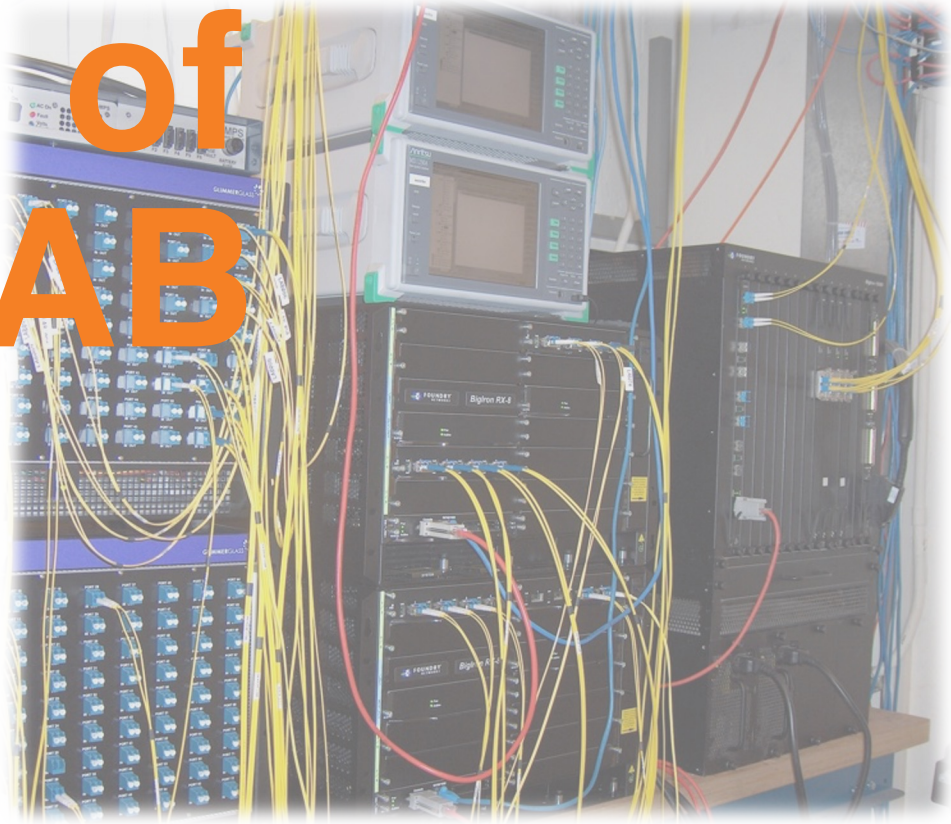
Evolution of AMS-IX LAB



30th June 2023 - NLNOG bbq-day

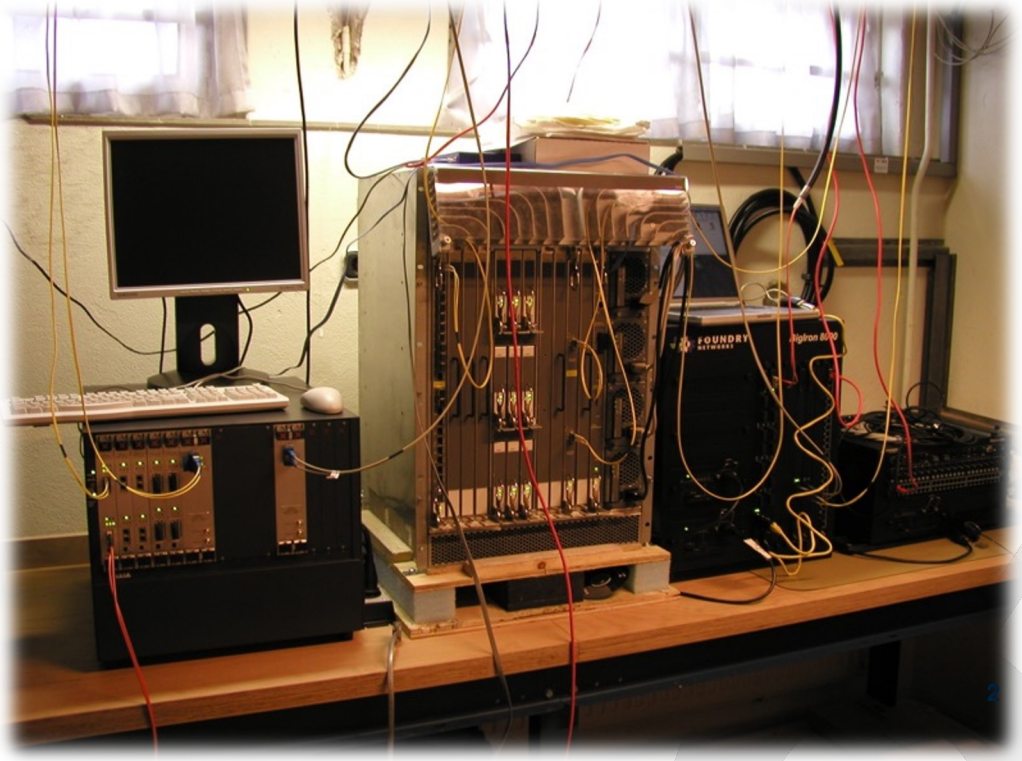
eric.nguyenduy@ams-ix.net

amsix

AMS-IX LAB … what for ?

Proof of Concept
Research
Equipment Testing
Software Development
Engineers training

also for photo-op



The Era

The Scale

The Achievements

The eras

Beginning at Westeinde 12 (WE12)

2000

2010

Move to Frederikpleins 42 (FP42)

2014

2018

Expansion to DRT

2021

2000 - 2010

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2000 to 2010

Genesis of both AMS-IX B.V. and Exchange platform

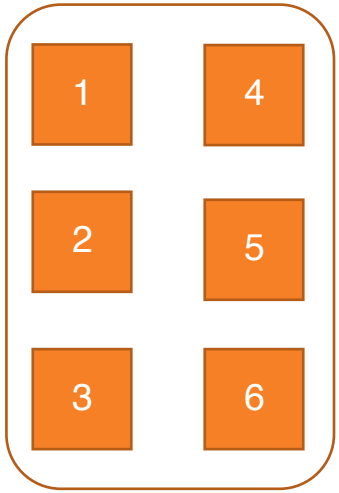
There were a single team of 7 to 8 people handling the technical operation & development

AMS-IX office was at only Westeinde 12 but later on expand to Westeinde 14

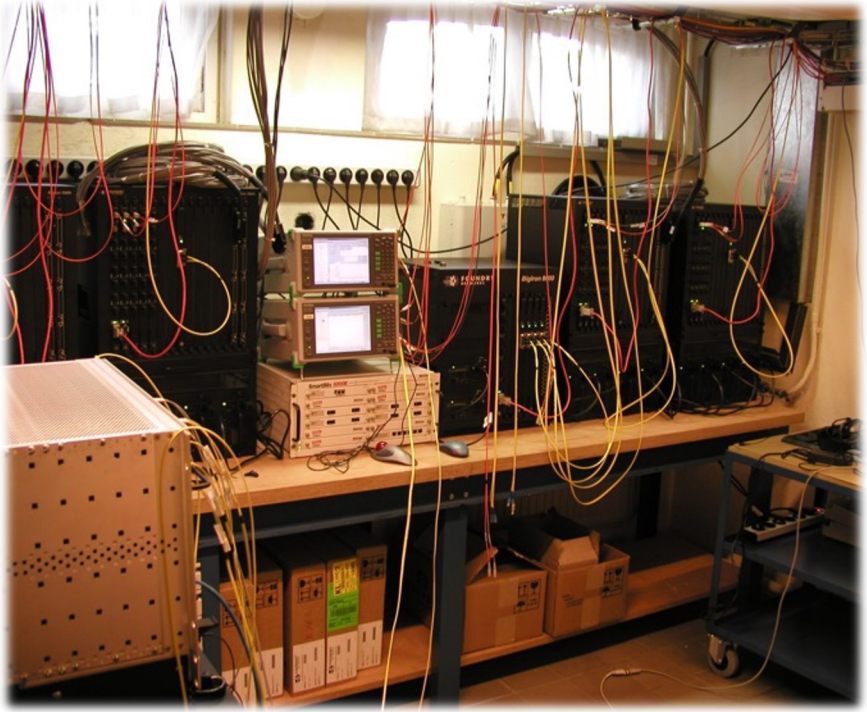
WE12 LAB is born

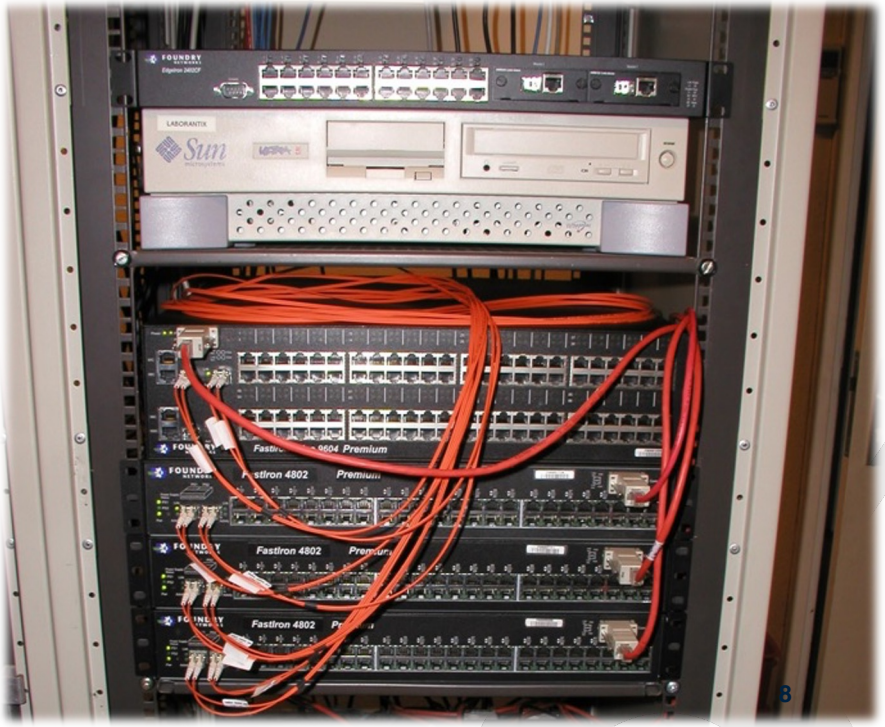
2000 to 2010
Scale

WE12



WE12 lab circa 2003 …

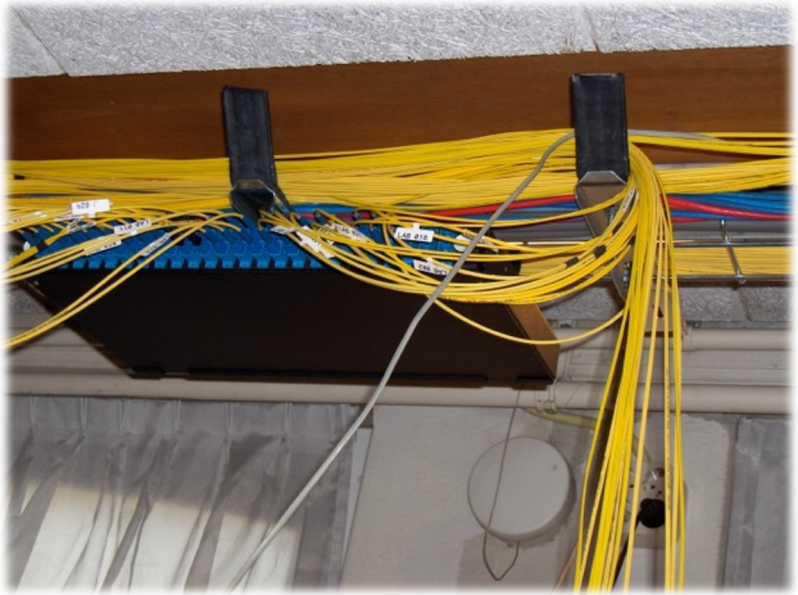


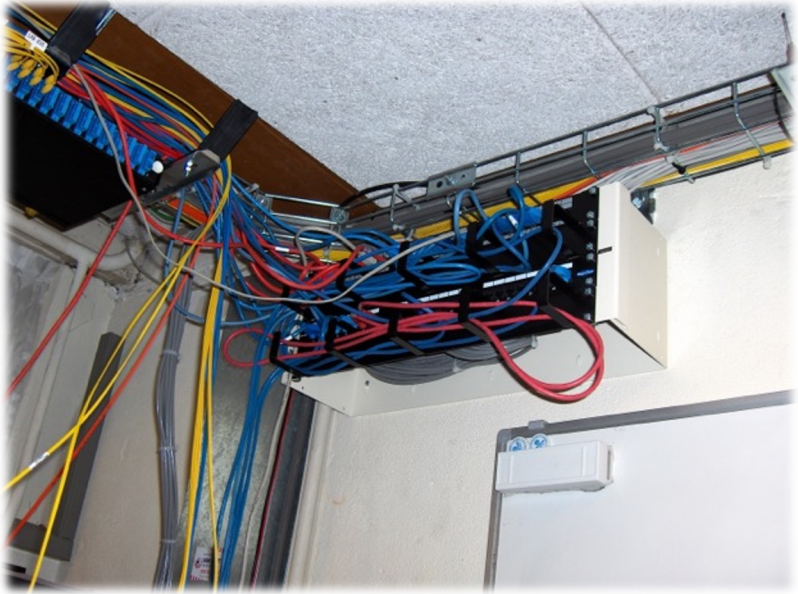


MG8 = “Mucho Grande” 8

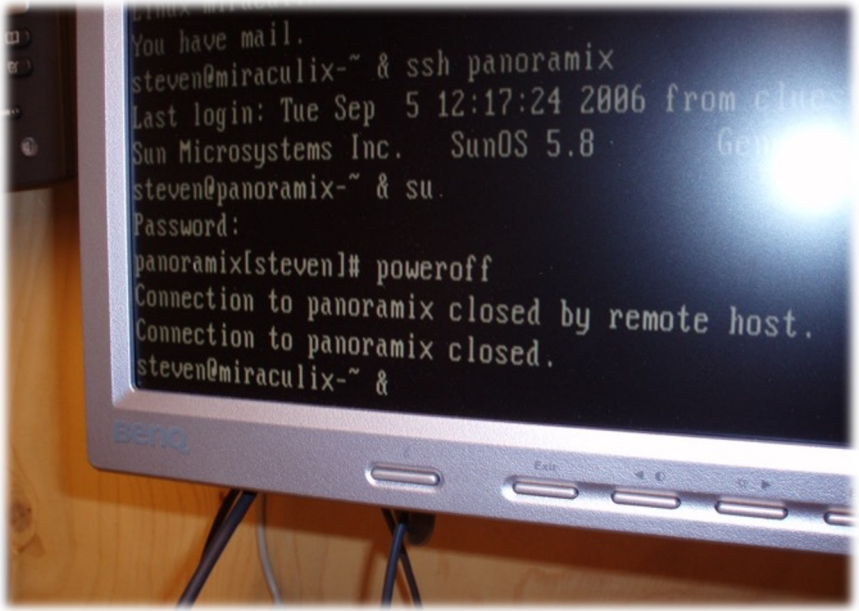
2003

How to move big switch down Amsterdam-style stair …

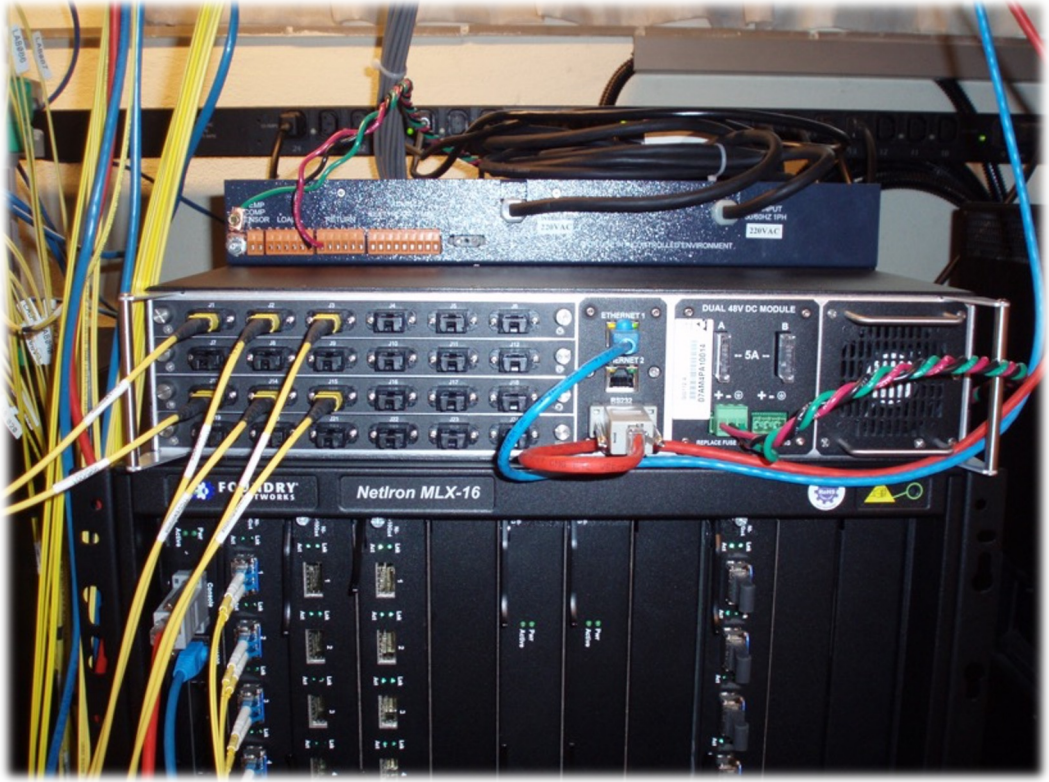




servers in 2006 …



new generation of equipment in 2007 …



2000 to 2010
Achievements

Change from Cisco to Foundry BigIron and later on MLX platform

Implementation of platform redundancy with VSRP & Glimmerglass Photonic deployment

Switch over from plain layer-2 switching to MPLS/VPLS in 2009

Netflow statistic collector library Net::sFlow & statistic tools

Crucial internal software like XML, M6::CfgDB library, PXCD

1st version of my.amsix.net portal

2010 - 2014

amsix

2010 to 2014

AMS-IX office expanded to Westeinde 16

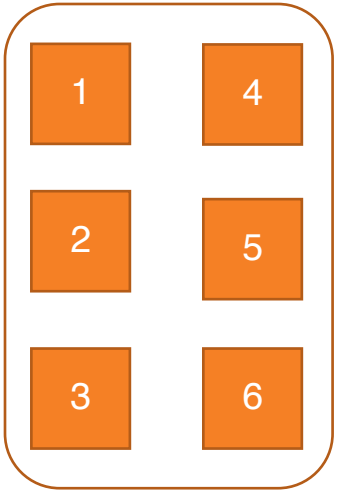
More people joining AMS-IX tech team to handle the workload

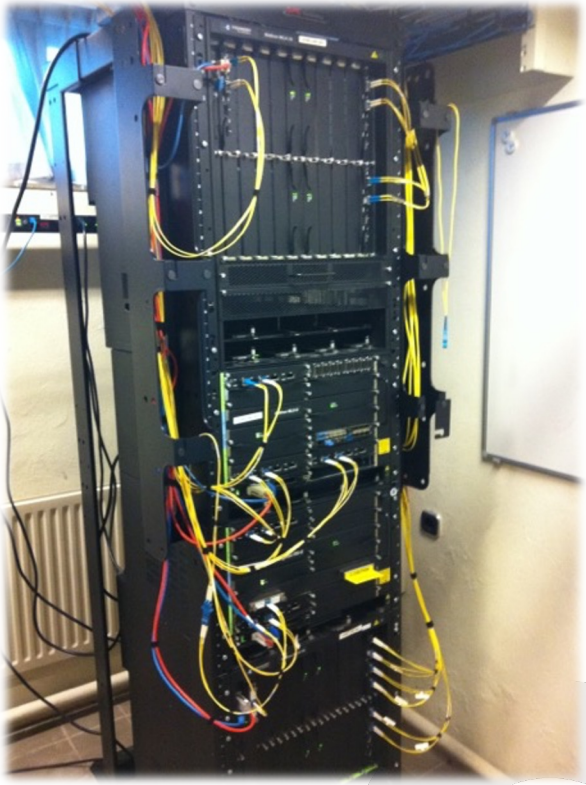
Start with 24/7 NOC

Deployment of remote Exchanges in Hong Kong and USA

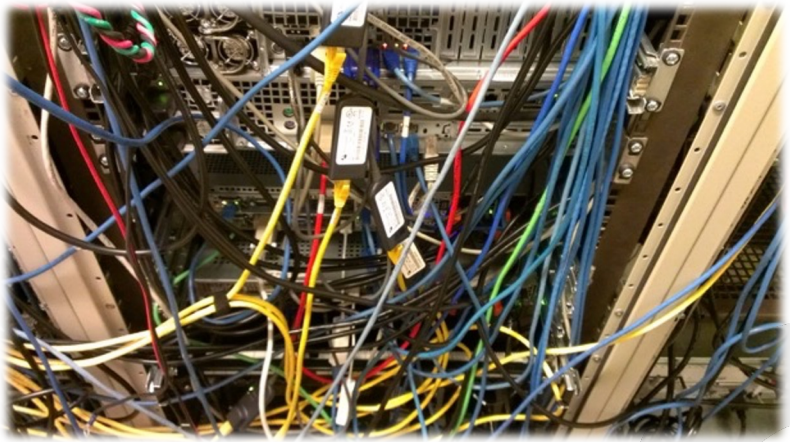
2010 to 2014
Scale

WE12





More equipment … more cable spaghetti (2012)



Cisco route-server test 2012 …

flooded and overheated lab did happen

Water leak from the A/C in the lab @ office

Kostas Koutalis [redacted] Wednesday, 3 October 2012 at 14:18

To: AMS-IX Tech; AMS-IX Receptie

! This message is high priority.

As Bart & I noticed, there's a water leak in the A/C next to the door in our lab.
We cleaned the lab & left 2 buckets underneath the leaking points.

I contacted Poolster (023 - 525 3780) and they will send someone over tomorrow morning to check it. Unfortunately they can't make it today so let's just hope that the buckets won't get filled with water.

Please whoever is the last that will leave the building today & the first to come in tomorrow , empty both buckets and place them again under the leaking points.

Kostas

Konstantinos Koutalis

AMS-IX NOC
Email: noc@ams-ix.net
Tel.: +31 (20) 514 17 17
Url: http://www.ams-ix.net/

AMS-IX's private sauna/ (a.k.a. LAB)

Kostas Koutalis <[redacted] Thursday, 10 October 2013 at 17:10

To: AMS-IX NOC; Ariën Vijn / AMS-IX Engineering

Is anyone using any of the MLX's in the lab?
If yes, please let me know ASAP. Else in about 1 hour I'll start powering off some things and hopefully the temperature will drop a bit.

Kostas

2010 to 2014
Achievements

Implement of 100G in AMS-IX platform

100G SOA amplification Proof of Concept

First revision of auto provisioning & engineering grapher

Route server benchmarking (BIRD/Cisco/OpenBGPD)

BIRD & Cisco route-server deployment

Check_MK introduction

NOC tools like lspctl, quickdebug v2 … etc

2014 - 2018

amsix

2014 to 2018

*AMS-IX office moved to **Frederiksplein 42***

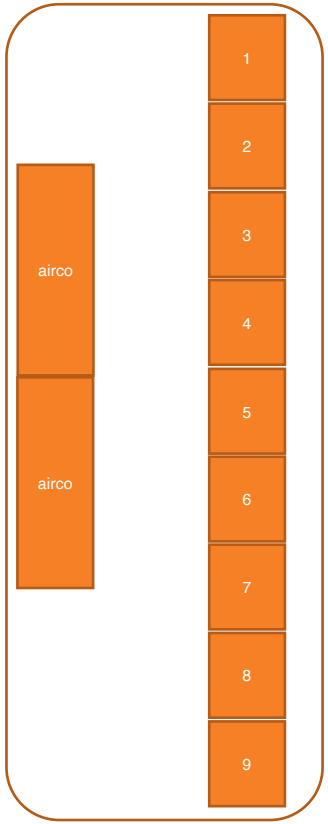
A brand new lab with more space

FP42 LAB was born

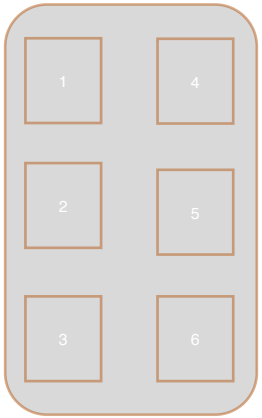
2014 to 2018

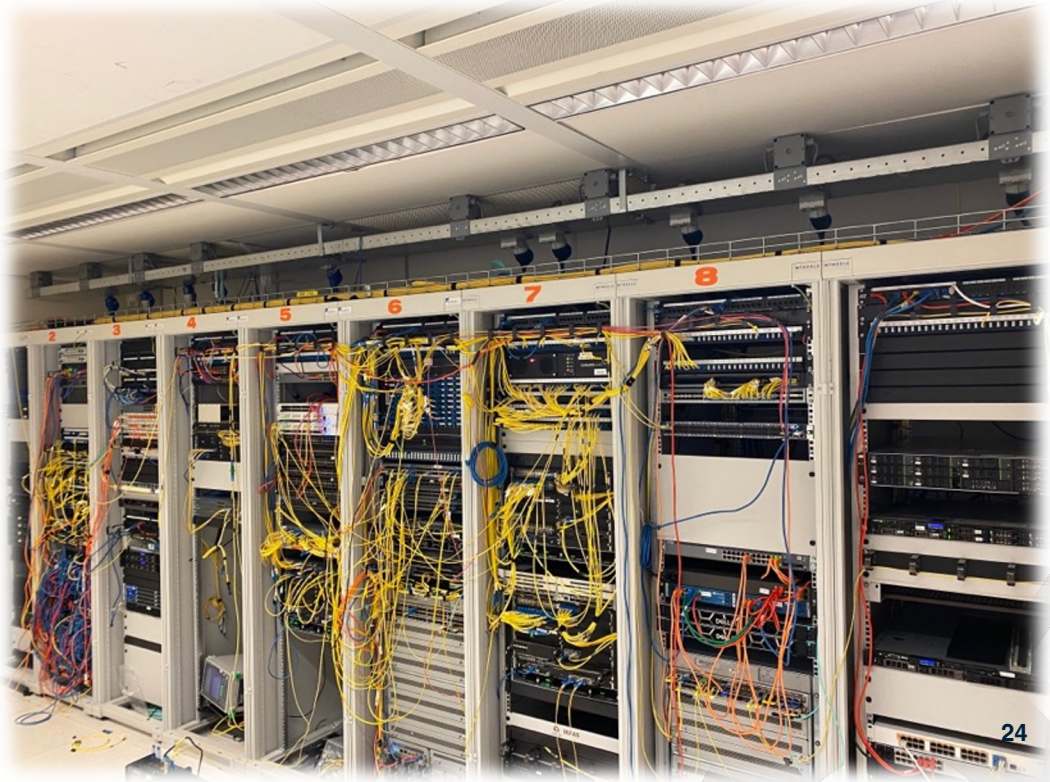
Scale

FP42



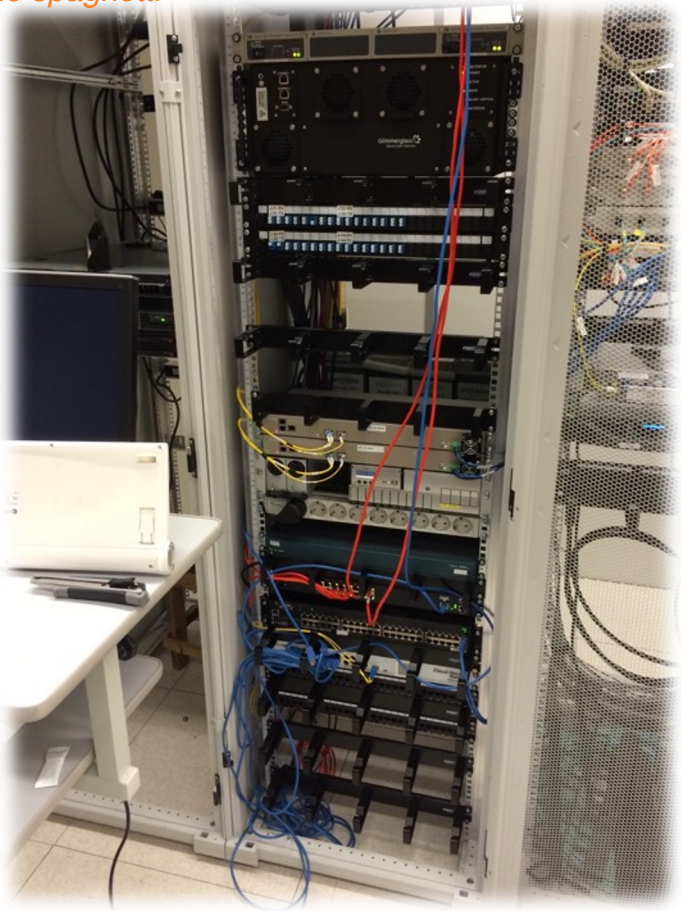
WE12

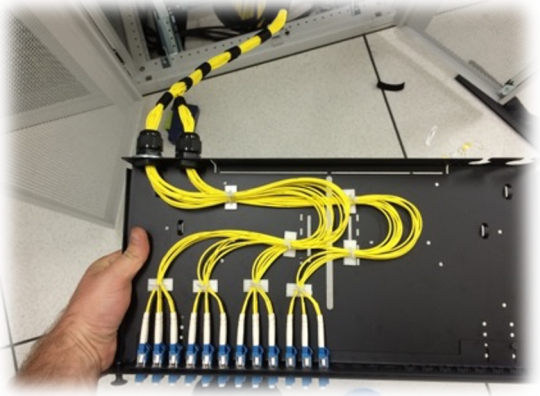




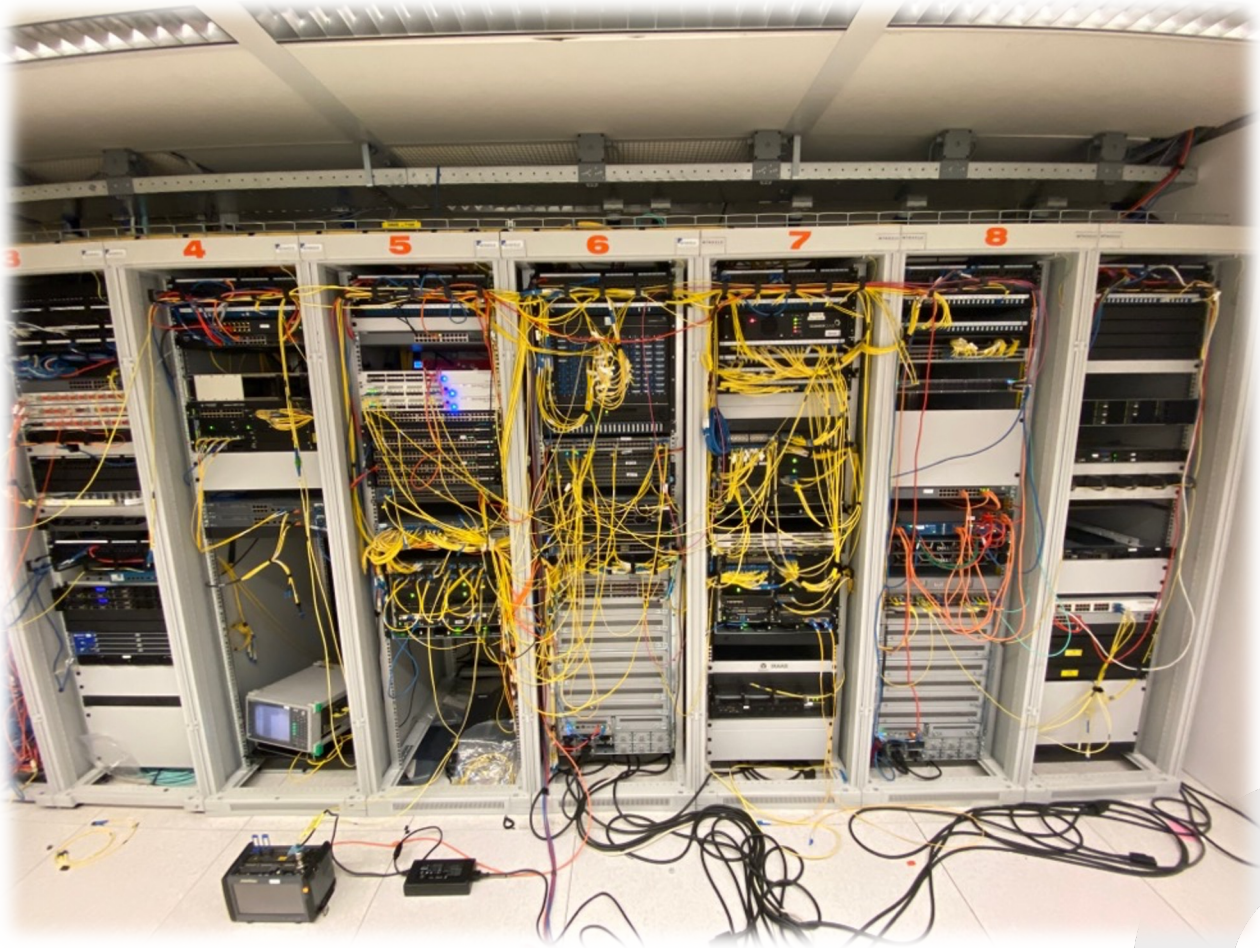
bye bye WE12 …

FP42 lab build out (2014) … trying to setup proper patch cabinet to avoid cable spaghetti





… almost fully occupied (2022) .. cable spaghetti is unavoidable though ☺



2014 to 2018
Achievements

SLX9850 platform testing

ADVA 100G (4x28G) DWDM solution

200G coherent DCI Proof of Concept test with Huawei/Adva/Coriant/Ciena

100G PAM4 test

1st Glimmermaxx prototype

AMS-IX management network POC test with Dell/Pluribus

Improved provisioning test end-to-end

qNOC tools

Megaport integration, a precursor for OSS API

2018 - 2021

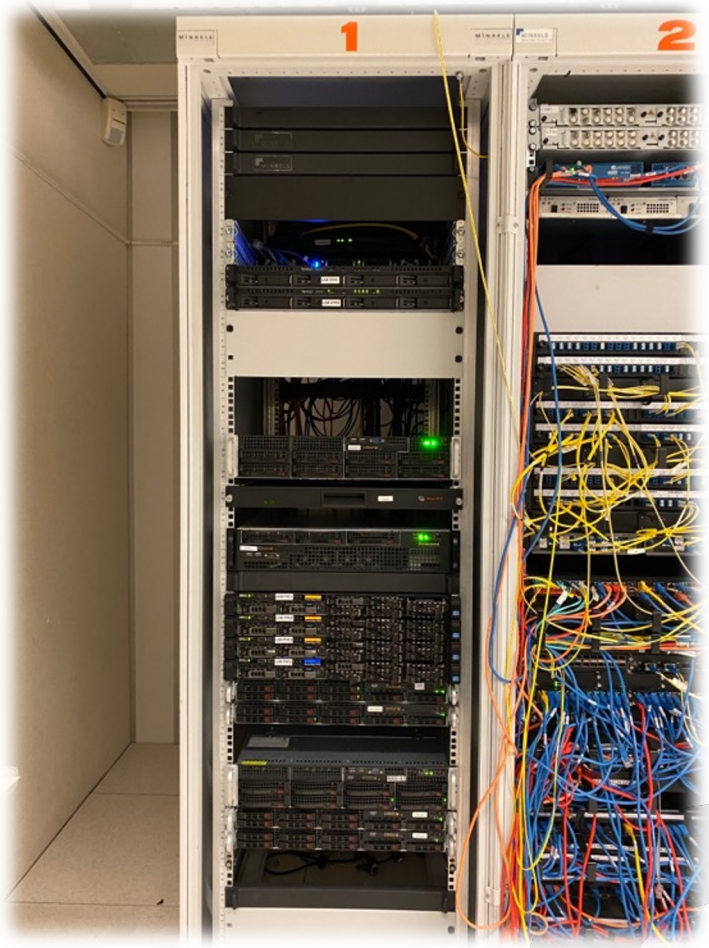
amsix

2018 to 2021

Fix the Basic

3rd party developers outsourcing & paradigm shift in development

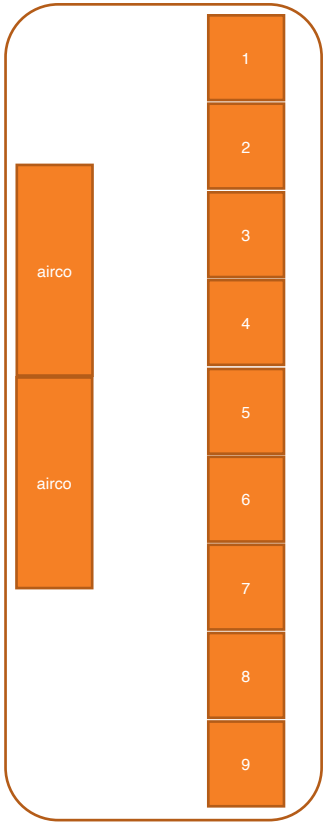
More development for IXaaS, Salesforce, IXAPI & automation



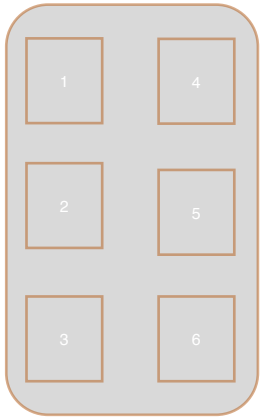
2018 to 2021

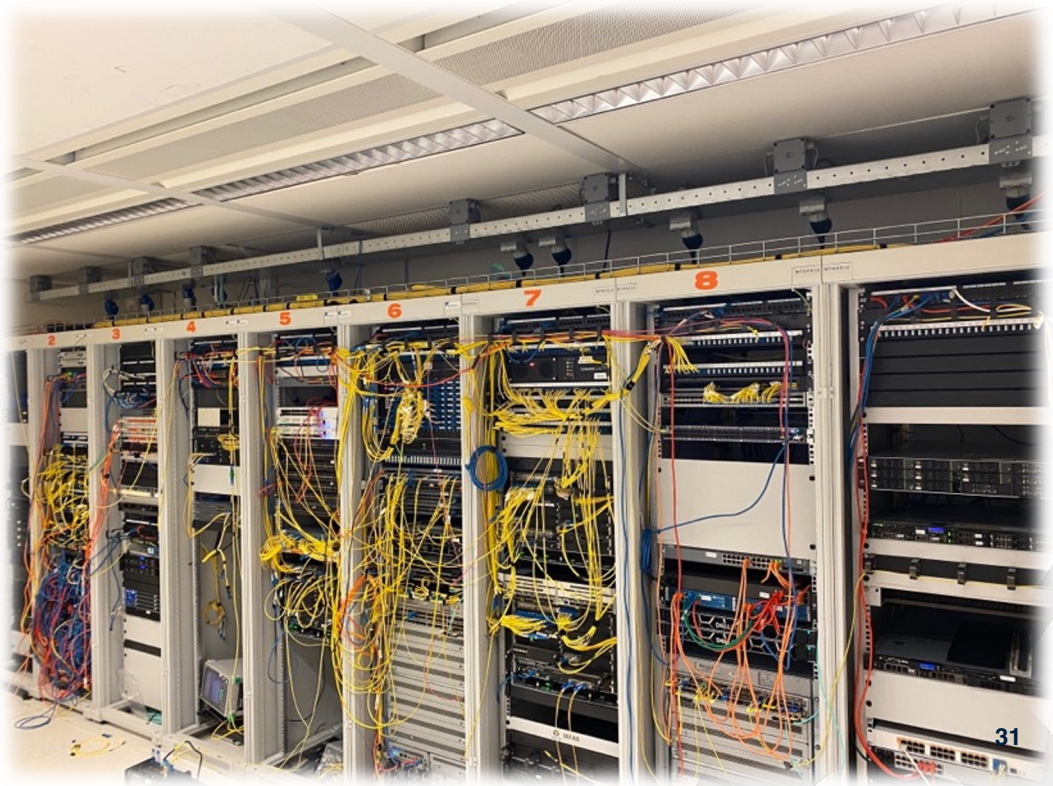
Scale

FP42



WE12





cabinet number 1 … the brain of the lab

LAB VMs (i.e. trialix)

gitlab runner CI/CD

SoftDev test bed (ABS/GGD/IXAPIv2) base on Docker

2018 to 2021
Achievements

No-XML phase 1

First IXaaS deployment & IXaaS v1.2 software stack (Docker base)

Introduction of CI/CD (Gitlab)

route-server RPKI

2nd Glimmermaxx prototype

New optical DCI test

Salesforce development leading to ams-ix.me release

2022 …

amsix

2022 … to the future

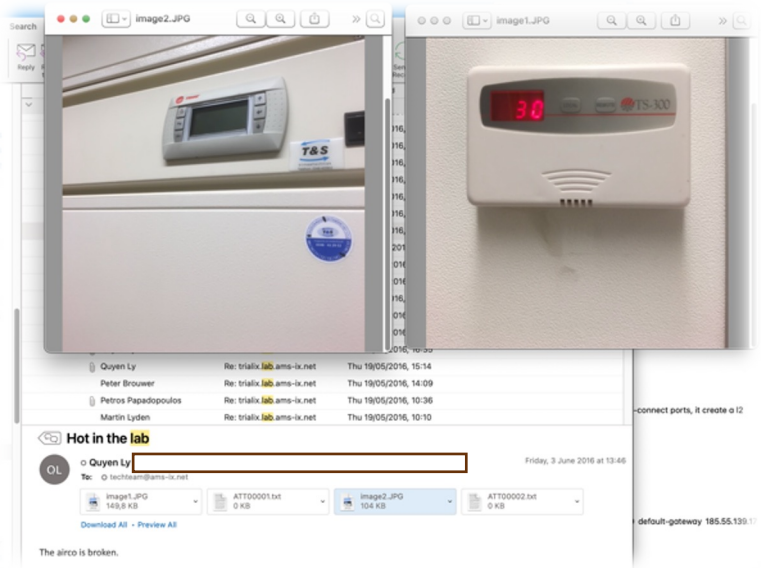
Emerging from COVID-19

Plenty of 2022 business objectives

AMS-IX LAB expands to Digital Realty Tower (DRT) Science Park

Ready for Juniper equipment

Lab look fancier but facility quality is a bit below par.
And still get overheated & flooded ☹



Airco @ HQ LAB out of order

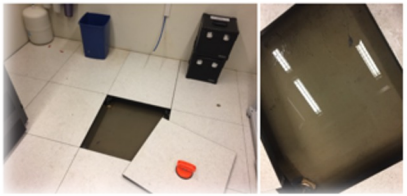
19/02/2022

We have been called by Trigion that there were burglary alarms at the building. I requested from Trigion to send a patrol and check. The patrol crew found out that the door at the HQ LAB was suspiciously hot, they reported that they could not even touch the door handle. There was was no fire smoke, but there was a strange smell and the temperature was too hot. I went onsite, I opened the door of the HQLAB and the temperature was approximately 50 degrees.

20170420 - Incident Reports: FP42 Server Room is flooded

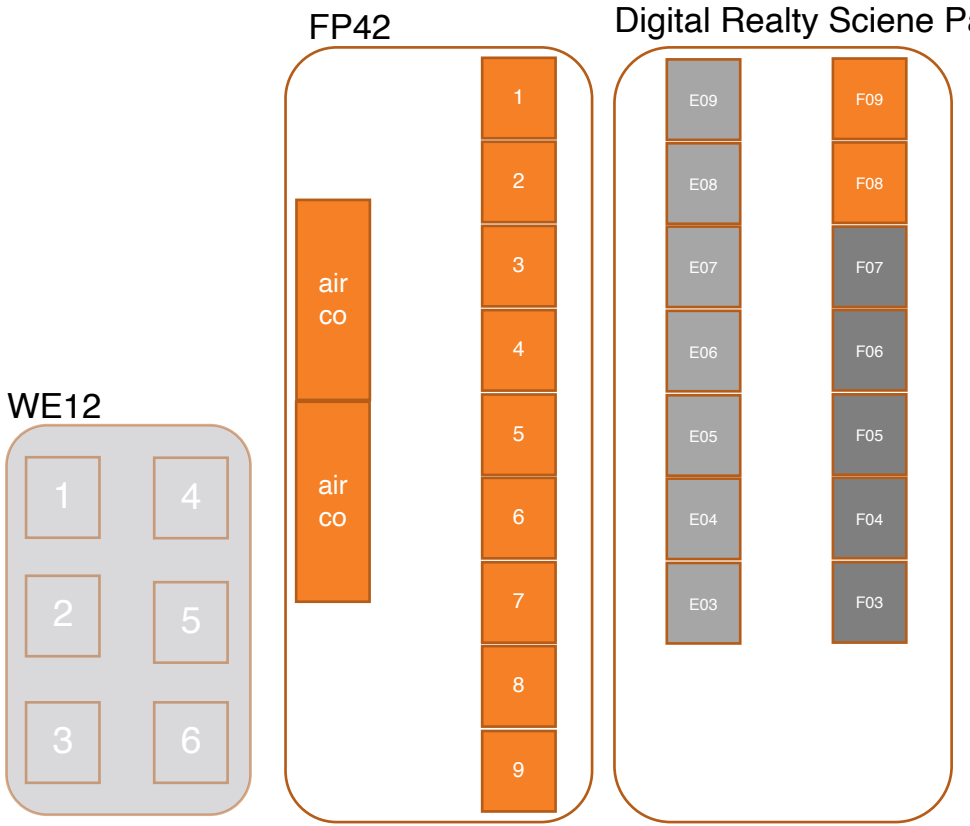
Created by Eric Nghia Nguyen-Duy, last modified by Konstantinos Prantzos on 28 Oct 2020

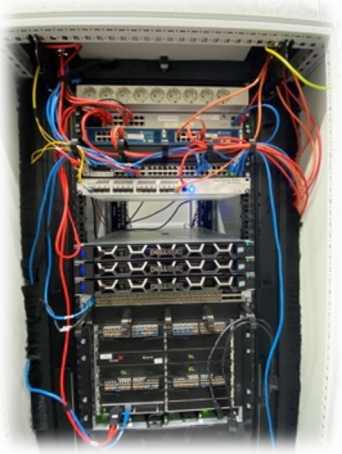
Evidence

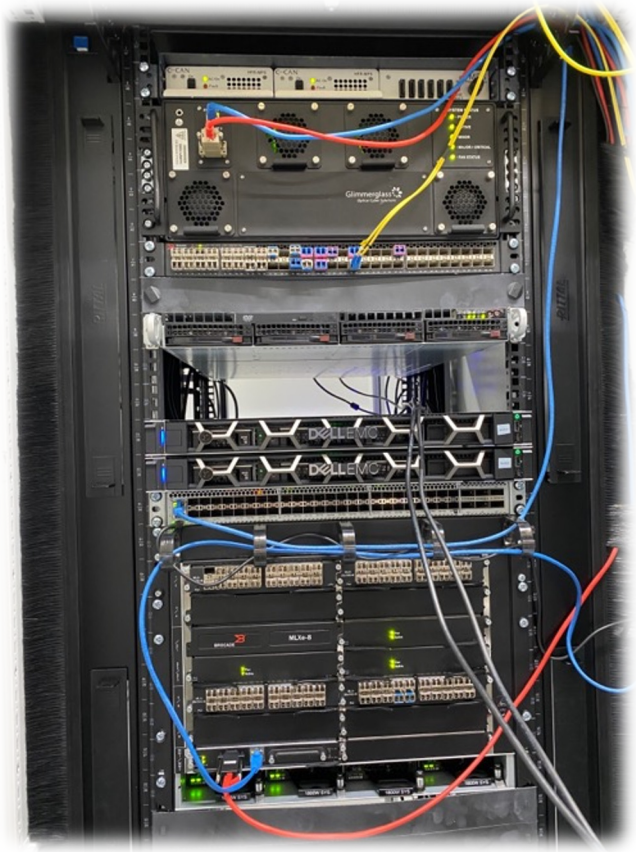


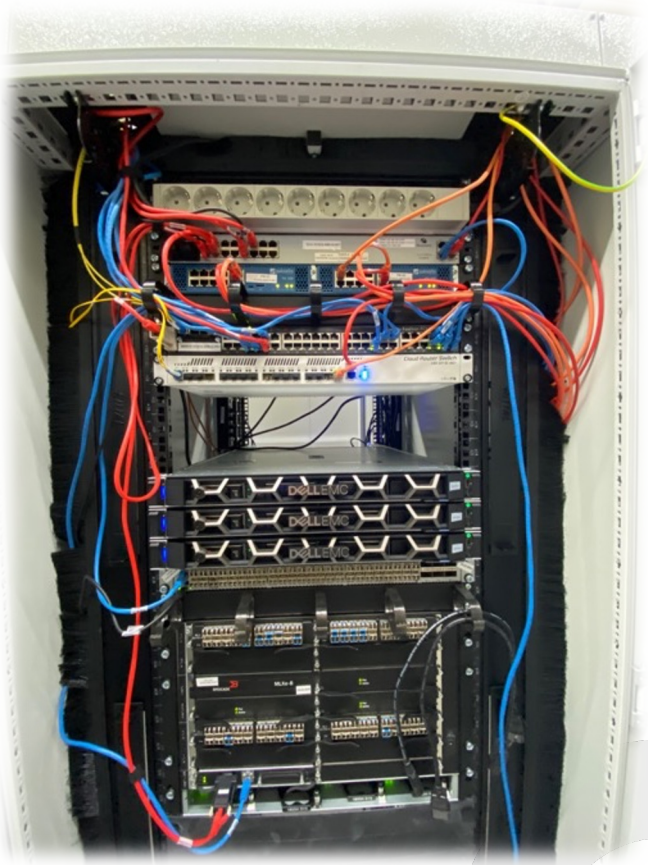
2022 … to future

New testbed at our core location dedicate to softdev team, no more accidentally removed ports






Glimmerglass
DELL EMC
DELL EMC
MLNX-8


DELL EMC
DELL EMC
DELL EMC
MLNX-8

2022 ...Achievement

More stable testing platform for our softdev team

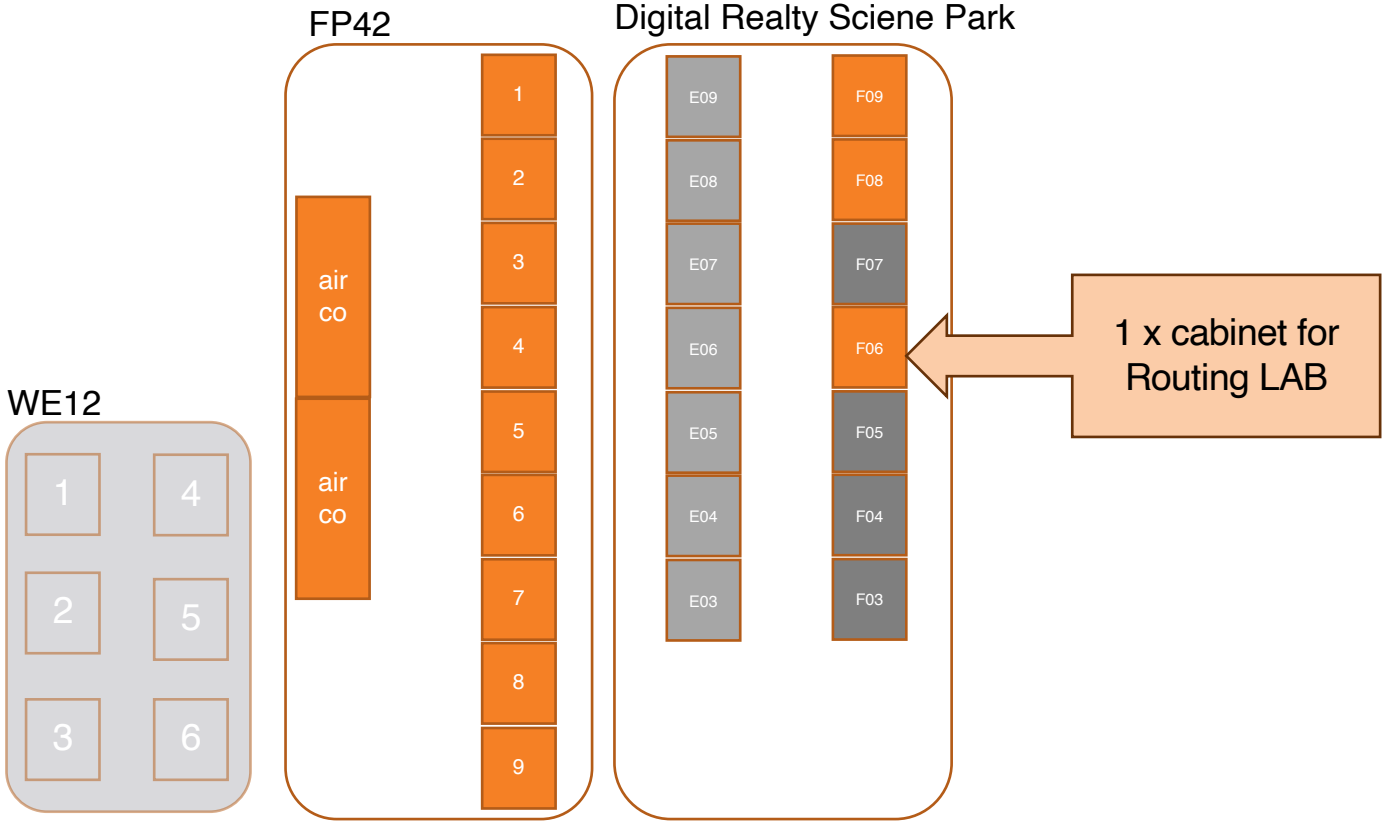
We were able to fasten up our Salesforce integration and prepare for Juniper integration

Our developers are much happier .. No-one accidentally pull out fiber or remove transceiver from port any more !

2023

amsix

2023
Scale


FP42
Digital Realty Sciene Park
air co
air co
1
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E09
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E07
E06
E05
E04
E03
F09
F08
F07
F06
F05
F04
F03
1 x cabinet for Routing LAB
WE12
1
4
2
5
3
6

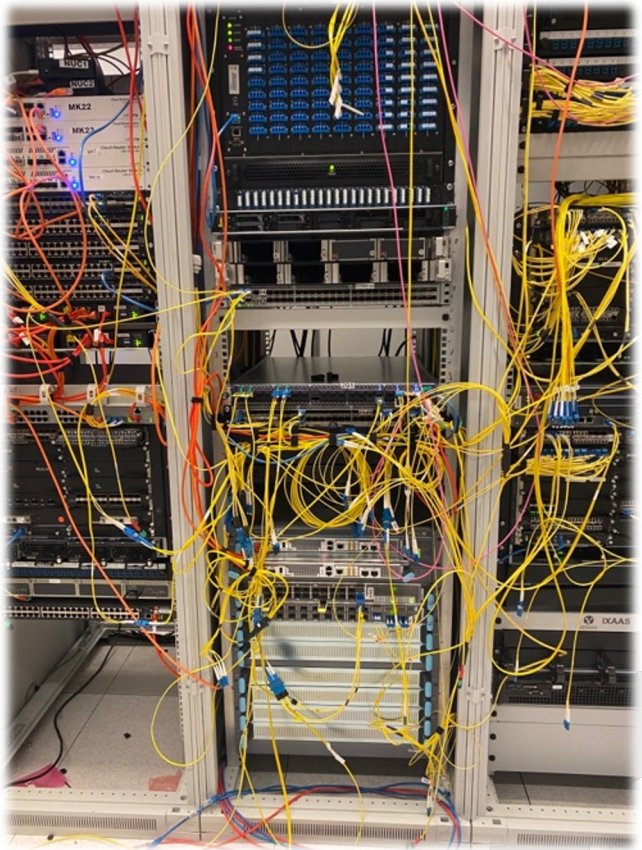
Routing LAB in DRT

- A virtualisation cluster for testing Route Servers
  - Consists of 7 Dell servers
  - Aiming to virtualise 1000+ BGP speakers
  - Test different Route Server implementations
    - Bird 2/3, OpenBGPd, etc.
  - Test new RS features (e.g. RTBH)
  - Test Support tools (e.g BirdWatcher, Alice-LG)

Juniper MX10008 & GlimmerMaxx in FP42

1st Juniper MX10008 box integrated to the FP42 LAB

1st production ready prototype of our optical relay switch Glimmermaxx



Q & A