



# Sun Tech Talk 3

## Solaris 10 and OpenSolaris

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**SOLARIS™**

# Solaris 10

- **Features**

Runs on both SPARC and x86 (32-64bit)

Solaris Zones

Predictive Self-Healing

ZFS

DTrace

- **Get it Today**

<http://www.sun.com/download>

# Performance

- CPU Optimization**

UltraSPARC IV	→	2x (US III)
Opteron + Xeon	→	up to 2x

- TCP/IP Stack**

New stack	→	30-50% better throughput
Web server	→	up to 10% better perf.
App. server	→	up to 50% better perf.

# Solaris Zones

- **Concept**

Virtual operating system abstraction.

Provides protected environment in which apps run.

- **Advantages**

Apps protected from each other.

No error propagation or unauthorized access.

Reboots within seconds.

- **Possibilities**

Run DNS server, FTP server on same computer.

# Solaris Zones

Before

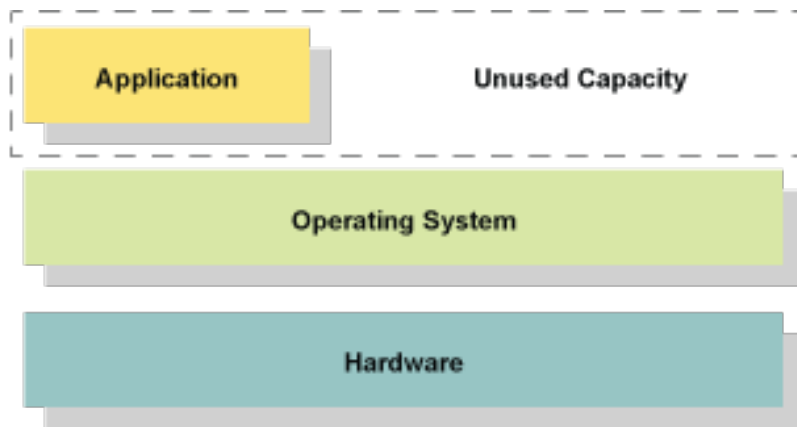


Figure 1. A non-virtualized environment

After

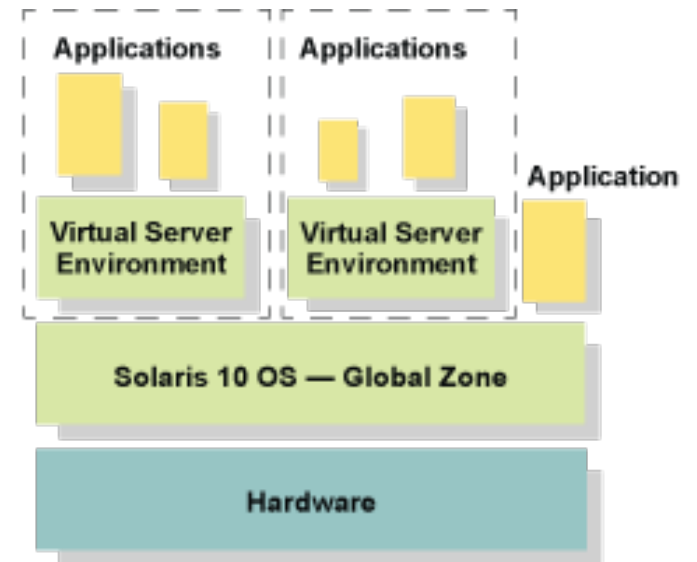


Figure 4. Solaris 10 Containers and the Global Zone

# Solaris Branded Zones

- **Concept**

Extension of Zones.

Zone that contains a non-native OS environment.

- **Advantages**

Run Linux apps within Solaris.

- **Possibilities**

Install different OSes within different Branded Zones.

# Predictive Self-Healing

- **Concept**

Intelligent fault management.

The OS is proactive towards faults and recovers by itself.

- **Implemented in two ways**

Fault Management Architecture (FMA)

Services Management Facility (SMF)



# Fault Management Architecture

- **Concept**

Error handling is resilient.

System can continue to operate.

- **Implementation**

Error handlers need to be part of FMA.

System will analyse the error and send diagnostic report.

# Service Management Facility

- **Concept**

Centralize management of system-wide services.

Control multiple services from one tool.

- **Advantages**

Failed services are automatically restarted in dependency order.

Detailed description of failure cause.

Snapshots of configurations.

Easier to delegate tasks to non-root users.

# Zettabyte Filesystem

- **Concept**

Storage pool model.

Can create virtual devices out of the pool.

- **Advantages**

Easy management.

Highly scalable.

Built in compression.

Snapshots.

- **Video**

<http://opensolaris.org/os/community/zfs/demos/basics/>

# Dynamic Tracing

- **Concept**

Tool to examine behavior of OS and users programs.

- **How to**

Send probes at precise places in your system.

Probes execute particular task to help debug system.

Use the D language to configure the probes and process info.

opensolaris™

# OpenSolaris

- **Idea**

Launched June 14, 2005

Open source version of Solaris.

- **Goals**

Collaborative work on core technology.

Integration of additional software

Alternate distribution

An OS for education

Future versions of Solaris based on OpenSolaris !!

# OpenSolaris Community

- **Where**

<http://www.opensolaris.org>

- **How to participate**

Download source (or get DVD at the end)

Become member of a project

Create your own project

- **Teach about OS**

<http://opensolaris.org/os/community/edu>

# Solaris 10 University Challenge

- **What is it?**

Sun sponsored competition for universities

Develop a new application (port Linux app, game, fix bug, write driver...)

Project using Solaris 10.

- **Grand Prize**

Winner receives \$5,000 + Sun Ultra 20.

Winner's university receives \$100,000 Sun material.

- **Register Today**

<http://www.sun.com/solaris10universitychallenge>





**Thank you !!**

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