

ORACLE®

ZFS Storage Expert Health Checks

Get the most out of your investment

ZFS STORAGE
APPLIANCE

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Safe Harbor Statement

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.

Topics

- 1 Introduction
- 2 Landscape
- 3 Demo
- 4 Additional Resources

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ZFS Storage Innovation



New Hardware components



Best practices

3-6

New Software versions
every 3 – 6 months.



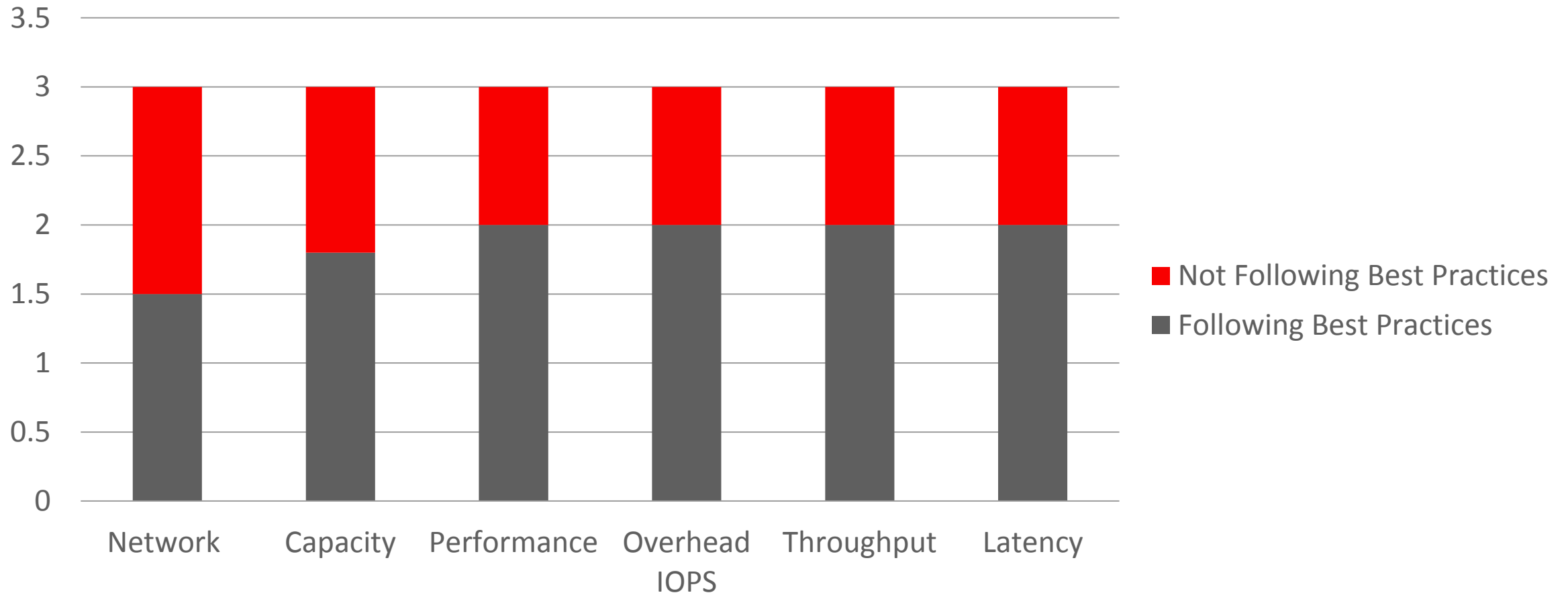
Performance Improvements

Customer growth

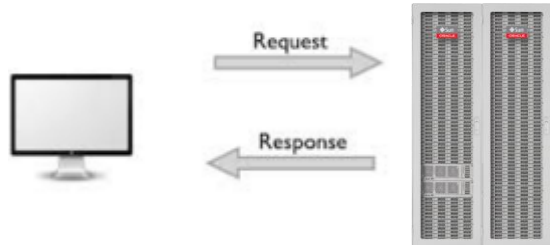
- New:
 - Workload changes
 - Data growth
 - New applications
 - Regulatory changes
 - Service



Technology and Business growth – High risk implications



Technology and Business growth – High risk implications



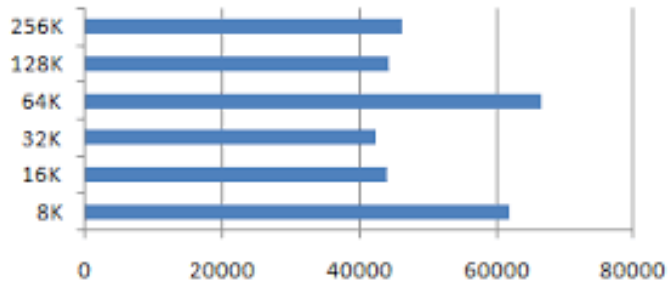
Network bandwidth



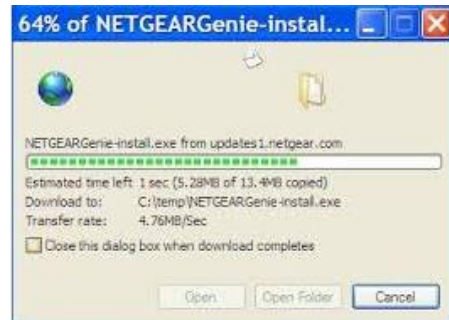
Capacity overload



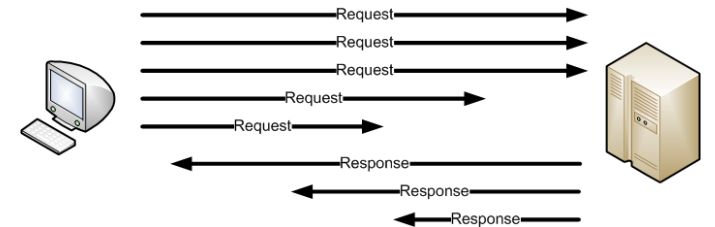
Performance degradation



Overhead IOPS



Throughput(MB/sec)



Latency

Get Pro-active with...

Configuration best practices.

Tools : Workflows and Scripts.

Support Services



Ensure you..



Use the right hardware components.

Stay up to date.

Get the Performance efficiency.

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DEMO

Phonehome Service

Description	Benefit
Telemetry insight with Services	New enhancements Capacity alerts Service Requests

Section 1 Hardware Output										
System							Storage			
Created	SystemId	HostId	Model	Software	Faults	State	Pools	Capacity in TB	Max pool	Maximum NFS Latency
2015-10-2	9281398	test	oracle zfs storage zs4-4	2013.06.05.5.0,1-1.6	2	On	1	344.45 TB	.01%	8 ms
2015-02-1	1231	test	oracle zfs storage zs4-4	2013.06.05.3.0,1-1.14	17	On	0	1637.26 TB	.00%	
2015-02-1	212413	test	oracle zfs storage zs4-4	2013.06.05.5.2,1-1.2	5	On	2	1808.95 TB	63.13%	
Section 2 Recommendations(Sample)										
Historic Trending Recommendations										
Based on your # of network devices and type you will be approaching 90% utilization in less than 2 months based on your historical utilization(System ID q45dsafds)										
Based on your historic capacity utilization , you will be reaching 90% in less than 3 weeks. Please increase your capacity. (System ID 1321132)										

Pool Scrubbing Mos Note

Description	Benefit
Data integrity best practices	Keep your ZFS Storage running at full speed.

```
root@storage:~# zpool status MiscStorage
pool: MiscStorage
state: ONLINE
scan: scrub in progress since Sun Jun 14 17:44:39 2015
      190M scanned out of 1.24T at 21.1M/s, 17h7m to go
      0 repaired, 0.01% done
config:

          NAME            STATE          READ WRITE CKSUM
          MiscStorage     ONLINE         0     0     0
           sdm_crypt      ONLINE         0     0     0

errors: No known data errors
```

ZSCheck workflow

Description	Benefit
ZFS Storage Hardware component health check [Tool]	ZFS Storage Hardware and software component alerts and recommendations.

The tool checks and validates the following configuration settings:

- Firmware
- Operating key services
 - DNS
 - Phone Home
 - SSH
 - NIS/Active Directory/LDAP
 - NTP
 - Service Tags
 - etc
- Cluster
- Network
- Pools (+vdevs)
- Readzillas and Logzillas
- Trays / stack

The ZS_Basic_Config_Chk also checks for faulted or missing HW components, such as:

- Disk Drives
- Power Supplies
- Fans
- IOMs
- Service Processor (ILOM)

ORAchk(ZScheck) framework

Description	Benefit
Oracle on Oracle Health check[Tool]	Oracle Software and Hardware component alerts and recommendations. All in one.

System Health Score is 92 out of 100 (detail)

System Health Score is derived using following formula.

- Every check has 10 points
- Failure will deduct 10 points
- Warning will deduct 5 points
- Info will deduct 3 points
- Skip will deduct 3 points

Total checks	461
Passed checks	369
Failed(fail/warn/info/skip) checks	92

..Hide

Click detail to expand and shows high level health score based on check results

Upgrade best practices

Description	Benefit
Best practices on upgrading your ZFS Storage	Get the latest bug fixes with your upgrade.

About System Updates

A system update for Oracle ZFS Storage Appliance is a binary file that contains new management software as well as new hardware firmware for your storage controllers and disk shelves. Its purpose is to provide additional features, bug fixes, and security updates, allowing your storage environment to run at peak efficiency. This section highlights the properties of a system update and how to download it onto your Oracle ZFS Storage Appliance.

System Update Version

The update feature is contained in the Software Updates section under Maintenance → System of the management interface. Each available system update is listed there with a version format that is contained in a numerical string. To understand this format, look at the following browser-user interface example:

Software Updates		Check <input type="checkbox"/> weekly <input type="button" value="↕"/>	Check now
VERSION ▲	RELEASE DATE	STATUS	
2013.06.05.1.1,1-1.2	2013-12-6 16:37:50	Previous system software	↻
2013.06.05.2.0,1-1.9	2014-5-28 09:20:06	Current system software	
2013.06.05.3.0,1-1.14	2014-12-19 07:31:49	Uploaded at: 2015-3-19 09:10:50	↻

Advanced Customer Services

Description	Benefit
Support Service Contract for advanced deep dive troubleshoot.	Get specific setup, recommendations, troubleshoot for your ZFS Storage environment with 24/7 availability.

Service	Service Summary
Oracle Configuration Review and Recommendations	<p>Analyzes current environment and establishes target configuration based on customer operational objectives and relevant Oracle best practices. Oracle performs gap analysis and identifies risks using Oracle diagnostic tools and knowledge, and delivers final findings report.</p> <p>Areas to be reviewed can include:</p> <ul style="list-style-type: none"> • ZFS Storage Appliance Configuration • ZFS Backup Appliance Configuration • ZFS Storage Appliance Replication • Solaris versions and patches • NAS storage, Disk storage, RAID Configurations • Network configuration
Oracle Performance Review and Recommendations	Oracle collects and analyzes performance data to identify system load patterns and potential bottlenecks. Reviews key performance metrics, and documents and reviews findings and recommendations.
Oracle Production Diagnostic Review and Recommendations	Oracle conducts a comprehensive system health- check and identifies risks associated with serviceability, configuration, stability and performance factors. Performs deep-dive diagnostics for identified high-risk issues and conducts a review of findings and recommendations.
Oracle Capacity Planning Review and Recommendations	Assist customers with maintaining adequate system resource capacity to support usage trends and peak-period demands. Provides a review of current available capacity, an analysis of consumption trends (including peak consumption periods), and provides the customer with a report of findings to assist them in making capacity planning decisions and to anticipate system resource needs over a 1-2 year period.

Tune ZFS Storage for Performance Mos Note

Description	Benefit
Tune your Share/Lun settings with your IOs for best performance .	Get the most out of your ZFS Storage Appliance Operations per second.



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References

Best Practice/Tool	Learn more here
Phonehome Service	https://docs.oracle.com/cd/E51475_01/html/E52872/configuration__services__phone_home.html
Pool Scrubbing Mos Note	https://mosemp.us.oracle.com/epmos/faces/DocumentDisplay?id=2118680.1
ZScheck workflow	https://mosemp.us.oracle.com/epmos/faces/DocumentDisplay?id=2046539.1
ORAchk(ZScheck) framework	https://mosemp.us.oracle.com/epmos/faces/DocumentDisplay?id=1268927.2
Upgrading your ZFS Storage White Paper	http://www.oracle.com/technetwork/server-storage/sun-unified-storage/documentation/best-practices-upgrading-zfssa-wp-2556078.pdf
Advanced Customer Services	http://www.oracle.com/us/support/advanced-customer-services/resource-library/services-zfs-storage-appliances-1673949.pdf
Using ZFS Storage Analytics to tune for performance Mos Note	https://mosemp.us.oracle.com/epmos/faces/DocumentDisplay?id=1567691.1

Online and community resources

- [OTN](#) Online Technology Network.
- [ZFS Storage home page](#)

A woman with long brown hair and glasses is sitting at a wooden table in a bright, modern office or cafe. She is wearing a brown leather jacket over a blue patterned scarf. She is holding a black smartphone to her ear with her left hand and looking down at a large open book or document on the table with her right hand. The background is slightly blurred, showing other people and large windows. The word "Questions?" is overlaid in large white text on the right side of the image.

Questions?

Integrated Cloud

Applications & Platform Services

ORACLE®