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Building Competitive Business Clusters

Building ArsDigita Portals #2

Frank Bergmann <fbergmann@competitiveness.com>

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    - Build a First ACS Portal
    - What Went Wrong?
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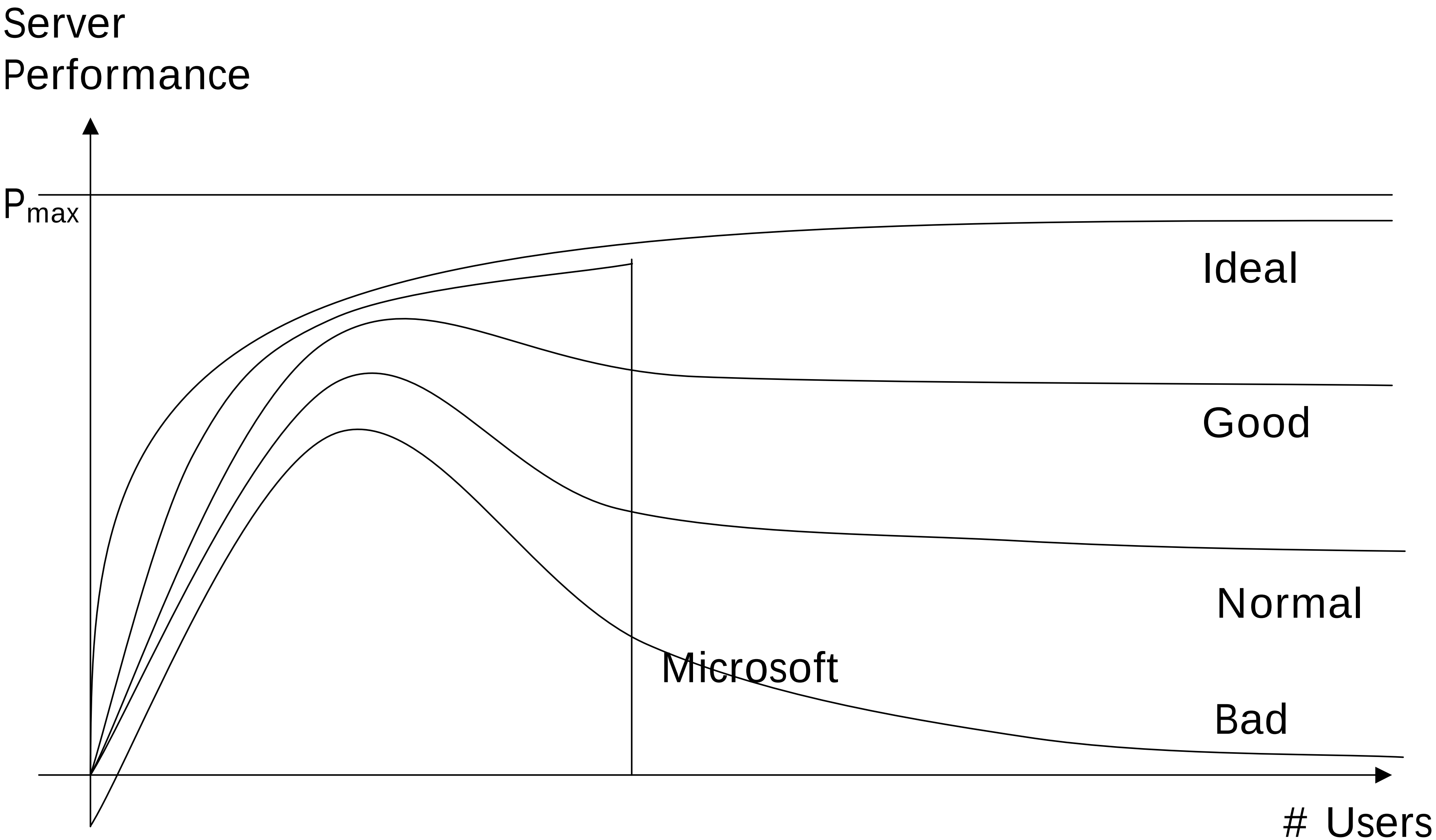
    - Build Custom Modules
    - Make Money

Recap: ACS Architecture

- Reliable Web Services
- AOLServer
- AOLServer against Apache
- Connection Pooling
- ACS Application Architecture

Reliable Web Services: Server Performance



Reliable Web Services: Problems

- Behaviour under heavy load
  - Trashing
  - Memory overflow
  - Infinitely growing queues
- Thread programming
  - Forgot to lock critical regions
  - Deadlocks
  - Too many/too few threads
- Continuus running processes
  - Memory leeks
  - Maintenance at runtime

http://www.arsdigita.com/asj/arsdigita-server-architecture

Philip Greenspun:

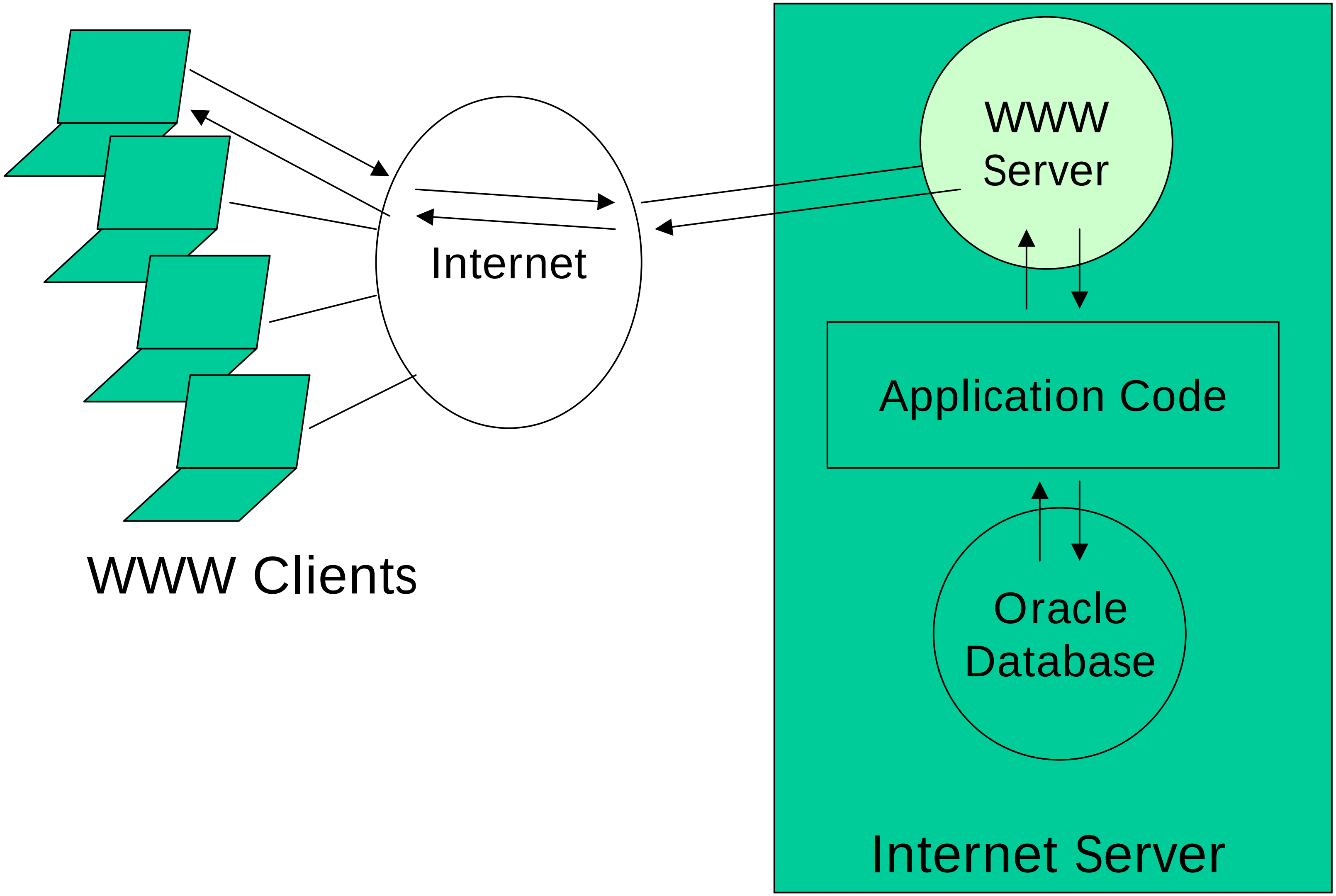
- „Leave the hard stuff of concurrency control and transaction atomicity to a standard relational database management system (RDBMS)“
- „Develop pages in a safe interpreted language“

=>

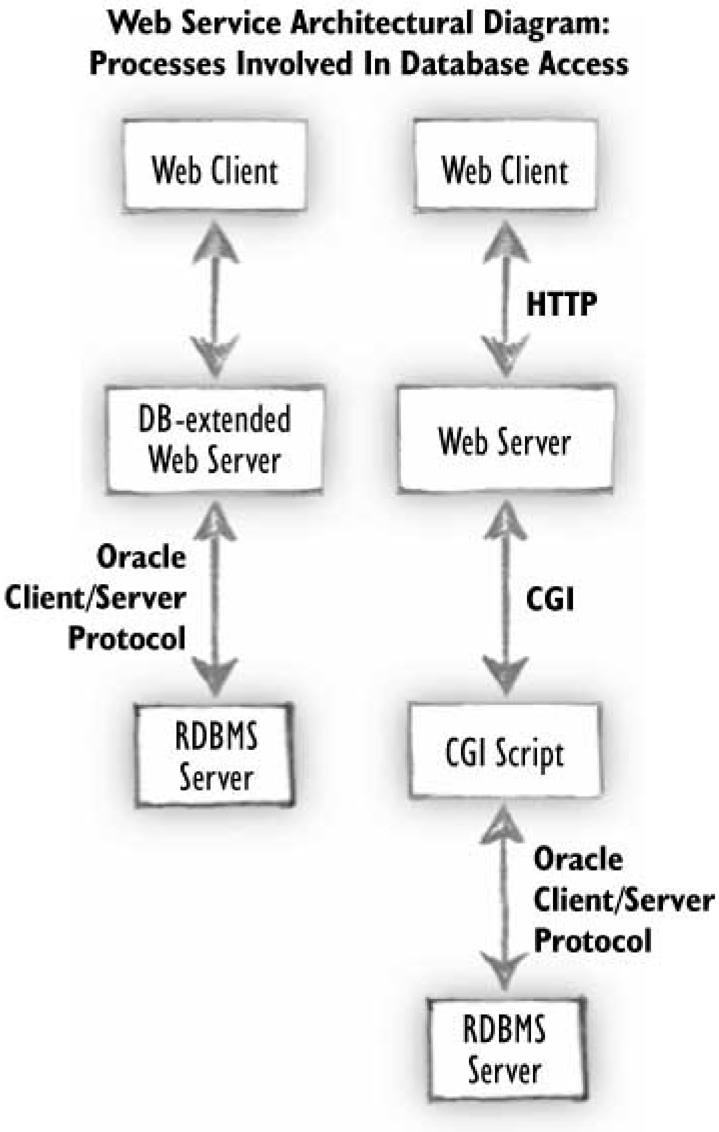
- It´s good to know about threads, but the more you know, the more you rely on working solutions
- Systems under heavy load behave very differently. For example, WindowsNT & IIS still run out of memory under heavy load

http://www.arsdigita.com/asj/arsdigita-server-architecture

AOLServer: Context



AOLServer


Web Service Architectural Diagram:
Processes Involved In Database Access
Web Client
Web Client
HTTP
DB-extended Web Server
Web Server
Oracle Client/Server Protocol
CGI
RDBMS Server
CGI Script
Oracle Client/Server Protocol
RDBMS Server

Traditional CGI architecture. 20 requests per second for database-backed pages = 40 new programs started per second.

AOLserver architecture. Database connection-pooling: 20 requests per second for database-backed pages = 0 new programs started per second

AOLServer against Apache

Apache

- Maintained by Apache Group
- Modular
- Feature rich: Virtual Servers, fancy autentication, …
- DB driver part of CGI program

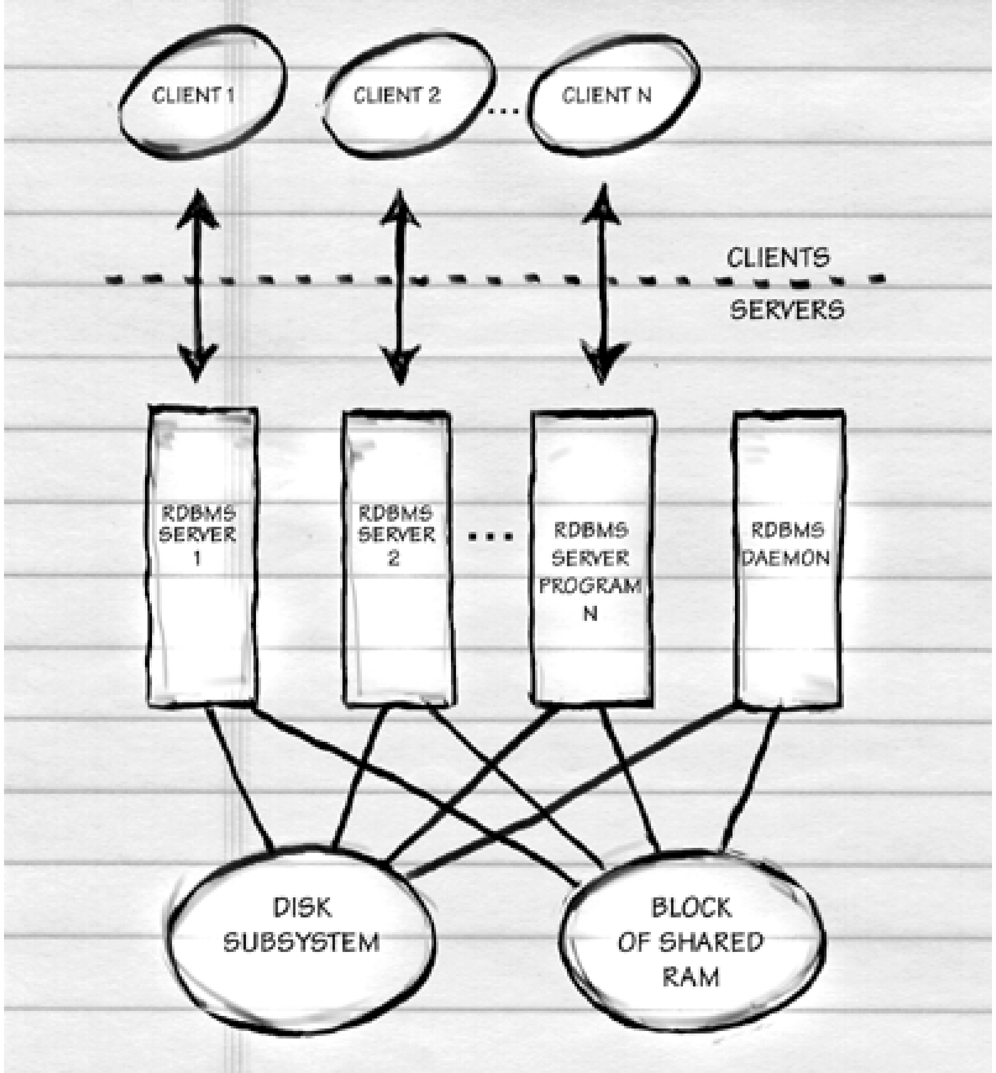
AOLServer

- Maintained by AOL
- Monolithic
- Designed for one purpose: being fast
- DB driver part of server

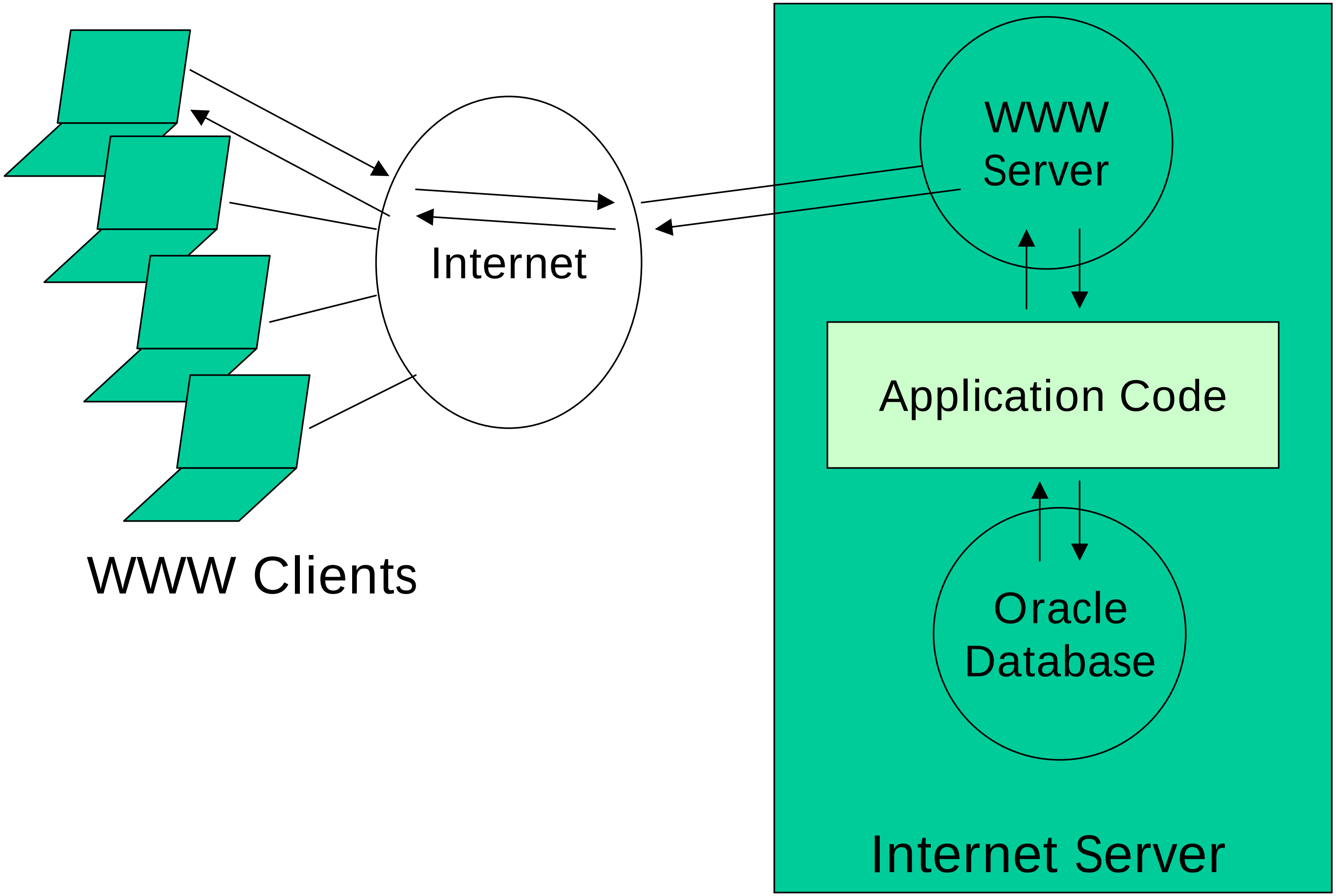
http://www.arsdigita.com/asj/aolserver/introduction-1.html

Connection Pooling

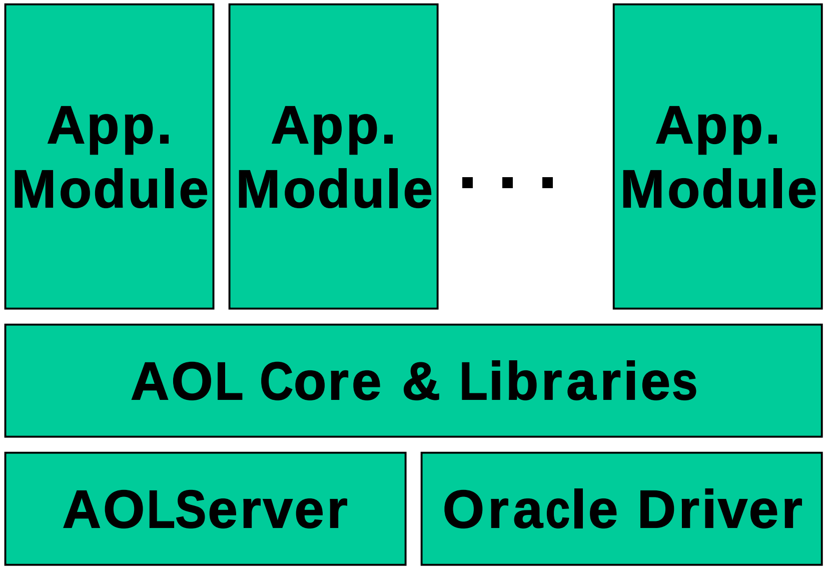
- Normally, Oracle spawns a new thread/process for each incomming connection
- Connection setup is slow.
- A limited number of connections reduces the maximum workload.



ArsDigita Application: Context



ArsDigita Application



Modules consist of:

- TCL code for dynamic pages
- SQL code for DB queries
- SQL Code to create data model

=> See 2nd part of the talk

Disadvantages

- Disadvantages:
  - It´s not Java
  - Not very well suited to deal with XML
  - Not very well suited to deal with complex business logic.

http://www.arsdigita.com/asj/arsdigita-server-architecture

Summary

- ACS Architecture designed for being:
  - on the Web
  - fast
  - reliable
  - easy to learn/program

- But:
  - Oracle 8i and Linux need a SysAdmin and
  - I would program a math problem in Java/C++

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How to Build Your Portal?

- Define the Project
- Setup an ACS Server
- Build a First ACS Portal
- What Went Wrong?
- Form Your Community
- Build Custom Modules
- Make Money

Driving School Portal

Case Study

- Idea
- Target Group
- Why Join the Portal?
- Additional Contents
- Which ACS Modules?
- Marketing
- Make Money

Setup an ACS Server

What to do?	How to do?
1. Learn some Linux	Install Linux at home
2. Learn TCL	ACS problem set 1
3. Learn SQL	ACS problem sets 1 & 2
4. Get a Linux server	PC with 128MByte RAM
5. Install ArsDigita	Read online doku
6. Install Oracle	Read online doku

Get together with some friends who have done it already

Build a First ACS Portal

1. Get an idea of what you want to build
2. Define a web design
3. Configure some existing modules
4. Make some small changes to the modules
5. See why nobody is using your portal
6. GOTO 1
   or continue with next slide

What Went Wrong?

- “Nobody likes to enter an empty bar” effect:
  - Create artificial “noise”
  - Ask your friends to participate
  - Actively form your community

- Application modules doesn’t 100% fit your needs:
  - Analyze in detail user behavior (ask your girlfriend/boyfriend)
  - Build custom modules

Form Your Community

What to do?	How to do?
1. Setup an initial community	▪ Tell your friends to participate
2. Make people stay in your portal	▪ Get killer content ▪ Design apps for people to stay ▪ Make “Strategic Partnerships” ▪ Import contents from other sites
3. Attract/maintain users	▪ Assure high quality/usability ▪ Remove old/bad contents

Build Custom Modules

1. Get an idea of what you want to build
2. Define a web design
3. Make a “Wemo” (=Workflow Demo) for new modules
   - Present the Wemo to friends & family.
   - The Wemo will save a lot of time during development.
4. Configure some exiting modules
5. Make an interaction model
6. Make a data model.
7. Write the TCL pages
8. Test the system together with some friends
9. See why nobody is using your portal
10. GOTO 1

Make Money

- Making money with a portal today is nearly impossible.
- You can try to sell your portals to people who still believe they can make money…

6. Related Literature

- Ars Digita: http://www.arsdigita.com/
- TCCG: http://www.competitiveness.com/
- ACS Documentation: http://www.arsdigita.com/doc/
- The Online Bible: http://www.arsdigita.com/books/panda/