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Using Network Architecture Virtualization Concepts to Build Tunnel-based BGP Emulation Testbed: A Study Case

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Since the global network continues to grow at a fast pace, the
inter-connection becomes more and more complicated to support reliable transmission. Meanwhile, the prosperity of network application service is getting increasing expanding as well. This brings more concerns and attractions on using software-defined concepts to make wide-area network to
be optimized and secured. However, collecting and manipulating BGP routes from/to global network for experiment is a challenge. Researchers may have to spend lots of time and cost in testbed conduction, and they also have to establish peering connections to other networks. Hence, this research aims to use an essential way to develop a tunnel-based BGP testbed to support Software-Defined WAN experiments, trying to satisfy the research and education purposes of global network exploration.

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