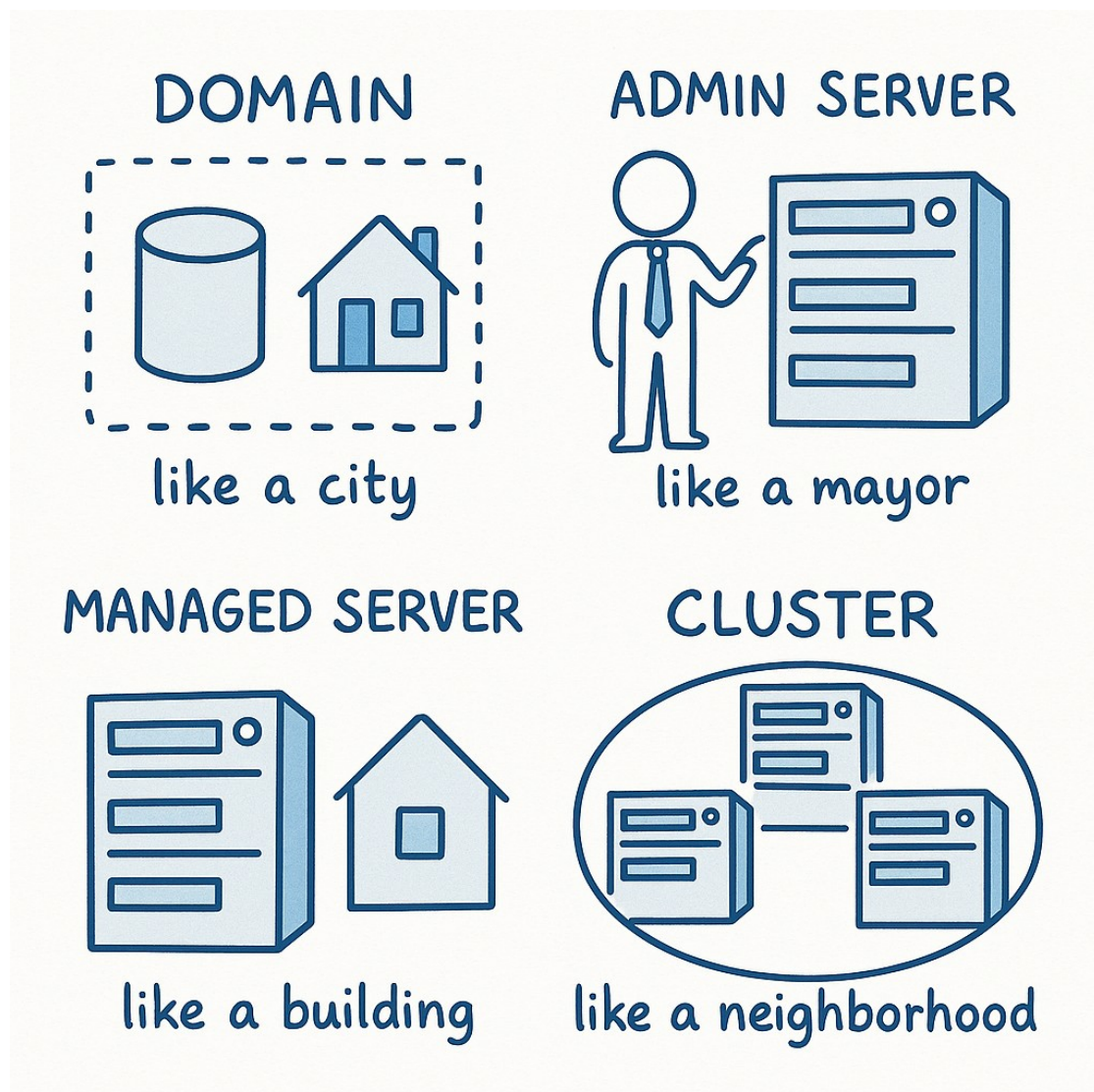


## Introduction to WebLogic Server

- **Owned by:** Oracle Corporation
  - **Type:** Java EE Application Server (supports Servlet, JSP, EJB, JMS, JPA, etc.)
  - **Use Case:** Enterprise deployment platform for Java-based applications.
- 

## WebLogic Architecture Overview

- **Domain:** A logically related group of WebLogic Server resources.
- **Admin Server:** Central control entity of a domain (only one per domain).
- **Managed Server:** Hosts actual apps and resources.
- **Node Manager:** Utility to control server instances remotely.
- **Cluster:** Group of managed servers for load balancing & failover.
- **Machine:** A logical representation of the physical computer (used with Node Manager).



## ◆ 1. Domain

### 💡 Real-life Analogy: A Housing Society

Imagine a **gated housing society**:

- All buildings, security, gardens, electricity, and residents are part of **one society**.
- It is managed as **one logical unit**.

🔍 In WebLogic:

- A **Domain** is like that society.
  - It contains everything: **Admin Server, Managed Servers, configurations, deployments**, etc.
  - It's the **highest-level structure** in WebLogic.
- 

## ◆ 2. Admin Server

### 💡 Real-life Analogy: Society Office / RWA President

In your housing society:

- The **society office** (or Resident Welfare Association head) keeps **full control**.
- Handles all administration: security, maintenance, new resident entries, etc.

🔍 In WebLogic:

- The **Admin Server** is the **control center** of the domain.
  - It manages configurations, deployments, and controls all Managed Servers.
  - There's always **only one Admin Server** in a domain.
- 

## ◆ 3. Managed Server

### 💡 Real-life Analogy: Individual Residential Buildings

Each building in the society:

- Has its own rooms (flats) where people live.
- Some have gyms, some have shops.

🔍 In WebLogic:

- A **Managed Server** is where **your actual applications run** (like websites, APIs).

- You can have **many managed servers**.
  - Admin Server **controls them**, but does **not run applications** itself (in most cases).
- 

## ◆ 4. Node Manager

### 💡 Real-life Analogy: Remote Watchman with Master Keys

Say each building has a **watchman** who can **remotely open or close** any building or flat:

- Can start/stop electricity remotely.
- Keeps track of status and reports to society office.

🔍 In WebLogic:

- **Node Manager** is a utility that **starts/stops Admin or Managed Servers** remotely.
  - Helps in **automated restarts, health monitoring**, etc.
  - Installed on each **machine** (server box) to control servers on that machine.
- 

## ◆ 5. Cluster

### 💡 Real-life Analogy: Multiple Buildings with Same Facilities

Imagine 3 buildings in the same society:

- All have gyms and shops.
- If gym in building A is full, you go to B or C.

🔍 In WebLogic:

- A **Cluster** is a **group of Managed Servers** doing the same job.
- Used for **Load Balancing** (spread users across servers).
- And for **Failover** (if one fails, others take over).

Example: If 10,000 users hit your website, the load is split across all servers in the cluster.

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## ◆ 6. Machine

### 💡 Real-life Analogy: Physical Plots in the Society

Every building (Managed Server) stands on some **land/plot**.

That plot is a physical entity.

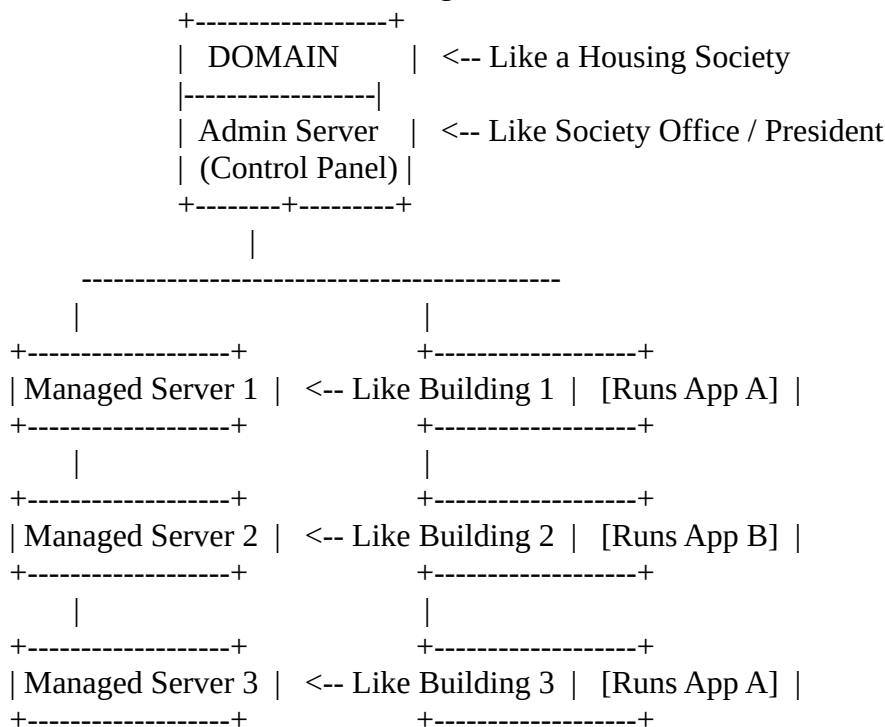
🔍 In WebLogic:

- A **Machine** represents the **physical or virtual hardware**.
- Used mostly with **Node Manager** to say: “This server runs on this machine.”

## ✓ Summary Table for Quick Revision

WebLogic Term	Real-Life Analogy	Role in WebLogic
<b>Domain</b>	Housing Society	Logical group of all WebLogic resources
<b>Admin Server</b>	Society Office / President	Central controller of the domain
<b>Managed Server</b>	Individual Residential Buildings	Hosts and runs the real applications
<b>Node Manager</b>	Remote Watchman with Master Keys	Starts/stops servers remotely
<b>Cluster</b>	Similar Buildings with Same Facilities	Group of managed servers for load balancing/failover
<b>Machine</b>	Physical Plot or Land	Represents hardware where server runs

===== WebLogic Architecture =====



CLUSTER  
(Managed Servers grouped together for  
Load Balancing & High Availability)

-----  
NODE MANAGER  
(Remote Watchman to Start/Stop Servers on Each Machine)

Machine A -----> Controls Admin + MS1  
Machine B -----> Controls MS2  
Machine C -----> Controls MS3

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## WebLogic Administrator

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### ◆ Introduction

#### What is Oracle WebLogic Server 14c?

Oracle WebLogic Server 14c is a modern Java EE-compatible application server and the runtime foundation for Oracle Fusion Middleware, supporting enterprise applications, microservices, cloud-native deployments, and more.

#### Editions in 14c:

- **Standard Edition (SE):** For developers and small-scale deployments.
- **Enterprise Edition (EE):** SE + clustering + advanced diagnostics.
- **WebLogic Suite:** EE + Coherence + TopLink + enhanced scalability.

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### ◆ Key Concepts in WebLogic 14c

#### ◆ WebLogic Server Instance

- A **JVM process** that hosts your Java EE applications.
- Two types:
  - **Admin Server:** Central controller.

- **Managed Server:** Runs business applications.

♦ **WebLogic Domain**

- A **logical container** that includes:
  - 1 Admin Server
  - N Managed Servers
  - Services (JDBC, JMS, etc.)
  - Machines and optional clusters

♦ **Admin Server**

- Special WebLogic instance for **configuration and monitoring**.
- Hosts the **Admin Console** (web-based GUI at <http://localhost:7001/console>).
- Should **not host applications in production**.

♦ **Managed Server**

- Hosts deployed applications and their related resources (JDBC, JTA, JMS).
- Contacts Admin Server on startup to sync config.
- Can run **independently** after starting (MSI mode).

### ◆ **Cluster**

- A **group of Managed Servers** with:
  - Same app deployed
  - Shared configuration
- Enables **load balancing** and **failover**.
- Often used with a **hardware or software load balancer**.

### ◆ **Node Manager**

- A separate process used to **remotely start/stop servers**.
- Must be configured per machine.
- Used in combination with Admin Console or WLST.
- Two types: **Java-based** (cross-platform) and **Script-based** (Unix-only).

### ◆ **Machine**

- A **logical representation of a host machine** (physical/VM).
- Required for using Node Manager and for clustering configuration.