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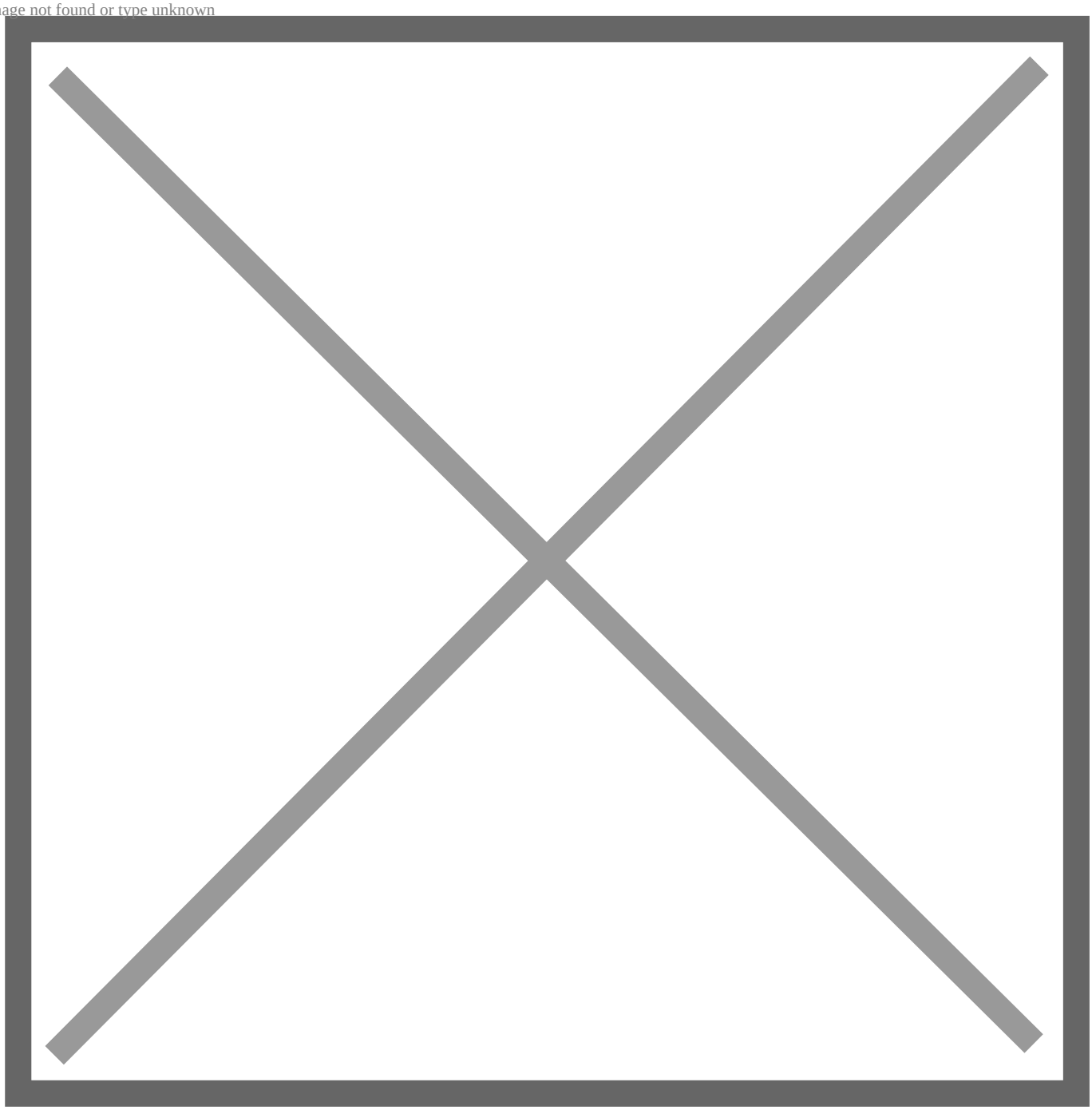

Everything you need to know about Cisco Nexus 1000V switches for VMware and vSphere #NB Tech A12

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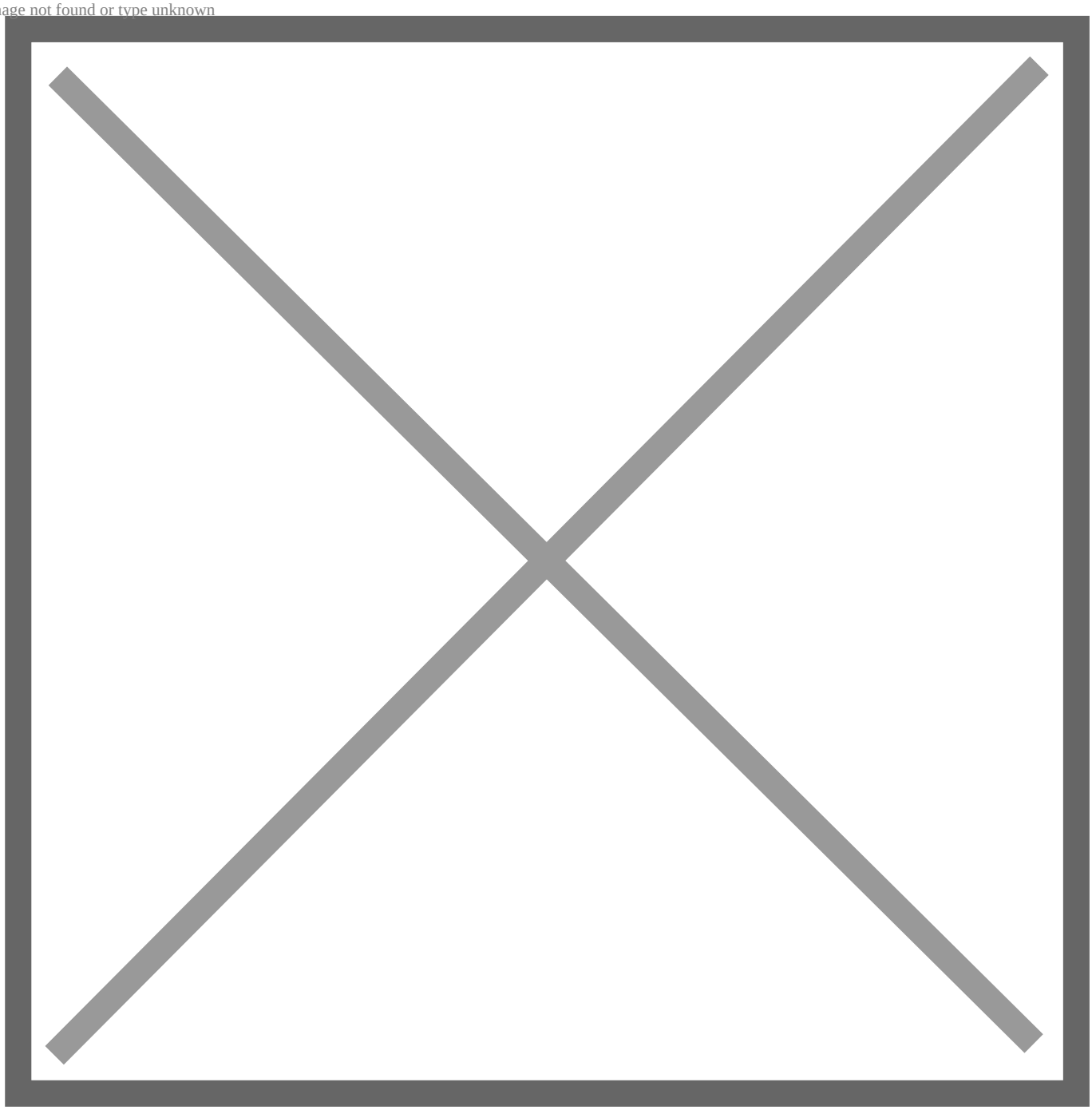

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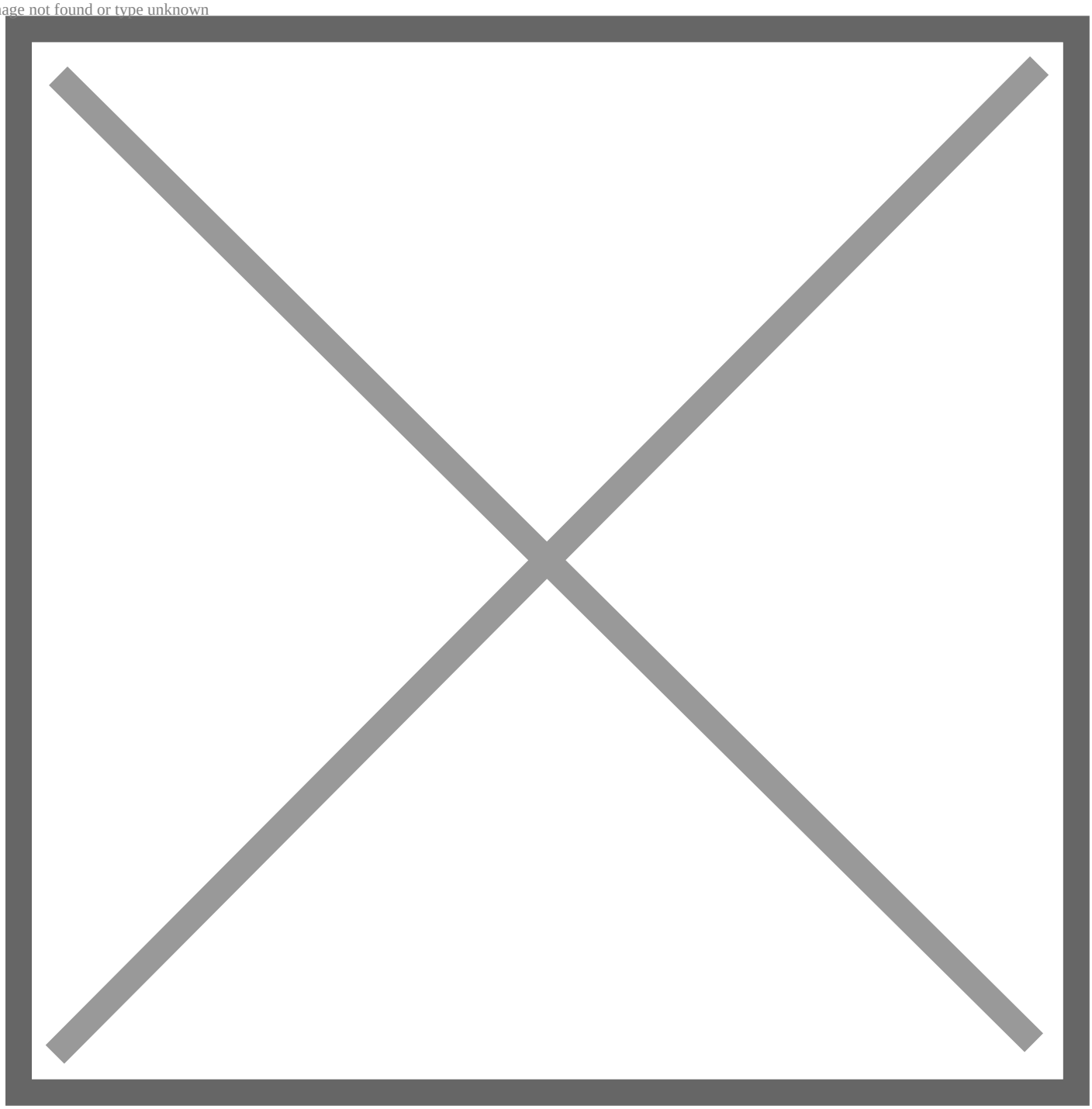

Cisco Nexus 1000V series switches have brought a new revolution in virtual switching. Cisco Nexus 1000V switches for VMware and vSphere are exactly **virtual machines which give access to intelligent software** – Switches. Cisco has especially designed Cisco Nexus 1000V series switches for **accelerating the server virtualization** as well as **multi-tenant cloud deployment** in operationally transparent and secure manner. Cisco Nexus 1000V Series switches allow extending network edge to the virtual machines and hypervisor. In addition, the switch is designed to scale for cloud-based networks.

Know in detail about the architecture of Cisco Nexus 1000V

There are majorly two components of Cisco's 1000V series switches namely – **Virtual Ethernet Module (VEM) and Virtual Supervisor Module (VSM)**. Both the modules have their own importance in the architecture of the switch. Below listed is brief about the two major components of the Cisco Nexus 1000V series switches.

Virtual Ethernet Module

- It runs inside hypervisor and is a part of hypervisor software. For performing networking functions and layer two switching, Virtual Ethernet Module (VEM) collects the configuration information from Virtual Supervisor Module (VSM). In case the communication between VEM and VSM is lost, then there is a Nonstop Forwarding capability in VEM which continues to switch the traffic on the basis of previously known configurations.

Virtual Supervisor Module

- It manages the multiple Virtual Ethernet Modules. VSM performs the configuration which is automatically transferred to the Virtual Ethernet Module. The Virtual Supervisor Module is integrated with orchestration and cloud management tools which allow the Network Administrator to get benefited from the network configurations in Cisco Nexus 1000V series switches.

The features and the two editions of Cisco Nexus 1000V switches

Cisco Nexus 1000V Switches are available in two editions namely Advanced edition and Essential edition. Here is a brief description of the two editions of Cisco Nexus 1000V Switches for VMware and vSphere with their features.

Essential edition

- This edition is available without any cost and includes all the basic features of switching. Maximum of the layer 2 networking features are provided in this essential edition. The features provided in this edition include Cisco vPath, VXLAN, enhanced QoS feature, vTracker and a lot more. The free version allows the risk-free and the rapid adaption of the virtual network technology of Cisco in multiple or a single hypervisor environment.

Advanced edition

- This edition is available with the Cisco VSG and in addition provides numerous advanced security features. The value-added features provided in the advanced edition are IP source Guard, Dynamic ARP inspection, DHCP Snooping, Cisco TrustSec SGA Support. These extra features enhance the utility of the edition, but you have to spend a good sum of money for this edition.

Capabilities/Features of Cisco Nexus 1000V

Cisco Nexus 1000V series switches makes use of Cisco VN – Link technology for providing a single management model to virtual as well as physical network infrastructure. Below listed are special features and the capabilities of Cisco Nexus 1000V series switches –

> Virtual Machine Connectivity

Cisco Nexus 1000V series switches have port profiles which are the scalable mechanism used for configuration of networks with numerous virtual machines. Port profiles facilitate the easy creation as well as provisioning of the virtual machines. Through Port profiles, you can define policies for virtual machine network for various classes or types of virtual machine, and then you can apply the profile via VMware vCenter.

> Mobility of Network Properties and Security of Virtual Machine

Virtual Machine throughout its lifespan follows the security and the network policies which are defined in the port profile, no matter whether the virtual machine is restarted, hibernated, suspended or migrated. In the case of updating specific port, the live update is automatically provided to all virtual ports by Cisco Nexus 1000V series switches via same port profiles. Regulatory compliance becomes quite easier in migrating security and network policies with Cisco Nexus 1000V as security policy is continuously enforced via switch and defined similarly to a physical server.

> Cisco vPath architecture

Apart from traditional switching features, Cisco Nexus 1000V series switches also provide for Cisco vPath architecture and support virtualized network services via intelligent Traffic Steering and Performance Acceleration. In a network flow, intelligent Traffic Steering redirects the packet to a virtual service known as VSN (Virtual Service Node).

> VXLAN Support

In addition to providing support to VLAN based segments, Cisco Nexus 1000V series switches also provide support to VXLAN ways overlays segment. VXLAN stands for Virtual eXtensible LAN and is IETF suggested draft from various vendors and Cisco. Architecture is provided by VXLAN which can be used by customers for expanding cloud deployments.

> VXLAN Gateway

In order to create a single broadcast domain, a mechanism is provided by VXLAN gateway for combining VLAN based segment with VXLAN segment. VXLAN gateway is provided as a service node working on Cisco Nexus 1110-X, 1110-S, 1010-X, and 1010 appliances. Cisco Nexus 1000V has integrated service note and it appears like a module on the switch having a common management plan and common control.

> Non-disruptive operational model

Cisco Nexus 1000V is closely integrated with VMware, vCenter and thus it allows virtualization administrator to use VMware tools for provisioning virtual machines. In addition, Network administrators can operate as well as provision virtual machine network in a similar manner to physical network. Throughout the virtual server environment, these switches enforce consistent policy and configuration.

Cisco Nexus 1000V series switches are used during the training of CCNA Data Center Certification. In fact, if you have taken CCNA R&S certification training, then you just need to take training of 10 to 12 days more on Cisco Nexus 1000V series switches in order to appear for CCNA data Center exam.

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You can also talk to our Career Experts for more guidance on our toll-free number 1800-3070-7628, International students can reach out to us over +91-8745885377.

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