

A YANG Data Model for Network Diagnosis by scheduling sequences of OAM tests

draft-contreras-opsawg-scheduling-oam-tests

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Introduction

- OAM testing is an essential part of network operations and management
- However, scheduling tests can be challenging, especially in complex networks.
- This proposed solution offers a way to simplify the scheduling process and improve the reliability of OAM testing.
- This work will reuse existing work like [RFC8531], [RFC8532] and, [RFC8533], which defined YANG models for OAM technologies.

Terminology

- Following terms are used for the representation of this data model.
 - **OAM unitary test:** it is a set of parameters that define a type of OAM test to be invoked. As an example, it includes the type test, configuration parameters, and target results.
 - **OAM test sequence:** it is a set of OAM unitary tests that are run based on a set of time constraints, number of repetitions, order, and reporting outputs.

Use cases

- **Troubleshooting.** OAM tests are used for troubleshooting network issues by testing specific components of the network and looking for anomalies or issues.
- **Birth certificate.** The birth certificate process is a set of OAM tests that validate that all relevant parameters are correct for a specific network service, ensuring that it is functioning correctly and meets the requirements defined by the operator.
- **Proactive supervision** involves running periodic OAM tests on service components to identify and resolve issues before they impact the customer or end user, ensuring SLAs are met.
- **Performance-based Path Routing** uses Path Computation Elements (PCEs) and OAM techniques to compute the optimal path for a particular service, taking into account its constraints and requirements, to optimize network performance, reduce congestion, and improve the overall user experience.

YANG model details

```
module: ietf-oam-unitary-test
  +--rw oam-unitary-test
    +--rw name?          string
    +--rw (test-type)
    +--rw period-of-time
    .. from ietf-schedule
    +--rw recurrence
    .. from ietf-schedule
    +--rw unitary-test-status? enumeration
```

- Name: Unique name for the test
- test-type: Choose the type of test. They are imported from other RFCs
- Period from ietf-schedule
- Recurrence from ietf-schedule
- Unitary-test-status status of the test

YANG model details

```
module: ietf-oam-test-sequence
  +--rw oam-test-sequence
    +--rw test-sequence* [name]
      +--rw name                string
      +--rw test-ref* [name]
        | +--rw name            string
        | +--rw (test-type)
        | +--rw numexecutions?  uint32
      +--rw period-of-time
      ... from ietf-schedule
      +--rw recurrence
      ... from ietf-schedule
      +--ro test-sequence-status?  enumeration
```

- Name: Unique name for the test sequence
- test-ref: List to reference to an ietf-oam-unitary-tests.
 - Name: Reference to an ietf-oam-unitary-test name
 - Numexecutions: Number of times the test sequence should be executed.
- Period from ietf-schedule
- Recurrence from ietf-schedule
- test-sequence-status status of the test sequence

Conclusion and future work

- This is an initial work
- Feedback on the proposal to see if there is interest in the WG.