



IEEE NfV-SDN

2022 IEEE Conference on Network Functions Virtualization & Software Defined Networks

Chandler (Arizona), USA

November 14th – 16th, 2022

#IEEE #NFV #SDN

CALL FOR PAPERS

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Network virtualization has transformed how our infrastructures are connected, built, and operated. Network services often rely on the disaggregation and reconstitution of Network Functions through Network Function Virtualization or NFV. When combined with dynamic and automated network configuration concepts, or Software Defined Networks (SDN), advantages of overall improved performance, reduced vendor lock-in, more rapid adoption of new features, and increased operational efficiency are realized.

Today network operators around the globe have proven the advantages of virtualization in portions of the network, yet much work remains to be proven beneficial in this field. Research and development of virtualization technologies, from the Radio Access Network to the network core, can increase resiliency, security, and power efficiency and provide more effective operationalization through automation and Artificial Intelligence.

The recent Cloudification and Cloud/Container Native Functions (CNF) practices continue to challenge network operators and their ecosystem partners from early research and into practice, while new and innovative applications at the edge demand even more attention from industry and academia. NFV, CNF, and SDN are accepted evolutions in all areas of network concepts and technologies today. They are transforming telecommunication networks, campus, enterprise, and data center networks. They are accelerating the introduction of technologies and applications, requiring further advances in several areas of network programmability and network automation.

Significant enablers for rapid adoption include shifts towards open source software and hardware development, the convergence of IT and telco tools and technologies, and the alignment of operational processes. Integration of the latest research in software technologies, algorithms, hardware design, etc., driven by competition to adopt the best ideas, is helping to drive global acceptance of network virtualization.

The 2022 IEEE NfV-SDN conference will be held in Chandler (Arizona), USA at Intel on Nov. 14-16, 2022. It again is an important forum for the ongoing exchange of the latest ideas, developments, and results amongst ecosystem partners in both academia and industry. The conference fosters knowledge sharing and discussion on new approaches and works addressing gaps and improvements in virtualized enabled architectures, algorithms, and operational frameworks for virtualized network functions and infrastructures.

IMPORTANT DATES

June 4th, 2022	Workshop proposal deadline
July 15th, 2022	Full paper submission deadline
July 6th, 2022	Tutorial proposal deadline
July 27th, 2022	Demo/Fast Track paper submission deadline
September 5th, 2022	Acceptance notification (full papers)
September 13th, 2022	Acceptance notification (fast-track papers, demos)
October 9th, 2022	Camera-ready papers

TOPICS

The IEEE NfV-SDN conference invites researchers from around the world to share ideas influencing the evolution and operation of NFV and SDN technologies. The following is a non-exhaustive list of topics:

NFV, CNF, and SDN Architectures, Infrastructure, and Elements

- Emerging improvements, including Network Slicing and the unikernel paradigm
- Improvements in the design of forwarding elements, e.g., switches/routers, wireless systems
- Optimizing virtualized infrastructures, including hardware acceleration technologies
- Heterogeneous server platforms and the detailed element-level CPU/GPU/FPGA mapping of network functions
- SDN/CNF/NFV in recent and novel architecture paradigms

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- Architectural design aspects toward Next-Generation wireless networks,
- Virtualization Technologies for Edge/Fog Computing
- Microservice-based and agent-based SDN/NFV
- SDN/NFV in 6G three-dimensional networking

NFV, CNF, and SDN Operations

- Dynamic license management, autonomies, machine learning, monitoring, resiliency, fault management and self-healing
- Network security and isolation impacts of virtualization technologies
- Advanced tools for automated design, deployment, validation and management
- Application of machine learning and big data analytics to manage to simplify deployment and operation of SDN/NFV networks
- SDN/NFV orchestration and operations in 6G network continuum

Performance Analysis and Optimization

- Costs of migration of application containers and workloads
- Data/control plane performance, interoperability and scalability studies
- Resource dimensioning and optimization (e.g., cloud-native design), workload isolation and tradeoffs
- Design guidelines for modularity, scalability, high availability and interoperability (e.g., container and micro services implementations)
- SDN/NFV new KPIs and trade-offs in 6G architecture

Results and Evaluations in Application Scenarios

- Comparative studies on different virtualization technologies
- Usage scenarios such as SD-WAN, IoT, Smart Grid, Smart Cities, etc.
- Improvements in future communication infrastructure enabled by SDN and NFV including fixed and wireless access, public, private and hybrid clouds
- Social and regulatory impacts (e.g., network implications of data location and privacy)
- Operational experience in operational networks (e.g., 5G deployments)

DEMOS, TUTORIALS, WORKSHOPS, DOCTORAL SYMPOSIUM

Call for Demos: The IEEE NFV-SDN 2022 conference also invites demonstration papers in the NFV, CNF, and SDN realms addressing (but not limited to) the topics above. The demonstrations should be configured to run in a cloud environment accessible via the Internet and presented from the exhibition space floor on the demonstrator's laptop. Also, an author of an accepted demo is required to register for the conference at the full or limited rate and present the demo at the IEEE NFV-SDN 2022 conference. For information on submission, please visit <http://www.ieee-nfvdsn.org/>

Call for Tutorials: The organizing committee invites proposals for tutorials to be held prior to the main conference. Tutorials should serve one or more of the following objectives: introducing students and newcomers to major topics in CNF, NFV, and SDN research; providing instructions on established practices and methodologies; surveying a mature area of CNF, NFV, and SDN research and/or practice; motivating and explaining an NFV and SDN topic of emerging importance; introducing expert non-specialists to a CNF, NFV, and SDN research area. Proposals should be submitted by electronic mail to the Tutorial Program Co-Chairs. For information on submission, please visit <http://www.ieee-nfvdsn.org/>

Call for Workshop Proposals: The committee solicits proposals for one full-day or two half-day workshops to be held at the beginning of the main technical program. The scope of the workshops aims to complement the main conference program with forums for the exchange of technical expertise, development, integration, and standardization efforts on particularly focused areas of interest within the frame of CNF, NFV, and SDN. Proposals from industry and academia are welcome. Proposals should be submitted by electronic mail to the Workshop Program Co-Chairs. For information on submission, please visit <http://www.ieee-nfvdsn.org/>

Call for Doctoral Symposium: The Doctoral Symposium is a new feature of the conference this year. It provides an opportunity for young researchers (Ph.D. students) to discuss and get valuable feedback on preliminary research work from experienced researchers from both industry and academia. It will help to build and strengthen collaboration amongst the communities researching and working in the areas of CNF, NFV, and SDN. The doctoral symposium has the status of an IEEE workshop and provides an excellent opportunity for networking among Ph.D. students and experienced researchers. Accepted submissions are published in the conference proceedings. For information on submission, please visit <http://www.ieee-nfvdsn.org/>

AUTHOR & SUBMISSION GUIDELINES

Prospective authors are invited to submit original full technical or fast-track papers for publication in the IEEE NFV-SDN 2022 Conference Proceedings and for presentation in the technical sessions. We solicit submission of high-quality full papers reporting original and novel research results on all above topics. Papers must be written in English, unpublished and not submitted elsewhere. Full papers must be formatted as the standard IEEE double-column conference template.

FULL TECHNICAL PAPERS should have a maximum paper length of six (6) printed pages (10-point font), including figures, without incurring additional page charges (maximum 1 additional page with over length page charge of USD100 if accepted). Papers exceeding 7 pages will not be accepted at EDAS. For information on submissions, please visit <http://www.ieee-nfvcdn.org/>

FAST-TRACK PAPERS: In addition, we welcome fast-track papers from the research community up to four (4) pages in length (10pt font); max. one additional page with over length page charge of USD100 if accepted. These papers should focus more on recent and newly-developing results. FAST-TRACK papers will be reviewed with a more open mind towards the scope of evaluation or breadth of topics compared to longer papers. We recommend that authors check both calls for papers before submitting. For information on submissions, please visit <http://www.ieee-nfvcdn.org/>

DEMO PAPERS should have a maximum paper length of two (2) printed pages (10-point font), including figures, without incurring additional page charges (maximum 1 additional page with over length page charge of USD100 if accepted). Papers exceeding 3 pages will not be accepted at EDAS. For information on submissions, please visit <http://www.ieee-nfvcdn.org/>

To be published in the IEEE NFV-SDN 2022 Conference Proceedings and to be eligible for publication in IEEE Xplore, an author of an accepted paper is required to register for the conference at the FULL (member or non-member) rate and the paper must be presented by an author of that paper at the conference. For authors with multiple accepted papers, one FULL registration is valid for up to 3 papers. Accepted and presented papers will be published in the IEEE NFV-SDN 2022 Conference Proceedings and submitted to IEEE Xplore®.

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