MMIX's Action

On the failure of Major International Backbone link of Myanmar

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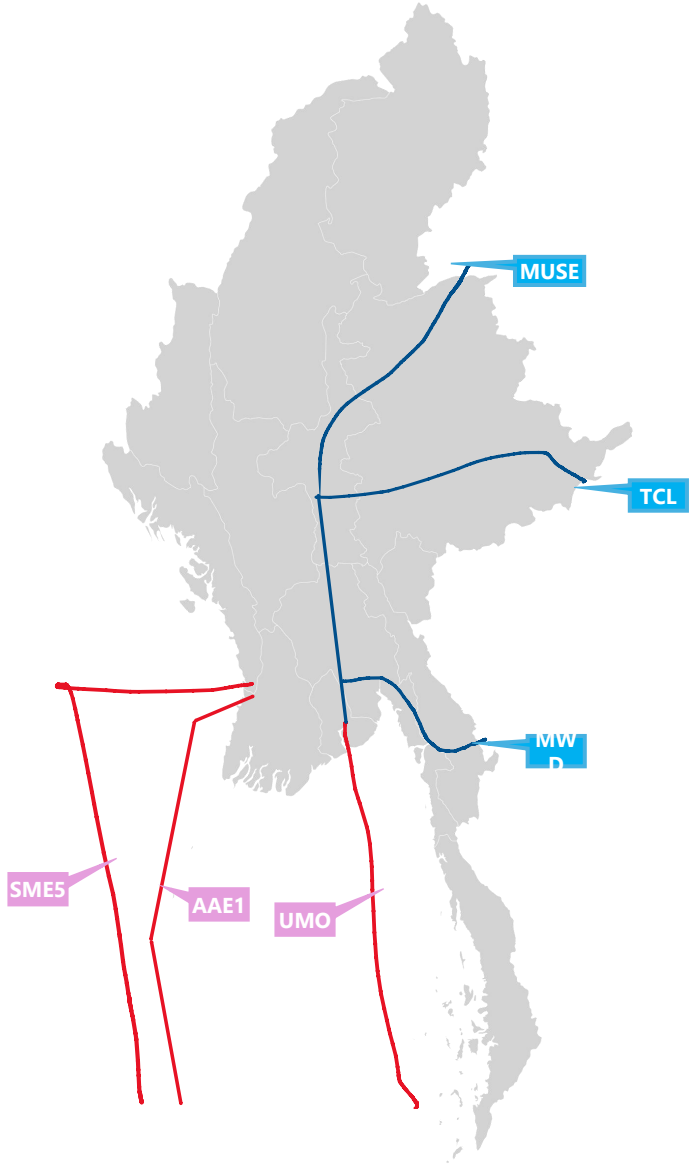
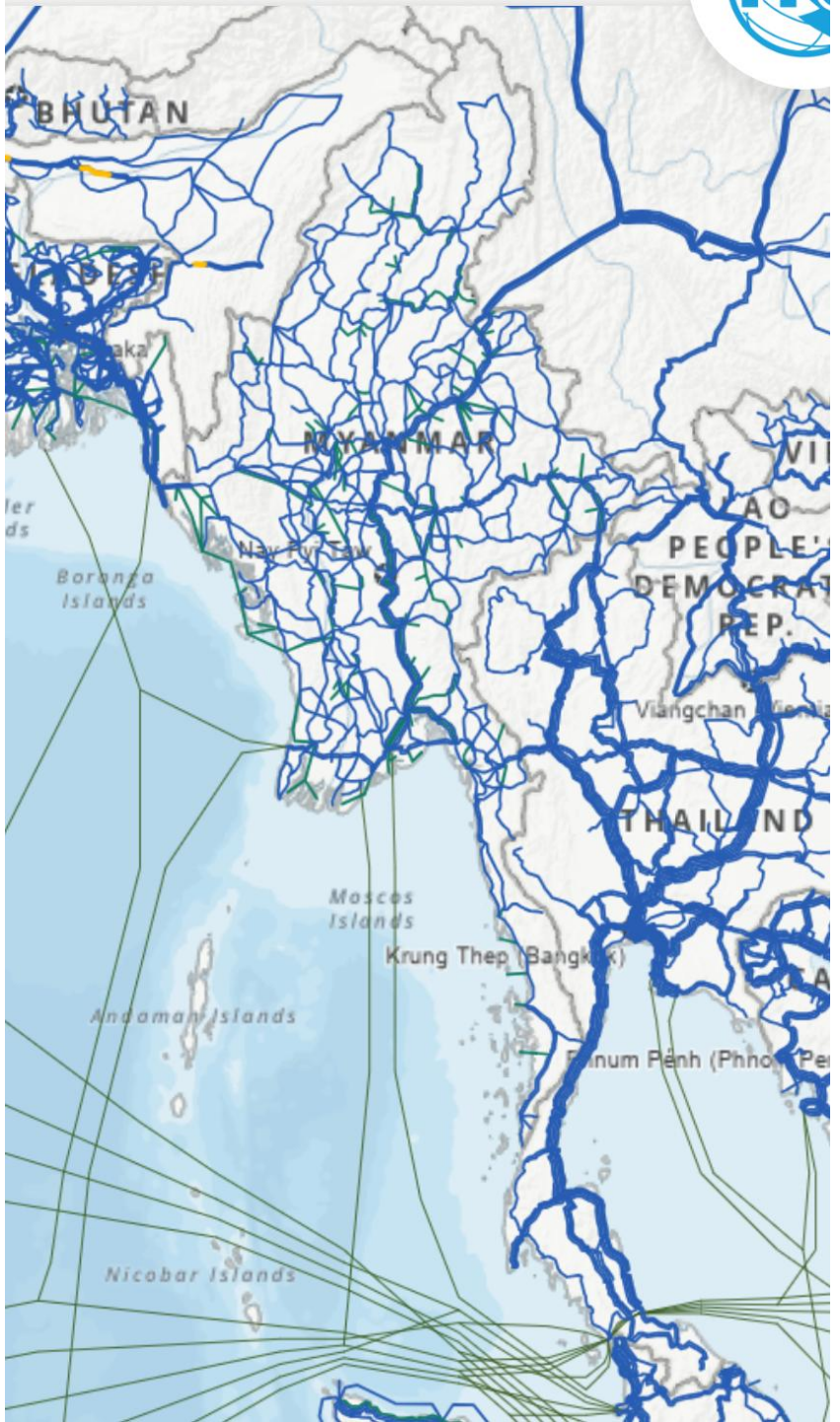
Version : 1.0

Update : 20 Jan 2026

Major Myanmar International links





UMO Cable

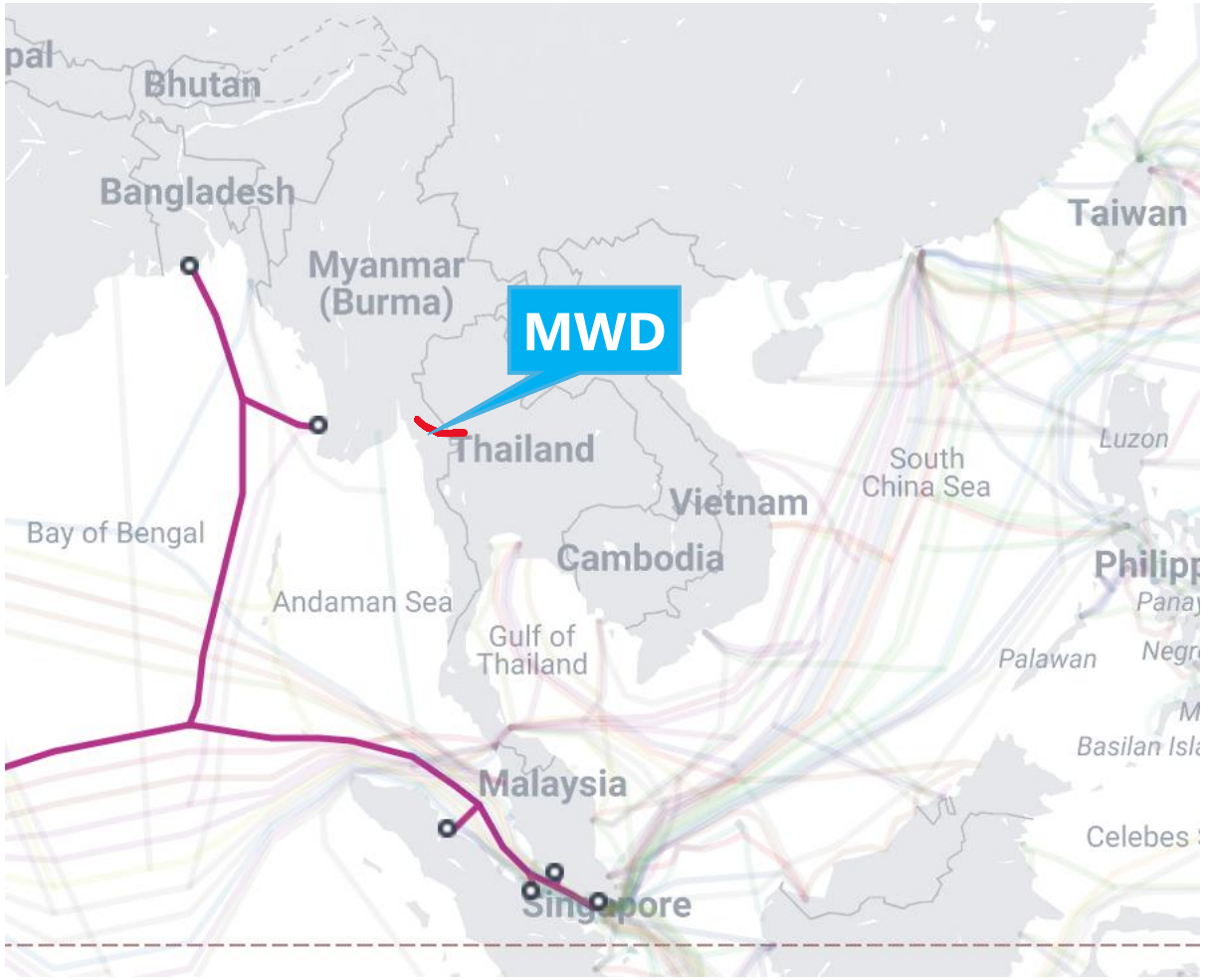
Internet Service - active on Oct 2023

SEAMEWE-5

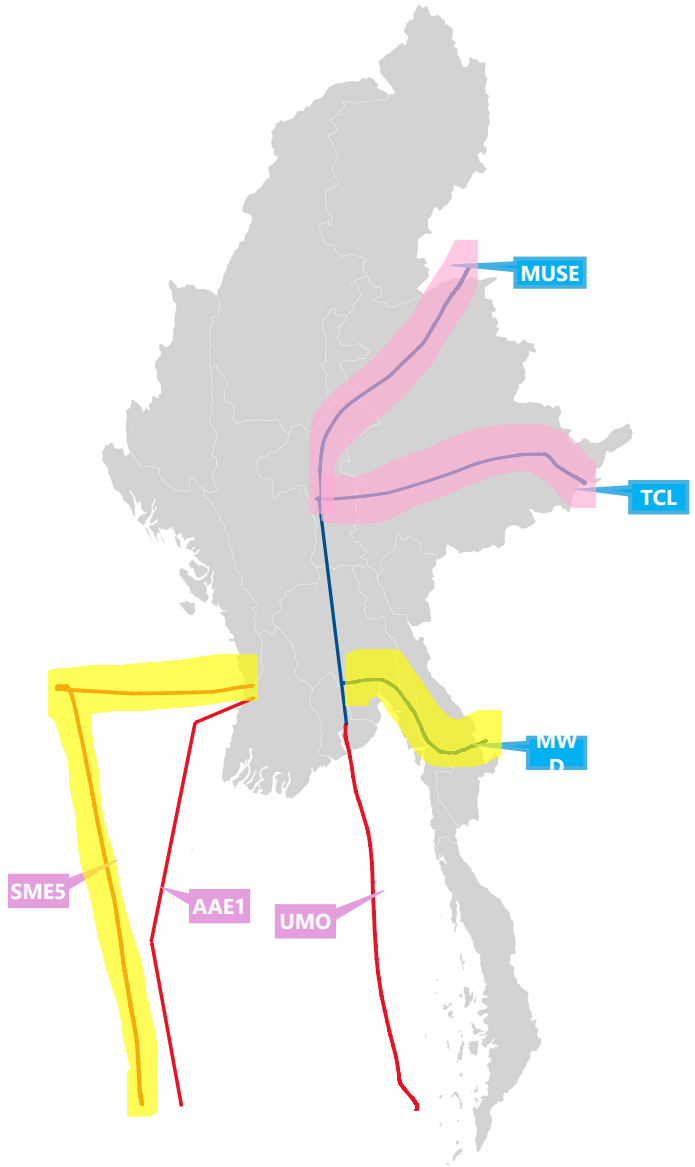
Fault - April to June 2024 – 2 months

Myawaddy Land line

Major failure starting about May 2024



SEAMEWE-5 – Fault
MWD Landland – Failure
Tachileik Landland – Unreliable
AAE1 – is limited



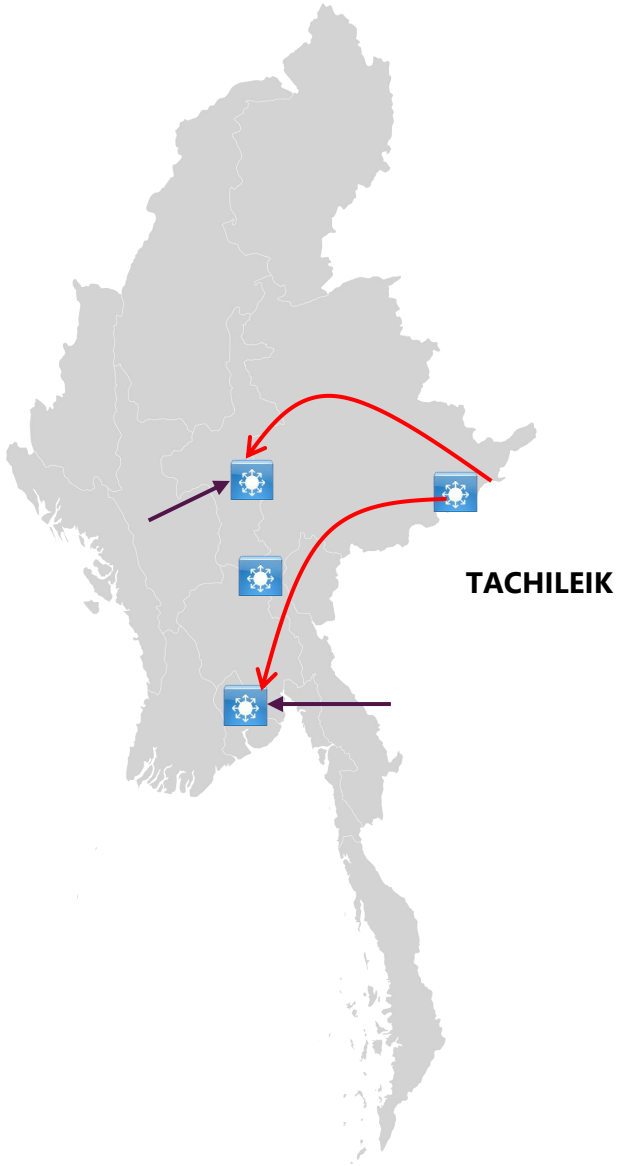
UMO - Failure

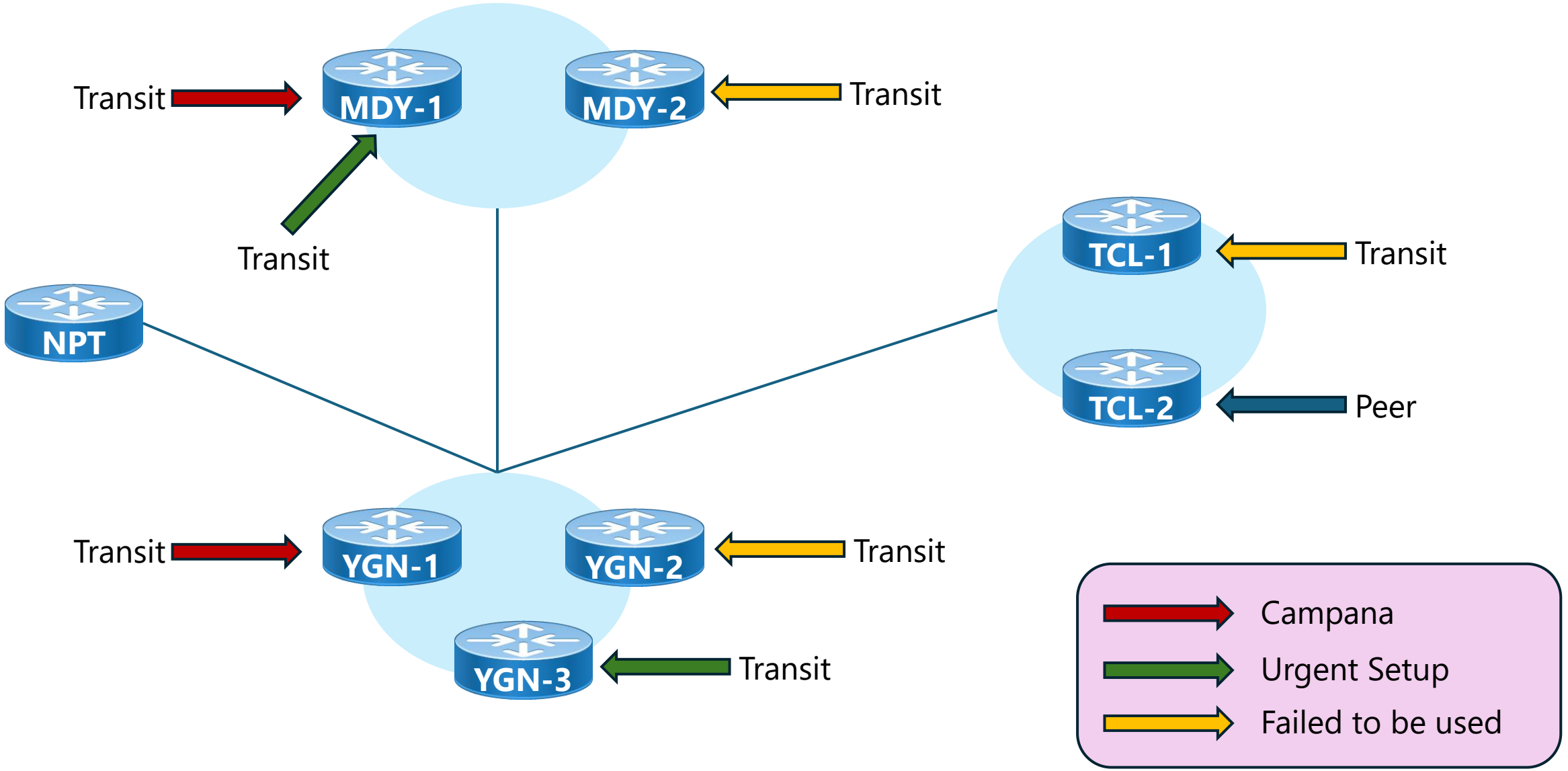
1st November 2025 – 20 December 2025

Nearly every Internet Services impact.

MMIX struggle

1. Major changes for network topology to accept IP Transit from remote sites.
2. Urgently get IP Transit from Tachileik upstream via MMIX POP.
3. Activate MMIX network & fill some CDNs.
4. Get another links for more CDNs
5. Wait for Canpana Service.




Transit
MDY-1
MDY-2
Transit
Transit
NPT
TCL-1
Transit
TCL-2
Peer
Transit
YGN-1
YGN-2
Transit
YGN-3
Transit
Campana
Urgent Setup
Failed to be used

How to manage multiple IP Transits?

1. **Setup Different routing instance (VRF) for dedicated IP Transit**
2. **Change desired content (CDNs) to targeted routing instance (VRF)**

Constraints: multiple configuration changes such as

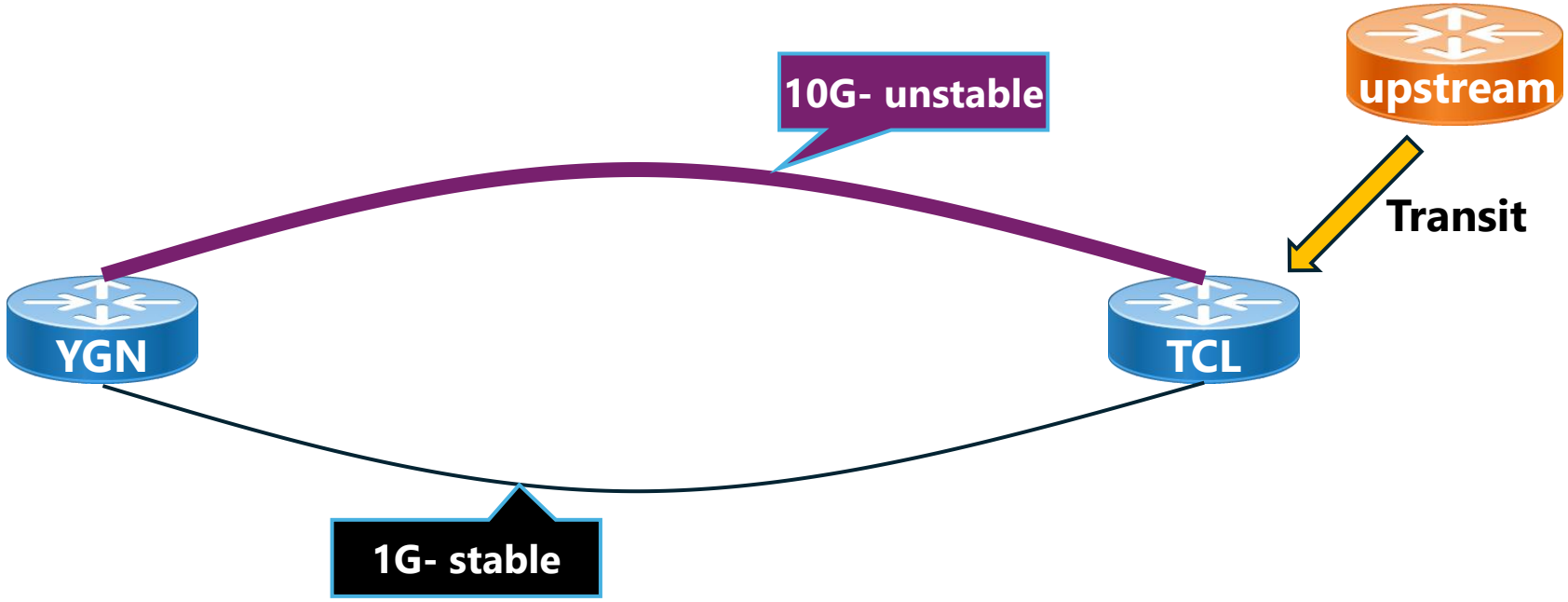
- vrf instance changes at the content interfaces
- route filter changes at the bgp sessions

1. **Later, we changed configuration using multiple vrf not only for IP Transit, but also for CDN.**
2. **Then, we play route import & export only.**

How did we manged limited IP Transits?

Based on available transit, we allowed only limited CDNs and services.
If transmission got problem, shutdown more content.

Limited CDNs



How did we manged limited IP Transits?

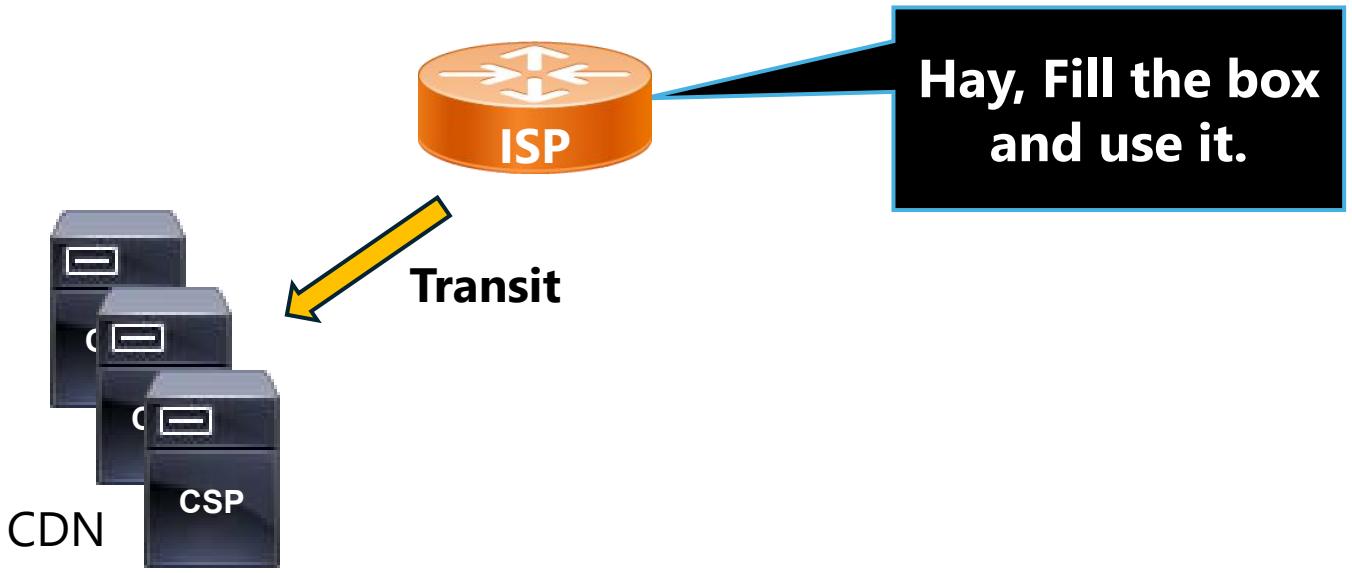
Based on available transit, we keep monitor the traffic. If reach critical point, we shutdown some CDNs.

How did we manged limited IP Transits?

Based on available transit, we requested CDN owner to control (reduce) their traffic capacity.

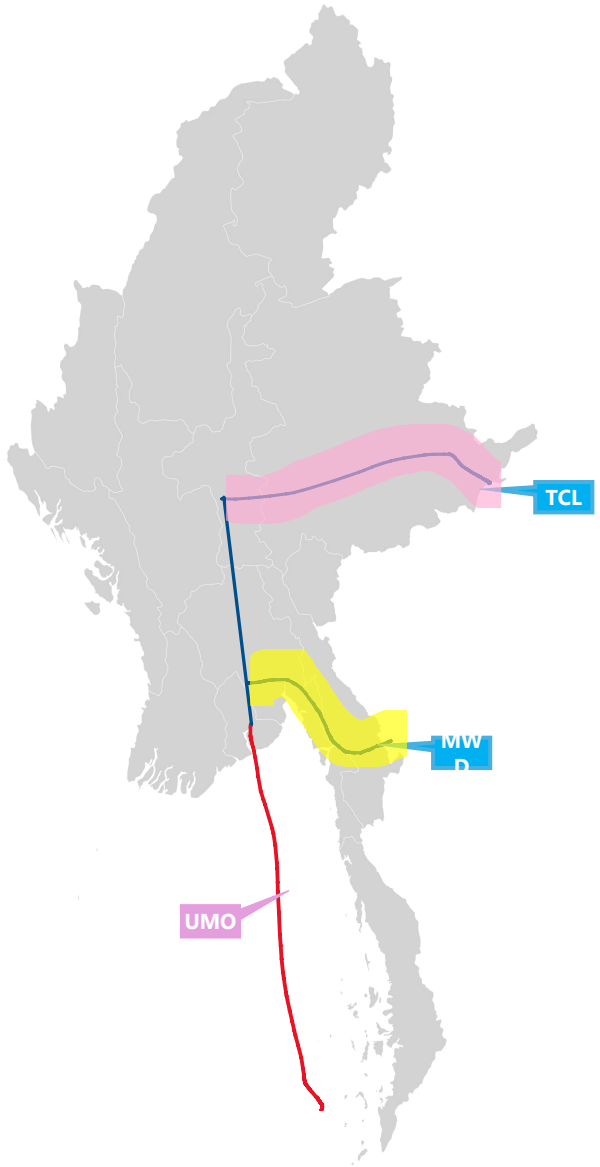
How did we manged limited IP Transits?

Ask member (big ISP) to fill IP transit to the CDN box and use it.

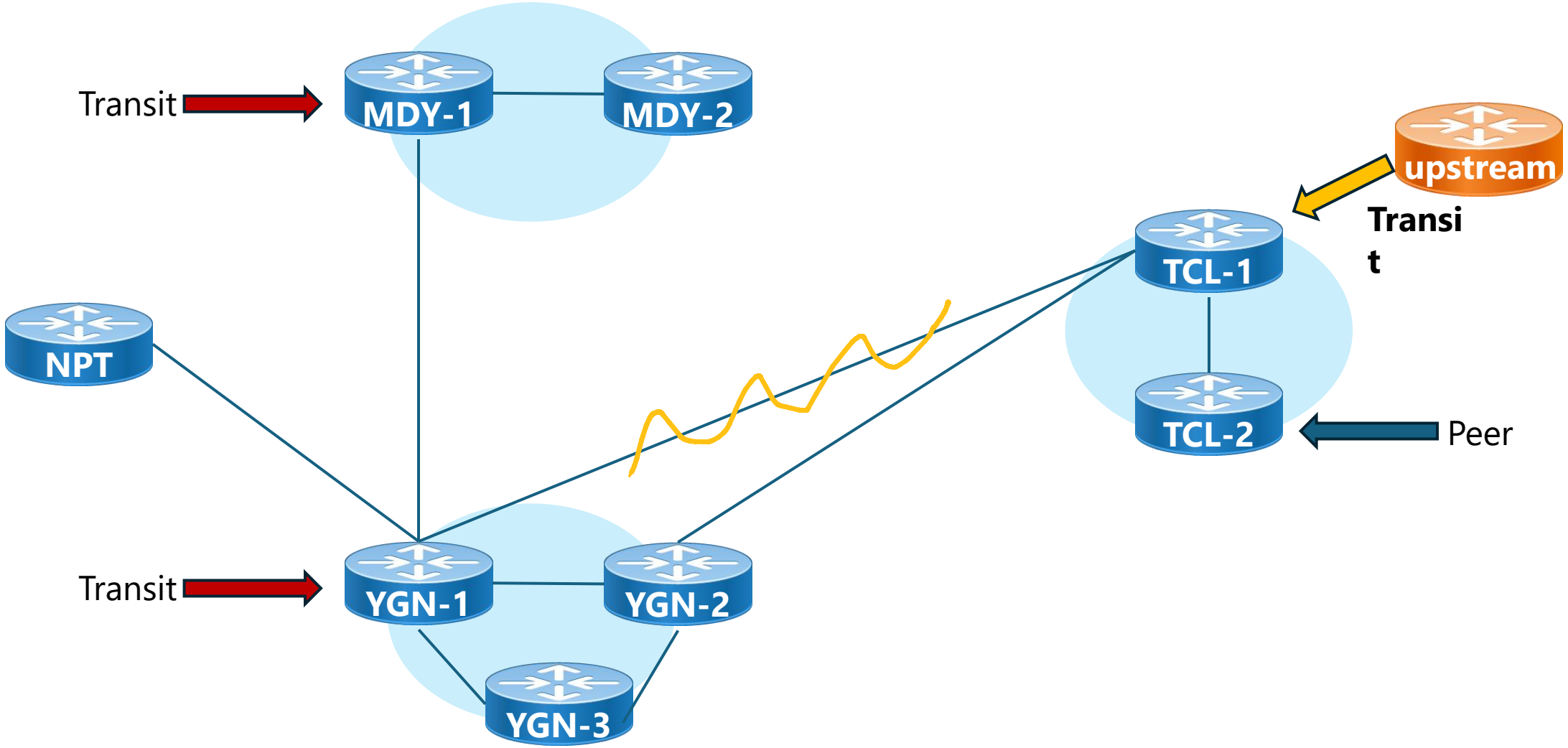


Campana - Recovery

2025 November 20th – Partial up via TCL link
2025 November 23rd – Partial up via MWD link
2025 December 20th – UMO up, Fully recovery

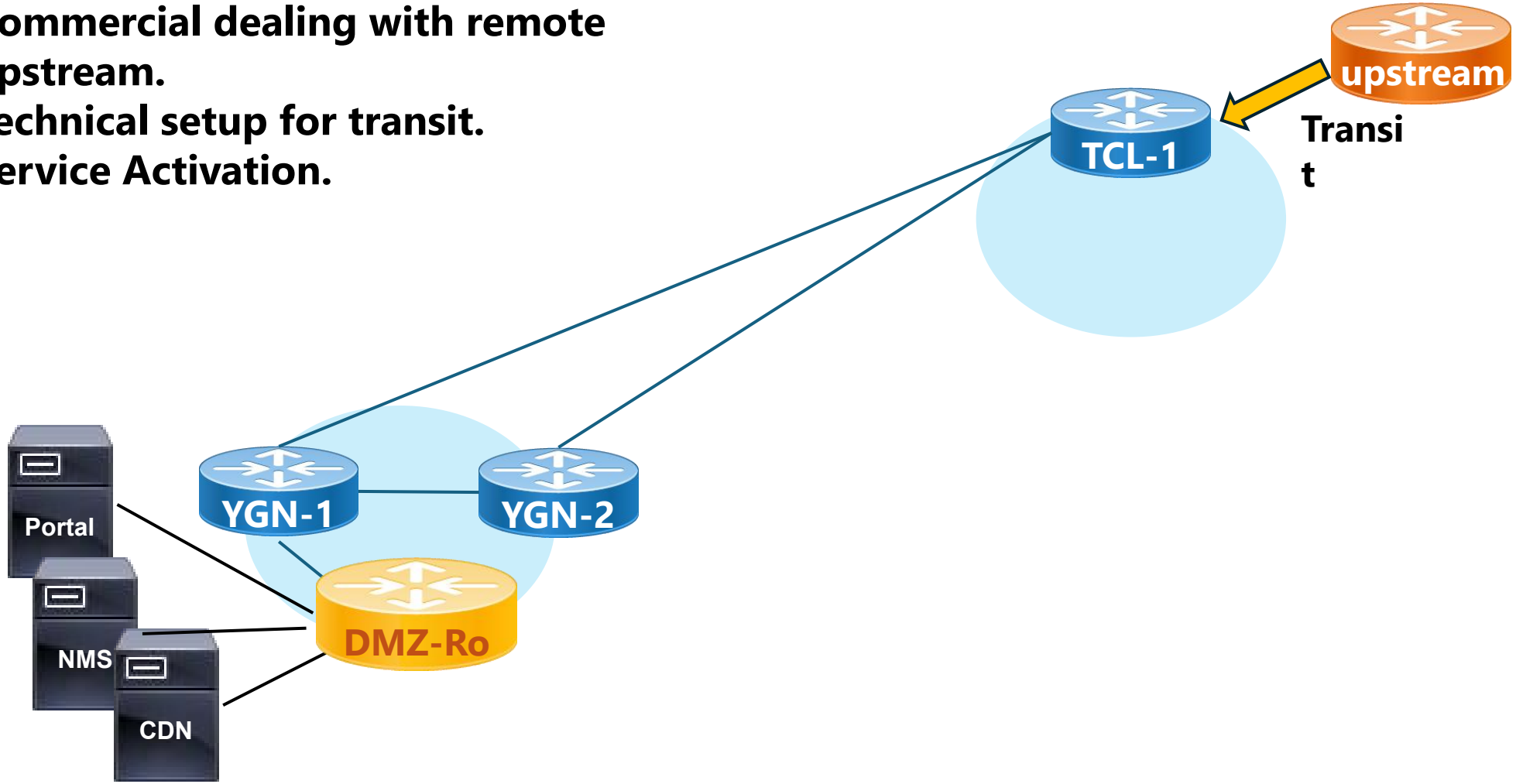


1st urgent IP Transit.



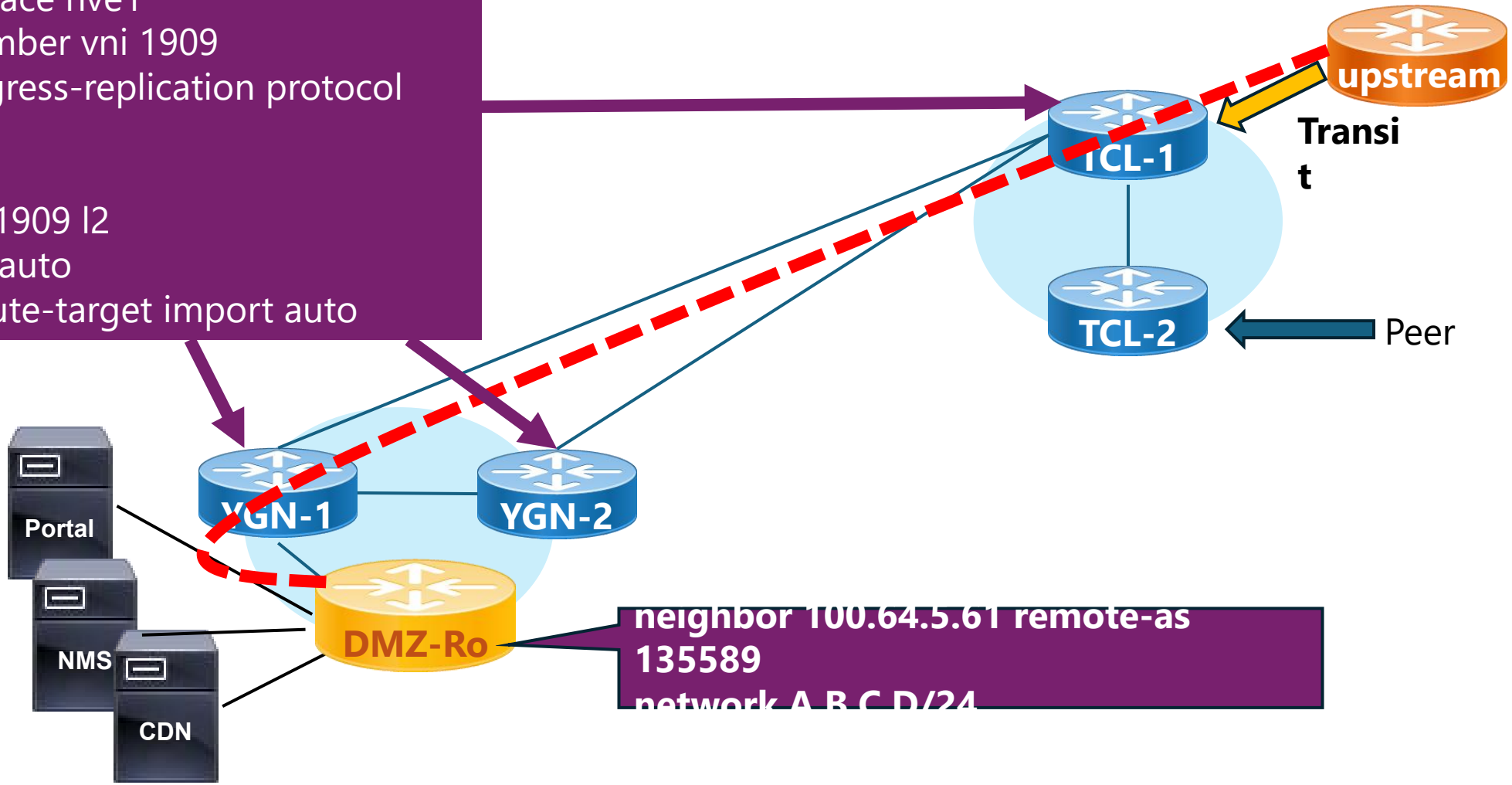
Step 1: Get alive back MMIX & low capacity CDNs

1. Commercial dealing with remote upstream.
2. Technical setup for transit.
3. Service Activation.



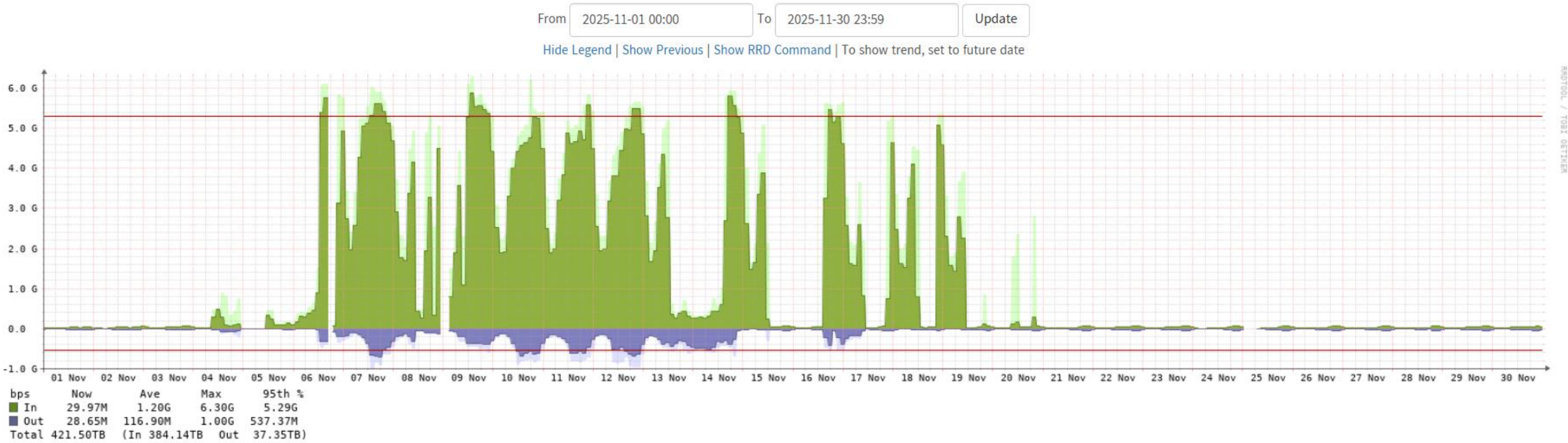
Carry L2 link across EVPN network and setup BGP

```
interface nve1
  member vni 1909
    ingress-replication protocol
bgp
evpn
  vni 1909 l2
    rd auto
    route-target import auto
```

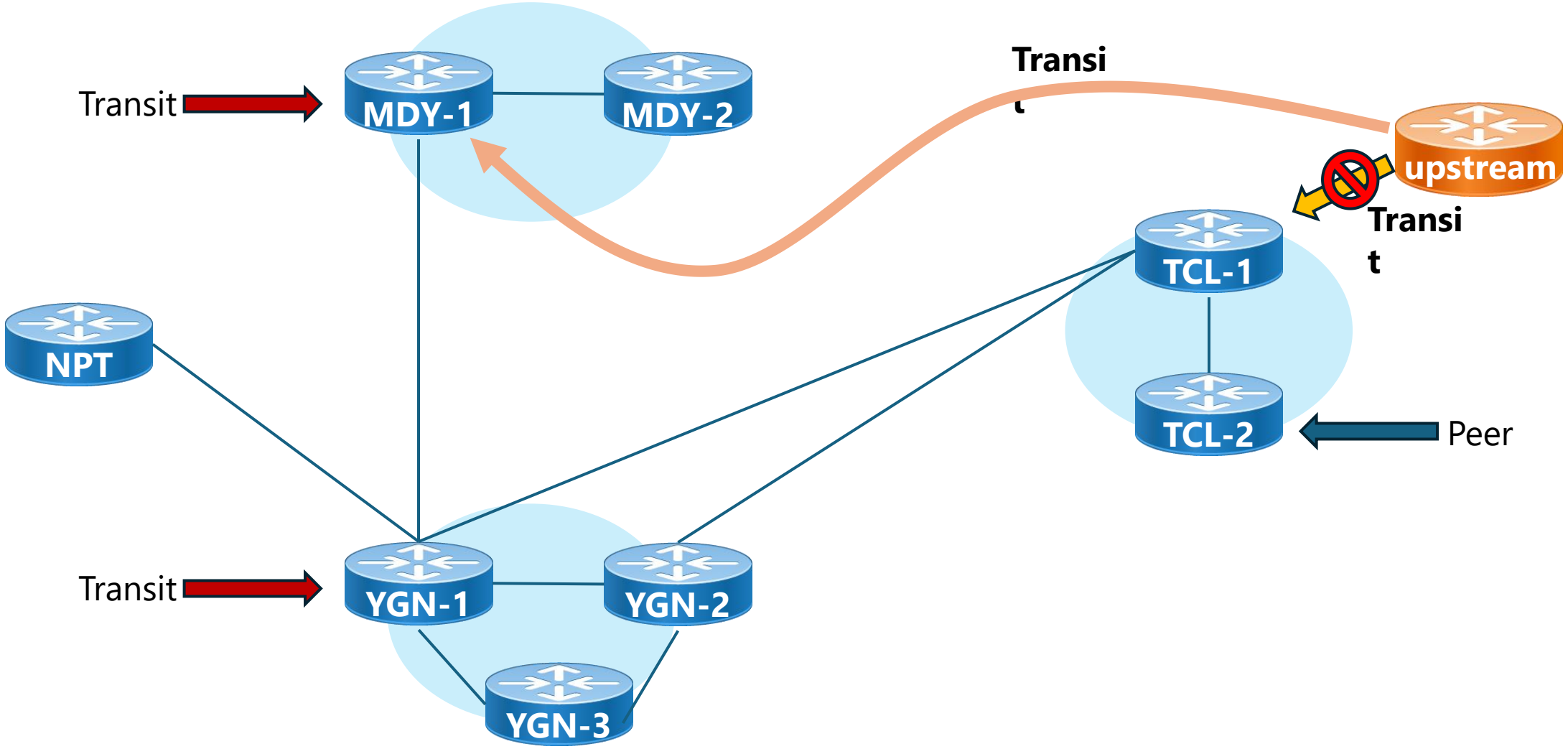


Constraints

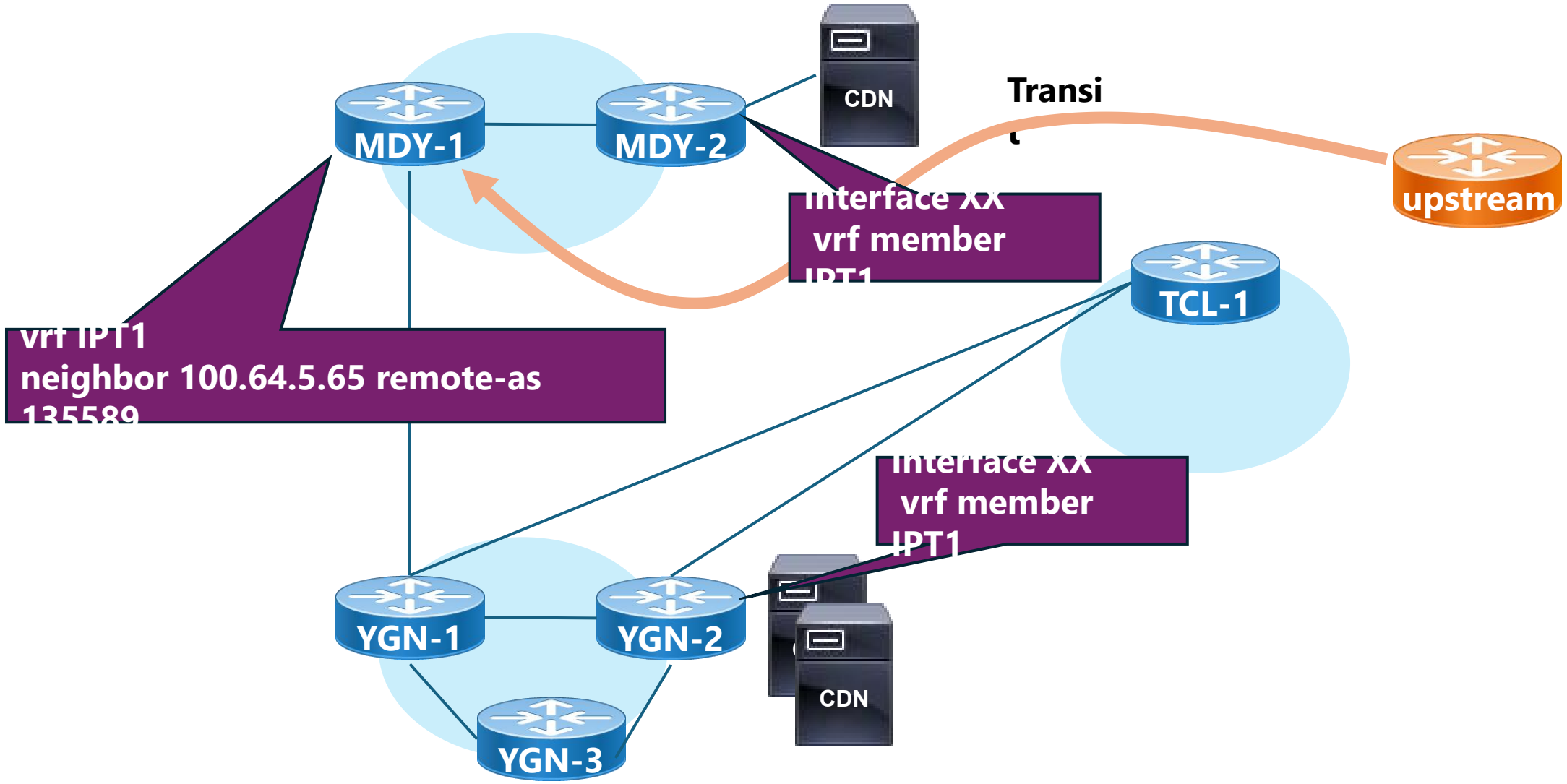
Commercial negotiation: for short term period requirement.
Capacity management:
MMIX keep on eyes the link condition. If primary link down, we shutdown CDNs.
The same link is used for peering. It also impact to existing TCL's peer traffic.
Unexpected issue: Domestic link availability is very short period. Can use only 13 days.



2nd Urgent IP Transit.



Filling CDN in Mandalay

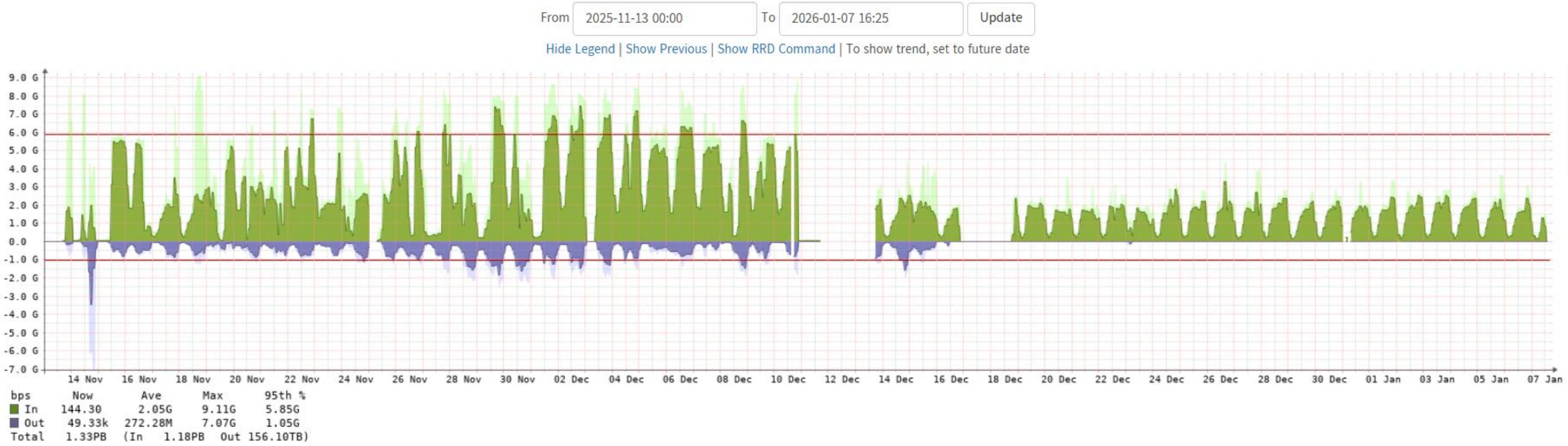


Constraints

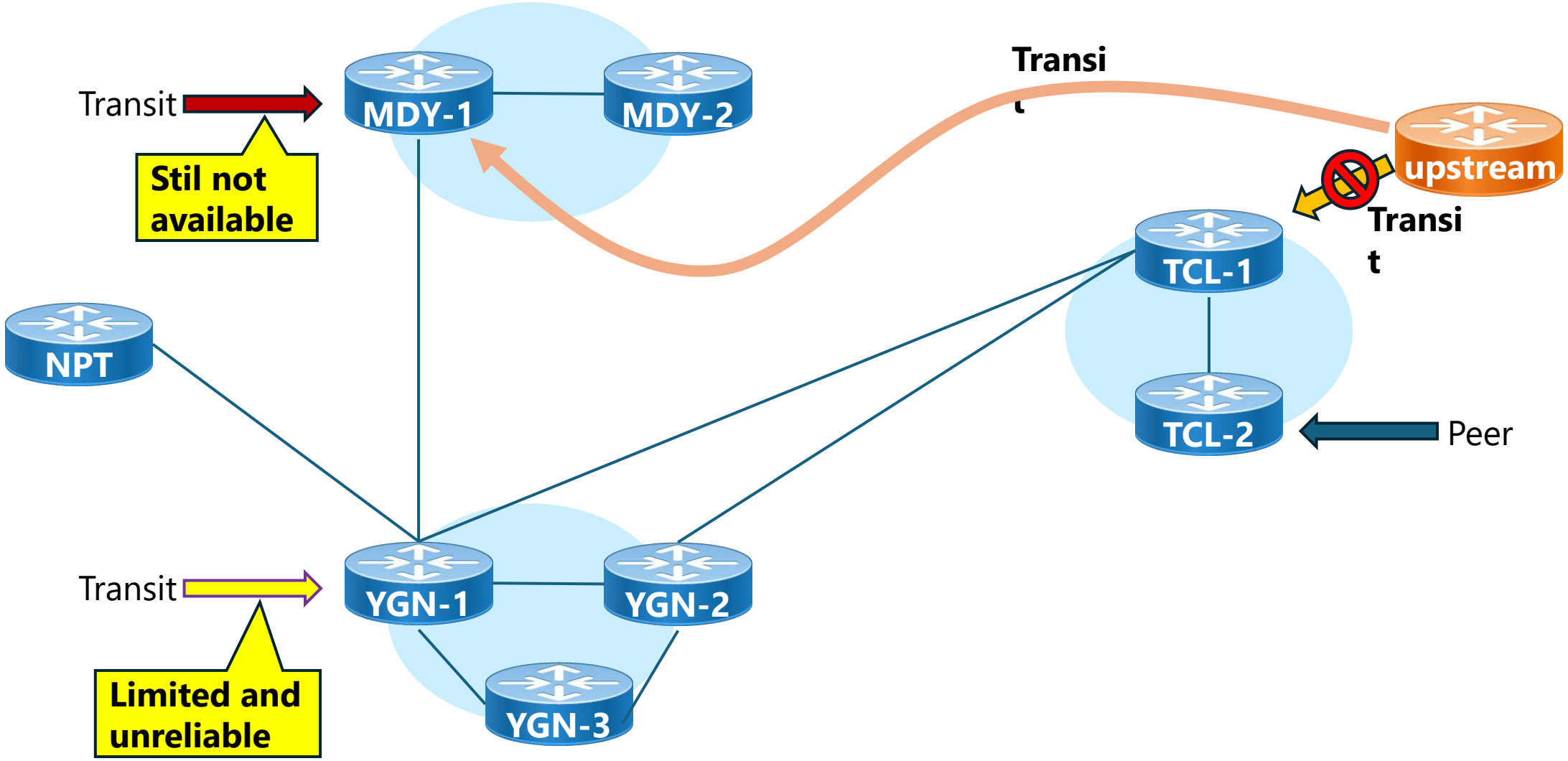
Capacity management:

As limited BW, we request CDN provider to reduce Cluster's capacity.

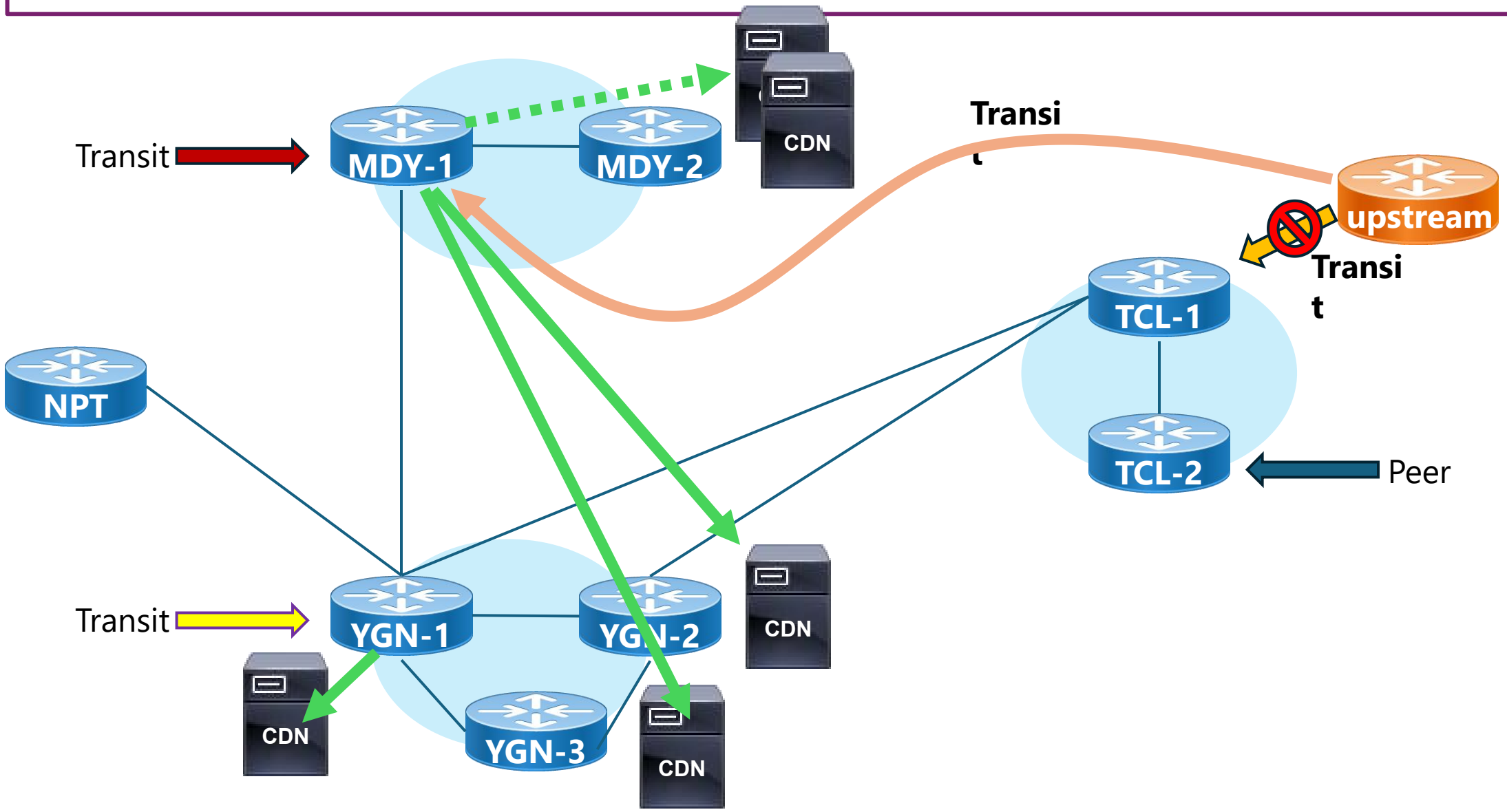
Why MDY CDN is not working well, we allowed Yangon CDNs to use that link.



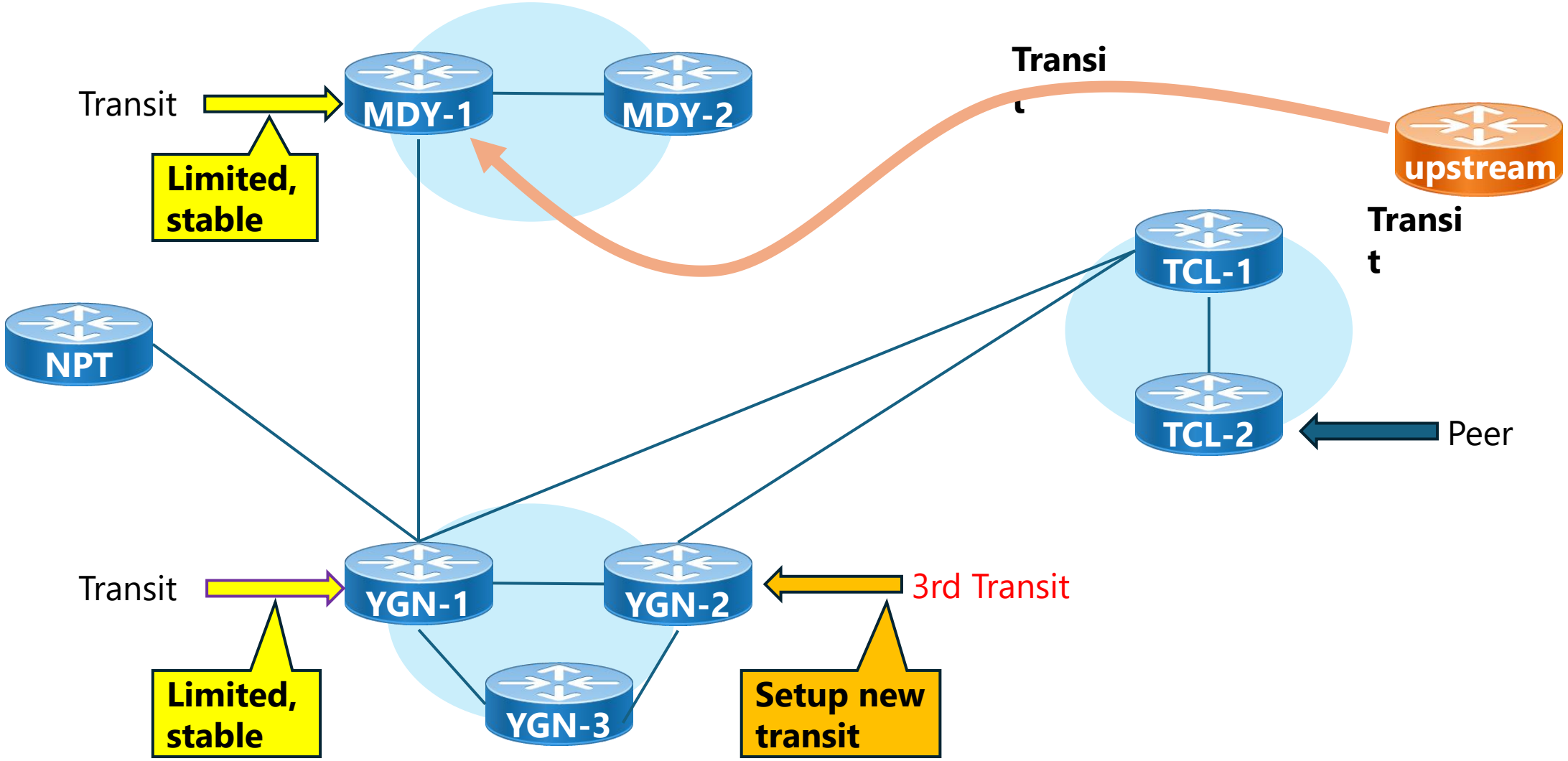
Campana IP Transit Recovery – 1 (via unreliable land line)



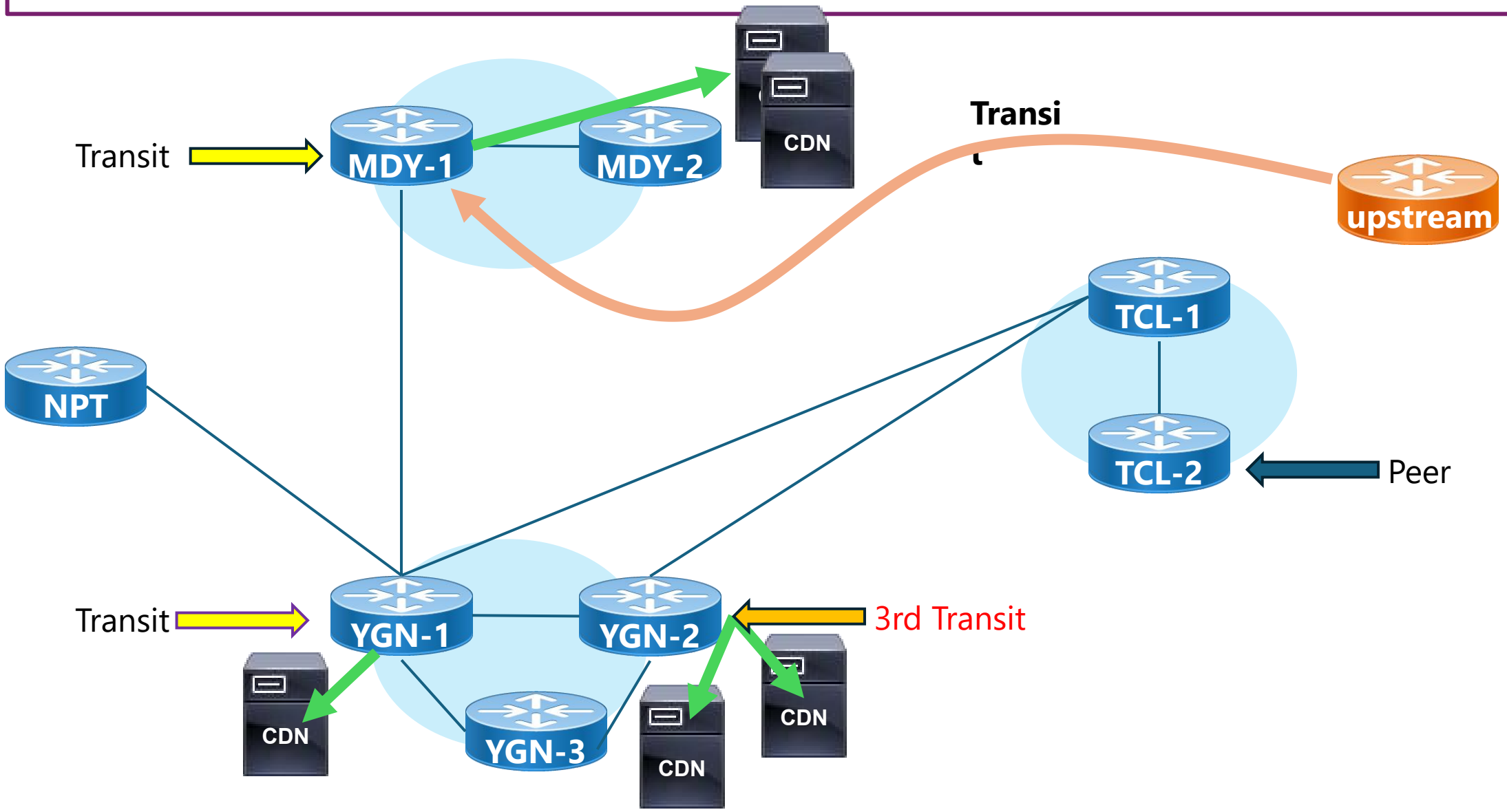
Fill CDNs


Transit
MDY-1
MDY-2
CDN
Transi
t
upstream
Transi
t
TCL-1
NPT
TCL-2
Peer
Transit
YGN-1
YGN-2
CDN
CDN
YGN-3
CDN

Campana IP Transit Recovery – 2 (Reliable land line but limited)



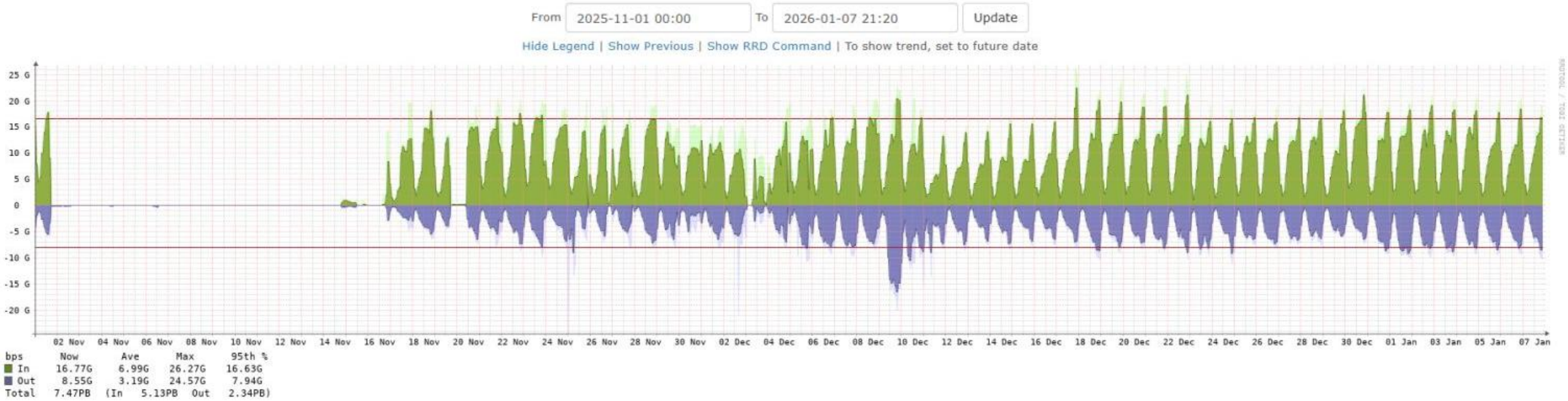
Fill CDNs


Transit
MDY-1
MDY-2
CDN
Transi
upstream
TCL-1
NPT
TCL-2
Peer
Transit
YGN-1
YGN-2
3rd Transit
CDN
YGN-3
CDN
CDN

Yangon Campana Link

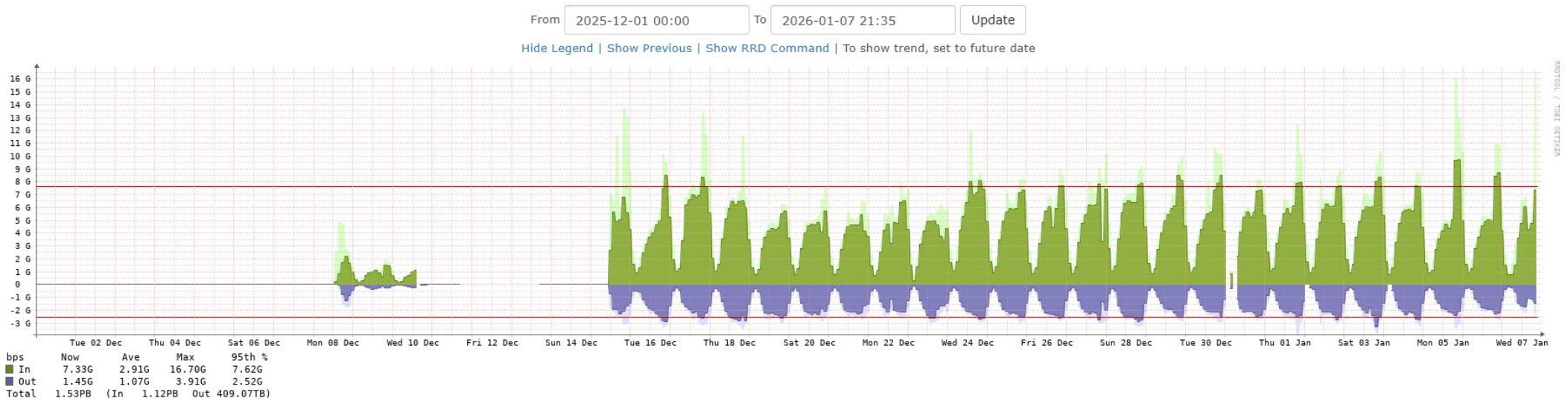
Transit management:

Initially, we got limited Bandwidth. Same as Mandalay situation,
we requested CDN owner to reduce capacity. Later, we can fill fully after recovery.



Mandalay Campana Link

Late recovery.



Using route import/export for changes

To manage multiple IP transits and multiple CDN, we used changing vrf of CDN to IP Transit vrf.
We need multiple changes such as interface vrf, filter lists and so on.
Later we setup dedicated vrf for each CDN and IP Transit. Then, we play route exports and imports

```
vrf context IPT
  vni 91012
  rd 10.0.0.1:2
  address-family ipv4 unicast
    route-target import 65000:101
    route-target import 65000:101 evpn
    route-target import 65000:301
    route-target import 65000:301 evpn
    route-target import 65000:401
    route-target import 65000:403 evpn
    route-target import 65000:404
    route-target export 65000:201
    route-target export 65000:201 evpn
```

Service impact and Constraints

- Urgently buy IP Transit from other available upstream.
- Upstream themselves got congested as per high demand.
- Some small ISPs keep waiting CPN as they can’t effort extra cost.
- Transmission providers urgently recover some routes.
- Facing aggressive complaints from end-users.
- Need to consider discount to end-users while need to buy more IP Transit..

Thank you

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