ARCHIBUS

OVERVIEW

This document describes the components and relative configuration for a Web Central Deployment.

BACKGROUND

Many sites view their deployments as an n-tier application architecture -- a model in which the application is divided into several service tiers or layers that can be modified independently. Adherence to this organization results in a highly flexible and highly reusable application. It also results in an application that can use a variety of Web servers, application servers, and database servers because the interfaces for each layer follow industry standard protocols.

The essential tiers of the Web-server side are:

Tier	Description	Role	Software Examples
Presentation Tier	Holds static content, such as views, forms and reports.	Web Server	Internet Information Services, Apache
Business Tier	Processes business logic and dynamic content that changes with each query -- the logic that forms the brains of your operation. It advances work to the next state, sends notifications, and runs calculations. Includes Web forms, drill-down reports, edit forms, and workflows.	Application Server	Tomcat, WebLogic, Web Sphere
Data tier	Holds the data saved in the database management system	Database Server	Oracle, Microsoft SQL Server, Sybase

J2EE deployments gain scalability by being able to offload different types of processing onto distinct computers, each optimized for its specific role.

From a broad perspective, the different tiers of distinct software may be deployed as below.

Figure 1 - Reference Deployment

This tier is usually not separated from the Application Server (AS). Typically the AS serves both roles

Windows Server 2003/8 or Linux RH4
WebLogic 9.1
Tomcat 5.5.27

Oracle 9i, 10g, 11g
SQL Server 2000, 2005
Sybase ASA 9, 10

Web User

Web Server

Application Server

Data Base Server

CAD/Power Users connect directly to the database server using an ODBC or through Web Services to the Application Server

CAD/Power User

SHARED/SINGLE INSTANCE – WEB USERS

In this configuration the environment is optimized for use by many clients sharing the same hardware for each component in the architecture. Multiple server instances can be configured on a single application server. Using Tomcat Application Server, as an example, serving two clients on one physical server; clientA and clientB, the configuration is as follows.

1. Install two instances of Tomcat and register each instance as a service on the Windows 2003/8 servers using the Tomcat Service Manager, pictured below.

Figure 2 - Tomcat Instance Manager

2. Configure each instance to use different ports on the server to avoid startup conflicts. The user URL will look similar to the following:

a. **clientA**: `http://servername.company.com:8080/archibus/`

b. **clientB**: `http://servername.company.com:8081/archibus/`

The installation/configuration procedures will vary based on the application server environment selected and is beyond the scope of this document. The figure below is a configuration that will meet the needs of the Shared/Single Instance requirements for many deployments.

Figure 3 - Shared/Single Instance
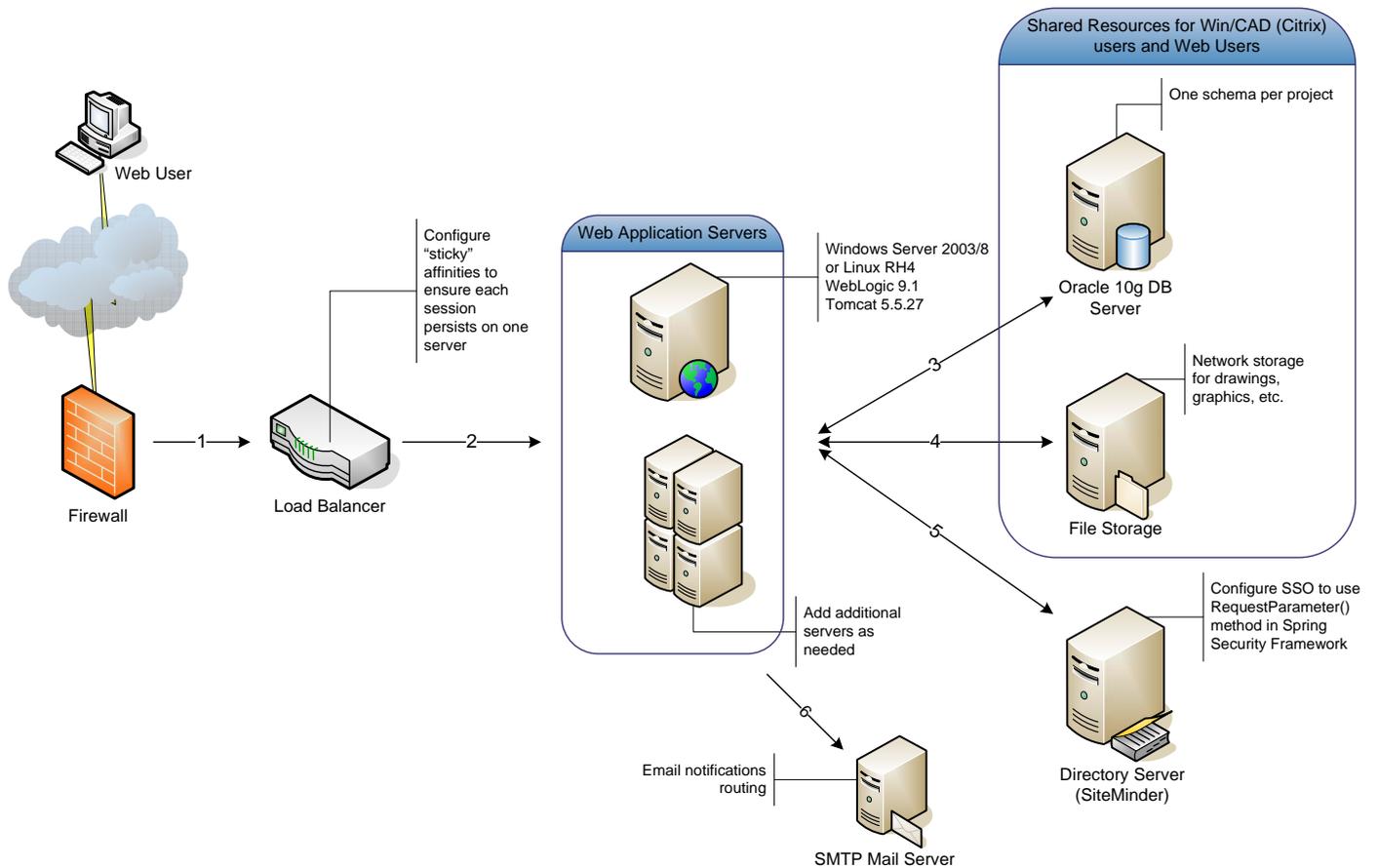
1. User requests will originate from the client's machines via an intranet/internet connection through any firewalls and related hardware.

2. After authentication, the user is directed to a load balancer (if required) that will forward the request to the most available server. The load balancer must be configured to use "sticky affinities" such that each user session persists on a single server for the life of that session. Subsequent user sessions can route to any server in the set. SSO is recommended to make this process seamless to the user.

3. Once the request reaches the Application Server, Web Central, which is configured for Single Sign-On (SSO), will request the username parameter from the request header as provided by the authentication page.

4. Web Central will maintain three distinct connections to the Oracle database using a JDBC connection URL as shown below from the `afm-projects.xml` file. Each connection can be configured with a separate Oracle user account to control access permissions for each role/connection.

```
<database role="data" maxNumberOfRecords="100">
        <login defaultAccount="afm" defaultPassword="">default</login>
        <engine type="Oracle">
                <jdbc url="jdbc:oracle:thin:@127.0.0.1:1521:oracle" />
        </engine>
</database>
```

The three roles are; 1) Security; 2) Schema, and 3) Data for access to the parts of the database implied by their names. Security is used to verify the user credentials during the authentication process. Schema is responsible for all schema access queries and updates. Finally, the Data role connection handles all application data queries and updates.

5. All of the application content that Web Central uses is included in the provided WAR or EAR application file; however, project specific data files such as drawings and/or other graphics should be stored in a location where both the Web Central application and the other systems—such as the drawing publishing process—can access. Typically, a network share (NAS) is created and all project specific files are organized in this location for all components to access. Web Central can be configured to access these resources from a remote location or in the project folder(s) within the Web Central file structure. For access to a remote location, a virtual directory (using IIS or something similar) is required to ensure that all remote users can access these resources.

SAMPLE SOFTWARE CONFIGURATION

The table below describes the installed components on each tier of the architecture stack.

Component	Operating System	Installed Components	Comments
Web Application Server	Unix, Linux, Windows, etc.	Tomcat, Web Sphere, WebLogic Java ARCHIBUS Web Central (v19/20)	Specific configurations are available in the online help
Database Server (Shared resource)	Unix, Linux, Windows, AIX, etc.	Oracle 9i, 10g or 11g	Will need a UAT/Test Database environments for upgrade testing and deployment
File Server (Shared resource)			Web Central will only access drawings and graphics from the storage area

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SAMPLE HARDWARE CONFIGURATION

ARCHIBUS Web Central runs on a wide variety of Sun, Linux, and Windows Server hardware, which can be provided with a very broad range of performance capabilities. For illustration, however, a sample hardware configuration would be the following.

Component	Example	Processer	Memory	Storage
Firewall	Cisco PIX 501			
Load Balancer	Coyote Point E350 Equalizer			
Application Server	HP ProLiant DL380 G5 Server series - Models	(1) Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 1333MHz FSB, 80W)	4GB Fully Buffered DIMM PC2-5300 (4x1GB)	2, HP 72GB Pluggable 2.5 SAS 15,000 rpm Hard Drive - RAID
Database Server	HP ProLiant DL380 G5 Server series - Models	(2) Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 1333MHz FSB, 80W)	4GB Fully Buffered DIMM PC2-5300 (4x1GB)	4, HP 72GB Pluggable 2.5 SAS 15,000 rpm Hard Drive - RAID
File Server	HP ProLiant DL380 G5 Server series - Models			Project specific