Carrier Ethernet Service OAM

Service OAM (SOAM) provides mechanisms for monitoring connectivity and performance for entities (links, services, etc.) within the Carrier Ethernet Network (CEN). SOAM provides benefits to both the Service Provider (SP) and the Subscriber.

> ✓ **Note**
>
> Service OAM or SOAM is the abbreviation of Service Operations, Administration and Maintenance

Service Provider

For the service provider, SOAM provides the tools to monitor network and service connectivity and to locate the source of connectivity faults.

Subscriber

For the service subscriber, as well as the service provider, SOAM provides a standard way to measure important metrics documented in the Service Level Agreement (SLA) such as availability and delay.

Fault Management and Performance Monitoring

SOAM has two components:

- Fault Management (SOAM FM)

- Performance Monitoring (SOAM PM)

Service OAM is based on two external standards:

- IEEE 802.1Q-2011 (originally documented in 802.1ag) - which defines the Connectivity Fault Management (CFM) capability
- ITU-T Y.1731-2011 - which defines both fault management and performance monitoring

  Note that both 802.1Q and Y.1731 define the fault management capability. Their SOAM FM definitions are almost identical, the primary difference is some of the terminology. In this document we primarily use Y.1731 terminology.

  Related OAM Standards

MEF SOAM capabilities are documented in the following technical specifications:

MEF 17 - Service OAM Requirements and Framework - Phase 1

OAM (Operations, Administration and Maintenance) can be used to manage network infrastructures and services provided across these network infrastructures. This document provides requirements and framework for Service OAM within MEF compliant Metro Ethernet Networks (MENs). Service OAM requirements represent expectations of Service Providers in managing Ethernet Services within the MENs and Subscribers in managing Ethernet Services across the MENs. Service OAM framework describes the high-level constructs used to model different MEN and Service components that are relevant for OAM. The framework also describes the relationship between Service OAM and the architectural constructs of Ethernet Services (ETH), Transport Service (TRAN) and Application Service (APP) Layers as identified in MEF 4.

MEF 17 provides requirements to be satisfied by the Service OAM mechanisms in Carrier Ethernet Networks and a framework for discussing and implementing those mechanisms. It also provides context for several MEF specifications (UNI Type 2 and ENNI) and the work of other standards bodies. MEF 17 addresses the following specific functional areas of Service OAM: Fault Management : detection, verification, localization and notification of faults; Performance Monitoring (including performance parameter measurements); Auto-discovery (including discovering service aware network elements within provider networks); Intra-provider and inter-provider Service OAM.

MEF 30 - Service OAM Fault Management - Implementation Agreement

This document specifies an Implementation Agreement (IA) for Service Operations, Administration, and Maintenance (OAM) that builds upon the framework and requirements specified by MEF 17. In particular, this IA specifies Service OAM requirements for Maintenance Entity Groups (MEGs) and for Fault Management (FM). Service OAM in general and FM in particular are defined in IEEE 802.1Q and ITU-T Y.1731. This IA details how to use these functions to achieve the MEF requirements of Service OAM in general and Service OAM FM in particular.

MEF 35 - Service OAM Performance Management - Implementation Agreement

MEF 35 is an Implementation Agreement for MEF Service OAM Performance Monitoring. The goal of MEF 35 is to define specific performance measurement procedures and specify solutions for collecting the information needed to compute the performance metrics defined in MEF 10.2 as enhanced by MEF 10.2.1, that may be included in Service Level Specifications (SLS) over a typical SLS interval. The solutions use the PM functions defined by ITU-T Y.1731, ITU-T G.8021, and ITU-T G.8021 Amendment 1.

This Reference Wiki section presents Service OAM and discusses the concepts and components that make up the Service OAM capability and the specifics of the various FM and PM tools and capabilities.

Example(s)

Related and Further Reading

Categories