



Bulk Loagen



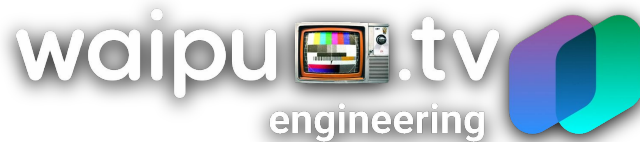
Creating Letters of Authorization automatically from NetBox

Tobias Krischer @ DENO15 (2023-11-21)



About me

- Tobias Krischer - tobikris
- Network Software Engineer at Exaring AG - powering waipu.tv
- <https://engineering.waipu.tv>
- <https://github.com/tobikris>

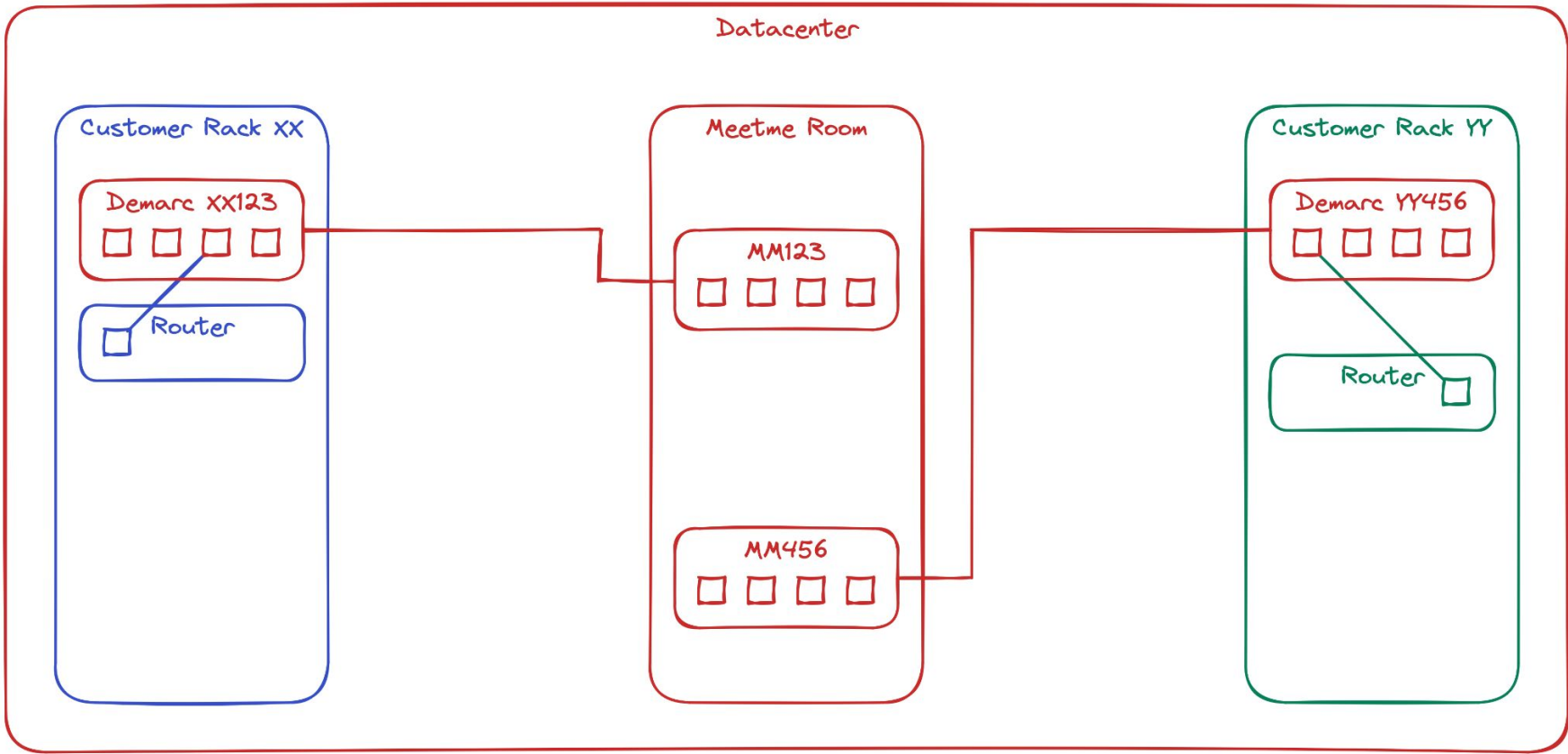




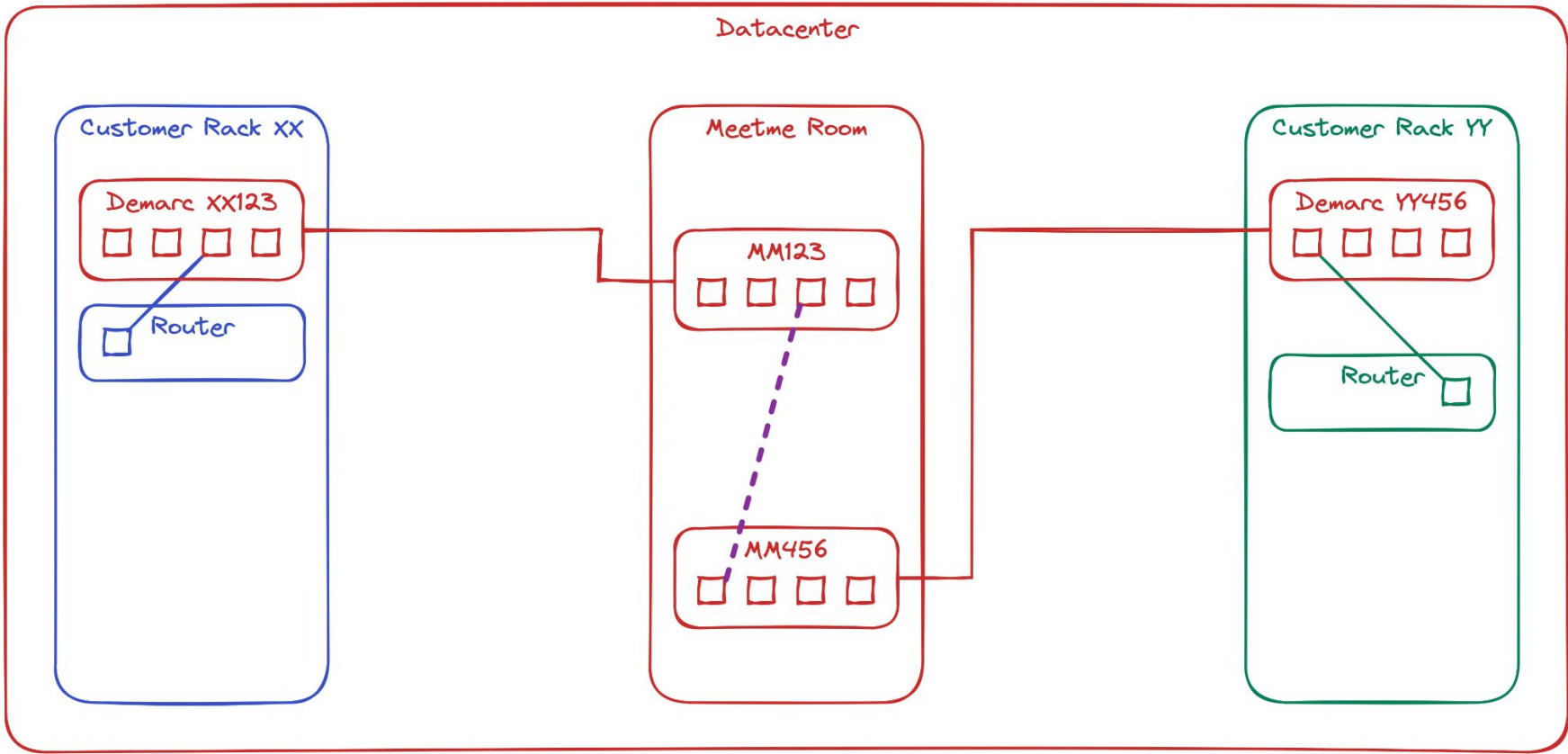
Scenario: Peering connection

- you want to setup a data center peering with another party
- this requires a physical connection between two routers
- who is able to patch between the devices in different racks (belonging to separate customers)?

⇒ **Solution: Cross-connect by Data center**



Customer racks have “Demarc Panels” which are cabled to a central “Meetme Room”



Cross-connect: Data center patches between two ports in Meetme Room



Problem solved?

- physically 
- organizational 
- who orders the cross-connect patch?
- how does the data center know this is wanted by both parties?

 Enter “LoA (Letter of Authorization)”



LoA: Letter of Authorization

- Party A creates a LoA that authorizes Party B to order the cross-connect
- Party B orders a cross-connect and uses the LoA as proof

DENOG e.V.

Sample Company
Sample Street 1
Sample City

Letter of Authorization

17. November 2023

To whom it may concern:

Please use this letter as authorization to DENOG e.V. (Partner) or their designated agent(s) to order/run a cross-connect towards the following demarcation point of Sample Company. This LOA does not obligate



creating LoAs - any volunteers?

DENOG e.V.

Letter of Authorization

To whom it may concern:

Please use this letter as authorization to DENOG e.V. (Partner) or their designated agent(s) to order/run a cross-connect towards the following demarcation point of Sample Company. This LOA does not obligate Sample Company to be billed for any services.

Site

Demarcation Panel
Demarcation Port

DC01:23

Rack R1234 U48 - Demarc Panel
Fiber 13/14

Sample Company
Sample Street 1
Sample City

17. November 2023

This LOA expires 50 calendar days from the date of issue if not used, upon notification to Partner by Sample Company or on the date that the cross-connect is installed, whichever is earlier. It is not automatically re-usable by Partner or their designated agent(s).

Please contact the Sample NOC after the work has been done with information about the used port. Should you have any questions or concern regarding this LOA please contact Sample NOC.

Sample NOC
noc@example.com

- the LoAs need to be created specifically for each cross-connect
- necessary physical details in the format required by the data center



TOIL!

see <https://sre.google/sre-book/eliminating-toil/>













Bulk Loagen



- “sidecar” for NetBox
- accessed by custom links in NetBox on the Demarc Panel device
- uses NetBox API for fetching info about Demarc Panel
- asks for Partner Details
- generates the LoA PDF

Bulk Loagen

<input type="checkbox"/>	Fiber 11/12	—	LC/PC	1	—	—	—	LOA					
<input checked="" type="checkbox"/>	Fiber 13/14	—	LC/PC	1	—	#2	DENOG e.V. > if-1	LOA					

Devices > DC01

Demarc Panel

Created 2023-11-18 00:12 · Updated 1 day, 12 hours ago

Device Front Ports 12 Rear Ports 12 Config Context Render Config

Device

Region	—
Site	DC01
Location	—
Rack	Rack01 (R1234)
Position	U48 / Front
GPS Coordinates	—
Tenant	—
Device Type	Generic Patchpanel (1U)
Description	—



Bulk Loagen will help you:

Create a LOA for device *Demarc Panel*. This device belongs to the tenant *Sample Company*.

Select the Rear Port to create a LOA for and specify the partner details.

DENOG e.V.	Partner Street	Partner City
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Fiber 13/14

Generate LOA



Running Bulk Loagen

- Small tool written in Golang
- <https://github.com/exaring/bulk-loagen/>
- Demo setup with docker-compose and sample data included

⇒ Try it out yourself!



Non-custom alternatives?

- a few data centers support/develop improved processes
- e.g. Equinix DiLOA (Digital LOA)
- no standard, not widespread

⇒ Ideas: we are looking into adding support for those APIs wherever possible

Summary

- Cross-connects require proof of authorization by other party
- This is based on LoAs in form of PDFs (in many data centers)
- Creating the LoAs is a simple, but repetitive and annoying task (“toil”)
- Bulk Loagen streamlines the PDF generation drastically
- We invite data center providers to improve their processes



Takeaways for today:

Let the bots do the repetitive work.

Toil can be reduced with rather simple, but strategic tools.