Oracle Solaris Remote Lab
A Solaris 11 Adoption Tool

Ron Larson
Dale Layfield
Oracle Systems ISV Engineering
The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions.

The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
# Oracle Solaris 11 for Developers Webinar Series

<table>
<thead>
<tr>
<th>Webinar Series Topic</th>
<th>Date</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern Software Packaging for Enterprise Developers</td>
<td>03-27-12</td>
<td>Eric Reid</td>
</tr>
<tr>
<td></td>
<td>(Recorded)</td>
<td></td>
</tr>
<tr>
<td>Simplify Your Development Environment with Zones, ZFS &amp; More</td>
<td>04-10-12(Recorded)</td>
<td>Eric Reid &amp; Stefan Schneider</td>
</tr>
<tr>
<td>Managing Application Services – Using SMF Manifests in Oracle Solaris 11</td>
<td>04-24-12(Recorded)</td>
<td>Matthew Hosanee</td>
</tr>
<tr>
<td>Optimize Your Applications on Oracle Solaris 11: The DTrace Advantage</td>
<td>05-08-12(Recorded)</td>
<td>Angelo Rajadurai</td>
</tr>
<tr>
<td>Maximize Application Performance and Reliability on Oracle Solaris 11</td>
<td>05-22-12(Recorded)</td>
<td>Vijay Tatkar</td>
</tr>
<tr>
<td>Writing Oracle Solaris 11 Device Drivers</td>
<td>06-05-12</td>
<td>Bill Knoche</td>
</tr>
<tr>
<td></td>
<td>(Recorded)</td>
<td></td>
</tr>
<tr>
<td>Publishing IPS Packages</td>
<td>06-19-12</td>
<td>Eric Reid &amp; Brock Pytlik</td>
</tr>
<tr>
<td></td>
<td>(Recorded)</td>
<td></td>
</tr>
<tr>
<td>Scripting and Other Advanced IPS Topics</td>
<td>08-14-12</td>
<td>Eric Reid &amp; Brock Pytlik</td>
</tr>
<tr>
<td></td>
<td>(Recorded)</td>
<td></td>
</tr>
<tr>
<td>Oracle Solaris Remote Lab</td>
<td>1-10-13 @ 11:00 AM Singapore Time</td>
<td>Ron Larson &amp; Dale Layfield</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Oracle Solaris Remote Lab
An Exastack Lab offering

- The Lab provides access to Oracle Solaris 11 11/11 environments (SPARC and x86) for validating correct application execution
- The Lab provides a simple and straightforward cloud interface for configuring an application test environment
- The Lab meets Oracle's stringent security requirements
- The Lab extensively leverages unique Oracle Solaris 11 technologies
- The Lab is available to Oracle Partner Network members at the gold level and above
Why Solaris 11 11/11

- Image Packaging System is a new network based package management system
- The Service Management Facility is an important part of the system configuration and software package installation architecture
- ZFS is the root file system offering a superior experience in terms of manageability, scalability and data integrity
- Support for the new next generation Sparc T4 processor and Oracle Sparc T-series servers.
- Support for Intel Advanced Vector Extensions
- Enhanced User Environment
Agenda
What we will learn today!

• Oracle Solaris Remote Lab - Demo
• Introduction to Technologies
  – Oracle Solaris 11 Virtual Machine Templates:
    1. General Purpose
    2. Oracle 11gR2
    3. WebLogic
    4. Apache-PHP-MySQL (SAMP)
  – Lab Security Features
  – Fact Sheet

• Next Steps…
Demo

Six Steps to Oracle Solaris 11 Application Validation
Technology Introduction
Available Virtual Machine Templates (SPARC and x86)

1. General Purpose (Solaris 11 11/11 only)

2. Oracle Database 11g Release 2 (11.2.0.3) and Oracle Enterprise Manager 11g

5. Weblogic 12c

7. SAMP: Apache http server, PHP, MySQL, phpadmin

“Virtual Machine Templates” are Zones with pre-installed software
All templates include Oracle Solaris Studio 12.3 for application development
All Virtual Machine Templates Include the Following:

- **Solaris 11 11/11 (Key Features)**
  - Zones (fast reboots, create and manage multiple boot environments within a Zone, monitor with zonestat)
  - ZFS (encryption, compression, deduplication, snapshots…)
  - IPS (full access to Oracle’s IPS published software)
All Virtual Machine Templates Contain the Following:

- **Oracle Solaris Studio 12.3**
  (C, C++ and Fortran development tool suite)
  - Latest compiler optimizations
  - Multithread performance
  - Enhancements
  - Analysis tools

- Installation locations:
  /opt/SolarisStudio12.3-solaris-z86-bin/solarisstudio12.3
  /opt/SolarisStudio12.3-solaris-sparc-bin/solarisstudio12.3
Oracle Solaris Studio 12.3 Tools

- IDE – Integrated development environment
  Includes Oracle Solaris Dynamic Tracing facility (DTrace)
- C/C++/Fortan Compiler
- dbx Debugger
- Math Libraries, OpenMP, Oracle Perf. Library
- Performance Analyzer
- Thread Analyzer
Oracle Database 11gR2 Template:

- **Oracle Database 11g Release 2 (11.2.0.3)**
  - Oracle DBA user/password: sys/oracle123
  - Oracle user/password: oracle/oracle123

- **Oracle Enterprise Manager 11g**
  - Connection URL → https://<localhost or ip>:1158/em/

- **Oracle installation**:
  - oracle@OAY8WdzeI8:~$ echo $ORACLE_BASE
    /u01/app/oracle
  - oracle@OAY8WdzeI8:~$ echo $ORACLE_SID
    orcl
Oracle Database 11gR2 Template:

Database server, Listener, and Enterprise Manager are ready to use....
Weblogic 12c (12.1.1) Template:

- **Weblogic 12c (12.1.1)**
  - Industry's best application server for building and deploying enterprise Java EE applications
  - Oracle Weblogic Server installation (home) = /home/wluser
  - `su - wluser, password1` (the password must be changed after first login)
Oracle Weblogic Template:

Steps to invoke WebLogic:

1. ssh –X to default WebLogic user

3. Create Weblogic Server Domain ./quickstart.sh
Oracle Weblogic Template:

...steps to invoke WebLogic, cont’d:

3. `./startWebLogic.sh`

Solaris-Apache-PHP-MySQL (SAMP) Template:

• **Apache HTTP server** - http://httpd.apache.org/
  /var/apache2/2.2

• **PHP** - http://www.php.net/

• **MySQL** Server - http://www.mysql.com/

• **phpmyadmin** - [http://www.phpmyadmin.net](http://www.phpmyadmin.net)
  Tool to administer MySQL over the World Wide Web
# SAMP Template:

<table>
<thead>
<tr>
<th>Port or Connection URL</th>
<th>Logins and Passwords</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appache HTTP server</td>
<td>80</td>
</tr>
<tr>
<td>MySQL server</td>
<td>3306</td>
</tr>
<tr>
<td>phpmyadmin</td>
<td><a href="http://localhost/">http://localhost/</a></td>
</tr>
</tbody>
</table>

- **Appache HTTP server**: Port 80
- **MySQL server**: Port 3306
- **phpmyadmin**: http://localhost/phyMyAdmin

- 'root' password is same as server's 'root' password
- 'root' password is same as server's 'root' password

**phpMyAdmin tool**
Lab Security Features
Security Paradigm

• **Security by Isolation**
  – Isolate services (VM’s, Secure Global Desktop (SGD), NFS)
  – Compromise of one service should not affect the others
  – Isolated from direct Internet access

• **User Authentication**
  – Ensure that users are who they say they are

• **Authorization**
  – Ensure that the users are authorized to use the service they are requesting
Security
Security

- Isolation
  - Separate **NFS** & **Secure Global Desktop** servers per partner
  - Partner VMs and their private NFS and SGD servers are isolated on separate VLANs
Security

• Authentication
  – Oracle Access Manager (Single Sign On)
  – No passwords are stored in Lab database
  – Forced authentication every time partner accesses VMs
  – Multiple levels of authentication are forced for all activities and actions

• Authorization
  – Manual verification by Oracle Partner Network personnel before being allowed access to the lab
  – List of authorized users is stored in multiple locations and checked in multiple locations
Securing Access to VMs

• **Oracle Secure Global Desktop**
  - Secure access through xterm and Desktop
  - API allows integration into Web UI
  - Single point of entry for the network
  - Intelligent routing to access VMs
Fact Sheet  (Oracle Solaris Remote Lab)

• Feature Overview
  - Lifetime of project: 45 days
    (extensions granted on demand)
  - Up to 5 virtual machines (Zones) in private network
  - Virtualization technology: Solaris Zones
  - Fast/secure file upload/download between user’s local machine and virtual machines
  - “root” access within virtual machines
  - Solaris Studio compiler on all virtual machines
  - Full access to Oracle IPS repository

• Resources per Virtual Machine
  - Processor support: SPARC or x86
  - OS version: Oracle Solaris 11 11/11
  - 4GB physical memory
  - 4GB swap space
  - 10GB local file system storage
  - 10GB network file system (NFS) mounted on all virtual machines

• Networking Configuration
  - External network routes only to a Partner’s other virtual machines
  - No network routing to the Internet
  - Can create/share NFS file systems between virtual machines
  - All ports between virtual machines are open
  - Exclusive-IP Zones

• Device Access
  - Applications that assume the existence of / devices will not run in a virtual machine
  - Applications that use eeprom to modify SPARC eeprom setting will not run in a Virtual Machine

• Oracle Solaris Utilities (not accessible):
  - add_drv, disks, prtconf, prtdiag, rem_dev
Resources for Solaris 11 Developers

Oracle Solaris Developer

Google: “Oracle Solaris Developer”

Oracle Solaris 11 Developer Webinar Series

Who should attend?

Application developers and administrators wanting a deep dive on key features of Oracle Solaris 11 which you can exploit to make your applications superior to your competitors and easier to use.

Please note (after registering) you will receive details on how to attend the meeting in a separate confirmation email within 48 hours.

Agenda - Next Sessions

Google: “Oracle Solaris 11 Webinar”
APPLY NOW for Oracle Solaris Remote Lab

Oracle Exastack Remote Labs: Oracle Solaris, Oracle Linux, Oracle VM

Thank you for your interest in accessing the Oracle Exastack Remote Labs. These provide qualifying OPN members with access to remotely accessible environments for the purpose of testing and tuning their applications on the latest major release of Oracle Solaris, Oracle Linux or Oracle VM.

Upon completion of testing and once your application publicly supports the latest major release, your application qualifies to participate in Oracle Exastack Ready and receive additional OPN benefits.

Eligibility Criteria for access to the Oracle Exastack Remote Labs:
- You must be an OPN member at the Gold level or higher.
- You must have membership in the applicable OPN Knowledge Zone (Oracle Solaris, Oracle Linux, Oracle Server Virtualization). We recommend that at least one employee declares an interest in the applicable Knowledge Zone for the purposes of receiving communications.
- Your OPN PRM Administrator must complete the Oracle Exastack Remote Labs online application (available on the upper right hand side of this page or on the develop lab within each respective Knowledge Zone).
- You must provide an active URL that describes your application and verifies that your application is generally commercially available to commercial customers.
- You must have a published and current OPN Solutions Catalog profile for both your company and your application. Click here to view your current profile.
- You must achieve and maintain Oracle Exastack Ready status for the applicable Oracle product within the Oracle Exastack Remote Labs offering within two months of announcing general availability of your application support of the latest major release of Oracle Solaris, Oracle Linux and/or Oracle VM.
- You agree to validate your application to be fully compatible and function with the applicable Oracle product within the Oracle Exastack Remote Labs offering within 24 months of Oracle's release of a new major release or version of the applicable Oracle Exastack Remote Labs offering.
- Your OPN PRM Administrator must accept the terms and conditions of the Oracle Exastack Remote Labs Addendum to the Oracle Partner Network Agreement.

If you have any questions, chat with a partner expert now or email OracleExastack ww@oracle.com.

To start the application process, please select "Apply Now" at top of this page.

Go To: “OSRL.Oracle.com”
Q&A
Hardware and Software
ORACLE®
Engineered to Work Together