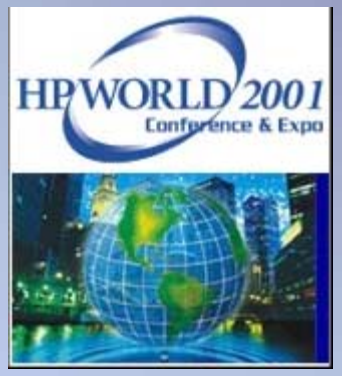
Title: **Building and Evolving an HPe3000 Web Application: Session: 6221**

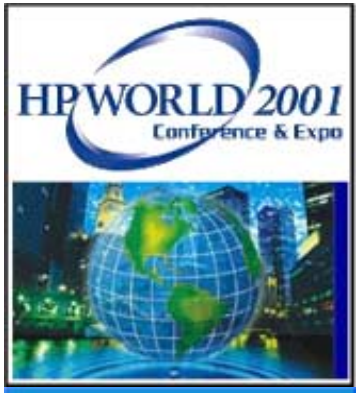


Author: Steve Klump
Director, Internet Services

Company: Orion Group Software Engineers
5770 Nimtz Parkway
South Bend, IN 46628

Phone: (219) 233-3401

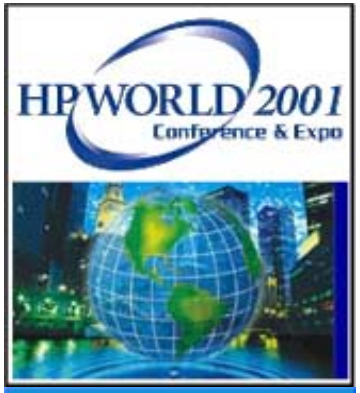
E-mail: sklump@ogse.com



What We'll Cover Today

- Case study Overview
- HPe3000 to Web Connectivity
- The Web Front End
- Lessons Learned
- Live, Connected Examples
- Questions

interex
Shared Knowledge
Shared Power

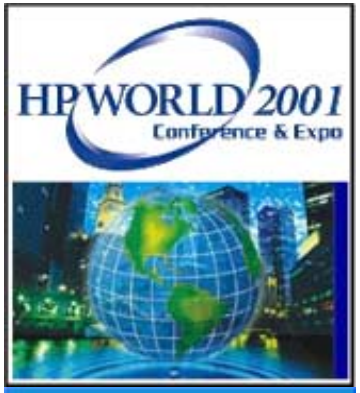


Our Case in Point:

Bryan
EQUIPMENT
SALES

- Biggest Distributor of Stihl power equip. in the United States.
- 80,000 sq. ft. office & warehouse space.

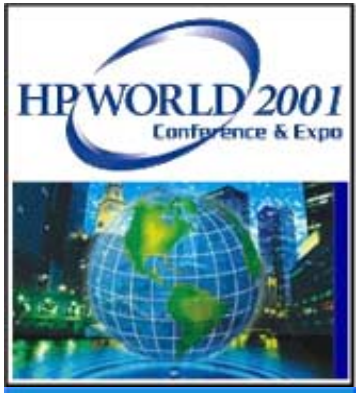
interex
Shared Knowledge
Shared Power



Bryan
EQUIPMENT
SALES

- Serve a 6 state area
- Approximately 1200 Customers
- 70 Million in Sales - 210,000 Stihl Units

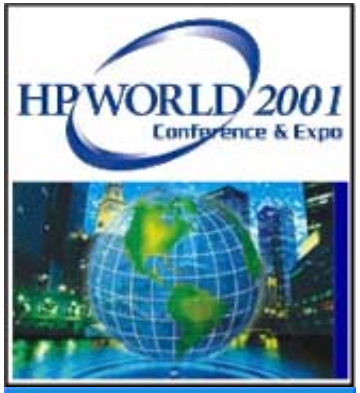
interex
Shared Knowledge
Shared Power



Why A Web Application?

- Offer better service to their 1200 dealer base.
- Reduce routine calls to customer service.
- Reduce redundant data production and updating.
- Exploit the power of the HPe3000 in terms of data and performance.

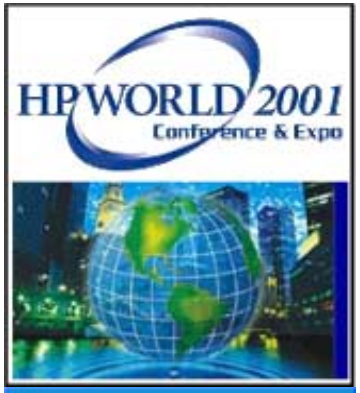
interex
Shared Knowledge
Shared Power



What's Included:

- Product Information
  - **Save on Customer Service work**
  - **24 x 7 information**
- Invoice Lookup/Display
  - **Use as "Packing List"**
  - **Quicker turn around**
- Technical Service Bulletins
  - **Save on distribution costs/work**
  - **Available more quickly to customers**

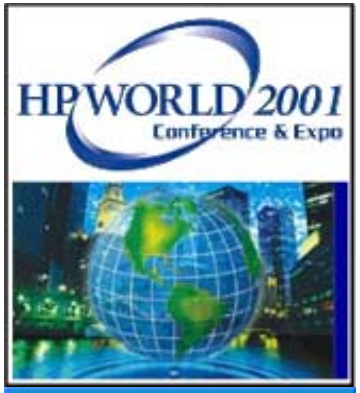
interex
Shared Knowledge
Shared Power



What's Included (cont.)

- Warranty Claims
  - **Quicker turnaround to Customer**
  - **Save on processing costs/work**
  - **VERY HAPPY CUSTOMERS!**
- Co-op Claims
  - **Quicker turnaround to Customer**
  - **Save on Processing costs/work**
- Take Orders Online

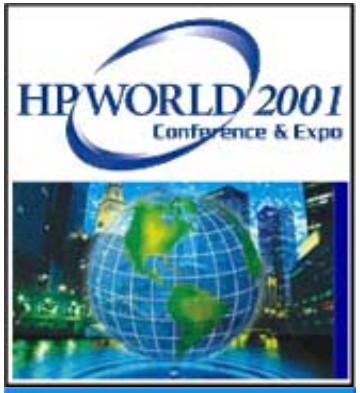
interex
Shared Knowledge
Shared Power



The Technical Environment

- HPe3000 937
- MCBA accounting/distribution software (heavily customized)
- Omnidex enhanced IMAGE databases
- NT-based warehouse system - using data from HPe3000
- NT-based sales automation package - using data from HPe3000

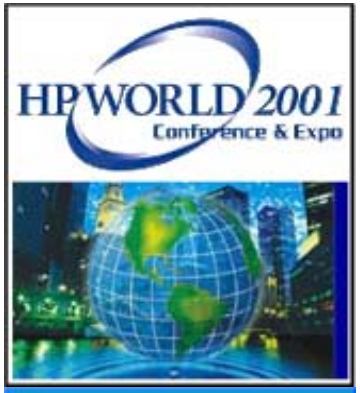
interex
Shared Knowledge
Shared Power



The Technical Environment

- Internet Connection: fractional T1
- Business hours 8:00am-5:00pm.
- Batch processing throughout much of the evening.

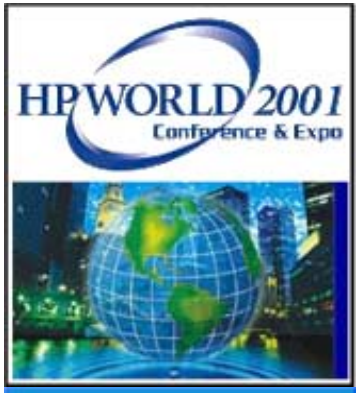
interex
Shared Knowledge
Shared Power



Database Statistics

- 1200 Customers
- 9999 Products
- 9999 Parts
- 9999 Employees

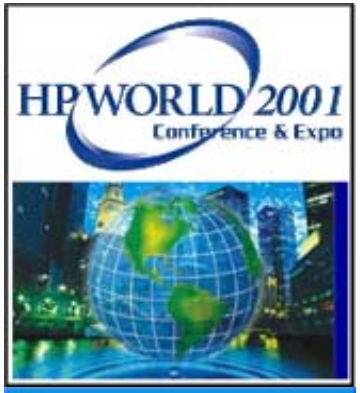
interex
Shared Knowledge
Shared Power



Connectivity Solution:

- Need to get the HPe3000-based data to the web application.
  - **Requirements:**
    - **Data access must be Online**
    - **Fast OLTP transaction model**
    - **Small CPU hit on the HPe3000**
    - **Cannot interfere with current applications**

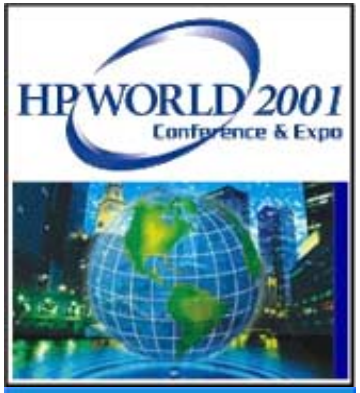
interex
Shared Knowledge
Shared Power



Options Explored:

- Testing and benchmarking done.
- ODBC:
  - **In some cases caused some “spiking” on the HPe3000 CPU.**
  - **Potential to cause IMAGE locking issues w/HPe3000 application.**
  - **Unacceptable speed under load.**

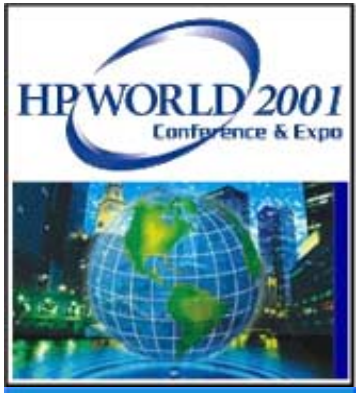
interex
Shared Knowledge
Shared Power



Options Explored (cont.)

- Socket Connectivity
  - **Socket communications are a way to connect different machines without understanding the different network protocols**
  - **All connectivity between machines uses sockets at the low level**
  - **Berkley Software Distribution Interprocess Communications (BSD IPC) is a standard available on almost all machines**

interex
Shared Knowledge
Shared Power

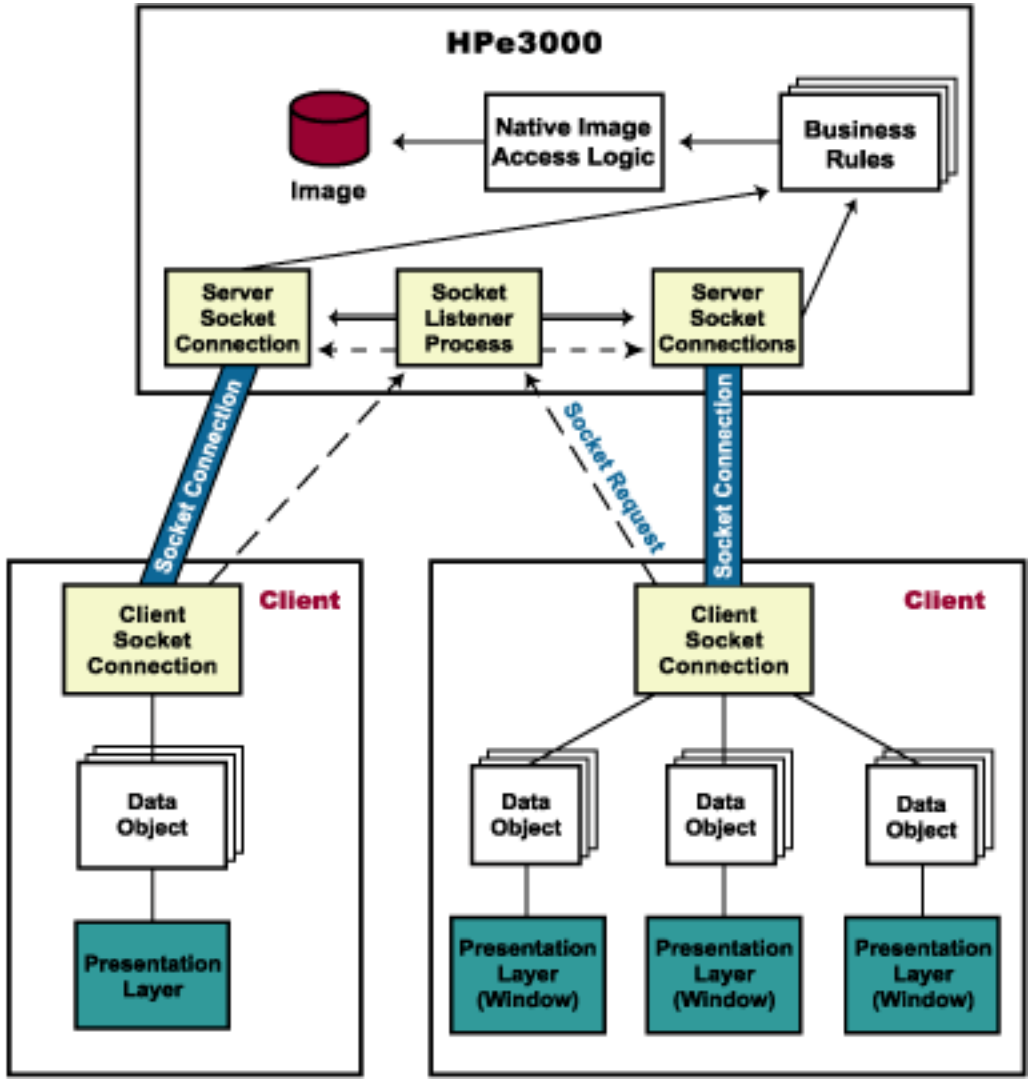


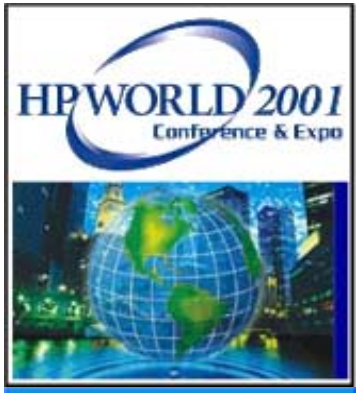
Options Explored (cont.)

- Socket Connectivity
  - **Fast OLTP processing possible**
  - **Use native IMAGE calls on the HPe3000**
  - **Use native IMAGE locking - no worries!**
  - **HPe3000 CPU usage similar to native programs (very low)**
  - **HPe3000 can support 10,000+ socket connections concurrently**

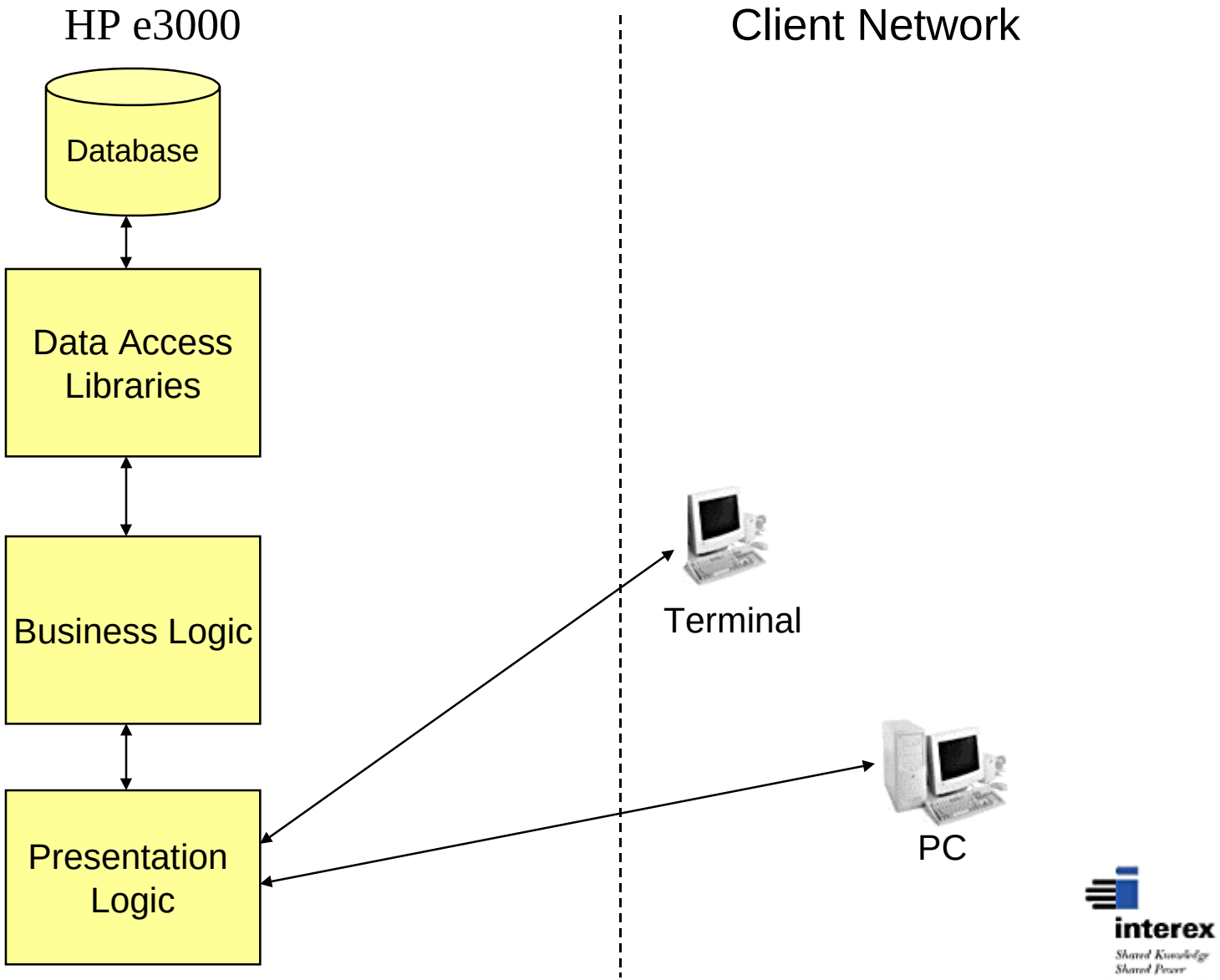
interex
Shared Knowledge
Shared Power

Decision: Sockets

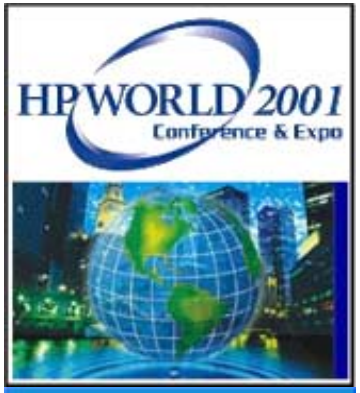




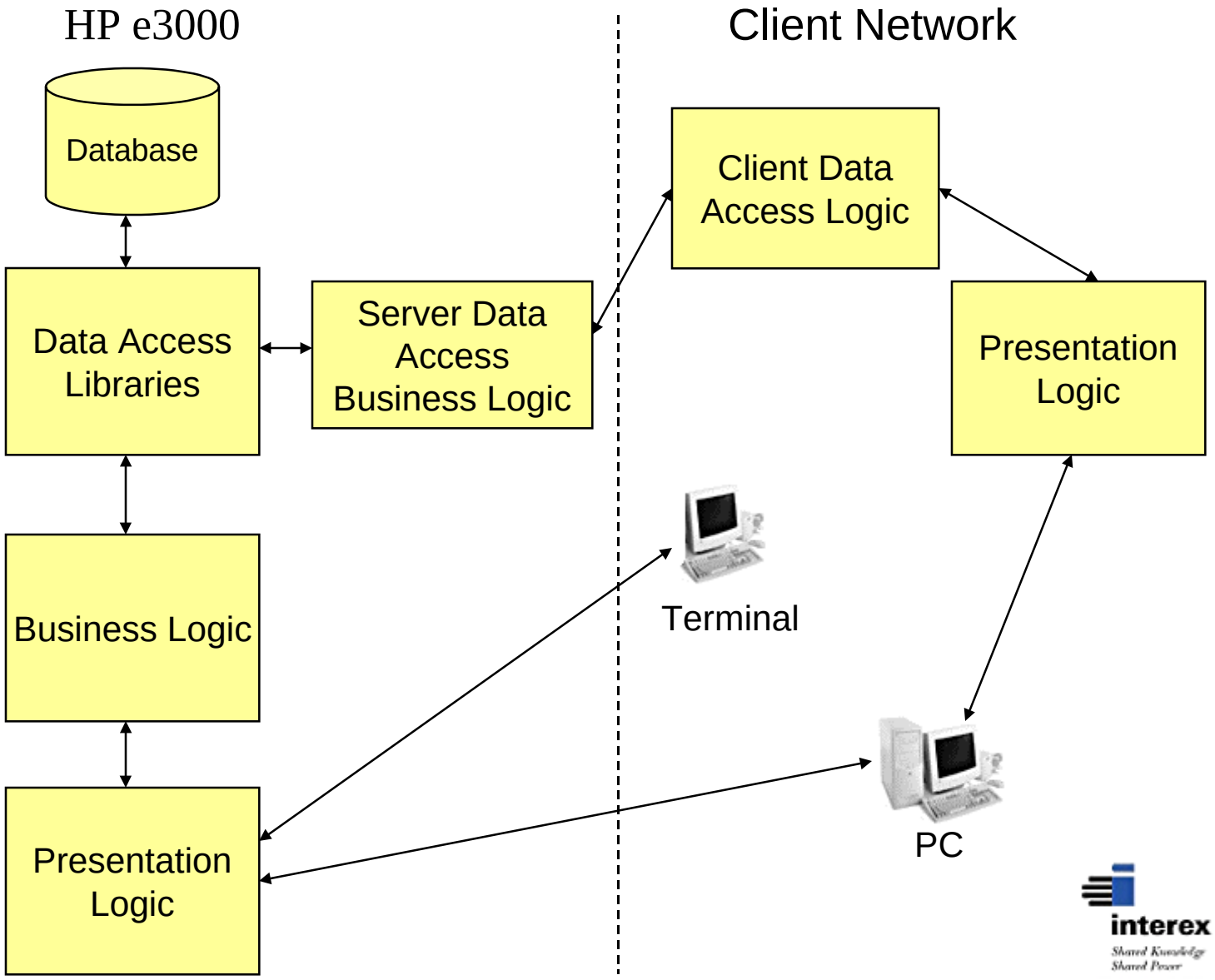
Current HP e3000 Technology



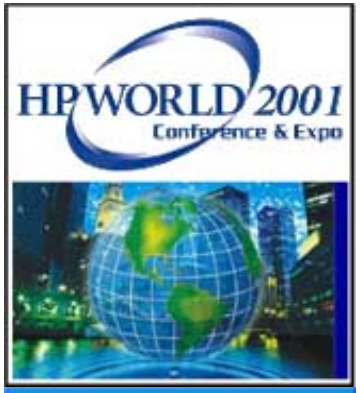
interex
Shared Knowledge
Shared Power



Adding Socket Technology



interex
Shared Knowledge
Shared Power

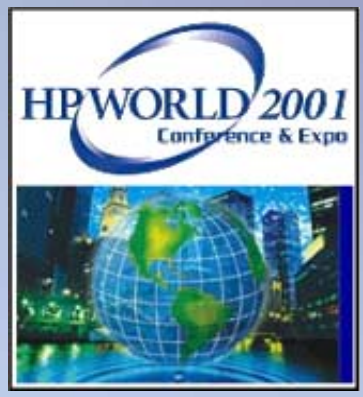


Socket Components:

Processes required for socket connections:

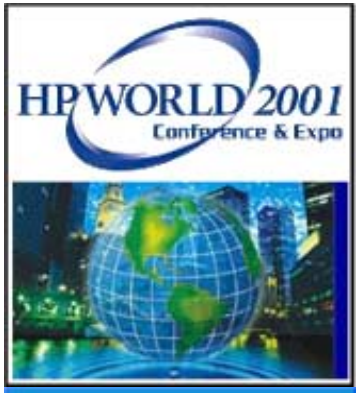
- Listener Process (Waits for new connection requests)
- Server Process (Handles requests once connected)
- Client Process (Asks for connection, sends requests, accepts returned data)

interex
Shared Knowledge
Shared Power



Demonstration:

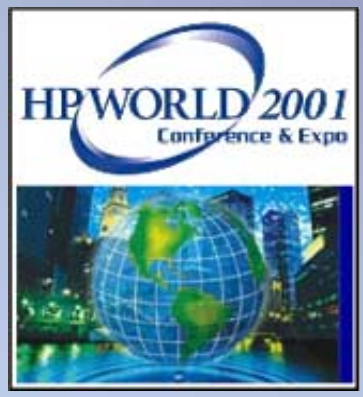
Socket Performance on HPe3000 using DealerWeb and Glance3000



The Web Front End?

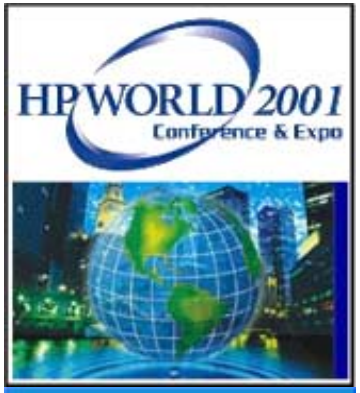
- Utilizing Microsoft Technologies and hosted on NT Server
- Utilize SQL Server database for security
- Natural Choice: Microsoft ASP
  - **Web Server plugin - listens for .asp requests**
  - **Allows for State Management**
  - **Included w/NT and IIS**

interex
Shared Knowledge
Shared Power



Demonstration:

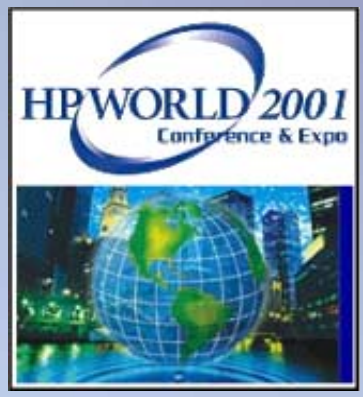
ASP-based Web Application Pages & Functionality.



Some Issues:

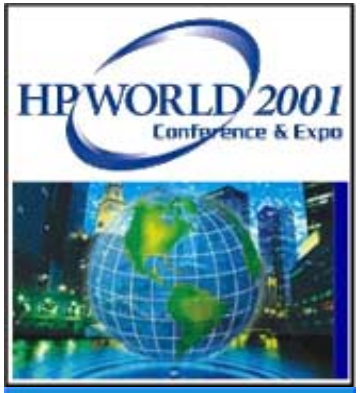
- ASP drawbacks:
  - **All the load on the web server**
  - **State management - not a “slam dunk”**
  - **Adding more web servers - creates more issues requiring more programming!**
- Research required!!

interex
Shared Knowledge
Shared Power



Web Application Servers

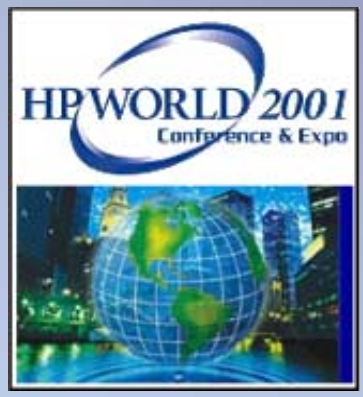
A Quicktime Visual Presentation



Web App. Server Deployed

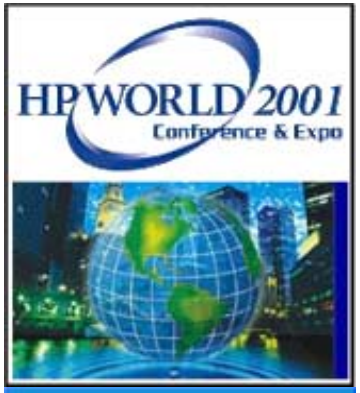
- Infrastructure requirements.
- Plays fine with ASP
- Handles state management
- Fail-over handled
- Code reuse ability high

interex
Shared Knowledge
Shared Power



Demonstration:

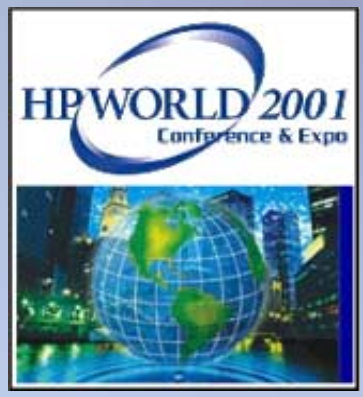
View the Homogenous Application (Warranty Claims) and Web App. Server Monitor Process



Lessons Learned!

- Design, Design, Design!
- Staging and Production area
- Use App. Server if possible
- Nobody can know everything!

interex
Shared Knowledge
Shared Power



Questions?