

ADG

Enterprise Financial and Utility Billing
Solutions for Government

Application Architecture

Web Technologies



Compatibility

Flexibility

Scalability



Table of Contents

Client Software	1
Client Operation System	2
Server Software	2
Computing Hardware	3
Network Hardware	3
Appendix 1	

Application Architecture

Here at ADG, we are serious about our long-term commitments to our customers. This is why we made a strategic decision to choose a software platform that is not dependent on one proprietary operating system or hardware configuration, but that offers compatibility and flexibility to our customers.

Let's face it, not everyone is a fan of every operating system out there and we don't want to trap our users into certain hardware or software platforms. Our systems are as flexible as we can make them. So, if you are looking for software that will run in a Windows environment we can do it. If you are looking for a system that can run in a Linux environment, we can do that too. If your current system has you stuck on an expensive AS 400 server and you just know that there is no way to keep justifying that, we can help set you free.

Client Software

Data is presented to the end user in one of the following formats:

HTML

All user interaction with the system is via an appropriate web browser. Current

supported browsers are:

- ◆ Microsoft Internet Explorer, Version 6+
- ◆ Mozilla Firefox, Version 2+

- ◆ Apple Safari Browser.
- ◆ Any other browser that supports W3C HTML and CSS standards.
- ◆ ADG issues guidelines on an occasional basis as to required upgrades to take advantage of bug fixes or new features in browser software.
- ◆ Browser must have Javascript enabled.
- ◆ Browser must have popup blocking disabled for the application host.
- ◆ ADG may require Java RT support for future functionality.

PDF

The client should have Acrobat Reader, version 4 or greater, installed on the workstation. This software is available at no charge from Adobe.

XLS

Spreadsheet data is presented as an XLS file. This can be opened using Microsoft Excel or any other application, such as Open Office, that allows importation of this data format.

Common Text Outputs

Data may be exported in common output formats such as Comma or Tab separated formats.

Hardcopy Output

Output may be sent directly to printers. Currently supported formats are:

- ◆ HP Laserjet and compatible printers that support the PCL language. Tray selection is available at run-time.
- ◆ Plain text for line printer type operations.

Client Operating System

Any client capable of running a modern web browser. Known compatible systems are:

- ◆ Microsoft Windows products from Windows 2000 onwards
- ◆ Linux desktop products, using the Firefox browser.
- ◆ Apple Macintosh, using Safari or Firefox browsers

Notes

1. No client-side batch processing is performed. All batch jobs, including production of hard copy is performed server side.
2. The application supports unlimited application sessions open on workstations.
3. The minimum screen resolution supported is 1024x768, using standard fonts. Use of a lower resolution or large fonts will work, but windows will not necessarily display without scrollbars.

Server Software

The server side portion of the ADG application suite is designed specifically to be vendor independent, allowing maximum choice of configuration and scalability. ADG can supply turnkey type instal-

lations for smaller operations, or integrate its software into numerous existing configurations when required. The following items are required (choosing one item from each group):

Web Server Software

The currently supported platforms are as follows:

- ◆ Apache 2 Running on Windows XP or Vista Home client for a small system installation.
- ◆ Microsoft IIS 5/6 on Windows Server 2000/2003
- ◆ Microsoft IIS 7 on a Windows Vista Home Premium and higher
- ◆ Microsoft IIS 7 on Windows server 2008.
- ◆ Apache 2 running on a supported Linux platform

Application Server Software

The system is normally configured with the web and application servers on the same physical machine. For very high throughput environments, multiple web/application servers may be installed and accessed via load-balancing configurations. In addition, a separate server may be utilized for batch processing.

Database Server Software

The application software is designed to be database vendor independent. The system currently supports the following DBMS:

- ◆ Oracle 9/10
- ◆ Microsoft SQL server 2000/2005/2008 (not SQL Server Express edition)
- ◆ MySQL Version 5
- ◆ IBM DB2

Notes

1. The database may normally reside on any platform supported by the database manufacturer. For lower throughput applications the database may reside on the same physical machine as the web/application server.
2. Databases may require manufacturer supplied add-ons.
3. MySQL does not normally require commercial licensing.
4. The customer must license commercial databases appropriately, especially with regard to client connectivity from separate web servers.
5. Systems management, tuning, and backups of commercial database products are normally the responsibility of the customer.

Virtualization

The application will perform as expected when installed on a virtual machine.

Scalability

The table in Appendix 1 shows sample system scalability. The database selections are purely for example, and are not intended to suggest any limit in performance or functionality, nor are they intended to recommend or endorse any specific manufacturers product or configuration.

Computing Hardware

Client

Client computing requirements are low, consistent with running a modern web browser. The current lowest known configuration in a live environment

is a Windows 2000 workstation / IE6 running on a machine purchased in 2003.

Server

Server Hardware specifications depend on estimated load and database manufacturer recommendations.

The current lowest known configurations in live environments are:

- ◆ Windows 2000 Server / IIS5 running on a machine purchased in 2002.
- ◆ Windows XP workstation 1GB memory running as both server and client.

Network Hardware

Client

- ◆ The average page size delivered to the client is in the 10-25kb range.
- ◆ The minimum supported connection speed for the client is 56kb (Dial-up modem connections). The system allows disabling of certain functionality for this speed.
- ◆ The minimum recommended connection speed is 256kb (Basic DSL).
- ◆ The minimum recommended Local Area Network speed is 10Mbps.

Server

The minimum recommended connection speed between Web/Application and Database servers is 100Mb. Database manufacturers may specify higher requirements.

Appendix 1

Scalability

The following table shows sample system scalability. The database selections are purely for example, and are not intended to suggest any limit in performance or functionality, nor are they intended to recommend or endorse any specific manufacturers product or configuration.

Users indicates no of logged in users, not open sessions

<i>Users</i>	<i>Database</i>	<i>Configuration</i>
1-10	MySQL	Windows XP/Apache 2 or Vista Workstation/IIS 8
1-100	MySQL	Single Linux server running Apache 2 and Database
	MS SQL Server	Single Windows 2003 Server running IIS 6 Single Windows 2008 Server running IIS 7
Over 100	MySQL	1. Linux Server running Apache 2 2. Linux Server running Database
	MS SQL Server	1. Windows 2008 Web/AppServer running IIS 7 2. Windows 2008 Database Server
Over 500	Oracle 10	Multi-processor Linux Web/App server running Apache 2 HPUX database server Separate Linux Server For Batch Processing.
Over 1000	IBM DB2	Multiple Multi-processor Windows 2003 Web/App Servers running IIS 6 IBM Z Series server