Intel® network builders

• Ecosystem Overview
• Intel® Network Builders Areas of Engagement
• Network Builders University
Intel® network builders – Accelerating network transformation

An Intel led ecosystem of ISVs, OSVs, OEMs, ODMs, TEMs, SIs, and end users with a shared mission to accelerate network transformation on Intel architecture based servers.

End to end partnership with a robust ecosystem

Intel Architecture, FPGAs, Software, Security
Intel Network Builders is an membership program that provides CommSP with insight on network transformation accelerated by broad industry engagement

Business transformation – what are the success models

Gain insight on commercially available solutions

Support on latest technologies

Get Industry Insight

Train your teams

✓ Deep dive on individual business models and match up with network transformation models

✓ Insight on a community of 300+ ecosystem ISV/OSV/OEM/ODM/SI

✓ Exposure to Intel Roadmaps and INB ecosystem solution readiness

✓ Attend NDA, CommSP led events, meet with Intel Execs for tailored approach

✓ A technical training program for Intel’s end user customers, with individualized content
Lack of NFV Training deters NFV adoption

**Lack of skills**

Lack of Knowledge/ Skills was noted as one of the **TOP 3 PROBLEMS** or issues Service Providers face that hold back commercial deployment of NFV in their network.

IHS Technology – Service Provider Survey
June 2017

**Talent Gap**

Operators and CSPs are finding that there are not enough people with the relevant skills and practical experience both in-house and entering the industry, resulting in a **GROWING TALENT GAP**.

Computer Business Review – Barrier to Progress- January 2018

**IT meets Network**

**HUMAN REVOLUTION** as well," said Laurent Herr, the vice president of OSS for OBS, during a presentation at today's TM Forum Live! event in Nice, France. "We need new **HARD SKILLS** on the network and IT side -- the hardware guys need to understand what is happening on the OSS side and the IT people need to understand the network."

Iain Morris, News Editor, Light Reading, 5/10/2016
Intel® Network Builders University programs
Creating Real Value for Communications Service Providers

Intel® Network Builders University

CommSP F2F Training

Ecosystem Deep Dive Training

Custom Pathways

Innovation summits
Intel® Network Builders University

A technical training program for Intel's end user customers and Intel® Builders ecosystem partners aiming to accelerate the adoption and deployment of virtualized technologies through education.

Training courses are delivered in short video format. Quizzes are available after training to support understanding. Available whitepapers, product briefs, and other related materials.

Intel Network Builders End User Ecosystem Member Benefits:

- Intel NDA Content
- CommSP Innovation Summits
- Early Access to Technical Training
- Customized Curriculum Paths
- Face to Face Training Opportunities
- Reporting
- Deep Dive Virtual Lab Technical Training
Intel® Network Builders University

Technical Education

Transforming The Network from Edge to Core

180+ Training Courses across 18 Programs

- Network Academy
- Basic Training Program
- Service Provider Program
- DPDK Program
- OvS Program
- Security Program
- MANO Program
- OpenStack Program
- vE-CPE Program
- Gi-LAN Program
- vEPC Program
- vIMS Program
- Intel Select Solutions
- AI/Machine Learning Program
- Cable Program
- Visual Cloud Program
- QAT Program
- Virtualized Network Operations

Technical Programs Planned for Development

- FlexRAN
- Network Edge
- 5G
Intel® Network Academy

A formal training program on network technologies to accelerate Network Transformation for Communications Service Providers and the Ecosystem that supports them.

Pertinent and timely training addressing real adoption challenges

FOUNDATION LEVEL
Introductory Lessons and Fundamentals

Course 1
Consumers and Providers of Service, Inside the Telco Cloud, Network Functions Virtualization, Software Define Networking

Course 2
VNF Operations, VNF Development, Intel Hardware and Software Benefits, The Road Ahead

INTERMEDIATE LEVEL

ADVANCED LEVEL

being planned for 2019
Consumers of Services and their Supporting Technologies

**Telco Cloud:**
- vGi-LAN, vEPC, vIMS, FlexRAN, vCPE

**Provider Services:**
- 5G, SD-WAN, Visual Cloud

**NFV:**
- VNFs, Service Chaining & Orchestration

**SDN:**
- Network Slicing, Transport Network Orchestration

**VNF Development:**
- Cloud Native Architecture, Security, FD.IO, DPDK

**VNF Operations:**
- Virtualization, Containers, Kubernetes, OpenStack

**Intel Products:**
- FPGA, SR-IOV, Smart NICS, Hyperscan, TXT, Quick Assist

Consumers of Service: IoT, Autonomous Vehicles, Smart Stadiums, Enterprise Digital Transformation
Pathways & Reporting

**Pathways**

- The Pathways Program was created to address a number of usability requests from Partners.
- These include Active Courses, Saved Courses (Favorites), Recommendations, Pathways, and Custom Pathways.

**Reporting**

- The Partner Reporting Project was created to allow Partners and Account teams the ability to track account level registration and consumption of content in Network Builders University.

**GOALS**

- Enhance the learning process for users
- Allow for the integration of Network Builders University content into CommSP internal training programs
- Enable customizable curriculum Pathways based on individualized needs of key accounts.
- Provide a more customized and personalized learning experience.

**STRATEGIES**

- Enhance the learning process for users allowing them to return to courses that are in process of being completed and save chapters they find relevant to their jobs.
- Allow for Recommendations by Intel on the most relevant and valuable content.
- Allow for the creation of Customized Pathways for specific accounts allowing them to select the courses most relevant for their employees.
Data center lab overview

• Early access to latest Intel Select compliant HW config and validated SW stack [Complete NFVi stack - BIOS / FW / OS / drivers based on Intel NFV Best Known Config.] ready to land VNFs

• Full "seat" with test and back end systems including high bandwidth connectivity. Remote access enabled

• SLA support and clear escalation path for issue resolution and tracking, access to broad expertise at Intel

• Optimization support from Intel SMEs. Benchmarking help and support

• Direct path to collaborate with Intel and other ecosystem partners on VNF optimization, characterization, and co-marketing
Training → PoC / Test / Optimize / Characterize on Remote Seat in Data Center

- **Training zone**
  - 2nd Gen Intel Xeon Scalable **6230N** Dual Processor Servers
  - Systems Under Test
  - Shared Environment

- **Systems Under Test**
  - Intel Xeon Processor Servers
  - Traffic Generators

- **Intel® Network Builders**
  - Data Center
  - NFVI
    - 3 servers
  - EDGE
    - 3 servers

- **Shared Environment**

- **Isolated & Secured Environment**
  - NFVI
    - 5 servers
  - EDGE
    - 5 servers
Data center lab configuration “menu”

• Seats preinstalled with Intel BKC (Best Known Configuration)
  • CentOS* 7.6
  • Ubuntu* 18.04.2
  • Red Hat* Enterprise Linux 7.6 (RH Entitlements included)
• Option for tenants to install OS and tools as needed
• Seats may be combined to form a bigger cluster
  • RedHat OpenStack* Platform (RHOSP Compute node entitlements included)
• Tools such as Vtune™ etc are installed and available

*Other names and brands may be claimed as property of others.
Primary intent: enable network ecosystem and scale partners (ISVs, SIs, OSVs, etc.)

Business approval
Intel Network Builders Team

Technical discussion
Intel Network Builders Tech. Team

Onboarding

- What is the **goal** of this engagement?
- Identify expected **outcome** in terms of PoCs, whitepapers, technical papers, etc.
- Level of **activity** expected on the seat and for what **duration**?
- How is the seat planned to be used?
- What are the infrastructure requirements?
- Is there a need for traffic generator / analyzer?
Onboarding (2/4)

Admission

- Sign CNDA

Sign EULA

- Fill out Datacenter Access Form

Provide SSH Public Keys

- Welcome Package
  - Seat configuration
  - User Guide
  - Public JIRA

Collaboration

Remote Access Service Terms and Conditions

Please read these terms and conditions carefully before using Intel Remote Access Service. Use of the Service constitutes acceptance of these terms and conditions.

Definitions

- "Agreement" means these terms and conditions of Service.
- "Company" means the company, university, or other entity whose employee, contractor, or representative (each a "User") access to this Agreement or uses the Service.

- Company name and contacts
- Intel sponsor
- Gateway IP address(es)

ssh-rsa AAAAB3NzaC1yc2EAAQAABQDn0dTOx9zTS4YFr...

Welcome Package

- Seat configuration
- User Guide
- Public JIRA

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Collaboration (3/4)

Onboarding

2 weeks*
(Extendable as needed)

Checkpoint

More time needed

Work Completed

No Activity

Finalization

• * Time is allocated in TWO WEEKS chunks
• Issues reported through centralized JIRA portal
  • Your IEM notified automatically
  • CRT DC team: Hardware, Connectivity, Network
  • Intel Network Builders Tech team: deeper NFV questions
  • SME’s from all Intel: special cases

• Keep your IEM up to date on progress
• Sync-up meeting or e-mail with IEM and Intel sponsor to check the progress and decide whether extension is needed

* Duration can be extended depending on the progress, demand and expected outcome

Intel Confidential
Collaboration

Publishing results / collateral

Access revoked

All systems securely wiped

• Publish PoCs, whitepapers, technical papers, etc. agreed during business approval
• Intel Network Builders Partners are encouraged to work with the Intel Network Builders team on publishing the results
resources

• Access requests: Please work with your IEM (Intel Enabling Manager)

• Tech info on 2nd Gen Intel Xeon Scalable Processors
  

• DPDK
  
  http://core.dpdk.org/perf-reports/

• Experience Kits
  
resources

Intel® Network Builders University

• Intel® Builders University
  https://builders.intel.com/university

• Feedback or Support
  university@builders.intel.com

• Intel Network Builders University
  https://builders.intel.com/university/networkbuilders
  contact@networkbuilders.intel.com
How to join intel® network builders

• Contact Network Builders team and let us know if you are interested in our program
• You will be notified of acceptance in the program based on discovery meeting
• Sign up to the program following the instructions we’ll provide. There are no membership dues or fees associated with program
END USER GUIDED PROGRAM
TO ACCELERATE INNOVATION, ADOPTION AND IMPLEMENTATION OF NEXT-GEN SOLUTIONS

PLAN
Lead and Influence Mindshare
Build your NFV roadmap, identify your vendors.

CONNECT
New requirements to purchasing
Specify what Ecosystem partners Must deliver wrt next gen capabilities

DEPLOY
Commercialize Rapidly
Engage in trials, enable faster deployments
Intel is Investing to Lead Network Transformation

Deliver Technology Leadership
- Silicon and Software
- Performance, Packet Processing, Security, Orchestration, Service Assurance and Scalability

Enable an open ecosystem
- An ecosystem of ISVs, SIs, OSVs, OEMs, ODMs
  - 315 Ecosystem Partners
  - 57 Edge Ecosystem Members

Advance Open Source Standards

Collaborate with End Users
- Comms, Cloud, Enterprise
- 37 End User members
Engaging with motivated and knowledgeable SIs to help accelerate, implement, and invest in the network transformation.

✓ Technical assistance and guidance
✓ System Integrators Ecosystem Matchmaking
✓ Deep-dive on ISV solution capabilities
✓ Info on Solution/Services catalog through Intel co-branded technical papers, webinars, event speaking opportunities and demos

** Engagements with each SI may vary **