

BIER APP Project

Name

BIER_APP

Repo Name

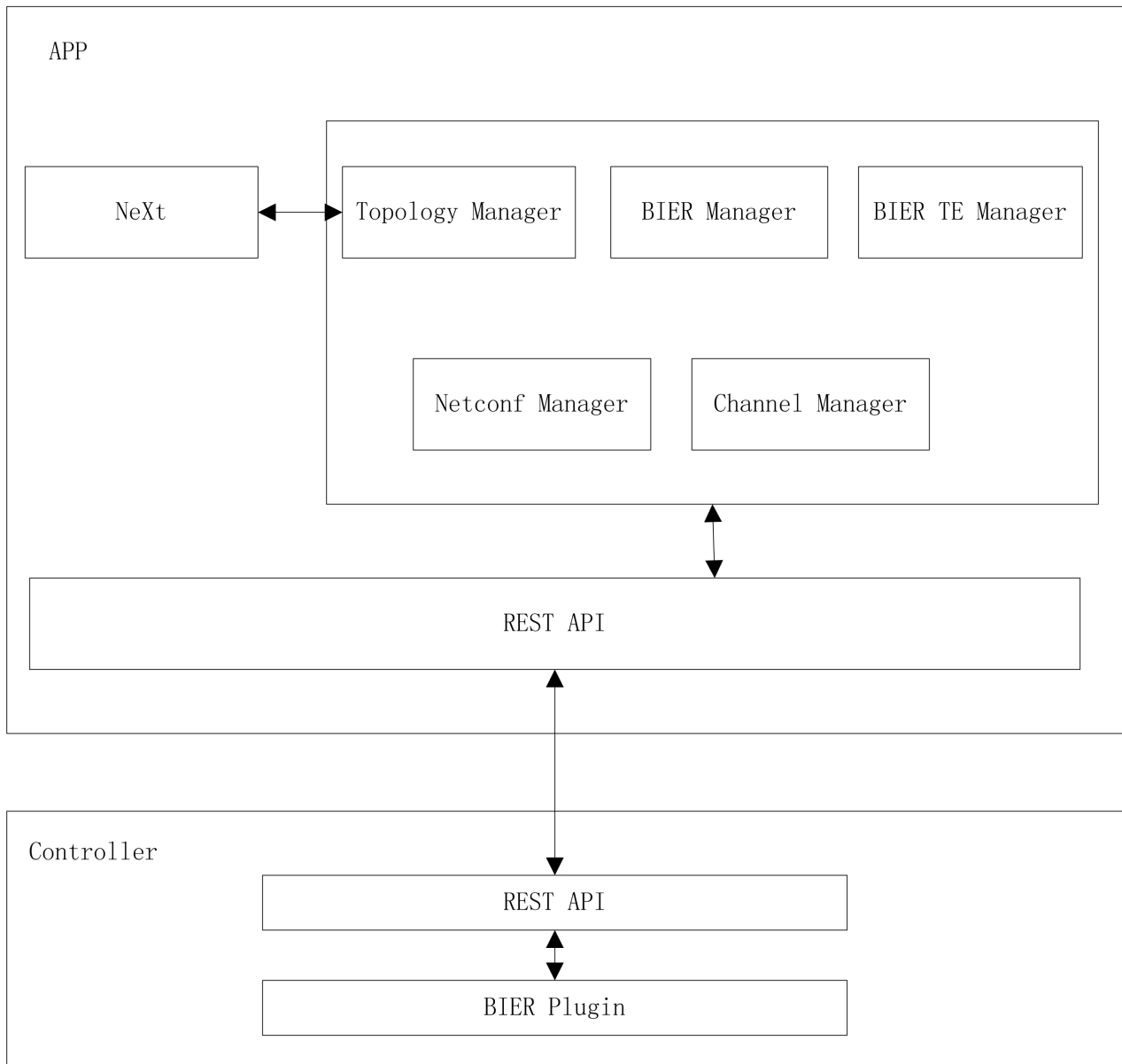
bier

Description

BIER (Bit Indexed Explicit Replication) introduces a method for multicast flow forwarding, without storing states in every node along the multicast path. SDN controller should support the BIER service, to make devices support BIER more easily and BIER network configuration more simply. BIER service has been provided in OpenDayLight with details shown in <https://wiki.opendaylight.org/view/BIER:Main>.

BIER_APP is the application plugin for the SDN controller to implement BIER service in the northbound interface. It provides many RESTful API to get dataes form SDN controller and send configuration information to controller. For example, get topology form controller and show it, distribute nodes to different domain or subdomain, configure necessary information for node in different subdomain, create channels and deploy it with ingress node and egress nodes, show calculated path in topology. This app supports BIER and BIER-TE, nodes can distribute to BIER topology

[BIER APP architecture](#)



And the managers definition is as table bellow:

Manager Name	Description
Topology Manager	Get BIER topology from controller, show BIER topology, BIER domain topology and BIER-TE domain topology..
BIER Manager	Configure BIER for node to controller.
BIER TE Manager	Configure BIER-TE for node to controller.
Channel Manager	Show channels and deploy channel with BIER nodes or BIER-TE nodes, show calculated paths from controller.
Netconf Manager	Configure Netconf for controller, Southbound protocol use NETCONF Protocol.

The BIER APP using steps:

- step1: Configure controller and BGP-LS.
- step2: Get topology from controller.
- step3: Configure Netconf plugin for controller.
- step4: Configure Domain and Subdomain.
- step5: Configure BIER node or BIER-TE node.

- step6: Configure Channel and deploy it with ingress node and egress nodes

Scope

The scope of this project is mostly about implementing a BIER Application Plugin in ODL, make controller be able to implement BIER service and generate multicast flow path manually or dynamically.

Open questions

None

Future Work

None

Resources Committed (developers committed to working)

- yu.jinghai@zte.com.cn Username: yujinghai
- xiong.quan@zte.com.cn Username: xiongquan
- gao.chenqiang@zte.com.cn Username: gaochenqiang

Initial Committers

- gao.chenqiang@zte.com.cn Username: gaochenqiang
- alzverev@cisco.com Username: Alexei Zverev

Vendor Neutral

The project is made from scratch, no vendor code, logos nor is anything included.

Presentation

[File:Presentation-bierapp-proposal-review.pdf](#)

Meets Board Policy (including IPR)