1. Record Nr. UNINA9910825480203321

Autore	Pujolle Guy
Titolo	Software networks . Volume 1 Virtualization, SDN, 5G and security / / Guy Pujolle
Pubbl/distr/stampa	London, [England] ; ; Hoboken, New Jersey : , : ISTE : , : Wiley, , 2015 ©2015
ISBN	1-119-00796-8 1-119-00795-X 1-119-00510-8
Edizione	[1st edition]
Descrizione fisica	1 online resource (262 p.)
Collana	Networks & Telecommunications Series
Disciplina	004.6
Soggetti	Computer networks Cloud computing Virtual computer systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Title Page; Copyright; Contents; Introduction; I.1. The first two revolutions; I.2. The third revolution; I.3. "Cloudification" of networks; I. 4. Conclusion; 1: Virtualization; 1.1. Software networks; 1.2. Hypervisors; 1.3. Virtual devices; 1.4. Conclusion; 2: SDN (Software-Defined Networking); 2.1.The objective; 2.2. The ONF architecture; 2.3. NFV (Network Functions Virtualization); 2.4. OPNFV; 2.5. Southbound interface; 2.6. The controller; 2.7. Northbound interface; 2.8. Application layer; 2.9. Urbanization; 2.10. The NSX architecture 2.11. CISCO ACI (Application Centric Infrastructure)2.12. Open Contrail and Juniper; 2.13. Brocade; 2.14. Alcatel Lucent's SDN architecture; 2.15. Conclusion; 3: Smart Edges; 3.1. Placement of the controller; 3.2. Virtual access points; 3.3. Software LANs; 3.4. Automation of the implementation of software networks; 3.5. Intelligence in networks; 3.6. Management of a complex environment; 3.7. Multi-agent systems; 3.8. Reactive agent systems; 3.9. Active networks; 3.10. Programmable networks; 3.11. Autonomous networks; 3.12. Autonomic networks; 3.13. Situated view; 3.14. Conclusion 4: New-generation Protocols 4.1. OppenFlow; 4.2. VXLAN; 4.3. NVGRE

(Network Virtualization using Generic Routing Encapsulation); 4.4. MEF Ethernet; 4.5. Carrier-Grade Ethernet; 4.6. TRILL (Transparent Interconnection of a Lot of Links); 4.7. LISP (Locator/Identifier Separation Protocols); 4.8. Conclusion; 5: Mobile Cloud Networking and Mobility Control; 5.1. Mobile Cloud Networking; 5.2. Mobile Clouds; 5.3. Mobility control; 5.4. Mobility protocols; 5.5. Mobility control; 5.5.1. IP Mobile; 5.5.2. Solutions for micromobility; 5.6. Multihoming; 5.7. Network-level multihoming
5.7.1. HIP (Host Identity Protocol)5.7.2. SHIM6 (Level 3 Multihoming Shim Protocol for IPv6); 5.7.3. mCoA (Multiple Care-of-Addresses) in Mobile IPv6; 5.8. Transport-level multihoming; 5.8.1. SCTP (Stream Control Transmission Protocol); 5.8.2. CMT (Concurrent Multipath Transfer); 5.8.3. MPTCP (Multipath TCP); 5.9. Conclusion; 6: Wi-Fi and 5G; 6.1. 3GPP and IEEE; 6.2. New-generation Wi-Fi; 6.3. IEEE 802.11ac; 6.4. IEEE 802.11ad; 6.5. IEEE 802.11af; 6.6. IEEE 802.11ah; 6.7. Small cells; 6.8. Femtocells; 6.9. Hotspots; 6.10. Microcells; 6.11. Wi-Fi Passpoint; 6.12. Backhaul networks
6.13. Software radio and radio virtual machine 6.14. 5G; 6.15. C-RAN; 6.16. The Internet of Things; 6.17. Sensor networks; 6.18. RFID; 6.19. EPCglobal; 6.20. Security of RFID; 6.21. Mifare; 6.22. NFC (Near-Field Communication); 6.23. Mobile keys; 6.24. NFC contactless payment; 6.25. HIP (Host Identity Protocol); 6.26. The Internet of Things in the medical domain; 6.27. The Internet of Things in the home; 6.28. Conclusion; 7: Security; 7.1. Secure element; 7.2. Virtual secure elements; 7.3. The TEE (Trusted Execution Environment); 7.4. TSM; 7.5. Solution without a TSM; 7.6. HCE
7.7. Securing solutions

Sommario/riassunto

The goal of this book is to describe new concepts for Internet next generation. This architecture is based on virtual networking using Cloud and data centers facilities. Main problems concern 1) the placement of virtual resources for opening a new network on the fly, and 2) the urbanisation of virtual resource implemented on physical network equipment. This architecture deals with mechanisms capable of controlling automatically the placement of all virtual resources within the physical network. In this book, we describe how to create and delete virtual networks on the fly. Indeed, the system