ORACLE

Oracle Infrastructure Monitoring Cloud Service

Oracle Infrastructure Monitoring Cloud Service is a software-as-a-service solution that monitors the status and health of your entire IT application infrastructure – on-premises or on the cloud – from a single platform. Proactive monitoring across all your application infrastructure enables you to be alerted on issues, troubleshoot and resolve these before they impact end users.

ORACLE
Infrastructure
Monitoring
Cloud Service

UNIFIED VISIBILITY ACROSS A HETEROGENEOUS HYBRID LANDSCAPE

Today's infrastructure is dynamic and ubiquitous.   It can reside in your on-premises datacenter or be dynamically provisioned on public clouds. The volume and variety of infrastructure can easily overwhelm your IT staff whose job is to keep it up and running. With Oracle Infrastructure Monitoring, you can unify monitoring across different vendor technologies and locations with a single monitoring solution. Infrastructure Monitoring provides a single holistic view of the health of your entire IT infrastructure. With the Enterprise Summary dashboard, you can easily keep a proactive eye on the current availability status and performance across all your tiers -- hosts, databases, application servers, virtual servers, and load balancers, cloud services. You can also review open alerts across all your infrastructure and drilldown to further investigate.

FEATURES

- Monitoring of on-premise and cloud application infrastructure
- Enterprise Summary views with interactive drilldowns
- Proactive, rich alerting
- Alert notifications through email, Slack, Pager Duty, Webhooks, ServiceNow, OMC Mobile application
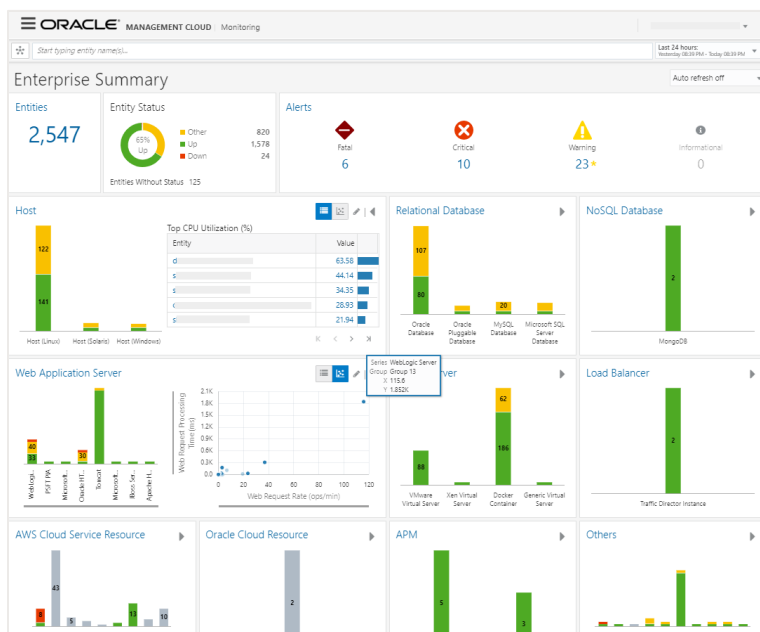- Extensible monitoring

Figure 1 Enterprise Summary dashboard allows you to monitor current status and performance across all your hybrid IT application infrastructure in a single pane of glass.

MONITOR MANY BY EXCEPTION

Monitoring large environments can be a challenge. It is not feasible to review performance charts for every single entity. Likewise, viewing only the top N entities with slowest performance will create blind spots in understanding the health of the other parts of your IT estate. The Enterprise Summary dashboard provides an inclusive view of your entire application infrastructure with focus on highlighting areas of concern.   The Status region rolls up current availability status across all monitored entities, and visually brings attention to entities that are down. The Alerts region shows total open alerts by severity, with drilldowns to quickly investigate the more critical issues.

Each part of the application stack – servers, databases, web application servers, cloud services, etc. – are represented in its own region in the dashboard. Each region shows current status by platform type. For example, the Web Application Server region shows status breakdown by WebLogic Server, Tomcat, JBoss, Microsoft IIS, Apache HTTP Server. This allows you to easily identify which type of app server has entities that are down. You can also use the interactive performance charts to see entities with the most load (e.g. Top app servers by Web Request Rate) or switch to scatterplot view to show all entities by any two performance metrics (e.g. Web Request Rate and Web Request Processing Time).   In large environments, entities with the heaviest load or slowest performance will be visually seen as outliers in the scatterplot chart.
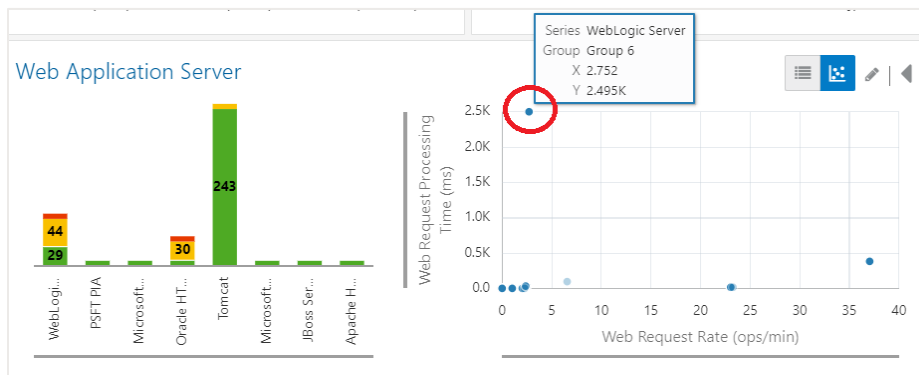

Figure 2 The Web Application Server region allow you to quickly check which type of app servers are down and use the interactive scatterplot chart to identify app servers with the most load.

You can further examine any of these outliers by clicking on the data point in the chart. This will launch a dialog box to show the recent history of the metric. Any anomalies in metric value will also be highlighted to show potential problem areas. Detection of anomalies is based on the underlying machine learning processing that learns normal, baseline behavior and highlights data points that are outside the baseline (aka anomalies).
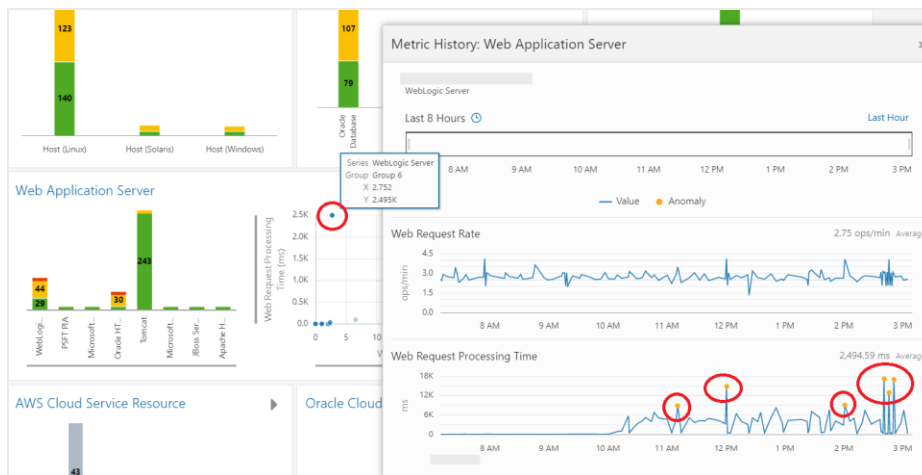
Figure 3 Clicking on a datapoint in the chart launches a dialog showing the recent performance of the metrics. Any anomalous data points are visually highlighted in the charts to show potential problem areas.

MAXIMIZE OPERATIONAL EFFICIENCY

As new infrastructure is added, one important IT task is to set up alert rules for the new infrastructure. In dynamic environments, it becomes very inefficient to update alert rules each time new servers are added. Different environments (e.g. Production vs. Test) may also have their own alert threshold standards, adding to the IT Operator's task of knowing which alert rule needs updating.

Infrastructure Monitoring solves this with tag-based dynamic groups and alert rules. The monitoring set up becomes a 2-step process of (1) defining tag-based dynamic groups and (2) setting up alert rules using these dynamic groups.   For example, to set up alerting for entities in a Production environment, you can create a dynamic group called ProdGroup defined as a group of entities with tag = "Environment=Production". Create an alert rule with the ProdGroup as the entity for the rule and specify the desired alert threshold conditions and notification channels. Whenever a new database server is added to the Production environment, simply specify the tag "Environment=Production" when adding the database entity to Infrastructure Monitoring.   The database entity is automatically added to ProdGroup and the alert rule conditions for ProdGroup will automatically apply to the newly added database.   Leveraging these features enables your IT Operations staff to become more efficient in monitoring at scale.

PROACTIVE, RICH ALERTING

Lights out, continuous monitoring relies on alerts to be raised when a problem needs your attention. Infrastructure Monitoring automatically detects and generates alerts when an entity is down (e.g. database down, application server down). Alert Rules enable you to specify your own alert conditions (when to alert) and notification channels (who to notify).   Alert rule conditions are typically based on metrics crossing fixed thresholds. In addition to this, you can also alert based on metric statistics (e.g. alert when sum of broken jobs over last 30 minutes > 20) or when the metric value is anomalous for at least 15 minutes. You can also use early warning alerts to notify you when a metric is trending towards a specified value, e.g. CPU Utilization expected to reach 90% in 30 minutes. This allows you to take proactive actions to head off the issue.   Alert messages can be customized to make it more meaningful to your IT staff. Links to runbook URLs can be added as notes to the alert. These are automatically added to alert email notifications, providing IT staff with easy access to the runbook instructions as they respond to the alert. In addition to email, alerts can also be sent to PagerDuty, Slack or other external ticketing

systems through Webhooks integration. The ServiceNow notification channel can be used to automatically create ServiceNow incidents for alerts.   Alerts can also be sent to the Oracle Management Cloud (OMC) Mobile App for easy access to alerts from wherever you are.
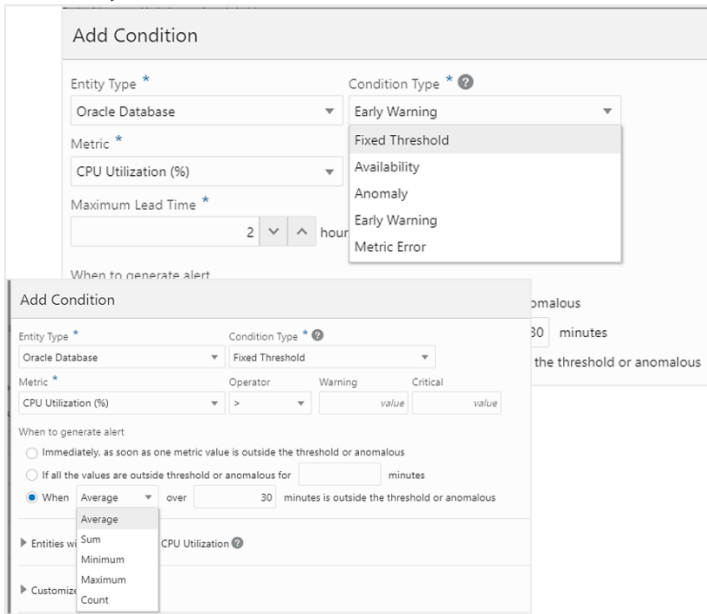

Figure 4 Alerts can be generated based on 1) fixed-thresholds on metrics or metric statistics; 2) anomalies in metric values; 3) metrics expecting to reach certain values (early warning alerts).

EXTENSIBLE MONITORING TO COVER YOUR HETEROGENEOUS LANDSCAPE

With the diversity in today's IT application infrastructure, it is important to provide a way to extend monitoring to any IT resource in your environment.   Infrastructure Monitoring allows you to monitor a wide variety of application infrastructure in many ways. Process Monitoring capabilities enables you to monitor the state and resource consumption of any process running on a host. Integration with collectd and Telegraf enable you to collect metrics from a wide variety of system and application infrastructure by leveraging their library of system and application plugins. Once the integration with collectd or Telegraf have been set up, you'll only need to configure the appropriate read (or input) plugin and metrics that are collected from the plugin are automatically uploaded to OMC. These result in new custom entity types with their own homepages. All other monitoring features (alerting, notifications, baselines/anomaly detection) can be used with these new custom types..
You can also create custom metrics by leveraging the agent's metric collection mechanism with your own custom scripts. Or, using REST APIs, you can create new custom entity types and upload metric data for that type. These new entities and metrics will be seamlessly integrated within the Infrastructure Monitoring UI and alerting capabilities, allowing you to get complete visibility into all your IT application infrastructure within a single platform.

ORACLE MANAGEMENT CLOUD

- Oracle Infrastructure Monitoring Cloud Service is part of the Oracle Management Cloud

- Oracle Management Cloud (OMC) is a suite of next-generation, integrated monitoring, management and analytics solution delivered as a service on Oracle Cloud. It is designed for today's heterogeneous environments on-premises and in the cloud for both Oracle and non-Oracle footprint. OMC is built on a horizontally scalable big data platform with high throughput data processing for providing real-time analysis and deep insights across technical and business events.

- Data in OMC is automatically analyzed using machine learning and is correlated across all OMC services, thereby eliminating multiple information silos across end-user and infrastructure data, enabling faster trouble-shooting.

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