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| **Controller Overview** | | | | | |
| **Host Name** | **Site** | **Serial Number** | **Model** | **AutoSupport Enabled** | **ONTAP Version** |
| <H:H> |  | <H:S> | <H:M> |  | <H:V> |
| **Latest ONTAP Release Available** | | | | | 8.2.4P2 7-Mode |
| *Newer version of OnTap is available. We recommend updating to the latest version* | | | | | |

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| **Motherboard Firmware Overview** | | | |
| **Host Name** | **Current Version** | **Latest Release** | **Action Required** |
| <H:H> | <H:MBV> | <H:MBL> | <CMP> |

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| **Service Processor Firmware** | | | |
| **Host Name** | **Current Version** | **Latest Release** | **Action Required** |
| <H:H> |  |  | <CMP> |

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| **Shelf Firmware Overview** | | | | | | |
| **Host Name** | **Total Shelf Count** | **Shelf / Module Type** | **Shelf / Module Count** | **Current Version** | **Latest Release** | **Action Required** |
| <S:H> | <S:C> | <S:TM> | <S:MC> | <S:V> | <S:L> | <CMP> |

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| **Disk Firmware** | | | | | |
| **Host Name** | **Disk Model** | **Disk / FW Count** | **Current Firmware** | **Latest Release** | **Action Required** |
| <D:H> | <D:M> | <D:C> | <D:V> | <D:L> | <CMP> |

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| **Observations and Generic Recommendations** |
| Newer version of Data OnTap is available. Upgrade is recommended  Newer version of Service Processor firmware is available. Update is recommended  Motherboard, Service Processor and ONTAP firmware should be updated collectively after interoperability matrix checks.  Newer versions of shelf and disk firmware is available. Update is recommended  **Keystone’s Configuration Mentorship is available to discuss how changes can be made to meet your business requirements.** |

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| **Aggregate Disk Space** | | | | | |
| **Aggregate Name** | **Total Capacity (GB)** | **Remaining Capacity (GB)** | **% Used** | **Rate of Growth (GB/Day)** | **Estimated Time to Capacity** |
| <A:NAME> | <A:C> | <A:RC> | <A:PU> | <A:G> | <A:EST> |

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| **Disk Space Summary** |
| Disk space utilization figures can be skewed due to the use of LUN reserves and / or volume guarantees within an aggregate. |

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| **Physical Configuration** | | | | | | |
| **Host Name** | **Disk Shelf Cabling** | **Environment Probes** | **Service Processor** | **Unowned Disk** | **Broken Disks** | **Spare Disk Ratio** |
| <H:H> |  |  |  |  |  |  |
| **Host Name** | **No Memory Errors** | | **Interface Groups Operational** | | **No Errors on Network Ports** | |
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| **Summary** |
| Note: Memory errors are not reported in auto support in this version of ONTAP |

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| **Logical Configuration** | | | | |  |
| **Host Name** | **NTP Server Config.** | **LUN Misalignment**  **Check** | **Optimal LUN access** | **Interface Partners Configured** | **Auto Giveback** |
| <H:H> |  |  |  |  |  |

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| **Summary** |
| Block storage is not used, no LUN configured  Auto Giveback is not enabled. NETAPP best practice is to enable auto give back |

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| **Hardware Failures / Replacements February 2015 - Present** | | | 0 |
| **Controller** | **Date** | **Case Number** | **Description** |
| N/A | N/A | N/A | N/A |

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| **Glossary of Terms** | |
| **Controller Overview** | **Check Description** |
| AutoSupport Enabled | Verifies AutoSupport is enabled for each controller allowing on going monitoring and management of the system. |
| ONTAP Version | Identifies which instance of ONTAP is present on each controller. Information on possible upgrades is provided. |
| **Firmware Overview** | **Description** |
| Service Processor, Motherboard, Shelf and Disk Firmware | Reviews the firmware installed on components of the system and compares with latest available releases. |
| **Aggregate Disk Space** | **Description** |
| Total Capacity (GB) | The total capacity of all the disks in the system |
| Remaining Capacity (GB) | The total space remaining on all the disks in the system. All or some of this space may be reserved and may or may not be available for THIN provisioning. |
| % Used | % of total capacity holding data within each aggregate. If THICK provisioning is used further analysis is required to identify % of space used within a reserved space. |
| Rate of Growth (GB/Day) | This is the average amount of data added to the entire system per day based on data consumption for the last quarter. |
| Estimated Time to Capacity (Days) | Estimate based on current consumption and current growth rates, above. |
| **Physical Configuration Checks** | **Description** |
| Disk Shelf Cabling | Verifies no disk or cable failures exist and the system is still configured as per best practices. Errors can result in loss of redundancy. |
| Environment Probes | Environment probes monitor status of various hardware components, such as fans, PSU, battery charger, etc. |
| Service Processors Online | Service Processor provides additional management and monitoring functions. Verifies the SP is configured and online. |
| No Unowned Disks | Unowned disks are the disks that are physically present but not assigned to any node. Under normal conditions all the disks have to be assigned to promote optimal performance. |
| No Broken Disks | Identifies any broken disks to be replaced. |
| Spare Disk Ratio | Optimal spare ratio to ensure continued service: Aim to maintain 1 spare disk for nodes with up to 20 disks, 2 spares are required for nodes with up to 100 disks. |
| No Memory Errors | A high number of correctable memory errors (>5000) indicates a faulty memory module which may require replacement. |
| Interface Groups Operational | Verifies that all members of multi-mode interface group are operational as required to ensure redundancy. |
| No Errors on Network Ports | Checks for errors on ports which degrade performance and require further investigation. |
| **Logical Configuration Checks** | **Description** |
| NTP | Verifies NTP server is configured and enabled. |
| LUN Misalignment Check | Misaligned LUNs slow performance: The more misalignments the greater the depletion of service. This check reviews NetAppp data for LUNs that are reported as misaligned. |
| Optimal LUN Access | This check verifies that LUN access is performed through the node which owns the LUN. Incorrect access will slow performance. |
| Interface Partners Configured | Interface Partners control where interfaces can migrate in failover scenarios. Without appropriate configuration failover will not complete properly. |
| Auto Giveback Enabled | Verifies Auto Giveback is enabled to initiate an automatic giveback after an automatic takeover occurs due to the partner node panicking. Enabling this function shortens the time between failure and the full restoration of service. |