Data Center
Converged And Virtual Ethernet Switching
DC CAVES - Introduction

Renato Recio

Thanks to our Host - **Prosper Chemouil and Orange Labs**

Thank You!

Program Committee → Thanks for your help

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- **Renato Recio, Program Committee Chair, IBM, USA**

Agenda

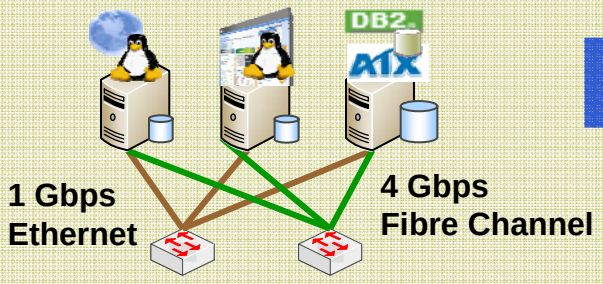
Time	Description	Speakers
9:00 - 9:30	On-site registration	
9:30 - 9:45	**Opening Remarks**	P. Chemouil & R. Recio
9:45 - 10:15	**Invited Keynote - Data Centre Networking at Orange**	
10:15 - 10:45	**Coffee Break**	
10:45 - 12:45	**WS 1 - Converged Data Center Network - Scalability**	
10:45-11:15	Addressing the Scalability of Ethernet with MOOSE	M. Scott, A. Moore and J. Crowcroft
11:15-11:45	Scaling-out Ethernet for the Data Center	Y. Haviv , M. Lipshteyn and O. Gerlitz
11:45-12:15	Benchmarking the Ethernet-Federated Datacenter	M. Gusat, C. DeCusatis, C. Minkenberg, L. McKenna, K. Bhardwaj, G. J.
12:15-12:45	Fibre Channel over Convergence Enhanced Ethernet Use Cases	D. Eisenhauer and R. Recio
12:45 - 14:15	Lunch	

- Lunch will be provided to all workshop participants in a nearby restaurant.

Agenda… Continued

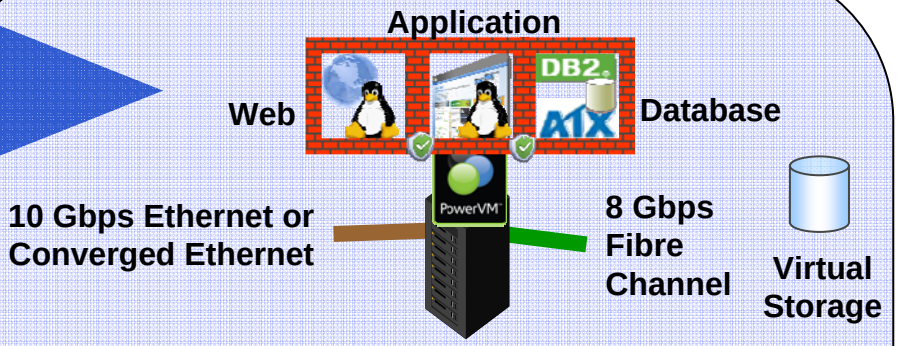
Time	Description	Speakers
14:15 - 15:15	**WS 2 - Converged Data Center Network - Performance**	
	Network Performance Considerations in Virtualized Data Centers	M. Beck and M. Kagan
	OSF – Open Service Framework	A. Gorti and V. Pandey
15:15 - 15:30	**Coffee Break**	
15:30 - 17:00	**WS 3 - Convergence and Virtualization at the Access Layer**	
	Introduction to VNTag	J. Pelissier
	A General Purpose API for iWARP and InfiniBand	R. D. Russell
	Automated Ethernet Virtual Bridging	R. Recio and O. Cardona

DC CAVES Workshop Background/Overview



- **From a physical compute model that has:**
  - VMs held captive by low bandwidth links & manual network configuration
  - Few Virtual Machines (VMs) per server
  - Using lower bandwidth links
  - Sprawl of manually intensive, expert based IT management tools
  - Poor image life-cycle management tools
  - Physical appliance sprawl

- **Expense issues with this model:**
  - High capital expenses due to under utilized servers and multiple fabrics
  - High operational expenses due to manual administration of many management tools.



- **To a virtualized, Dynamic Infrastructure model that:**
  - Has simpler, **integrated & virtualized appliances and systems**
  - Has **many** highly utilized servers, each with **many VMs**; using virtual storage, networks & appliances
  - Is enabled by high bandwidth links and migrating to **virtual & converged fabrics**
  - Includes new, "faster time to value" Cloud Building Block (CBB) Multi-Rack acquisitions

- **The value of this new model is:**
  - Lower capital expenses through higher server, storage and network utilization.
  - Lower operational expenses through **automated & integrated management** that optimizes and automates Data Center infrastructure and delivers self configured services to the business.

DC CAVES Workshop Scope

- The workshop is intended to serve as a forum to present the latest work by researchers and developers from both academia and industry, in the areas of:
  - Server network virtualization infrastructure
  - Physical switch virtualization (including fabric convergence) infrastructure

- Server virtualization infrastructure includes:
  - Layer-2/3/+ switching technologies performed within the server

- Physical switch virtualization and convergence infrastructure includes:
  - Layer-2/3/+ fabric virtualization technologies, such as VLANs, MPLS, VPLS, Switch Stacking and mechanisms that partition a single physical switch into multiple virtual switches; and
  - Storage and Ethernet convergence technologies, such as iSCSI, NAS, FCoE and FC over MPLS.

DC CAVES Workshop - Areas of Interest

- Server virtualization infrastructure
  - Automation of virtual server network identity management
  - Enhanced virtual server network access and traffic controls
  - Networking technologies to enable virtual server migration within a DC & across DCs
  - Security plane infrastructure virtualization
  - Enhancements to virtual server switches
  - Offloading of virtual switching to external fabrics
  - Converged fabric reference services architectures
  - Future directions

- Virtual & converged fabric infrastructure
  - Overall network virtualization & performance
  - Performance evaluation of converged iSCSI, NAS and emerging FCoE fabrics
  - Converged fabric security considerations
  - Transport stack options for converging Inter-Process Communication (IPC) traffic
  - Additional Ethernet Quality of Service enhancements needed for converged environments
  - Performance and fault event management for converged fabrics
  - Converged fabric management infrastructure and reference services architectures
  - Future directions

Logistics

- Each attendee will receive a CD with the workshop papers and the full version of ITC 21 Papers.
- Attendees also registered to ITC 21 will get the overall material and badge for ITC 21 as well.
- ITC 21 Program is available at http://www.i-teletraffic.org/itc21/technical-program/