



Technology Offering

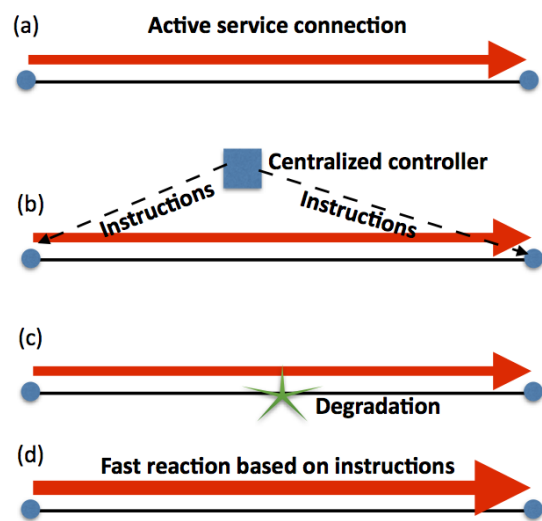
Instruction-based system for fast recovery

Introduction

The system enables to instruct network devices on the actions (e.g., re-routing or transmission parameter adaptation) to perform upon failure or degradations without querying a centralized controller. This way, the recovery of services is guaranteed in a much faster way.

Brief Description

The proposed system is based on a remote controller, two novel YANG Models, a controller data plane device to extend and increase the level of programmability of networks. According to the network state, bandwidth availability, established connections when events occurs, actions have to be taken on data plane devices. The centralized controller sends a message that enables the remote controller to instruct the device controller about critical events and actions to be taken. Thus, the system provides the possibility to configure on the device a finite state machine (FSM) through YANG and any configuration protocol supporting YANG (e.g. NETCONF, REST). Finally an acknowledgement message is sent to the remote controller notifying that the operation has been concluded. A relevant part of this new system relies on the YANG for events and finite state machine (Fig. right).



Applications and market size

The system can be applied in a wide range of network scenarios and can ensure the achievement of a more agile and flexible network:

- backbone networks
 - metro networks
 - inter-data and intra-data center networks
- cloud computing.

Both operators and service providers can leverage the benefits of the system. Consequently, network element vendors could implement such functionalities on their products because of the interest of operators.

Advantages

- ✓ Human actions reduction;
- ✓ self-configuration
- ✓ fast response to critic conditions
- ✓ improve network performance in increasing the service level



Stage of development/ TRL

The software has been developed

Intellectual Property Rights

Priority date: 27.09.2016

Priority Number: 102016000096594

Ownership: 100% Scuola Superiore Sant'Anna

Status: Available for licensing

Type of collaboration sought

Interested industrial partners to license-in the offered technologies and/or to collaborate with.

Contacts

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KTO is willing to provide with a more elaborate presentation of the technology.