

# ANYCon 2017 Talk – VLAN Hopping, ARP Poisoning and Man-In-The-Middle Attacks in Virtualized Environments

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## ANYCon Invited Talk

I have been invited to give a talk on my research at the upcoming [ANYcon](#) InfoSec and Hacking conference which will be held in Albany, NY from June 16th – 18th. This is a new conference bursting into the InfoSec scene, and is shaping up to be similar in size and spirit to other family oriented mainstream InfoSec conferences like [DerbyCon](#) and [BSides](#). The talk abstracts are starting to pop up on the [Agenda](#) page, and my talk is listed in the [Offensive Track](#).

While your hanging in Albany that weekend you may also want to stay a few extra days and check out the [Dead & Company](#) concert that will be at [SPAC](#) on June 20th!

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## DEF CON 24 Presentation: VLAN

# Hopping, ARP Poisoning, & Man-in-the-Middle Attacks in Virtualized Environments

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## DEF CON 24 DEMO: Double Tagging VLAN Hopping Attack Against the Microsoft Server 2012 Hyper-V Cisco Nexus 1000v Virtual Network Using One Physical Switch

This post demonstrates the effects of using a double tagging VLAN hopping attack to send an ICMP packet to a virtual machine located on a separate VLAN than the physical attacking system. In this scenario the attacker is using a physical Kali 2.0 system connected to a native vlan access port on a Cisco 2950 switch and targeting a virtual machine located on a separate VLAN within the Microsoft Server 2012 Hyper-V hypervisor environment using the Cisco Nexus 1000v virtual switch.

This experiment was performed on seven different hypervisor/virtual network configurations in order to perform a systematic evaluation of the effects across all of the major enterprise level virtualization platforms. The following

network diagram illustrates the configuration used for each of the experiments:



The following video walks through the attack process and results.

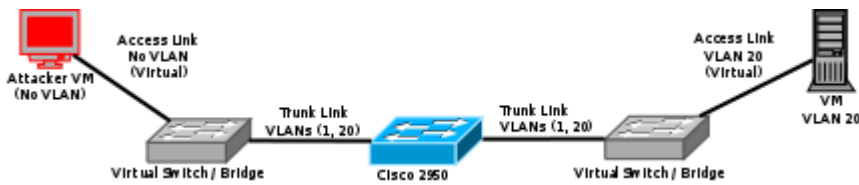
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## **DEF CON 24 DEMO: Double Tagging VLAN Hopping Attack Between Two Virtual Networks With a Cisco 2950 Switch in the Middle**

This post demonstrates the effects of using a double tagging vlan hopping attack to send an ICMP packet from a virtual machine located in one hypervisor environment to another virtual machine located in a separate hypervisor environment connected to the same physical switch. In this scenario the attacker is using a virtual Kali 2.0 system located within the Citrix XenServer hypervisor environment and targeting a virtual machine located on a separate VLAN within the ProxMox hypervisor environment.

This experiment was performed on seven different hypervisor/virtual network configurations in order to perform a systematic evaluation of the effects across all of the major

enterprise level virtualization platforms. The following network diagram illustrates the configuration used for each of the experiments:

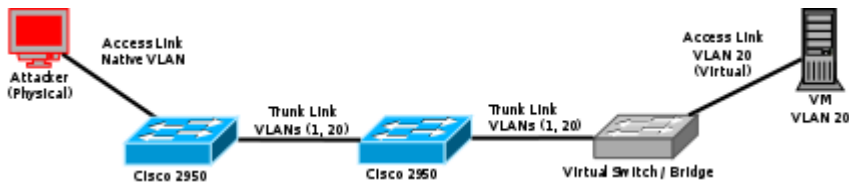


The following video walks through the attack process and results.

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## **DEF CON 24 DEMO: Double Tagging VLAN Hopping Attack Against the Proxmox Virtual Network Using Two Physical Switches**

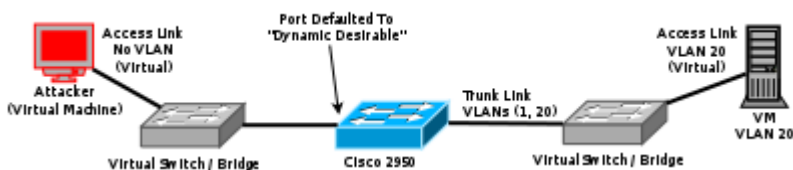
This post demonstrates the effects of running a Double Tagging VLAN Hopping attack against the ProxMox hypervisor environment. In this scenario there are two Cisco 2950 switches in between the attacker and the virtual network. The experiment was performed on seven different hypervisor/virtual network configurations in order to perform a systematic evaluation of the effects across all of the major enterprise level virtualization platforms. The following network diagram illustrates the configuration used for each of the experiments:



The following video walks through the attack process and results against a virtual machine hosted within the ProxMox hypervisor environment.

# DEF CON 24 DEMO: Switch Spoofing Attack Against a Cisco 2950 Switch from the VMWare ESXi 6.0 Hypervisor Environment

This post includes a demo video which illustrates the effects of a Switch Spoofing attack launched from within a virtualized networking environment. The experiment was performed on seven different hypervisor/virtual network configurations in order to perform a systematic evaluation of the effects across all of the major enterprise level virtualization platforms. The following network diagram illustrates the configuration used for each of the experiments:



The following video walks through the attack and results under

VMWare ESXi 6.0 using the standard ESXi virtual switch.

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# **DefCon 23 Presentation: Exploring Layer 2 Network Security in Virtualized Environments**