A grayscale topographic map of a mountainous region, showing intricate contour lines and peaks. The map serves as a background for the chapter title.

Chapter 2, Modeling with UML: *Component and Deployment Diagrams*

Components

- A Component is a self-contained unit that encapsulates the state and behavior of a number of Classifiers.
 - In UML, a Classifier represents a classification of instances according to their Features.
 - For instance: a category of entities in the domain
 - A classifier has attributes

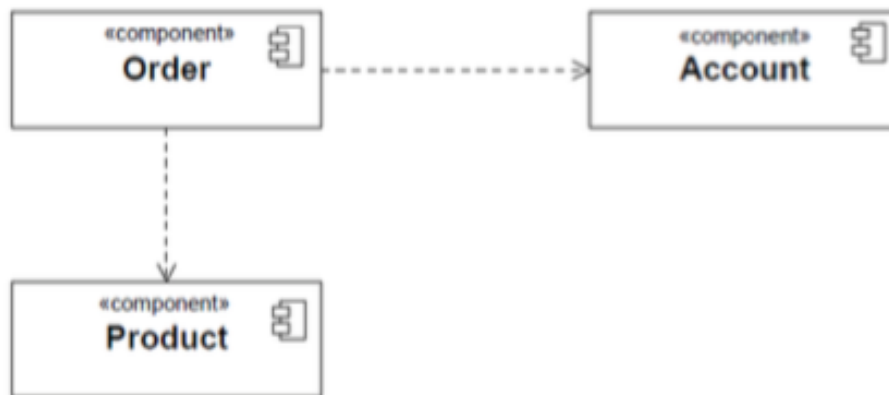


Figure 11.39 Example of an overview diagram showing Components and their general Dependencies

Component's interface

- The provided and required Interfaces of a Component may be shown by means of ball (lollipop) and socket notation

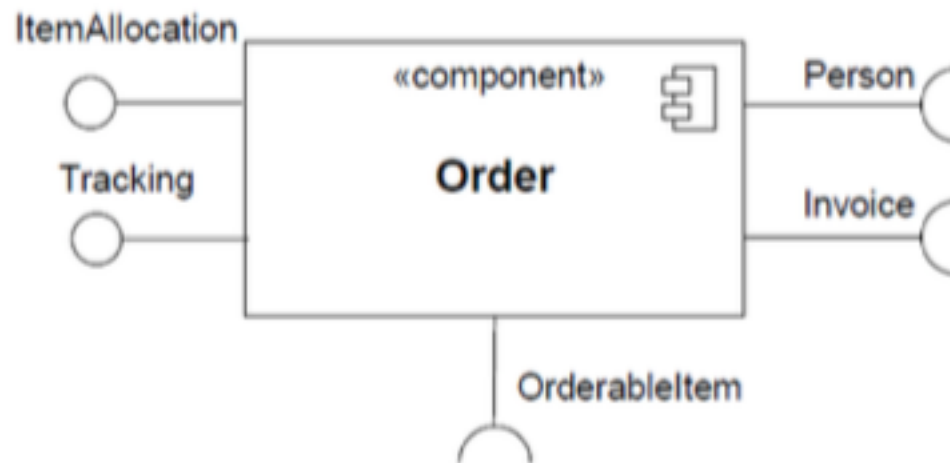


Figure 11.40 A Component with two provided and three required Interfaces

Dependencies among components

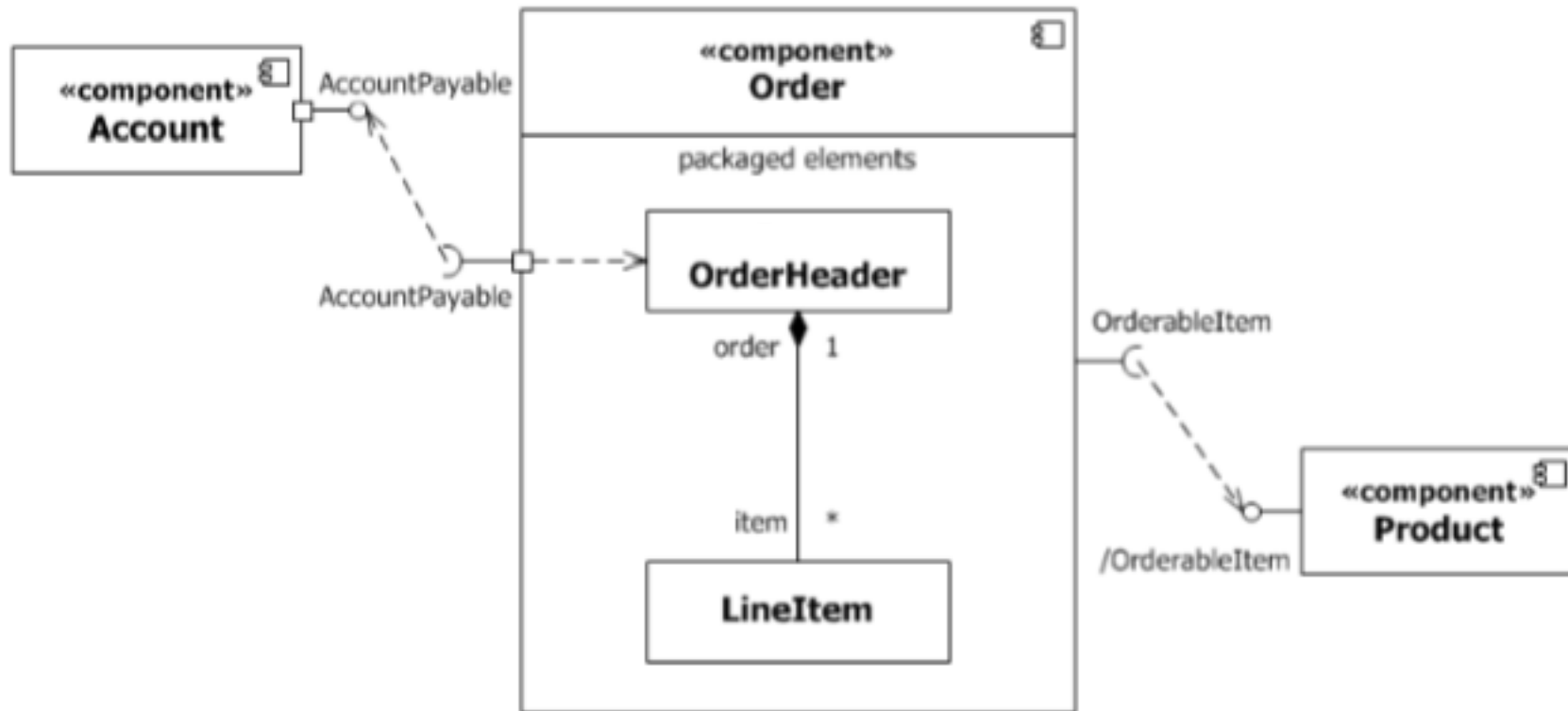


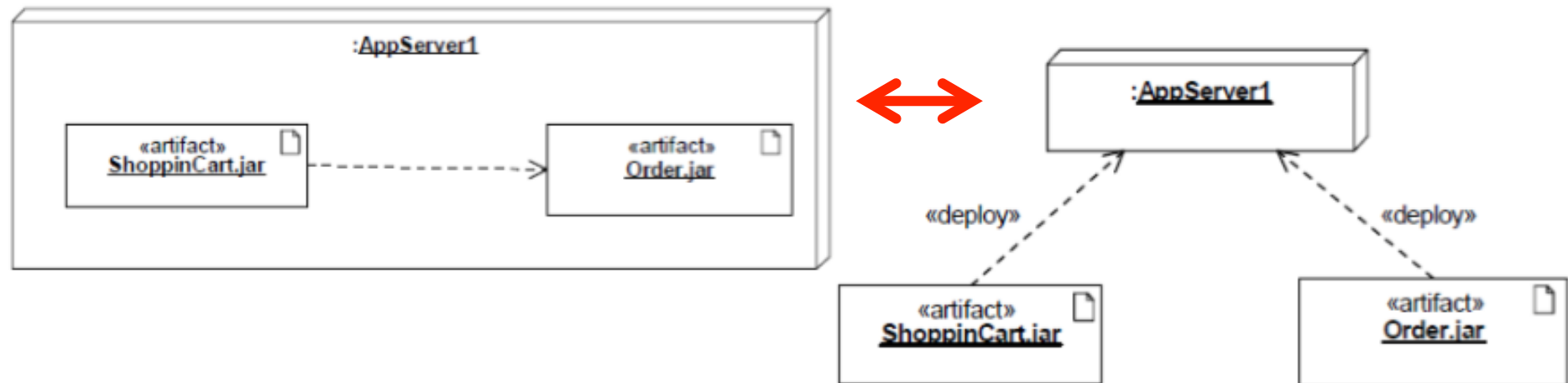
Figure 11.46 Example model of a Component, its provided and required Interfaces, and wiring through Dependencies

Deployment Diagrams

- Deployment diagrams specify constructs that can be used to define:
 - the execution architecture of systems and
 - the assignment of software artifacts to system elements.

Deployment diagrams examples

- Nodes in deployment diagrams represent either hardware devices or software execution environments.

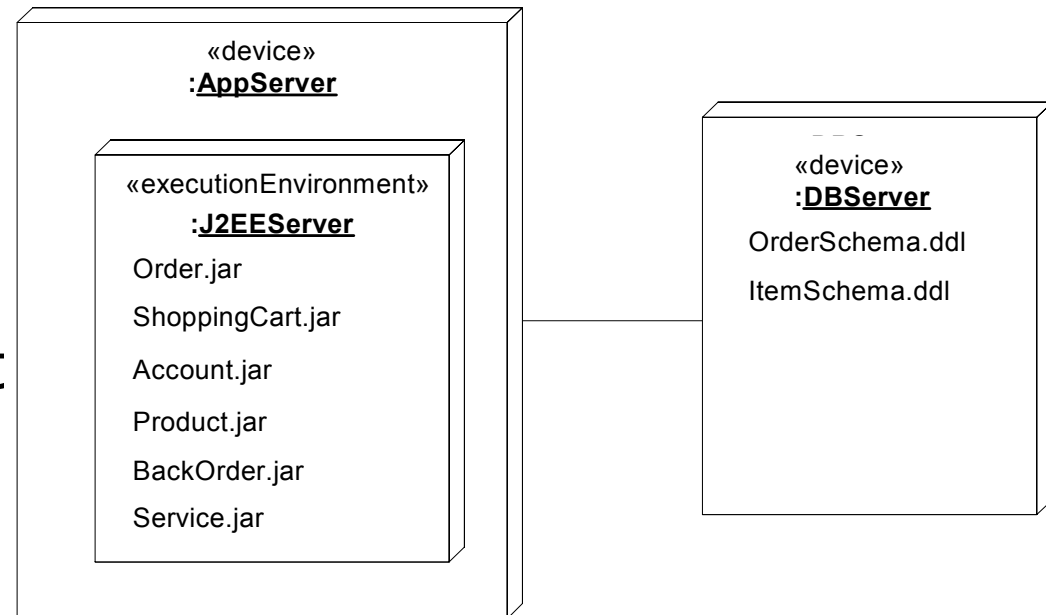


- Artifacts are deployed over nodes
 - Some item of information that is used or produced by a software development process or by operation of a system.
 - Examples: model files, source files, scripts, executable files, database tables, development deliverables, word-processing documents, and mail messages.

UML 2 Deployment Diagrams - nodes

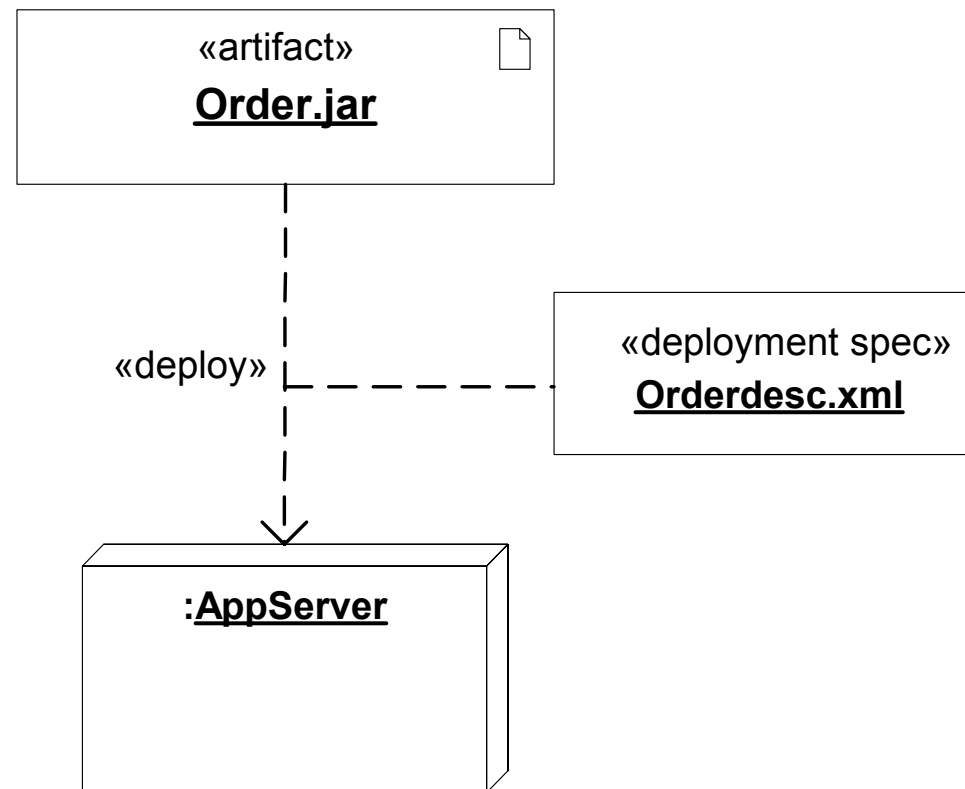
Two node types:

- Device
 - a physical computational resource with processing capability upon which artifacts may be deployed for execution.
- Execution environment
 - a node that offers an execution environment for specific types of components that are deployed on it in the form of executable artifacts.



Deployment specifications

- A deployment diagram can have a deployment specification



Manifestation

- Artifacts can now manifest any packageable element, not just components
- Manifestation (the concrete physical rendering of one or more model elements by an artifact) is shown by a dependency with keyword «manifest»

