

Marc Bruyère

RESEARCHER · NETWORK COMPUTER

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“Getting a researcher’s mindset right with 20 years of experience in computer network to designed, installed, configured and maintained complex networks.”

Education

PhD in Computer Networking

LAAS CNRS

Toulouse, France

Oct 2012 - PRESENT

- Opening new frontiers : Software Defined Networking to the Internet exchange point

Cisco Certification Internetworking Expert in Routing and Switching

CISCO TRAINING AND CERTIFICATION

Brussels, Belgium

Oct 2002 - PRESENT

- The CCIE certifies the skills required of network engineers to plan, operate and troubleshoot complex, converged network infrastructures on a wide variety of Cisco equipment.
- Recertified with written 350-080 Data Center in August 2015.

Master Degree in computer networking and telecom

UPSSITECH SYSTEM TELECOM AND RÉSEAU INFORMATIQUE - UNIVERSITY PAUL SABATIER

Toulouse, France

Sept 1998 - June 2001

- Left my job at Club-Internet to learn.

Research experience

ENDEAVOUR - Towards a flexible software-defined network ecosystem

LAAS CNRS

Toulouse - France

Jan. 2015 - PRESENT

- Surveyed the Internet exchanges ecosystems.
- Contributed to various deliverables of the project.
- Developed the architecture Internet eXchange switching fabric Umbrella.

ToulX Software Defined Networking

LAAS CNRS

Toulouse - France

Sept. 2014 - PRESENT

- Investigated and designed an optimal Internet exchange switching fabric oriented operator using OpenFlow.
- Deployed and operated the first full OpenFlow European Internet Exchange Point.

Software Defined Networking for SatCom

LAAS CNRS - CNES RESEARCH & TECHNOLOGIES

Toulouse - France

Jun. 2013 - Dec. 2015

- Explored new architecture with SDN to propose new virtualized services for broadband satellite networks.

Open Source Network Tester

LAAS CNRS

Toulouse Cambridge - France UK

Jun. 2013 - Jun. 2014

- Influenced the low level Hardware designed
- Tested and evaluated the first Open Source Network Tester based on the NetFPGA10G platform.

ALIEN FP7 - Abstraction Layer for Implementation of Extensions in Programmable Networks

LAAS CNRS - DELL FRANCE

Toulouse - France

Dec. 2011 - Jun. 2014

- Formulated a networks abstraction mechanism to converge control and management plan for interoperability of heterogeneous network elements
- Established the first DELL european research project granted by EC FP7
- Experimented the DELL split DataPlane prototype switch with XDPD from ALIEN BiSDN
- Unique DELL contributor for all ALIEN deliverables

Nuclear Physic data acquisition network fine grained monitoring

CERN LHCb - LAAS CNRS - DELL FRANCE

Geneva - Toulouse

Oct. 2012 - Apr. 2013

- Studied the time structure of the CERN LHCb DAQ network, placing NetFPGA probes into the running network.

NetFPGA BootCAMP

STANFORD UNIVERSITY

Palo Alto - USA

Aug. 2011

- Tried to program in Verilog the Local Id Separation Protocol encap/decap mechanism for the NetFPGA-1G platform.

Professional experience

DELL - Force10

TECHNICAL CONSULTANT

EMEA

Jul. 2011 - Oct. 2012

- Defended my original ideas to the DELL executives to get their approval. ALIEN FP7 grant got approved.
- Drafted various innovations open hardware ideas.
- Provided technical support to all EMEA sales team for the largest EMEA customers.

Force10 Networks

EMEA TECHNICAL ENGINEER

EMEA

Jul. 2007 - Jul. 2011

- Provided technical support to all EMEA sales team for the largest EMEA customers.
- Visited monthly the CERN Computer Center & LHCb & Atlas networks teams.
- Leading the beta testing program for the 3rd generation high density chassis Exascale at CERN.
- Staged and installed HPC networks for EPFL, ETH Zurich, Phillips Morris International and the King Abdulha University Science and Technology in Saudi Arabia.
- Conducted Proof of Concept for the IXPs : BNIX, DE-CIX and for Telefonica, American Express, NYSE EuroNext.

AIRBUS - Dimension Data

TECHNICAL TEAM LEADER

Toulouse France

Dec. 2005, Jul. 2007

- Specified the new data center architecture.
- Supervised the proof of concept at Cisco - San Jose & London.
- Level 3 Network Support for AIRBUS CDN, DMZ and WAN.
- Improved the entire AIRBUS LAN Campus 1500 active devices with RC-OSPF, NTP, RSTP, TACACS features.
- Updated all the LAN Campus devices configuration to support IP Telephony.
- Wrote technical RFP and help pre sales team for high level technical questions.

Credit Suisse First Boston

NETWORK ENGINEER CONTRACTOR

Milan Italy

July. 2002, Dec. 2004

- Maintained the italian LAN, MAN, WAN and nomads solutions.
- Deployed the network for a new data center with its disaster recovery remote site.
- Migrated Milan MAN and the 35 italian agencies to improved stability.

Brainshare EMEA Novell Barcelone

NETWORK ENGINEER CONTRACTOR

Barcelona Spain

May. 2002, Jun. 2002

- Staged and deployed and operated the guest, registration and the Corporate WLANs.

Vivendi Universal Networks

NETWORK OPERATION CENTER ENGINEER CONTRACTOR

Paris France

Feb. 2002, May. 2002

- Technologies : MPLS, Frame Relay, ATM, Leased Line and ISDN.
- A massive world wide network managed through HP openview, CiscoWorks.
- Report of the network incidents with Remedy.
- Documenting new procedures.

Cisco Systems

NETWORK ENGINEER CONTRACTOR

London UK

Jul. 2001, Oct. 2001

- Network Engineer in the EMEA marketing team.
- Design, staged, configured, deployed and operated the Cisco events networks.
- CIO Summit Monaco Grimaldi Forum Nov. 2000 - 500 attendees.
- Sales Meeting Paris Palais des Congrès Sep. 2001 - 1500 attendees.
- Networkers CCIE CLC BellaCenter Copenhagen Oct. 2001 - 4000 attendees.

Cisco Systems

SYSTEM ENGINEER JUNIOR

Paris France

Jun. 2000, Jun. 2001

- Wrote technical replies for different RFP and RFI.
- Offered hands-on sessions for the new service providers for CPE and xDSL solutions.
- Documented CPE xDSL solutions.

Club Internet

HOTLINE TECHNICIAN AND SALE REPRESENTATIVE

Paris France

May. 1997, Apr. 1998

- Launched the french south west computer reseller sales network.
- HotLine technician support.

Presentation

2016 - Mar. Open Networking Summit , TouSIX first OpenFlow European IXP	Santa Clara USA
2015 - Nov. GEANT NREN Tech Workshop , Deployment of the SDN IXP - TouSIX	Paris France
2015 - Nov. RIPE NCC Meeting , ENDEAVOUR BoF - SDN for IXP	Bucharest Romania
2015 - Oct. EURO-IX Forum 27th , The Toulouse SDN IXP and TouSIX-Manager	Berlin Germany
2015 - Sep. France-IX General Meeting , The Toulouse SDN IXP deployment	Paris France
2015 - Apr. EURO-IX Forum 26th , The Toulouse SDN IXP	Marseille France
2014 - Nov. INSA , SDN Introduction	Toulouse France
2014 - Oct. EURO-IX Forum 25th , SIX : Sdn Internet eXchange	Bucharest Romania
2014 - Jun. EHSN , The Open Source Network Tester on NetFPGA10G	Hamburg Germany
2014 - Jan. UPSSITECH STRI , SDN for IXP	Toulouse France
2013 - Dec. JRES , Utilisation d'OpenFlow et des modules Split Data Plane de DELL pour traiter le DUID-MAC-spoofing des requetes DHCPv6	Montpellier France
2013 - Nov. CAPITOUL , SDN Introduction	Toulouse France
2013 - Nov. ENSEEIH , SDN for IXP	Toulouse France
2013 - Aug. Observe hack & Make , Reaching 40Km with 100Gbps using Arduino	Oudkarspel Netherlands
2013 - Mar. Technische Universitat Berlin Meeting , NetFPGA monitoring at the LHCb DAQ Network	Berlin Germany
2013 - Mar. Network Processor Workshop - ALIEN , Dell split data plane - OCTEON NPU	Berlin Germany
2013 - Feb. Seminaire IRIT , Open Hardware platforms for realtime monitoring	Toulouse France
2012 - Nov. Capitol du Libre , Quand le Software prend le controle des reseaux et que l'Open Hardware est une solution pour aller plus loin	Toulouse France

Publications

SUBMITTED

2016	Umbrella: Leveraging control data plane separation for more resilient IXP fabrics. , Bruyere, M., Antichi, G., Fernandez, E., Moore, A. W., Uhlig, S., & Owezarski, P.	ACM SIGCOMM
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CONFERENCE & WORKSHOP

2016	OpenFlow-based Migration and Management of the ToulIX IXP , Lapeyrade, R., Bruyere, M., & Owezarski, P.	MANI - IEEE IFIP
2015	OFLOPS-Turbo: Testing the next-generation OpenFlow switch , Rotsos, C., Antichi, G., Bruyere, M., Owezarski, P., & Moore, A. W.	IEEE - ICC
2013	Utilisation d'OpenFlow des modules Split Data Plane de DELL , Bruyere, M., Delavennat, D.	JRES
2013	Architecture for an open source network tester , Shahbaz, M., Antichi, G., Geng, Y., Zilberman, N., Covington, A., Bruyere, M., ... Owezarski, P.	ANCS - IEEE/ACM

JOURNAL & MAGAZINE

2015	Software Defined Networking and Virtualization for Broadband Satellite Networks , Bertaux, L., Medjah, S., Berthou, P., Abdellatif, S., Hakiri, A., Gelard, P. & Bruyere, M.	<i>Communications Magazine - IEEE</i>
2015	OSNT: Open source network tester , Antichi, G., Shahbaz, M., Geng, Y., Zilberman, N., Covington, A., Bruyere, M. , ... Owezarski, P.	<i>Communications Magazine - IEEE</i>
2013	Time Structure Analysis of the LHCb DAQ Network , Antichi, G., Bruyere, M. , Pérez, D. H. C., Liu, G., Neufeld, N., Giordano, S., ... Moore, A. W.	<i>Journal of Physics: Conference Series</i>

Program Committees

2015	EURO-IX Forum , Joined the Forum program committee.	<i>Toulouse - France</i>
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Extracurricular Activity

Snootlab SAS

CO-FOUNDER AND BOARD MEMBER

Toulouse - France

Jan. 2010 - PRESENT

- Designed the carrier grade 100Gbps Optical Amplifier - Snootlab Range Extender product for AMS-IX.
- Snootlab designs and develops electronic products with an Open Hardware and Open Source approach.
- Snootlab is specialized in the design of new shields for Arduino, Raspberry PI and others platforms.
- Snootlab disrupts maker, hacker and artist use electronic.

TETANEUTRAL.NET

CO-FOUNDER OF THE NON-COMMERCIAL ISP TETANEUTRAL.NET

Toulouse - France

Oct. 2010 - PRESENT

- TetaNeutral.net has hosting services and it is providing internet access with its own wireless MAN and ADSL to a large community of members around Toulouse City.
- TetaNeutral.net is part of the DIY ISP community to have citizens taking back their own local network.
- TetaNeutral.net strongly support Free Software and Hardware.

THSF : The largest french HackerSpace event

CO-FOUNDER OF THE TOULOUSE HACKERSPACE FESTIVAL

Toulouse - France

Mai. 2009 - PRESENT

- Launched on the model of the Chaos Computer Congress in Germany, an event mixing Artists, Hackers, and Makers coming from different horizon.
- Organized the 2-3 days conference program of all editions.
- Member of the CCC and NOC CCC from 2007

Astrophysics & Cosmology

PASSED AN UNIVERSITY DEGREE IN ASTROPHYSICS & COSMOLOGY TO BROAD MY KNOWLEDGE

Orsay - France

1995 - 1996

- Enthusiast about space and cosmology from my early age.

Rocketry & Space projects

FOUNDER AND PRESIDENT OF THE SPACE CONCEPT ORGANIZATION

Toulouse - France

1986 - 1992

- Cooperated to the project Cyline with The "Institut de Mécanique des Fluides de Toulouse" (IMFT) an academic research laboratory.
- Experimented Taylor-Couette flow in weightlessness in the Caravelle ZeroG flight for the project Cyline.
- Constructed the French-Russian rocket Olga with confirmed russian engineers. Olga was launched in the World Wide Launching Campaign (WWLC) 1992 in Mourmelon le Petit in France.
- Experimented reduced-gravity effect with 3 different rockets Baka I & II and Ohka.
- Won the first prize with the rocket TOP-X in the CNES design, make a launch rocket contest.