Deployment Diagram

Deployment Diagram

Visualize the topology of
the physical components of a system
where the software artifacts are deployed.

What is a Deployment Diagram?

A deployment diagram is a UML diagram type that shows the execution architecture of a system, including nodes such as hardware or software execution environments, and the middleware connecting them.

Deployment diagrams help model the hardware topology of a system compared to other UML diagram types which mostly outline the logical components of a system.

Overview

- Deployment diagram
  - Represents the deployment of s/w artifacts to deployment targets (nodes)
- There are two types of Nodes:
  1. Device Node
  2. Execution Environment Node

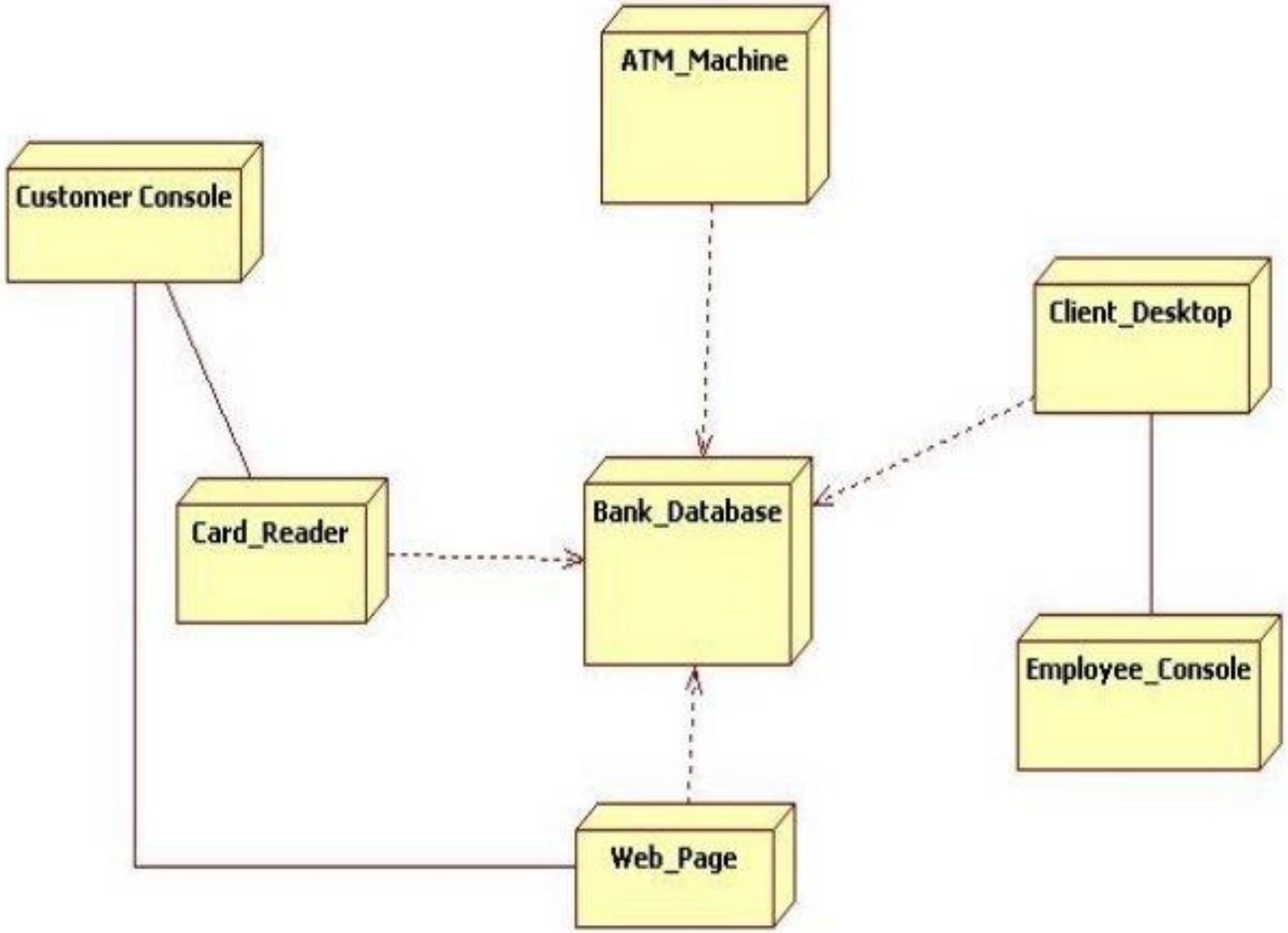
- Device nodes are physical computing resources (h/w)
  - With processing memory and services to execute software.
  - Few Example : PC, laptop, or mobile phone

- An EEN is a software computing resource that runs within an outer node
  - They provides a service to host and execute other executable s/w elements.
  - Few Example : OS, a JVM, or servlet container.

Purpose & usage

- Purpose of deployment diagrams can be described as:
  - Visualize hardware topology of a system.
  - Describe the hardware components used to deploy software components.
  - Describe runtime processing nodes.

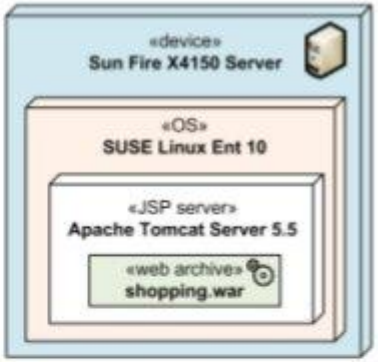
- Usage of deployment diagrams can be described as follows:
  - To model the hardware topology of a system.
  - To model embedded system.
  - To model hardware details for a client/server system.
  - To model hardware details of a distributed application.
  - Forward and reverse engineering.


ATM_Machine
Customer Console
Client_Desktop
Card_Reader
Bank_Database
Employee_Console
Web_Page

Notations

- Node is shown as a 3-dimensional box shape

Application Server Device



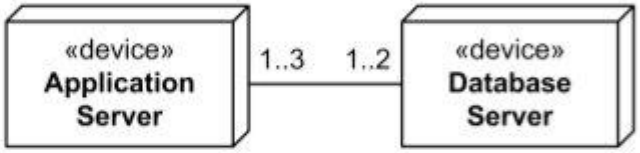
Several execution environments nested into server device

- EEN can be nested

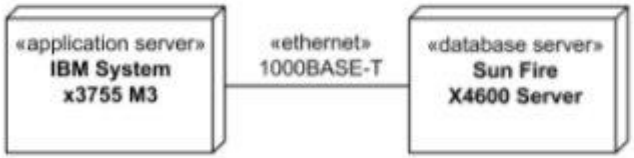
- An artifact is denoted by a rectangle
  - With Artifact name, and document icon

Communication path

- A communication path is association b/w two deployment targets,
  - Through which they are able to exchange signals and messages.



Communication path b/w several application servers and database servers.



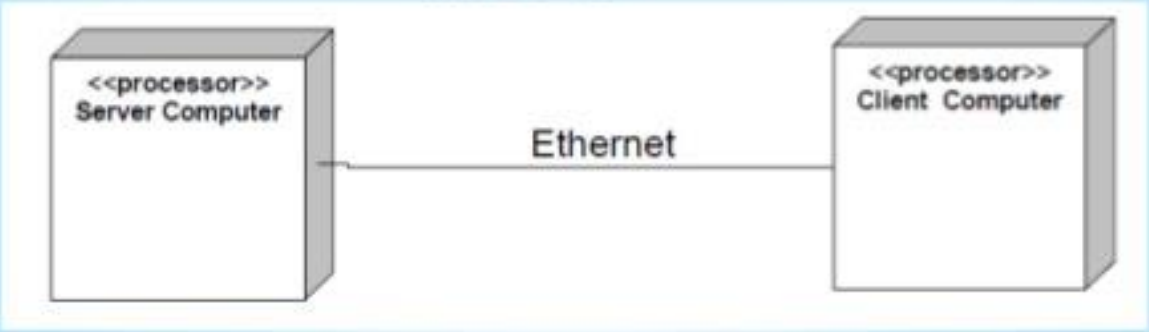
Gigabit Ethernet as communication path b/w application and database servers.

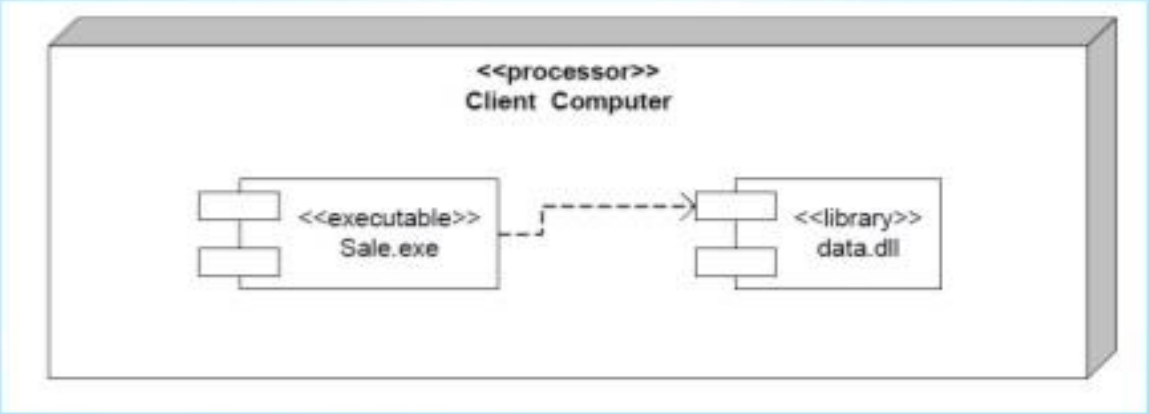
when deployment targets are some physical **devices**,

communication path will typically represent a physical connection b/w the nodes

Elements of Deployment diagram

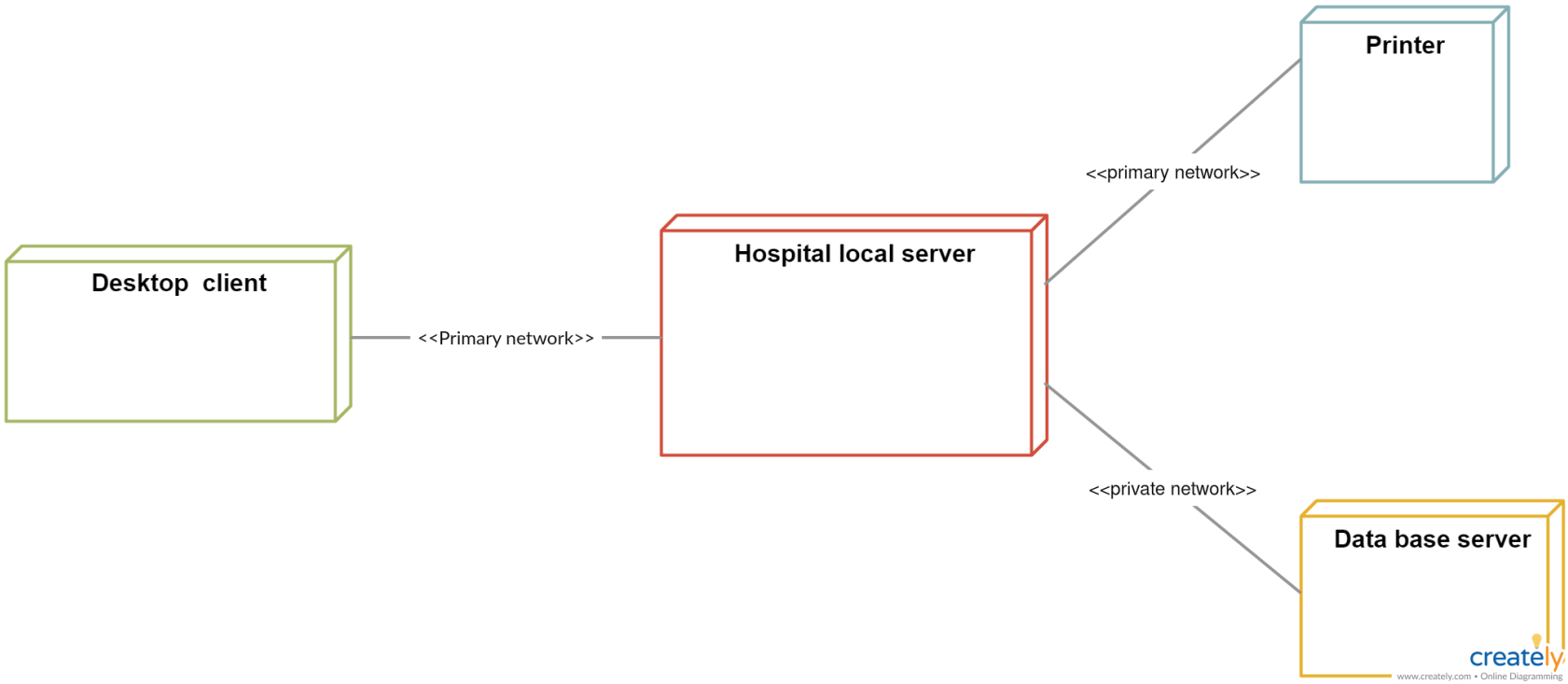
Association

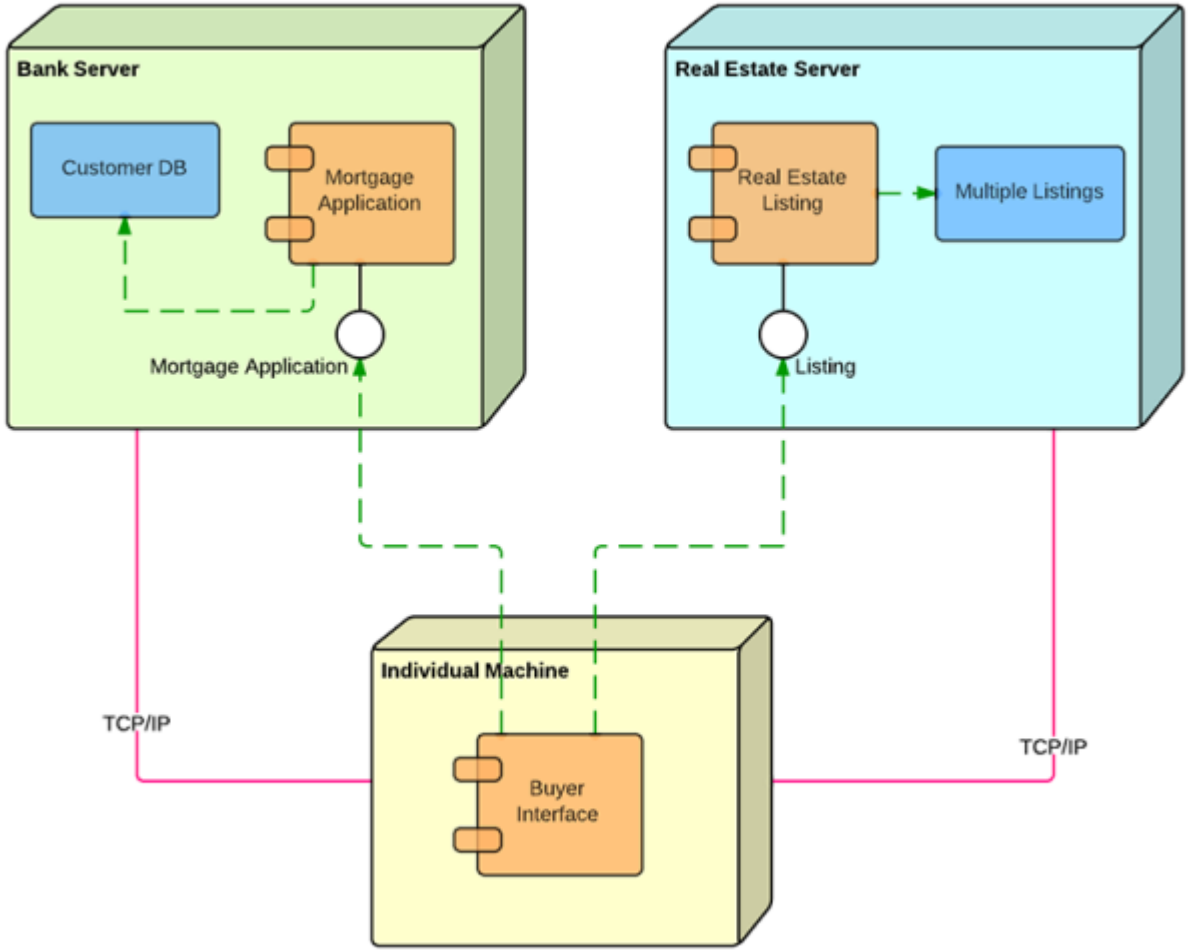




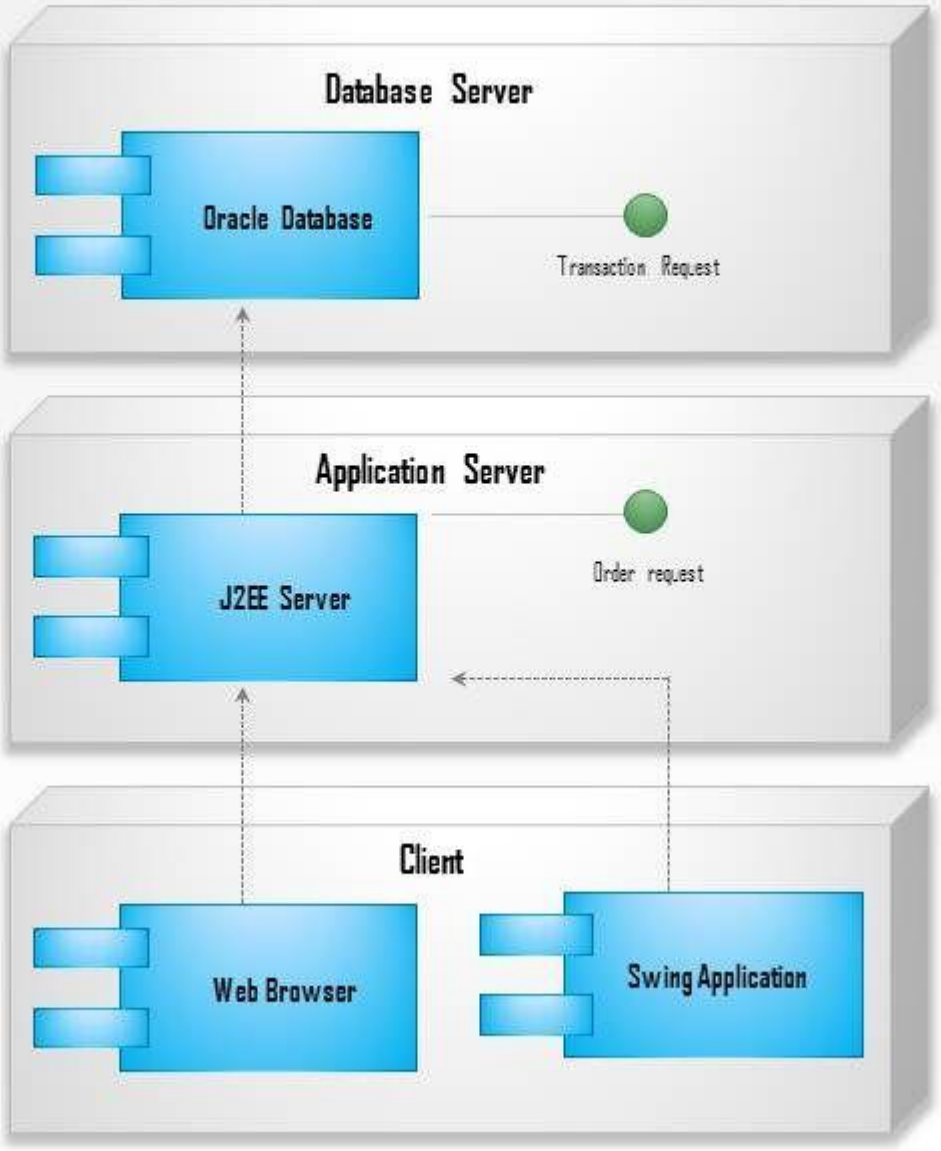
Component and nodes

HOSPITAL MANAGEMENT SYSTEM




Bank Server
Customer DB
Mortgage Application
Mortgage Application
Real Estate Server
Real Estate Listing
Multiple Listings
Listing
Individual Machine
Buyer Interface
TCP/IP
TCP/IP

UML Deployment



Your Logo