

Enterprise Planning – Large Scale

ARGUS Enterprise 11.0

12/4/2015

ARGUS Software – An Altus Group Company



Large Enterprise Planning Guide
ARGUS Enterprise 11.0
12/4/2015

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Purpose

The purpose of this document is to provide information about the architecture and server system requirements for large-scale enterprises with high availability and high capacity (HA/HC) demands.

About Large-Scale Design

The large-scale design is a good selection to establish a production environment in an organization with large user counts and/or more than ten portfolios comprising more than 500 properties. Unless service uptime is a critical priority, the large-scale design is usually excessive for a pilot or test environment.

When evaluating the large-scale design, consider the following benefits and limitations of the approach:

- **Performance** — Scaled-up hardware allows for enhanced application performance.
- **Design** — The large-scale design represents a measurable increase in cost, but the design offsets much of the risk associated with downtime and performance lag.
- **Scalability** — The large-scale design is optimally suited for large volumes of users, property data, and portfolio analytics.
- **Redundancy** — The large-scale design provides a moderate level of application tier redundancy (server farm) and database tier redundancy (server cluster). System and data backups should be part of the regularly scheduled IT procedures as appropriate for the environment purpose.

ARGUS Enterprise Components

ARGUS Enterprise supports the following user interfaces:

- **ARGUS Enterprise Windows Client** – The main user interface.
- **Excel Add-in** – A convenient tool for importing/exporting bulk data between ARGUS Enterprise and Microsoft Excel 2007 and above.

ARGUS Enterprise supports the following Server Components:

- **Application Service** – This component broker's data requests between the ARGUS Enterprise client user interfaces and the ARGUS Data Warehouse (ADW) Database.
- **Process Service** – This component services bulk change requests submitted by the user for background processing (e.g. recalculation of a scenario of properties, import of bulk changes to asset models via XL4ADW or the Data Service)
- **Data Service** – This optional component services import/export of data between the ARGUS Data Warehouse (ADW) Database and a customer's line-of-business systems via a web service interface and optionally the Custom Data Service Client provided where appropriate in some services engagements.
- **ADW database** – The data storage for ARGUS Enterprise.
- **SQL Server Reporting Services (SSRS)** – The use of this Microsoft provided service allows for the rendering of Portfolio level reports

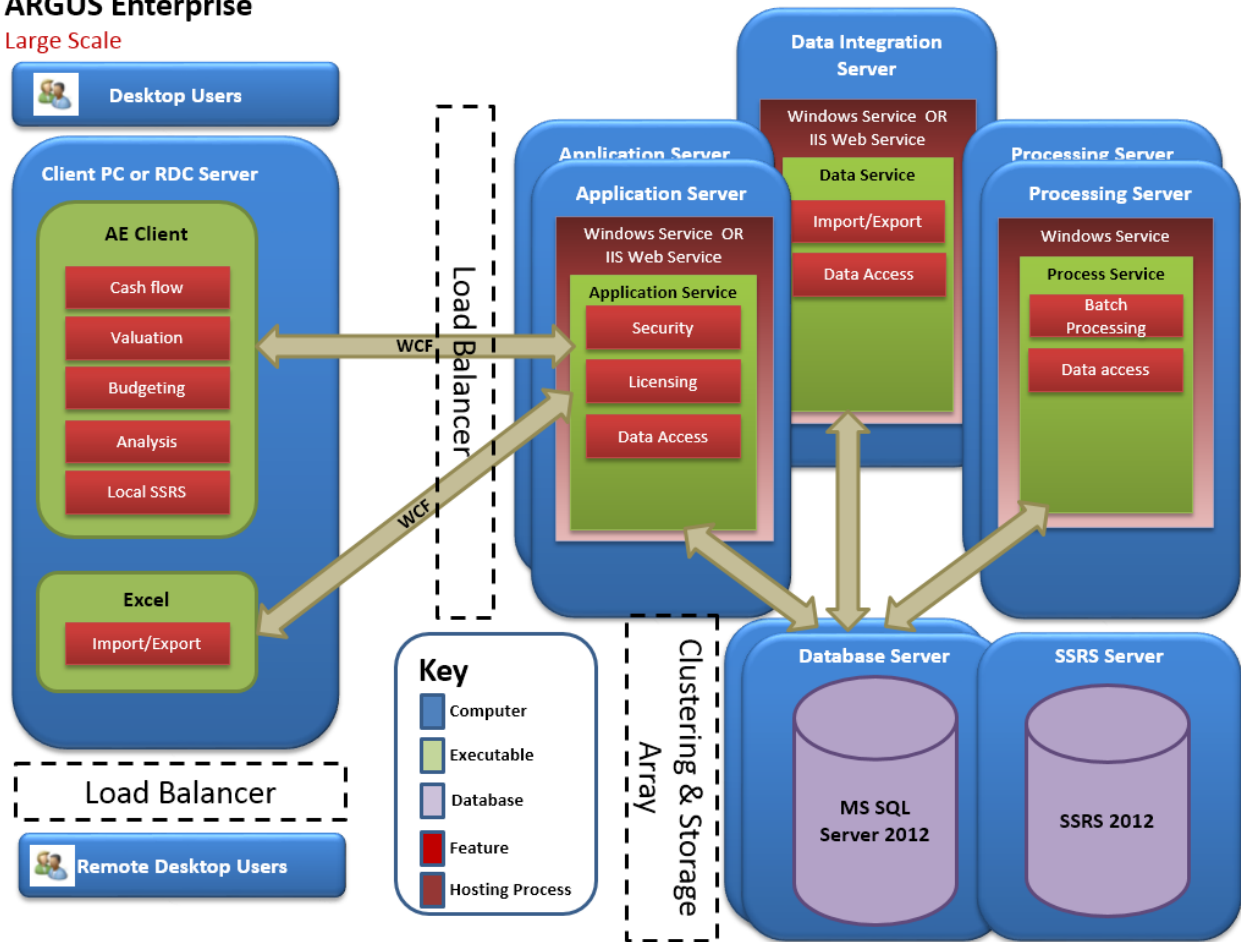
Architecture

The high availability/high capacity configuration for large enterprises takes full advantage of the benefits offered by the solution architecture. The application tier is planned for scale as needed by adding processing servers and load balancing multiple application services to scale up throughput of user activity. The database storage can be configured as an SQL Server cluster, backed up by a storage array. All individual hardware is also scaled-up for improved server performance. In addition, the ARGUS Enterprise Client will work in thin client configurations such as deploying it on Citrix or through terminal services.

Fault tolerance is achieved by the clustering of all required components: database level, application service level, process service level and client level. Additionally, storage capacity can be addressed by making a storage array a requirement rather than an option.

ARGUS Enterprise

Large Scale



System Requirements

The following represents minimal supported system requirements for use of ARGUS Enterprise 11.0, using a large-scale design:

ARGUS Enterprise Application Server

The deployment configuration of application services are flexible; thus it is possible to use one of many solutions to balance the load across a number of servers as required, providing scalability, performance, and fault tolerance.

Component	Required	Recommended
Processor	Dual processors rated faster than 2.5 gigahertz (GHz)	Multi (4/8 core) processors rated faster than 3.0 GHz
RAM	4 gigabytes (GB)	8 GB
Disk	New Technology File System (NTFS) formatted partition with at least 3 GB of free space with the operating system (O/S) installed	
Operating System	Windows Server 2008 Std x86 or x64	Windows Server 2012 R2 Std x64
Other	Microsoft .NET framework 4.0	

ARGUS Enterprise Data Server

The deployment configuration of data services are flexible; thus it is possible to use one of many solutions to balance the load across a number of servers as required, providing scalability, performance, and fault tolerance. Usually, integration requirements are such that a single Data Server is sufficient. Further, if data integration takes place off peak hours, you can deploy the Data Service to one of the Application Service Servers to take advantage of the hardware as long as you are not incurring a penalty in performance for the Application Service.

Component	Required	Recommended
Processor	Dual processors rated faster than 2.5 gigahertz (GHz)	Multi (4/8 core) processors rated faster than 3.0 GHz
RAM	4 gigabytes (GB)	8 GB
Disk	New Technology File System (NTFS) formatted partition with at least 3 GB of free space with the operating system (O/S) installed	
Operating System	Windows Server 2008 Std x86 or x64	Windows Server 2012 R2 Std x64
Other	Microsoft .NET framework 4.0	

ARGUS Enterprise Processing Server

Two or more servers installed as required.

Component	Required	Recommended
Processor	Dual processors rated faster than 2.5 GHz	Multi (4/8 core) processors rated faster than 3.0 GHz
RAM	6 GB	8 GB
Disk	NTFS file-system formatted partition with at least 3GB of free space with the O/S installed	
Operating System	Windows Server 2008 Std x86 or x64	Windows Server 2012 R2 Std x64
Other	Microsoft .NET framework 4.0	

ARGUS Enterprise Database Server

Two servers installed as an active-passive failover cluster.

Component	Required	Recommended
Processor	Dual processors rated faster than 2.5 GHz	Multi (4/8 core) processors rated faster than 3.0 GHz
RAM	8 GB	32 GB
Disk	10 disk array on-board storage with 100 GB of free space.	
Operating System	Windows Server 2008 Std x86 or x64	Windows Server 2012 R2 Std x64
Database	Microsoft SQL Server 2008 or later	Microsoft SQL Server 2012 or later
Other	<p>SSRS is required for Repertoire Reporting. Installation of SSRS on a dedicated server will provide the best reporting experience. Use the same spec as this Database Server spec.</p> <p>The shared storage array and connectivity required for a failover cluster configuration is dependent upon determination of exact server hardware.</p>	

ARGUS Enterprise Workstation & Client

Component	Required
Computer and Processor	2 GHz processor or higher
Memory	4 GB RAM or higher
Hard Disk	2 GB; a portion of this disk space may be freed up post-installation by removing the original download package.
Display	1024x768 or higher resolution
Operating System	Microsoft Windows Vista with SP1 (32-bit or 64-bit); Microsoft Windows 7 (32-bit or 64-bit) , Microsoft Windows 8 (32-bit or 64-bit); Microsoft Windows 10 (32-bit or 64-bit).
Other	Installation of the .NET framework 4.0 is a pre-requisite for use with the Enterprise platform. These minimum guidelines are subject to modification based on unique system specifications.
Additional	<p>Export to PDF requires an accompanying reader such as Adobe Acrobat Reader.</p> <p>Some functions, such as <i>Export to Excel</i>, require Microsoft Excel 2007, 2010, 2013 or 2016.</p> <p>File exported to the .sf format require ARGUS Valuation-DCF to open/modify.</p>

ARGUS Enterprise Thin Client

Deployment of the ARGUS Enterprise client in a Citrix or Terminal Services environment.

Component	Required
Computer and Processor	See vendor recommended specs dependent on the thin client technology being deployed. Min Multi (4/8 core) processors rated faster than 3.0GHz
Memory	Min 2 GB RAM per ARGUS Enterprise client
Hard Disk	2 GB; a portion of this disk space may be freed up post-installation by removing the original download package.
Operating System	See vendor recommended. Typically, Windows Server 2008 Std x64 or Windows Server 2012 R2 Std x64
Other	Installation of the .NET framework 4.0 is a pre-requisite for use with the Enterprise platform. These minimum guidelines are subject to modification based on unique system specifications.
Additional	Export to PDF requires an accompanying reader such as Adobe Acrobat Reader. Some functions, such as <i>Export to Excel</i> , require Microsoft Excel 2007, 2010, 2013 or, 2016. File exported to the .sf format require ARGUS Valuation-DCF to open/modify.

Advantages

- A thin client allows the team to centralize its installs onto one or a small number of servers, reducing the client desktop complexities that large organizations have.
- It allows use of the system from other devices and from multiple locations.

Potential Issues

- The memory footprint and CPU intensity of the ARGUS Enterprise Client will limit the number of clients that can be deployed on any single server. It is recommended that users avoid opening multiple properties at once and turn **Auto Calculate** off in order to minimize the load on these servers.

Summary

Due to the increased cost and build-out time, careful planning is essential for a successful implementation. Consider these system and configuration hints as you plan the implementation:

- Hardware selection is investment critical and likely a longer process for the large-scale design. Careful selection will ensure a system that is not bounded by physical scalability.
- The architecture diagram shows the SSRS component installed on a separate Database Server as there is some performance gain in distributing this component to a remote host.
- The large-scale configuration can be performance scaled by adding more application servers and process servers beyond the initial setup and by committing additional CPU/RAM/Disk resources to those individual servers. Achieve capacity scaling by growing the storage array employed by the database server.
- The large-scale build-out requires more time and expertise with respect to initial setup and ongoing system maintenance.