



Deployment Diagrams

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Deployment Diagrams

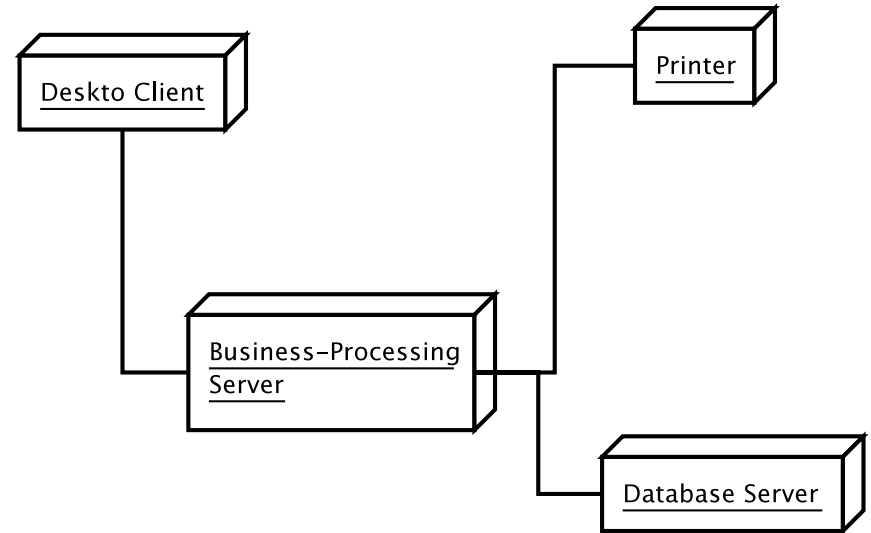
- show the structure of the run-time system
- capture the hardware that will be used to implement the system and the links between different items of hardware.
- Model **physical hardware elements** and the communication paths between them
- Plan the **architecture** of a system
- Document the deployment of software components or nodes

Deployment Diagrams

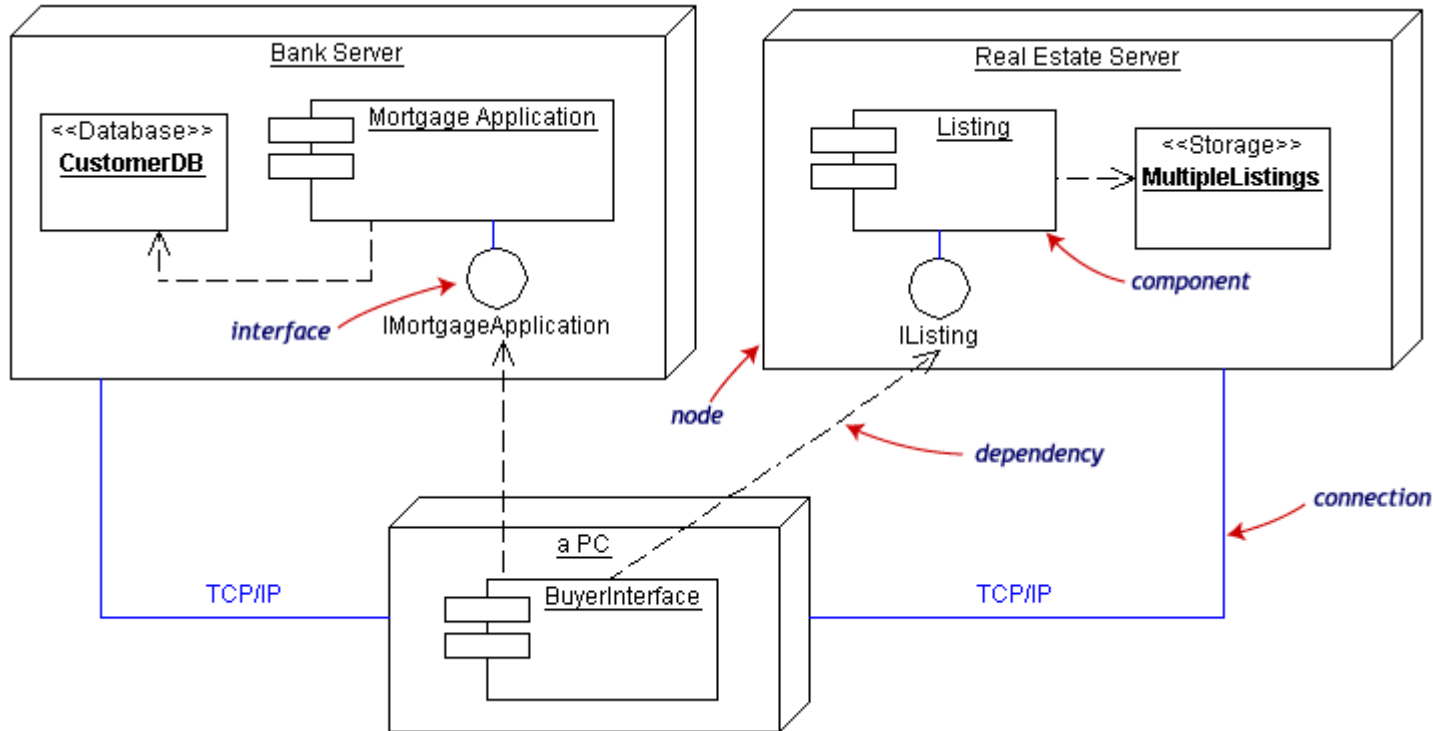
- A **Deployment Diagram** shows the configuration of run-time processing elements and the software components, processes, and objects
- Software component instances represent **run-time** manifestations of code units
- Deployment Diagrams capture only components that exist as run-time entities
- A deployment diagram shows the system's hardware, the software installed on that hardware, and the middleware that connects the disparate machines together
- A Deployment Diagram is a collection of one or more deployment diagrams with their associated documentation

Communication Association

- A communication associations between nodes indicates a communication path between the nodes that allows components on the nodes to communicate with one another



An Example of Deployment Diagram



Deployment diagrams show the physical configurations of software and hardware. The example shows the relationships among software and hardware components involved in real estate transactions.

Deployment Diagrams

- What existing systems will system need to interact or integrate with?
- How robust does system need to be (e.g., redundant hardware in case of a system failure)?
- What and who will connect to or interact with system, and how will they do it
- What middleware, including the operating system and communications approaches and protocols, will system use?
- What hardware and software will users directly interact with (PCs, network computers, browsers, etc.)?
- How will you monitor the system once deployed?
- How secure does the system need to be (needs a firewall, physically secure hardware, etc.)?

Deployment Planning

- How will your system be installed?
 - Who will install it? How long should it take to install?
 - Where the installation possibly fail? How do you back out if the installation fails? How long does it take to back out?
 - What is your installation window (during what time period can you install your system)?
 - What backups do you need before installation? Do you need to do a data conversion?
 - How do you know that the installation was successful?
- If different versions of the system will be in production at the same time, how will you resolve differences?
- What physical sites do you need to deploy to and in what order?
 - How will you train your support and operations staff?
 - Do you need to deploy a production support system so that the support staff uses their own environment to simulate problems?
- How will you train your users?
 - What documentation, and in what formats and languages, do your users, and support and operation staff need?
 - How will updates to documentation be deployed?

How to produce deployment diagrams

1. Decide on the **purpose** of the diagram
2. Add **nodes** to the diagram
3. Add **communication associations** to the diagram
4. Add other **elements** to the diagram, such as components or active objects, if required
5. Add **dependencies** between components and objects, if required

Modeling Business Process

- Business modeling using nodes and components is an effective means of capturing non-computer based processes and entities
- This can be done very early in development, to complement the use case model and other business modeling
- Components are the business procedures and documents; the nodes ("run-time structure") are the organization units and resources (human and other) of the business

