server.

5.10.1 Set up database for central user management

To enable user authentication via central user management, you must change database properties.

Prerequisite

- You have the **Database management** function privilege or are logged in as system user.
- You have installed ARIS Process Governance or entered the license key for the Software AG Designer integration.

Procedure

1. Click on **Administration** in the **Modules** bar, and log in to the database.
2. Right-click on the database, and select **Properties**.
3. Click on the **Authentication/Authentication system** page on the **Selection** tab.
4. Enable the **Central user management** option.
5. Enable the **Automatically import users at login** check box, and select a user group if applicable.
6. Click on **Authentication/Central user management** on the **Selection** tab.
7. Specify all data on the pages. The program is unable to verify whether your entries are correct. Follow the instructions in the dialog. Help on using wizards and dialogs is available directly in the user interface.

From now on, users are only authenticated using central user management on the server level. Users who have only been created in the database can no longer log in.

5.10.1.1 Import users (central user management)

If you have installed ARIS Process Governance, you can use central user management to authenticate users. Only the user name and password are verified. Imported users are granted function and access privileges through the associated user groups in the database.

Users from central user management must be imported into the database to enable them to log in. In the database properties under **Authentication/Authentication system** you can define that every authenticated user is automatically created as a user in the database during the first login.

Prerequisite

- You have the **User management** function privilege.
- You have selected the **Central user management** option in the database properties under **Authentication/Authentication system**
- You have correctly specified all data in the database properties under **Authentication/Central user management**.

Procedure

1. Click on **Administration** in the **Modules** bar, and log in to the database.
2. Click on the **Users** database item and then on the **Import users** button.
The wizard opens.
3. Follow the instructions in the wizard. Help on using wizards and dialogs is available directly in the user interface. If you activate the **Help** tab (F1) instead of the **Steps** tab in the wizard, you are assisted in entering information.

The users have been created in the database. In the future, they will be authenticated using central user management and therefore cannot change their passwords. You can also use (page 262) central user management together with LDAP.

5.10.1.2 Assign user groups (central user management)

If you assign ARIS user groups to central user management groups, you do not have to create any users in ARIS. Users are then assigned from one central location. All privileges that you have assigned to ARIS user groups are automatically assigned to the users.

Prerequisite

- You have the **User management** function privilege.
- You have selected the **Central user management** option on the **Properties - Database/Authentication system** page.
- You have correctly specified all data on the **Properties - Database/Authentication/Central user management-Settings** page.

Procedure

1. Click on **Administration** in the **Modules** bar, and log in to the database.
2. Click on the **User** database item.
3. Right-click on the relevant user group on the **User** tab, and select **Properties**.
4. On the **Selection** tab, click on **Group association** and enable the check boxes for the groups whose members you want to assign to this user group.
5. Click on **OK**.

All authenticated users in the group from central user management are assigned to the activated ARIS user groups. These users automatically have all access and function privileges of this user group.

5.10.2 Set ARIS Business Publisher Server for central user management

If you have installed ARIS Process Governance, you can use central user management to authenticate users. Only the user name and password are verified. Imported users are granted function and access privileges through the associated user groups in the database.

Users from central user management must be imported into the database to enable them to log in. In the database properties under **Authentication/Authentication system** you can define that every authenticated user is automatically created as a user in the database during the first login.

Procedure

1. Open the file `..\BPServer\tomcat\webapps\businesspublisher\config\webappserver.cfg`.
2. Find the **<LoginModuleSection value=** tag and change it as follows:
`<LoginModuleSection value="UMCLogin"/>`
3. Open the file `..\BPServer\tomcat\webapps\businesspublisher\config\umcconfig.cfg` and specify the required settings of the **<umcproviderurl value=""/>** tag (see **<ldap>** section).

Restart ARIS Business Publisher Server.

5.11 Data backup

Administrators have various options for backing up the data that is managed on an ARIS Business Server.

Every time ARIS Business Server is launched, the configuration files are backed up in the file **backup_sysconfig.zip**. This file is saved in the **sysconfig** directory. If required, you can open this file using an extraction program and restore the files of the **sysconfig** directory.

Database

- In ARIS Business Architect, using the **Backup** functionality in the pop-up menu of a database.
- In ARIS Admintool (page 286), using the **Backup** (page 289) command.
- In ARIS Site Administrator, using the **Backup** functionality in the pop-up menu of a database.

If the size of the backup file (ADB) exceeds 2 GB (page 320), errors may occur during restoration.

Filter

- In ARIS Business Architect, using the **Export** functionality in the pop-up menu for a filter (individual backup).
- In ARIS Admintool (page 286), using the **Backupconfig** (page 293) command.

Method, configuration, and queries

- In ARIS Admintool (page 286), using the **Backupconfig** (page 293) command.

Scripts

- In ARIS Business Architect, using the **Export** functionality in the pop-up menu for a script (individual backup).
- To back up all scripts and macros for an ARIS Business Server, save the directory <ARIS installation directory>\server**templates** with all its subdirectories.

When you perform an update, make changes to a program, add languages, or uninstall a component, the relevant files and directories are backed up. A selection of files is listed here to provide examples:

In a client installation in the directory <ARIS installation directory>\backup<date>:

- Files from <ARIS installation directory>\LocalServer\data (user databases, when uninstalling)
- Directory <ARIS installation directory>\LocalServer\sysconfig
- Directory <ARIS installation directory>\html
- Directory <ARIS installation directory>\script

In a server installation in the directory <ARIS installation directory>\server\backup:

- Files from **<ARIS installation directory>\server\data** (user databases, when uninstalling)
- Directory **<ARIS installation directory>\server\sysconfig**
- Directory **<ARIS installation directory>\server\templates**

Note

User attributes of the **Free attributes** attribute type group from previous ARIS versions are no longer used as of version **7.2**. You can now customize attribute type groups and attribute types.

To be able to apply user attributes from previous versions, you must import the filters of the previous version containing all user attributes of the database. These user attributes are only created and thus visible once the filters have been imported. Subsequently, restore the database of the previous version on your current ARIS Business Server.

Alternatively, you can also use ARIS Converter. Please note that you can only view user attributes in the current ARIS version if you have imported the corresponding filters from the previous version.

5.11.1 Back up users and configuration

To back up the entire content of a database server, proceed as follows.

Procedure

Active mode

1. Use **ARIS Admintool** to back up all user databases. Use the **arisadm72 backup all <directory>** command if you use the **ARIS Admintool** in interactive mode.
2. Use **ARIS Admintool** to back up configuration data. Use the **arisadm72 backupconfig <directory>** command if you use the **ARIS Admintool** in interactive mode.

Tip

It is also possible to back up user databases online. The ARIS System Maintenance and Administration training session provides instructions on backup procedures and concepts. For additional information, please contact Software AG.

5.11.2 Automatic backup of current configuration files

Every time ARIS Business Server is launched, the configuration files are backed up in the file **backup_sysconfig.zip**. This file is saved in the **sysconfig** directory. If required, you can open this file using an extraction program and restore the files of the **sysconfig** directory.

5.11.3 Save method changes

Running the **Backupconfig** (page 293) command in ARIS Admintool (page 286) backs up all data for the configuration and method of an ARIS Business Server. You can restore it using the **Restoreconfig** command.

5.12 Transfer data from earlier ARIS versions

This chapter provides information on transferring data from ARIS version 6.2 and higher or Oracle BPA Suite 10.1.3.4 and higher.

What data will be transferred?

You can continue to use data from ARIS version 6.2 and higher or Oracle BPA Suite 10.1.3.4 and higher. Using ARIS Converter, you can transfer user databases and configuration databases.

Transfer databases

User databases contain the organizational structure and process organization of your company, for example. The contents of user databases can be transferred in their entirety using ARIS Converter.

Procedure

1. Create a backup copy of your databases.
2. Ensure that the ARIS Business Server has been launched with access to the databases. The data to be transferred can exist locally within an ARIS installation or on the network.
3. Click on **Start/Programs/ARIS Platform/Administration/ARIS Converter 7.2** if you installed ARIS in the program group suggested by the installation program. The ARIS Converter Wizard opens.
4. Select the ARIS Server on which the converted database is to be saved. To add a server to the list, click on Add. Enter the server name and click on **OK**.
5. Click on **Next**.
6. Enable the option button for the ARIS version to be used as the source for conversion.
7. Click on **Next**.
8. Select the source containing the ARIS user database that you want to transfer to your new ARIS installation.

Based on your settings you now have one or several of the following options.

ARIS Network server

Select an ARIS server in the **Network server** box. To add a server to the list, click on Add. Enter the server name and click on **OK**.

Local system

Local database directory: Enable the **Local** option button.

To convert databases locally (LOCAL server), you need to launch the **LOCAL** server of the appropriate ARIS version before starting ARIS Converter. To start **LOCAL**, click on **LOCAL** in the tree view in the **Explorer** module.

Procedure

1. Click on **Next**.
 2. Select the user database you would like to transfer.
 3. Click on **Next**.
 - a. Enable the check boxes for the configuration database items you wish to transfer. Enabling all check boxes has the following effects:
 - b. Items and method extensions in the configuration database on the source server will be transferred, if they do not exist on the target server.
 - c. Existing items and user-defined symbols in the configuration database on the target server will be overwritten with items and user-defined symbols having identical GUIDs.
 - d. Names of user-defined symbols, free attributes and units of free attributes that already exist in a certain language in the configuration database on the target server will be overwritten.
 - e. Assignments of attributes to attribute type groups that already exist in the configuration database on the target server will be overwritten.
 - f. Items and method extensions in the configuration database on the target server remain unchanged if they do not exist on the source server.

User-defined symbols are always transferred. You cannot disable this check box.
 4. Click on **Next**.
 5. Enter the database administrator password and the password for the configuration database of the source server.
 6. Click on **Next**.
 7. Enter the database administrator password and the password for the configuration database of the target server.
 8. Click on **Next**.
 9. Check the settings you specified in the wizard. To start data transfer, click on **Finish**. The converted database is saved. If the name of the converted database already exists on the target server, a number is added to the name of the converted database. Once the data transfer has been completed successfully a message appears.
 10. Click on **OK**.
- ARIS Converter closes.

5.12.1 Transfer exported filters, font formats, languages, and templates

You can transfer filters, templates, and chart definitions that you have exported in XML format (ACC, AMC, and ATC files).

The following description refers to ARIS Business Architect.

Procedure

1. In the **Administration** module, click on the **Configuration/Conventions** database item of the server into whose configuration you wish to import data.
2. Right-click on **Filter**, **Font formats**, **Languages** or **Templates** and select **Import**. The Import dialog opens.
3. Select the import file and, if required, decide how conflicts are to be solved during import by enabling the relevant check boxes.
4. Click on **OK**.

5.12.2 Transfer item groups of the configuration

Method and evaluation filters, templates, font formats, and chart definitions are managed in the configuration. The contents of the configuration are available to all user databases on a given server. You can transfer individual configuration items.

You can use ARIS Converter to transfer all or individual item groups, such as filters or model templates, from the configuration of ARIS 6.2.3 and higher.

Tip

- The procedure description and the Select configuration data wizard page of the online help for ARIS Converter include instructions for selecting individual item groups.
- When you transfer item groups with ARIS Converter, the reference to the respective database is not affected. In other words, the assignment of user-defined symbols to objects in the databases still exists, for example.

5.12.3 Transfer custom or modified scripts of previous ARIS versions

You can import user-generated or modified scripts and semantic checks that you wrote in JavaScript in previous ARIS versions. Use ARIS Script Converter to transfer VB scripts and import converted scripts to the required ARIS Business Server.

Procedure

1. Copy the VB scripts to the appropriate script directories of **ARIS <installation directory>\script**.
2. Run ARIS Script Converter and click on **Select scripts**.
3. Select the scripts to be converted and repeat this action for all relevant directories.
4. Click on **Convert**. ARIS Script Converter updates all scripts in the list.

Note

If not all scripts have been updated, you are informed which scripts are affected and why ARIS Script Converter did not update them.

For example, read-only scripts cannot be updated. Scripts that are not updated remain on the list.

5.13 Data management with ARIS Admintool

You can use ARIS Admintool commands (page 287) to manage the ARIS databases of a server and to change administrator passwords, for example. The program is a console application and runs in the MS DOS input window. The individual commands of the program are supplied as command line parameters. The program provides information on the success and effect of each command executed.

You can start ARIS Admintool from any client computer and access the databases on the server:

Click on **Start/Programs/ARIS Platform/Administration/ARIS Admintool 7.2** if you accepted the program group suggested by the installation program. The MS DOS input window opens and ARIS Admintool is launched in interactive mode.

If you start ARIS Admintool from the file system of a Windows operating system, ARIS Admintool identifies itself as the ARIS Server Administrator.

5.13.1 ARIS Admintool commands

In this section, all program commands are listed with their syntax both in interactive mode (**Start/Programs/ARIS Platform/Administration/ARIS Admintool 7.2**) and outside of interactive mode. To use ARIS Admintool outside of interactive mode, you must enter the parameter ARIS Business Server, as well as passwords.

To work outside of interactive mode, you need to enter a command to navigate to the ARIS installation directory (for example, to the directory **C:\Program Files\ARIS**).

Warning

For example, if you use scripts for daily backups, we strongly recommend that you protect these scripts at the operating system level, or enter (page 296) passwords encrypted.

As a basic rule, ARIS databases should not be edited using Windows Explorer. If you rename database folders or copy files, this may result in program malfunction.

Parts of commands that are enclosed in angle brackets must be replaced with the appropriate designations or names. Example: In the **Backup all <directory>** command, you replace **<directory>** with the name of an existing directory. For example, this command could be:

backup all e:\backup

Parts of commands that are enclosed in square brackets are optional, i.e., you can use these if you need to.

Example: delete [<database name>] [all]

After the command, you can either enter a database name or use **all** to specify that all databases be deleted.

If parameters include spaces you need to enclose the parameter in quotation marks.

If you want to create the **Sales data** database with the name **Sales data 2005**, for example, enter the following:

Interactive mode

```
copy Sales data "Sales data 2005"
```

Outside of interactive mode

```
arisadm72 copy Sales data "Sales data 2005"
```

Syntax

A command line in ARIS Admintool has the following syntax:

```
arisadm72 [<option>] <command> [<command argument 1>] ...
```

The following options can be used in ARIS Admintool:

Option	Description
-s <server name>	Indicates the server on which the command is to be performed. In interactive mode, the server can be changed via the server command.
-p <password>	Indicates the database administrator password for the specified server. If the password is not correct, the program will prompt you to enter the correct password before the selected command can be performed. The default password is DBADMIN (uppercase).
-pc <password>	Indicates the configuration administrator password for the specified server. If the password is not correct, the program will prompt you to enter the correct password before the selected command can be performed. The default password is CFGADMIN (uppercase).
-pa <password>	Indicates the Site Administrator password. The default password is SITEADMIN (uppercase).
-l <file name>	Activates logging of all program operations. The log file indicates which operation was performed at what time and with what result.
-cf <command file>	Specifies the command file with executable commands that is to be started.
-sc <schema context>	Indicates the context of the schema. ARIS is set as the default.
-u <user> <password>	Specifies the alternative password for the system user.

When working with ARIS Admintool, please observe the following:

- If you are working with ARIS Admintool on the server computer, use the **-s localhost** parameter.
- If you have not entered a password, you will be prompted to supply the Database Administrator password before each command is executed.
- If you use values with special characters (e.g. '&' in the password), you need to enclose the value in quotes. For additional information, please refer to the help and support center for your operating system.
- On the server, system messages in ARIS Admintool are always output in the ARIS installation language.
- For example, if you use scripts for daily backups, we strongly recommend that you protect these scripts at the operating system level, or enter (page 296) passwords encrypted.

5.13.1.1 Backup

Backs up a database as a compressed file with the **ADB** (ARIS database) file extension to a folder of your choice. If the size of the backup file (ADB) exceeds 2 GB (page 320), errors may occur during restoration.

ARIS databases may contain your company's organizational structure and business processes, for example. The contents of these databases are subject to constant development. Every time a user opens a database and supplements a model for example, important information is added. To avoid the risk of losing this data, it is recommended that you back up your user databases every day.

To back up a database as an ADB file, enter the following command call and press Enter:

backup <database name> <backup directory>

The name of the **backup file** consists of the name of the database and the appended file extension, ADB.

Warning

If a file of the same name already exists in the backup directory, it will be overwritten.

For example, if you use scripts for daily backups, we strongly recommend that you protect these scripts at the operating system level, or enter (page 296) passwords encrypted.

You can use the following switch:

All: Backs up all databases on the selected database server.

To back up all databases on a server as ADB files, enter the following command call and press Enter.

Interactive mode

```
backup [<database name>] [all] <backup directory> [<new database name>]
```

Outside of interactive mode

```
arisadm72 backup [<database name>] [all] <backup directory> [<new database name>]
```

Using the Restore (page 300) command, databases that have been backed up as ADB files can be imported into and registered on a server.

5.13.1.1.1 Example

The **Project** database to be backed up is located on the **LOCAL** server. The database administrator password is **DBADMIN**. The backup file is to be saved to the **Backup** folder on a data carrier.

Procedure

1. Run ARIS Admintool (Start/Programs/ARIS Platform/Administration/ARIS Admintool 7.2). ARIS Admintool is launched directly in interactive mode and you can enter the desired command.
2. Enter the following command line and press Enter:

```
backup project e:\backup
```

Once you have identified yourself as the database administrator, the command is executed.

5.13.1.1.2 Data backup using a batch program (batch file)

If you want to back up data automatically at a particular time every day, ARIS provides support with the **backup.cmd** batch program in the **addons\ServerBackup** directory on the ARIS Platform installation media. This program can be run regularly using time control software.

To perform time-controlled data backups, copy the file **backup.cmd** to **<ARIS installation directory>\JavaClient**. Then use the time control software to specify the times at which the data backup is to be performed. All registered databases will be backed up at the specified time to the directory you previously entered in the **backup.cmd** file.

Warning

For example, if you use scripts for daily backups, we strongly recommend that you protect these scripts at the operating system level, or enter (page 296) passwords encrypted.

5.13.1.2 Backupasn

Saves a database as a compressed file with the file extension **ADB**. Extracts the status of the specified change list number **<asn>** from a versioned database **<dbname>** to an ADB file of the **<archivedir>** directory. Instead of **<asn>**, **<head>** or **<work>** can be used. **<head>** stands for the last versioned state and **<work>** for the current state that is not versioned yet.

Databases may contain your company's organizational structure and business processes, for example. The contents of these databases are subject to constant development. Every time a user opens a database and supplements a model for example, important information is added. To avoid the risk of losing this data, it is recommended that you back up your user databases every day.

Warning

If a file of the same name already exists in the backup directory, it will be overwritten.

To back up the state of a specific change list number of a versioned database as an ADB file, enter the following command call and press Enter:

backupasn <database name> <backup directory> <change list number>

To back up the current state of a versioned database as an ADB file, enter the following command call and press Enter:

backupasn <database name> <backup directory> head

To back up the state of a versioned database that is not versioned yet as an ADB file, enter the following command call and press Enter:

backupasn <database name> <backup directory> work

The name of the **backup file** consists of the name of the database and the appended file extension **ADB**.

Note

Databases that have been backed up as ADB files can be imported in and registered on a server using the **Restore** (page 300), **Restoreasn** (page 302), and **Restoreversioned** (page 301) command.

5.13.1.3 Backupconfig

Saves the ARIS configuration data (filters, templates, and charts) to the specified directory in the appropriate file format.

Interactive mode

```
backupconfig <backup directory> <new file name>
```

Outside of interactive mode

```
arisadm72 backupconfig <backup directory> <new file name>
```

To restore (page 302) configuration files, use the **Restoreconfig** command.

5.13.1.4 Configadminpassword

Changes the configuration administrator password.

Interactive mode

The new password may not be entered in interactive mode, you will be prompted for it by the system

```
configadminpassword <current password>
```

Outside of interactive mode

```
arisadm72 configadminpassword <new password> <current password>
```

5.13.1.5 Copy

Copies databases to a server.

Interactive mode

```
copy <source database name> [all] <target database name>
```

Outside of interactive mode

```
arisadm72 copy <source database name> [all] <target database name>
```

Optionally, you can specify the server to which you want to copy the database by typing a colon behind the target database name and adding the server name.

In batch mode, you can also enter the database administrator password and specify that all databases are to be copied:

```
copy <source database name> <target database name> [all] [:<server>] [/<server password>]
```

Note

Database names must be unique. If a database already exists with the name specified in the second parameter, the database cannot be copied.

Example

The **SalesDB** database is to be duplicated on the LOCAL server. The database administrator password is **DBADMIN**. The copy of the database is to be named **New salesDB**.

Procedure

1. Run ARIS Admintool (**Start/Programs/ARIS Platform/Administration/ARIS Admintool 7.2**). ARIS Admintool is launched directly in interactive mode and you can enter the desired command.
2. Enter the following command line and press Enter:

```
copy SalesDB "New salesDB"
```

If you have identified yourself as the database administrator, the command is executed.

5.13.1.6 Createdb

Creates a new database. If you enter the **versioned** option, a versionable database is created.

Interactive mode

```
createdb SalesDB versioned
```

Outside of interactive mode

```
arisadm72 createdb SalesDB versioned
```

5.13.1.7 Dbmspassword

Changes the password of the DBMS user. This change is helpful if the DBMS (Database Management System) in use is also used by applications other than ARIS. This may be the case with the Oracle DBMS. The Oracle DBMS user is called **ARIS72**. The default password is **arisadmin** (lower case).

To change the password of the DBMS user:

Interactive mode

The new password may not be entered in interactive mode, you will be prompted for it by the system.

```
dbmspassword <current password>
```

Outside of interactive mode

```
arisadm72 dbmspassword <new password> <current password>.
```

5.13.1.8 Download

Saves log files, configurations, or user login information from the ARIS site to a selected directory as ZIP files.

Interactive mode

```
download [logs] [configs] [accounting] <target directory> all
```

Logs stands for log files, **configs** for configurations and **accounting** for user information.

Outside of interactive mode

```
arisadm72 download [logs] [configs] [accounting] <target directory>
```

Example

If you want to save all of the log files of ARIS Business Server **xyz** as a ZIP file on drive **d:**, please enter the following commands:

```
No connection<aris>> server xyz
```

```
Enter site administrator password for server xyz: *****
```

```
xyz<aris>> download -logs d:
```

```
downloaded to d:\log.zip
```

5.13.1.9 Delete

Removes databases from the database server and deregisters them.

You can use the following switches:

All: Deletes all databases on the selected database server.

Force: Deletes the relevant databases even though users are still logged in.

Interactive mode

```
delete [<database name>] [all] [force]
```

Outside of interactive mode

```
arisadm72 delete [<database name>] [all] [force]
```

5.13.1.10 Encrypt

Encrypts passwords, for example, for ARIS Business Server or ARIS Business Publisher Server. If you enter passwords, e.g., in the file **Scriptrunner.cfg** (page 309), or use passwords in ARIS Admintool, we recommend that you encrypt them for security reasons. You cannot encrypt passwords in the files **defaultServerSettings.cfg** or **lockingservice.cfg** using this command.

Interactive mode

```
encrypt <password to be encrypted>
```

Outside of interactive mode

```
arisadm72 encrypt <password to be encrypted>
```

Copy the entire expression, highlighted in bold in the example, to the file.

encrypted password: **{crypted}25f553fba171ea45b4d0168f29329c5b**

5.13.1.11 Exit

Exits interactive mode and closes the ARIS Admintool window. The Exit command can only be executed in interactive mode.

To exit interactive mode as well as the program, enter the following command call and then press Enter: **exit**

5.13.1.12 Help

Displays a help text for every available command. The help text describes the actions that will be performed as a consequence of the command, as well as the parameters that must be entered with the command.

To call help for a specific command, enter the following command call and press Enter:

Interactive mode

```
help <command>
```

Outside of interactive mode

```
arisadm72 help <command>
```

To see an overview of help, enter the following command call and press Enter. By pressing the Enter key, you can navigate through the Help.

5.13.1.13 Interactive

Switches to interactive mode, in which you can enter several commands in a prompt sequence without having to exit the program. You need to log in to each server only once.

To enter a sequence of commands within the program, enter the following command call outside of interactive mode and press Enter:

```
arisadm72 interactive
```

5.13.1.14 Kill

Terminates a user's connection to databases on the selected database server. This connection is identified by the connection ID that you can display using the Sessions command.

Warning

All users whose connection to databases on the specified server was terminated with the Kill function cannot properly exit ARIS. Changes which have not yet been saved are lost.

You can use the following switch:

all: Terminates all connections with databases on the selected database server.

To terminate a user's connection to databases on the specified server, enter the following command call and press Enter.

Interactive mode

```
kill [<session ID>] [all]
```

Outside of interactive mode

```
arisadm72 kill [<session ID>] [all]
```

5.13.1.15 List

Displays all databases that are registered on a database server and that can be opened by ARIS.

You can use the following switch:

all: Lists all databases regardless of context. In this way, all databases of the ARIS and Business Optimizer context are output.

To display all databases that can be opened by ARIS, enter the following command call and press Enter.

Interactive mode

```
list [all]
```

Outside of interactive mode

```
arisadm72 list [all]
```

5.13.1.16 Maintain

Starts maintenance for the specified database. Maintenance is database system-specific, which means that a set number of maintenance tasks is performed depending on the database. Refer to your database management system documentation for information regarding specific maintenance tasks.

You can use the following switch:

all: Starts maintenance for all databases on the database server.

To perform maintenance for a database, enter the following command call and press Enter.

Interactive mode

```
maintain [<database name>] [all]
```

Outside of interactive mode

```
arisadm72 maintain [<database name>] [all]
```

5.13.1.17 Monitor

Shows all current server activities, such as backup or XML export, for example.

Interactive mode

```
monitor
```

Outside of interactive mode

```
arisadm72 monitor
```


5.13.1.18 Password

Changes the database administrator password for the selected server. First, the current password must be entered.

Interactive mode

```
password <new password> <current password>
```

Outside of interactive mode

```
arisadm72 password <new password> <current password>
```

5.13.1.19 Rename

Renames a database.

You can use the following switch:

force: Renames the database even if users are connected to it.

Interactive mode

```
rename <old database name> <new database name> [force]
```

Outside of interactive mode

```
arisadm72 rename <previous database name> <new database name> [force]
```

5.13.1.20 Reorg

Reorganizes a database.

ARIS searches the database for object and connection definitions that do no longer have occurrences in models. These are deleted.

If you are using an object library, you should not enable this option since it may be possible and intended for certain definitions to exist without having any occurrences.

Note

A database can only be reorganized if no user is logged in to the database.

You can use the following switch:

all: Reorganizes all databases on the selected database server.

Interactive mode

```
reorg [<database name>] [all]
```

Outside of interactive mode

```
arisadm72 reorg [<database name>] [all]
```

5.13.1.21 Restore

Restores individual databases that were backed up as ADB files, or all ADB files of a directory, to the current database server. If the size of the backup file (ADB) exceeds 2 GB (page 320), errors may occur during restoration.

The database directory must not contain a database that has the same name as the one to be imported. You are therefore given the opportunity to rename the database at the same time. To import one or more ADB files in a directory to a server and register them there, enter the following command call and press Enter.

Options

- **overwrite**

Overwrites current databases with the same name on the database server.

- **noconfirm**

Converts databases from previous versions during the restore operation on the database server without prompting for confirmation.

Interactive mode

```
restore <backup file> [overwrite] [noconfirm]
```

Directory with multiple ADB files:

```
restore <backup directory> [overwrite] [noconfirm]
```

Outside of interactive mode

```
arisadm72 restore <backup file> [overwrite] [noconfirm]
```

Directory with multiple ADB files:

```
arisadm72 restore <backup directory> [<new database name>] [overwrite] [noconfirm]
```

To import an ADB file and rename the database at the same time, enter the following command call and press Enter.

Interactive mode

```
restore <backup file> [<new database name>] [overwrite] [noconfirm]
```

Outside of interactive mode

```
arisadm72 restore <backup file> [<new database name>] [overwrite] [noconfirm]
```

5.13.1.22 Restoreversioned

Creates a versionable database **<dbname>** from an ADB file **<archive>** of an unversioned database. Can also back up all adb/bdb files of a directory. The **overwrite** option can only be used for backup files of the current program version.

The database directory must not contain a database that has the same name as the one to be imported. You are therefore given the opportunity to rename the database when importing.

You can use the following switch:

overwrite: Overwrites a database on the database server that has the same name as the one imported.

To import one or more ADB files in a directory to a server and register them there, enter the following command call and press Enter.

Interactive mode

```
restoreversioned <backup file> [<database name>] [overwrite]
```

Directory with multiple ADB files:

```
restoreversioned <backup directory> [overwrite]
```

Outside of interactive mode

```
arisadm72 restoreversioned <backup file> <database name> [overwrite]
```

Directory with multiple ADB files:

```
arisadm72 restoreversioned <backup directory> [overwrite]
```

5.13.1.23 Restoreasn

Creates a versionable database **<dbname>** of a specific state from an ADB file **<archive>** of an unversioned database. Either a change list number **<asn>** or **head** can be selected as the state. **head** represents the last versioned state. Can also back up all adb/bdb files of a directory. The **overwrite** option can only be used for backup files of the current program version.

You can use the following switch:

overwrite: Overwrites a database on the database server that has the same name as the one imported.

To import one or more ADB files in a directory to a server and register them there, enter the following command call and press Enter.

Interactive mode

```
restoreasn <ADB file> <change list numberasn> <database name> [overwrite]  
or  
restoreasn <archive> head <dbname> [overwrite]
```

Directory with multiple ADB files:

```
restoreasn <backup directory> [overwrite]
```

Outside of interactive mode

```
arisadm72 <ADB file> <change list numberasn> <database name> [overwrite]  
or  
arisadm72 restoreasn head <archive> <dbname>[overwrite]
```

5.13.1.24 Restoreconfig

Saves the ARIS configuration data (filters, templates, and charts) to the specified directory in the appropriate file format.

To save the ARIS configuration data, enter the following command call and press Enter:

Interactive mode

```
restoreconfig <path\file name>
```

Outside of interactive mode

```
arisadm72 restoreconfig <path\file name>
```

To back up ACB files, use the Backupconfig (page 293) command.

5.13.1.25 Schemacontext

Changes the view area of databases. The default schema context is **aris**.

To be able to access databases of ARIS Business Optimizer, please enter the following command call and press Enter:

Interactive mode

```
schemacontext bo
```

Outside of interactive mode

```
arisadm72 -sc bo
```

From now on, all database-specific commands refer exclusively to databases of ARIS Business Optimizer.

To reset the database schema to the ARIS schema context, enter the following commands:

Interactive mode

```
schemacontext aris
```

Outside of interactive mode

```
arisadm72 -sc aris
```

5.13.1.26 Server

Can be run in interactive mode only. It terminates the current connection to the server and permits connecting to another server. All commands that are entered thereafter relate to the new server.

```
server <server> [<password>]
```

You can enter the Site administrator password (page 305) now or wait for it to be requested later.

5.13.1.27 Sessions

Displays all users who are logged in to a database on the specified server.

The following information is displayed:

- TCP/IP host name of the computer that the user used when logging in to the database
- User name
- Connection ID
- Name of the application that established the connection

The user name displayed is based on the value specified in the **Username** environmental variable of the computer from which the user logged in to the database.

The information displayed can be sorted either by user name or database name.

The following options are available for displaying information about all current users of databases on the specified server.

Users sorted by user name:

Interactive mode

```
sessions byuser
```

Outside of interactive mode

```
arisadm72 sessions byuser
```

Users sorted by process identifier:

Interactive mode

```
sessions bypid
```

Outside of interactive mode

```
arisadm72 sessions bypid
```

Users sorted by database name:

Interactive mode

```
sessions bydatabase
```

Outside of interactive mode

```
arisadm72 sessions bydatabase
```

5.13.1.28 Siteadminpassword

Changes the password of ARIS Site Administrator. The default password after installation is **SITEADMIN**. This is case sensitive.

To change the Site administrator password:

Interactive mode (the new password may not be entered in interactive mode, you will be prompted for it by the system)

```
siteadminpassword <current password>
```

Outside of interactive mode

```
arisadm72 siteadminpassword <new password> <current password>
```

5.13.1.29 Statistic

- Displays the following information for the evaluated database:
- All models
- All users
- All font formats

You can use the following switch:

all: Outputs all information about the database.

To display this information for one or all databases, enter the following command calls and press Enter:

Interactive mode

```
statistic <database name>
```

Information about all databases:

```
statistic all
```

Outside of interactive mode

```
arisadm72 statistic <database name>
```

Information about all databases:

```
arisadm72 statistic all
```

5.13.1.30 Status

Displays the status of a client-server connection.

Interactive mode

```
status <server>
```

Outside of interactive mode

```
arisadm72 status <server>
```

5.13.1.31 Version

Outputs the version number of the **ARIS Admintool** program.

Interactive mode:

```
Version
```

Outside of interactive mode

```
arisadm72 version
```

Tip

To output the version number of an ARIS Business Server, please use the **Status** (page 306) command.

5.14 Evaluation (scripting)

The VB report execution environment enables you to run Visual Basic reports when you work with Java-based products. The VB report execution environment runs under Windows. It is installed with the ARIS Site Administrator installation. Ensure that the Report Server is enabled (page 141).

With ARIS Business Architect you can also create and run JavaScript reports, provided the necessary system requirements (page 125) are met.

Visual Basic reports

You need about 10 MB RAM plus about 25 MB RAM for each simultaneously run Visual Basic report. For example, to create four reports at the same time, you need 10 MB plus four times 25 MB RAM, that is, a total of 110 MB RAM.

VB Report Server generally runs under Windows 2003 Server (64-bit). Windows 2008 (64-bit) is not generally released for this server.

JavaScript reports

The RAM required (page 125) for reports varies greatly. If you want to run report scripts that process large quantities of database items, we recommend a 64-bit Windows installation or a Unix installation due to the upper memory limit of 1.2 GB main memory for ARIS Business Server. Please also note the information on script development (page 307).

Note

If you observe certain requirements (page 308) when creating report scripts, you ensure that memory requirements are optimized when the reports are run. This reduces the execution time of your reports and the risk of reaching the memory limits (page 125) of your system.

5.14.1 Optimize memory requirements

Reports

If you observe certain requirements (page 308) when creating report scripts, you ensure that memory requirements are optimized when the reports are run. This reduces the execution time of your reports and the risk of reaching the memory limits (page 125) of your system.

Only use database objects within the report for as long as is necessary. Afterward, the database objects should no longer be kept in memory. To achieve this, you can take the following steps, for example:

- Avoid storing lists of ARIS objects in global variables if possible.
- Use "short" functions to keep data only as long as it is required.
- If lists containing a large number of objects are no longer needed, it is advisable to clear them. This helps enable Java's garbage collection to delete these objects from the memory. This measure provides additional memory for report execution in the long term even if the memory requirements in Java and using JavaScripts cannot be controlled directly.

Macros

Depending on the application scenario, large databases or models and the use of comprehensive macros may result in extended runtimes. ARIS clients and ARIS Web clients then require more RAM. More RAM is also required for automatic spell checking when more than two languages are used.

By default, memory allocation takes place automatically and can however, be manually (page 214) configured.

During automatic memory allocation, manual settings specified for ARIS clients (launcher.cfg) and ARIS Web clients (arisloader.cfg) are ignored.

To configure memory allocation manually, you must adjust the configuration files:

- **ARIS clients**
(<ARIS installation directory>\JavaClient\config\launcher.cfg)
- **ARISWeb clients**
(<Installation directory>/server/html/config/arisloader.cfg.)

Procedure

1. In the **<jvmParams** entry, insert:

```
AutomaticMemoryManagement="false"
```

This enables manual configuration of the JVM parameters.

2. Adjust the memory size, e.g.:

```
jvmOptions="-Xmx512m;-Xms64m;-XX:NewSize=32m;-XX:MaxNewSize=64m;-XX:MaxPermSi  
ze=156m;-Dsun.java2d.d3d=false />
```

After you restart the client your settings are transferred. Automatic memory allocation is deactivated.

5.14.2 Automatically start reports with Script Runner

If you do not want to run reports time-controlled, you can also start them using the command prompt on the computer that ARIS Business Server is installed on. You do not need an ARIS client installation to do so, however you do require a valid license key. You cannot start interactive reports, i.e. reports that call dialogs during execution, automatically.

For security reasons, it is recommended that you encrypt (page 296) the password using the ARIS Admintool command **encrypt**.

Prerequisite

- You have access privileges for the installation directory (ARIS Business Server).
- You need a valid ARIS client license key
- The report to be run may not open dialogs.

Procedure

1. Open the **scriptrunner.cfg** file under **server/templates** and **LocalServer/templates**.
2. Adapt the file by specifying the relevant report, output format, etc. You will find notes on how to do this in the file. The **scriptrunner.cfg** displayed as an example (page 310) runs a standard report for the start model in the demo database.
3. Save the changes under **<installation directory>/server**.
4. Open the command prompt for the directory **<installation directory>/server**, enter **scriptrunner.bat scriptrunner.cfg**, and press the Enter key.

The report is run and saved in the directory that is specified in the **scriptrunner.cfg** configuration file.

5.14.3 Example scriptrunner.cfg

In the following example, the report **Output object information (for MashZone)** is run for the start model (structuring model) of the **DemoDB-United Motors Group** database. For the objects that occur in the model the report outputs the specified attributes and relationships to other objects.

Therefore, the **bold** entries in the file <ARIS installation directory>/server/templates/**scriptrunner.cfg** have been adapted and saved in the ARIS Business Server installation directory. You can use the sample file **scriptrunner.cfg** if the demo database is available, the marked text parts match your system configuration, and you enter a valid license key.

Information on parameter entry is shown if you click on a link.

After you adjusted the sample file **scriptrunner.cfg** and saved it in the installation directory of <ARIS Business Server, open the command prompt in <ARIS installation directory>/**server** and enter the following:

scriptrunner.bat scriptrunner.cfg.

When this action is complete, the output file is available in the directory
D:/Evaluations/Reports/example.xls.

Sample file 'scriptrunner.cfg'

```
#server home directory (if you save the file scriptrunner.cfg in the directory <ARIS
installation directory>/server you do not need to adjust this path.)
#example: server.home=D:/Program Files/ARIS/Server
server.home=.
```

ARIS Business Server installation directory.

You can keep the default setting (.) only if you start the file **scriptrunner.bat** from the ARIS Business Server installation directory.

```
# ARIS server to connect to. Defaults to 'localhost'
scriptrunner.servername=localhost
```

Name of the ARIS Business Server on which the script is run and the modeling data to be evaluated is saved.

Enter the name or IP address.

```
# Database name to login.
scriptrunner.dbname=DemoDB-United Motors Group
```

Name of the database for which you want to run the report, or for whose elements you want to run the report.

In this case, the database name is **DemoDB-United Motors Group**. If you do not have access to this database your system administrator can help you. The demo database is stored on the ARIS installation media.

```
# User name for login.
scriptrunner.username=system
```

User name and password of the user that is to be used for login.

In this example, login is performed with the system user **system**.

```
# Password for login.
scriptrunner.userpassword={crypted}d12173f23e5f6e5d3cf163169b1068a4
```

Password of the user that is to be used for login.

In this example, login is performed with the system user **system** and the password **manager** (here: **{crypted}d12173f23e5f6e5d3cf163169b1068a4**). For security reasons, it is recommended that you encrypt (page 296) the password using the ARIS Admintool command **encrypt**.

```
# Method filter for login. Defaults to "entire method"
scriptrunner.methodfilterguid=dd838074-ac29-11d4-85b8-00005a4053ff
```

GUID of the method filter. In this example, the GUID is **dd838074-ac29-11d4-85b8-00005a4053ff**. If you do not specify a GUID here, the **Entire method** filter is applied automatically.

You obtain the GUID of a filter in the **Administration** module by right-clicking on the relevant filter and selecting **Edit**.

```
# Locale for database login. ISO 639 code for language.
scriptrunner.dblocale=de
```

ISO 639-1 code for the database language to be used for the report.

In this example, **de** for German is selected.

You can also specify the country in which the language is spoken by entering **scriptrunner.dblocale.country=**.

```
#optional ISO-3166 country specification for database login
# scriptrunner.dblocale.country=
```

ISO 6166 code for the country in which the language is spoken that you defined as database language (**scriptrunner.dblocale=**). Please enter this ID in capital letters.

For example, if you have specified **scriptrunner.dblocale=en** you can define the language in more detail by entering **scriptrunner.dblocale.country=US** for American English or **scriptrunner.dblocale.country=GB** for British English.

```
# License key to use
scriptrunner.clientkey=<enter your client license key here>
```

Valid license key of the ARIS client.

```
# oem identifier
scriptrunner.oemprofile=oem01
```

Internal default name of the program.

To avoid failures do not change this entry.

```
# Locale for script string table and error messages. ISO 639 code for language.
scriptrunner.guilocale=de
```

ISO 639-1 code for the language in which error messages and report texts are displayed.

In this example, **de** for German is selected.

```
# script component - id. Default is 'Report' (value = 1). Optional 'static publisher'
(value = 10).
```

```
# scriptrunner.component=1
```

```
# ID of script to execute.
```

```
scriptrunner.scriptid=standard/de46f0c0-a9da-11df-03f2-c09e38d23e7e
```

Identifier of the report script to be run.

In this example, the identifier is **Output object information (for MashZone)**

(**standard/de46f0c0-a9da-11df-03f2-c09e38d23e7e**) for the standard script.

Identifiers for report scripts are available on the Properties page the script in the **Administration** or **Scripts** modules.

Please use only reports whose **Opens dialogs** check box is disabled on the Properties page.

```
# Output format ID, defaults to -1 (no output)
```

```
# 0 = RTF
```

```
# 2 = Text
```

```
# 3 = HTML
```

```
# 4 = MS Word
```

```
# 5 = MS Excel
```

```
# 7 = other
```

```
# 8 = XML
```

```
# 9 = PDF
```

```
# -1 = No output
```

```
scriptrunner.outputformat=5
```

Defines the format of the output file.

In this example, the output format **MS Excel (5)** is used.

```
# path and name of output file. Only relevant if outputformat != -1
```

```
# example: D:/Evaluations/Reports/MyResult.xls
```

```
scriptrunner.outputfile=D:/Evaluations/Reports/example.xls
```

Path and name of the output file.

In this example, the entry **D:/Evaluations/Reports/example.xls** is used. If the path does not exist it is created automatically. Ensure that you have access privileges for the target path.

```
# Optional evaluation filter
```

```
scriptrunner.evaluationfilterguid=
```

GUID of the evaluation filter you use to exclude items from evaluation. In this example, no evaluation filter is defined.

You obtain the GUID of a filter in the **Administration** module by right-clicking on the relevant filter and selecting **Edit**.

```
# IDs of objects to start the script on. Separated by ';'

```

```
scriptrunner.scriptinput=M:bf2a9d60-7cb8-11dc-2729-000bcd0cce4e
```

Defines the database item for which the report is to be run.

Syntax: <element type>:<GUID>

To evaluate multiple identical database items separate the entries with a semicolon (;). Examples are available in the file as comments.

In this example, the start model of the database is evaluated,

M:bf2a9d60-7cb8-11dc-2729-000bcd0cce4e. **M:** stands for Model, followed by the GUID of the model.

The GUID is available on the Properties page **Information** of the model.

```
# DB      : the script is to be run on a database context (database is specified by
scriptrunner.dbname property)
# F:[GUID]: for scripts running on "configuration filter" context a configuration
filter is specified by "F:" directly followed by the filter GUID
# G:[OID]: for scripts running on group objects: their OIDs, each preceded by "G:"
# M:[GUID]or[OID]: for scripts running on models: their OID or their GUID, each
preceded by "M:"
# O:[GUID]or[OID]: for scripts running on object definitions: their OID or their GUID,
each preceded by "O:"
# examples:
# scriptrunner.scriptinput=DB
# scriptrunner.scriptinput=F:f98555a9-6158-11d4-8582-00005a4053ff
# scriptrunner.scriptinput=G:
#
scriptrunner.scriptinput=M:abababab-cdcd-efef-ala2-b1b33fce23e5;M:ef2579bd-cdcd-
efef-ala2-b1b33fce23e5
#
scriptrunner.scriptinput=O:abababab-cdcd-efef-ala2-b1b33fce23e5;O:ef2579bd-cdcd-
efef-ala2-b1b33fce23e5
# user-defined properties. can be accessed in script using
Context.getProperty("propertyname")
scriptrunner.userproperty.count=0
```

Configuration for calling texts that you can define in the lines

scriptrunner.userproperty<number>.key= and

scriptrunner.userproperty<number>.value=.

Change the entry only (0) if you use the call **Context.getProperty("<value of the key>")** in your own report scripts.

For example, if you specified the following texts and keys:

```
scriptrunner.userproperty.count=2
scriptrunner.userproperty1.key=send_mail
scriptrunner.userproperty1.value=true
scriptrunner.userproperty2.key=Extra text
scriptrunner.userproperty2.value=Started with scriptrunner.bat
```

you can call these texts in the script as follows:

```
var text = Context.getProperty("Extra text") //returns "Started with scriptrunner.bat"
if("true"==Context.getProperty("end_mail"))
  sendMail();

# as many user-defined properties as specified in scriptrunner.userproperty.count.
# syntax:
#scriptrunner.userproperty1.key=
#scriptrunner.userproperty1.value=
#scriptrunner.userproperty2.key=
#scriptrunner.userproperty2.value=
#...
```

5.14.4 Report formats and report files

Visual Basic reports

To generate **DOC** and **XLS** output formats, Microsoft Office version 2000 or later must be installed on the computer on which ARIS Site Manager is installed. If you use reports to import data from Excel tables, please ensure that the tables have been saved in **XLS** format.

The RAM required (page 125) for reports varies greatly. If you want to run report scripts that process large quantities of database items, we recommend a 64-bit Windows installation or a Unix installation due to the upper memory limit of 1.2 GB main memory for ARIS Business Server. Please also note the information on script development (page 307).

Note

The Report Server is running by default. If you do not want to start any VB scripts on an ARIS Business Server, you can shut down (page 141) the Report Server to avoid unnecessary use of system resources. You can always run these locally. To shut down the Report Server, you must configure the file **userServerSettings.cfg**.

Visual Basic reports cannot be run if ARIS Business Server or the local server LOCAL are installed on computers with the following operating systems:

- MS Windows 7
- MS Windows 2008
- MS Windows 2008 R2

All reports

If, for example, you want to output documents in PDF format using Microsoft Word or Microsoft Excel, you must have Adobe Reader and Microsoft Office version 2000 or higher installed. If you use reports to import data from Excel tables, please ensure that the tables have been saved in **XLS** format. If pop-up blockers are activated for the domain, it may not always be possible to open report output in PDF format from a Publisher export.

In addition, all applications that are linked in your models should be installed.

The reports are saved in your Temp directory. To save them in a different directory, use the **Save As** functionality in the output program.

In ARIS Business Architect, you can manage evaluation scripts (reports, macros, transformations, and semantic checks) in the **Administration** module.

If you output reports as Word files, model graphics are embedded in EMF format by default. To embed model graphics in PNG format, please add the following entry to the configuration file **userServerSettings.cfg** (page 133):

```
<report default_rtf_image_format="png">
</report>
```


5.14.5 Windows API functions

Since reports are run on the server, dialogs that are called from a script via Windows API functions cannot be displayed on the client, for example. The same applies to running **Shell** and **ShellExecute**. The relevant programs and files are run or opened via the default methods on the server.

For this reason, ARIS Script has special methods for displaying, running, or opening dialogs, programs, and files on the client. You find the parameters for these methods in the corresponding help files. Replace the default methods as shown in the following table:

Default	ARIS Script
GetOpenFileName (Win API)	BrowseForFiles Option parameter e.g. = 0. Multiple files can be selected if you increase this parameter by + 8.
GetSaveFileName (Win API)	BrowseForFiles Option parameter e.g. = 3
GetFilePath (Sax Basic)	BrowseForFiles
SHBrowseForFolder (Win API)	BrowseForFolders
ShellExecute (Win API)	Shell

5.14.6 Dialog variables

When you use dialog variables in a report, this differs from use in the local report because you must declare the scope of the dialog variables.

Example of a local report:

```
bIsOk = False
If bIsOk Then
    Begin Dialog UserDialog 440,112,"ARIS Report" ' %GRID:10,7,1,1
        OptionGroup.options
            OptionButton 20,14,380,14,"Option1"
            OptionButton 20,35,380,14,"Option2"
    OKButton 210,77,100,21
    CancelButton 320,77,100,21
    End Dialog
    Dim Dlg As UserDialog
    End If
    If Dlg.options = 0 Then ...
```

If this report is run on a server, an error occurs here because the **Dlg.options** variable is not globally valid.

The following change makes the **Dlg.options** variable globally valid and allows you to run the report as a Web report:

```
Dim nDlg_Options As Long
bIsOk = False
If bIsOk Then
    Begin Dialog UserDialog 440,112,"ARIS Report" ' %GRID:10,7,1,1
        OptionGroup.options
            OptionButton 20,14,380,14,"Option1"
            OptionButton 20,35,380,14,"Option2"
    OKButton 210,77,100,21
    CancelButton 320,77,100,21
    End Dialog
    Dim Dlg As UserDialog
    nDlg_Options = Dlg.options
    End If
    If nDlg_Options = 0 Then ...
```

5.14.7 Nested dialogs

Nested dialogs are not permitted in Web reports. Such nested dialogs occur, for example, when a message box (MsgBox) is used in the DialogFunc to output an error message. To have the Web report output this message box, you need to integrate it in such a way that it appears only after the dialog generated with DialogFunc is closed.

5.14.8 Icons for placed attributes

For example, if you run reports or create a Publisher export, the icons that are saved in the **icons** subdirectory in the installation directory of your ARIS Business Server are used for linked files. Icons of Microsoft Office products are automatically displayed. For these applications, you do not need any icons in the directory noted above unless you want to use your own icons.

You can change icons or add new ones. To create and edit icons in ICO format, you need a suitable application. Assign file names that conform with the extension of the relevant application.

To create icons that represent bitmap graphics, Lotus Notes or text files, for example, save the graphics under the names **bmp.ico**, **nsf.ico**, and **txt.ico**.

Added icons are immediately available. Once you have changed icons, you must restart ARIS Business Server.

Note

If icons displayed in models are different from those in the report output or in Publisher export, ensure that you have saved the corresponding icons in the installation directory of your ARIS Business Server, in the **icons** subdirectory.

If icons for placed attributes are missing there, they will not be displayed in the Publisher export or report output.

5.14.9 Add custom icons for macros

For users to be able to add frequently used macros as icons to the toolbar, administrators must provide these icons.

Procedure

1. Create the **images** subdirectory in the installation directory of the relevant ARIS Business Server **..server/templates/scriptservice/internal/**. This is where you save the icon files in PNG format.

The graphics must be (n*16) x 16 pixels in size.

2. Create an **images.lst** file and save it in UTF-8 format.

The file specifies the sequence in which the icons are displayed in the user interface.

Insert an empty line at the beginning and continue with the following structure:

```
<name of the first icon>.png  
<name of the second icon>.png  
...
```

The new icons are available to users in the **Configure macros** dialog after program restart. If the file **images.lst** is missing, no icons from the **images** directory are displayed.

5.14.10 Transfer custom or modified scripts of previous ARIS versions

You can import user-generated or modified scripts and semantic checks that you wrote in JavaScript in previous ARIS versions. Use ARIS Script Converter to transfer VB scripts and import converted scripts to the required ARIS Business Server.

Procedure

1. Copy the VB scripts to the appropriate script directories of **ARIS <installation directory>\script**.
2. Run ARIS Script Converter and click on **Select scripts**.
3. Select the scripts to be converted and repeat this action for all relevant directories.
4. Click on **Convert**. ARIS Script Converter updates all scripts in the list.

Note

If not all scripts have been updated, you are informed which scripts are affected and why ARIS Script Converter did not update them.

For example, read-only scripts cannot be updated. Scripts that are not updated remain on the list.

6 Known restrictions

Knowing how the system is going to be used is essential to determining an optimal technical configuration.

For specific cases, please contact Software AG (<http://www.softwareag.com>).

Versions more recent than those listed in the hardware and software requirements have not been tested or approved for use.

Note

Despite the approval of our software for operation with the listed operating system versions and other software and hardware requirements, we cannot exclude the possibility of problems arising from unpredictable incompatibility issues with certain hardware/software combinations.

This applies, for example, to the use of certain printers/printer drivers or graphic cards/graphic card drivers under certain operating system versions. In some cases, operational faults may occur when you display graphics in ARIS, create reports, use other Office applications, or export from Web Publisher. When a hardware key is used for copy protection of software programs, poor performance of the parallel interface may lead to delays or even errors.

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, please contact your local Software AG sales organization. Please note that this type of manufacturer-specific or customer-specific change is not subject to the standard Software AG software maintenance agreement and that these changes can only be performed if you requested and agreed on them.

6.1 Printers/plotters

ARIS printouts are not correctly generated with some **HP Design Jet** plotter drivers and compatible drivers in HPGL mode.

6.2 Java Runtime Environment (JRE)

Version 6 updates 7 or earlier

If you are using the ARIS download client as an applet in combination with JRE 6 update 10 or higher, you can increase (page 223) the maximum heap size.

If you are using an older JRE (update 7 or earlier), these settings are ignored. The maximum memory size remains 64 MB. You may then encounter out of memory errors.

We therefore recommend to use JRE 6 update 17 or 18.

Version 6 updates 19 and 20

- Currently, Java can only process files of up to a maximum of 2 GB safely. Thus, errors may occur with larger backup files (ADB) and during database recovery. If errors occur during backup or while restoring please use the backup mechanism in your database management system (DBMS).
- If you use ARIS Web clients in applet mode (page 222), you must deactivate Java security settings for mixed code.
- The log file contains the entries that concern the file selection dialog. These must not be considered.
- If you use a program version before SR2010_5, information is not logged properly. In this case, please use the current program version together with the approved JRE version.

Thus, we recommend the use of JRE Version 6 Updates 17 and 18.

Version 6 update 21 in connection with Mozilla Firefox 3.X.X

If errors occur when ARIS Web clients download data from ARIS Business Server, please use the recommended JRE Version 6 Updates 17 or 18.

6.3 Calendar

ARIS supports the Gregorian calendar. Other calendars, such as the Islamic and traditional Japanese calendar, are not supported.

6.4 Reports in PDF format

Windows operating systems

If you select **PDF** as the output format and create the report script in design view, only the character sets of the computer (**C:\Windows\Fonts**) on which ARIS Business Server is installed are used. If you have formatted a text with the **Algerian** character set, for example, and this is not in the specified directory, the default character set is used to output this text.

Additional character sets that you install in **C:\Windows\Fonts** are automatically considered.

Unix operating systems

There is no default directory for character sets under Unix operating systems. If you install additional character sets in a directory of your choice, the file **userServerSettings.cfg** in the directory **aris7.2/config** must be customized.

To do this, add the following expression to the file:

```
<reportdir  
  font_location="/Fonts/" >  
</reportdir>
```

6.5 Software AG Designer

If you open models in Software AG Designer that were published using ARIS Business Publisher, they may not be displayed correctly. Display problems may occur, if, for example, you are using a browser in Software AG Designer that has not been approved for ARIS Business Publisher or if ARIS Business Publisher has been customized.

6.6 Characters

- Because of a known error in JVM (Sun)
(http://bugs.sun.com/bugdatabase/view_bug.do?bug_id=5040856), you should use only Western European characters in computer names.
If you publish OLE objects whose file names are written in Japanese characters in another language, e.g. **de** or **en**, the names will not be displayed correctly. These files cannot be opened. To be able to open the files, replace the Japanese (or other) file names with English ones.
- Because of a known Microsoft error
(<http://blogs.msdn.com/ie/archive/2007/02/12/International-Mailto-URIs-in-IE7.aspx>
(<http://blogs.msdn.com/ie/archive/2007/02/12/International-Mailto-URIs-in-IE7.aspx>)),
you should enable the **Use UTF-8 for mailto links** Internet Option (Advanced tab) in your browser. Otherwise, the subject may be displayed incorrectly if you click on a link that opens an e-mail form in an export in a language with a non-Western European character set.

6.7 Links

- Because of a known Microsoft error
(<http://blogs.msdn.com/ie/archive/2007/02/12/International-Mailto-URIs-in-IE7.aspx>
(<http://blogs.msdn.com/ie/archive/2007/02/12/International-Mailto-URIs-in-IE7.aspx>)),
you should enable the **Use UTF-8 for mailto links** check box on the **Internet Options/Advanced** tab in your browser.

Otherwise, the subject may be displayed incorrectly if you click on a link that opens an e-mail form in an export in a language with a non-Western European character set.

- If you create a Publisher export and use links to large files (>15 MB), you may need more memory for your ARIS Business Server. If the memory is insufficient, the export process is canceled.
- Links must be specified correctly to be displayed from a Publisher export.
If you have enabled the **Copy documents** check box in the Profile Wizard
(**View/Options/Publisher export profiles**) on the **Include links** page, links function from Publisher exports only if the protocol is entered in the **Link 1-4** attribute. Thus,
http://aris.com instead of **www. aris.com**.

When do links work?

A link is a connection between resources. When you click on a link in a browser, the linked file is displayed. Many factors play a role in this process, which can sometimes lead to errors. Ensure that all system requirements are met and only the approved browsers are used. If, for example, you install a security update for your browser that is not approved by Software AG, links may no longer work.

If you create a Publisher export and use links to large files (>15 MB), you may need more memory for your ARIS Business Server. If the memory is insufficient, the export process is canceled.

Using file servers is one way to exclude the possibility of faulty links. All files that have been linked in databases are managed on a file server.

Type of file (MIME type)

Not every browser can display all files. Some systems do not return files without an extension, since the MIME type cannot be determined directly. Access can also be limited to files of a specific type. Your system administrator may have defined these restrictions in various places:

- Server
- Operating system of the server
- Client
- Operating system of the client
- Central settings (with Active Directory, etc.)
- Proxy and its operating system

Correct notation

Depending on your system configuration, the notation of the link may also cause errors. Generally, a URL is processed in 8-bit representation. Unicode coding must be handled separately.

No problems should be expected if you:

- Specify links in English and without any spaces and special characters
If you specify links in languages such as Japanese, or with spaces and special characters, etc., you must place these links in quotation marks.
- Links are no longer than 1024 characters.
Many systems cannot process more characters than that.

Type of link

Depending on the domain from which a link is started or to which a link leads, a distinction must be made between local and external links. Different errors may also occur depending on system and security settings.

- **External links**

Correctly written and absolute links pose no problems. All links to files that were copied from ARIS Business Publisher to the ARIS Business Publisher Server also work correctly. The browser handles these as external links.

- **Local links**

All links to local files are subject to strict security restrictions. These restrictions are not at all uniform and differ between various browsers and different versions and patches. If, for example, you install a security update for your browser that is not approved by Software AG, links may no longer work.

Syntax

- **Local link without drive link**

The link **///C:/Program Files/Internet Explorer/readme.txt** opens a file in the local directory structure **C:\Program Files\Internet Explorer\readme.txt**

- **Local link with local drive link**

- The link **///U:/ARIS/businesspublisher/tomcat 5.5.16/RUNNING.txt** opens a file in the local directory structure **U:\ARIS\businesspublisher\tomcat 5.5.16\RUNNING.txt**, with **U** representing a direct link to a local directory.

- **External link with network drive link**

The link **///V:/External/Version.txt** opens a file in the network structure **V:\External\Version.txt**, with **V** representing a direct connection to a network drive.

- **UNC link (Universal Naming Convention)**

UNC path

The link with a different syntax, for example, **//SERVER/www/trace.txt**, **///\\SERVER\\www\\trace.txt**, or **/////SERVER/www/trace.txt**, opens a file in the drive structure **\\SERVER\\www\\trace.txt**.

Direct access (i.e. without a drive link) to any resource in the network is possible with a UNC path.

Security risks

Not every browser always makes interactive reference to possible security risks. More frequently, functional links are blocked.

Firefox generates a message in the error console in these cases (**Tools/Error console**), but does not distinguish between local and external links. All local access is blocked automatically. You can remove blocking of specific sites by customizing or creating the file **<drive>:\Documents and Settings\<User>\Application**

data\Mozilla\Firefox\Profiles\<GENERATED_NAME>.default\users.js:

```
user_pref("capability.policy.policynames", "localfilelinks");  
user_pref("capability.policy.localfilelinks.sites", "http://pcsomeone");  
user_pref("capability.policy.localfilelinks.checkloaduri.enabled", "allAccess");
```

Authorizations

Missing authorizations and the location of linked files may be reasons for faulty links.

- If locally saved files are linked in a database, these links cannot be resolved if you use an ARIS Business Server. These links only work if you manage the database on the local server **local**.
- If you have enabled the **Copy documents** check box on the **Include links** page of the Profile Wizard (**View/Options/Publisher export profiles**) and started ARIS Business Server as a service, ensure that your authorization concept permits access to linked documents.

6.8 Windows Vista Ultimate

As a result of the modified security settings in Windows Vista Ultimate, Java applets cannot access user hard drives. If ARIS runs under Windows Vista, all of the files are saved to the following directory:

<USERHOME>\AppData\LocalLow\ARIS72

- If, under Windows Vista Ultimate, you use the DownloadClientPath settings in the file **arisloader.cfg** or the **ARISHome72** environment variable, please ensure that you have write access to these files.
- If you are using Windows Vista, you require Java Runtime Environment 1.6 update 10 or higher.

6.9 Windows

Data cannot be correctly saved

Under Windows 7, it is impossible to save data on DFS drives. The saved data can only be displayed as shortcuts and cannot be opened (error in Windows 7 system file Shell32.dll).

This error occurs when saving XML or ADB export data.

To correctly save the data, enter the name of the server, the shared drive, and the name of the file (e.g. "\\file server\export data\exportfile.xml") in the **Select export file** box of the Export Wizard.

7 Support

If you have any questions on specific installations that you cannot perform yourself, contact your local Software AG sales organization.

By telephone

If you have a valid support contract, you can contact us internationally at:

+800 ARISHELP

The "+" stands for the prefix required in a given country to dial an international connection.

Example for dialing within Germany with a direct extension line:

00 800 2747 4357

By e-mail

The e-mail address is:

arissupport@softwareag.com

8 Glossary

A

Application server

Computer on which applications are run. It is a component of a 3-tier architecture.

ARIS agent

Program that autonomously monitors and manages ARIS Business Server processes.

ARIS Business Architect

Modeling tool of the ARIS product family that runs within a browser or as an application (page 222) and that can be used in a LAN and a WAN. ARIS Business Architect thus enables so to speak Internet modeling of business processes.

ARIS Business Server

ARIS application server (see **Application server**)

ARIS Converter

Conversion component of ARIS. It converts ARIS data of previous ARIS versions to the current ARIS format.

ARIS Easy Design

Windows-based client that provides functions tailored to the operating departments.

ARIS HTML Generator

Program module that automatically generates the HTML files needed by Java-based clients when they are launched via a browser.

ARIS Site

At least one ARIS Business Server, one database server and one ARIS Site Manager.

ARIS Site Administrator

Central management component with which administrative accesses can be provided to all ARIS sites simultaneously.

ARIS Site Manager

Central component of ARIS Site that, for instance, coordinates access to programs and data by means of a license and lock service.

ARIS Toolset

Windows-based client used to model, analyze, and simulate business processes etc.

C

Context path

The context path is the path to the directory where the **index.html** start page for ARIS Business Publisher is located. If you want to place the start page in another directory, you need to change the path accordingly.

CRON expression

A CRON expression is a string consisting of six to seven fields that is separated by a space and represents a time. Normally, a CRON expression is used to define routine jobs that are executed at certain times by the system.

Fields:

- Seconds, mandatory field, valid value: **0-59**, valid characters: ***, /, , -**.
- Minutes, mandatory field, valid value: **0-59**, valid characters: ***, /, , -**.
- Hours, mandatory field, valid value: **0-59**, valid characters: ***, /, , -**.
- Day in month, mandatory field, valid value: **0-59**, valid characters: ***, /, , -**.
- Month, mandatory field, valid value: **0-12** or **JAN-DEC**, valid characters: ***, /, , -**.
- Day of the week, mandatory field, valid value: **0-7** or **SUN-SAT**, valid characters: ***, /, , -, ?, L, C, #**.
- Year, not a mandatory field, valid value: **1970-2010**, valid characters: ***, /, , -**.

D

Database server

Computer on which the ARIS Repository is installed. ARIS Clients access the database server on which the ARIS Repository containing the ARIS databases resides via the ARIS Business Server.

F

Firewall

Technology (hardware and/or software) that controls the data flow between internal and external (unprotected) networks and provides protective mechanisms to combat unauthorized access.

J

JMX

JMX provides a standardized way to administer Java applications and services. JMX is a specification developed by the Java Community Process (The Java Community Process is the process used since 1998 to enhance the Java programming language and its standard library). You can communicate with any compliant application via the uniform JMX interface using a JMX enabled management console.

JRE

Java Runtime Environment. System that is used to run Java programs. The main components are the Java Virtual Machine, the Java Interpreter, and the host operating system.

L

LAN

Local Area Network. Network within a company. This network has broad bandwidth.

LDAP

Lightweight Directory Access Protocol. Protocol that provides access to centrally managed libraries of information and directories. It saves having to search the whole network for data. The access data for user login to ARIS is stored centrally on the LDAP server so it does not have to be managed separately for each database.

O

Oracle

Relational database system that can be used for ARIS installations.

R

RAID

Redundant Array of Independent Disks. Method of linking several hard drives and accessing these as if accessing a single hard drive. This means that data storage and data access is 'spread' across these hard drives, which improves access time and avoids complete loss of data should a drive fail.

S

SSL

Secure Socket Layer. Security software for encrypting data that is exchanged between programs.

SSO

SSO (**S**ingle **S**ign-**on**) means that users can access all computers and services for which they have local access privileges from one and the same workspace without having to log in again every time. If the user changes the workspace, authentication and local access privileges are no longer valid.

System user

Users who have all function and access privileges in a database. System users can be created by the system manager (user **system**) or by another system user. The **system** system user is created automatically for every database. The name **system** cannot be changed. A system user should immediately change the password **manager** to prevent unauthorized access. The function and access privileges of system users cannot be changed. To withdraw privileges from a system user, another system user must disable the **System user** check box on the former user's **Function privileges** properties page. As a result, the user's privileges can be changed. After this, the user has no access privileges.

User 'system'

The **system** system user is created automatically for every database. It takes on the administrator role of the system manager and has all function and access privileges. Authorized persons can use this emergency user to log in to any database, even if you are using an external system, such as LDAP, for authentication. Enter the user name **system** if you log in for the first time since you have installed the program or created a new database.

The name **system** cannot be changed. The **System user** check box for this user (**Function privileges** properties page) cannot be disabled either. You should immediately change the password **manager** to prevent unauthorized access.

To avoid problems, you should create additional system users. If you forgot the passwords of all your system users then the full range of functions and access to the data in this database are no longer available to you.

U

URL

A **URL** (**U**niform **R**esource **L**ocator) is a particular type of **URI** (**U**niform **R**esource **I**dentifier). URLs identify a resource via the network protocol used (e.g. http or ftp) and the **location** of the resource (e.g. of a service) in a network.

The term URL is often used synonymously with URI because URLs were the first and are still the most frequently used type of URI.

V

VB report execution environment

"Interface" between Java-based products and Windows-based products. Java-based products use this environment to generate VB reports.

W

WAN

Wide Area Network. Network that transports data both within the company network and via the Internet. This network has low bandwidth.

Web Client Components

WWW components that are accessed by Web clients, e.g. ARIS Business Architect when they are started via a Web browser.

WebDAV

WebDAV (**W**eb-based **D**istributed **A**uthoring and **V**ersioning) is an open standard to provide files on the Internet. Users can access their data in the same way as if they were saved on their local hard drive.

Web server

A server containing the HTML pages, images, documents and other files and folders that users or programs within a network can access.

9 Appendix

9.1 System language and locale IDs

The locale ID (LCID (<http://msdn.microsoft.com/en-us/goglobal/bb964662.aspx>)) designates a language within a language group.

Language groups and code page are also represented by a number, e.g., code page=1252. The language group is preceded by a minus sign (-), e.g., -1252.

The table shows a few examples. You can find more information at:

[http://msdn.microsoft.com/en-us/library/0h88fahh\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/0h88fahh(VS.85).aspx)

([http://msdn.microsoft.com/en-us/library/0h88fahh\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/0h88fahh(VS.85).aspx)).

System language	LCID
Afrikaans - South Africa	1078
Albanian - Albania	1052
Arabic - Algeria	5121
Arabic - Bahrain	15361
Arabic - Egypt	3073
Arabic - Iraq	2049
Arabic - Jordan	11265
Arabic - Kuwait	13313
Arabic - Lebanon	12289
Arabic - Libya	4097
Arabic - Morocco	6145
Arabic - Oman	8193
Arabic - Qatar	16385
Arabic - Saudi Arabia	1025
Arabic - Syria	10241
Arabic - Tunisia	7169
Arabic - U.A.E.	14337
Arabic - Yemen	9217
Basque - Spain	1069
Belarussian - Belarus	1059
Bulgarian - Bulgaria	1026

System language	LCID
Catalan - Spain	1027
Chinese - Hong Kong	3076
Chinese - PRC	2052
Chinese - Singapore	4100
Chinese - Taiwan	1028
Croatian - Croatia	1050
Czech - Czech Republic	1029
Danish - Denmark	1030
Dutch - Belgium	2067
Dutch - Netherlands	1043
English - Australia	3081
English - Belize	10249
English - Canada	4105
English - Caribbean	9225
English - Ireland	6153
English - Jamaica	8201
English - New Zealand	5129
English - South Africa	7177
English - Trinidad	11273
English - United Kingdom	2057
English - United States	1033
Estonian - Estonia	1061
Faeroese - Faeroe Islands	1080
Farsi - Iran	1065
Finnish - Finland	1035
French - Belgium	2060
French - Canada	3084
French - France	1036
French - Luxembourg	5132

System language	LCID
French - Switzerland	4108
German - Austria	3079
German - Germany	1031
German - Liechtenstein	5127
German - Luxembourg	4103
German - Switzerland	2055
Greek - Greece	1032
Hebrew - Israel	1037
Hungarian - Hungary	1038
Icelandic - Iceland	1039
Indonesian - Indonesia	1057
Italian - Italy	1040
Italian - Switzerland	2064
Japanese - Japan	1041
Korean - Korea	1042
Latvian - Latvia	1062
Lithuanian - Lithuania	1063
Norwegian - Norway (Bokmal)	1044
Norwegian - Norway (Nynorsk)	2068
Polish - Poland	1045
Portuguese - Brazil	1046
Portuguese - Portugal	2070
Romanian - Romania	1048
Russian - Russia	1049
Serbian - Serbia (Cyrillic)	3098
Serbian - Serbia (Latin)	2074
Slovak - Slovakia	1051
Slovene - Slovenia	1060
Spanish - Argentina	11274

System language	LCID
Spanish - Bolivia	16394
Spanish - Chile	13322
Spanish - Colombia	9226
Spanish - Costa Rica	5130
Spanish - Dominican Republic	7178
Spanish - Ecuador	12298
Spanish - El Salvador	17418
Spanish - Guatemala	4106
Spanish - Honduras	18442
Spanish - Mexico	2058
Spanish - Nicaragua	19466
Spanish - Panama	6154
Spanish - Paraguay	15370
Spanish - Peru	10250
Spanish - Puerto Rico	20490
Spanish - Spain (Modern Sort)	3082
Spanish - Spain (Traditional Sort)	1034
Spanish - Uruguay	14346
Spanish - Venezuela	8202
Swedish - Finland	2077
Swedish - Sweden	1053
Thai - Thailand	1054
Turkish - Turkey	1055
Ukrainian - Ukraine	1058
Vietnamese - Vietnam	1066

9.2 Port numbers

The following port numbers are entered in the **Services** file of your Windows installation. This file is located in the **system32/drivers/etc/** Windows directory.

Port	Name	For
16070	aris71_name_public	Public Name Service
16071	aris71_name_private	Private Name Service
16073	aris71_admin_agent	Agent Service
16074	aris71_Sybase	Standard database system
16075	aris71_local_public	Public Name Service local
16076	aris71_local_Sybase	Standard database system local
16077	aris71_local_private	Private Name Service local
16078	aris71_local_admin	Admin Service local
16079	aris71_bp_service	Business Publisher Service
16080	aris71_simuserver	Simulation Service
16081	aris71_local_simuserver	Simulation Service local
16083	aris71_bp_report	Business Publisher Report Service
16091	aris71_derby	Derby database system
16092	aris71_bp_derby	Derby database system for Business Publisher
16093	aris71_local_derby	Derby database system local

Index

A

- Administration
 - Browser use (Java-based products) 217
 - Language update and character sets 221
 - Software distribution 225
- Applet 221
- Application 221
- Approved platforms
 - ARIS Business Publisher Server 104
 - ARIS Business Server 125, 128
- ARIS Admintool
 - Backup 288
 - Backupasn 291
 - Backupconfig 292
 - Configadminpassword 292
 - Copy 293
 - Createdb 293
 - Dbmsspassword 294
 - Delete 295
 - Download 294
 - Exit 295
 - Help 296
 - Interactive 296
 - Kill 296
 - List 297
 - Maintain 297
 - Monitor 297
 - Password 298
 - Rename 298
 - Reorg 298
 - Restore 299
 - Restoreasn 301
 - Restoreconfig 301
 - Restoreversioned 300
 - Schemacontext 302
 - Server 302
 - Sessions 303
 - Siteadminpassword 304
 - Statistic 304
 - Status 305
 - Version 305
- ARIS agent 240
- ARIS API 64
- ARIS BI Modeler 190
 - ARIS IT Architect 211
- ARIS Business Publisher Server 102
 - Configure 108
 - Connect DMS 109
 - IBM WebSphere Application Server (WAS 6.0.X) (Windows) 43
 - Install Apache Tomcat Web Application Server (Solaris/Linux) 58
 - Install Apache Tomcat Web Application Server (Windows) 41
 - Install ARIS Business Publisher Report Server 63
- ARIS Business Server
 - Configure 133
 - Configure ARIS Process Board connection 141
 - Configure client connection 138
 - Connect DMS (ARIS Business Server) 138
 - Database platform 128
 - Deactivate Report Server 141
 - Deactivate simulation server 141
 - Enable a hardware key (dongle) 139
 - Enable SSL 142
 - Expand memory 222
 - IBM DB2 database 82
 - Log messages (debugging) 148
 - Log user login (Account logging) 148
 - Microsoft SQL database 78
 - Operating system 128
 - Oracle database 72
 - User-defined installation 16
- ARIS Connectivity for Lotus Notes 238
- ARIS Notify Service 150
- ARIS Process Governance
 - Back up ARIS Process Governance 94
 - Change memory 155
 - Configure e-mail notification for ARIS Process Governance administrator 165
 - Configure e-mail notification for users 166
 - Configure static export 174
 - Licensing 154
 - SQL*Plus scripts 90
- ARIS Site Manager
 - Installation under Unix 25
- Automatic backup 67

B

- Backup 288
- Backupasn 291
- Backupconfig 292
- Browser use (Java-based products) 217

C

Character set 221
 Citrix 183
 Client log 213
 Configadminpassword 292
 Configure ARIS Process Board
 connection 141
 Configure client connection 138
 Connect DMS 70, 109
 Connect DMS (ARIS Business Server) 138
 Copy 293
 Createdb 2 93

D

Database platforms
 ARIS Business Publisher Server 104
 ARIS Business Server 128
 Dbmsspassword 294
 Deactivate Report Server 141
 Deactivate simulation server 141
 Delete 2 95
 Download 294

E

Enable a hardware key (dongle) 139
 ESR connectivity 208
 Evaluation 306
 Exit 295
 Expand memory
 Client 307
 Server 145

H

Hardware key 65
 Hardware requirements
 ARIS BI Modeler 183
 ARIS Business Architect 183
 ARIS Business Designer 183
 ARIS Business Optimizer 183
 ARIS Business Publisher 99
 ARIS Business Server 125
 ARIS Business Simulator 189
 ARIS Toolset/ARIS Easy Design 230
 ARIS UML Designer 183
 Help 2 96

I

Install ARIS Business Publisher Report
 Server 63
 Install ARIS Business Publisher Server 39
 Install ARIS Business Server (Unix) 21
 Install ARIS Business Server (Windows) -
 default 14
 Install ARIS Business Server (Windows) -
 user-defined 16
 Installation
 ARIS Site Manager 17
 ARIS Web Client Components 26
 Automatic backup 67
 DMS 70
 Hardware key 65
 Install ARIS Business Publisher
 Server 39
 Install ARIS Business Server (Unix) 21
 Install ARIS Business Server (Windows) -
 default 14
 Install ARIS Business Server (Windows) -
 user-defined 16
 Install ARIS Process Governance
 Server 28
 Software distribution 225
 Interactive 296

J

Java Runtime Environment 65
 Java-based products 218

K

Kill 296

L

Language update 221
 Language update and character sets 221
 LDAP 329
 List 297
 Locale ID 332
 Log files 210
 ARIS Business Optimizer 210
 ARIS Business Server 148
 Java clients 213
 Log messages (debugging) 148
 Log user login (Account logging) 148
 Logging
 ARIS Business Optimizer 183
 ARIS Business Server 148
 Java clients 213
 Log user login (Account logging) 148

M

Maintain 297
 Memory-optimized scripts 307
 Monitor 297
 Multi-monitor operation 183

O

OLE automation 239

P

Password 298
 Port numbers 336

R

Rename 298
 Reorg 298
 Requirements
 Additional memory
 Client 307
 Server 145
 Approved platforms 104
 ARIS BI Modeler 183
 ARIS Business Architect 183
 ARIS Business Architect for SAP/ARIS
 Business Designer for SAP 195
 ARIS Business Designer 183
 ARIS Business Optimizer 183
 ARIS Business Publisher 99
 ARIS Business Server 125
 ARIS Business Simulator 183
 ARIS Converter 146

ARIS IT Architect 211
 ARIS Toolset/ARIS Easy Design 230
 ARIS UML Designer 183
 Web Client Components 183

Restore 299
 Restoreasn 301
 Restoreconfig 301
 Restoreversioned 300

S

Schemacontext 302
 Server 302
 Server LOG 148
 Sessions 303
 Siteadminpassword 304
 Software distribution 225
 SQL*Plus scripts
 Available SQL*Plus scripts 74
 Import 73
 SSL encryption 142
 Start a program as an Applet 221
 Start a program as an application 221
 Start a program in the browser 217
 Statistic 304
 Status 305
 Support 326
 System language 332

T

Time control software 239
 Transfer data from earlier ARIS
 versions 281

V

Version 305