ARIS TECHNICAL WHITEPAPER
9.8 SR4

A closer look at ARIS products and architecture

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This document is for business analysts and IT administrators considering an ARIS installation in their organization. It gives insights into the product and software architecture of ARIS. It also summarizes non-functional and provisioning aspects of typical ARIS installations. The scope of this document is set for simple cases. The Global Support ARIS team is available to help with any exceptions or complex cases.

To avoid redundancies, this document does not re-iterate information available in other documents. For more details, please review:

- For software/hardware requirements and platform availability, see **ARIS 9 Platform Matrix**
- For installation instructions, see **ARIS Client Installation Guide** and **ARIS Server Installation and Administration Guide**
- For an overview on features and functionalities, see **Functional Product Matrix ARIS 9**
- For an overview on supported interfaces, methods, languages, and compatibilities, see **Technical Product Matrix ARIS 9**

All these documents are available on the documentation server for download:
http://documentation.softwareag.com/aris/aris9.htm

ARIS 9 product architecture

Product architecture overview

The ARIS product portfolio (see Figure 1) holds at its core the client products (ARIS Architect, ARIS Designer, ARIS Connect Viewer and ARIS Connect Designer) as primary tools for Business Process Analysis (BPA). For neighboring use cases, such as enterprise architecture, ARIS for SAP® Solutions or ARIS Business Strategy, there are Extension Packs (EPs) that add specific functionality and/or method elements. Also, there is a separate modeling client for UML™ 2.0 as well as separate client for risk and compliance use cases.

While targeting different user groups, all client products operate on the same database that runs on a server. ARIS server products provide the infrastructure (back-end) for the client products. If you choose to use only ARIS Architect and/or ARIS Designer, you need at least ARIS Design Server, unless you are working only with the local server without a centralized database. And for working with ARIS Connect clients, you need ARIS Connect Server.

Although ARIS Connect Server and ARIS Design Server are two dissociated license products, technically they share functionalities. In this respect, ARIS Connect Server includes all ARIS Design Server functionalities plus additional functionalities to facilitate collaborative process modeling.

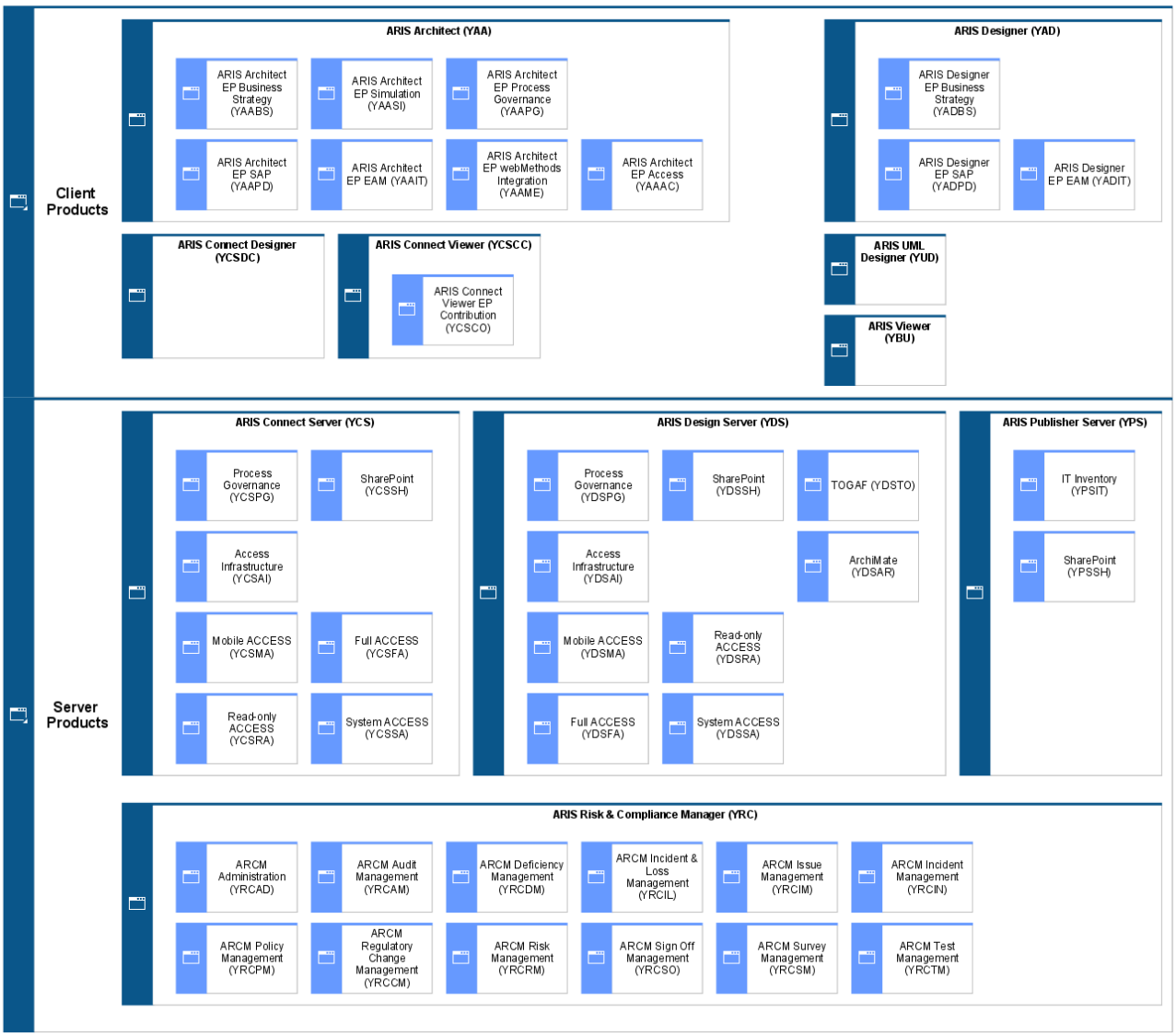

Figure 1: ARIS Product Architecture

ARIS Client products
ARIS Client products provide the user interface (front-end) and enable the usage of functionalities that are provided by the server products (back-end).

- ARIS Architect, ARIS Designer and ARIS UML Designer: clients that support Java® that may be either installed locally or provided as download clients (rich clients). ARIS Architect contains extensive modeling functionalities and provides administration for the central ARIS repository.
- ARIS Designer offers basic process modeling and analysis capabilities, which can be expanded by ARIS Architect functionalities.
- ARIS Connect Designer and ARIS Connect Viewer: HTML5-based clients that run in a browser and provide lightweight functionalities (thin clients).
- ARIS Connect Viewer: viewing models and collaborating on them in a Web-based front-end (thin client).
- ARIS Connect Designer: additional editing and modeling capabilities.
- ARIS Connect Clients can be used on their own OR in combination with other ARIS Clients for expert usage (see Figure 2). However, at least one ARIS Architect license is needed to work with ARIS Connect to manage modeling methods, filters and administration settings.
- ARIS Viewer grants process governance participation and viewing access via a browser to ARIS repository content published to an ARIS Publisher Server.

As mentioned, the main client products ARIS Architect and ARIS Designer can be extended by using EPs for additional functionality. It is important to understand that several EPs can be allocated to the user of ONE ARIS Architect or ARIS Designer, thereby giving the flexibility to offer just the right functionality needed.

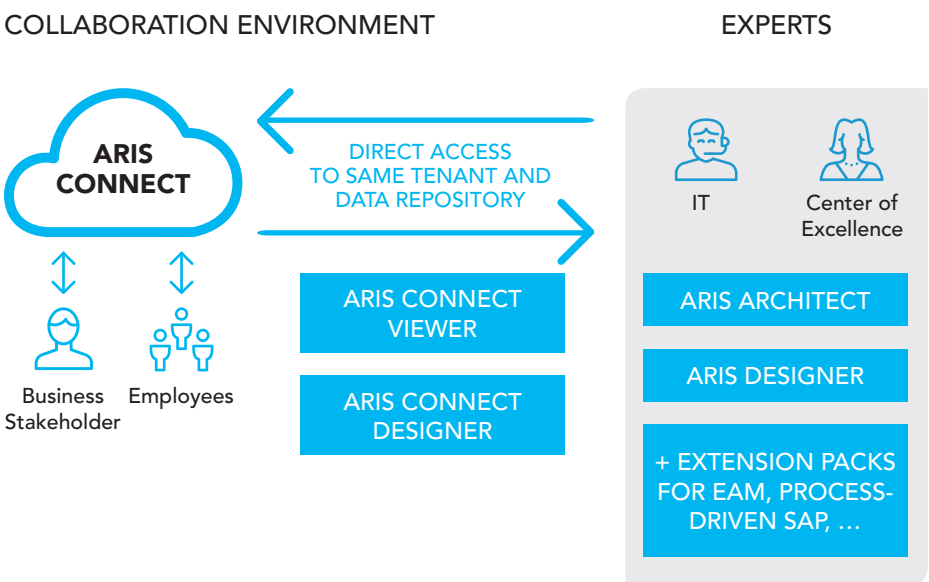

Figure 2: Combining ARIS Connect with ARIS Design Clients

ARIS Server products
ARIS Design and Connect Server provide the central ARIS repository, user and license management, central ARIS Document Storage (ADS) and modeling methodologies for all ARIS Client products, such as ARIS Architect and ARIS Designer, that may connect to this server.

An ARIS Server installation is accompanied by the use of one tenant and requires one license. Additional tenants have to be licensed separately. One tenant can handle an unlimited number of databases and an unlimited access for licensed users. Also, it includes all languages available for server and clients.

Each tenant holds not only its own database(s) but also its own configuration of the ARIS method, reports and analyses as well as user management and Lightweight Directory Access Protocol (LDAP) settings. Each tenant comes with its own User Management Component and ARIS Document Storage. Both are accessible via a Web interface as shown in Figure 3. Thus, each tenant may operate independently despite its physical integration in one ARIS Design Server installation.

ARIS DESIGN SERVER AND ARIS CONNECT SERVER INSTALLATION

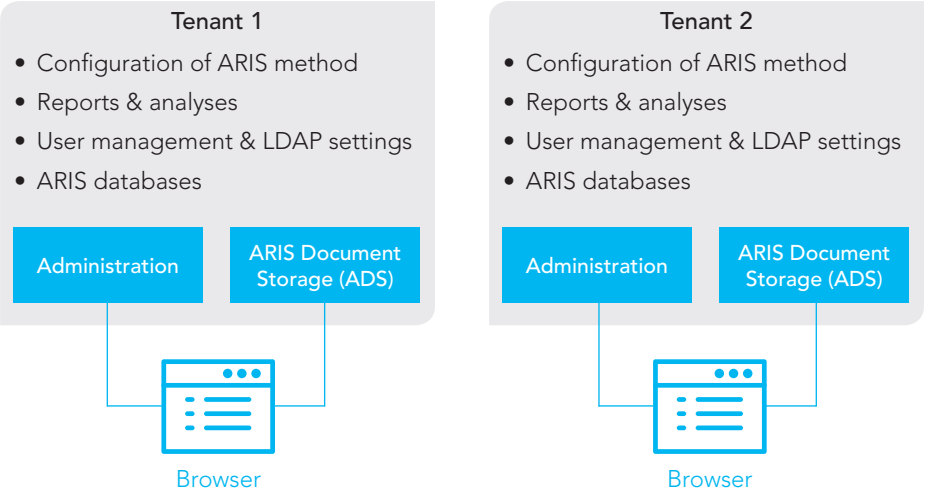

Figure 3: ARIS Tenants

It is important to note that:

- ARIS Connect Clients can only connect to an ARIS Connect Server.
- ARIS Connect Server includes all ARIS Design Server functionalities as described in the previous section. Thus, it is an extension of the ARIS Design Server that is required for the usage of ARIS Connect Clients. It comes with additional functionalities, such as an enterprise collaboration platform for social interaction, as well as pre-deployed process governance workflows. ARIS Connect Server allows for using both lightweight and professional functionalities for Business Process Management (BPM) (see Figure 2). All user groups work on the same tenant and data repository.
- ARIS Publisher Server allows the dynamic publication of ARIS contents from databases located on one tenant running on an ARIS Connect/Design Server installation (see section on tenants on page 6).
- ARIS Risk & Compliance Manager offers capabilities for Governance, Risk and Compliance (GRC) management.

Technical architecture

ARCHITECTURE OVERVIEW

Client-server architecture
From a client perspective (see Figure 4), ARIS Architect and ARIS Designer are Java-based rich clients that differ only in the level of functionalities provided. Similarly, ARIS Connect Viewer and ARIS Connect Designer are HTML5-based thin clients that differ in their functional rights granted to the user.

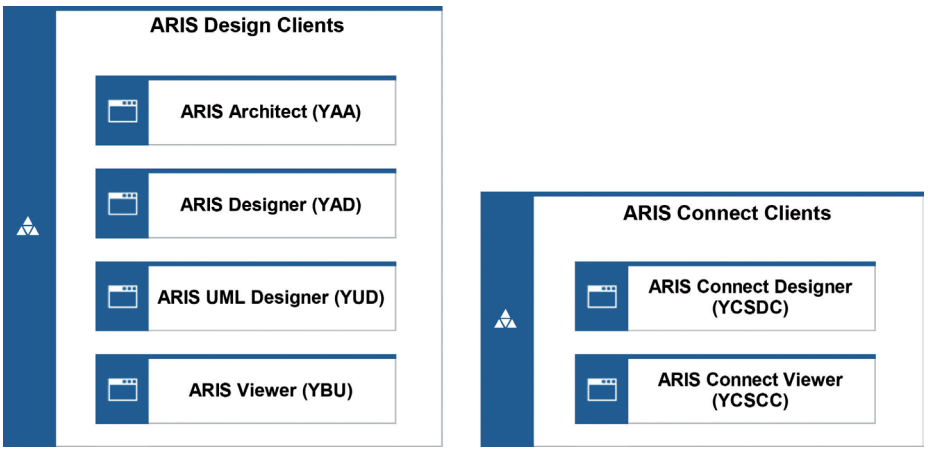

Figure 4: Standard ARIS Clients vs. ARIS Connect Clients

The basic software architecture of ARIS is a client-server architecture with two server variants (ARIS Design Server or ARIS Connect Server) and both rich and thin clients.

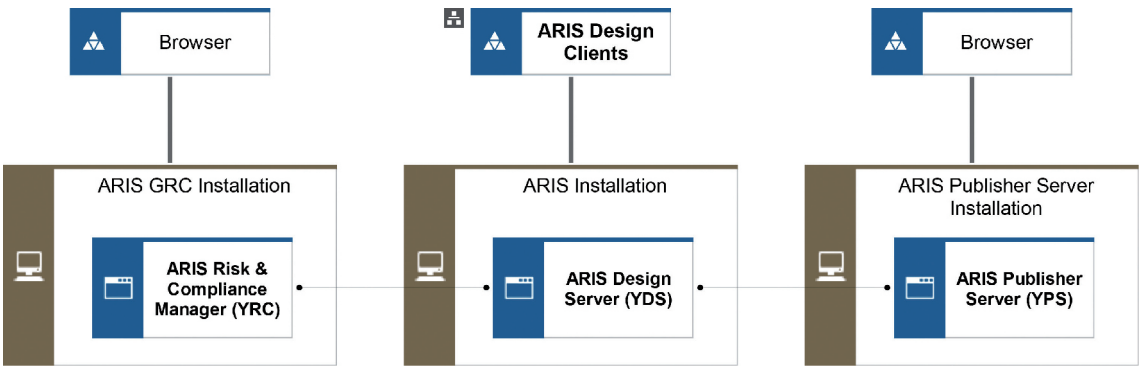

Figure 5: ARIS installation based on ARIS Design Server

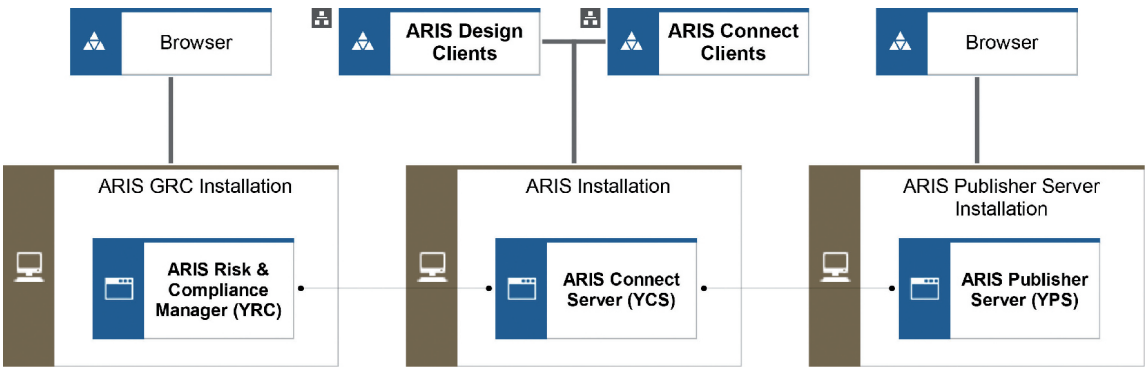

Figure 6: ARIS installation based on ARIS Connect Server

For ARIS Risk & Compliance Manager, there is a separate server. ARIS Publisher also acts as a separate server that may connect to the ARIS Design or Connect Server to retrieve modeling content for publication.

Multi-node installation
An ARIS installation can be distributed to multiple machines. This leads to a better load distribution and a higher fail-safe operation.

Multi-tenancy
ARIS supports a multi-tenant architecture, i.e., multiple independent instances (tenants) of ARIS products operating in a shared environment (on-premises or in a cloud). They are logically isolated but physically integrated.

Each tenant is a closed ARIS environment (data and configuration, methodologies/ modified ARIS meta models) that does not interfere with other tenants running on the same ARIS installation. As the wording implies, multi-tenancy allows for one ARIS Server installation serving multiple client organizations.

In terms of product licensing, ARIS is based on tenants. Each tenant needs an ARIS license of its own. ARIS Design Clients or ARIS Connect Clients can connect only to one tenant at one time.

ARIS SERVER COMPONENTS

ARIS Design Server and ARIS Connect Server differ primarily in the applications. The UMC administration allows for central user and license management. Figure 7 gives an overview on all server components called runnables.

ARIS Server Products / Runnables	ARIS Connect Server (YCS)	ARIS Design Server (YDS)	LOCAL	ARIS Risk & Compliance Manager (YRC)	ARIS Publisher (YPS)
Service Registry (zoo_)	✓	✓	✓	✓	
Primary Database (postgres_)	✓	✓	✓	✓	
Search Engine (cloudsearch_)	✓	✓	✓	✓	
Document Search (elastic_)	✓	✓	✓	✓	
User Management (umcadmin_)	✓	✓	✓	✓	
Business Server (abs_)	✓	✓	✓		
Analysis Server (octopus_)	✓	✓	✓		
Simulation (simulation_)	✓	✓	✓		
Document Storage (adsadmin_)	✓	✓		✓	
Document Database (couchdb_)	✓	✓		✓	
Load Balancer (loadbalancer_)	✓	✓		✓	
Process Governance (apg_)	✓	✓			
Portal Server (copernicus_)	✓				
Collaboration Server (ecp_)	✓				
Collaboration Database (postgresECP_)	✓				
Risk & Compliance Manager (arcm_)				✓	
Business Publisher (businesspublisher_)					✓

Figure 7: ARIS Server products and components (also known as runnables)

ARIS USAGE SCENARIOS

These usage scenarios describe the installation of ARIS Design and ARIS Connect Server. ARIS Risk & Compliance Manager and ARIS Publisher are to be installed each on a separate machine.

ARIS Design Server scenario—on-premises
As an on-premises installation, ARIS runs in a client-server setup installed locally in your organization. This includes the ARIS Design Server installed centrally on a server machine and ARIS Design Clients installed locally on end-user computers. It allows additionally for an ARIS Publisher to connect to the ARIS Design Server for retrieving modeling content and providing it to the users via a browser.

ARIS Connect Server scenario—on-premises
If your organization is using ARIS Connect, the installation scenario compares with a private cloud setting where the ARIS Connect Server offers one or multiple tenants to be accessed by both ARIS Connect Clients (thin clients) as well as ARIS Design Clients (rich clients). The ARIS Connect Clients are used via a browser and provide collaboration, consumption and design capabilities to the user. Java-based ARIS Design Clients (ARIS Architect or ARIS Designer) are used as in the ARIS Design Server scenario described. The server may be installed on one server machine or distributed across multiple physical machines. Similar to the ARIS Design Server installation, ARIS Publisher may be installed side by side.

ARIS Connect Server Scenario—private cloud
Within ARIS, a private cloud installation is possible (contact ARIS Support for assistance). The technical base of this scenario is a cloud repository setup, which contains the ARIS runnables consisting of applications and services.

ARIS SETUP AND PROVISIONING

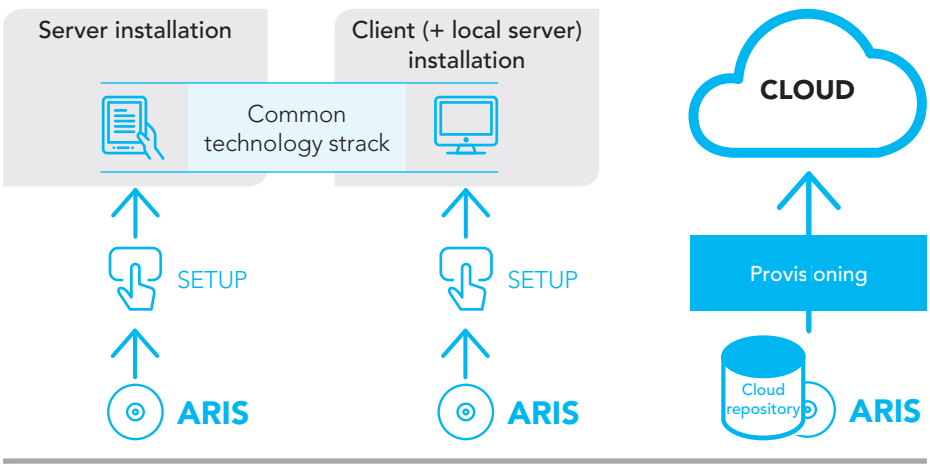

Figure 8: ARIS setup and provisioning

The ARIS usage scenario determines whether you have to install your client-server environment on-premises (setup) or use private cloud provisioning. An ARIS on-premises installation takes place via the setup program on the ARIS installation DVD. Following installation steps are performed in this process:

- First the server (ARIS Design Server or ARIS Connect Server) is installed, which provides downloadable ARIS Design Clients:
- Optional installation of ARIS Publisher or ARIS Risk & Compliance Manager may follow
- An optional installation of the ARIS Design Client (with/without local server) can take place

ARIS private cloud provisioning works like this: A cloud repository is set up on Amazon®, which contains the ARIS runnables consisting of applications and services. With provisioning of the cloud repository customers can access the Amazon cloud and work with corresponding licenses in the cloud environment (see Figure 8— right side).

INTEGRATION WITH EXISTING INFRASTRUCTURES

ARIS allows integration with:

- Mail server infrastructures (SMTP server)
- User management systems (LDAP integration/Kerberos SSO)
- Third-party database management systems (instead of internal default database system).

For further information, please see our document **ARIS Platform Matrix**.

Additional resources

- ARIS Product Matrix
- ARIS Client Installation Guide
- ARIS Server Installation and Administration Guide
- Functional Product Matrix ARIS 9
- Technical Product Matrix ARIS 9
- ARIS Support and De-support Information

All these documents are available on Empower, the customer portal of Software AG, as well as on the ARIS DVD and the ARIS Download Center for download:

http://documentation.softwareag.com/aris/aris9.htm

http://aris.softwareag.com/

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