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 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/


Key People & Communication Channels

Technical Steering Team (TST)

The Technical Steering Team is the group of people responsible for the technical direction of the project. As of April 2022, the SD-Core TST consists of the following members:

- Saurav Das (saurav.das@intel.com)
- Kushal Mittal (kushal.mittal@intel.com)
- Oguz Sunay (oguz.sunay@intel.com)
- Ajay Thakur (ajay@opennetworking.org)
- Thomas Vachuska (thomas.vachuska@intel.com)
Mailing Lists

For technical questions and discussion, we highly recommend posting to the mailing lists, where the entire community can benefit from the answer.

- 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/C02TGUWTC93
  - To join the ONF Community Slack Workspace, please click here: https://join.slack.com/t/onf-community/shared_invite/zt-g2ed9rid-t9mAGa4Y2KrKbWbY665IA

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/pfc (member-only)
    - https://github.com/omec-project/nssflib (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/testpodSG (member-only)
    - https://github.com/omec-project/webconsole (member-only)
    - https://github.com/omec-project/MongoDBLibrary (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/l_trafficgen
    - https://github.com/omec-project/pfcp-agent
    - https://github.com/omec-project/ost-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)
  - https://gerrit.opencord.org/plugins/gitiles/sdcore-helm-charts (member-only)
- P4:
  - https://github.com/omec-project/up4 (member-only)
  - https://github.com/omec-project/dbuf (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.

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.