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Best Practices for Maintaining and Upgrading Oracle Solaris

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**ORACLE
OPEN
WORLD**

**HARDWARE
AND SOFTWARE
ENGINEERED
TO WORK
TOGETHER**



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.

Program Agenda

- Oracle Services and Premier Support
- Best Practices for installing and maintaining Solaris
 - My Oracle Support
 - Maintaining and Upgrading Oracle Solaris 11
 - How to get help
- Additional Sessions and Support Stars Bar

Oracle Services

Enabling the success of your Oracle hardware and software investments

ORACLE®
CONSULTING

Oracle Experts
Helping You
Succeed with
Your Oracle
Investments

ORACLE®
SUPPORT

Complete
Support for
Oracle Hardware,
Software, and
Engineered
Systems

ORACLE®
ADVANCED CUSTOMER
SUPPORT SERVICES

Mission Critical
Support Services
for All Oracle
Applications and
Technologies

ORACLE®
UNIVERSITY

Your Complete
Training Source
for Oracle
Hardware and
Software

ORACLE
MANAGED CLOUD
SERVICES

Extend Your Oracle
Investments to the
Cloud with Value,
Choice, and
Confidence

ORACLE®

Oracle Premier Support

Comprehensive Coverage

Service and Support

Quickly diagnose and resolve issues

- ✓ Expert technical support
- ✓ Rapid-response field service
- ✓ Lifetime Support



Tools and Resources

Get the most out of your Oracle products with proactive services

- ✓ Oracle knowledgebase
- ✓ Product health checks
- ✓ My Oracle Support Community



Product Innovation

Keep pace with change and capitalize on new opportunities

- ✓ Updates
- ✓ New releases
- ✓ Tools to assist with patching and upgrades



Helping you get the most value from Oracle Premier Support

PREVENT 	RESOLVE 	UPGRADE 
Prevent known problems, help keep your Oracle software and systems healthy and your resources focused on business goals.	If issues do occur, discover capabilities and tools to help you resolve issues and get your business back on track.	Oracle Premier Support's integrated methodology provides capabilities and tools to help guide you through the upgrade process.

Get
Proactive



Get Proactive Portfolio—an integral component of your Premier Support Contract

Oracle Support Best Practices and Recommendations for **Maintaining and Upgrading Oracle Solaris**



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Top Reasons for Creating Service Requests



What we see the most:

- Unfamiliarity with My Oracle Support Capabilities
- Differences in Solaris 11 packaging and updating

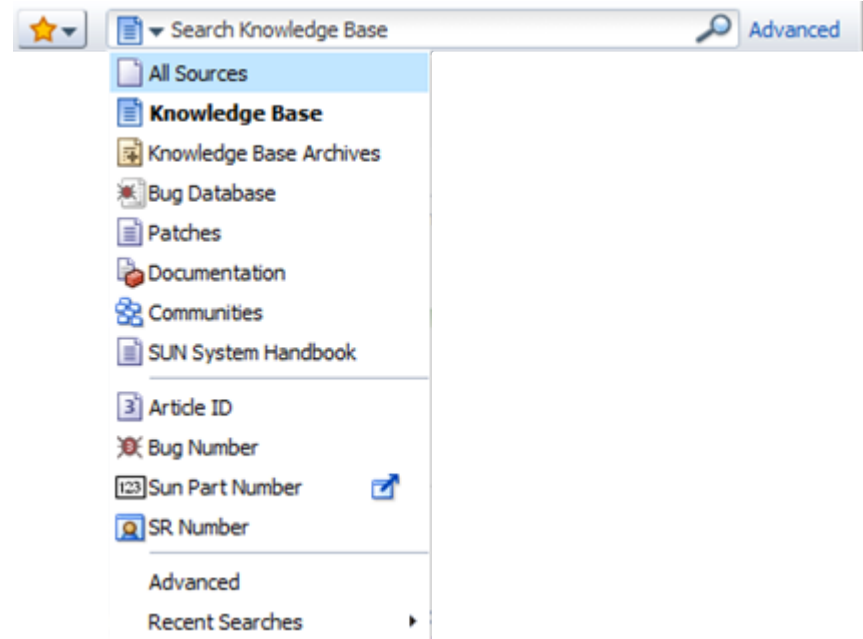


My Oracle Support

My Oracle Support

support.oracle.com

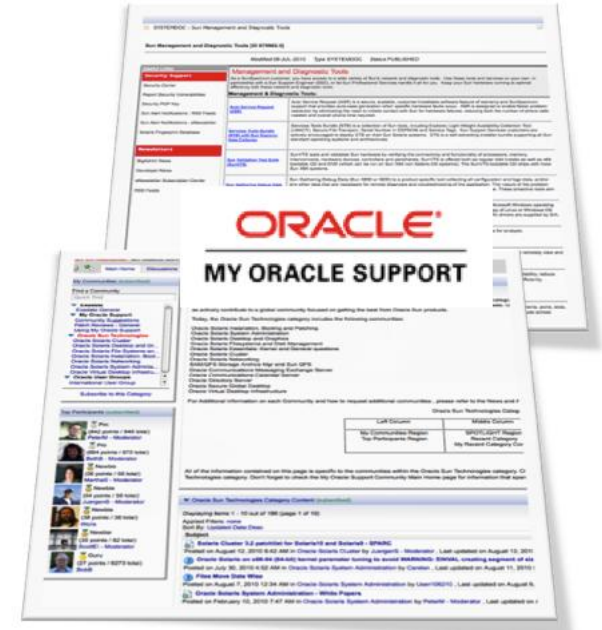
- Knowledge base
- Bug database
- Communities
- Documentation
- Sun System handbook
- Patches
- Service Request management



My Oracle Support

support.oracle.com

- Over 250 personalized communities with 580,000 members, including 9 Solaris specific product communities
- Knowledge base with ~1 million articles including over 100,000 Sun support documents and bug reports
- Access to all Solaris product documentation




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My Oracle Support Resource Centers

Landing pages for key Solaris Technologies


- Solaris
- IPS
- Zones
- ZFS
- Booting
- Security
- ...


[Overview](#) [Use](#) [Troubleshoot](#) [Update and Maintenance](#) [Install and Configure](#) [Boot](#) [Security](#)


 **Updating and Maintaining Solaris 11**


Learn to take advantage of all the tools for updating and maintaining your system

- [Adding and Updating Oracle Solaris 11 Software Packages](#)
- [Copying and Creating Oracle Solaris 11 Package Repositories](#)
- [Image Packaging System Man Pages](#)
- [The Oracle Solaris 11 Package Branch Version Scheme \[Document 1378134.1\]](#)
- [Support Repositories Explained \[Document 1021281.1\]](#)

 **HowTos and FAQs (9)**

 **Oracle Recommended Updates (3)**

 **Solaris 11 Community Links (1)**

 **Product Related Update Notes**

1-10 of 50 [Show All](#)

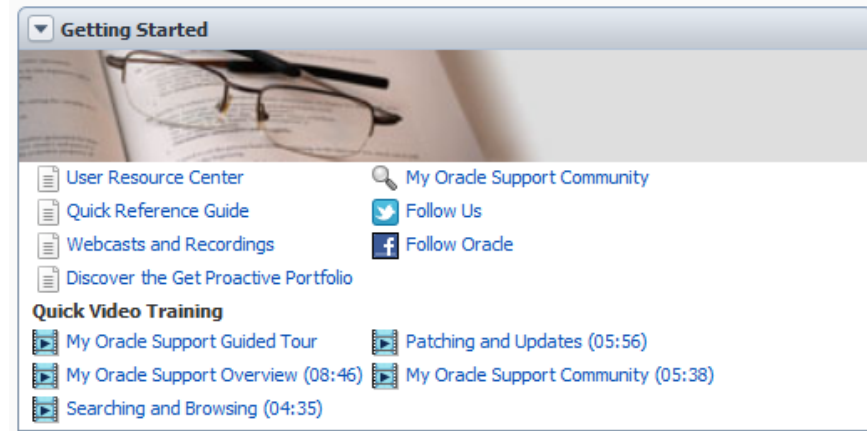
Recommended update notes to help you with the maintenance of your product.

- [How to install IDRs \(.p5p based\) on Solaris 11](#) [Updated: 08/29/2013]
- [How to check if a specific change request is fixed by a Solaris 11.x SRU](#) [Updated: 08/26/2013]
- [All passwords are rejected when using /usr/share/lib/dict/words for dictionary \(DICTIONLIST on mkpwdict\)](#) [Updated: 08/26/2013]
- [pkg\(1M\) on Solaris 11 System Fails with "Framework error: code: 60 reason: SSL certificate problem, verify that the CA cert is OK"](#) [Updated: 08/23/2013]
- [Oracle Solaris 11.1 Support Repository Update \(SRU\) 11.1.10.5.0 ReadMe](#) [Updated: 08/20/2013]
- [Oracle Solaris 11.1 Support Repository Updates \(SRU\) Index](#) [Updated: 08/19/2013]
- [Unable to Update System Passwords on Solaris 11.1.8.4.0 or Later and Solaris 10 With Patch 148049-03 or 148050-03 \(WITHDRAWN\) Installed](#) [Updated: 08/14/2013]
- [Managing Interim Diagnostic Relief \(IDR\) packages with Solaris11 IPS](#) [Updated: 08/14/2013]
- [How to Interpret, Understand and Resolve Common pkg\(1\) Errors on Solaris 11](#) [Updated: 08/13/2013]

My Oracle Support

support.oracle.com

- Access to all Solaris patches and recommended patch sets
 - Blog – Patch Corner Solaris Patching news and best practice
 - <http://blogs.oracle.com/patch/>
 - Blog – Solaris 11 life cycle
 - <http://blogs.oracle.com/Solaris11Life/>
- Access to the Sun Systems handbook
- Service Request (SR) management
 - Create, update, review history, track Solaris defects (bugs)

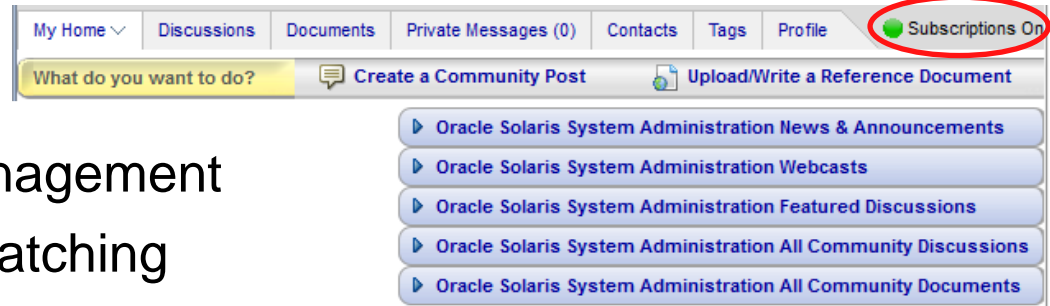



New!

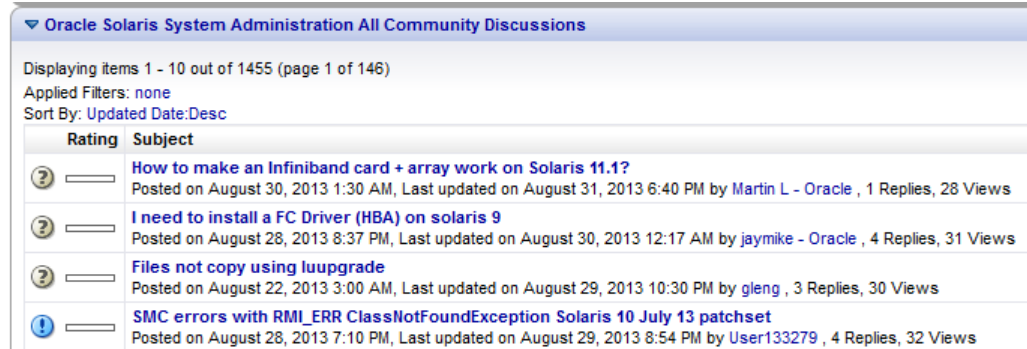
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My Oracle Support Communities

communities.oracle.com




- File systems and Disk Management
- Installation, Booting and Patching
- Performance, panics, hangs, dtrace
- Networking
- Virtual Networking 
- ZFS
- System Administration
- Patch Reviews - SUN

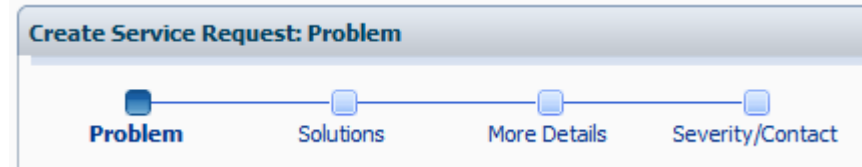


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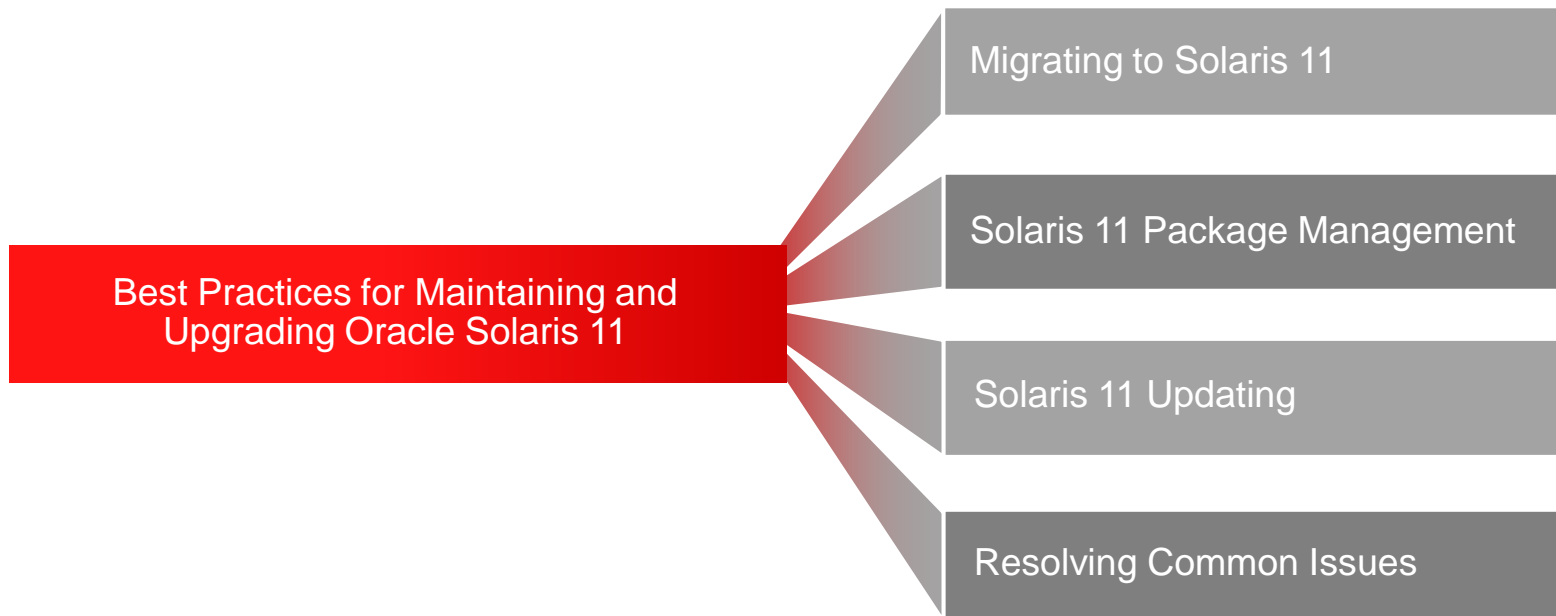
My Oracle Support – SR Management

support.oracle.com

- Create and update Service Requests online
- Solaris technology specific templates
- Targeted diagnostic information and uploads
- Track Solaris defects (bugs) 
- More details on creating Solaris Service Requests later in the presentation...



Maintaining and Upgrading Oracle Solaris 11



Installing Oracle Solaris 11

- Live Media & graphical installer on x86
- Interactive Media text installer on SPARC
- Automated Installer (AI)
 - Jumpstart Migration Utility – `js2ai`
 - Jumpstart and AI can co-exist on the same Solaris 11 server
- Custom distribution image with Distribution Constructor
 - Installed via a DVD, USB flash drive (x86) or AI.
- Unified Archives planned for Solaris 11.2

Migrate From Solaris 10 to Solaris 11

- Migrate Solaris 10 environments to Solaris 10 branded zones on Solaris 11
- Migrate Solaris 10 zones to Solaris 10 branded zones on Solaris 11
- Perform side-by-side installation
 - Install Solaris 11 to another disk whilst still running Solaris 10
 - Useful if data and apps external or in zones

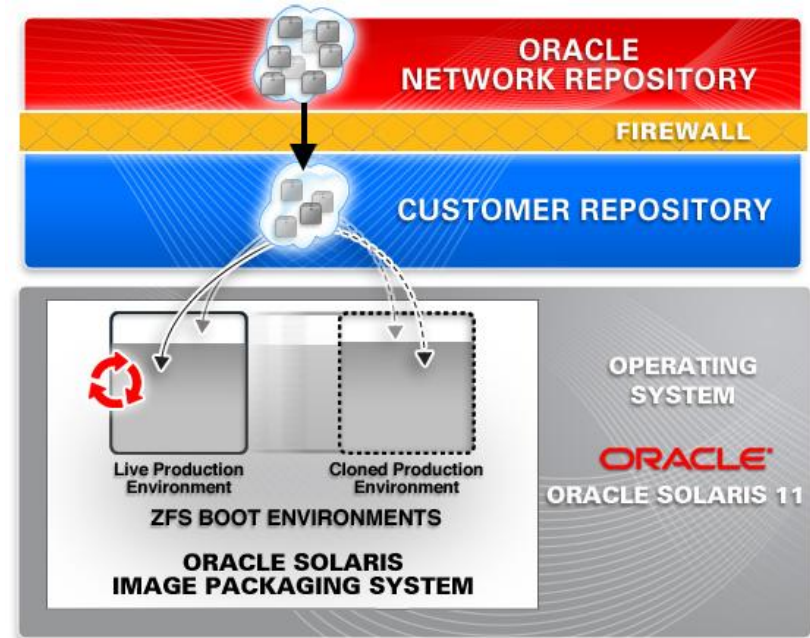
ZFS Boot environments

- Quick, reliable, space efficient and easy to use
- Reduces risk
 - Enforces best practice
 - Kernel changes always result in new BE
 - Provides quick recovery or rollback
- Integrated with Oracle Solaris Zones

Package and Patch Management

Image Packaging System (IPS)

- Integrated single-tier solution
- Network centric repository-based
- Automatic dependency checking & validation
- Predictable & efficient with guaranteed failsafe updates
- Integration with zones



Package and Patch Management

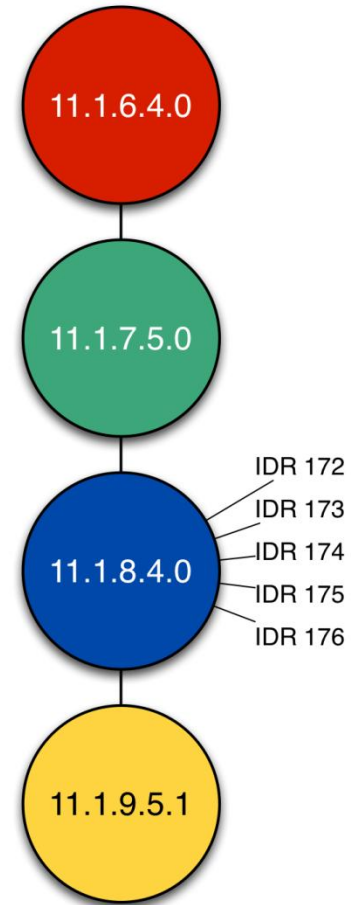
Patching Updating

- Forget patching. Package updates only
- Bugs fixed in updates to pkgs
 - Bug ID saved in pkg meta-data
 - # `pkg search -f ':set:com.oracle.service.bugid:7146824'`
- Interim Diagnostic or Relief (IDR)
 - Temporary relief or further diagnosis
 - Provided as standalone package archive (**p5p**)
 - Tip: Keep IDRs in a separate repo local to affected BE
 - See MOS Doc ID [1452392.1](https://support.oracle.com/knowledge/Oracle%20Database/1452392.1)

Package and Patch Management

Service Repository Updates (SRU)

- Formal method to obtain package updates for bug fixes
- Cumulative and issued monthly
- Automatically supersede IDRs
- Quarterly SRU is an Oracle CPU
 - CVE identifiers in package meta-data.
- New versioning scheme
 - `release.update.sru.build.respin`
eg. Oracle Solaris 11.1.6.4.0



Keeping Your Solaris 11 Systems Up To Date

Oracle Repository Servers

- Oracle support repository at <https://pkg.oracle.com/solaris/support>
- Register at pkg-register.oracle.com
 - Download certificate & key
 - Configure clients to point to "support" repository
 - See <http://pkg-register.oracle.com/help/>
- Benefits:
 - Oracle maintained repository server
 - Always up to date
 - Contains all SRUs and revisions of packages

Keeping Your Solaris 11 Systems Up To Date

Local Repository Servers

- Local repo servers offer:
 - lower external bandwidth
 - quicker updates and zone installation
 - better change control
- Update directly from Oracle servers or via SRU ISOs
- Tip: Ensure local repo includes all releases and SRUs

Keeping Your Solaris 11 Systems Up To Date

Updating Oracle Solaris 11

- Quick and easy
 - Dry run: `# pkg update -nv`
 - Update: `# pkg update`
- Update SRUs as a unit
- Same for SRUs and upgrades
 - Upgrades may have pre-requisites



KEEP
CALM
AND
PKG
UPDATE

Keeping Your Solaris 11 Systems Up To Date

Oracle Enterprise Manager Ops Center

- Install and update multiple clients
- Support for IPS, AI and BEs
- Synchronises with Oracle repository server
- Manage systems, zones, Oracle VM for SPARC & x86 in one tool
- Download
 - www.oracle.com/technetwork/oem/ops-center/oem-ops-center-188778.html
- How to
 - docs.oracle.com/cd/E27363_01/nav/howto.htm

How to Resolve Common pkg(1) Errors

Example 1

- **Error:**

```
# pkg install compatibility/ucb
Creating Plan (Solver setup): -
pkg install: No matching version of compatibility/ucb can be installed:
  Reject: pkg://solaris/compatibility/ucb@0.5.11,5.11-0.151.0.1:...Z
          pkg://solaris/compatibility/ucb@0.5.11,5.11-0.175.0.0.0.2.1:...Z
          pkg://solaris/compatibility/ucb@0.5.11,5.11-0.175.0.10.1.0.0:...Z
          pkg://solaris/compatibility/ucb@0.5.11,5.11-0.175.1.0.0.24.2:...Z
  Reason: This version is excluded by installed incorporation
pkg://.../osnet/osnet-incorporation@0.5.11,5.11-0.175.1.9.0.5.2:...Z
```

- **Cause:** Host is at a later version than repository offers
- **Solution:** Update your repository

How to Resolve Common pkg(1) Errors

Example 2

- **Error:**

```
pkg update: No solution was found to satisfy constraints
```

```
latest incorporations:
```

```
[ Truncated for brevity ]
```

```
The following indicates why the system cannot update to the latest version:
```

```
No suitable version of required package pkg://solaris/... found:
```

```
Reject: pkg://solaris/...
```

```
Reason: All versions matching 'incorporate' dependency pkg:/... are rejected
```

```
Reject: pkg://solaris/...
```

```
Reason: A version for 'require' dependency on pkg:/library/... cannot be found
```

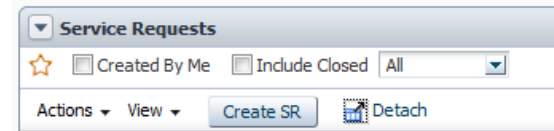
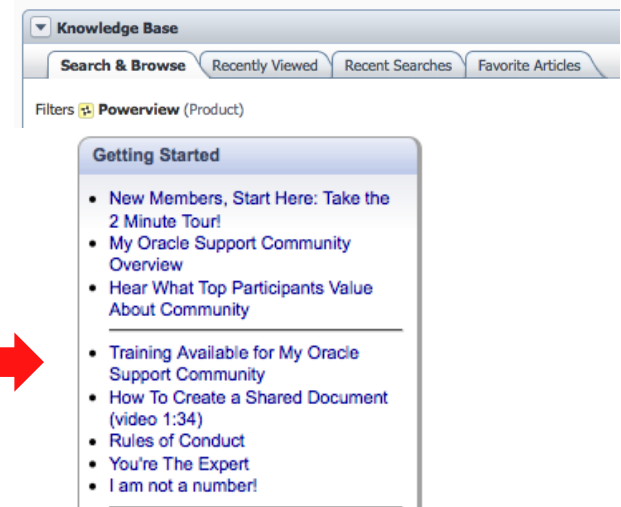
- **Cause:** Incomplete or damaged repository
- **Solution:** Ensure your repository is a complete repository
- See Doc ID [1574718.1](#)



Getting Help

How to get help if you need it

- Search the My Oracle Support knowledge base
 - <http://support.oracle.com>
- Ask the Solaris communities
 - <https://communities.oracle.com>
- Log a Service request
 - <http://support.oracle.com>



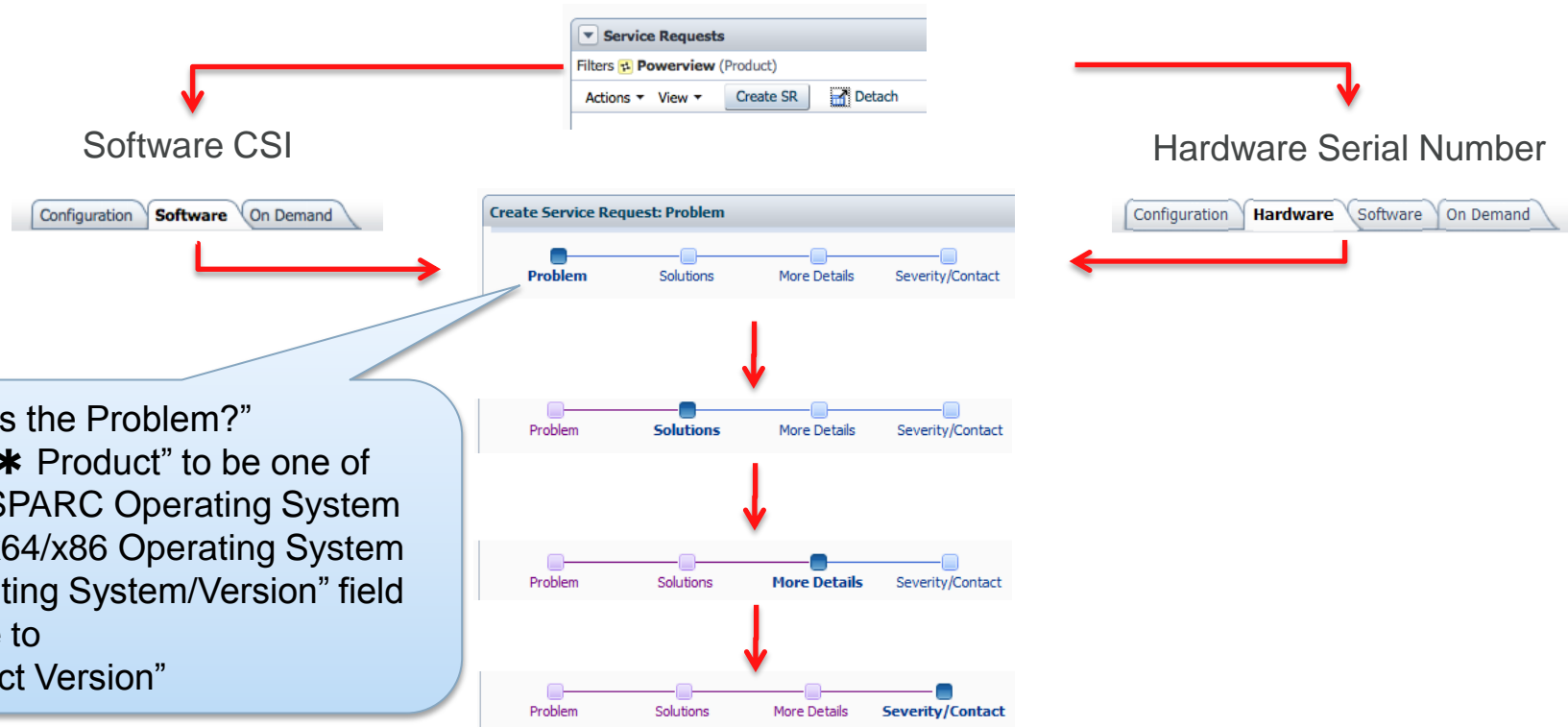
Logging a Solaris Service Request On-line

Benefits of using My Oracle Support

- Accurate problem statement
 - You tell us about your problem (no interpretation)
 - Solaris technology specific templates assist you in providing diagnostic information
- Your SR routes “direct to specialist”
 - Solaris support engineers with specific expertise in that technology
- Detailed instructions in My Oracle Support knowledge document [1344979.1](#)

Logging a Solaris Service Request On-line

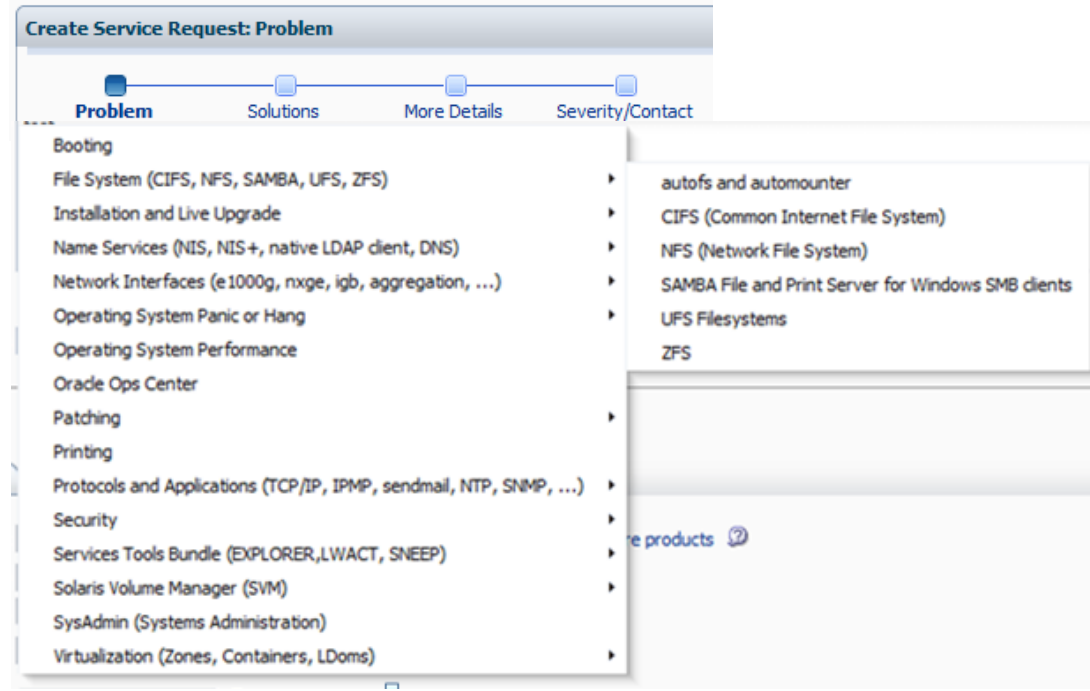
How to create in My Oracle Support



My Oracle Support Solaris Categories

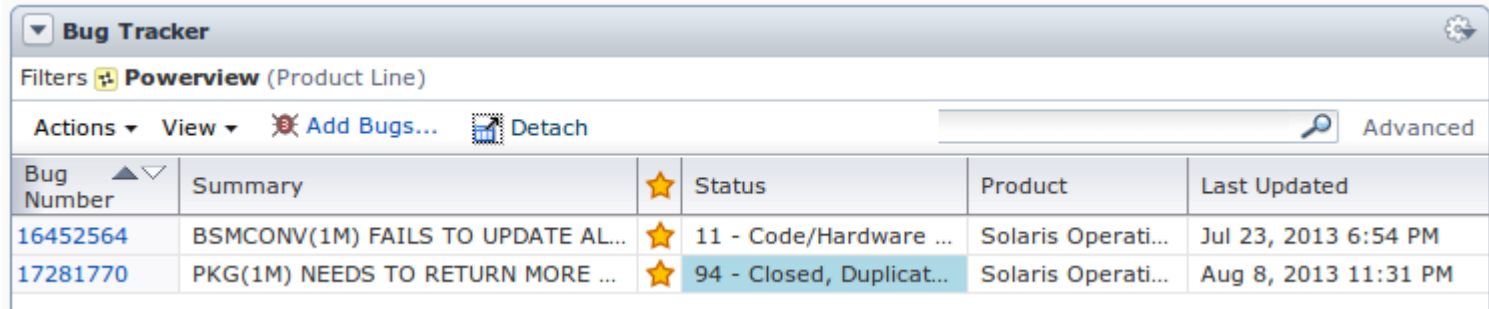
Solaris Technology Specific Templates

- Re-architected Solaris Problem Types
- Logical grouping based on Solaris technology
- Shorter, more targeted diagnostic templates
- Enables routing to specialist engineer



Tracking Solaris defects (bugs)

- Integrated in to My Oracle Support



The screenshot shows the Oracle Bug Tracker interface. At the top, there's a 'Bug Tracker' header with a gear icon. Below it, a filter section shows 'Powerview (Product Line)'. A toolbar contains 'Actions', 'View', 'Add Bugs...', and 'Detach' buttons, along with a search bar and an 'Advanced' link. The main table lists bugs with columns for Bug Number, Summary, Status, Product, and Last Updated. Two bugs are visible: 16452564 and 17281770.

Bug Number	Summary	Status	Product	Last Updated
16452564	BSMCONV(1M) FAILS TO UPDATE AL...	11 - Code/Hardware ...	Solaris Operati...	Jul 23, 2013 6:54 PM
17281770	PKG(1M) NEEDS TO RETURN MORE ...	94 - Closed, Duplicat...	Solaris Operati...	Aug 8, 2013 11:31 PM

- Bug Status details

www.oracle.com/pls/topic/lookup?ctx=mos_en&id=MOSHHP762

Additional Sessions and Support Stars Bar



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While You're at Oracle OpenWorld...

■ Support Breakout Sessions

- Oracle Database
- Oracle E-Business Suite
- SQL Tuning
- Oracle Exadata
- Siebel CRM
- PeopleSoft
- JD Edwards
- Oracle Business Analytics
- Oracle Fusion Middleware
- Oracle Solaris
- Oracle RAC Cluster
- Oracle Communications Solutions
- Sun Server and Storage Systems

■ Support Stars Bar

Moscone West, Level 2

- Oracle experts
- Live demos
- Mini-briefings
- Videos



Mon	10:00 – 18:00	Wed	09:00 – 17:00
Tues	10:00 – 18:00	Thurs	09:00 – 13:00

4th Annual My Oracle Support Community Meet Up Event

Monday, September 23
6:30 – 9:30 pm

- Join us for fun, networking, beverages and appetizers
- Meet fellow Community members and Oracle moderators
- Admission is free but registration is required
- Details and registration at:
www.bit.ly/MeetUpEvent2013



Q&A and Important Support Resources

- **Discover more about Get Proactive:**
<http://www.oracle.com/goto/proactivesupport>
- **MOS Community:**
https://communities.oracle.com/portal/server.pt/community/oracle_sun_technologies/388
- **Product Information Centers (PIC):**
Solaris 11 PIC [Doc ID [1559480.2](#)]
How to create a Solaris Software SR [Doc ID [1344979.1](#)]
How to create an Ops Center SR [Doc ID [1390697.1](#)]
- **Technical content from this presentation:**
Doc ID [[1585638.1](#)]

Thank you!

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