Enterprise Planning – Medium Scale

ARGUS Enterprise 11.0

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ARGUS Software – An Altus Group Company

Medium Enterprise Planning
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Purpose

The purpose of this document is to provide information about the architecture and server system requirements of mid-size enterprises.

About Medium-Scale Design

The medium-scale design is a good selection for production environments with fewer than thirty users or when creating pilot or test environments for larger scale implementations. A nice compromise to the lower performance of a small-scale design and the higher cost of a large-scale deployment, the medium-scale design offers a reasonably fast startup time with options to provide some basic benefits in fault tolerance and capacity management. Consider the large-scale implementation if you anticipate more than 500 property models to be contained within any one portfolio.

The medium-scale design is a good choice for:

- **Production environments** where the user counts are moderate and where the maximum property portfolios sizes consist of 200 – 500 property models.

- **Pilot Environments** used for pre-production design and concept prototyping with system customization. The pilot environment is temporary, but may be transformed into production.

- **Test Environments** that are permanently maintained for ongoing system changes and upgrades. The test environment is recommended for organizations that have large-scale production systems in place for ARGUS Enterprise 11.0 and staff dedicated to solution customization.

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

- **Performance versus cost** — The medium-scale design produces a moderate increase in system physical components and cost versus the small-scale design, with the benefit of enhanced performance.

- **Efficiency and Resources** — The medium-scale design requires only slightly more time and resources for initial hardware and software provisioning than small-scale design, with the advantage of using nearly the same requirements for ongoing maintenance.

- **Redundancy** — The medium-scale design provides only a minimum level of application service redundancy. The design does not intrinsically support high-level data redundancy or availability protection. System and data backups should be part of the regularly scheduled IT procedures as appropriate for the environment purpose.

- **Scalability** – The medium-scale design allows for additional user and data capacity and can be scaled up to a large-scale design with the addition of hardware resources quite easily.

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.

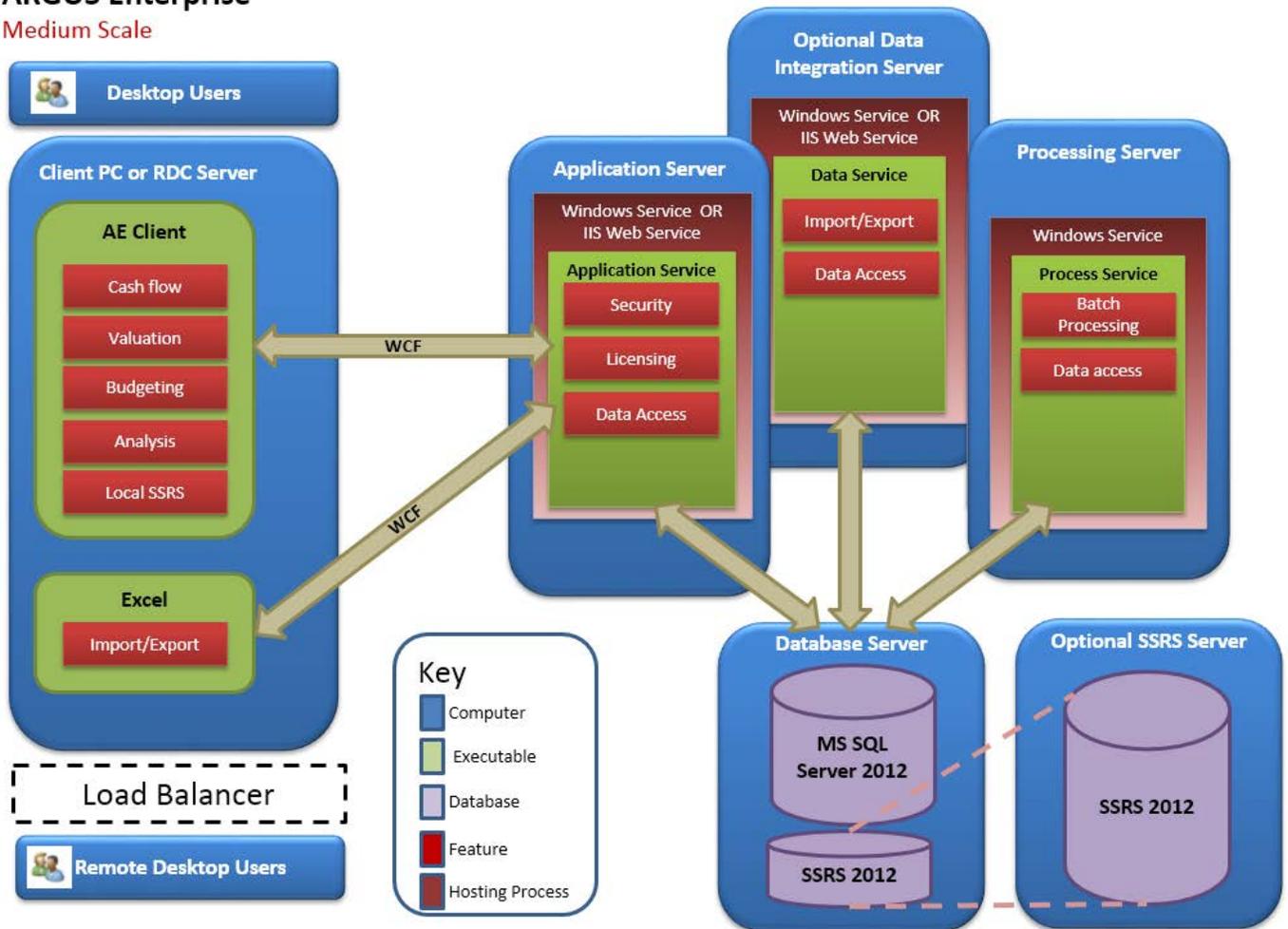ARGUS Enterprise supports the following Server Components:

- **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 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.

- **ARGUS Data Warehouse (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 architecture shown below avoids excessive bottlenecks of the CPU and RAM on the server when processing user requests and calculations. By separating the process service instances over to dedicated processing servers, the first step in building a scaled out server solution at the application tier is realized. The dedicated processing server, coupled with an increase in overall server hardware requirements, is the difference in moving from a small-scale architecture to a medium-scale architecture. In essence, the first step is to scale-out on the application tier and scale-up in both the application and database tier. The application tier achieves moderate fault tolerance, with most of the benefit measurable by performance gains.

System Requirements

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

ARGUS Enterprise Application Server

Component	Required	Recommended
Processor	Dual processors rated faster than 2.5 gigaherz (GHz)	Quad processors rated faster than 3.0 GHz
RAM	4 gigabytes (GB)	8 GB
Disk	NTFS file-system formatted partition with at least 3GB 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

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 Std x64
Other	Microsoft .NET framework 4.0	

ARGUS Enterprise Processing Server

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

ARGUS Enterprise Database Server

Component	Required	Recommended
Processor	Dual processors rated faster than 2.5 GHz	Quad processors rated faster than 2.5 GHz
RAM	8 GB	16 GB
Disk	6 disk array on-board storage with 50 GB of free space	Network storage with 10+ disk array configured as logical unit numbers (LUNs) with 100 GB of free space.
Operating System	Windows Server 2008 R2 Std x86 or x64	Windows Server 2012 Std x64
Database	Microsoft SQL Server 2008 or later	Microsoft SQL Server 2012 or later
Other	If local reports are not used, then SSRS is required for Repertoire Reporting, but can be installed on a separate instance of SQL Server.	

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 prerequisite 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 *Export to Excel*, require Microsoft Excel 2007, 2010, or 2013. File exported to the .sf format require ARGUS Valuation-DCF to open/modify.

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 3.0G Hz
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 Std x64
Other	Installation of the .NET framework 4.0 is a prerequisite 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 *Export to Excel*, 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 limits 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

While a medium-scale design offers improved performance compared with a small-scale design and costs less than a large-scale design, it requires careful planning. Consider these system and configuration hints as you plan the implementation:

- Initial selections in the physical hardware are critical to ensure that performance and data volumes meet the usage needs for the duration of the environment.

- The application tier offers some scalability potential, but the database tier requires significant modifications to scale beyond the initial setup.

- The architecture diagram shows the SSRS component installed on the database server, but you may achieve some performance gain by distributing the SSRS to a remote host. Note that this is not a required component for most use cases running reports.

- The medium-scale configuration can be performance scaled by adding more processing servers beyond the initial setup and by committing additional CPU/RAM/Disk resources to the individual servers.