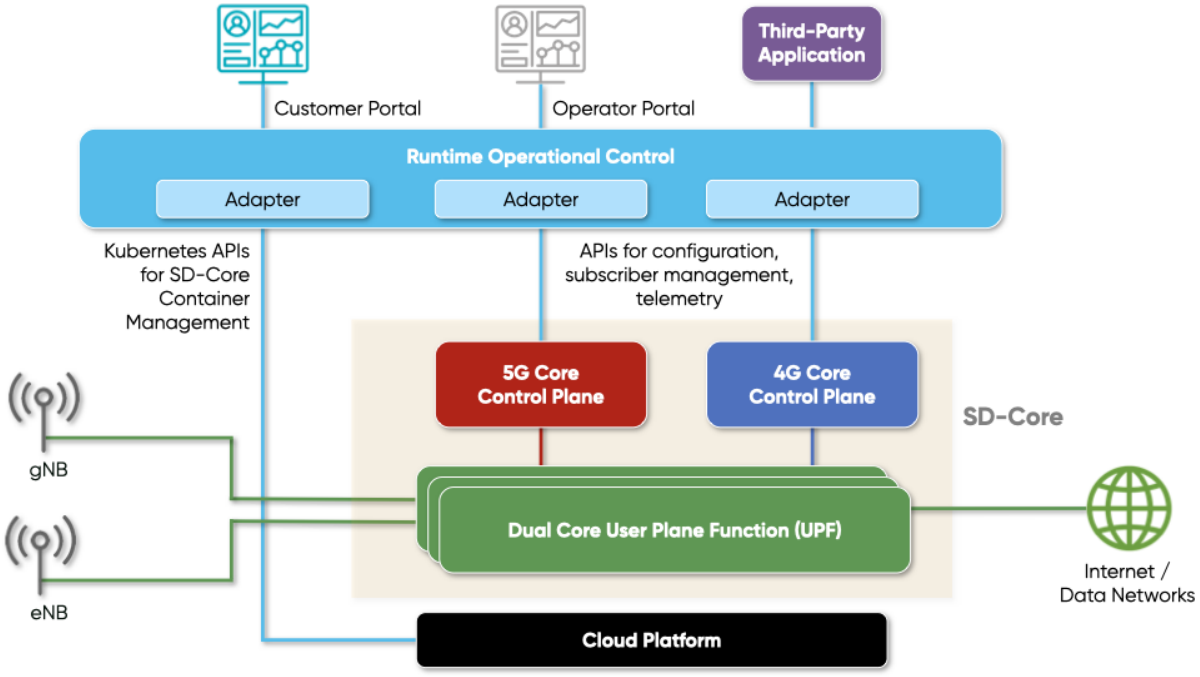
SD-Core

Introduction

The SD-Core project is a 5G/4G disaggregated mobile core implementation optimized for deployment in the public cloud. SD-Core exposes standard 3GPP interfaces for those wishing to use the project as a conventional mobile core, but it is also pre-integrated with an adapter available as part of the Aether ROC subsystem for those wishing to deploy mobile-core-as-a-service as a SaaS solution.



SD-Core leverages control plane components of the Free5GC project and the ONF OMEC project, building on both of these upstream open source projects by adding cloud native capabilities for scaling, resiliency and multi-cloud agility. It also includes three separate User Plane Function (UPF) implementations, and all of which are designed to be deployed throughout the edge of the network with each optimized for specific use cases:

- Maximum performance: **P4-UPF** - a hardware-based dual-mode 4G/5G UPF implemented in P4 language optimized for high-throughput low-latency applications, with UPF packet processing offloaded into Intel Tofino P4 switching silicon.
- High throughput on Intel servers: **DPDK-UPF** - a software-based dual-mode 4G/5G UPF, optimized for Intel® Xeon® using DPDK, supporting any I/O option (SR-IOV, AF_PACKET, AF_XDP), and scalable to 100 Gbps on Intel Ethernet Network Adapter E810 with Dynamic Device Personalization (DDP).
- Maximum flexibility to run on any cloud: **Flex-UPF** - a software-based dual-mode 4G/5G UPF UPF implementation for campus and multi-cloud, implemented with eBPF and optimized with AF_XDP to make it suitable to run on any variety of CPU (to be available later this year).

Learn more about SD-Core here: https://opennetworking.org/sd-core/

Read the recent press release: https://opennetworking.org/news-and-events/press-releases/onf-announces-new-cloud-native-software-defined-sd-core-project-addressing-5g-mobile-core/

Licensing Notice

This project is in the "Incubation Phase" under the ONF Member-Only Software License. Only ONF members in good standing are allowed access to the project repositories. We strongly recommend you review the ONF Member-Only Software License, License Overview, and Licensing & IPR FAQ before requesting access. Requesting access will initiate your company's **90 day grace period** and notify your company's primary contact. If you wish to be granted access to the repository, please contact membership@opennetworking.org.

Key People & Communication Channels

While the SD-Core project does not have an official Technical Steering Team (TST) yet, here are some key people to contact in the SD-Core team. For technical questions and discussion, we highly recommend posting to the mailing lists, where the entire community can benefit from the answer.

- Ouz Sunay, ONF (VP R&D, Mobility, oguz@opennetworking.org)
- Ajay Thakur, ONF (MTS, ajay@opennetworking.org)
- Pingping Lin, ONF (MTS, pingping@opennetworking.org)

Mailing Lists

- SD-Core announcements (sdcore-announce@opennetworking.org) https://groups.google.com/a/opennetworking.org/g/sdcore-announce - Public SD-Core related announcements
- SD-Core developers (sdcore-dev@opennetworking.org) https://groups.google.com/a/opennetworking.org/g/sdcore-dev - ONF member-only developer mailing list (**NOTE**: you will need to request to be added with your valid ONF member company email alias. Approval may take up to 24 hours)

Slack

- Slack channel: #sdcore-dev https://onf-community.slack.com/archives/C01SNNZAUQ2 This channel is currently ONF member-only (**NOTE**: you will need to request to be added with your valid ONF member company email alias. Approval may take up to 24 hours)

Community/Project Meetings

- There are currently no community/project meetings scheduled. Please join the above mailing lists and slack channels to carry on the conversation.

Additional Resources

Google Drive (Public folder)

- No public drive yet

CLA

To contribute to SD-Core, both individuals and companies are required to submit a Contributor License Agreement (CLA).

Jira Board

- Coming Soon!

Repositories

- The github repos can be found at:
  - 5G:
    - https://github.com/omec-project/5gc (member-only)
    - https://github.com/omec-project/amf (member-only)
    - https://github.com/omec-project/smf (member-only)
    - https://github.com/omec-project/pcf (member-only)
    - https://github.com/omec-project/udm (member-only)
    - https://github.com/omec-project/udr (member-only)
    - https://github.com/omec-project/pfcp (member-only)
    - https://github.com/omec-project/ausf (member-only)
    - https://github.com/omec-project/nssf (member-only)
    - https://github.com/omec-project/nrf (member-only)
    - https://github.com/omec-project/nas (member-only)
    - https://github.com/omec-project/simapp (member-only)
    - https://github.com/omec-project/gnbsim (member-only)
    - https://github.com/omec-project/testpod5G (member-only)
    - https://github.com/omec-project/webconsole (member-only)
    - https://github.com/omec-project/config5g (member-only)
  - 4G:
    - https://github.com/omec-project/Nucleus
    - https://github.com/omec-project/spgw (member-only)
    - https://github.com/omec-project/c3po
    - https://github.com/omec-project/upf-epc
    - https://github.com/omec-project/ngic-rtc
    - https://github.com/omec-project/ignite
    - https://github.com/omec-project/libgtpv2c
    - https://github.com/omec-project/epctools
    - https://github.com/omec-project/freediameter
    - https://github.com/omec-project/il_trafficgen
    - https://github.com/omec-project/pfcp-agent

        - https://github.com/omec-project/oss-util
        - https://github.com/omec-project/ngic-rtc-tmo
        - https://github.com/omec-project/openmme (Obsolete project - we encourage you to use Nucleus)
        - https://github.com/omec-project/libpfcp
    - Helm chart:
        - https://gerrit.opencord.org/plugins/gitiles/aether-helm-charts (member-only)(**NOTE**: each company has a custom login for the ONF documentation sites and helm charts. Please contact membership@opennetworking.org to request one).
    - P4:
        - https://github.com/omec-project/up4 (member-only)
        - https://github.com/omec-project/dbuf (member-only)

We expect all ONF employees, member companies, and participants to abide by our Code of Conduct. If you have any questions or concerns, please notify a member of the ONF team or email conduct@opennetworking.org.