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Look behind the scenes - Technology Updates from DE-CIX
Look behind the scenes

» Peering Platform Developments in 2017/2018
  • Nokia Satellite Deployments, what is it and what is it for?
  • Route Server Development in a Nutshell
  • The Challenges of GlobePeer Remote
  • Examples of location projects,
    DE-CIX Hamburg, DE-CIX New York, DE-CIX Madrid

» The Move of DE-CIX FRA 12
Look behind the scenes – Peering Platform Developments in 2017/2018
Improvements for customer connectivity
Apollon Production Platform in a Nutshell

- Edge nodes are used for service termination/presentation to customer
- Core nodes provide interconnection capacities between Edges, as a Backbone
- Backhaul nodes present
  - smaller capacity interfaces (e.g. not available on big Edge nodes, common in DE-CIX Frankfurt) OR
  - are present in distant locations (e.g. common in DE-CIX New York)
  - or both
Nokia Satellite Deployments

So what is a Satellite?

- New type of network node, formal name Nokia 7210 SAS-SX
- Integrates seamlessly into an Edge and presents virtual ports
- DE-CIX Provisioning system will provision an Edge port
- Available in 2 different versions
Nokia Satellite Deployments

Satellite Applications

7210 SAS-Sx 1/10 GE 48 port fiber

7210 SAS-Sx 10/100GE 64 port fiber
Route Server Development in a Nutshell

- Dedicated project team
- New features in 2017/2018
  - Do you ...
    - ... already use our route origin BGP communities?
    - ... already use (selective) path prepending?
    - ... already know our new LG? Do we filter routes from you?
- More features in the pipeline
- Talk to us!
The Challenges of GlobePeer Remote

- Conditions
- Quality Standards
- Finding paths
DE-CIX New York Growth and Expansion

➤ History of DE-CIX New York, first technical setup
  • starting with two Edge sites in 60 Hudson and 111 8th Avenue
  • all other PoP with connected Backhaul nodes from Edges
  • Metro connectivity based on Dark Fiber, passive MUX/DEMUX, DWDM-colored SFP+, scaled from 1x10GE up to 16*10GE (single)
DE-CIX New York Growth and Expansion

- Growth seen in DE-CIX New York, customers, ports, traffic
  - NYC6, NYC8, NYC5 NYC3 were upgraded to Edge sites, Nokia SR7
  - NYC6 was upgraded again, to SR12e
  - NYC5 is in planning to upgrade to SR12e, NYC4 is planned to be upgrade
DE-CIX New York Growth and Expansion

→ Growth in interconnection bandwidth

• Using dark fiber and adding colors was the right strategy to grow
• Future interconnects will also be DWDM colors, but need to scale to n*100GE
• We will introduce a small form factor DWDM system to scale to up to 12*100GE on 1HU. We will deploy Infinera CX1200
DE-CIX New York Growth and Expansion

- Growth in interconnection ports
  - More Edge sites distribute the service function
  - Rapidly growing Interconnect ports are filling up the Edge nodes in NYC1 and NYC2
  - At this stage, we will build two Core nodes in NYC for Platform Interconnects
  - Tests/PoC have started recently
DE-CIX Hamburg

- SR12e Upgrade
- Additional PoPs
- Multiple 100GE to Frankfurt
DE-CIX Madrid

- Fastest growing IXP
- Hardware upgrades
- Multi-Site setup
Look behind the scenes –
The Move of DE-CIX FRA 12
Need for changes in DE-CIX Frankfurt 12

- DE-CIX Frankfurt 12 takes over the functionality of DE-CIX Frankfurt 7
- Located in the biggest fiber PoP in Frankfurt
- Handling connections to 7 different data centers
- High rate of new and upgraded connections
Implementing ODF

- DE-CIX Frankfurt 12 first PoP with an Optical Distribution Frame instead of Standard-Rack and Patchpanels for Customer-Interconnecting
- Small footprint along a wall with a high density and integrated simple overlength management
Adding intelligence

- Adding an active (automated) layer in front of the ODF, without the need to extend the footprint.
- Manual intervention is still possible at all time.
- Remote Interconnection between each Customer presentation and Equipment port provides greater flexibility.
Increasing speed and density

- Customer presentation can be provided within minutes
- Provisioning or upgrading a port can be completed within 6 minutes
- Regularly maintenance concentrates technicians work times

- Capacity increased to 2300 customer connections on a small footprint (1,6m²)
- Each customer port can connected to each datacenter presentation
More flexibility

- All router-ports are fully precabled to the ODF
- ad-hoc and scheduled jobs to extend the Port to the MMR of desired data center
- Port-Moves and Upgrades can be performed without intervention by any field-technician (except on customer side)
A look into the future

System starts with a base set of functionality (patching, removing, upgrade)

Future deployment for faster troubleshooting and provisioning
  • providing red light to troubleshoot connections
  • using light-level measurement to ensure the correct polarity