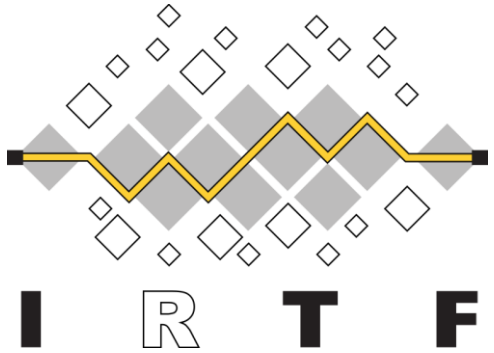

Interconnection Intents

<draft-contreras-nmrg-interconnection-intents-03>

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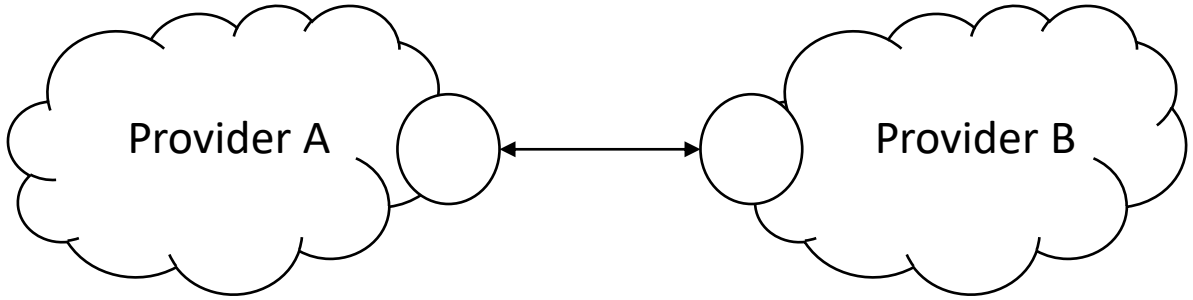
IETF 115, London, November 2022

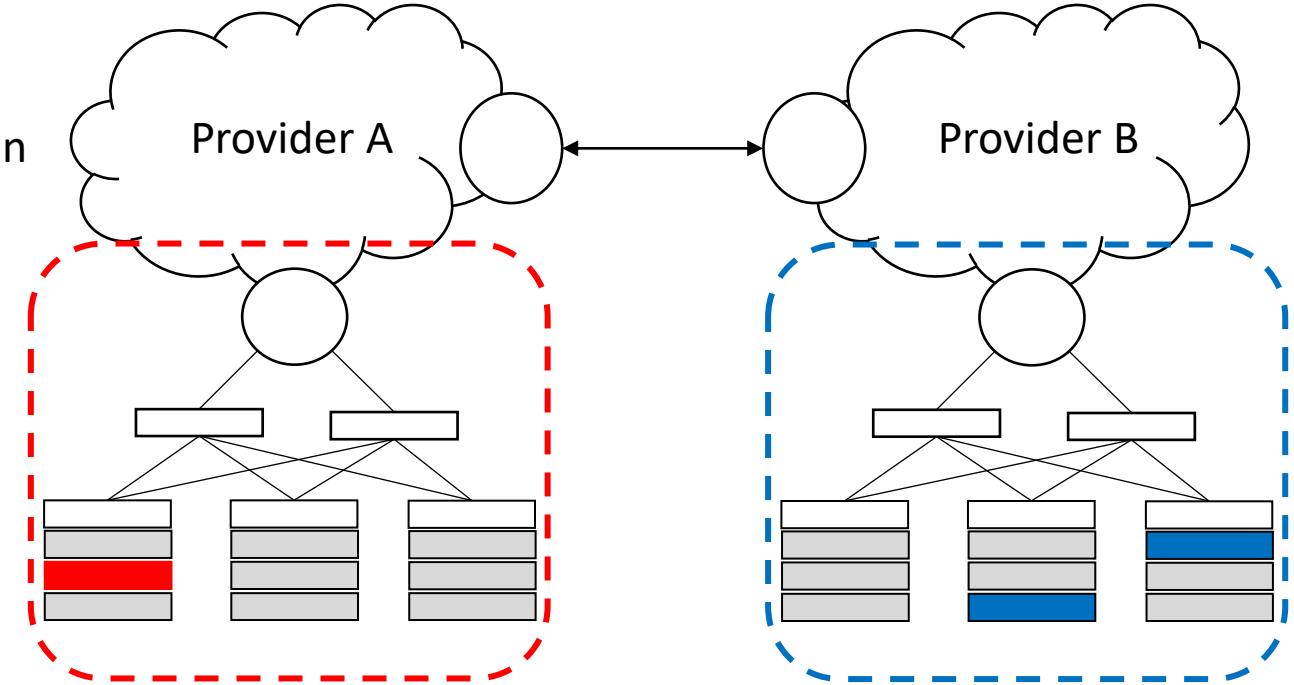
Motivation and objectives (reminder)

Classical Interconnection



- Interconnection today is conceived only as pure IP traffic interchange
- BGP as base protocol for this (sessions advertising reachability of IP prefixes)

Evolution of Interconnection



- New models for interconnecting SDN/NFV/Edge enabled networks are required (E.g., for deploying or requesting specific VNFs and service graphs, ie. SFCs)
- Apart from IP prefixes can be required advertisement of Service Functions and/or DATA Center capabilities

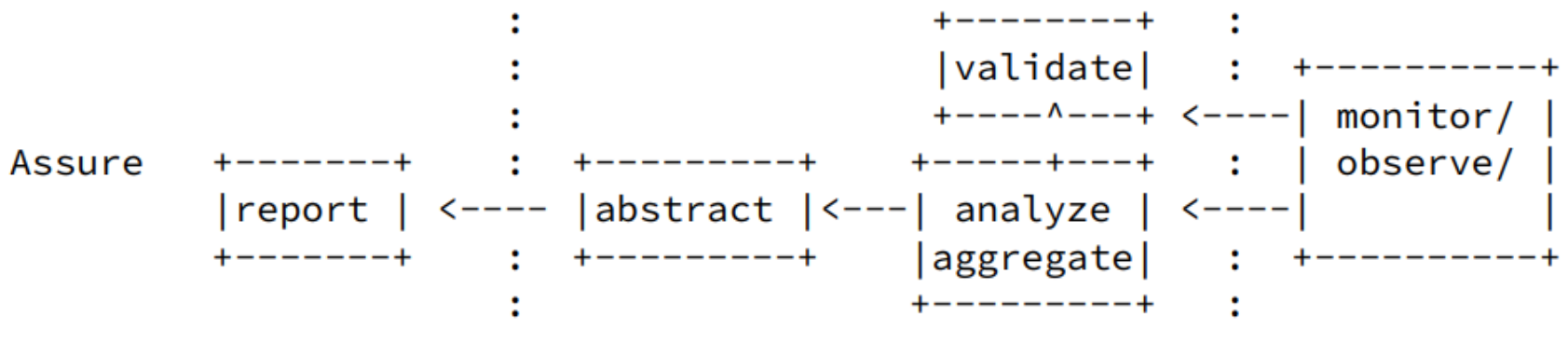
Summary of the draft (reminder)

- Target: to leverage on IBN technologies to handle enriched interconnection requests (i.e., traffic interchange and beyond)
- Scenarios of applicability:
  - Interconnection of non-public to public Networks in 5G
  - Multi-domain Network-as-a-Service requests (see e.g. sec.4.4 in RFC8568)
  - Multi-domain Network Virtualization (draft-bernardos-nmrg-multidomain-01)
- Modes of usage for interconnection intents
  - only IP traffic interconnection (i.e., traditional peering / transit)
  - service (e.g., CDNi as defined e.g. by IETF CDNI or Streaming Video Alliance)
  - VNFaaS (e.g., packet core capabilities for MVNOs), for instance leveraging on draft-ietf-teas-sf-aware-topo-model
  - Computing capabilities (for instantiating functions/containers on top), for instance leveraging on draft-llc-teas-dc-aware-topo-model
  - Any combination of the ones before
- Benefits:
  - Establish a common, normalized method among service providers for automated interconnection
  - Simple way of expressing enriched interconnection request further than pure IP traffic interchange

Updates from -02 version

- Details on assurance phase of the intent lifecycle
- Insights on interconnection intent structure
  - Information about the type of data traffic subject of the interconnection intent
  - Service functions expected to be supported by the peer provider, including how are connected in terms of topology (i.e., service function graph).
  - Resources expected to be offered by the peer provider, expressed in terms of raw values or quotas.
  - Constraints that could apply to whatever of the elements included in the interconnection intent, including traffic steering ones.
  - Further information that could be necessary for delivering an end-to-end service by means of the intent.

Interconnection Intent lifecycle - Assurance phase



Provider A

- Analysis of the reported metrics against the intent request
- Trigger of actions if needed, e.g., new intent (outer closed loop)

Provider B

- Checking of monitored data for internal closed loops to ensure commited SLOs (inner closed loop)
- Aggregation of data producing an abstracted view fitted to the intent request

- Collection of telemetry info related to allocat resources (i.e., routes, compute quotes, service functions, etc.)

Key questions from the chairs

- Objective of the work in regards to NMRG activities
  - Elaborate intents to facilitate new interconnection needs which exceed simple IP traffic, by combining services (SFs) and/or computing (resources), leveraging on IETF technologies
- Remaining steps to finalize
  - Propose a structure to express rich interconnection intents and validate them (through a PoC for a concrete example)
- How long this would take
  - PoC foreseen by Q4’23 (targeting IETF 118)
  - Potential topic for the hackathon at that time? Interconnection -> interop

Moving forward the draft ideas

- Definein more detail the structure of the intent (template, data model, etc)
- Identify protocols / APIs (or lack of them) for accomplishing the different kind of interconnection types considered
  - This will help to compose the workflow of configuration / provision (i.e., order of actions, dependencies on parameters/data for each set of actions, etc)

- Feedback is more tan welcomed!!

Relationship with measurement intent draft *Question to the RG*

- Authors of both *draft-yang-nmrg-network-measurement-intent* and *draft-contreras-nmrg-interconnection-intents* have shown mutual interest on the other draft
- Some parts can be perceived as common while some others are specific for the topic of each draft
- Two options for progressing the work
  1. For authors of one draft to join the effort of the other draft, working together on separated drafts
  2. To merge the drafts while maintaining differentiated sections for the specificities of each draft
- Question to the Chairs and the RG: What do you think is the best approach?