
Application
Center 2000
Airlift

Interoperability and Reliability

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Microsoft Application Center 2000

Agenda

- Microsoft® Application Center Interoperability
  - Goals
  - Approach
  - Major products and technologies
  - Tips and tricks
- Application Center Reliability
  - Stress tests to prove reliability
  - Office Stress
  - Lab stress – good farms
  - Lab stress – bad farms

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Interoperability
Why interoperability

- Interoperability is a key requirement for us to be successful
- Application Center is some kind extension of the platform
- We share the same market segment and the same customers with the other products
- Don’t break the user code!

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Interoperability
Goals

- To prove interoperability with:
  - Products of Microsoft .NET Enterprise servers group
  - Microsoft technologies
  - Third party products
- To go through customer configurations and scenarios

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Interoperability
Approach

- Setup order scenarios
- Environment & requirements (hotfixes, products) evaluation
- Functionality (feature by feature approach)
- Upgrade/transition
- Build complex end-to-end scenarios

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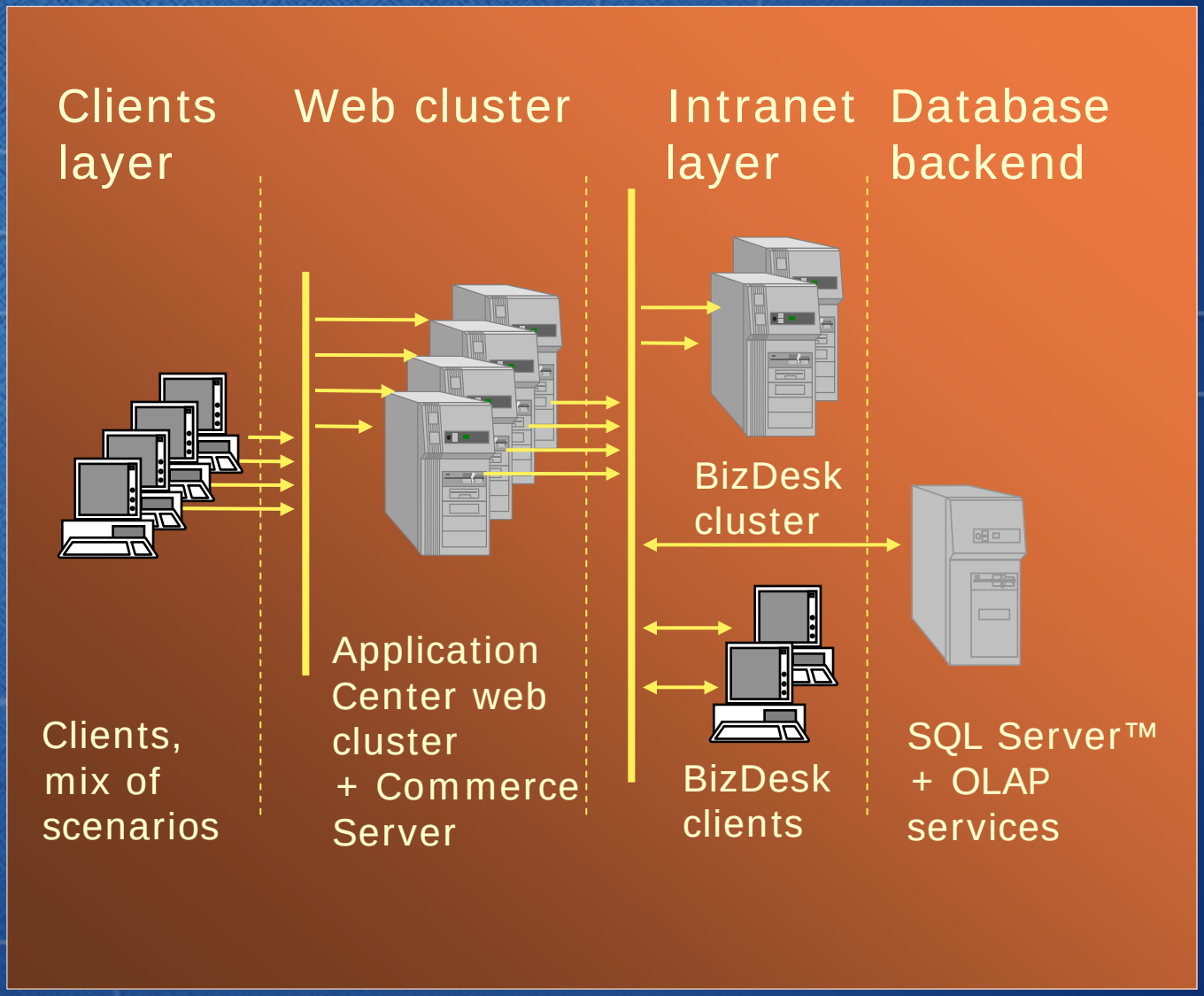
Interoperability

.NET Enterprise

- Commerce Server 2000
- BizTalk™ Server 2000
- Host Integration Server 2000
- Exchange 2000
- Site Server 3.0 and Commerce



Interoperability

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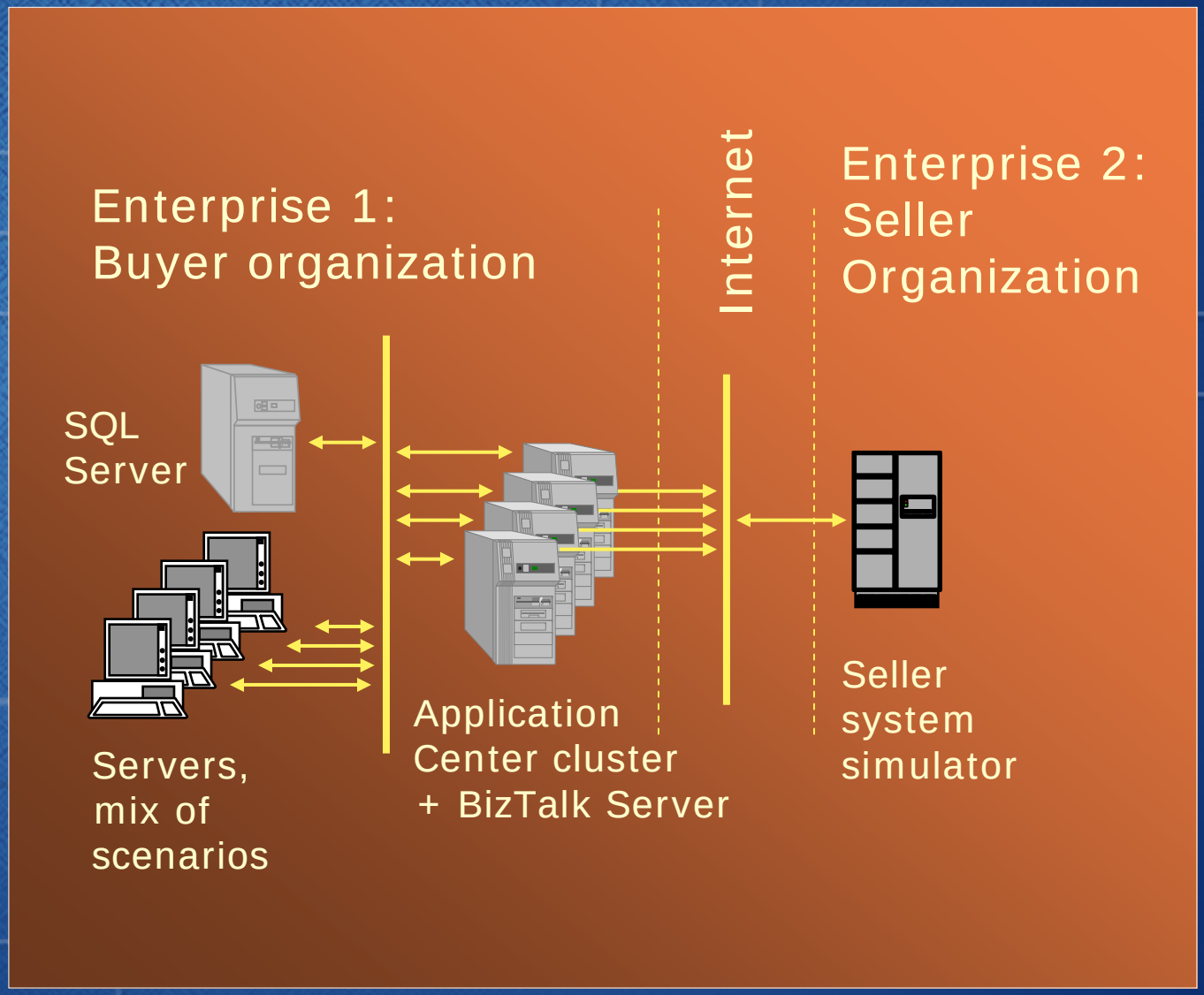

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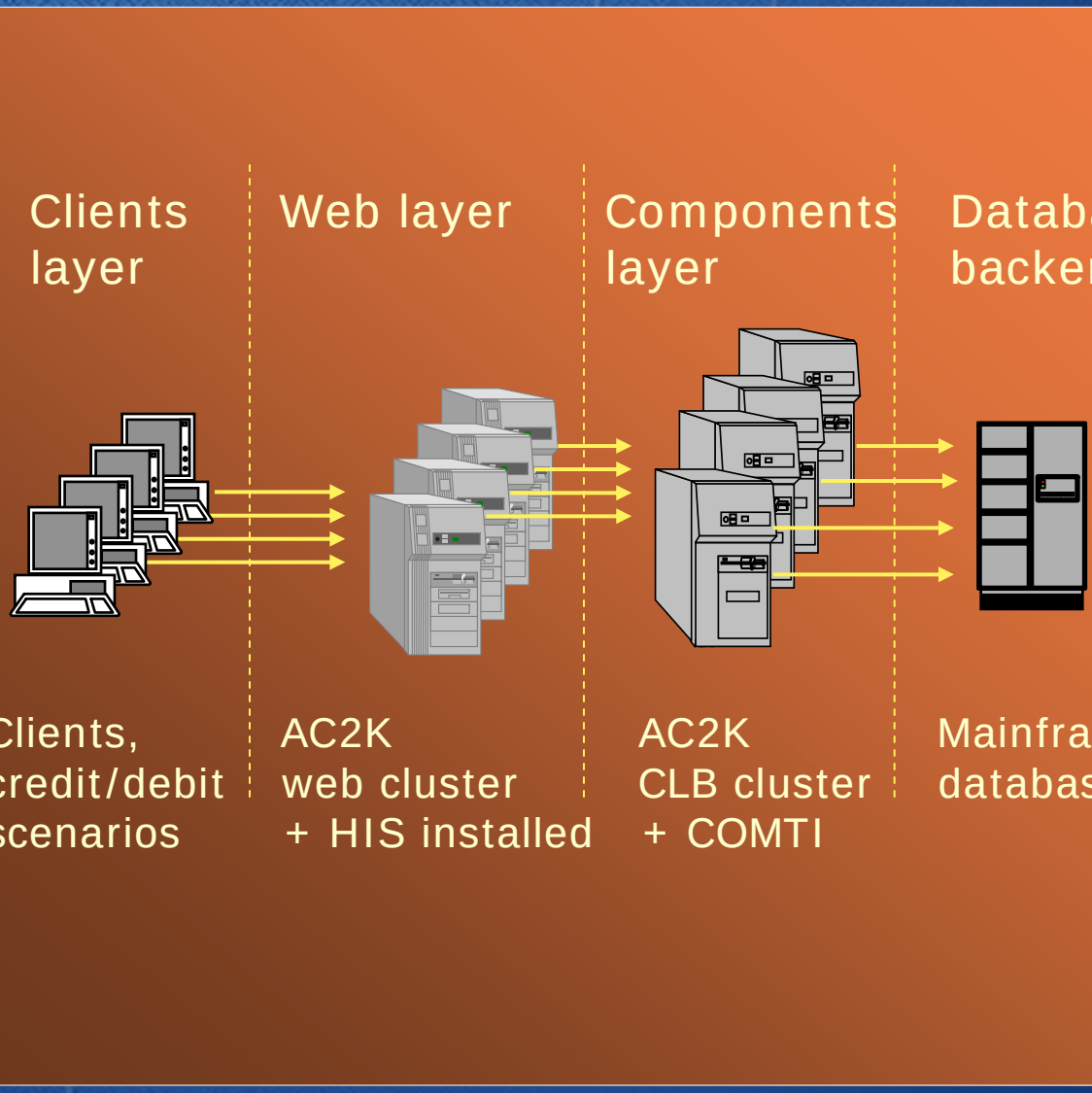

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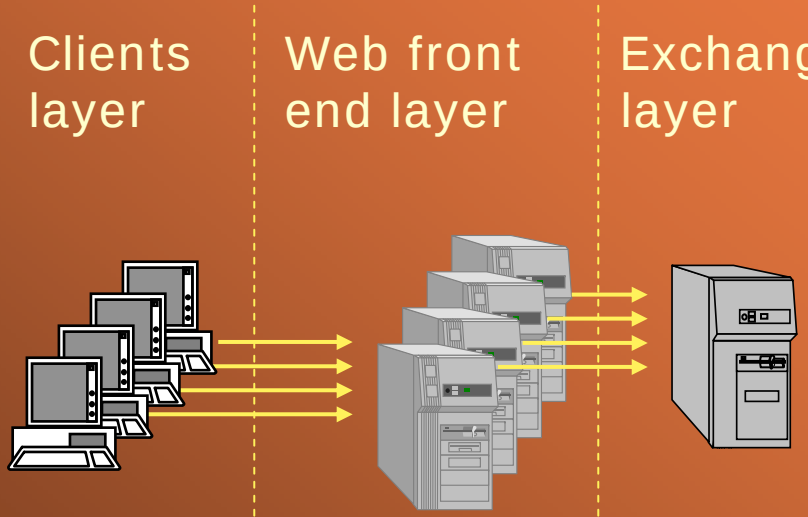

Interoperability

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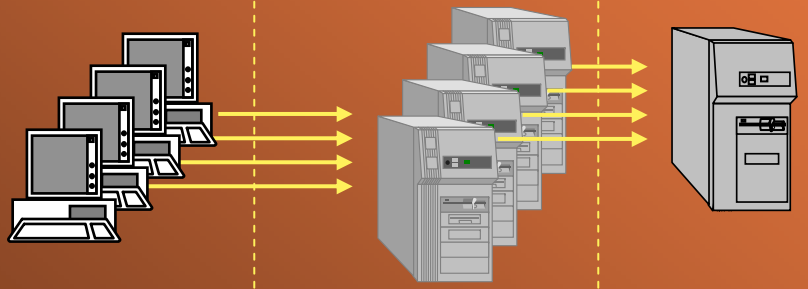


Clients layer	Web layer	Database layer
Clients, mix of scenarios	Application Center web cluster + Site Server 3.0 installed	SQL server Database + OLAP services installed

Interoperability

Other products

SQL Server 7.0/2000

Oracle Server 8.0

FrontPage®

Cold Fusion

- **Scenarios:**
  - Coexisting of the web cluster boxes
  - Connectivity with the backend
- **Results:**
  - SQL Server 7.0/2000 can be installed on the web cluster machines
  - No breaks in connectivity with the database backend
  - Potential problems with the user code due to the newer MDAC

Interoperability

Other products

SQL Server 7.0/2000

Oracle Server 8.0

FrontPage

Cold Fusion

- **Scenario:**
  - Oracle client installed on the web cluster boxes
  - Connectivity with the backend Oracle server
  - Credit/debit transactions
- **Results:**
  - Oracle client can coexist with Application Center
  - No breaks in connectivity with the database backend

Interoperability

Other products

SQL Server 7.0/2000

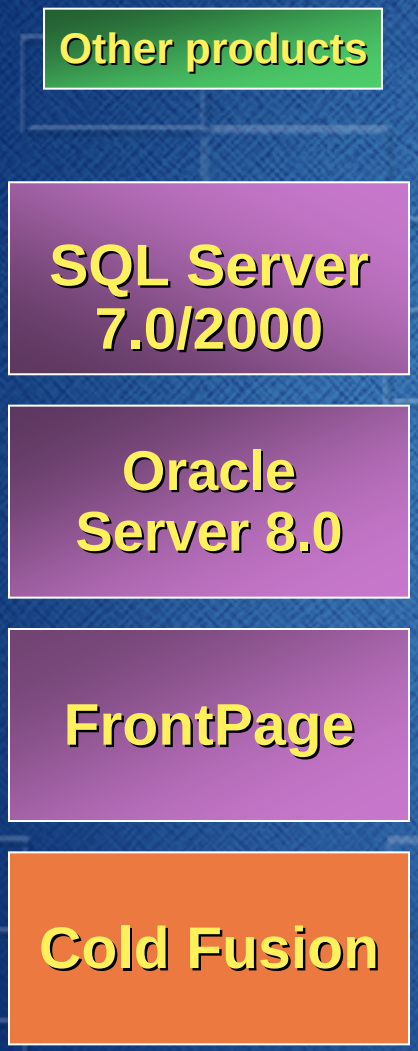
Oracle Server 8.0

FrontPage

Cold Fusion

- Scenario:
  - Deployment of new content to the controller, member and virtual IP
- Issue: Using local account causes “Access denied” in some cases
- Results/resolutions:
  - No problems deploying new web content to the controller, member and using virtual IP
  - Use domain based accounts

Interoperability



- **Configuration:**
  - Application Center web cluster with Cold Fusing Server installed
- **Scenarios:**
  - Open CFML pages
  - Access database backend from CFML
- **Results:**
  - Install Cold Fusion first, then Application Center
  - Cold Fusing CFML engine runs successfully in AC cluster environment
  - Request Forwarding should be ON for preserving the state

Interoperability
Tips and tricks for clustering your app

Evaluation:

- **Define the target configuration:**
  - **single layer web cluster or**
  - **two layer configuration (web and component cluster)**
- **Evaluate compatibility with existing systems/procedures for:**
  - **Deployment, monitoring, load balancing**
- **How cluster aware is the software you use:**
  - **Do not use local configuration files**
  - **Do not keep the state locally**
  - **Do not use local accounts**
  - **Store the data on external database server**
- **Can all COM components be registered as COM+ components?**

Interoperability
Tips and tricks for clustering your app

Transition:

- First separate the database backend!
- Verify database backend connectivity with AC installed (MDAC!)
- Create single node cluster
- Which are the components that have to be replicated
  - Web sites
  - COM/COM+ components
  - Registry settings
  - Files and directories
- Create AC application, register the resources
- Start to add members
- Test! Test! Test!

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Interoperability
Results

- No open issues with Microsoft .NET Enterprise servers
- Easy workarounds for some known caveats
- Set of tips how to use the products in AC cluster environment
- More info? -> Chapter 14 of Application Center Resource Kit

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Reliability
Why reliability

- Reliability? Availability? What is this?
- This is a key requirement for 24/7 working software
- Application Center increases the reliability of web sites, but should be reliable itself
- The way to prove reliability is stress testing
- Operational profiles:
  - File content
  - Web load/scenarios
  - Exploitation cycle

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Reliability
Stress tests to prove the reliability

- **Office stress**
  - Heavy load, lack of resources
  - High frequency of normal scenarios
  - Large configurations/web sites/components
  - Simultaneous execution
- **Lab stress – good farms**
  - To model the real exploitation cycle
  - To compress the time exactly 15 times
- **Lab stress – bad farms**
  - To test the robustness of the product
  - To prove the correct behavior in case of failures
  - Failure injectors: CPU, memory, disk, net Off/On, process killer, services stopper

Reliability
Stress tests results

- 600+ bugs found, investigated and fixed
- 650,000 hours of office stress for the shipping cycle
- 200+ machines in office stress before shipping
- 250,000 hours of lab stress for the shipping cycle
- Proven reliability of Application Center

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