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Oracle Session Delivery Management Cloud

Oracle Session Delivery Management Cloud (Oracle SDM Cloud) is a SaaS management and monitoring solution for Oracle Communications session delivery product portfolio. Built on Oracle's next generation cloud infrastructure, Oracle SDM Cloud helps customers minimize operational costs in an agile, reliable, and secure way.

Overview

Oracle Session Delivery Management Cloud provides a cloud native service framework for the management and monitoring of Oracle Communications network functions. Current and future Oracle Communications session delivery products and versions are supported by default. Oracle SDM Cloud enables customers to focus on innovation without having to worry about the complex, time-consuming task, for installation, provision, upgrade and applying security fixes for the management system. Its reporting and analytics capabilities powered by Oracle Analytics Cloud redefine how network administrators and business users interact with technical data and visualize complex data in a unified, custom dashboard. The self-service analytics capabilities with assistive recommendations helps network operations teams to kick start their analytics journey.

The feature-rich SaaS solution includes fault, configuration, accounting, performance, and security (FCAPS) management, and provides an insightful and unified view across the Oracle Communications session delivery products portfolio. Oracle SDM Cloud monitors and reports the health of the network functions, leveraging key performance indicators (KPI) and extended data sources to ensure a high service level is maintained. Through integration with monitoring solutions such as Oracle Communications Operations Monitor and Oracle Enterprise Operations Monitor, Oracle SDM Cloud provides users with the ability to view call data using a ladder diagram, as well as additional monitoring KPIs which can be displayed in customized dashboards.

Oracle SDM Cloud interface incorporates a centralized work order framework supporting process automation for network functions such as Oracle Communications Session Border Controller or Oracle Enterprise Communications Broker, that includes software upgrade, device configuration, local route table (LRT) management, and automatic rollbacks in the event of failure. For configuration audits, Golden configuration comparison functionality is an easy and efficient method to compare a source config with a target config and report any differences side by side. Designed with a flexible and intuitive framework, Oracle SDM Cloud helps customers to customize their dashboards and KPI views according to specific business needs or job roles. Oracle SDM Cloud also provides users with the ability to perform historical KPI searches at device level, helping them gain useful insights for fault isolation, capacity planning or root cause analysis. Users can also pull key information from Oracle Communications Session Border Controller or Oracle Enterprise Communications Broker along the lines of what 'show commands' provides into Oracle SDM Cloud interface as a multidimensional KPI data source and display them on-demand in a user-intuitive format.

Large and complex networks often use a centralized network management system (NMS) or Operations Support Systems (OSS) to receive and monitor network traps. Oracle SDM Cloud provides the option to forward Simple Network Management Protocol (SNMP) traps coming from managed network functions (NF) and traps generated by Oracle SDM Cloud itself to northbound trap receivers such as a third-party NMS or OSS systems. Oracle SDM Cloud is an important step towards a future-proof solution capable of addressing enterprises and service providers' network operations management requirements across their increasingly complex networks. Oracle SDM Cloud helps customers in their evolution from on-premises towards cloud transformation, in a cost effective and agile way.

Network operations challenges

Cloud delivery model will change the way software applications are used. Organizations are faced with the complexities of managing multiple environments from traditional on-premises systems, to private, public and hybrid cloud deployment models.

Moreover, network operations management brings its own set of complex and time-consuming challenges for service providers and enterprises, namely:

- Multiple user interfaces across different applications
- Configuration change management and audits
- Software version management
- Diverse and disjoint data sources
- Changing resource requirements
- Long recovery times impacting Quality of experience (QoE) and committing to Service-level agreements (SLAs)
- Timely detecting and responding to network anomalies
- Insufficient levels of automation to minimize human interaction and maximize efficiency and agility

To help address these challenges, operations management software needs to keep up with the rapidly evolving technology stack, with automated security, real-time monitoring, intuitive dashboard, and the right set of tools for preemptive actions resulting in improved Quality of Experience (QoE) and Service Level Agreements (SLAs).

Why Oracle SDM Cloud?

Oracle Session Delivery Management Cloud is a SaaS solution for both service providers and enterprises, built on a next-generation cloud infrastructure that's architected on security-first design principles. Oracle SDM Cloud is built from the ground-up with security, flexibility, and a cloud native infrastructure, optimized for cloud-based deployments. The reliability of Oracle Cloud provides customers with the assurance of reliable service delivery and the freedom to extend the resources they dedicate to managing applications as their business evolves. Oracle SDM Cloud service is available from Oracle Cloud Regions in North America and Europe and is capable of managing Oracle Communications session delivery products deployed on appliances or virtual machines at customers' premises. Oracle SDM Cloud helps customers to focus on innovation without having to worry about complex, time-consuming and error prone operations management processes.

When it comes to Cloud, experience matters!

The Cloud Native Computing Foundation (CNCF) is an open-source software foundation dedicated to making cloud native computing universal and sustainable. Oracle is a platinum member of the CNCF to ensure that its vision of an open, cloud native and standards approach is well aligned. With a rich heritage in telecommunications, Oracle Communications has a deep understanding of service reliability. Developing applications in this space has placed an emphasis on creating foundational platform services whereby applications could be built consistently to these expectations. Oracle has a keen awareness of the operational aspects and challenges of these applications as its customers move to SaaS-based cloud delivery in the telecoms industry.

Oracle SDM Cloud leverages Oracle's next-generation cloud infrastructure

Oracle Cloud Infrastructure is built for innovation. This includes industry-leading scalability and availability, integrated governance and control, and reliability backed by end-to-end SLAs. Oracle's cloud mission extends to supporting emerging technologies such as AI, machine learning (ML), the Internet of Things (IoT), blockchain, and human interfaces. Oracle provides IaaS, PaaS, and SaaS services as part of its second-generation cloud offering.

Security is an intrinsic part of Oracle Cloud

Oracle offers core-to-edge protection such as customer isolation, data security, internal-threat detection, and highly automated threat remediation. Oracle's infrastructure isolates compute and network resources to ensure that personal data and traffic are shielded from other users. It also separates code, data, and resources from management machines—helping to prevent attackers from stealing or manipulating data in the cloud. Oracle Cloud presents a limited attack surface through granular customer isolation. Layers of defense with built-in firewalls, DDoS, and encryption proactively detect and stop threats.

Oracle SDM Cloud leverages Oracle Cloud Infrastructure which gives Oracle complete control of full cloud stack such as Infrastructure, Platform and Application.

Unlocking network insights

Oracle Session Delivery Management Cloud's advanced reporting and analytics capabilities help reduce the heavy lifting for network teams by using pre-built data connections to collect network functions' historical data recordings (HDR), and auto aggregate the data across time dimensions.
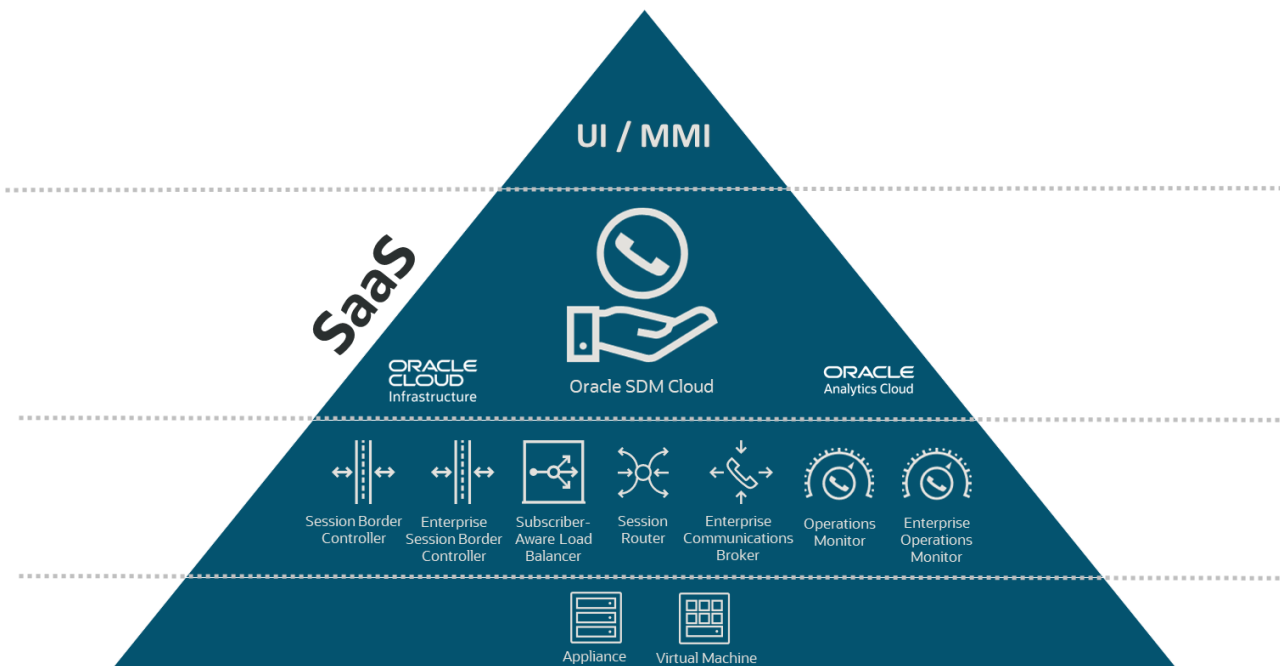
Reporting and Analytics, powered by Oracle Analytics Cloud, offers a no-code environment that enables business users and network operations teams to drag and drop network data into creating simple, highly intuitive custom dashboards - Using AI-powered assistive recommendations users can choose best visualizations for the network data. Applying built-in machine learning and analytics tools such as clustering, outlier analysis and forecasting allows network monitoring teams to quickly get into insights and assisting with root cause identification.

Oracle SDM Cloud a key part of session delivery portfolio

Oracle Session Delivery Management Cloud provides various management and monitoring capabilities for the following Oracle network functions:

- Oracle Communications Session Border Controller,
- Oracle Enterprise Session Border Controller,
- Oracle Communications Session Router,
- Oracle Communications Subscriber-Aware Load Balancer,
- Oracle Enterprise Communications Broker,
- Oracle Communications Operations Monitor,
- Oracle Enterprise Operations Monitor.

Figure 1. Oracle SDM Cloud Architecture

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Oracle Cloud Infrastructure (OCI) is the foundational layer for Oracle Communications SaaS applications, providing a robust, scalable, secure, highly available and cost-effective cloud platform.

Oracle SDM Cloud is capable of managing Oracle Communications network functions such as session border controllers deployed on appliances or virtual machines at customers' premises. It supports a bidirectional communication model that allows using only the Ground-to-Cloud communication path and extends the Management Cloud Engine functionality to directly register with Oracle SDM Cloud. The Cloud-to-Ground and Ground-to-Cloud communication is achieved using WebSocket. This model also supports a multisite deployment architecture for robust cross-site redundancy. Using a multisite deployment architecture, if any management site goes down then the network functions will be managed automatically via the redundant site.

Oracle SDM Cloud features set

Oracle SDM Cloud supports various applications for the management and monitoring of Oracle Communications network functions, as outlined in the table below.

Table 1. List of applications and key features supported by Oracle SDM Cloud

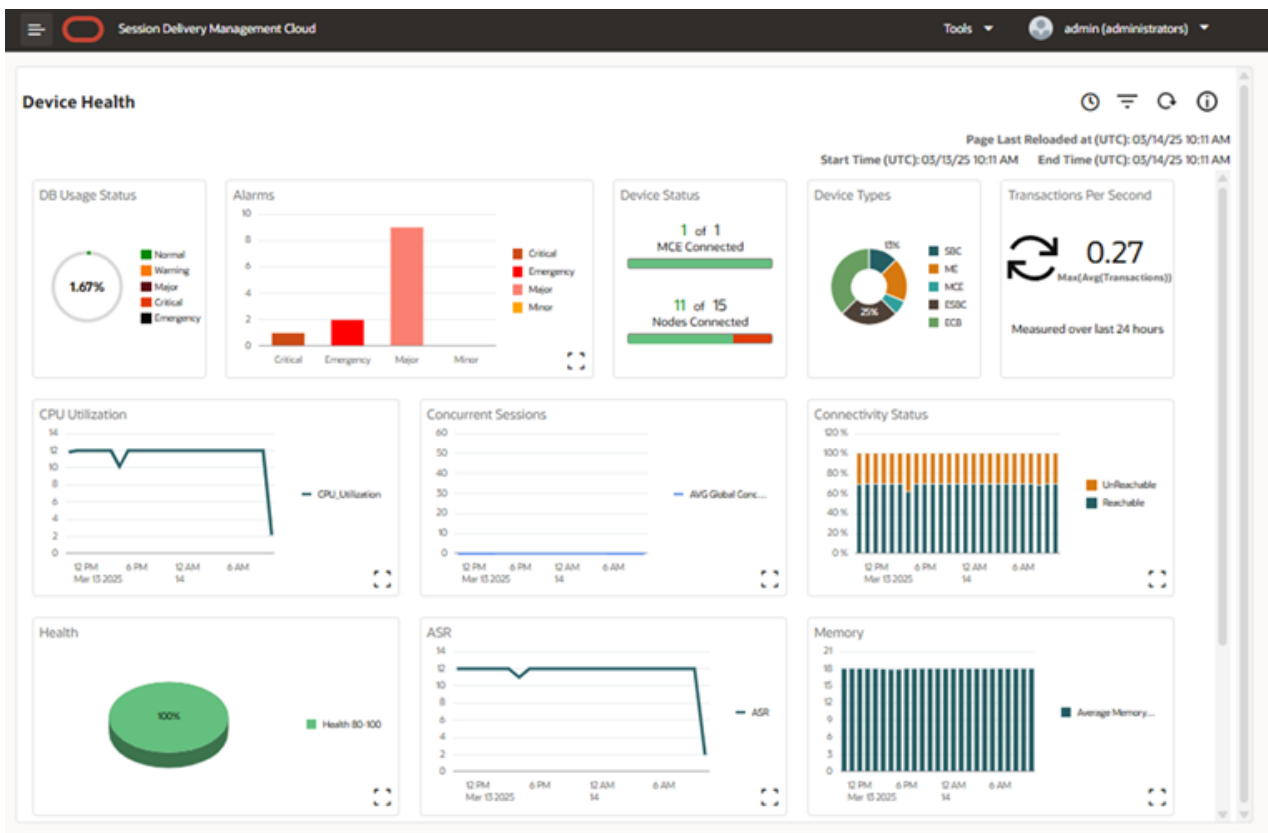| APPLICATIONS	DESCRIPTION	KEY FEATURES
Reporting and Analytics	Oracle Session Delivery Management Cloud's Reporting and Analytics capability helps users gain deep, actionable insights into their network data without requiring sophisticated technical expertise or custom code. By empowering network teams with self-service analytics, organizations can proactively monitor network health, identify trends, and forecast utilization.	• Self-service analytics • Code-free, drag-and-drop visualizations • AI-powered assistive recommendations
Dashboard Manager	Dashboard manager provides an insightful and unified view of key performance indicators and statistics to simplify network operations management. Utilizing dashboard designer and portlet designer, customers can create and customize their dashboards and KPI views according to specific business needs or job roles. Through interaction with Oracle Communications Operations Monitor and Oracle Enterprise Operations Monitor, Oracle SDM Cloud collects key monitoring data metrics from one or more Mediation Engines (MEs) and displays specific monitoring KPIs.	• Dashboard designer • Portlet designer • Flexible data visualization • Customized KPI views • Historical data view • Interactive charts • Monitoring KPIs • Utilization metrics • Dashboard auto refresh
Monitoring Manager	Monitoring manager takes monitoring integration one step further by providing users with the ability to view call ladder diagram and call data for recent and/or historical calls.	• Recent calls table • UCaaS/CCaaS KPIs • Calls filter capability • Call ladder diagram
Configuration Manager	Configuration manager enables element configuration and provisioning for Oracle Communications session delivery products. Golden configuration comparison functionality is an easy and efficient method to reduce the operation workload for configuration audits and report the discrepancies.	• Online configuration • Offline configuration • Configuration templates • Backup & restore • Golden configuration comparison
Device Manager	Device manager applies administration of individual session delivery infrastructure devices or device groups to simplify the management of small to very large networks. Device groups can be organized hierarchically according to the needs of the organization. To reduce the need to frequently log in to SBC to monitor critical operational information, users can pull on-demand SBC 'show command' details directly into Oracle SDM Cloud user interface.	• Device access control • Device grouping • Site location support • Software image repository • Boot loader image repository • Multidimensional KPI
Route Manager	Route manager provides users with the ability to manage the routes and route sets and associate them to one or more devices such as session border controllers or session routers. Find and replace functionality provides an easy and intuitive method to do bulk changes in route sets.	• Route sets management • File import/export functionality • Multiple device association • Bulk route sets changes
Work Order Manager	Work order manager is a process automation framework that provides users with the ability to schedule complex tasks such as network function software upgrades, device configuration and local route table updates. Designed with support to define workflow behavior and error policies that will be automatically instigated when an error occurs, the work order manager provides a consistent and centralized mechanism for streamlined operations.	• Task automation framework • Behavior and error policies • Scheduling capabilities • Configurable Load Shedding

Security Manager	Security manager enables the definition and control of access rights for individual users and user groups, plus an audit log for all changes. Security settings are configurable for users, user groups, groups of devices, configurations, route management, monitoring, notification permissions, etc.	• IAM authentication support • Service authorization • Role-based and device level access controls
Fault Manager	Through fault manager, Oracle SDM Cloud enables real-time monitoring of operational status using alarms and faults. Alarm auto refresh provides support for a periodic refresh on alarms screen. Users have the option to forward SNMP traps coming from managed network functions (NF) and Oracle SDM Cloud to northbound trap receivers such as a third-party NMS or OSS system.	• Event manager • Alarm manager • Alert configuration • Alarm auto refresh • Trap forwarding
Administration	Oracle SDM Cloud provides the ability to subscribe to email notification about important events, such as traps. Subscriptions and notification criteria can be easily configured through the administration element.	• Email notification • Subscriptions • Notification criteria

It's time to reimagine network management

Oracle SDM Cloud is a platform for innovation and continuous value addition, helping customers in their evolution from on-premises towards cloud network transformation. With deep, actionable insights, end-to-end network monitoring capabilities and simplified networks operations management, Oracle SDM Cloud provides a single-pane-of-glass view across Oracle Communications session delivery product portfolio.

Oracle SDM Cloud is an important step towards a future-proof SaaS-based solution capable of addressing enterprises and service providers' end-to-end operations management requirements across their increasingly complex networks, with less cost, and with more simplicity and increased agility.

Figure 2. Oracle SDM Cloud dashboard example

Key business benefits

- Provides a single-pane-of-glass view across Oracle Communications session delivery product portfolio

- Leverages Oracle's next generation cloud infrastructure that's architected on security-first design principles

- Helps users gain actionable insights into their network data without requiring sophisticated technical expertise

- Offers carrier-grade scalability and multisite redundancy

- Reduces network access complexity by enabling universal access to all the network functions

- Supports user and device level access control

- Streamlines operations using a centralized work order automation framework

- Offers a flexible and intuitive framework for creating customized dashboards and KPI views

- Provides an aggregate view of essential monitoring KPIs

- Enhances call monitoring and troubleshooting using a centralized view of call details

- Eliminates the need to maintain the management system

- Provides FCAPS management

- Helps customers minimize operational cost and resources

- Manages small to large deployments

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