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Patching Solaris Systems

Best Practice

Gerry Haskins
Director, Software Lifecycle Engineering
Revenue Product Engineering, Systems
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Agenda

- 1 Introduction
- 2 Typical Enterprise Customer Patching Process
- 3 What to patch
- 4 Resources
- 5 Improvements in Solaris 11
- 6 Improvement in Engineered Systems

Introduction

- Two types of maintenance:
 - Proactive maintenance for issue prevention
 - Reactive maintenance for break/fix situations
 - Proactive maintenance is less costly and less stressful than reactive maintenance
- Monthly bug fix release cadence for Solaris
 - Solaris 10 OS Recommended Patchset
 - Solaris 11 Support Repository Update (SRU)
 - Both are supersets of their last quarterly security Critical Patch Update (CPU)
- Don't forget to update the System firmware!
 - Usually not necessary to update card or disk firmware unless advised

Typical Enterprise Customer Patching Process

- Team produces “Golden Image” to deploy Enterprise wide
 - Content determined from generic Best Practice plus
 - Known relevant fixes specific to your environment
 - Fixes for issues previously encountered
 - Fixes for Service Alerts for specific configurations – for example EMC PowerPath, Veritas
- Tested in typical configuration(s) under normal and peak loads
- Typical deployment cycle is ~ 9months

What to patch

- Solaris 10 Systems:
 - Use Solaris 10 OS Recommended Patchset and add:
 - Fixes for issues previously encountered
 - Fixes for Service Alerts for specific configurations – for example EMC PowerPath, Veritas
 - Apply using Live Upgrade
- Solaris 11 Systems:
 - Use Support Repository Update (SRU)
- Include System firmware update in patching plan
 - Firmware is increasingly important for SPARC as well as x86 systems and can have a significant effect on performance and stability
- Add in updates/patches for other products you use such as Solaris Cluster, ZFSSA, RDBMS, etc.

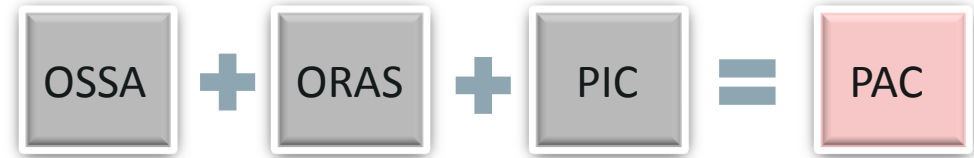
Resources

- Proactive Analysis Center: <https://support.oracle.com/pac>
 - See Doc 1634073.2 on MOS
- MOS: <https://support.oracle.com>
 - Use “Product or Family (Advanced)” search option on “Patches & Updates” tab
 - Search MOS Knowledge Docs for (Solaris) Service Alerts – for example Doc 1021776.1
 - Solaris 10 CPU (Recommended) Patchset Known Issues: Doc 1943839.1
 - Solaris 11 Support Repository Update (SRU) Known Issues: Doc 1900381.1, Doc 1629462.1
- Solaris 10 patch blog: <https://blogs.oracle.com/patch>
- Solaris 11 Maintenance Lifecycle blog: <https://blogs.oracle.com/Solaris11Life>

Resources - Proactive Analysis Center (PAC)

Combines three tools

- Oracle Sun Systems Analysis (OSSA)
- Oracle Risk Analysis System (ORAS)
- Proactive Information Center (PIC)



Holistic system health reporting solution for proactive and reactive services.

PAC system health reports are a cornerstone in improving system availability:

- Quickly identify at risk systems with vulnerabilities
- Manage risk through tracking/improving Operational Risk Index (ORI)
- Decrease operational cost by managing downtime
- Reduce the number of service requests and the time to resolve issues

Resources – Proactive Analysis Center

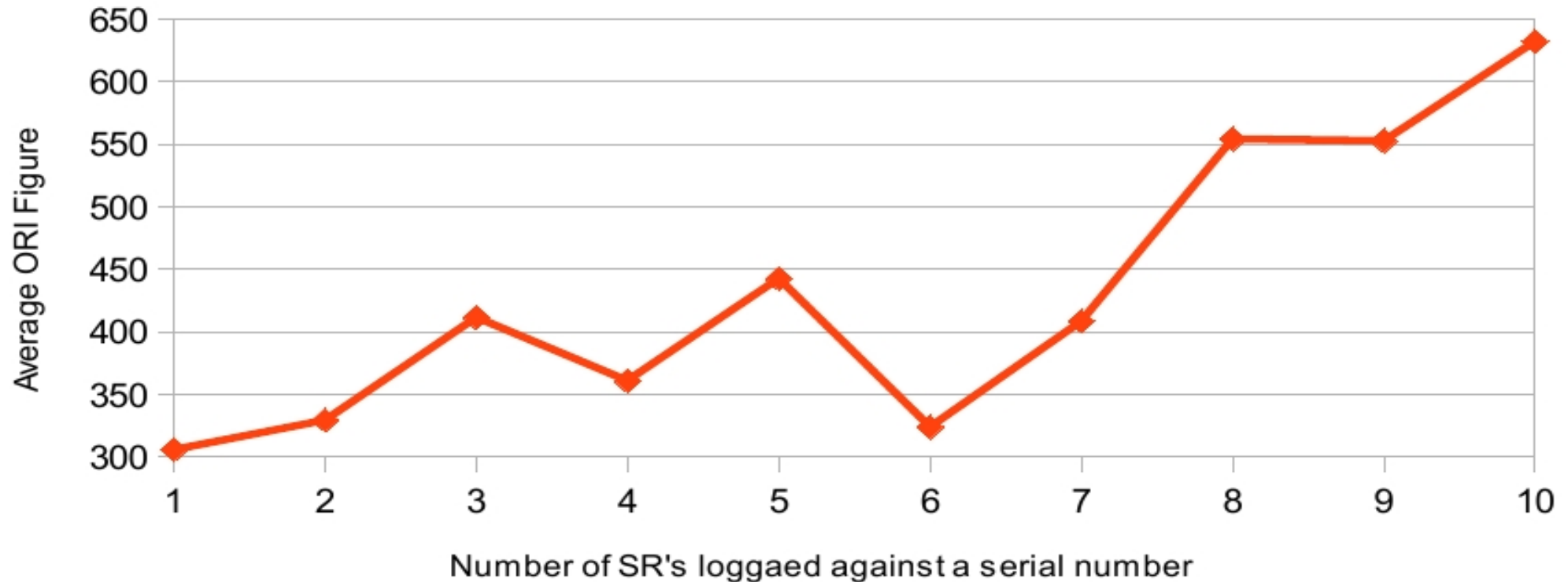
- The Operational Risk Index (ORI) is a simple metric that acts as an indicator of IT risk
- The ORI score is based on a measurement of failed rules for a system
- The higher the ORI number the greater the potential for problems, downtimes, or outages
 - ✓ Each issue (rule) is given an ORI Severity that is used in calculating the ORI Score
 - ✓ The possible severities include: Critical, High, Medium, and Low
 - ✓ ORI is calculated only on conclusive results (100% applicable to this system); however, inconclusive results are still listed for review
- As customers remediate rule failures, the ORI number drops

Resources – Proactive Analysis Center

Case Study: Large multinational Telco

No of SR's per system against average ORI

803 Calls & 407 Servers



Improvements in Solaris 11

- Many of the technologies introduced in Solaris 10 are more tightly integrated into Solaris 11 along with key new technologies
 - ‘beadm’ is a more sophisticated and tightly integrated version of Live Upgrade
 - Leverages ZFS root filesystem which making it easy to take backup snapshots prior to updating
 - Easy to roll-back to known state
 - Image Packaging System (IPS) eliminates patches
 - All updates are at the package level
 - Repo based solution
 - Monthly Support Repository Updates (SRUs) provide one-size-fits-all set of bug fixes
 - No need to filter through lots of Solaris or Cluster patches to figure out which ones you need
 - Safety-in-numbers effect as many customers on same software level so issues can be found and fixed quickly
 - Automatically supersedes IDRs which have been fixed
 - Solaris 11.2 introduces Security Compliance framework, security package

Improvements in Engineered Systems

- Many customer lifecycle issues are the result of sub-optimal deployments
 - Engineered Systems such as SuperCluster and Exadata leverage Engineered Together, Tested Together Install Bundles to ensure best practice deployment configurations
 - Still allows flexible configurations – for example, SuperCluster redundancy or server consolidation
- Quarterly Full Stack Download Patch (QFSDP) provide a tested maintenance update for the entire SuperCluster or Exadata Engineered System
 - Systems firmware, OS, cell software, DB, IB switch, ZFSSA, Solaris 11, Solaris 10, Cluster 4.x, Cluster 3.3u2, Exafamily utilities for both SuperCluster and Exadata
 - Eligible for Platinum Patching – we do the patching for you, so you don't have to!
- Has proved to be an exceptionally stable model reducing customer issues
 - Issues which do occur are much faster to root cause, resolve, and proactively publish to other customers before they're impacted

Hardware and Software Engineered to Work Together

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