

# Inter-op Test cases in multi-vendor scenario based on ACTN Architecture

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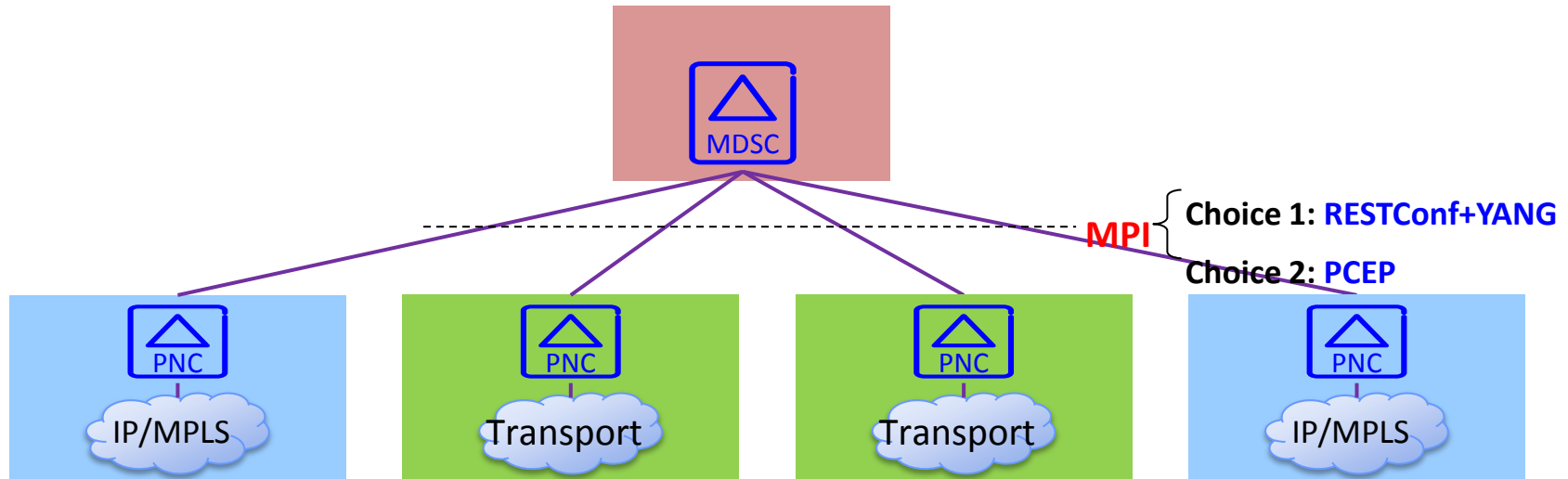
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# Inter-op test introduction

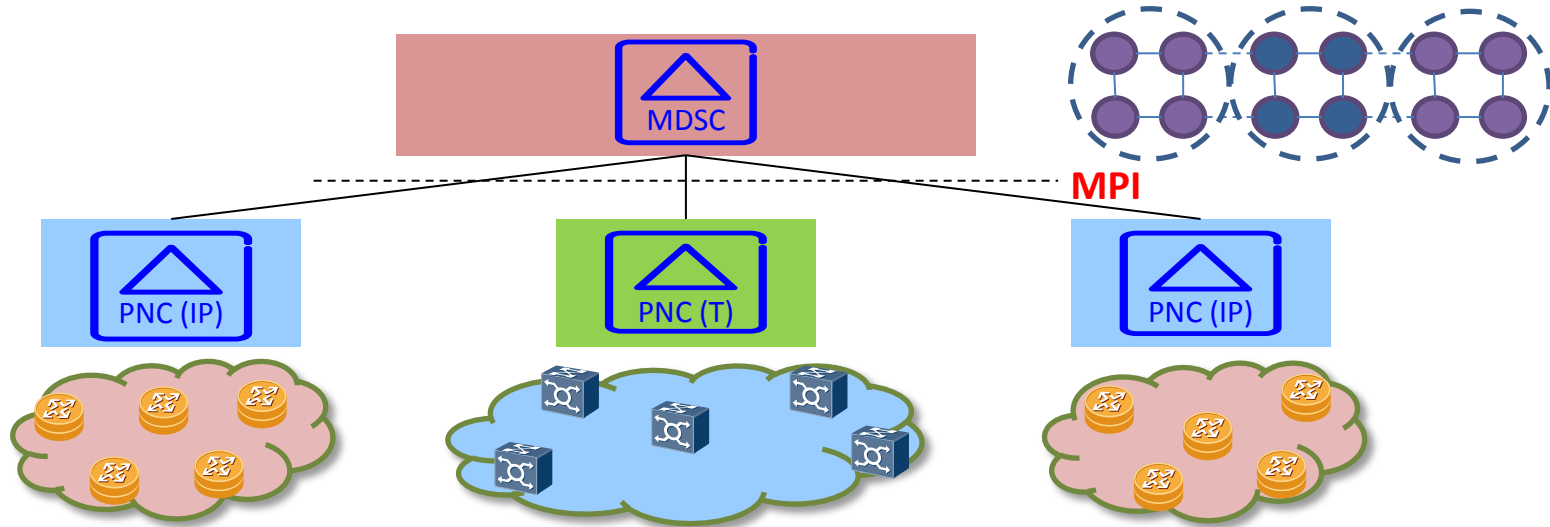


- Based on **Emulators**;
- Inter-op focused on **ACTN MPI**:
  - Operators are welcomed to discuss or develop their own MDSC;
  - Vendors are expected to have PNC and device emulators with corresponding solution on Southbound Interface
- **Multi-layer, multi-domain and multi-protocol** is supported;

# Related IETF work

- ACTN:
  - draft-ietf-teas-actn-requirements
  - draft-ietf-teas-actn-framework
- Applicability:
  - draft-zhang-teas-actn-yang
  - draft-dhody-pce-applicability-actn
- Yang model (with RESTconf)
  - For Topology: Based on draft-ietf-teas-yang-te-topo-04
  - For Services: Based on draft-zhang-teas-transport-service-model-00
- PCEP:
  - For Topology: draft-dhodylee-pce-pcep-ls-04
  - For Services: draft-ietf-pce-pce-initiated-lsp-05/draft-dhodylee-pce-stateful-hpce

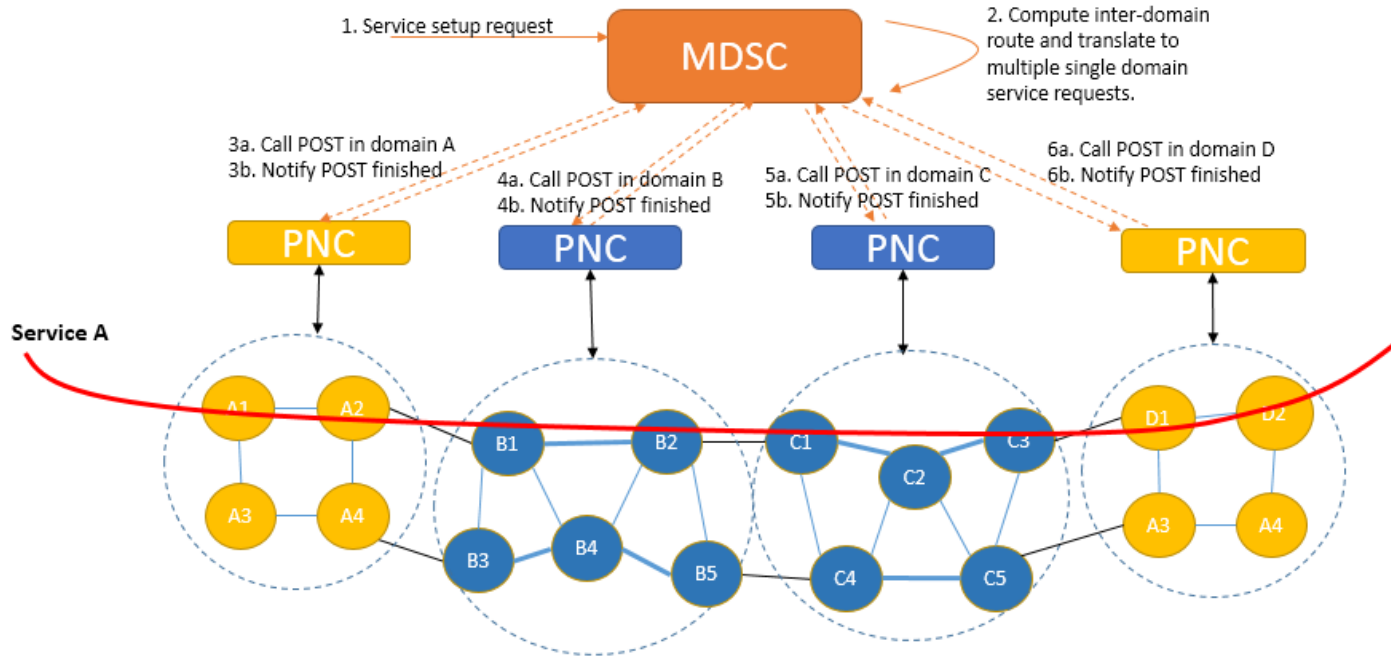
# ACTN Test Case (1) – Topology Abstraction



## ➤ Topology Abstraction Steps:

- Preparation (respective TED & Abstraction Algorithm as per PNC);
- Each PNC report abstracted topology to MDSC; MDSC create its TED;
- RESTconf: Get message with topo model for initial topo, with notification on changes;
- PCEP-LS: LSRpt message for both initial topology and changes;
- MDSC need to detect the cross-domain link, and stitching to get full topology;

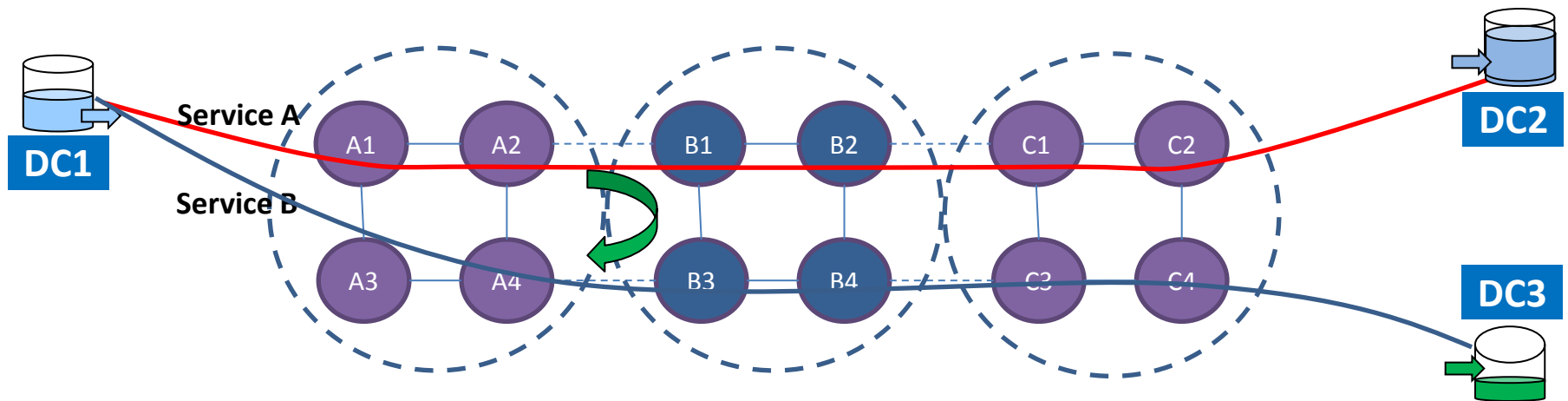
# ACTN Test Case(2) – E2E Service Provision



- **Service Provisioning Steps:**

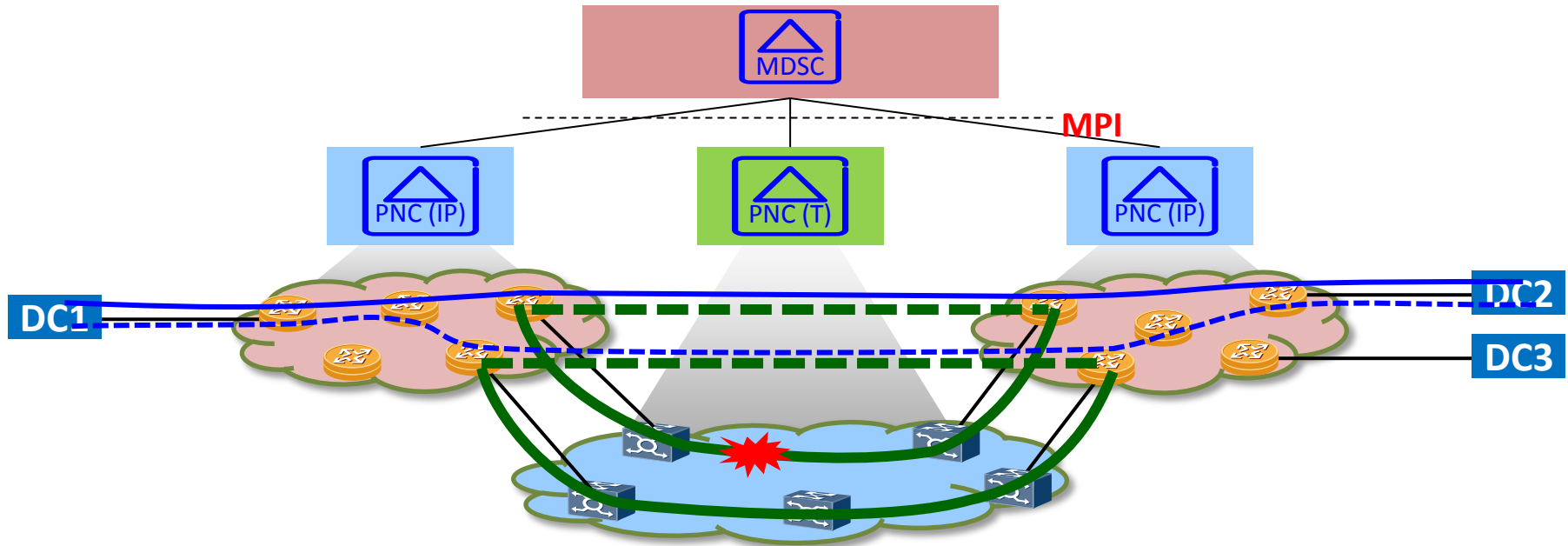
- MDSC initiate a service provisioning request;
  - RESTconf: POST message with Service YANG model;
  - Use Hierarchical PCInitiate for PCEP;
- Each PNC compute intra-domain path, and establish it respectively;
  - Process is domain-specific, report to MDSC via standard HTTP message;
- MDSC should have DELETE operation;

# ACTN Test Case(3) – Bandwidth Adjustment



- Bandwidth adjustment Steps:
  - Set up two 'existing' LSPs, say 30G and 10G respectively;
  - Update the bandwidth for two LSPs:
    - RESTconf: PUT message with Service model;
    - PCEP: PCUpd and PCRpt message;
  - Looks like a 'DC load balance';

# ACTN Test Case(4) – Inter-domain Restoration



- Inter-domain Restoration Steps

- Create one service between DC1 and DC2;
- Detect a 'failure' in transport domain, and assume there is not enough resources to do intra-domain restoration; need to report to MDSC;
- MDSC create backup inter-layer paths based on failure notification;

# Future work

- Future Work:
  - Continue our job on inter-op test;
  - Result will be published in ACTN wiki after IETF:  
<https://sites.google.com/site/openactn/interoperability-demo/multi-vendor-inter-op-test> ;
  - We are willing to see interests and partners to work together.
  
- Comments?



**THANK YOU!**

**BNB DEMO AVAILABLE ON THURSDAY NIGHT!**