Week 5

CS2212
Introduction to Software Engineering

Deployment Diagram

Some images and content from Software Engineering: A Practitioner's Approach 9th Edition By Roger Pressman and Bruce Maxim

Deployment-Level Design Elements

- **Deployment-level design** indicates **how software functionality and subsystems will be allocated** within the physical computing environment.

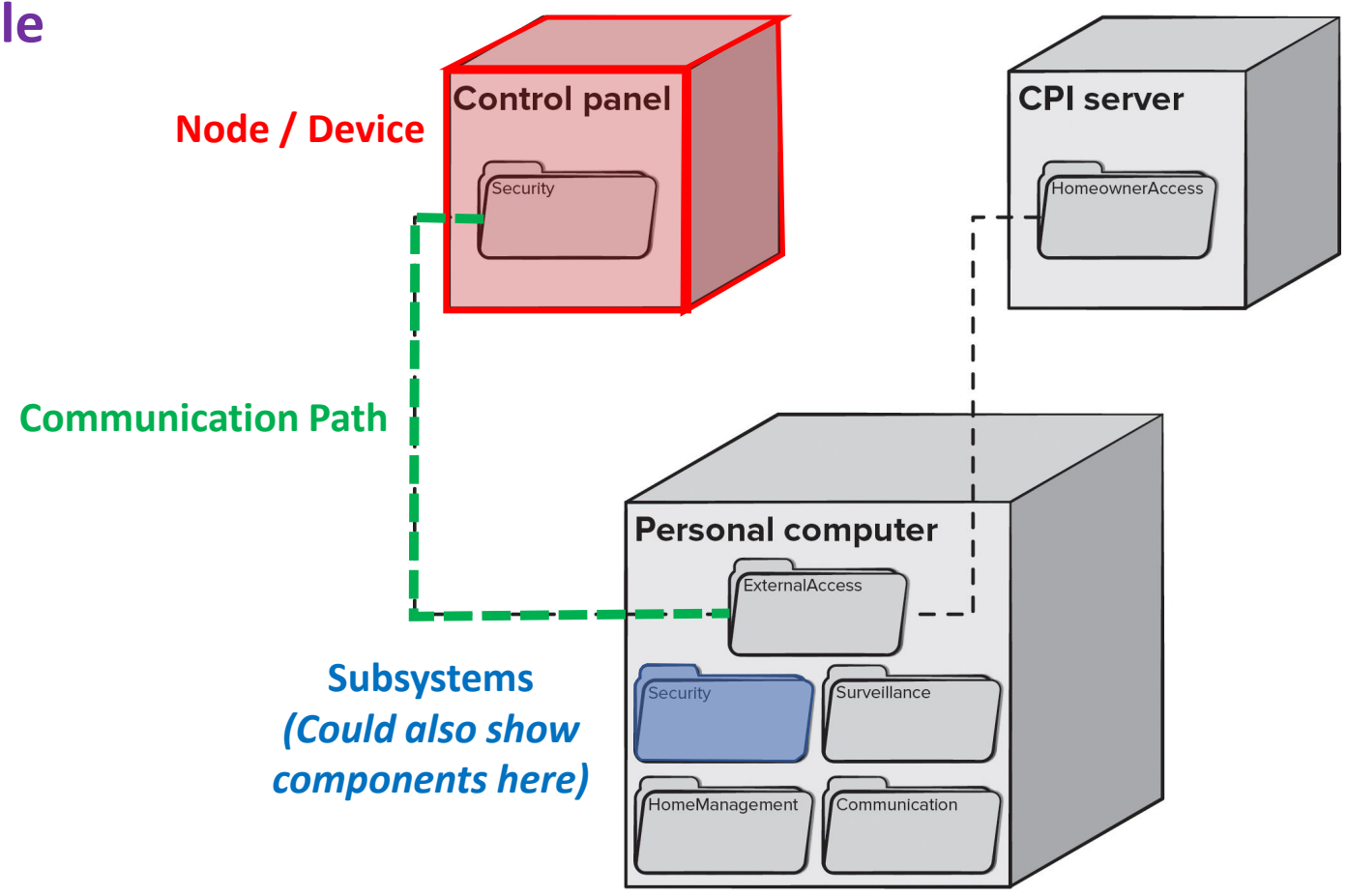
- Modeled using **UML deployment diagrams**.

  - **Descriptor form deployment diagrams show the computing environment,** but do not explicitly indicate configuration details.

  - **Instance form deployment diagrams identifying specific named hardware configurations,** are developed during the latter stages of design.

Deployment Diagram

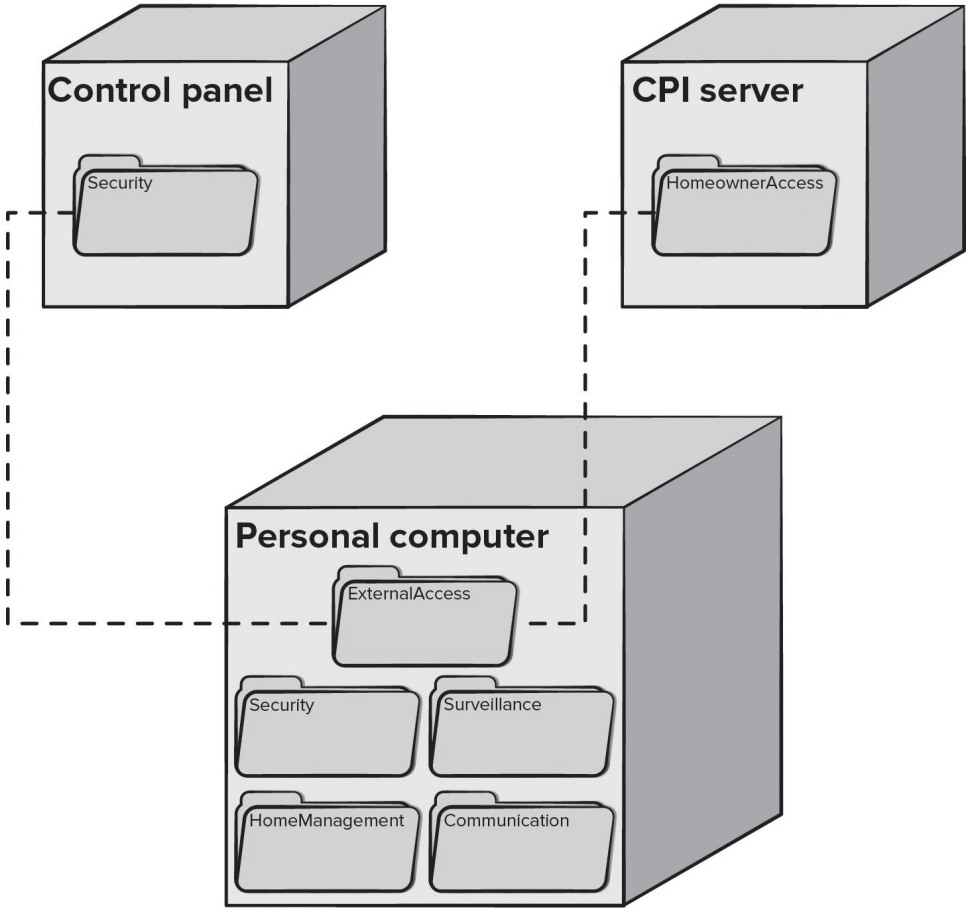
Descriptor Form Example



Deployment Diagram

Descriptor Form Example

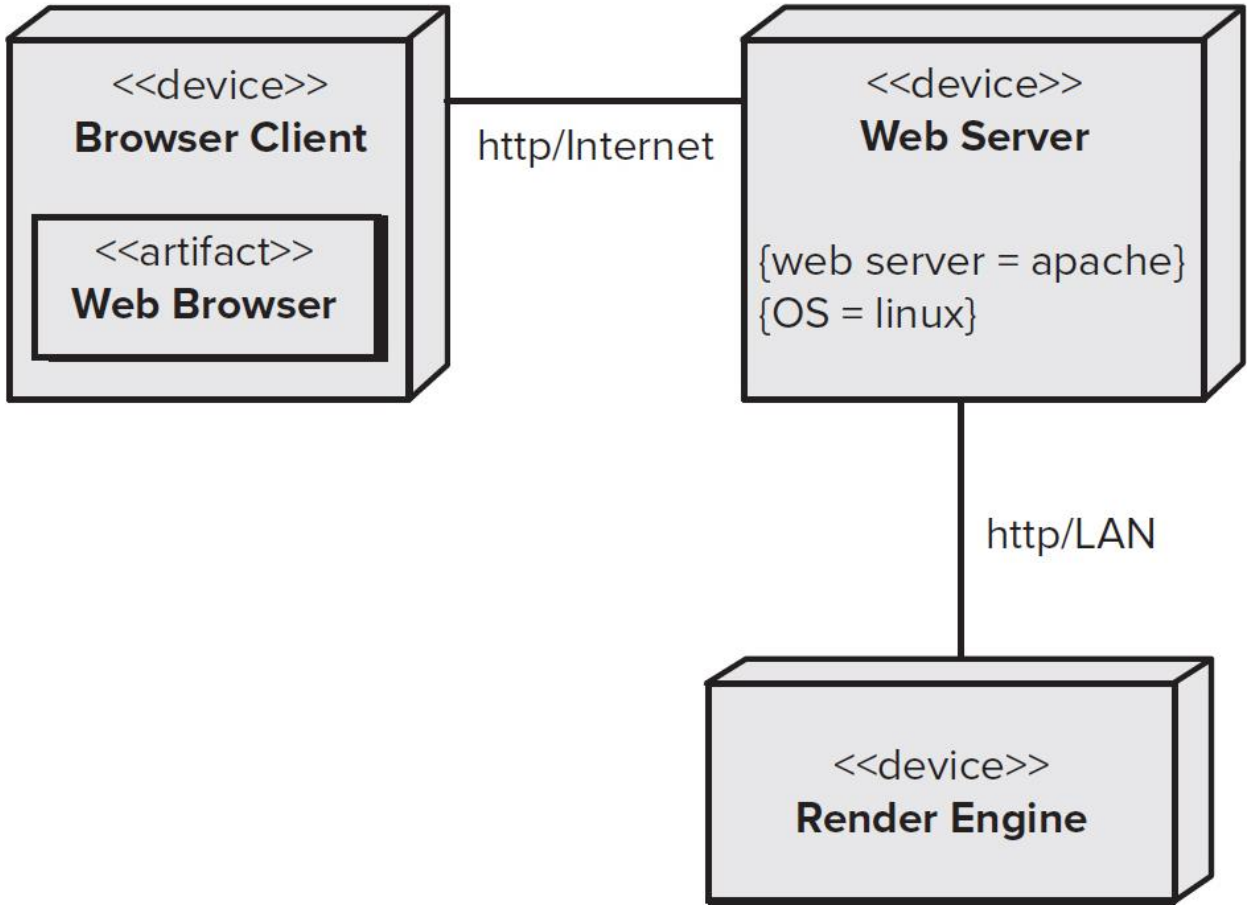
- An example **UML deployment diagram** for *SafeHome*.
- In this case, we can see that a **personal computer houses subsystems** that implement security, surveillance, home management, and communication features.
- In addition, an **external access subsystem** has been designed to manage access to the *SafeHome* system from an external source.
- Each **subsystem could be elaborated to indicate the components** that it implements.
- Other elements like sensors and cameras have been omitted but could be added in.



Deployment Diagram

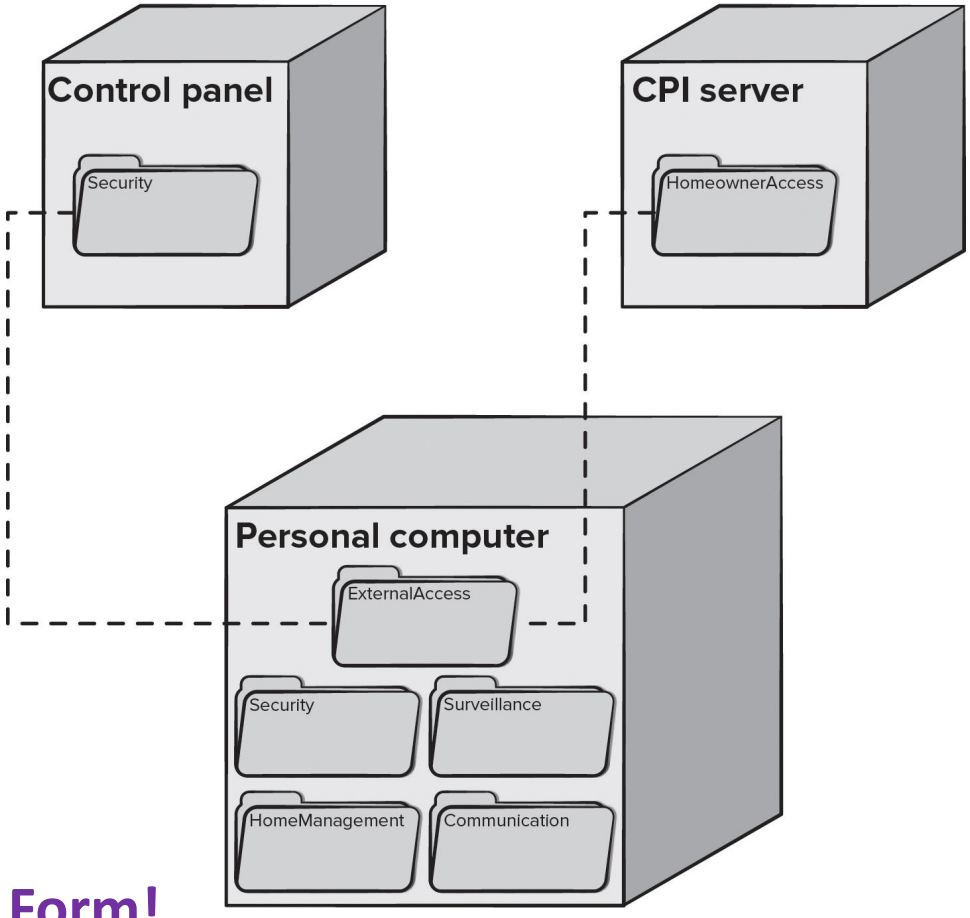
Instance form

- Each node annotated with details about the device.
- <<device>> denotes hardware components.
- <<artifact>> denotes software running on the device.
- Values in {}s are tag values that show configuration details.
- Communication paths may have optional labels that denotes the protocol.



Deployment Diagram Activity

- Add a **Sensor node** with a **SensorMonitor subsystem**.
- Add a **Camera node** with a **CameraControl** and **CameraFeed subsystem**.
- Add a **Mobile Device node** with a **MobileApplication subsystem**.
- The **Camera** and **Mobile** nodes communicate with the **CPI server** (you can add a new subsystem for this).
- The **Sensor node** communicates with the **Control Panel's Security subsystem**.
- The **Camera node** also communicates with the **Personal Computer's ExternalAccess subsystem**.



Should be in Descriptor Form!