

High Availability and Performance Handing



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by

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RegistryASP

RegistryASP

Agenda

- Risks
- High Availability
 - Concept Overview
 - Options of HA
 - Recommendations
- Performance Handling
 - Processes
 - Recommendations
- Our practices

Risks

Performance Handling

- Disaster
- Security
- Spam
- Data Corruption

- Service Unavailable
- Overload / Bottleneck
- Security holes

High Availability

Concept of HA

What is High Availability?



Is this High Availability?

This is Backup,
system is not available

Concept of HA

What is High Availability?



Is this High Availability?

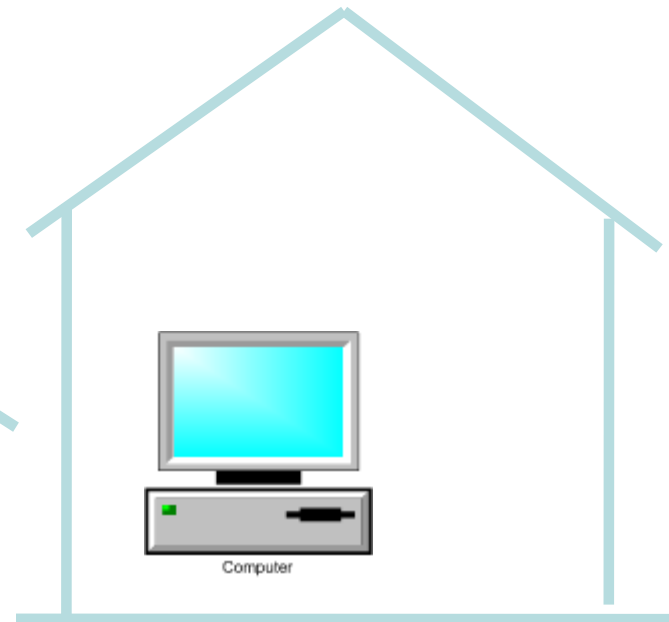
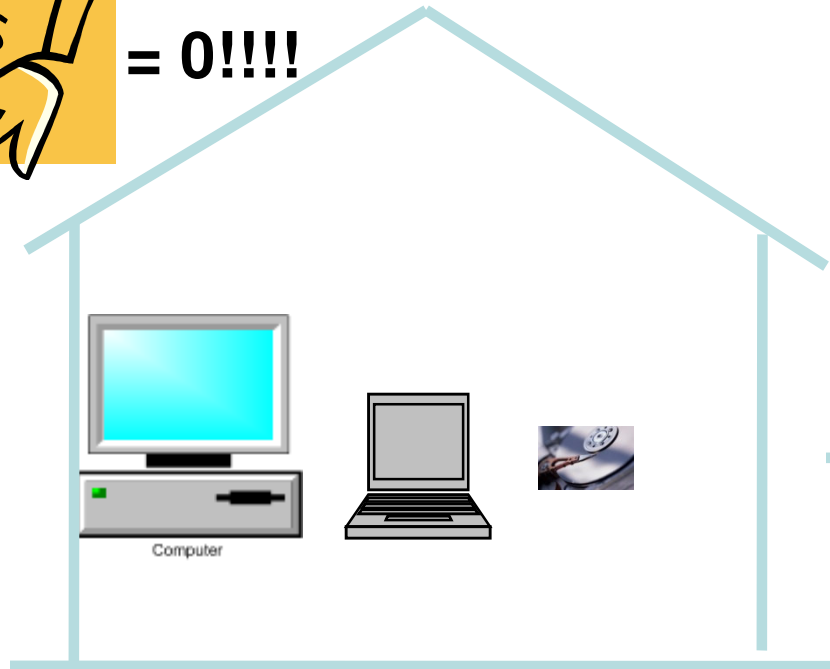
Basic HA

Concept of HA

- What is High Availability?

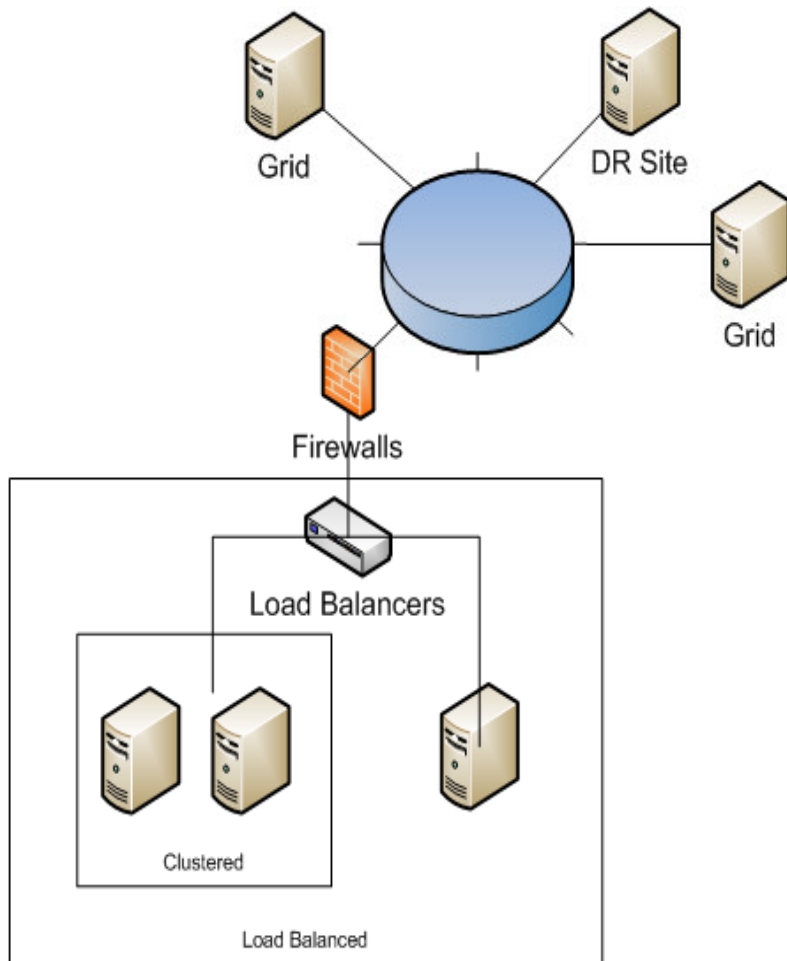


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Complete HA

Options of HA



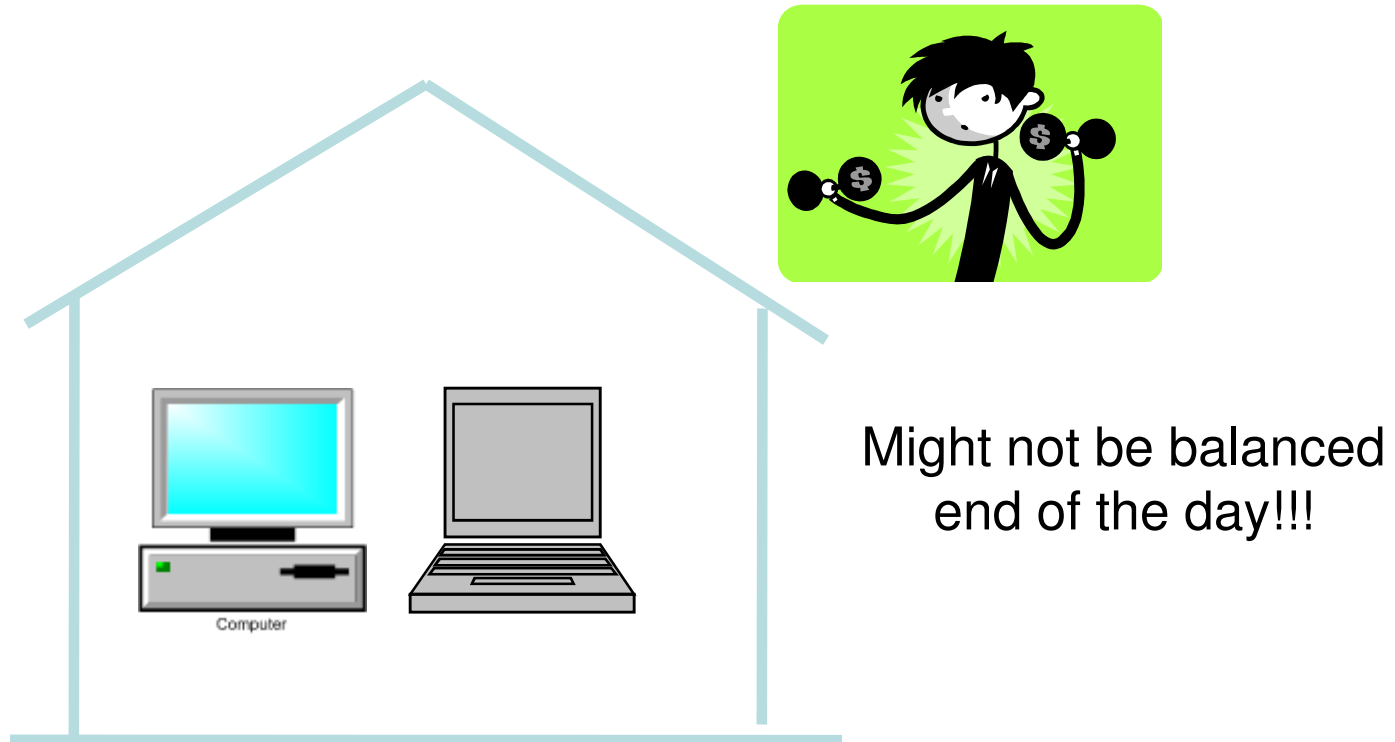
HA setup general guidelines:

- Infrastructure
- Virtualization / Grid
- Clustering
- Disaster Recovery in different location
- Policies and practices
- Fault Reporting

HA is Expensive!

- Priority, priority, priority..
 - Identify critical parts
 - Policy for acceptable failure
- Recovery Time Objective (RTO)
 - Duration system can be down before impacting business
 - Might be seasonal
 - Primary focus is transaction
- Recovery Point Objective (RPO)
 - Acceptable level of data loss
 - Not all work needs to be recover at the same time
 - Primary focus is data

Recommendation #1: Load Balancing



Recommendation #1: Load Balancing

Need for LB

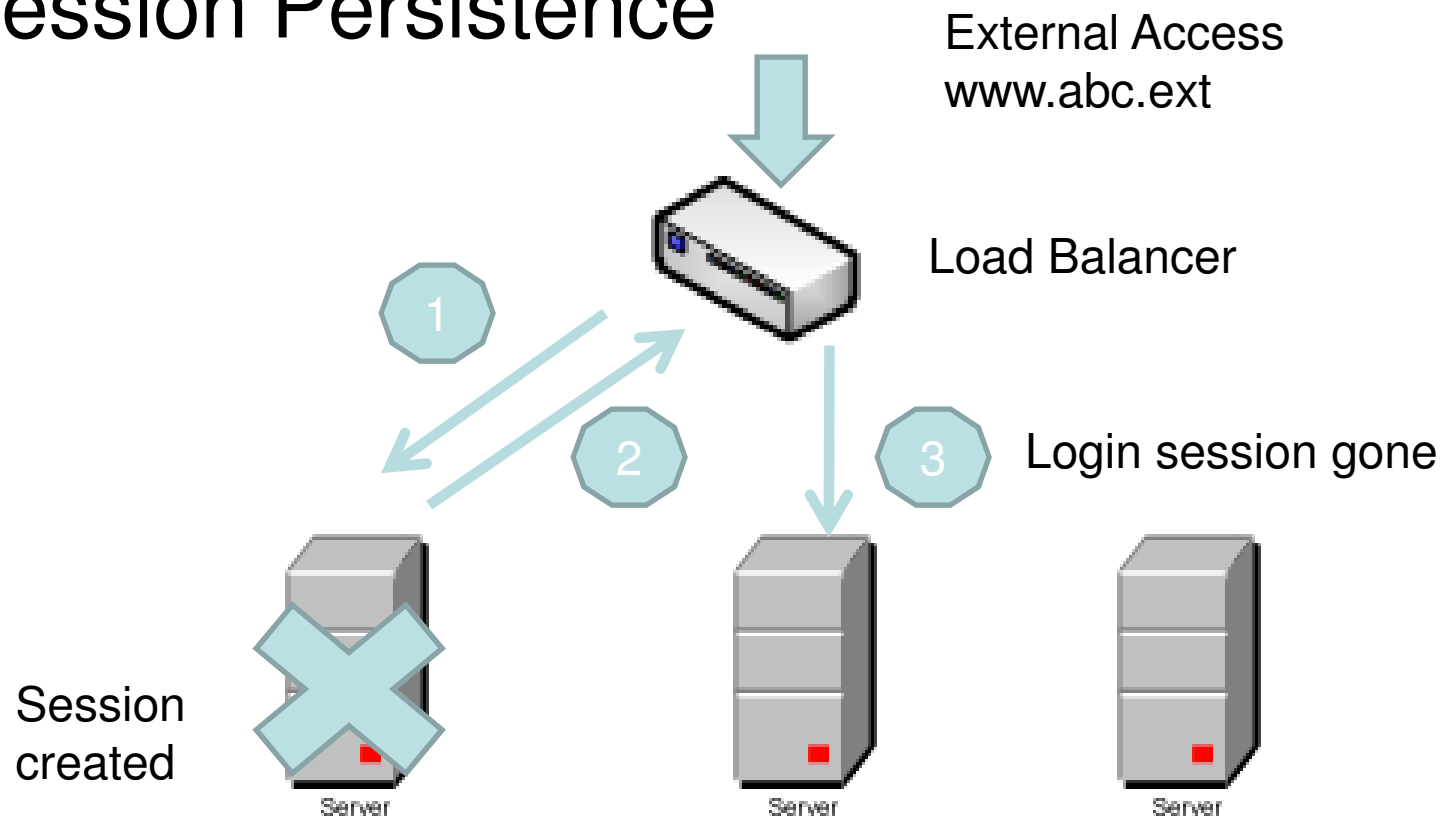
- Redundancy
- Increase overall system capacity

Types of LB

- Hardware LB
 - Distribute Load
 - Proxy functions
 - Centralized SSL
 - Session Persistence
- Software LB
 - Cheaper solution
 - Throughput limitation

Recommendation #1: Load Balancing

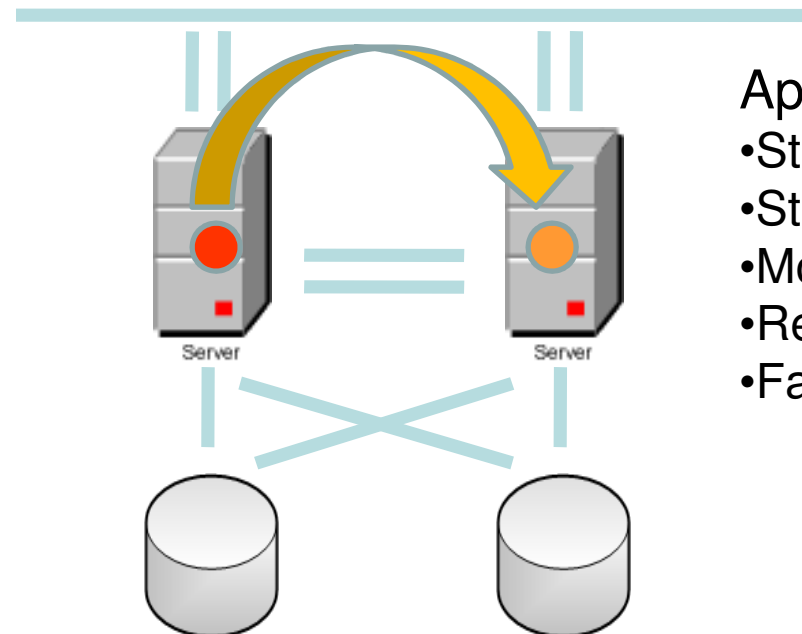
- Session Persistence



Application needs to remember the state!

Recommendation #2: Clustering

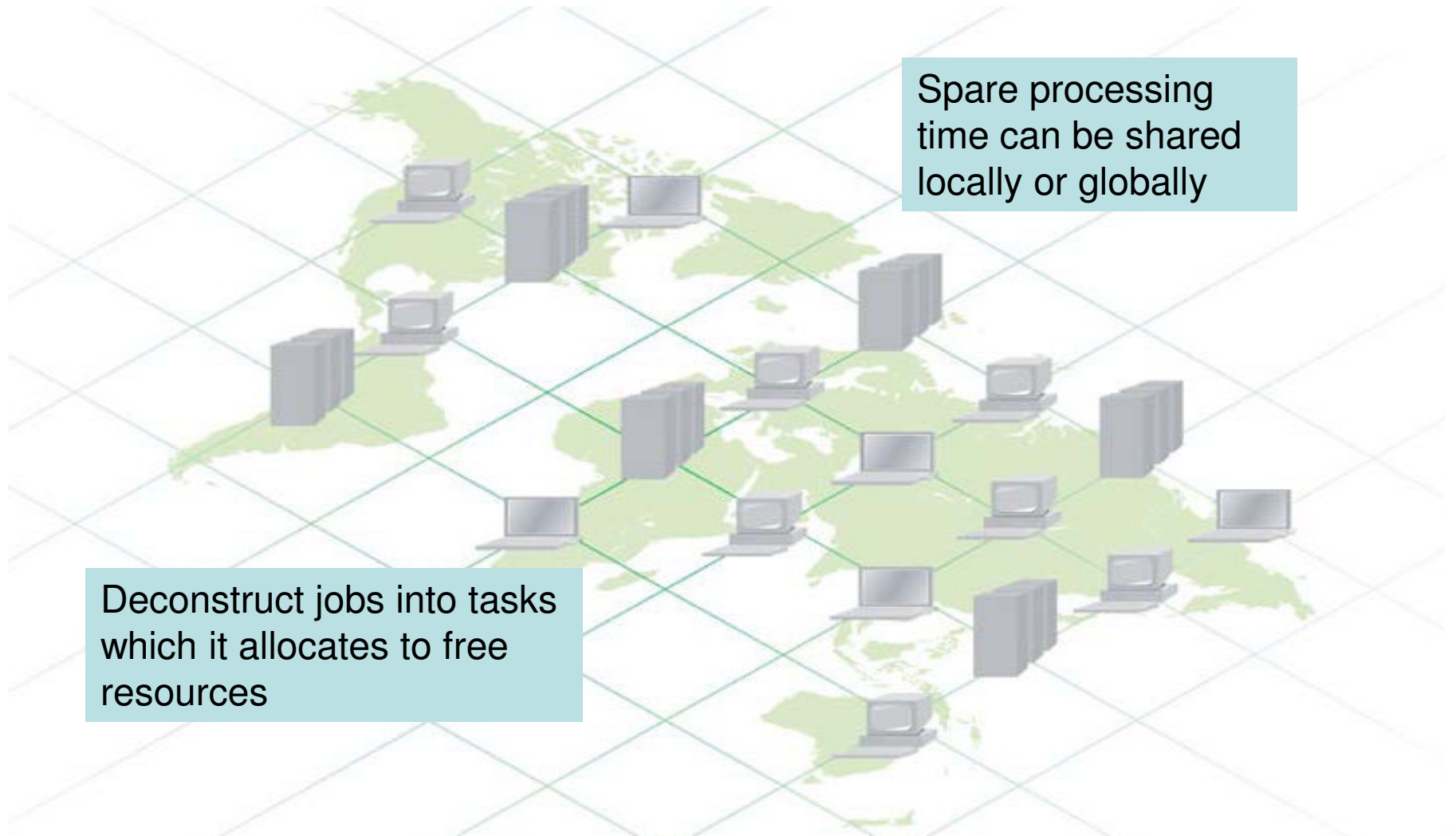
- Why clustering?
 - Keep business services running 24/7 through planned and unplanned maintenance, disasters and outages



Application Management

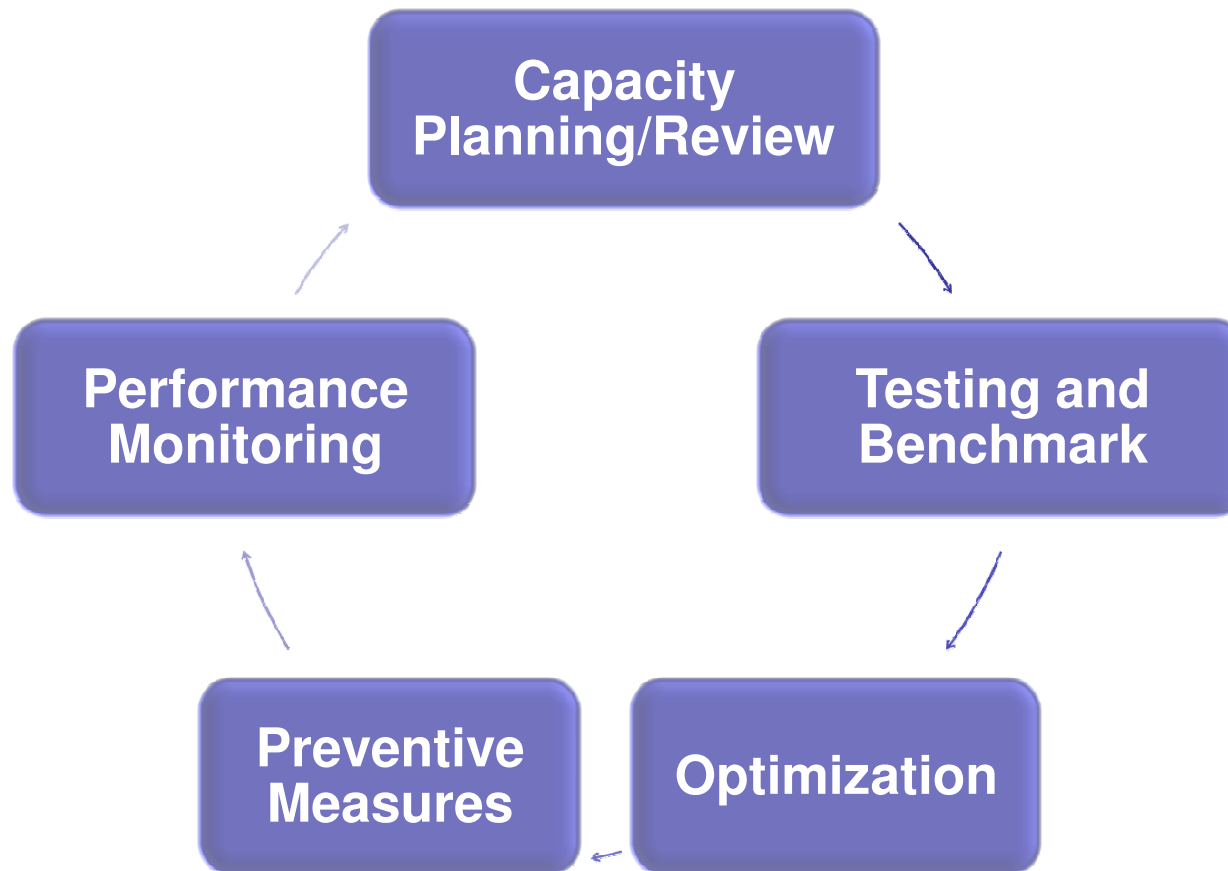
- Start
- Stop
- Monitor
- Restart
- Fail over

Recommendation #3: Grid Computing



Overview of Performance Handling

- Performance is a process



Capacity Planning and Review

- Capacity planning consideration:
 - Using SSL?
 - Database?
 - Storage?
 - Concurrent users?
 - Enough bandwidth?
 - Configured for clustering?
 - Performance tuning done?

Testing and Benchmarking

Test Creation

Test Case Tuning

Test Validation

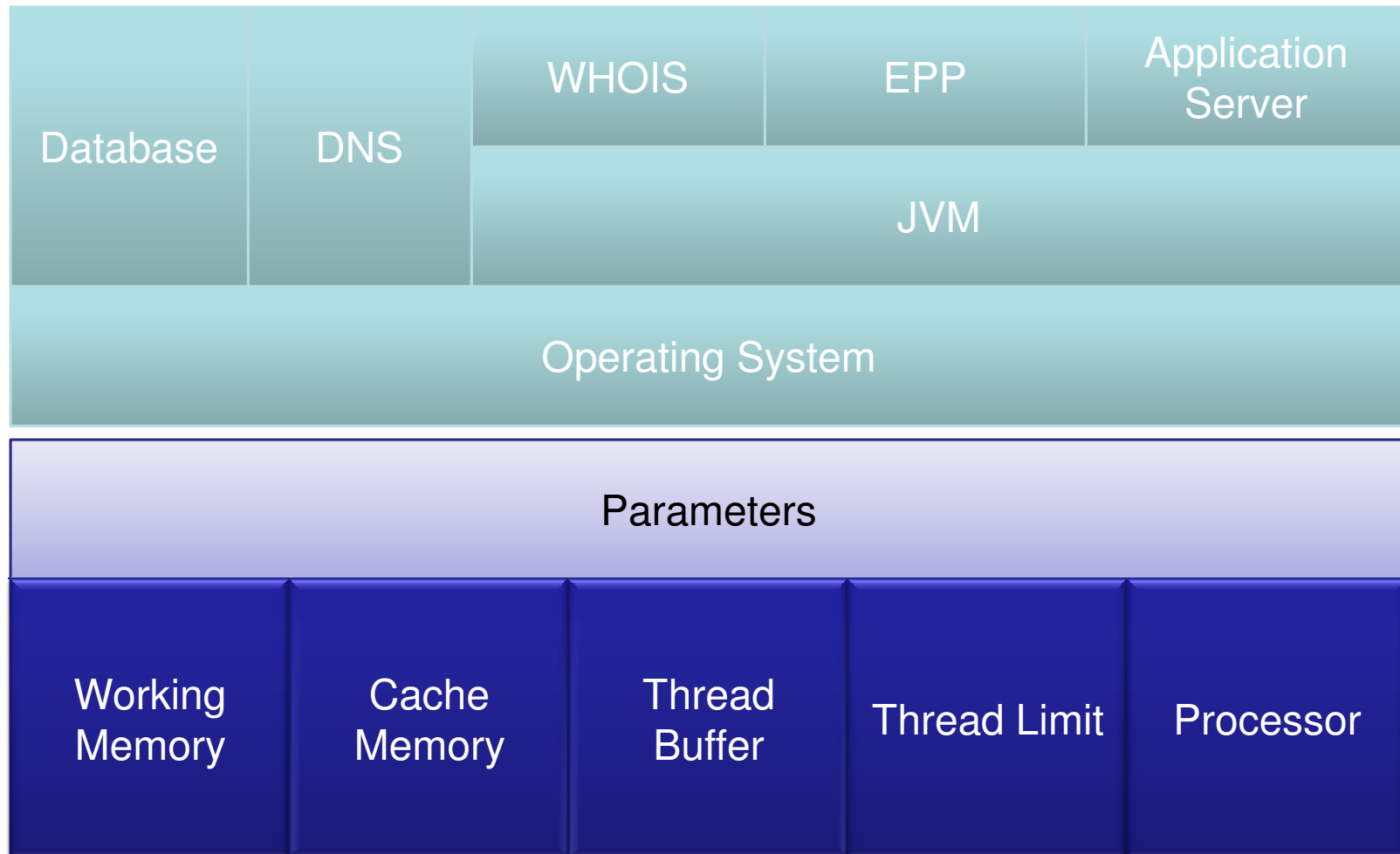
Workload Emulation

Result Evaluation

Optimization

- Remember the law of diminishing returns
- Do not tune just for the sake of tuning
- Consider the whole system
- Change one parameter at a time
- Measure and reconfigure by levels
- Check for software patches
- Understand the problem before upgrading the hardware
- Put fall-back procedures in place before start tuning

Optimization



Preventive Measures

Antivirus

- OS corruption
- Hacking
- File contamination
- Trojan / information theft

Firewall

- Prevent unauthorized access
- DNS cache poisoning
- Sync Flood
- Cross site scripting
- IP Spoofing
- Buffer overflow
- DDOS prevention

Preventive Measures

Intrusion Prevention System (IPS)

- Dropping detected bad traffic in real-time
- Pro active filtering and monitoring
- Based on rules

Deployment when:

- High security and protection is required
- High probability of an internal outbreak and attack

Best Practice:

- Deployment at Perimeter
- Core switches on Trunk VLANS
- Critical access layer switches

Performance Monitoring

- Up-to-date information on system
- Traffic and system load pattern
- Identify baseline for normal operation
- Useful to identify abnormality in system
- Assist to pin point source of problem
- Project system behavior for future configuration change

About RegistryASP

System

- Java-based registry system;
- System Customization;
- EPP, DNS and WHOIS services;
- System Integration;
- Business process Automation; and
- IDN and variants handling.

Consultancy

- Operation advisory;
- Policy and market development;
- Security and control;
- Quality assurance; and
- Performance monitoring - tuning.

Training

- DNS;
- EPP server and client setup;
- WHOIS;
- Registry application server administration; and
- Trends in Domain Industry

Maintenance

- Helpdesk and emergency 24/7 support;
- Onsite and remote support;
- Preventive system maintenance;
- Escalation policy and problem management; and
- Service level assurance.

Thank You

Questions and Answers

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