The MICO

CORBA Components

Project

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Motivation for CORBA Components

- CORBA 2: A server . . .
  - is a monolithic program that
  - operates by Request and Response

⇒ But these are relicts from the batch-programming of mainframes!

- CORBA 3:
  - Lightweight, modular, reusable Components
  - Programming by assembly of existing Components

Definition of “Component”

- Existing definitions are not very helpful:

> *A Component is a self-contained unit of software code consisting of its own data and logic, with well-defined connections or interfaces exposed for communication.*

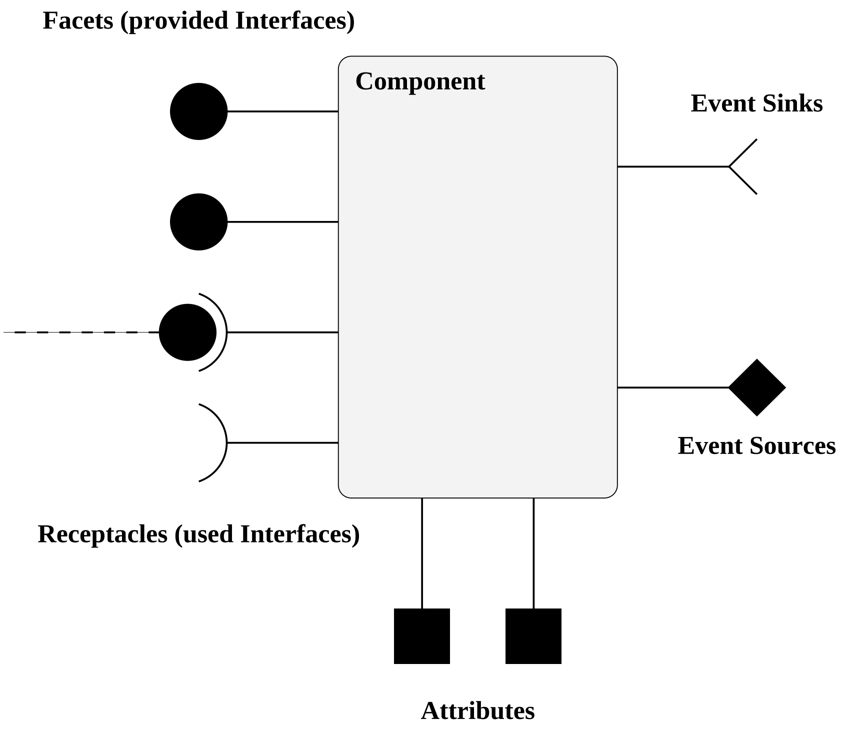
OMG Tutorial, Edward Cobb

> *A Component is an object.*

Arno Puder

- Why Components, if we already have objects?

External view of a CORBA Component



CORBA Components

- Not a new paradigm, but a specialization of objects
- Focus on the interfaces to other components
- Graphical handling of Components is possible:
  - Connecting facets to receptacles
  - Connecting event sources and event sinks
  - Configuring initial attributes

⇒ Goal: Application *assembly* rather than *development*

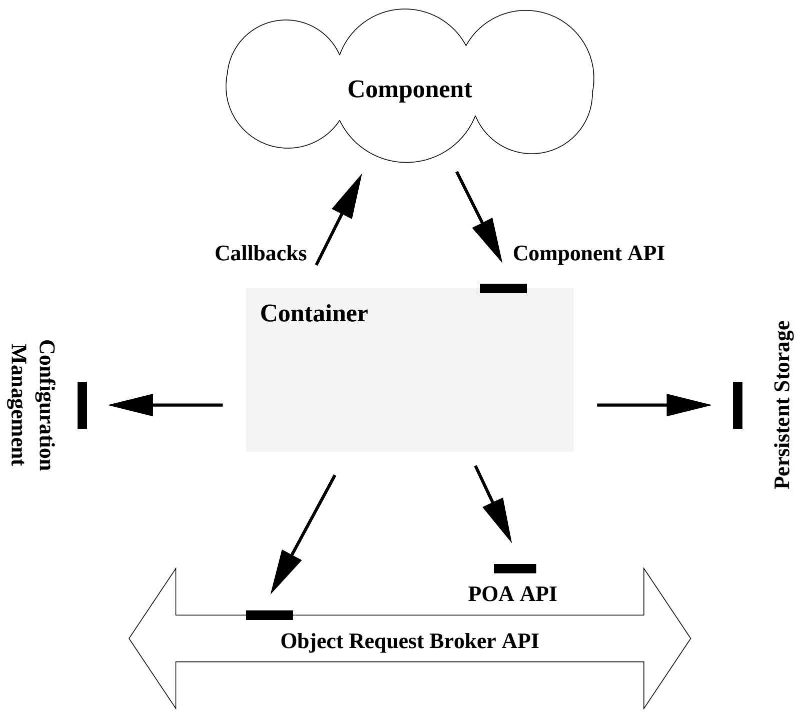
Container

- Each server is re-inventing lots of wheels:
  - Object reference management (via ORB and POA)
  - Persistence (via DBMS or PSS)
  - Configuration management (files)

⇒ Use a “Container” to automate these tasks.

- Pre-configured containers for common applications
- Component development becomes easier, components more lightweight

Container



Components Summary

The goal of CORBA Components is twofold:

- Easy assembly of reusable and configurable Components by expressing their interactions with other components

  ⇒ similar to Java Beans and ActiveX

- Easy implementation of persistent and transactional Components by introducing Containers

  ⇒ analogous to Enterprise Java Beans

- “Buzzword compliance”

Open Questions and Criticism

- “Vaporware,” originally planned for 1999
- Complex, as yet unverified specification
- Some parts still unfinished, such as CIDL and language mappings
- Third, non-orthogonal implementation strategy
- Is the ideal of application assembly ever possible?
  - Will component providers distribute their source code?
  - Non-source code Components are always bound to an ORB, but multiple ORBs per application are not desirable

The MICO CCM Project

- Sponsored by Alcatel
- Results will be included into the MICO distribution under normal GPL/LGPL license
- Support of Basic Components (EJB equivalent) by July 2001
- At the same time evaluation of Extended Components
- Feedback to the OMG if necessary