



## **What the Unified Manager server does**

### Active IQ Unified Manager

NetApp

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# What the Unified Manager server does

The Unified Manager server infrastructure consists of a data collection unit, a database, and an application server. It provides infrastructure services such as discovery, monitoring, role-based access control (RBAC), auditing, and logging.

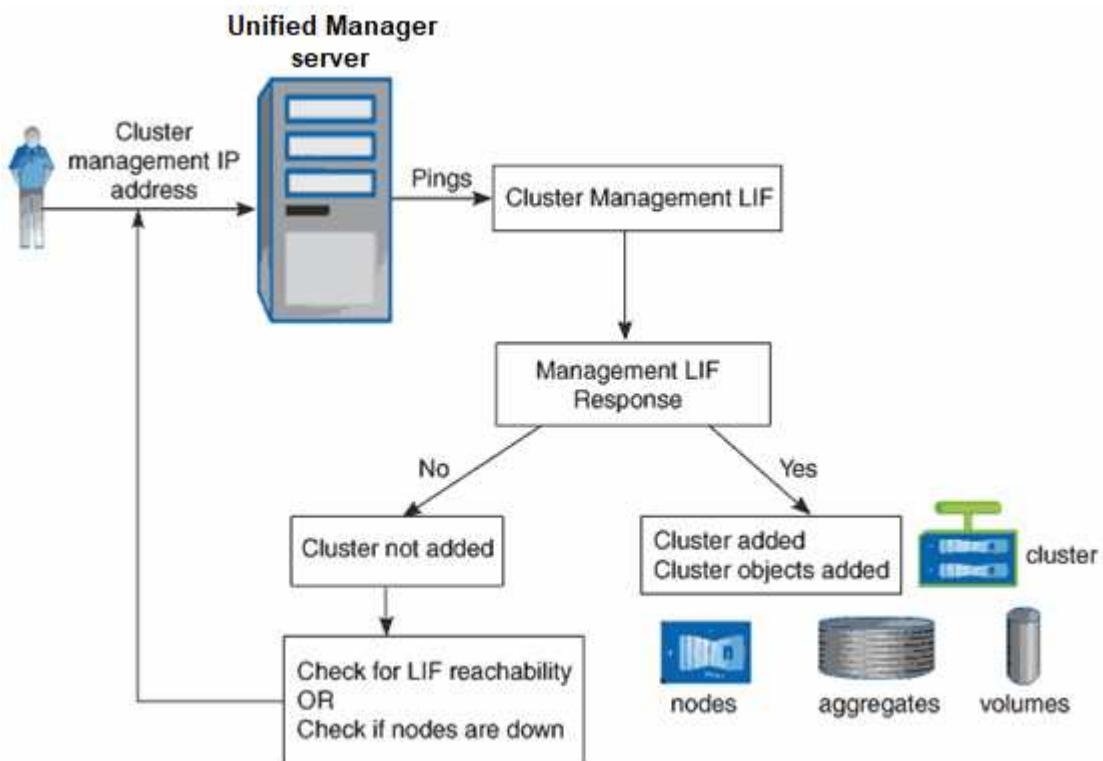
Unified Manager collects cluster information, stores the data in the database, and analyzes the data to see if there are any cluster issues.

## How the discovery process works

After you have added the cluster to Unified Manager, the server discovers the cluster objects and adds them to its database. Understanding how the discovery process works helps you to manage your organization's clusters and their objects.

The default monitoring interval is 15 minutes: if you have added a cluster to Unified Manager server, it takes 15 minutes to display the cluster details in the Unified Manager UI.

The following image illustrates the discovery process in Active IQ Unified Manager:



## Cluster configuration and performance data collection activity

The collection interval for *cluster configuration data* is 15 minutes. For example, after you have added a cluster, it takes 15 minutes to display the cluster details in the Unified Manager UI. This interval applies when making changes to a cluster too.

For example, if you add two new volumes to an SVM in a cluster, you see those new objects in the UI after the next polling interval, which could be up to 15 minutes.

Unified Manager collects current *performance statistics* from all monitored clusters every five minutes. It analyzes this data to identify performance events and potential issues. It retains 30 days of five-minute historical performance data and 180 days of one-hour historical performance data. This enables you to view very granular performance details for the current month, and general performance trends for up to a year.

The collection polls are offset by a few minutes so that data from every cluster is not sent at the same time, which could affect performance.

The following table describes the collection activities that Unified Manager performs:

Activity	Time interval	
Description	Performance statistics poll	
Every 5 minutes	Collects real-time performance data from each cluster.	
Statistical analysis	Every 5 minutes	
After every statistics poll, Unified Manager compares the collected data against user-defined, system-defined, and dynamic thresholds.  If any performance thresholds have been breached, Unified Manager generates events and sends email to specified users, if configured to do so.	Configuration poll	
Every 15 minutes	Collects detailed inventory information from each cluster to identify all the storage objects (nodes, SVMs, volumes, and so on).	
Summarization	Every hour  Summarizes the latest 12 five-minute performance data collections into hourly averages.  The hourly average values are used in some of the UI pages, and they are retained for 180 days.	Forecast analysis and data pruning
Every day after midnight	Analyzes cluster data to establish dynamic thresholds for volume latency and IOPS for the next 24 hours.  Deletes from the database any five-minute performance data older than 30 days.	
Data pruning	Every day after 2 a.m.	

Activity	Time interval
Deletes from the database any events older than 180 days and dynamic thresholds older than 180 days.	Data pruning
Every day after 3:30 a.m.	Deletes from the database any one-hour performance data older than 180 days.

## What a data continuity collection cycle is

A data continuity collection cycle retrieves performance data outside of the real-time cluster performance collection cycle that runs, by default, every five minutes. Data continuity collections enable Unified Manager to fill in gaps of statistical data that occur when it was unable to collect real-time data.

Data continuity collection is supported only on clusters installed with ONTAP version 8.3.1 or later software.

Unified Manager performs data continuity collection polls of historical performance data when the following events occur:

- A cluster is initially added to Unified Manager.

Unified Manager gathers historical performance data for the previous 15 days. This enables you to view two weeks of historical performance information for a cluster a few hours after it is added.

Additionally, system-defined threshold events are reported for the previous period, if any exist.

- The current performance data collection cycle does not finish on time.

If the real-time performance poll goes beyond the five-minute collection period, a data continuity collection cycle is initiated to gather that missing information. Without the data continuity collection, the next collection period is skipped.

- Unified Manager has been inaccessible for a period of time and then it comes back online, as in the following situations:
  - It was restarted.
  - It was shut down during a software upgrade or when creating a backup file.
  - A network outage is repaired.
- A cluster has been inaccessible for a period of time and then it comes back online, as in the following situations:
  - A network outage is repaired.
  - A slow wide area network connection delayed the normal collection of performance data.

A data continuity collection cycle can collect a maximum of 24 hours of historical data. If Unified Manager is down for longer than 24 hours, a gap in performance data appears in the UI pages.

A data continuity collection cycle and a real-time data collection cycle cannot run at the same time. The data continuity collection cycle must finish before the real-time performance data collection is initiated. When the data continuity collection is required to collect more than one hour of historical data, then you see a banner

message for that cluster at the top of the Notifications pane.

## What the timestamp means in collected data and events

The timestamp that appears in collected health and performance data, or that appears as the detection time for an event, is based on the ONTAP cluster time, adjusted to the time zone set on the web browser.

It is highly recommended that you use a Network Time Protocol (NTP) server to synchronize the time on your Unified Manager servers, ONTAP clusters, and web browsers.



If you see timestamps that look incorrect for a particular cluster, you might want to check that the cluster time has been set correctly.

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