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Training

ANSAwise - Welcome [Bellcore, to (5-day) Building Applications with Distributed Objects]

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Abstract

This is the ‘welcome speech’ to the course “Building Applications with Distributed Objects”. It gives the course roadmap and timetable.

This presentation is for the course as customized for Bellcore. It consists of modules from Understanding Distributed Systems Architecture, Building Applications with Distributed Objects, Introduction to CORBA, and CORBA in Depth. The focus is on CORBA. There is some coverage of DCE; ODP and ANSAware are mentioned only briefly.

APM.1740.01 **Approved** 4th April 1996

Briefing Note

Distribution:
Supersedes:
Superseded by:

Welcome to

Building Applications with Distributed Objects

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About this course

- This is an introduction to open distributed systems technology
  - focusing on the CORBA specifications from the Object Management Group
- It explains the main issues, the problems and extent of current solutions, and the terminology you'll need to grasp

Course Timetable - Day 1

Module
Welcome
Distributed Object Systems in Action
Objects in Distributed Systems
Break
Templates for Distributed Applications
Lunch
Introduction to the WWW and Java
Exercise: Sports Event Administration
Break
Introduction to CORBA and OMG
Close

Course Timetable - Day 2

Module
Comparing CORBA and DCE
Remote Procedure Call in Distributed Systems
Break
Specifying Services in CORBA IDL
Lunch
CORBA Directory Services
Trading and Federation
Break
Integrating Legacy Systems
Close

Course Timetable - Day 3

Module
The CORBA Object Lifecycle
Designing Applications with CORBA
Break
Persistent Data Storage with CORBA
Lunch
Exercise: Intelligent Network Freephone
CORBA Interoperability
Break
CORBA Futures
Close

Course Timetable - Day 4

Module
Dependability in Open Distributed Systems
Transactions in Distributed Systems
Break
CORBA Concurrency and Transactions
Lunch
Management of Distributed Networks
Engineering Distributed Systems
Break
CORBA Event Management and Message Queuing
Close

Course Timetable - Day 5

Module
Replication in Distributed Systems
Exercise: Airport Shuttle System
Break
CORBA in the Real World
Lunch
Multimedia in Distributed Systems
Break
The Future of Distributed Systems
Course Roundup
Close

Day 1 - morning

- **Distributed Object Systems in Action**
  - who uses distributed object technology in telecommunications?
  - what are the benefits?
- **Objects in Distributed Systems**
  - what are the characteristics of objects?
  - how do these characteristics differ in distributed systems?
  - what new concepts arise?
- **Templates for Distributed Applications**
  - what approaches are there for partitioning client/server applications into components?
  - what are the strengths and weaknesses of each approach?

Day 1 - afternoon

- **Introduction to the World Wide Web and Java**
  - what are the key components of the WWW?
  - how are standards and technologies evolving?
  - what effect will this have on electronic businesses?
- **Exercise: Sports Event Administration**
- **Introduction to CORBA and the OMG**
  - what is the Object Management Group's Common Object Request Broker Architecture?
  - what are the components of the CORBA Object Management Architecture?
  - how is interoperability achieved in CORBA?

Day 2 - morning

- **Comparing CORBA and DCE**
  - what are the differences between the OMG's CORBA and the OSF's DCE?
  - what are the similarities?
  - is it viable to use both of them?
- **Remote Procedure Call in Distributed Systems**
  - what is Remote Procedure Call and how does it work?
  - what are the different forms of Remote Procedure Call?
  - what are the performance implications?
- **Specifying Services in CORBA IDL**
  - what is the CORBA Interface Definition Language?
  - how is CORBA IDL used?
  - what are the basic features of CORBA IDL?

Day 2 - afternoon

- **CORBA Directory Services**
  - how do clients find servers in distributed systems?
  - what facilities do CORBA Object Services provide?
- **Trading and Federation**
  - how can clients find servers that provide the services that they need?
  - what criteria can be used to guide this process?
  - what are the implications of connecting together distributed systems?
- **Integrating Legacy Systems**
  - how can past, present, and future legacy problems be handled?
  - how does federation help build systems for flexibility?

Day 3 - morning

- **The CORBA Object Lifecycle**
  - how are objects created and destroyed in CORBA?
  - how can closely-related services simplify designs?
- **Designing Applications with CORBA**
  - what standard interfaces are available to applications?
  - what must be considered when designing object implementations?
  - how should interfaces between objects be determined?
- **Exercise: Intelligent Network Freephone**

Day 3 - afternoon

- CORBA Interoperability
  - what are the implications of interoperability for interconnecting ORBs?
  - how does CORBA 2 support multiple protocols?
  - what are the challenges involved in implementing interoperability?
- Persistent Data Storage with CORBA
  - how can database technology be integrated with CORBA?
  - what does the CORBA Persistent Object service offer?
  - which other standards and interfaces are relevant?
- CORBA Futures
  - what work is in progress in the Object Management Group?
  - where do Microsoft's offerings fit in?
  - what is likely to happen in the longer term?

Day 4 - morning

- **Dependability in Open Distributed Systems**
  - why is dependability more difficult to achieve in distributed systems?
  - what techniques are there for dealing with this?
- **Transactions in Distributed Systems**
  - how do database transactions integrate with distributed systems?
  - what standards are there for transaction services?
  - how does the CORBA Transaction service relate to these standards?
- **CORBA Concurrency and Transactions**
  - what the basic principles of concurrency?
  - what the implications of threads (lightweight processes)?
  - what facilities does the CORBA Concurrency Control service provide?

Day 4 - afternoon

- **Engineering Distributed Systems**
  - what trade-offs are necessary in distributed systems?
  - what techniques and mechanisms are available to help achieve these?
- **Management of Distributed Networks**
  - what are the key open management frameworks?
  - what facilities do these provide?
  - how can these frameworks assist the management of applications?
- **CORBA Event Management and Message Queueing**
  - how does CORBA deal with asynchronous events?
  - does queued messaging have a place in distributed systems?

Day 5 - morning

- **Replication in Distributed Systems**
  - what are the fundamental challenges for replication technology?
  - what has experience taught us?
  - how will replication technology be integrated with CORBA?
- **Exercise: Airport Shuttle System**
- **CORBA in the Real World**
  - who is shipping CORBA products?
  - what are some of their strengths and weaknesses?
  - what pitfalls are there to avoid?

Day 5 - afternoon

- **Multimedia in Distributed Systems**
  - what new challenges are posed by distributed multimedia systems?
  - how will CORBA evolve to meet these challenges?
  - what other facilities are needed in networks and operating systems?
- **The Future of Distributed Systems**
  - what are the key developments now happening?
  - how will these affect businesses, and their systems?
  - how will the role of the Internet change?

Enjoy the course!

- **... and ask questions whenever you wish**