# Topology planning

## Topology planning

In today's globalized world, modern organizations face a lot of opportunities and challenges every day. Many of these challenges can put an onus on the organization's IT infrastructure therefore its configuration is crucial. The Apache Geronimo application server supports small-to-medium-sized enterprise applications and provides robust, secure support for the latest Java EE specification. This section will highlight the different configuration options that can be used in your production environment.
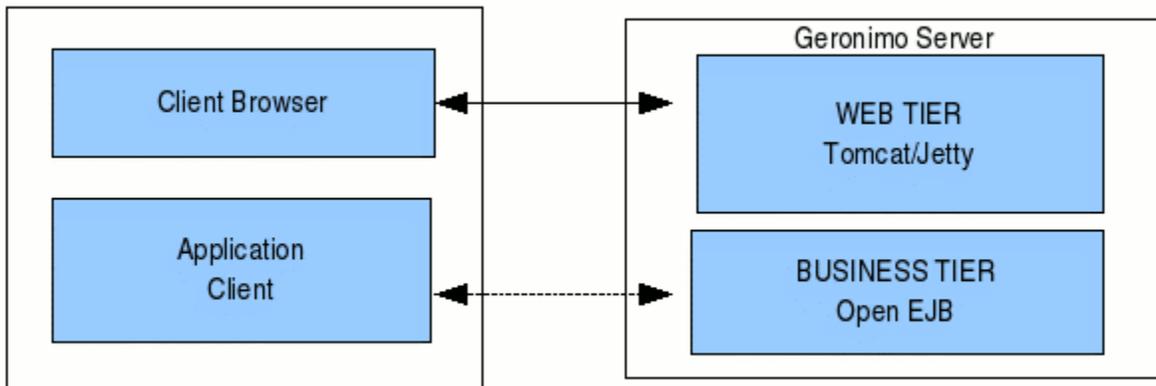
### Two-tier system

The figure below illustrates a client machine accessing an application hosted in the Geronimo server. Although the figure depicts only one client machine, several machines can be connected to the server and users on these machines can access the hosted Web applications using a standard Web browser.

The client-side application may vary ranging from being a simple command line user interface to a full-fledged user interface such as those created using popular client-side GUI technology. These applications can access the Web tier by connecting to the server using their own HTTP connections, or they can access business and EIS tier objects through the help of the Geronimo client application container.

Features of the Geronimo application client:

- Separate from the Geronimo server.
- Communication with the Geronimo server is over the network.
- Provides mapping dependency management for the client application and reference resolution.



### Three-tier system

Three tier architecture system is more scalable than two tier as it supports hundreds of users and organizations. It also increases flexibility and freedom.

Client Browser

Geronimo Server

WEB TIER
Tomcat/Jetty

Application
Client

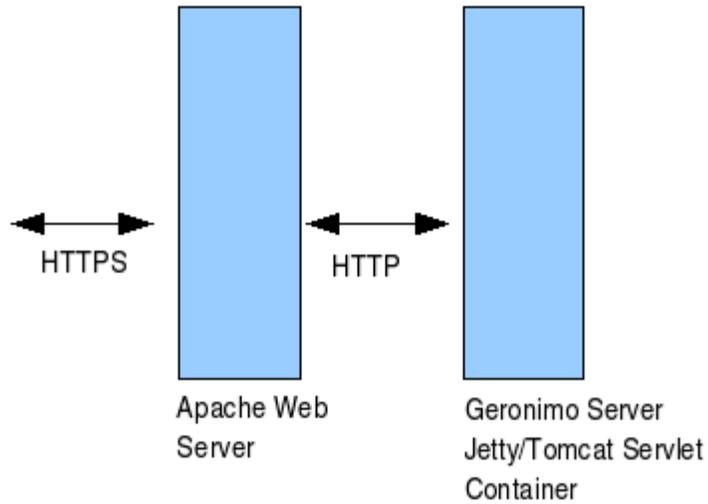BUSINESS TIER
Open EJB

Database
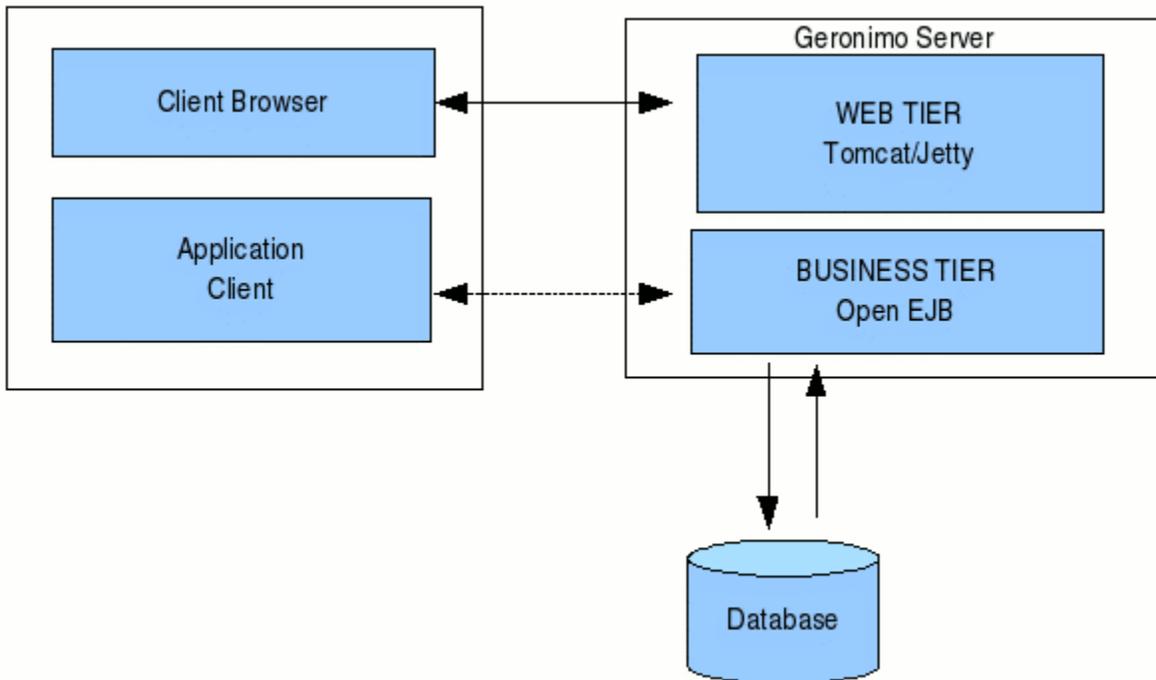
## Remote Apache HTTPd

The Apache Web server is the best, and most popular, HTTP server software in use on the Internet today. In your production environment using Geronimo with the Apache Web server would give you some rigorous advantages as given below.

1. Clustering & load balancing
   Clustering allows an application server to support multiple nodes with failover, session data sharing, and load balancing across many network nodes. Load balancing of the application can be done with the help of inbuilt support of Apache server.

request

Apache Server

Geronimo Server 1

Geronimo Server 2

Geronimo Server 3
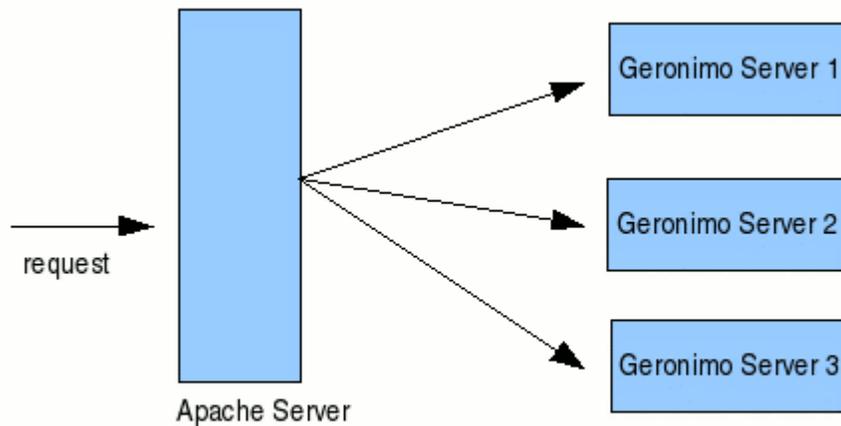
2. SSL encoder
   The advantages of Web server proxies are that they offer a way to get server affinity for SSL-encrypted messages, without any extra hardware. But extensive SSL processing puts an extra load on the proxy. It will be handled by Apache server while Geronimo can handle business logic of the application.

```
         ┌──────────┐        ┌──────────┐
         │          │        │          │
         │          │        │          │
◄────►   │          │ ◄────► │          │
HTTPS    │          │ HTTP   │          │
         │          │        │          │
         └──────────┘        └──────────┘
         Apache Web          Geronimo Server
         Server              Jetty/Tomcat Servlet
                             Container
```

3. Application load sharing
   In many serving systems, web and application servers work together to handle all HTTP requests. Apache handles the request for static pages (including HTML, JPEG, and GIF files), while Geronimo handles requests for dynamic pages (JSPs or servlets) with the help of Tomcat/Jetty. Geronimo servers can also handle static pages, but in combined systems, they are usually configured to handle dynamic requests.

```
         ┌──────────┐        ┌──────────┐
         │          │        │          │
         │          │        │          │
◄────►   │          │ ─────► │          │
HTTP     │          │        │          │
         │          │        │          │
         └──────────┘        └──────────┘
         Apache Web          Geronimo Server
         Server              Jetty/Tomcat
```