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ANSA Phase III

Jade Overview Presentation

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Abstract

The business problem addressed is the deployment of CORBA services on the Internet at a large scale.

The technical problem created by that business problem is engineering lightweight, portable and scalable CORBA client/server applications

The solution being offered is combining two widely successful and available technologies: The WWW and Java to develop CORBA lightweight downloadable clients using Java-enabled browsers.

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Jade Technical Overview

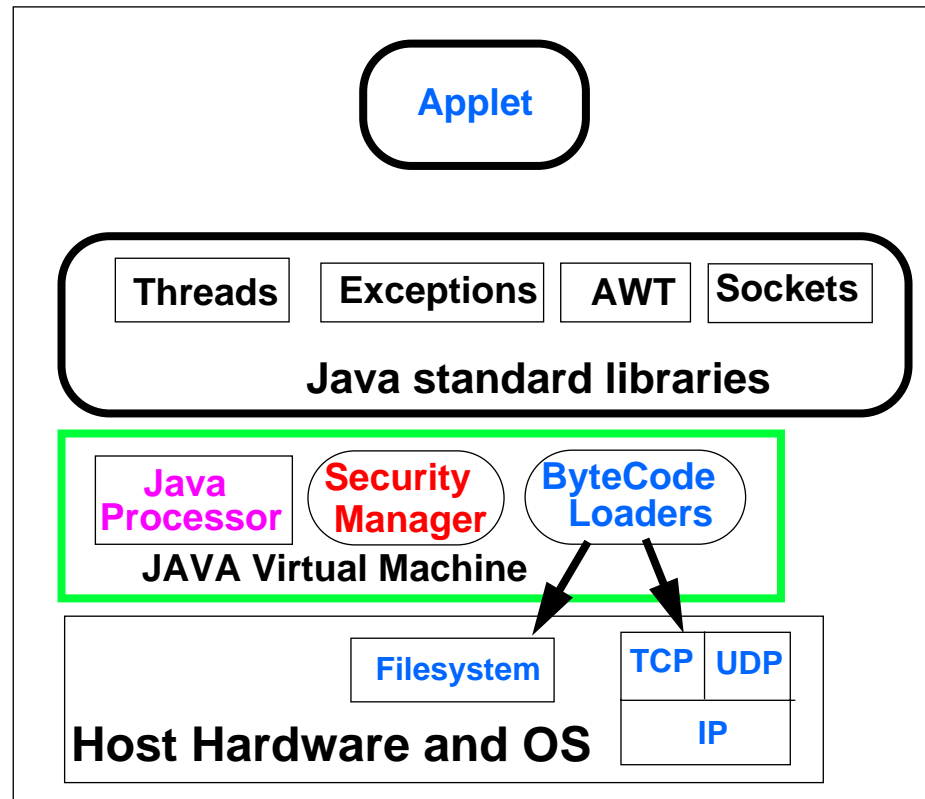
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Jade into Context

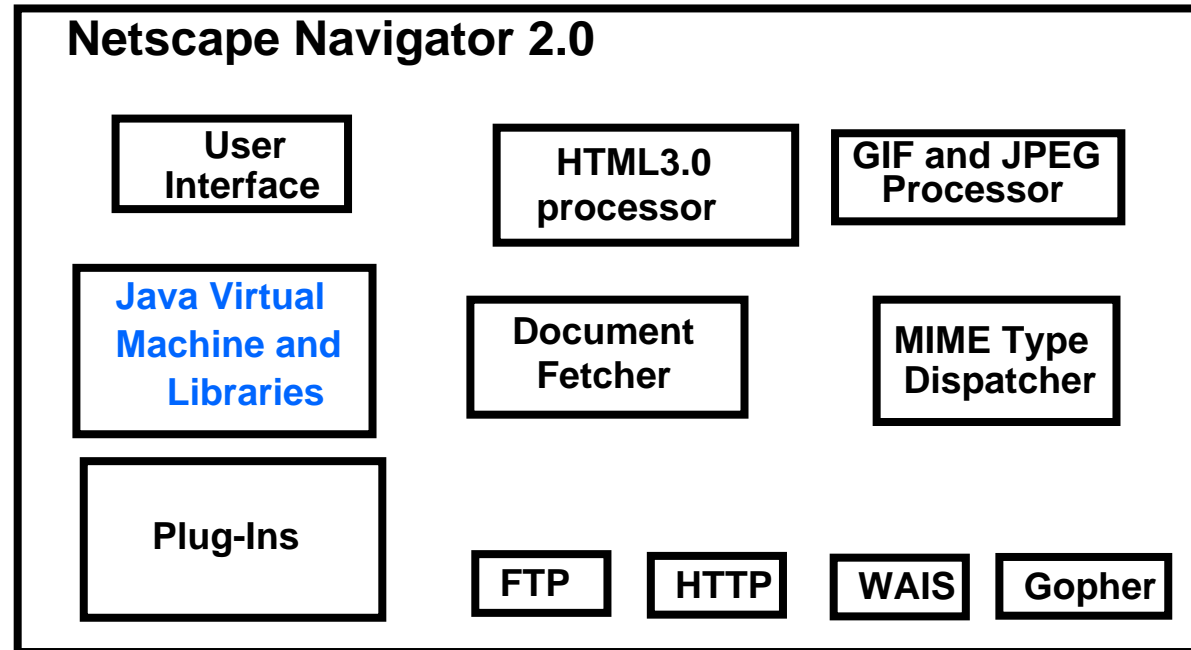
- **Based on the ANSA vision of the future in distributed computing:**
 - **Dynamic adaptability and flexibility is a key.**
 - **Code Mobility is important.**
 - **Security will be the concern of everyone.**
 - **Standardisation will occur by consensus and necessity.**
 - **Easiness of usage and timeliness will be more and more demanded.**

Java: The Network Virtual Machine





Browsers: The Operating Systems of 2000





Why is it appealing?

- **WWW Browsers are built around the network (and a wide-area one).**
 - Dissociated from the development environment.
 - Cheap, ubiquitous, and widely available technology.
 - Friendly and transparent to users (no installation or upgrade procedures).
 - Lightweight user infrastructure (PC, notebooks, PDAs, ...).

And it's going to improve further !



Large-Scale Service Deployment Requirements

- **Ubiquitous access to Services.**
- **Scalability and robustness.**
- **Easy configurability and adaptability.**
- **Early Attempts to use the web as a SAP: CGI and CCI interfaces.**
- **The WWW/Java is THE enabling technology for this scenario.**
 - **Auto-installable and loadable software.**
 - **Portability and security matters explicitly addressed.**
 - **Backed by heavyweights in the computer industry.**

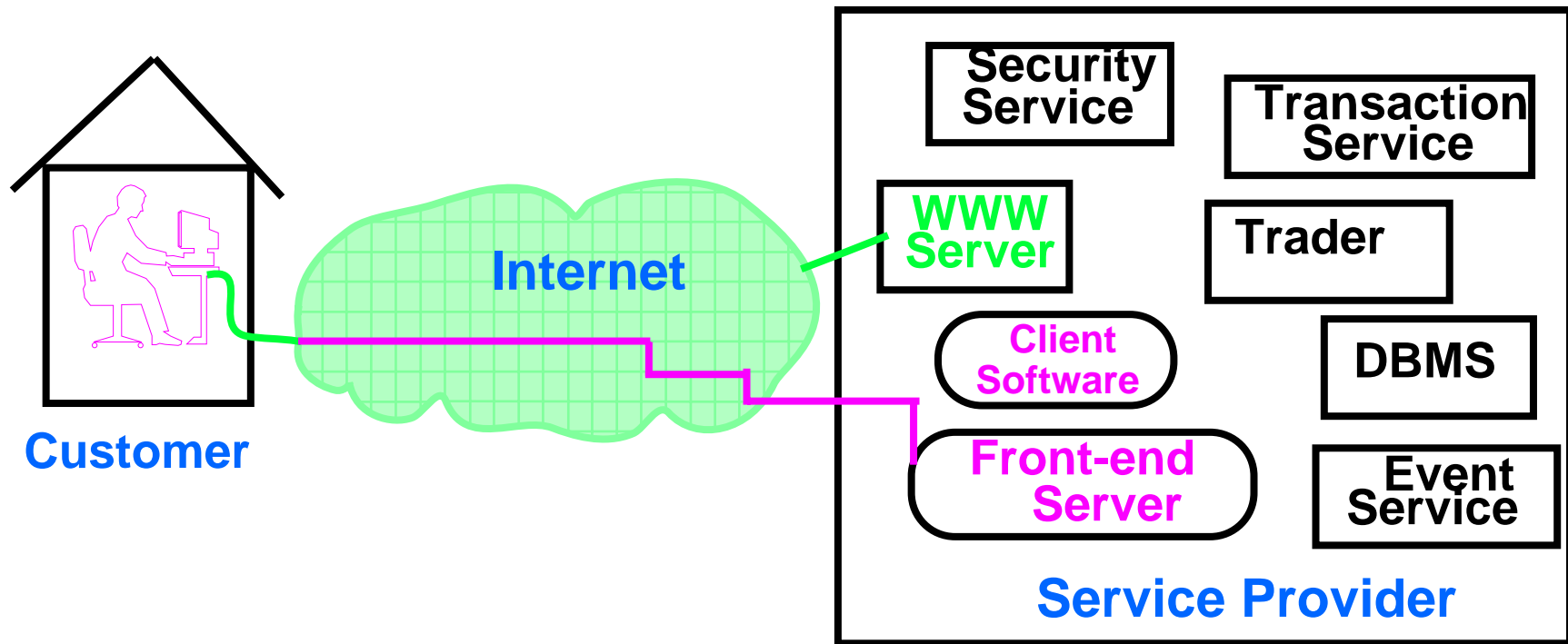


Engineering Client/Server Applications

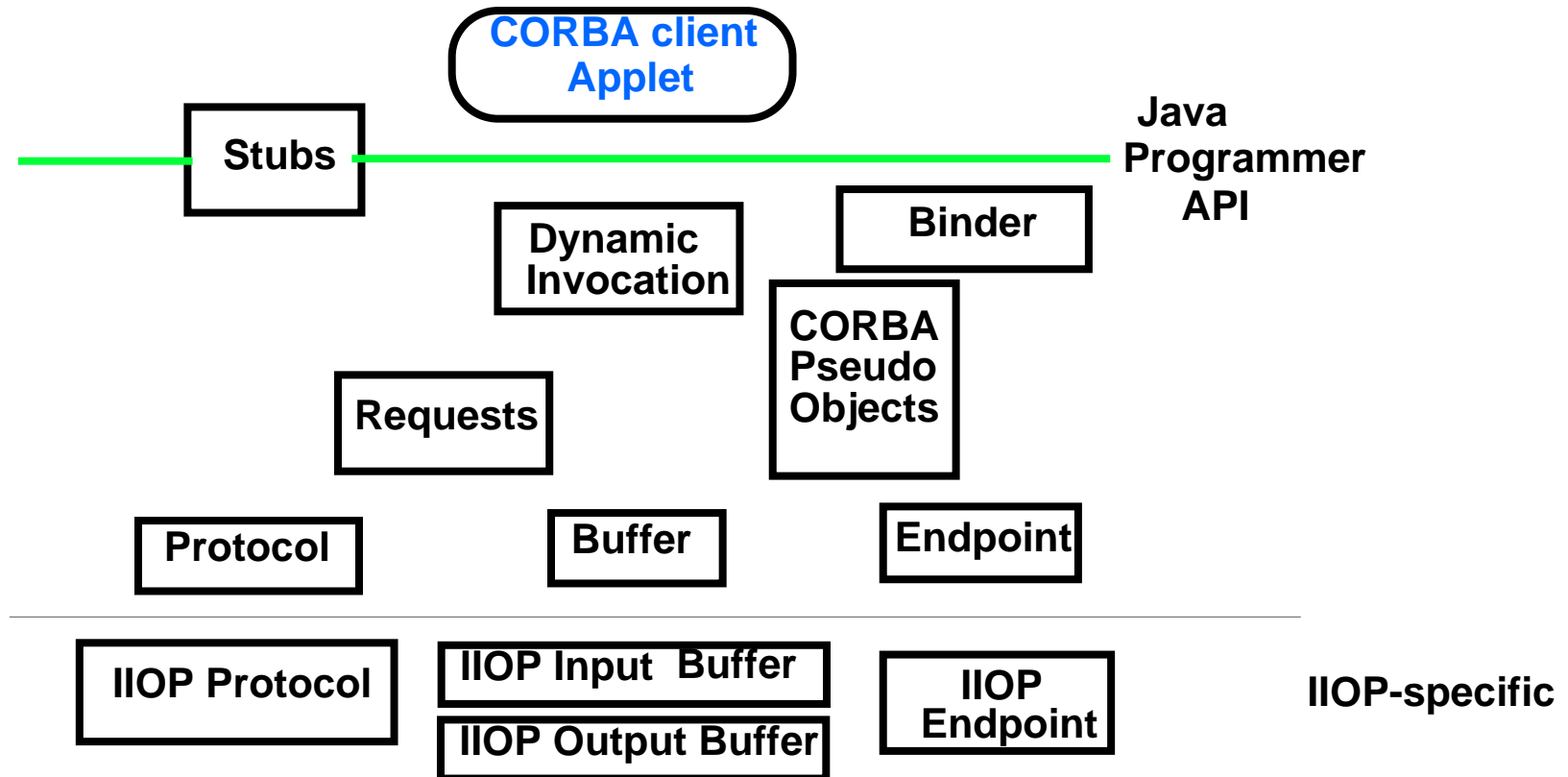
- **Engineering client/server applications is a notoriously difficult task.**
- **Development environments to help, are available in the market since many years: DCE, OLE, OpenDoc, CORBA ORBs, etc.**
- **OMG CORBA is gaining wide acceptance in the industry as a standard way for building and organising client/server applications.**
- **IOP is of particular interest in the context of the Internet and the WWW.**



Jade Client/Server Deployment Scenario



Jade Runtime Architecture





CORBA IDL to Java Mapping

- **OMG is considering a Sun RFP for a Java mapping.**
- **Had access to Sun's and Postmodern mapping documents (drafts).**
- **Chosen a natural and uniform Java mapping where possible.**
 - **Wrap Basic IDL types into Java Classes.**
 - **Each CORBA type is generated with methods to marshall/unmarshall itself in/from a buffer.**
 - **Straightforward support of CORBA in/out parameters in Java.**
- **The Jade Stub Generator is our next item on the list.**



Architectural Benefits

- **Jade is neatly modular.**
- **Higher ORB layers insulated from protocol details (e.g GIOP CDR).**
- **Natural mapping allows for rapid prototyping.**
- **Uniform coding of CORBA pseudo-objects and CORBA application objects.**