A YANG Data model for Event Management

draft-wwx-netmod-event-yang-00

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Why this draft?

- Objective
  - Defines a YANG data model for abstract event management.
  - Provide the ability to monitor yang instance on a local or remote system using the NETCONF/RESTCONF;
  - Initiates simple actions whenever a trigger condition is met.
- Motivation
  - To support closed-loop automation management of data collection and network optimization. For example:
    - Monitor the collected data,
    - Trigger the notification or reconfiguration if the collected data touch the threshold.
  - To provide an abstract template which
    - Clear and precise identification of Event types and instances.
    - Allow the server to inform the client that certain Events are related to other Events.
    - Allow one event to be able to trigger another external event or generate derived events.

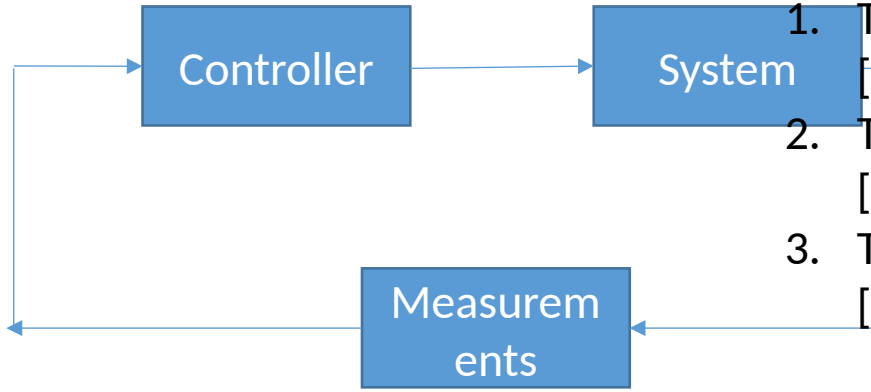
What is an event?

- Something the happens which may be of interesting or trigger the invocation of the rule.
- Such as
  - A fault;
  - An alarm;
  - A change in network state;
  - A network security threat;
  - Hardware malfunction;
  - Buffer utilization crossing a threshold;
  - Network connection setup;
  - An external input to the system, etc.

What does the event yang do?

Action A : Monitor a2b's loss pkt
Action B': Switch the path
Action C': Active/standby failover

Action B: Notif EventB
Action C: Notif EventC



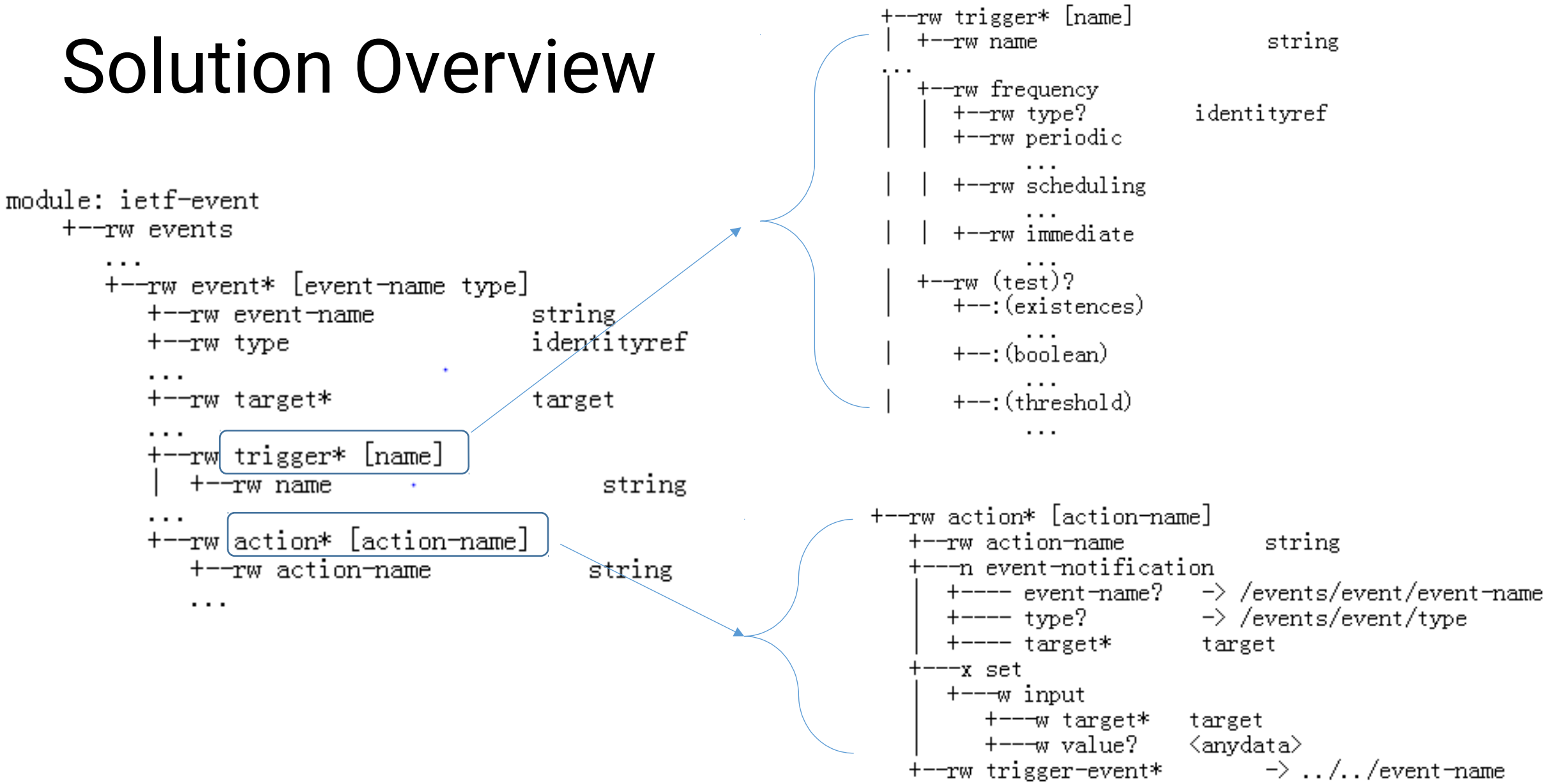
1. Target A:../../tunnel [name='a2b']
2. Target B:../../tunnel [name='a2b']/loss-pkt
3. Target C:../../tunnel [name='a2b']/state

Trigger A:"../../tunnel [name='a2b']" exist
Trigger B:../../tunnel [name='a2b']/loss-pkt>100
Trigger C:../../tunnel [name='a2b']/state=down

Usage Example: Lifecycle management for a VPN service

- **Event A**: A TE tunnel (tunnel a2b) is set up between VPN's site A and site B;
  - **Target**: ../../tunnel [name='a2b']
  - **Trigger** : this tunnel be set up successfully
  - **Action**: trigger a function: enable the performance monitoring of tunnel a2b
- Above action may involve a set of events, for example:
  - **Event B:** Monitor the tunnel a2b's loss packets number
    - **Target** : ../../tunnel [name='a2b'] /loss-pkts
    - **Trigger**: loss packets number cross the threshold
    - **Action**:
      1. sent a notification– "Loss packets number cross the threshold",
      2. and automatic set corresponding value, for example switch the path.
  - **Event C**: Monitoring the tunnel a2b's state
    - **Target** : ../../tunnel [name='a2b'] /state
    - **Trigger**: tunnel a2b down
    - **Action**:
      1. sent a notification –"a2b down",
      2. and trigger an another event—Event D: active/standby failover.

Solution Overview



What’s the difference between event and yang push?

Functions	Yang Push	This Event Yang
Trigger conditions	1- Periodic 2- On change	1- Existence 2- Boolean 3- Threshold
Notification	Support	Support
Automatic Reconfiguration	No support	Support
Automatic trigger another event	Not support	Support

Next Steps

- Solicit more comments
  - Your comments and suggestions are welcome!
- Improve our solution and document