

# Storage Management Service Levels Q&A Session – June 29, 2011

1. What are the key metrics that are included in an application's storage service level?

An application storage service level includes measuring the following key storage performance indicators:

- Average application response time
- Total input/output (I/O)
- Data transfer rate
- Read hits
- Write pending

2. Please describe how your chargeback feature could feed into in a custom chargeback system that includes all IT assets, not just storage?

The current chargeback support provided by Hitachi Command Director is focused on the following areas:

- a. Storage capacity allocation mapped back to a host and application. Storage capacity utilization is also reported if Dynamic Provisioning pools and volumes are used
- b. Host-side file system capacity allocation and utilization if agentless host data collectors are deployed
- c. Application performance information such as IOPS, throughput and response time are also available for more advanced chargeback scenarios. Currently, Hitachi Command Director provides the data but not the unit cost model for performance based chargeback.

These capacity and performance statistics can be extracted in Excel, CSV, or XML formats and fed into a user's custom chargeback system.

3. Can you provide additional details and requirements on how your application gathers server information if no agent is used?

Hitachi Command Director utilizes the "LUN Owner" method to identify a group of LUNs or volumes that belong to the same host or application by examining the host to storage paths via World Wide Names (WWNs) and Host Group information. By using this method, Command Director can identify multipath LUNs back to the same host or application without any agents or data collectors.

For more detailed host-side information, Hitachi Command Director agentless host data collector uses methods, such as WMI, SSH, etc. (depending on OS), to gather host side information, such as file system capacity utilization. Host platform coverage includes: VMware ESX servers via vCenter, Windows, HPUX, Solaris, Linux and AIX.

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4. Is there a CM component that tracks server CPU (cores), RAM, DASD, storage mappings?

Hitachi Command Director does not track CPU (cores), RAM, etc., as this is not currently one of the Command Director main use cases. Command Director already provide storage mapping back to the host or application today.

5. Since Hitachi Storage Services Manager has not been updated for long time, can this application support other vendors storage?

At this time, the primary focus Hitachi Command Director is Hitachi virtualized storage environments. It can support Hitachi storage systems and any storage, either Hitachi or another vendors' storage, virtualized behind the Hitachi storage controllers.

6. Can Hitachi Command Director send SNMP traps to a framework application?

No, not at this time.