Remote System Management

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Market Trends

- Number of servers are rapidly increasing
- Geographical dispersion of equipment
- Data centers are getting denser
- Headless and lights out operation
- Inadequate resources to handle the increasing load
- Need to access experts that are not locally present
- Increasing uptime and tighter SLA requirements

Market Requirements

- Increasing cost and complexity, in the area of system management, call for innovation.
- Immediate access to all systems, from anywhere, all the time
- No compromise on security
- Predictive / proactive support and maintenance
- Self-healing
- Integration in current solutions

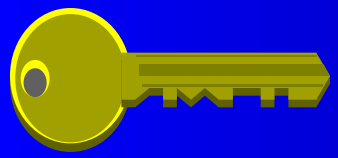
Addressing the Requirements

- Use internet as a communication media
- Use the browser to provide anytime, anywhere access
- Provide adequate security so that data transmission is encrypted

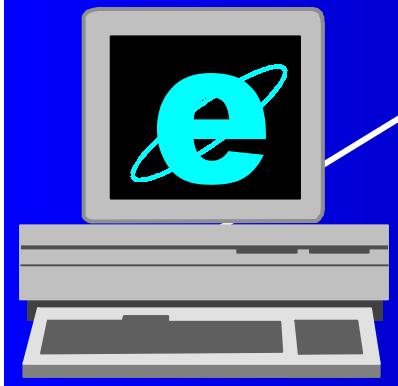
HP Innovation

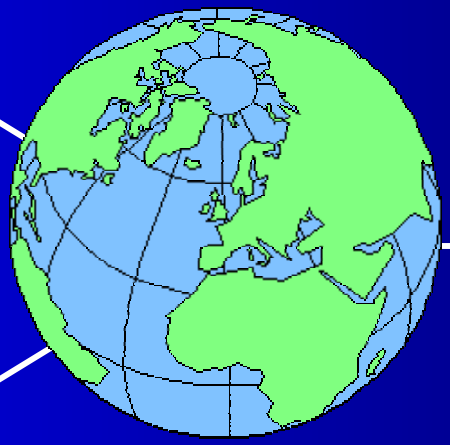
- Web, Java and security technologies now give an opportunity to create innovative solutions in the area of System Management over Internet.
- The first product to come out is the Secure Web Console (J3591A).
- It gives System Managers the capability to administer a system from any browser, by accessing the system's console in a secure way.

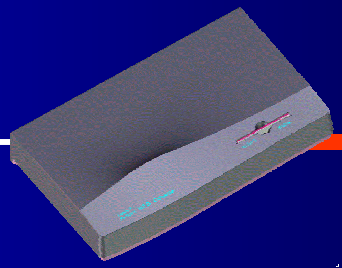
Console access using Secure Web Console



Web Clients







HP Secure Web Console J3591A

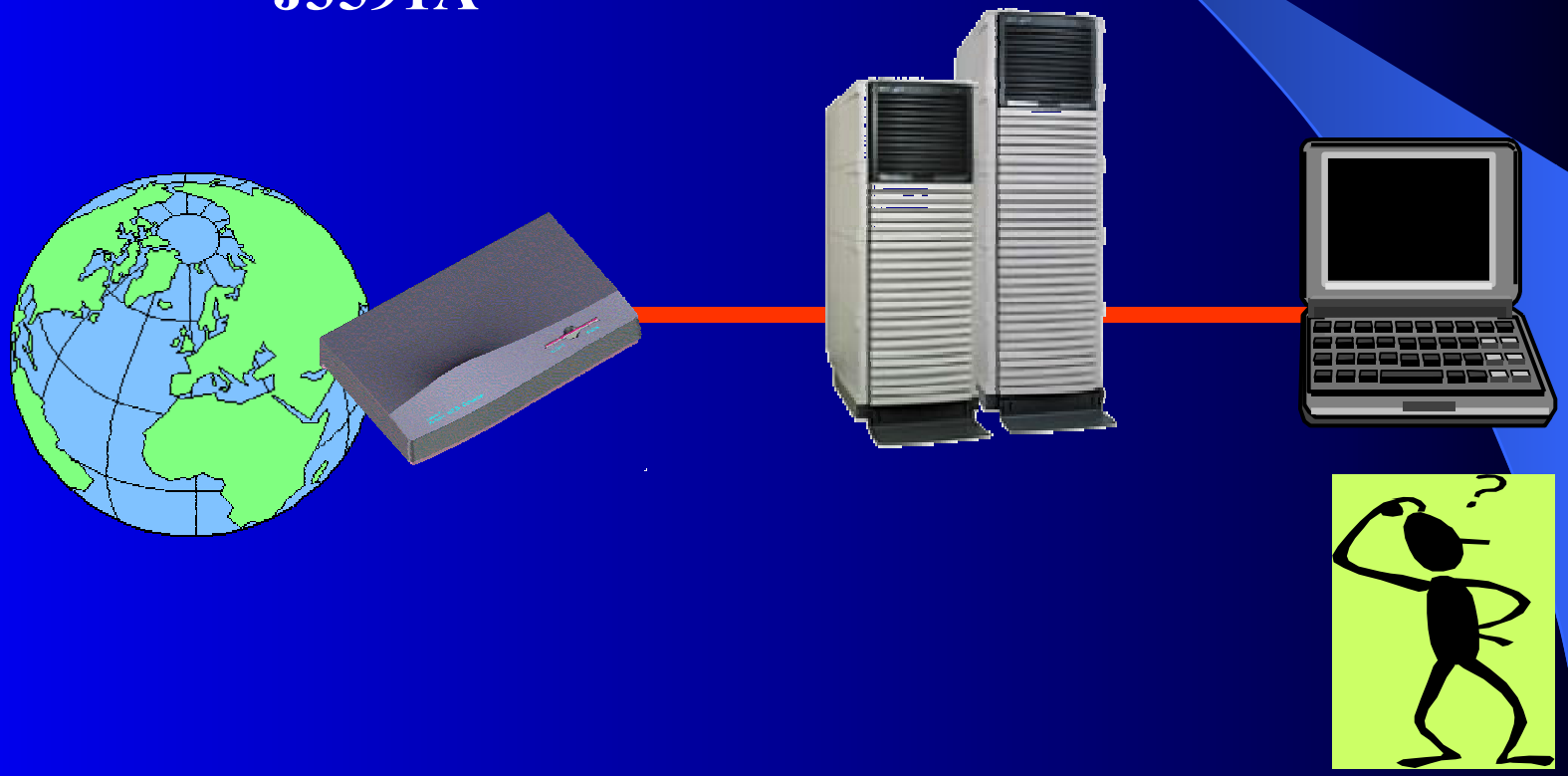
HP 3000
HP 9000
NT server
Other device

A Simple Choice

HP Secure Web Console J3591A

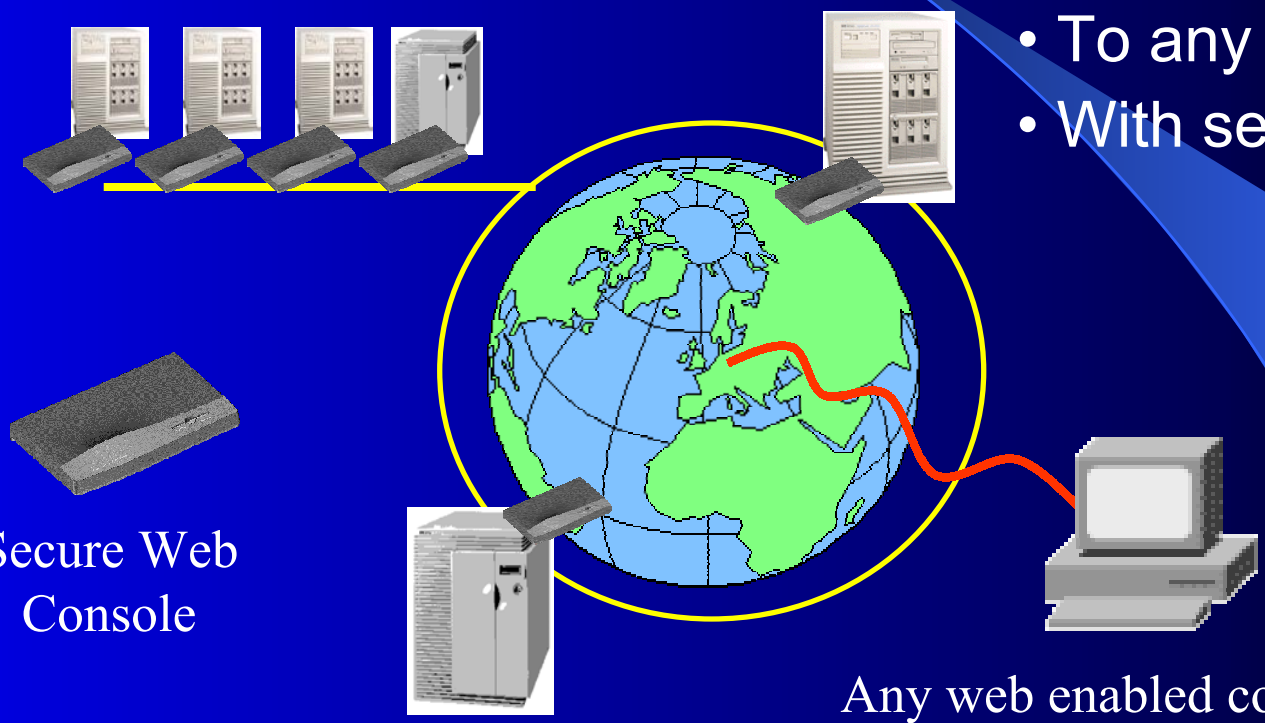
OR

Dumb Terminal



The Solution

- From anywhere
- With any browser
- To any system
- With security



Secure Web Console

Any web enabled computer

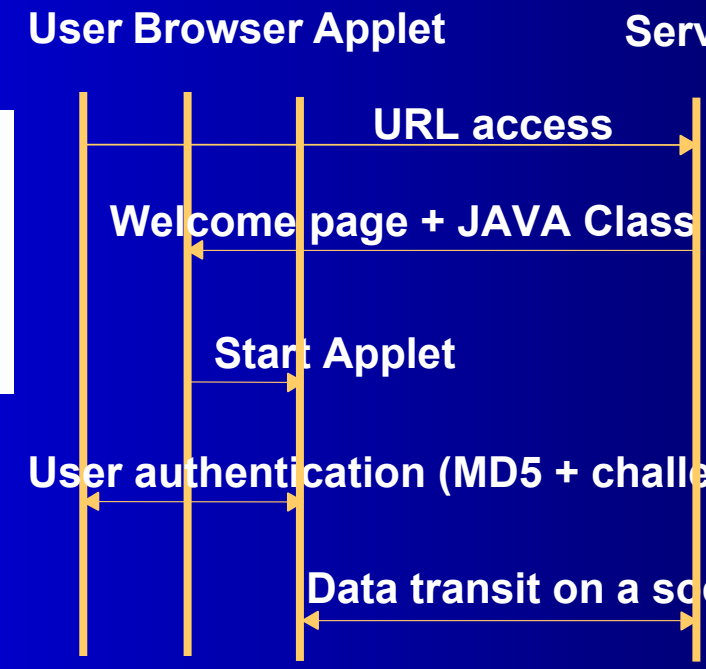
Instant access to system console

Features

- Powerful server management
- Mirrored access
- Easily scalable
- History
- Secure
- Browser based
- Easy upgrades
- Easy to install

Security Operation

Web Client



Secure Web Console

Benefits

- Allows a single operator to access and manage multiple servers located in various locations
- Provides a uniform way to manage heterogeneous equipment
- Multiple simultaneous access
- Remote access with security
- Scalable
- No modification to existing infrastructure

That's great, BUT

- Level of security
- Scalability
- Programmability
- Heterogeneity
- Redundancy

Security

- SSL
  - Secure socket based on RC-4
  - Certificate management
  - Client certificate
- Access Control List
  - Radius, LDAP, etc.
  - Secure Card
- Centralized access management

Scalability

- Single port product does not scale
  - One IP address per SWC is expensive
  - Multiple ports
    - 16 and 32 ports
    - Single IP address
- Single view access to multiple SWCs
  - Command Center
  - User to device access control mapping
  - Addressing legacy access methods

Programmability

- Need exist for
  - Monitoring and notification
    - Notification via E-mail, SNMP traps, etc.
  - Customized SNMP MIBs
  - Standard language scripting engine
- Out-of-band access
  - Modem connectivity
- Logging and audit information
- Simple management of ACLs

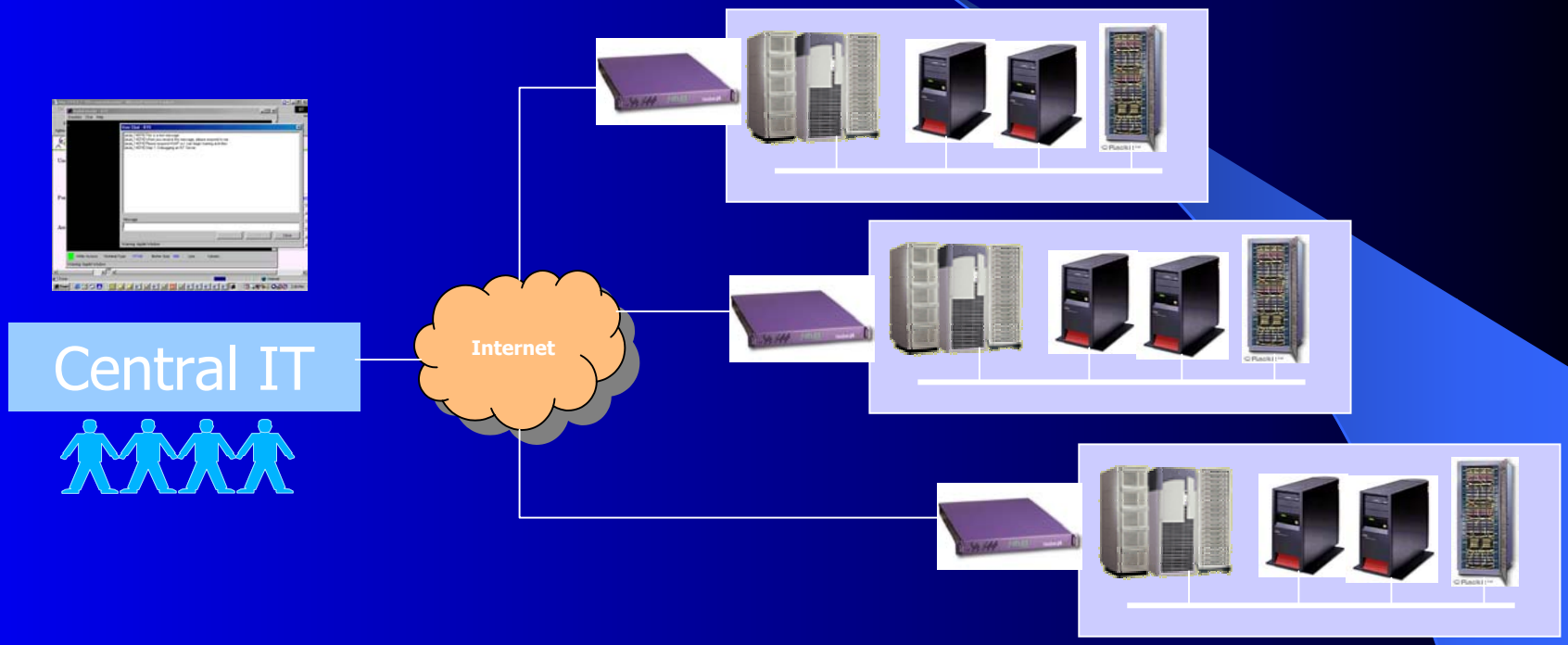
Heterogeneity

- Ability to connect to multiple systems in the rack
  - 3000s, 9000s, network equipment
- Need to address WinTel platforms with KVM solutions
- APIs for application access to devices
- Multi-language terminal support

Redundancy / Reliability

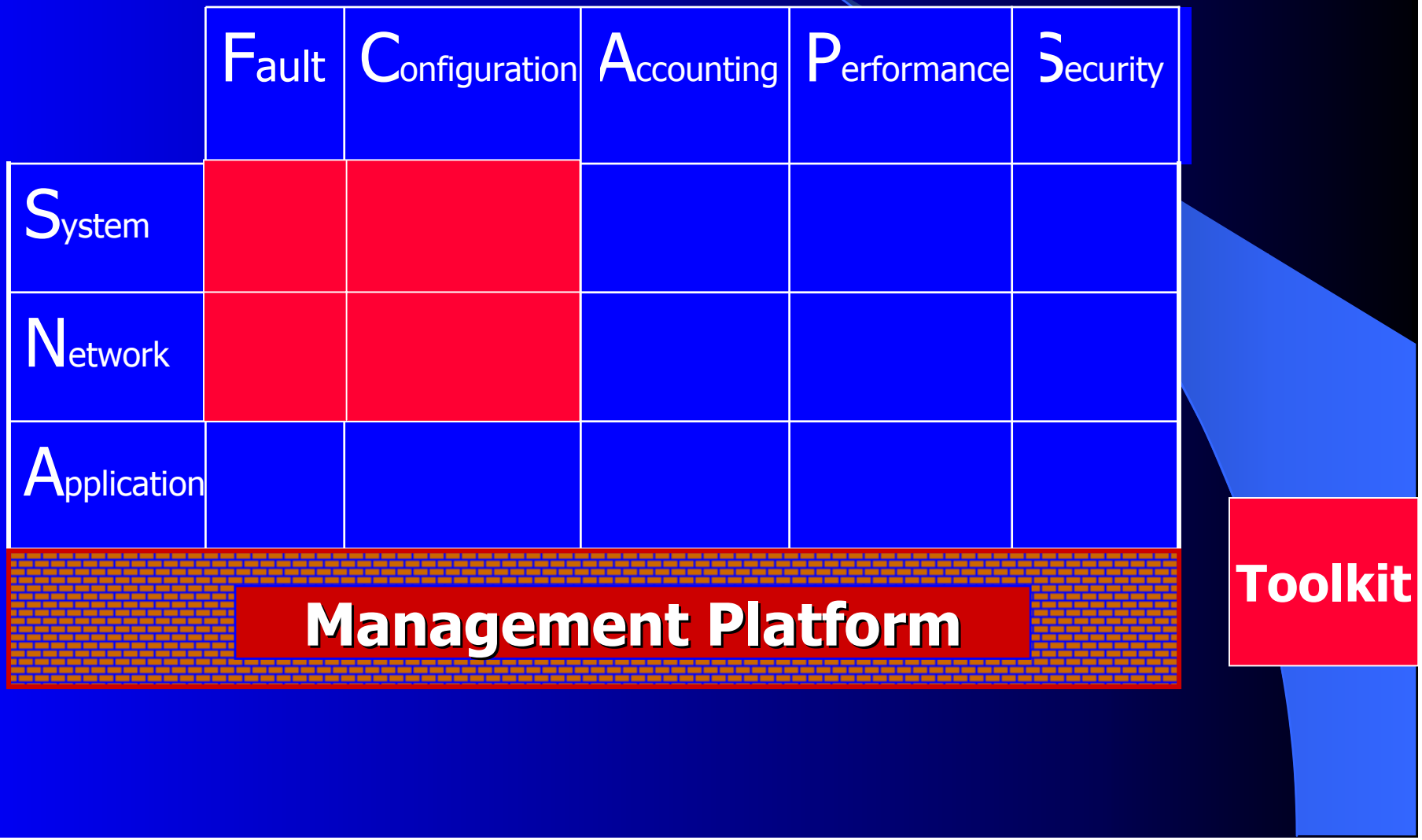
- Ability to connect to secondary failover network
- Modem connectivity
- No moving parts
- Network upgradeable

Total Solution



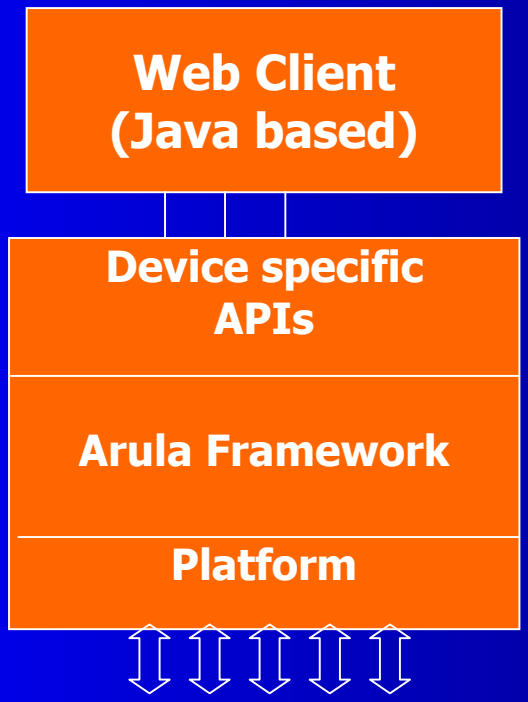
A simple Management Appliance in each location provides complete, secure, browser-based management of each device

FCAPS Framework

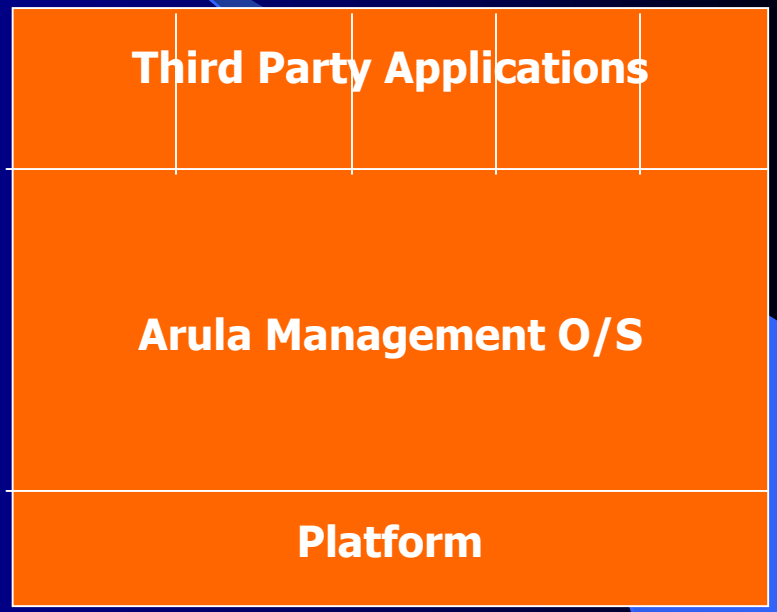


Technology Direction

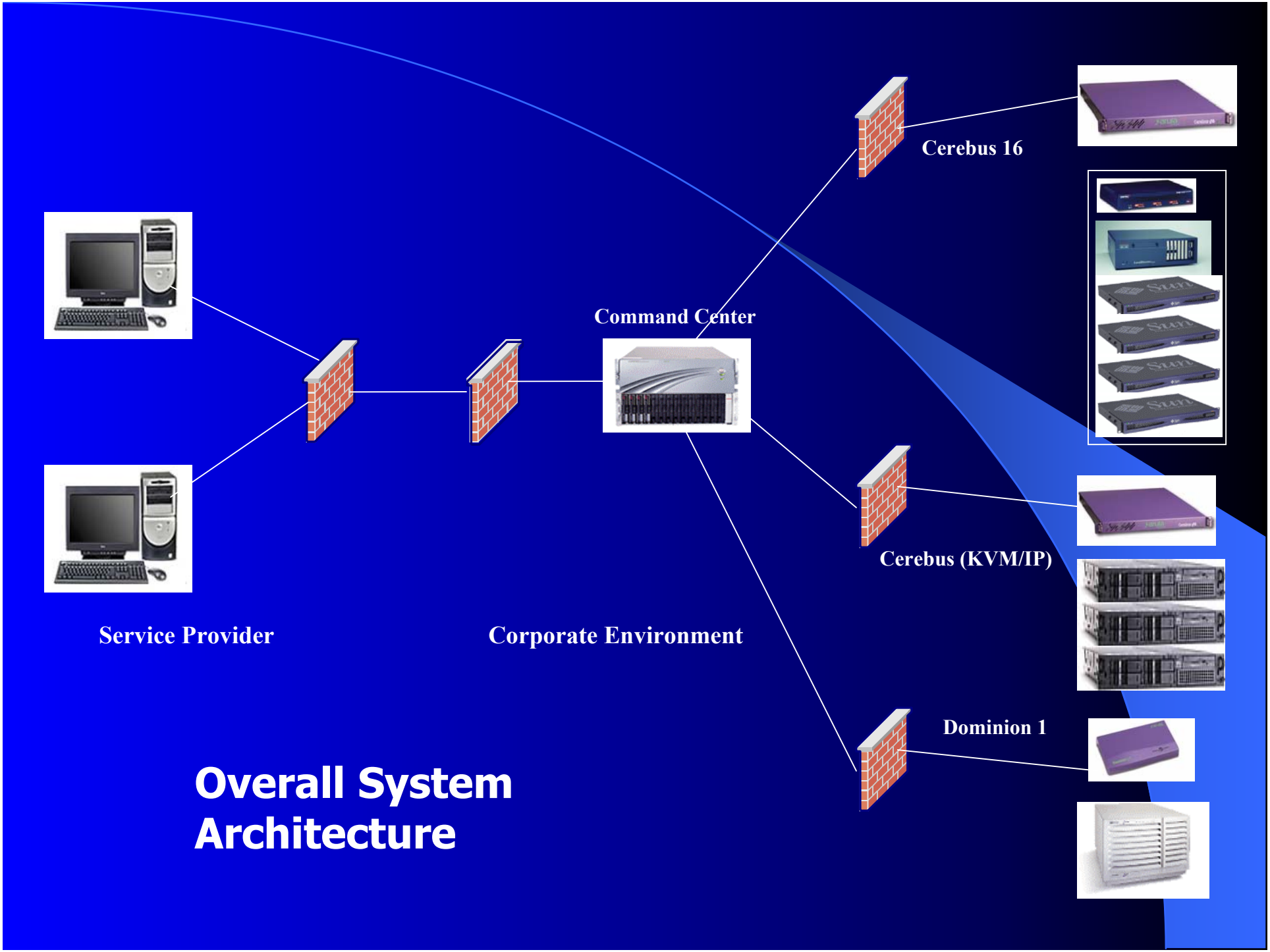
Management Appliance



Command Center



Overall System Architecture



Benefits to Internet-based Remote Management

- Unlike other solutions, no software installations is required on either server or client
- Using the Internet as communications conduit means that the target device can now be accessed from anywhere around the world
- Many systems and 'systems-of-systems' can be managed by a smaller set of people
- Can easily provide 24 x 7 support across the globe
- Can tap into experts that maybe located geographically
- Ideal for service providers, datacenters and remotes

Benefits/ROI

- Reduce downtime and increase availability of the network
  - Infonetics reports businesses lose an average of $709,000 per hour the network is down
- Better leverage existing human capital
  - Fewer IT people can manage a greater number of devices in multiple locations
  - One saved trip to a remote location pays for the cost of the device
- Cost effective solution
  - Appliances cost a fraction of what the alternatives cost

Conclusions

- Remote console access via the Internet with security to systems and network equipment is extremely valuable.
- Internet management appliances provides IT staff with a new cost effective way to manage their networks and extend the ROI on other network management solutions
- Solution like this one is easy to deploy and provides a framework for larger capabilities – automation, remote provisioning, monitoring, notification, providing the fixes, etc.

Questions?