

Meeting 081021 (Deep Dive)

Attendees: PLEASE ADD YOUR NAME HERE USING YOUR LF ID. IF YOU DON'T HAVE ONE, GET IT HERE: <https://myprofile.lfx.linuxfoundation.org/>.

Meeting Bridge: Join Zoom Meeting: <https://zoom.us/j/99018479008>, Meeting ID: 990 1847 9008, Find your local number: <https://zoom.us/u/abRK2FZIf1>

Name	Representing
LJ Illuzzi	LFN
Brandon Wick	LFN
amit Kapoor	Capgemini
Amar Kapadia	Aarna Networks
Sveto Ignjatovic	Kaloom
Ganesh Venkatraman	Kaloom
Rajat Gupta	Capgemini
Sam Diep	Intel
Sriram Rupanagunta	Aarna Networks
Rajendra Prasad Mishra	Aarna Networks
Yogendra Pal	Aarna Networks
Jamie Liu	Kaloom
Boris Mimeur	CENG
Raja Mittra	Rebaca
Jacobus Venter	Kaloom
Indranil Chowdhury	Rebaca
Kader Khan	Wavelabs
Hanan Garcia	Red Hat
Konstantin Dunaev	A10

NOTE: This is the weekly technical deep dive call to prep the latest version of the 5G Cloud Native Network Demo for ONE Summit 2021, Oct 11-12. If you would like the meeting invite, please email bwick@linuxfoundation.org and lilluzzi@linuxfoundation.org.

Program Management

A daily standup call has been established on Slack:

Logistics:

Time- 10am ET/7am PT Daily

Location- <https://lfn-demo.slack.com/archives/C01J7F0GXFH>

ONE Summit Keynote Planning Call:

Setting up a separate, stand-alone call to start scoping out the keynote presentation, e.g.

How do we show the builds/CNF onboarding?

How do we show slicing? What's running on each slice?

How do we show telemetry data?

What can we do with the new radio that we couldn't do before (E2E)?

Currently proposing Friday or Monday. Interested in joining? Take the Doodle Poll here:

<https://doodle.com/meeting/participate/id/BeX6MMIb>

Slack Communications:

Great traction on the Slack Channel. Let's keep it up! https://join.slack.com/t/lfn-demo/shared_invite/zt-pcf5086a-l0i926B0hc9pzf5_mVDhtA.

Status Check / Open Questions

Slicing / RAN/ Radio:

Getting A10 FW set up. Rajenda: Connecting to UPF and Data Network. Rajat. How to work in the simulator? Need to connect to the internet? Kubecon demo was crossing the cluster. Amar: This same demo we will also use for E2E. Samit: Sending traffic toward A10, Rebaca simulator, video server on internet side fo Firewall. Jamie: Deploying system on Cluster 1/Custer 2. Same GNB address or different? 2 Slices of the same UE? Sourmya: UE to slice 1 (high-quality), slide 2 (low-quality). Can be the same GNB. Idea: Same UE. 2 videos at the same time using parallel call flow. Samit checking if video client ca render data from video server at same time. Video server location? Sveto: Do we have enough spare capacity on cluster to run it. Yogendra: Data in cluster 2 (one server)? Raja: We need 3 VMs. What resources can you provide? Sveto/Hanen to check on capacity and if it can be expended (perhaps 1 free UE). How much is required? Boris: We may have resources? Is there a networking diagram? Yogendra showed the latest diagram. Boris+Sveto to connect offline with Hanen. Note: Labs are connect with Turnium SD-WAN. Next steps: Spread into 3 parts. Adding video server. Another option could be LaaS. Latency challenges? What levels of throughput are required for the simulator/video traffic? 400 Mbps. Yogendra: setting up the parameters with Rajat /Jamie. Rebaca VMs require 8 cores and 16GB RAM per VM. Might not be able to run on the clusters. 3 VMs needed (vCPUS). 100G disk size should be good. We likely have enough. Hanen/Sveto to confirm. Networking: Need to connect with core and UPF, A10 FW, and routing. Video client VM. Abot should have 2 interfaces. Is there a diagram for the VMs? Can we share the diagram more widely? Rebaca to share latest for minutes and slack channel.

Yogendra: Slicing updates:# Two slices configuration is now completed in MTL cluster01 for NGC under namespace ns-ngc. Ready for integration with Kaloom's UPF.

A10 deployment done in MTL cluster01 under namespace ngfw, pod started to comeup, some more changes required for network-attachment.

Next Steps:

Kaloom's UPF and NGC config update by respective teams for slice-blue and slice-red.

Rebeca integration with NGC (respective teams to take this forward).

Yogendra shared a demo network diagram

Sam: I've tested XRRAN FH with FlexRAN v21.03 on the Lenovo server at Kaloom's lab and is working properly. There is an issue with the accelerator, so I'm using SW FEC for now. I will send a replacement board to Sveto to swap out the Pomona Lake ACC board. I don't have any UL traffic to test with XRRAN FH, but L1 link to FH NIC is good at this point.

We can start the L2 integration when you are ready. Thanks

Amit: Sam has updated version on server. Ready with CU/DU binaries. Making some changes and will integrate with L1. Sveto: Has Sam shipped the new FPGA? For the RU part, they were going to test and ship. Need to check in with Hardik. Brandon/Sveto to check in with Hadik from GenXcom.

Demo Timeline:

- Final Testing and Configuration: 27 Jul 2021 - 10 Sep 2021 (Sept 10 ambitious, keep for now to keep things moving)
- Presentation Development: 13 Sep 2021 - 01 Oct 2021
 - Slideware/script/video(s)/animation
- ONE Summit: 11 Oct 2021 - 12 Oct 2021

Louis: Have we made up any ground on our timeline? Is Sept 10th a possibility? Sveto: On the the radio side, we need to make up ground. Anything else. Plan B: Show as fancy a slicing demo as we can (still on track).

Video Capture platform options (Louis)- (Loom, Ezvid, FreeCam)

Other:

REMINDER: "Document as you Build" approach would help expand our options

Slack Communications: The team needs to use the SLACK channel. Who is in Slack? Who is missing? Need to use it!

https://join.slack.com/t/lfn-demo/shared_invite/zt-pcf5086a-l0i926BOhc9pzf5_mVDhtA.

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Notes from calls 072721

Status Check / Open Questions

Slicing:

License issue status? Ready to add emulator/Rebaca? Ready to test for demo? (Sriram/Rajenda)

Licensing issue resolved. Deployment of NGC in progress on Montreal cluster. Working around some issues. UNH Serverlocal server. Slice creation and E2E data flow.

UNH Resources secured through Jan 2022. Rajendra in touch with Rebaca. They need access to UNH Server (VPN), access issue. Rajendra to connect with Sveto.

Preparing another host to build the NFS Server.

Rebaca to deploy containers on the same cluster: LFN Cluster 1 (Kaloom) Emulating the network to test the core.

RAN:

Running in UNH. Replicating in Montreal. Status? Synch for remote instal. Status? (Amit/Sveto)

CapGemini has access, FTP link for binaries uploading. Some access issues, working to resolve.

FPGA sent? Yes. (Nidhi) FPGA received and swapped out. Nidhi or Sam need to connect.

Radio:

VPN connections for testing (Sveto/Hardik) VPN in place. GenXComm, to assess testing (RU/FlexRAN/Latency) to see if this makes sense. Ganesh to connect offline today and confirm the plan. Needs FlexRAN in place pre-testing (on FPGA). Brandon to follow up on FlexRAN installation.

Need to factor in shipping times, customs, configuration.

Demo Options for ONE Summit:

Review of last year's demo/promos. (Brandon)

Rough Timeline (Brandon)

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Call Notes from Last Time 080321

Slicing: (Rajendra, Yogendra, 8/2)

- All pods are up for NGC core.

- License server is not working correctly. It is under debug. (Rajat/Hanen so advise, separate meeting).

We are suspecting that it is not able to access the host MAC address for validation.

- For firewall we are still waiting for response from A10. A fresh image is needed. Konstantin providing support. Will provide a link to image/Helm charts. Is there a network structure to review (with Traffic flow). Sveto can advise.

Emulator Next Steps? Rebaca Team? Raja from Rebaca on the call. Needs access to servers, 3 VMs, video server and client server to show video of the data. ABot containerized version? Raja to look into it. *This is preferred*. Option 2: Run VMs using Kubevirt, Option 3: Find temporary server.

Firewall: (Yogendra/Konstantin 8/2)

Last time (VCO 2.0) image is not available any more (I have checked with Sandeep who was working on it previously).

So, we need to start from scratch again. Please share the A10 image to download for deployment in the MTL lab.

Once 5GC Up and running, need to connect with Kaloom UPF. (Amar idea). Once slicing server done, some configuration required.

RAN/Radio: (Amit/Rajeshi/Sam 8/2)

CapGemini: We have restructured the folder and have installed all necessary prerequisite required for 5GStack. Also, we have installed the utilities required to build the orchestrated platform using K8s and Docker. The server now behaves as a single master worker node. Three pods - L1+DU, CUCP and CUUP, are deployed on the same using Helm Chart. These pods are dummy as of now, as the functionality is blocked. We are further ready to check on the integration part and proceed further.

Amit/Sam: The currently L1 deployment is on baremetal and we've tested with Timer mode and is running properly. Will be migrated to 21.03 and validate the X-RAN mode.

Radio shipping: Need to factor in shipping times, customs, configuration. When needed in Montreal?

Ganesh/Harik in discussions. Because of latency, setting up 2 radios. 1 in Austin with FlexRAN. Has new FLEXRAN. Sam to connect with Hardik on Slack on this piece. Shipping 1 this to Montreal. Action: Hardik to ship radio this week.