NetApp

FAQ

OnCommand Insight

NetApp
October 24, 2024

Table of Contents

FAQ

General Questions

This FAQ answers common general questions about OnCommand Insight.

When was OnCommand Insight (OCI) introduced?

OCI is one of the most mature infrastructure monitoring products in the industry today with over a decade in active development. Formerly known as Onaro or SANscreen, the SANScreen name was changed when joining the OnCommand Portfolio suite of products and is now referred to as OnCommand Insight, or more commonly Insight or OCI.

How long will OCI take to deploy in my environment?

OCI is simply a software download. Software is installed on two dedicated virtual or physical servers. Typical installations can be performed in as little as 2 hours and inventory, capacity and performance data will begin to be provided almost immediately. Any additional performance and best practice policies, user annotation, and cost awareness setup will require additional planning discussions.

Does OCI require agents, collectors, or probes?

OCI is 100% agentless and does not require the use of agents, taps or probes. All device discovery is read only, performed out of band, and over IP.

How does OCI discover and connect to devices?

OCI setup leverages the native APIs and protocols often already present in the data center environment, with no need of agents or probes. SSH, HTTP, SMIS and CLI are just a few examples. Where device element managers already exist (such as EMC's Unisphere, for example), OCI will communicate to the element manager(s) to capture the existing environmental data. Most device discoveries require only an IP address and read-only username and password. These device discoveries can be "one-to-many", such as with OCI's VMware data source. By discovering the VMware vCenter, OCI in turn discovers all of its ESXi hosts and their associated VM's, all with a single IP address and credential.

Does OCI require Professional Services? Is that available, and what do they offer?

For moderately-sized environments we recommend Professional Services for deployment, configuration, and integrations, as well as a wide variety of custom reporting and data validation possibilities. A short discussion with the OCI team and account engagement manager can help determine what services will benefit you the most.

How often does OCI release updates for new features and improvements?

Product updates and Service Packs are available for multiple versions of OCI. Major or minor releases are typically provided every few months, with service packs including new device support and firmware released more frequently. Both are available on the support.netapp.com download site. Certain updates such as new disk models that come out more frequently from manufacturers are pushed out automatically to the OCI software. Additionally, OCI data source device collection can be patched on site immediately after a development fix or update.

How does the OCI management team prioritize requests for new data sources?

OCI's Product Management team actively tracks all customer enhancement and interoperability feature requests (IFR's). Each request is detailed, evaluated for feasibility and prioritized based on customer demand and overall strategic business impact. Once accepted, requests are sized based on level of effort and scheduled for future development. The agile nature of the OCIs development process routinely allows for new data sources to be made available outside regular scheduled release cycles. NetApp account representatives can assist in customer inquiries and in submitting new requests on your behalf. Data sources can be patched on site, without the need to upgrade OCI.

My company runs completely on Linux. Will OCI work on Linux?

Yes, OCI supports several flavors of Linux as well as Windows. Be aware that Cognos (IBM's reporting tool used by OCI in conjunction with the Data Warehouse) is only supported on Windows, so if you are using OCI for reporting, you will need to run the reporting tool on a Windows server. The OCI Installation Guide lists the server requirements and supported operating systems for each OCI component.

Is OCI suitable for secure environments without internet access?

Yes, OCI is used by the top 10 Fortune 500 companies and by leading banking, healthcare, research and government agencies around the world today. OCI provides support for US military common access cards (CAC) and offers solutions for geographically-dispersed or heavily-firewalled environments.

I keep hearing that OnCommand Unified Manager (OCUM) is the management solution for cDOT. Can you help me understand why I would also use OCI?

OnCommand Unified Manager operates at the storage array "device management" layer, providing in-depth incident and event-based analysis of Clustered Data ONTAP (cDOT) arrays and their cluster interconnects. OCI provides a holistic view of on-premise and globally-dispersed environments consisting of 7-mode, Clustered Data ONTAP and other 3rd party arrays. Its end-to-end visibility, from VM to spindle, allows for historical trending and forecasting of capacity, performance and cost modeling that promotes a proactive service quality approach to data center management.

What is the OnCommand Insight Secondary ETL?

The "Secondary ETL" refers to a developed professional services implementation used for invoking additional Extract, Transform and Load (ETL) of captured data, for population into the OnCommand Insight data warehouse.

The Secondary ETL process primary purpose is to prefetch "batch" data allowing for more complex reports to generate faster, or to be scheduled to run on a daily basis.

This Secondary ETL is in addition to the recommended "once per day" ETL detailed in the OnCommand Insight data warehouse administration guide.

NetApp Professional Services is qualified to configure Secondary ETL scripting to avoid impact to existing OnCommand Insight report schedules, automated backups, scalability, or other system performance activities. For additional information regarding ETL scripting or data validation needs, please contact your NetApp Sales Representative and discuss how NetApp's Professional Services can assist you.

OnCommand Insight Licensing

Answers to common questions about OnCommand Insight licensing.

OCI Licensing Overview

OCI is licensed by capacity. Customers must purchase a license for each module they want to enable:

Discover is a prerequisite for Assure, Perform, and Plan and is not offered on its own. Discover is licensed by TB of managed capacity.

Assure is licensed by TB of managed capacity (as a single unit of charge for all storage infrastructure: FC, NAS, iSCSI, FCoE).

Perform is licensed by TB of managed capacity.

Plan is licensed by TB of managed capacity.

"Managed capacity" is defined as the raw capacity of the physical disks, virtual disks, and tapes prior to formatting. This is applicable to all storage discovered by Insight, both on-premises and in the cloud.

Most data sources are looking at disk raw base 2 capacity. There is no consideration for the disk role, such as a spare disk, unassigned disk, or RAID disk.

There are two types of Insight licenses available: **Perpetual** and **Subscription**.

Perpetual licenses allow you to indefinitely use the specific version/release of the software obtained subject to applicable license terms. If you have purchased a Software Support Plan (SSP), NetApp provides access to commercially available software updates through the NetApp Support site when and if updates are available in accordance with its Support Services terms. NetApp also provides access to special patches as determined by the NetApp Technical Support Center.

Subscription is a fixed term license of software which grants the right to:

- Use the software on-premises for a limited period only (most commonly 12 months) subject to applicable license terms
- Receive Software Support (previously referred to as SSP) for the period of the term
- While in effect the Licensee may use the most current commercially available version, release, or update, should any be made available as well as receive support for the software

At the end of each fixed term (most commonly 12 months), the license may be renewed for an additional fixed term (most commonly 12 months). If the license is not renewed, Licensee will no longer have the rights to use the software, will no longer be entitled to the benefits of SSP, and Licensee must destroy all copies of the software.

More about OCI License Modules

OCI has 4 core license modules to meet today's datacenter environment needs. These modules are **Discover, Perform, Assure and Plan**. Discover is the base module and is required for all other module purchases.

The **Discover** module enables OCI to locate the assets in the datacenter and dynamically map the device service paths. Information such as capacity, vendor information, model, firmware and serial numbers are provided.

Perform is OCI's performance collection module. Perform captures IOPS, throughput, latency, and CPU and memory information as well as provides other analytics.

Assure is positioned toward Fibre Channel environments and efficiency technologies. It helps identify and

manage risks in fibre channel and iSCSI environments. Assure also helps with information on identification, mapping and alerting of masking, mapping and zoning service path entries and efficiency best practice policies such as fabric redundancy, switch hops, fan-out ratios and thin provisioning.

Plan provides the ability to identify and forecast trends across compute, fabric and various types of storage (cDOT, 7-mode, 3rd party) in hybrid on premise and globally-dispersed Data Center environments. It allows for longer retention times. The Data Warehouse consists of a built-in Intelligence to allow report authoring and avoids double counting of metrics in enterprise shared storage environments. It has the ability to generate and schedule a compliment of "out of the box" productized reports, or create your own reports using its `'" drag and drop`'" integrated report authoring tools.

Configuration and Supported devices

This FAQ answers common questions about OnCommand Insight configuration and supported devices.

Does OCI make changes to my environment?

No. OCI is a read-only tool that gathers information about your environment. OCI never makes any changes to your assets or configurations.

What permission-level access does OCI need to my devices?

In most cases where the device supports it, a read-only access is all that is required. There are some solutions that do not permit read-only access and thus would require the appropriate elevated permissions.

How often does OCI collect information?

OCI typically collects performance data every 5 minutes and discovery of logical and physical constructs every ½ hr. OCI sets the default polling intervals according to suggested best practices and scalability but does permit the user complete control over these intervals.

What is OCI's impact to my Environment?

OCI's agentless, out-of-band and passive IP communications help minimize setup, maintenance and impact to the data center ecosystem. OCI's performance development team takes great measures to minimize any impact to the Data center's performance in activities of monitoring performance itself. Impact is considered negligible in normal operating environments and can be relaxed or tightened in highly utilized or underperforming technology platforms. See the OnCommand Insight Installation Guide for more information.

How can I list all the hosts/VM's in OCI?

OCI's compliment of widgets and query-listing possibilities can be used to provide inventory style listings for Data Center assets. Listings of Virtual Machines down to the spindles and numerous constructs in between can all be made available to queries, widgets, dashboards, and data warehouse reporting, and are accessible through the RESTful API.

Does OCI provide the same type of support for related non-hypervisor hosts (i.e. physical servers)?

Hypervisors such as VMware provide detailed information on the ESXI hosts and their associated virtual machines (VMs). For physical servers, OCI collects metrics up to the host HBA. OCI employs a unique method

in which it discovers physical servers using a patent-pending technology. Once storage and/or switches are discovered, host names for physical servers are contained within the fabric alias information. OCI selects these host names, matches them in DNS, and automatically brings the hosts into OCI. This technique greatly minimizes the need for manual entry updates and tool inventory maintenance.

Does OCI provide the same device metric depth (parity) across heterogenous environments?

There are varying degrees of standardizing, commonality and nomenclature across 3rd party platforms and vendor technologies. OCI attempts to normalize capacity and performance information into a consistent framework. Some capacity and performance metrics are provided natively from the device's counters, such as IOPs, latency and raw capacity. When counters are not provided, OCI can attempt to summarize the values (for example, by totaling the IOPs or capacities of underlying volumes), and in cases where neither is available, OCI will attempt to derive the metric values through various computational algorithms. OCI provides a generic SNMP integration capability to incorporate additional metrics not currently collected by OCI today.

Does OCI support Fibre Channel switches?

Yes, In addition to gathering data from your storage assets, OCI also acquires Inventory and Performance data from Cisco, Brocade and QLogic switches in your environment.

Are topology views of the whole infrastructure available? Does OCI show "end-to-end visibility"?

Yes, OCI dynamically discovers and maps the logical and physical constructs, providing an interactive end-to-end topology view of Compute, Fabrics, Virtualizers and back-end Storage. Topology icons allow quick launch navigation to impacted resources and aid in identification of workloads & violations in shared storage environments.

Scale and Ease of Use

This FAQ answers common questions about OnCommand Insight scaling and ease of use.

How does OCI scale?

OCI is a leader with respect to interoperability and the number of assets it can acquire with a minimal footprint. At its core, OCI requires 2 virtual or physical servers: one for the Operational Server which discovers all the data center assets, and one for its consolidated Data Warehouse for long term historical reporting. OCI's enterprise coverage supports hundreds of arrays, tens of thousands of Virtual Machines, 100,000 Fibre Channel paths and 10,000+ fibre channel ports, all in a single server instance.

How many people are needed to manage the OCI application?

OCI can be managed by a single person. But OCI has capabilities that can used by multiple personas within the business environment, each with different roles, each with different reporting, troubleshooting or analytics needs. All efforts are made to minimize tool maintenance—from health and notification menus displaying configuration problems, to automatic discovery of Physical Hosts attached to a fabric. Flexible annotations bring business context to the ecosystem data for all types of users. From Storage, Fabric, and Virtualization Administrators to Capacity Planners, Business Analysts and Executives, OCI brings the sharing of information across business silos and technologies together in a single pane of glass.

Does OCI support custom reporting?

Yes. OCI provides reporting via the IBM Cognos business intelligence tool, which allows you to create your own fully-customized reports from data collected in OCI's Data Warehouse.

How easy is it to create custom reports?

OCI reporting offers features for both novice and advanced users. OCI provides a number of report authoring capabilities including "drag and drop" report authoring and SQL query-based reporting for the more advanced user or professional service engagement. OCI's built-in business Intelligence solution (IBM Cognos) avoids common mistakes such as double counting capacity. With a complement of out of the box reports, widgets, queries and dashboards there are offerings to fit anyone's reporting requirements.

Customers can also find downloadable reporting templates available from the OCI community store.

Can OCI show performance and availability with "traffic light" simplicity?

Yes. OCI Data Warehouse and Reporting allow for reports with color enhancements—e.g. red/yellow/green "conditional styling" of values. Generating a colored font or background in a report can be implemented both by end users and Professional Services. OCIs widget libraries allow business specific performance metrics to be displayed in dashboards.

Performance troubleshooting

This FAQ answers common questions about OnCommand Insight performance troubleshooting.

How can I create a list of all the greedy resources in my environment?

OCI's correlation analytics help with identification of greedy and degraded resources for a specified service path. The correlation feature's generated analysis is performed in real time while viewing each object. The analysis provided greatly reduces the time necessary for troubleshooting performance issues and identifying root cause. Exploring generated violations of defined performance policies are one point of entry to discovering greedy or degraded resources. Both widgets and dashboards using the latest query capability help to filter, sort and visualize resources with higher than expected IOPS (greedy), Utilization or Latency.

Can OCI give one place to diagnose performance problems?

Yes. Performance Troubleshooting in OCI can be approached in multiple ways. OCI has a number of alerting methods possible. SNMP, Syslog and emailed Alerts are used commonly. Emailed Alerts allow users to quickly click and launch to the impacted resources within OCI. A global search window allows administrators to simply type in a resource name to begin analyzing the situation.

OCI's Violation Dashboard allows users to prioritize efforts based on the number of events, the duration and the time of day. An example of various alerting types would be Latency, IOPS, Utilization, Severity, business unit or even associated application.

OCI's correlation analytics helps administrators compare objects associated with the impacted resource and determines their impact to IOPS, Latency, Utilization, CPU and BB credits.

OCI's Query technology and Widget dashboards allows for pinpoint specifics in organized views that targets problem areas within the Datacenter.

Can OCI help with my 7-mode to cDOT migrations?

Yes, OCI provides an invaluable understanding for existing workload demand and post migration validations. OCI's role in modernizing today's datacenter allows for change management simulations, pre-migration optimization planning and defining the right tier of service. OCI effortlessly collects and correlates the business impact across thousands of NFS shares and Fibre channel paths in multi-vendor environments with just a few clicks. From migration to tech refreshes, OCI is providing a pathway to reliable, right-sized migrations and mitigating unplanned service disruptions.

How "real time" is OCI performance monitoring?

OCI is considered **near-real-time** for both on-premises and hybrid cloud data center management. While polling of data sources can be configured to occur more often, most users don't get significant analytical benefit from having a performance collection interval for most devices of less than 5 minutes. More frequent collection can put unnecessary burden on the objects under management and the analyses performed. Of course, there may be circumstances where a more granular collection is required, and fortunately OCI allows complete flexibility including configurable device inventory and performance polling intervals to suit your specific data center environment needs.

Why is my "Total" different from my "Read" plus "Write"?

In some instances, you may notice that the *Total* for a counter is not equal to the sum of *Reads* plus *Writes* for that counter. There are a few instances where this could happen.

IOPS: In addition to reads and writes, a storage array or other asset will process internal operations unrelated to the workload data flow. These are sometimes referred to as "system", "metadata", or simply "other" operations, and can be attributed to internal processes such as snapshots, deduplication, or space reallocation. In these cases, to find the amount of system operations for a given asset, subtract the sum of *Read* and *Write* IOPS from the *Total* IOPS. The sum of Read plus Write IOPS is the total IOPS directly related to your data flow.

Latency: The total response time (latency) for an operation can sometimes be reported as *less than* the write response time, because the total response time is a time-weighted average. I/O workloads will often consist of more read than write operations, with the writes typically observing larger latencies. For example, if a workload performed 10 read operations with an average latency of 5ms, and 5 write operations with an average latency of 10ms, the total weighted average latency will be calculated as the number of reads times the average read latency, plus the number of writes times the average write latency, divided by the total number of I/O operations, e.g. $(10 * 5 + 5 * 10) / (10 + 5) = 6.33ms$.

Why do OCI and OCUM show different values for overcomitted space?

The OnCommand Unified Manager (OCUM) notion of "Provisioned" space may include autogrow limits to which FlexVols (OnCommand Insight internal volumes) may grow. The OCI "Capacity" does not reflect those autogrow limits. As such, in an environment where autogrow Flexvols exist, the OCUM Provisioned capacity total will exceed the OCI storage level "Over-committed Capacity" total - the delta will be the difference between the Flexvols capacity and their autogrow capacity.

Managing your environment

This FAQ answers common questions about managing OnCommand Insight environments.

Can I give access to OCI to a specific user, while restricting the view to only certain resources (ie. SVM and related volumes, VMs, servers)?

OCI provides role-based access. For example, access to Reporting is controlled through OCI's Data Warehouse reporting. Reports can be scheduled, emailed as PDF, HTML or CSV, or to a file share or even a URL requiring the user to authenticate before viewing. User-based access is granted in the form of Admins, Users and Guests. Active directory/ldap support is also available.

Integrating Insight with other tools

This FAQ answers common questions about integration of OnCommand Insight with other tools.

Can OCI integrate with other tools and what integration points are available?

Yes, OCI is an extensible (wide open) solution allowing for Integrations with 3rd party orchestration, business management, change control and ticketing systems as well as custom CMDB integrations. OCI's fully published RESTful API and open MySQL database primary points of integration allow simple and effective movement of data and allow users to gain seamless access to their data.

Insight's Swagger-based API documentation is found in the product under **(?) Help > REST API Documentation**.

What is the Insight BMC Connector?

The OnCommand Insight Connector for BMC integrates the OnCommand Insight Data Warehouse (DWH) and the BMC Atrium Configuration Management Database (CMDB). The Insight Connector for BMC maps physical and logical stored data about network storage systems (for example, storage units, host storage services, VS Storage Service, and VM Storage Service) and their relationships with devices (hosts, storage switches, and tapes) and imports them into the BMC CMDB as configuration items and relationships. You can find more information about the OnCommand Insight Connector for BMC on the NetApp Support Site.

Does OCI work with SCOM or VROPs?

Yes, OCI complements a number of business management solutions and is considered an authoritative source for Storage, Compute, Hypervisor and Fabric information for the data center. OCI customers leverage OCI's RESTful API and Extensible MySQL database to enhance numerous applications like BMC's Remedy, ServiceNow, SCOM, Vrops, and Splunk, to name a few. OCI extends integrations by importing information from almost any source of record and/or by sending the captured environmental metrics to popular 3rd party Monitoring, Ticketing, CMDB billing & orchestration systems.

Can OCI work with cloud services I already use or am considering using?

Yes, OCI's management of both traditional on-premise and agile hybrid cloud environments provides visibility when determining the best, most cost-effective platform for your business service's needs. OCI can be leveraged for pre- and post-migration analysis, helping identify workloads that are suitable for the cloud. Historical capacity trending, performance and cost are all necessary in order to select the appropriate cloud service. Service Design Workshops leveraging OCI's I/O density and other metrics can also help you answer questions like whether you optimized your environment and if the cloud makes sense. OCI continues to expand its coverage with support for NetApp Private Storage, Cloud ONTAP, Amazon S3 and Openstack KVM. OCI continues to play a vital role in NetApp's Cloud management campaign, especially in areas where visibility into Capacity Planning, Performance, Service Quality and Chargeback are important.

Can OCI open incidents in our incident management solution?

Yes, OCI violation events can be triggered and sent via SNMP as a trap or via Syslog to a server, and some by RESTful API. Details contained within the provided events can be interpreted by many 3rd party incident management and ticketing solutions.

Can you allocate resources to a business unit or departments?

Yes, OCI incorporates a method of metadata tagging called Annotations. Business Units, Lines of Business, Tenants, and Projects can be assigned to data center resources for richer business context around assets, capacity planning, troubleshooting and reporting.

Does OCI work with Work Flow Automator (WFA)?

OCI's integration capabilities with 3rd party CMDB, Billing and Orchestration technologies are a key value to its success, and WFA is no exception. NetApp's Professional Services have performed a number of successful Integrations that exist today with WFA workflows and OCI .

How long are the OCI retention times for performance data?

The OCI server holds 90 days of near-real-time performance as well as the current (point in time) inventory (Logical and Physical constructs).

OCI performance polling intervals are user-configurable. Storage performance is typically configured for every 5 minutes for most vendors. Each day, performance/inventory data is sent to the OCI data warehouse (DWH) for long term historical and forecast reporting. DWH transforms this data into summarized data (Hourly, Daily, Monthly rollup data). Our ability to track "changes" e.g. monitored environmental history for Storage/Compute /fabric configuration/mappings, has no defined limit today.

Data Warehouse retains historical data based on the data marts and granularity of the data.

Are there any performance planning reports?

Yes, There are several reports provided with OCI and there are many others available in our Professional Services catalog, based on use case. The Data Warehouse module also comes with a suite of Cognos report authoring tools that allow users to create their own reports.

Data ONTAP Storage IOPS

This FAQ answers common questions about how IOPS numbers are derived from Data ONTAP storage systems.

How storage IOPS are derived from Data ONTAP storage systems

- Storage Array level IOPS are aggregated from the Internal Volumes IOPS
- Storage Node level IOPS include meta-data OPS
- Storage Pool level IOPS excludes meta-data OPS; only measures the disks
- Internal Volume level IOPS include Read + Write OPS (operations) + Other OPS

Question - How can the Aggregate IOPS be sometimes higher than Node IOPS?

Before CDOT 8.3.1 Node IOPS are made up of protocol IOPS. In CDOT 8.3.1. and later, they are made up of system constituents metrics. They include 'only' requests for data, request that come through the front door, but do not include backend tasks like snapmirrors, dedupe, and so on. On the other hand these tasks do produce disk IOPS, therefore Aggregate IOPS. Hence you might see Aggregate IOPS higher than the Node IOPS.

Question - How is Meta data or Other OPS calculated

Other OPS = Total - (Read + Write)