ORACLE

Oracle Communications Network Analytics Data Director

A future proof analytics solution for your 5G core network.

Communications service providers (CSPs) are starting to leverage the power of 5G in their networks. With 5G networks operational, a myriad of new revenue opportunities will be available. To deliver these new opportunities, CSPs must continue to make decisions around what to optimize and how to differentiate themselves in the market. More now than ever before there has been a realization that data, both central and peripheral to the network, has tremendous value. The capability to identify the various data types, its origins and content, then through statistical and predictive analysis, take actions to decrease costs and increase revenue, truly makes data the "new global currency." Because of this, CSPs are employing network analytics to answer the most important business questions and identify insights critical to developing new 5G-enabled opportunities. Data can be mined to support any business objective.

OVERVIEW

With data rapidly becoming a key component of success in the 5G era, it's critical that service providers understand what type of data they have, and how to monetize it. Telcos are challenged to make the most of the digital economy with the existing, rules-based analytics tools – many of which are siloed with non-standardized interfaces and data collection, long upgrade cycles, and poor data access and quality, including inconsistent data types and formats. To help CSPs access their 5G core data in a secure and reliable way, Oracle Communications has introduced the second

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product in its 5G Analytics portfolio, the Oracle Communication Network Data Director function complementing the Network Data Analytics Function (NWDAF), to provide analytics and drive insights all the way down to the 5G core network.

Today, telcos are challenged with securely extracting raw data from 5G call packets, optimizing the network performance, and providing the right 5G network information to the right teams and the right time.

Furthermore, when it comes to network assurance and monitoring of 5G data there are challenges with the new 5G core service-based architecture. This means that CSPs can't easily and intuitively troubleshoot any issues, analyze data usage of their 5G core, utilize their existing apps in the same way they've been accustomed to (3G/4G), or even plan for future growth in 5G. Leading to wasted time and money on procuring apps that cannot scale into the future. Not to mention the ability to plan for the upcoming demand cycles for specific services, to spot and fix issues in the network including critical ones that will have major customer and business impacts, and ultimately the loss of opportunity from not seeing trends or being able to forecast.

The Oracle Communications 5G Analytics solutions can helps CSPs address these challenges.

PRODUCT DESCRIPTION

The Oracle Communications Network Analytics Data Director allows CSPs to effectively manage critical network data to drive decisions based on analytics. It provides centralized data aggregation for NF data feeds using non-3GPP APIs. The Oracle Communications Network Analytics Data Director offloads the Oracle 5G core NF workload to distribute traffic across multiple tools and provides useful inputs for further analytics-based operations.

Oracle Communications Network Analytics Data Director is a specialized network data broker and part of the Network Analytics suite of products. It receives network data traffic data from various sources (Oracle 5G NFs, non-5G nodes, etc.) and sends the data securely to configured consumers (third party tools) in addition to configurable filtering, replication, and aggregation rules corresponding to the configured data feed for the consumers.

The Oracle Communications Network Analytics Data Director will enable data enrichment capabilities like detailed records, correlations across NF feeds, advanced filtering (Subscription Permanent Identifier (SUPI), Access Point Name (APN) etc.), reports, and visualization. The Oracle Communications Network Analytics Data Director enables the curation of traffic with advanced filtering and replication capabilities for other network analytics and monitoring tools including but not limited to the Oracle Network Analytics suite. With its robust, configurable filtering and aggregation capabilities, operators can sort through the data to create comprehensive dashboards and track key performance indicators (KPIs) for all departments within the service provider.

Key Features and Benefits

- Aggregation of messages from multiple NFs/pods to manage connections / limit data
- Integration with various monitoring and probe vendors
- Integration with Insight Engine to drive automation enabled by analytics
- Supports multiple 3rd parties with different message format requirements
- Load Balancing among multiple target endpoints of 3rd Party consumer application
- Intuitive UI/UX for User management, system configuration and system health reports/dashboard
- Fault tolerant and distributed system ensuring data redundancy and reliability
- Data replication with dedicated high availability pool of pods per destination
- Data correlation based on 5G-SBI-message parameters

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The Oracle Communications Network Analytics Data Director features

Easy and intuitive installation

The Oracle Communications Network Analytics Director provides Helm based installation and un-installation procedures. The procedures are defined in the form of a sequence, providing users with clear and unambiguous steps to perform the Data Director installation.

Feed aggregation

The Oracle Communications Network Analytics Data Director aggregates the ingested network traffic from multiple NFs (Service Communication Proxy (SCP), Security Edge Protection Proxy (SEPP), Network Repository Function (NRF), third party NFs, etc.) and provides the aggregated traffic feeds to one or many third-party monitoring tools. The aggregation rules can be configured during the application configuration using the Data Director user interface (UI).

Secure transport

The Oracle Communications Network Analytics Data Director provides secure data communication between producer NFs and third party consumer application. The ingress data streaming towards the Data Director and egress data streaming towards third party application are transport layer security (TLS) encrypted. The TLS can be disabled and enabled for the third party application using the configuration feature via Data Director UI. Data Director supports end-to-end TLS encryption of 5G core SBI*(Service Based Interface) message.

Health monitoring

The health monitoring feature provides periodic or on demand health reports for network services. It monitors the readiness and status of the network instances and provides alerts for any service malfunction.

Example status reports:

- Maximum number of replicas for service instances
- Service state (down/up)
- Maximum number of CPU/Memory threshold and utilization

Metrics, KPIs, and alerts

The Oracle Communications Network Analytics Data Director provides a rich set of metrics, KPIs, and threshold alerts. Some of the critical KPIs are also integrated with the operational dashboard provided by the Data Director user interface. Some of the important KPIs and alerts are:

- Ingress MPS
- Egress MPS
- Latency between producer NF and Data Director
- Failure alerts

Data replication, filtering, and correlation

Oracle Communications solutions and related network functions

- Oracle Communications Cloud Native Core, Binding Support Function (BSF)
- Oracle Communications Cloud Native Core, Service Communication Proxy (SCP)
- Oracle Communications Cloud Native Core, Policy Control Function (PCF)
- Oracle Communications Cloud Native Core, Policy, and Charging Rules Function (cnPCRF)
- Oracle Communications Cloud Native Core, Cloud Native Environment (CNE)
- Oracle Communications Cloud Native Core, Network Exposure Function (NEF)
- Oracle Communications Cloud Native Core, Security and Edge Protection Proxy (SEPP)

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The Oracle Communications Network Analytics Data Director can be provisioned to have several feeds running in parallel towards third party monitors or probes with dedicated high availability (HA) pool of pods per destination. It can also filter according to metadata (e.g., consumer id, producer id) with optimization for probes, which will deem useful when an increase in network traffic occurs. Data Director also filters, and correlates information feed based on metadata and 5G core message headers and parameters.

High availability

The Oracle Communications Network Analytics Data Director supports temporary storage to address network disruptions through backup and restore procedures. Data Director provides a fault tolerant and distributed system ensuring data redundancy and reliability. CSPs can take a Data Director site or a namespace specific database and required K8s resources backup and use the backup to restore either on the same or a different K8s cluster.

The Oracle Communications Network Analytics Data Director platform

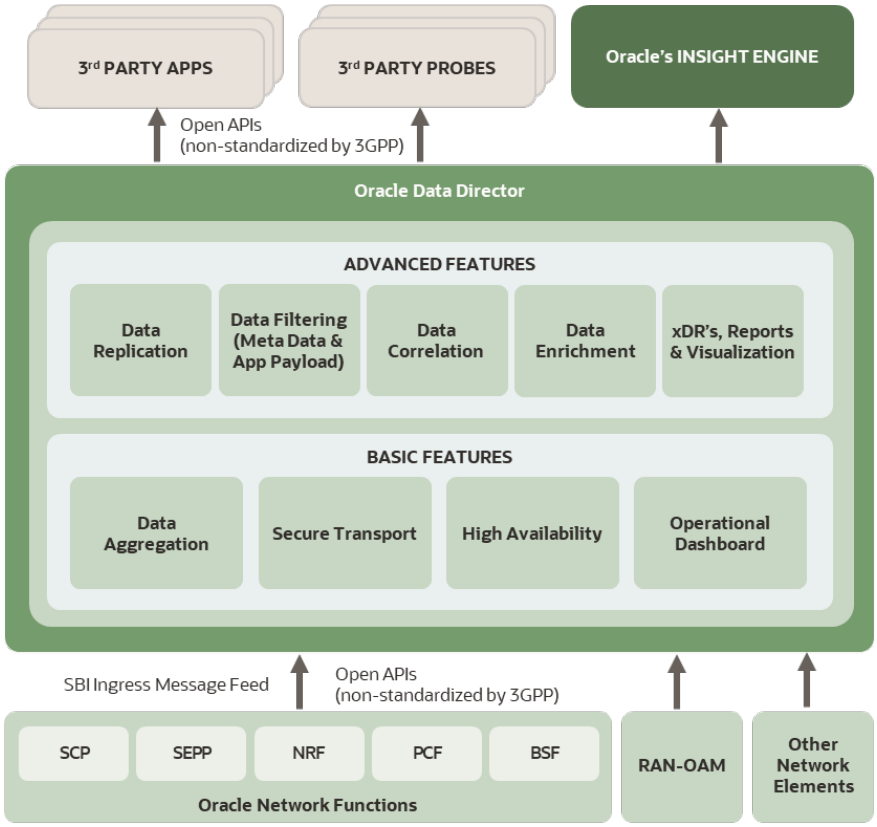

Figure 1: Oracle Communications Network Analytics Data Director Solution Overview

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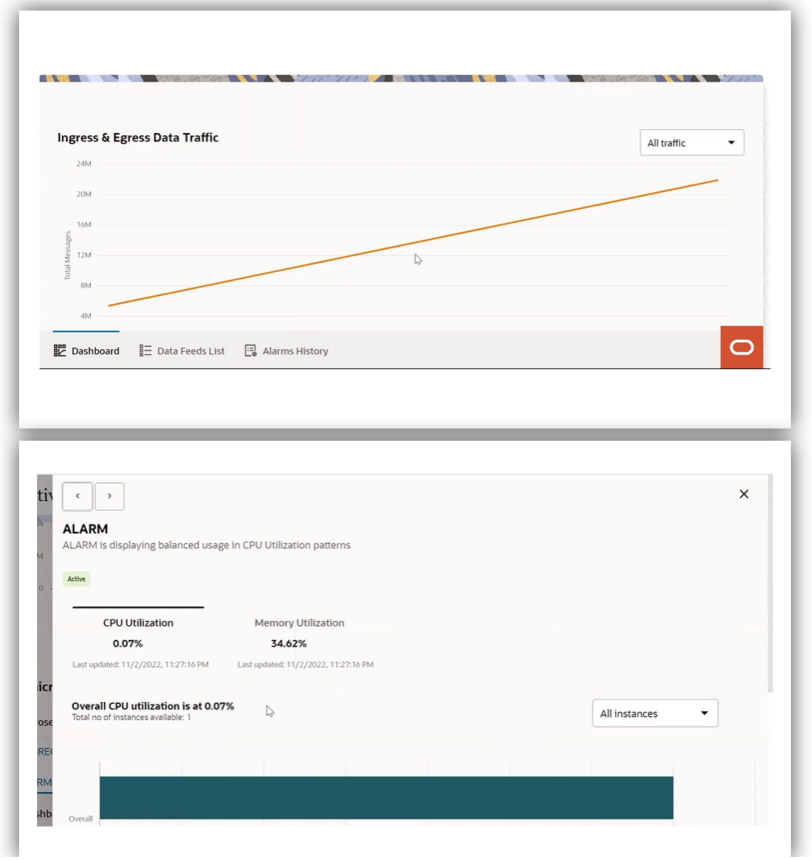

Figure 2: Oracle Communications Network Analytics Data Director sample dashboard

The Oracle Communications Network Analytics Data Director provides a rich set of insights in the form of operational dashboards that offers visualization for various metrics, KPIs, alarms and threshold alerts. The Data Director is also equipped with an intuitive and simple workflow-based user interface to configure the third party application feed.

The Oracle Network Analytics Suite

The Oracle Communications Network Analytics Data Director is a part of the Oracle Network Analytics Suite, a portfolio designed to be flexible enough to support the network journey of a CSP while providing the foundational capabilities needed to drive other analytics functions.

Oracle Network Analytics Suite provides secure and data-driven analytics solutions addressing multiple use cases across network functions.

As a unified and secure analytics platform offering deep network insights for CSPs spanning global regions, the Oracle Network Analytics Suite seamlessly handles multiple use cases across NFs, while providing cloud native options.

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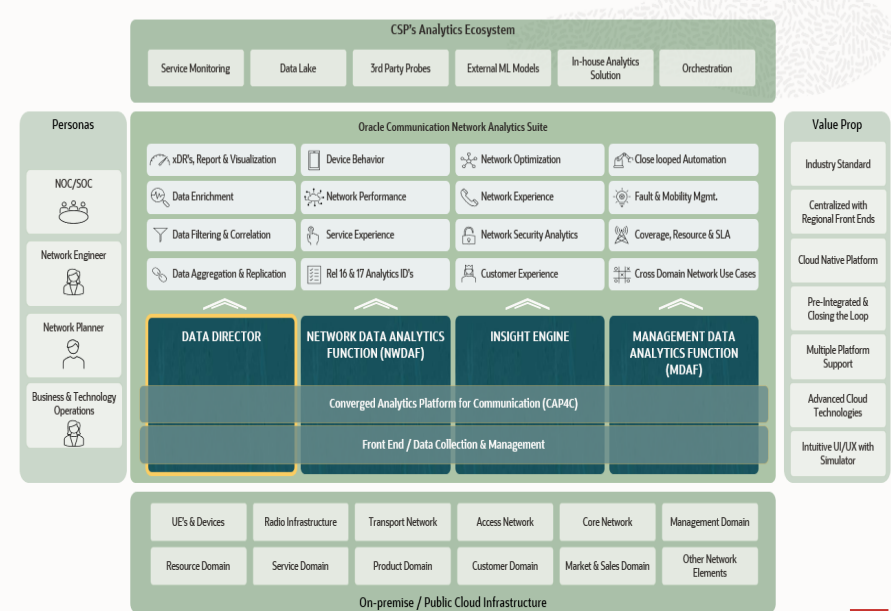

Figure 3: Oracle Communications Network Analytics Suite Platform

SUMMARY

Oracle Communications solutions enable service providers to securely manage and monetize the incremental growth in mobile data traffic and multimedia applications. They help service providers protect their network and customer data, analyze subscribers' quality of service, set policies to improve customer experience, and optimize network performance. The solution ultimately empowers CSPs to utilize analytics to future-proof their business and proves an integral resource to a cloud native 5G core product portfolio, supporting carriers as they transform from purveyors of connectivity to providers of digital services.

Oracle Communications helps billions of people, devices, and machines intelligently connect and engage over any network. With proven capabilities, scalable solutions, network security, cloud services, and a common intelligent signaling platform, Oracle Communications solutions guarantee security, high availability, and continued support.

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