































- [23] N. FEAMSTER, J. REXFORD, AND E. ZEGURA The Road to SDN: An Intellectual History of Programmable Networks. *SIGCOMM Comput. Commun. Rev.* 44, 2 (2014).
- [24] A. D. FERGUSON, A. GUHA, C. LIANG, R. FONSECA, AND S. KRISHNAMURTHI Participatory Networking: An API for Application Control of SDNs. In: SIGCOMM. ACM, 2013.
- [25] N. FOSTER, R. HARRISON, M. J. FREEDMAN, C. MONSANTO, J. REXFORD, A. STORY, AND D. WALKER Frenetic: A Network Programming Language. In: ICFP. ACM, 2011.
- [26] R. GANDHI, H. H. LIU, Y. C. HU, G. LU, J. PADHYE, L. YUAN, AND M. ZHANG Duet: Cloud Scale Load Balancing with Hardware and Software. In: SIGCOMM. ACM, 2014.
- [27] C. GKANTSIDIS, T. KARAGIANNIS, P. KEY, B. RADUNOVIC, E. RAFTOPOULOS, AND D. MANJUNATH Traffic Management and Resource Allocation in Small Wired/Wireless Networks. In: CoNEXT. ACM, 2009.
- [28] M. P. GROSVENOR, M. SCHWARZKOPF, I. GOG, R. N. M. WATSON, A. W. MOORE, S. HAND, AND J. CROWCROFT Queues Don't Matter When You Can JUMP Them! In: NSDI. USENIX Association, 2015.
- [29] H. HAN, S. SHAKKOTAI, C. V. HOLLOT, R. SRIKANT, AND D. TOWSLEY Multi-path TCP: A Joint Congestion Control and Routing Scheme to Exploit Path Diversity in the Internet. *IEEE/ACM Trans. Netw.* 14, 6 (2006).
- [30] C.-Y. HONG, M. CAESAR, AND P. B. GODFREY Finishing Flows Quickly with Preemptive Scheduling. In: SIGCOMM. ACM, 2012.
- [31] D. F. HOOPER *Using IXP2400/2800 Development Tools. A Hands-on Approach to Network Processor Software Design*. 1st ed. Intel Press, 2005.
- [32] V. JEYAKUMAR, M. ALIZADEH, C. KIM, AND D. MAZIÈRES Tiny Packet Programs for Low-latency Network Control and Monitoring. In: HotNets-XII. ACM, 2013.
- [33] V. JEYAKUMAR, M. ALIZADEH, D. MAZIÈRES, B. PRABHAKAR, C. KIM, AND A. GREENBERG EyeQ: Practical Network Performance Isolation at the Edge. In: NSDI. USENIX, 2013.
- [34] T. KARAGIANNIS, R. MORTIER, AND A. ROWSTRON Network Exception Handlers: Host-network Control in Enterprise Networks. In: SIGCOMM. ACM, 2008.
- [35] A. D. KEROMYTIS Tagging Data in the Network Stack: Mbuf.Tags. In: BSDC'03. USENIX Association, 2003.
- [36] E. KOHLER, R. MORRIS, B. CHEN, J. JANNOTTI, AND M. F. KAASHOEK The Click Modular Router. *ACM Trans. Comput. Syst.* 18, 3 (2000).
- [37] D. KREUTZ, F. RAMOS, P. ESTEVES VERISSIMO, C. ESTEVE ROTHENBERG, S. AZODOLMOLKY, AND S. UHLIG Software-Defined Networking: A Comprehensive Survey. *Proceedings of the IEEE* 103, 1 (2015).
- [38] V. T. LAM, S. RADHAKRISHNAN, R. PAN, A. VAHDAT, AND G. VARGHESE Netshare and Stochastic Netshare: Predictable Bandwidth Allocation for Data Centers. *SIGCOMM Comput. Commun. Rev.* 42, 3 (2012).
- [39] J. LEE, Y. TURNER, M. LEE, L. POPA, S. BANERJEE, J.-M. KANG, AND P. SHARMA Application-driven Bandwidth Guarantees in Datacenters. In: SIGCOMM. 2014.
- [40] A. LIKHAROV, R. NISHTALA, R. McELROY, H. FUGAL, A. GRYNENKO, AND V. VENKATARAMANI *Introducing mcrouter: A memcached protocol router for scaling memcached deployments*. Facebook. 2014. URL: <http://bit.ly/1TpNk0o> (visited on 06/16/2015).
- [41] S. MCCANNE, AND V. JACOBSON The BSD Packet Filter: A New Architecture for User-level Packet Capture. In: USENIX Winter Conf. USENIX, 1993.
- [42] N. McKEOWN, T. ANDERSON, H. BALAKRISHNAN, G. PARULKAR, L. PETERSON, J. REXFORD, S. SHENKER, AND J. TURNER OpenFlow: Enabling Innovation in Campus Networks. *SIGCOMM Comput. Commun. Rev.* 38, 2 (2008).
- [43] J. MOGUL, R. RASHID, AND M. ACCETTA The Packer Filter: An Efficient Mechanism for User-level Network Code. In: SOSP '87. ACM, 1987.
- [44] J. MUDIGONDA, P. YALAGANDULA, M. AL-FARES, AND J. C. MOGUL SPAIN: COTS Data-center Ethernet for Multipathing over Arbitrary Topologies. In: NSDI. USENIX, 2010.
- [45] A. MUNIR, G. BAIG, S. M. IRTEZA, I. A. QAZI, A. X. LIU, AND F. R. DOGAR Friends, Not Foes: Synthesizing Existing Transport Strategies for Data Center Networks. In: SIGCOMM. ACM, 2014.
- [46] NETRONOME *Netronome FlowNICs*. 2015. URL: <http://netronome.com/product/flownic/> (visited on 06/03/2015).
- [47] P. PATEL, D. BANSAL, L. YUAN, A. MURTHY, A. GREENBERG, D. A. MALTZ, R. KERN, H. KUMAR, M. ZIKOS, H. WU, C. KIM, AND N. KARRI Ananta: Cloud Scale Load Balancing. In: SIGCOMM. ACM, 2013.
- [48] J. PERRY, A. OUSTERHOUT, H. BALAKRISHNAN, D. SHAH, AND H. FUGAL Fastpass: A Centralized "Zero-queue" Datacenter Network. In: SIGCOMM. ACM, 2014.
- [49] B. PFAFF, J. PETTIT, T. KOPONEN, K. AMIDON, M. CASADO, AND S. SHENKER Extending Networking into the Virtualization Layer. In: HotNets-VIII. ACM, 2009.
- [50] B. PFAFF, J. PETTIT, T. KOPONEN, E. JACKSON, A. ZHOU, J. RAJAHALME, J. GROSS, A. WANG, J. STRINGER, P. SHELAR, K. AMIDON, AND M. CASADO The Design and Implementation of Open vSwitch. In: NSDI. USENIX, 2015.
- [51] L. POPA, A. KRISHNAMURTHY, S. RATNASAMY, AND I. STOICA FairCloud: Sharing the Network in Cloud Computing. In: HotNets-X. ACM, 2011.
- [52] L. POPA, P. YALAGANDULA, S. BANERJEE, J. C. MOGUL, Y. TURNER, AND J. R. SANTOS ElasticSwitch: Practical Work-conserving Bandwidth Guarantees for Cloud Computing. In: SIGCOMM. ACM, 2013.
- [53] C. RAICU, C. PAASCH, S. BARRE, A. FORD, M. HONDA, F. DUCHENE, O. BONAVENTURE, AND M. HANDLEY How Hard Can It Be? Designing and Implementing a Deployable Multipath TCP. In: NSDI. USENIX, 2012.
- [54] M. REITBLATT, M. CANINI, A. GUHA, AND N. FOSTER FatTire: Declarative Fault Tolerance for Software-Defined Networks. In: HotSDN. ACM, 2013.
- [55] M. REITBLATT, N. FOSTER, J. REXFORD, C. SCHLESINGER, AND D. WALKER Abstractions for Network Update. In: SIGCOMM. ACM, 2012.
- [56] B. SCHWARTZ, A. W. JACKSON, W. T. STRAYER, W. ZHOU, R. D. ROCKWELL, AND C. PARTRIDGE Smart Packets: Applying Active Networks to Network Management. *ACM Trans. Comput. Syst.* 18, 1 (2000).
- [57] A. SHIEH, S. KANDULA, AND E. G. SIRER SideCar: Building Programmable Datacenter Networks Without Programmable Switches. In: Hotnets-IX. ACM, 2010.
- [58] D. SHUE, M. J. FREEDMAN, AND A. SHAIKH Performance Isolation and Fairness for Multi-tenant Cloud Storage. In: OSDI. USENIX, 2012.
- [59] R. SOULÉ, S. BASU, R. KLEINBERG, E. G. SIRER, AND N. FOSTER Managing the Network with Merlin. In: HotNets-XII. ACM, 2013.
- [60] D. L. TENNENHOUSE, AND D. J. WETHERALL Towards an Active Network Architecture. *SIGCOMM Comput. Commun. Rev.* 26, 2 (1996).
- [61] E. THERESKA, H. BALLANI, G. O'SHEA, T. KARAGIANNIS, A. ROWSTRON, T. TALPEY, R. BLACK, AND T. ZHU IOFlow: A Software-defined Storage Architecture. In: SOSP. ACM, 2013.
- [62] A. VOELLMY, J. WANG, Y. R. YANG, B. FORD, AND P. HUDAK Maple: Simplifying SDN Programming Using Algorithmic Policies. *SIGCOMM Comput. Commun. Rev.* 43, 4 (2013).
- [63] D. WETHERALL, J. V. GUTTAG, AND D. TENNENHOUSE ANTS: a toolkit for building and dynamically deploying network protocols. In: OPENARCH. IEEE, 1998.
- [64] C. WILSON, H. BALLANI, T. KARAGIANNIS, AND A. ROWSTRON Better Never Than Late: Meeting Deadlines in Datacenter Networks. In: SIGCOMM. ACM, 2011.
- [65] J. ZHOU, M. TEWARI, M. ZHU, A. KABBANI, L. POUTIEVSKI, A. SINGH, AND A. VAHDAT WCMP: Weighted Cost Multipathing for Improved Fairness in Data Centers. In: EuroSys. ACM, 2014.