

Enabling UDP Multicast in Cloud IaaS: An Enterprise Use Case

Authors : Patrick J. Kerpan, Ryan C. Koop, Margaret M. Walker, Chris P. Swan

Abstract : The User Datagram Protocol (UDP) multicast is a vital part of data center networking that is being left out of major cloud computing providers' network infrastructure. Enterprise users rely on multicast, and particularly UDP multicast to create and connect vital business operations. For example, UDP makes a variety of business functions possible from simultaneous content media updates, High-Performance Computing (HPC) grids, and video call routing for massive open online courses (MOOCs). Essentially, UDP multicast's technological slight is causing a huge effect on whether companies choose to use (or not to use) public cloud infrastructure as a service (IaaS). Allowing the 'chatty' UDP multicast protocol inside a cloud network could have a serious impact on the performance of the cloud as a whole. Cloud IaaS providers solve the issue by disallowing all UDP multicast. But what about enterprise use cases for multicast applications in organizations that want to move to the cloud? To re-allow multicast traffic, enterprises can build a layer 3 - 7 network over the top of a data center, private cloud, or public cloud. An overlay network simply creates a private, sealed network on top of the existing network. Overlays give complete control of the network back to enterprise cloud users the freedom to manage their network beyond the control of the cloud provider's firewall conditions. The same logic applies if for users who wish to use IPsec or BGP network protocols inside or connected into an overlay network in cloud IaaS.

Keywords : cloud computing, protocols, UDP multicast, virtualization

Conference Title : ICNCC 2015 : International Conference on Networks, Communication and Computing

Conference Location : Chicago, United States

Conference Dates : October 08-09, 2015