

Slide 1 - Virtual ZEN (VZEN) Overview



ZCCP-IA

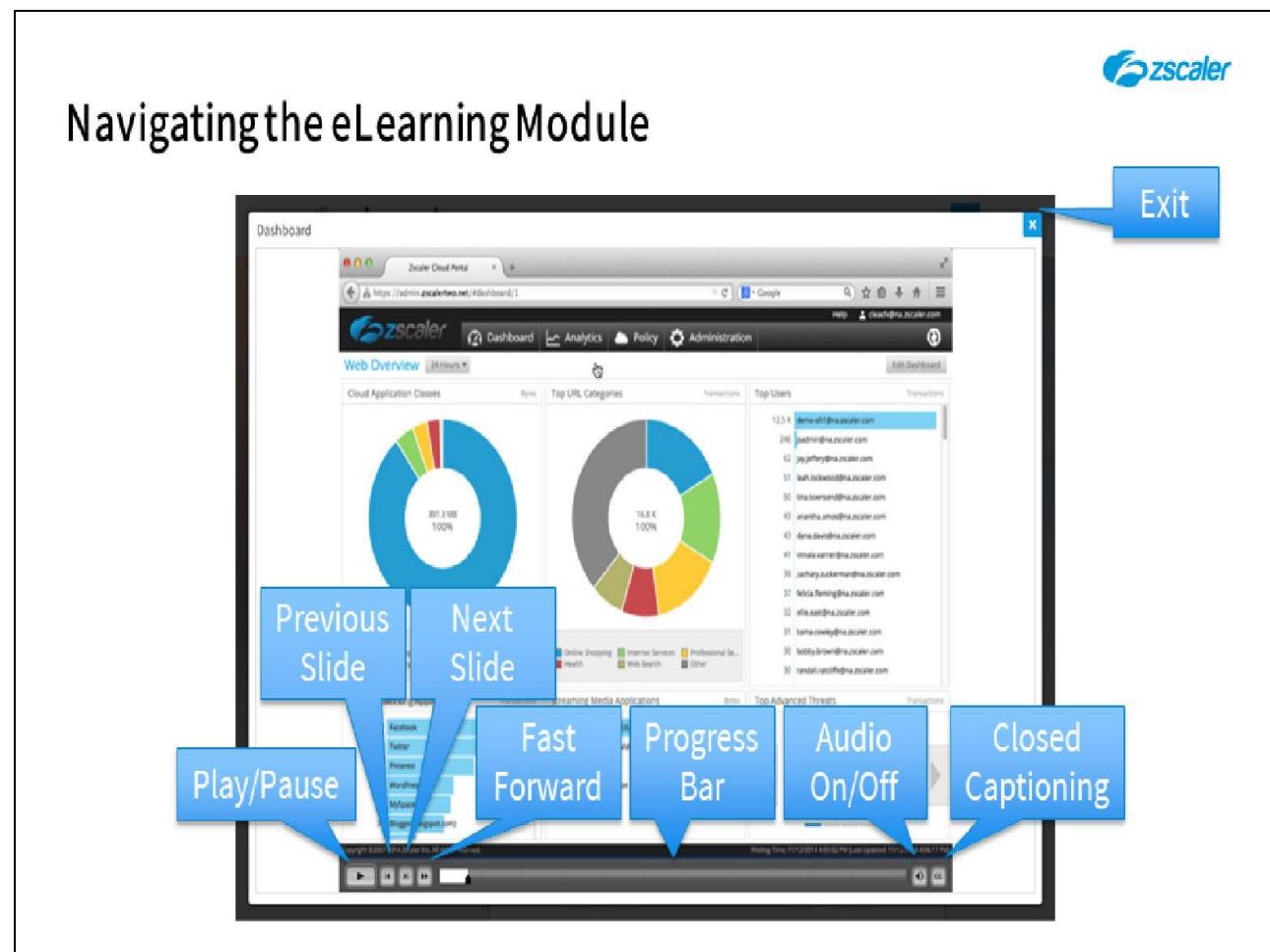
Virtual Service Edge

©2020 Zscaler, Inc. All rights reserved.

Slide notes

Hello and thank you for viewing this eLearning module on the Zscaler Virtual Service Edge.

Slide 2 - Navigating the eLearning Module



Slide notes

Here is a quick guide to navigating this eLearning module. There are various controls for playback including Play/Pause, Previous and Next Slide, and Fast Forward. You can also mute the Audio or enable Closed Captioning which will cause a transcript of the module to be displayed on the screen. Finally, you can click the “X” button if you wish to exit.

Slide 3 - Agenda

Agenda

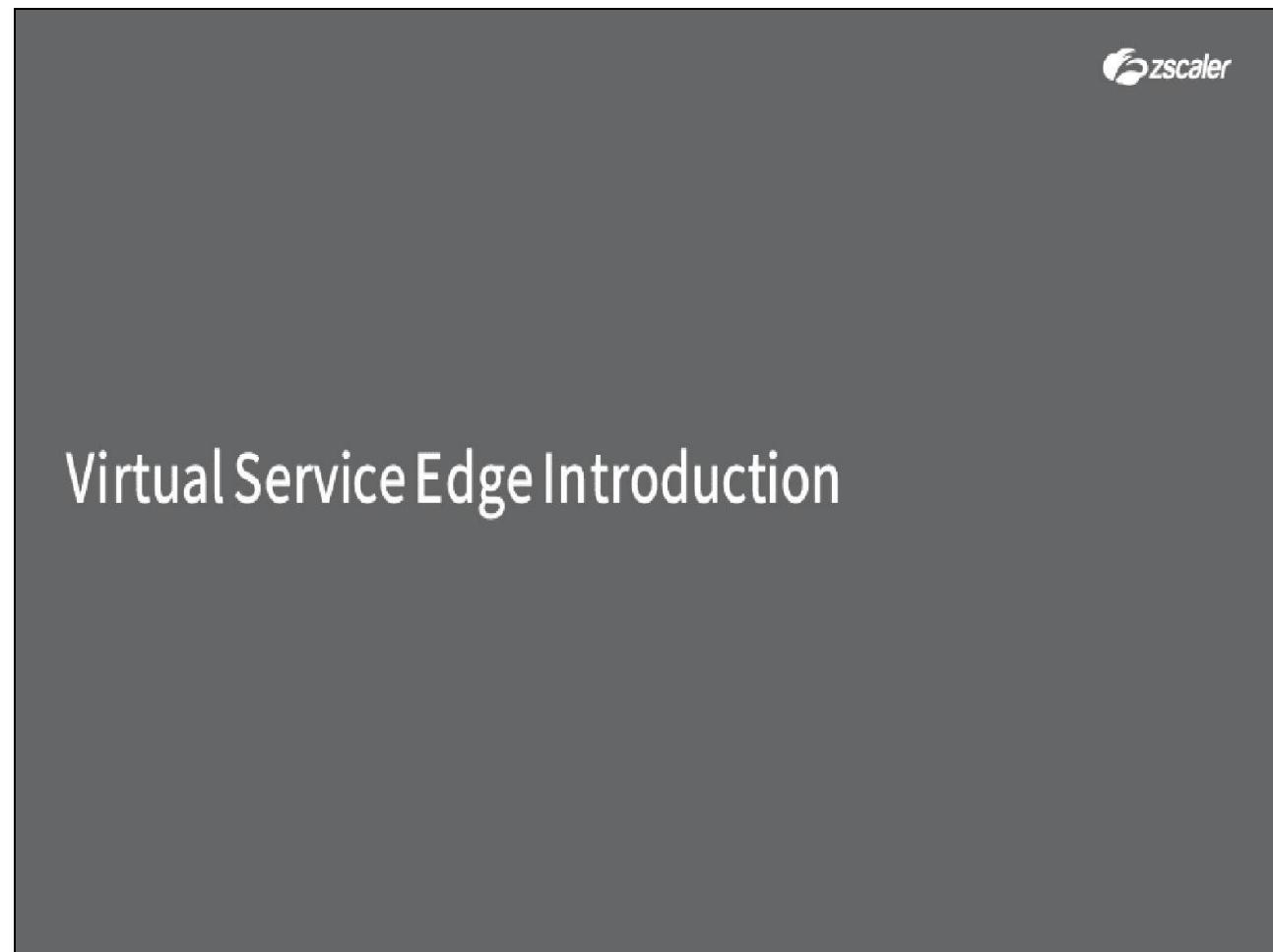


- Virtual Service Edge Introduction
- Virtual Service Edge Clustering
- Ease of Deployment
- Virtual Service Edge Sizing Guide and VM Specs
- Virtual Service Edge Monitoring
- Interactive Demo
- Configuring the Virtual Service Edge VM
- Troubleshooting

Slide notes

In this module, I will introduce you to the Virtual Service Edge, use cases, clustering multiple Virtual Service Edge nodes, Deployment, Virtual Service Edge VM specs and sizing guide, and Virtual Service Edge monitoring, followed by an interactive demo and a quiz.

Slide 4 - Virtual ZEN Introduction



Slide notes

Slide 5 - Virtual ZEN Solution



Virtual Service Edge Solution

- Virtual Service Edge software is downloaded and hosted in an organization's intranet / data center and are dedicated to an organization's traffic.
 - SW updates are managed automatically by Zscaler.
- Virtual Service Edge Use Cases



Locations with certain geopolitical requirements and regulations



Not in region for localized content



Poor latency to public ZEN (>70ms)



Need to maintain customer Source IP when Extranet access is based on it

Slide notes

A key component of the Zscaler cloud is the Zscaler Enforcement Node, or ZEN which are full-featured secure Internet gateways that provide integrated Internet security. They inspect all web traffic bi-directionally for malware, and enforce security, compliance, and next generation firewall policies.

ZENs are deployed in Zscaler data centers around the globe. So, no matter where your users are, at headquarters or at a branch office, or in a coffee shop, they can access the Internet from any device and the ZENs will protect their traffic and apply your corporate policies.

ZENs have significant fault tolerance capabilities. They are deployed in pairs in an active-active mode all over the world to ensure availability and redundancy. Zscaler monitors and maintains its ZENs worldwide to ensure 24/7 availability. They are located in Zscaler data centers which provide the highest level of data privacy and network security.

Zscaler always recommends that organizations forward traffic to the ZENs in the Zscaler cloud. However, some organizations may have certain requirements that may make forwarding their traffic to the ZENs in the Zscaler cloud less than ideal such as: Locations with certain geopolitical requirements and regulations, Applications that require an organization's IP address as the source IP address, Users who need to see localized content, Locations that experience high latency when connecting to public ZENs.

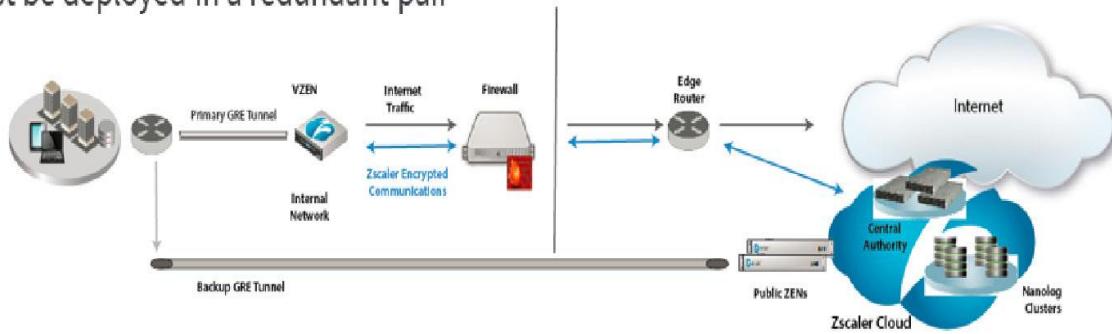
A Virtual Service Edge uses a virtual machine (VM) to function as a full-featured ZEN dedicated to your organization's traffic. A Virtual Service Edge performs the same service as the public ZENs in the Zscaler cloud, including support for features such as the Next Generation Firewall, Behavioral Analysis, and DLP. Virtual Service Edges are part of the Global Zscaler cloud. They communicate with the Zscaler cloud for user authentication and policy updates, and for logging and reporting. Thus, admins define policies only once, through the admin portal.

Slide 6 - Typical Deployment



Typical Deployment

- Virtual Service Edge is deployed on the customer internal network and do NOT require a public IP
- GRE tunnel is connected from an internal router to the Virtual Service Edge with a secondary tunnel to a public ZEN
- Virtual Service Edge establishes outbound connections to the Zscaler cloud
- PAC can also be used – return Virtual Service Edge cluster IP based on internal network IP
- Must be deployed in a redundant pair



Slide notes

A typical deployment is shown here. The Virtual Service Edge is deployed on the customers internal network and do not require a public IP. Traffic is forwarded to the Virtual Service Edge in a similar fashion as a customer would if sending traffic to a public ZEN instance. The Virtual Service Edge establishes outbound connections to the Zscaler Cloud and inbound connections are not required except for times where you may wish Zscaler TAC to assist in debugging. Virtual Service Edges are generally deployed as clusters with a minimum of two nodes. Additional nodes can be deployed for additional performance up to 20 nodes per cluster.

Slide 7 - Traffic Forwarding to VZEN



Traffic Forwarding to Virtual Service Edge

- Traffic is forwarded to a Virtual Service Edge in a similar manner as to the public ZEN nodes:
 - Dynamic GRE Tunnels supported from non-registered IP addresses
 - L2 forwarding supported
 - PAC forwarding; Virtual Service Edge IP as destination in the PAC file (no GeoIP proximity)

Slide notes

Virtual Service Edges are hosted within an organization's premise. Zscaler recommends that you deploy Virtual Service Edges behind your firewall, though you can deploy it in the DMZ as well. The following sections describe the different ways that your organization can forward traffic to a Virtual Service Edge cluster.

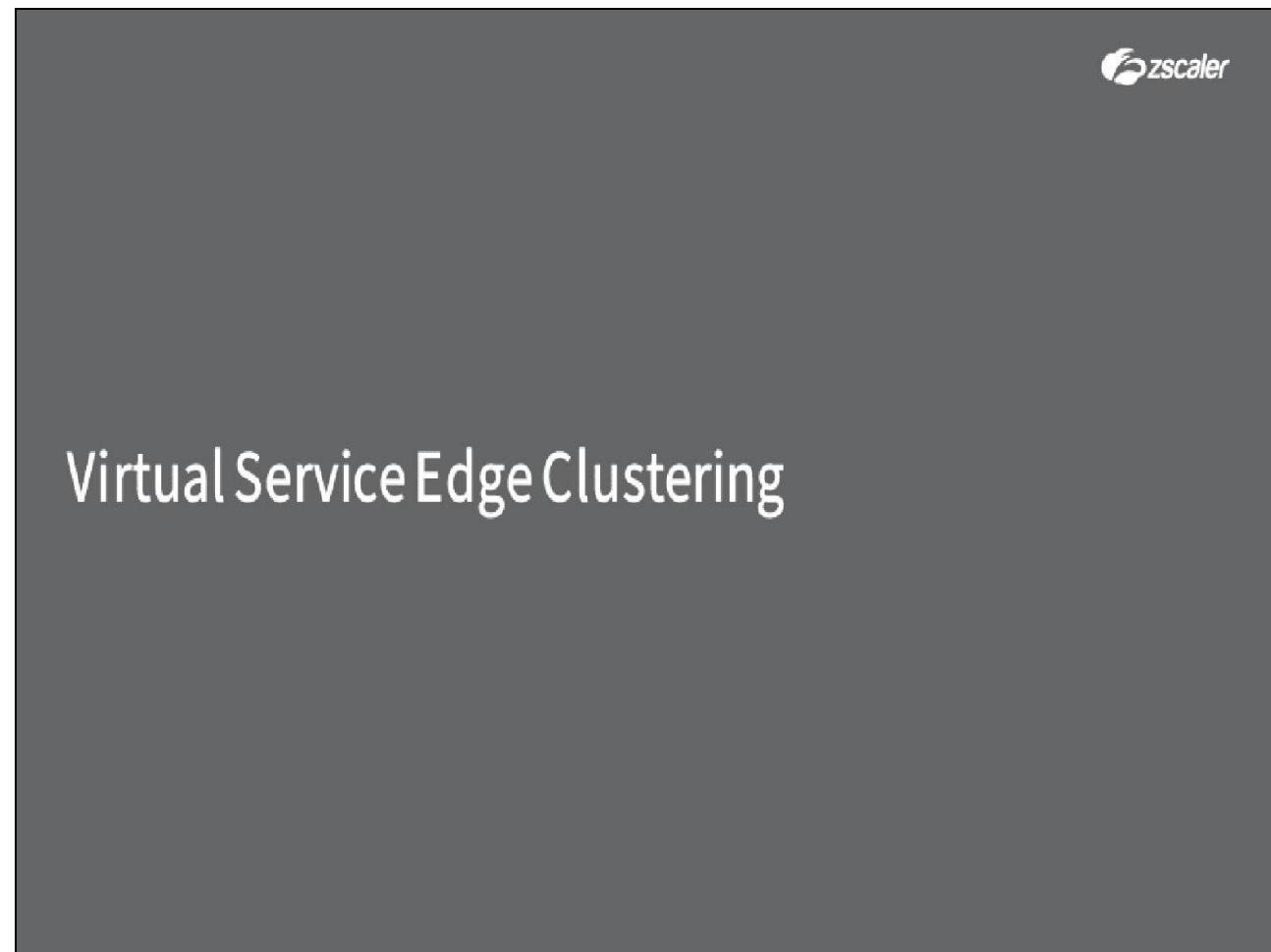
Traffic is forwarded to a Virtual Service Edge in a similar fashion as you would using public ZEN nodes in the cloud using GRE tunnels or PAC files. Zscaler recommends that you configure a GRE tunnel from your internal router to the Virtual Service Edge Cluster IP address. Because you are using internal IP addresses for the tunnel, you will not need to contact Zscaler to register the tunnel IP addresses. Though a Virtual Service Edge cluster provides failover and redundancy, you can also configure a backup GRE tunnel between the internal router and a public ZEN.

You can configure your users' devices to use a PAC file to forward their traffic to the internal Virtual Service Edge. You can also configure your PAC file to failover to the Zscaler public ZENs should your Virtual Service Edge become unavailable.

It is also possible to have users browse through the Virtual Service Edge while in the office and automatically switch over to a public ZEN when the user is out of the office. An example configuration can be found in the Virtual Service Edge configuration guide located on the Zscaler Help portal.

Traffic can also be forwarded to the Virtual Service Edge at Layer 2 if the router is on L2 reachable from the Cluster IP via Policy Based Routing to forward traffic to the Cluster IP.

Slide 8 - VZEN Clustering



Slide notes

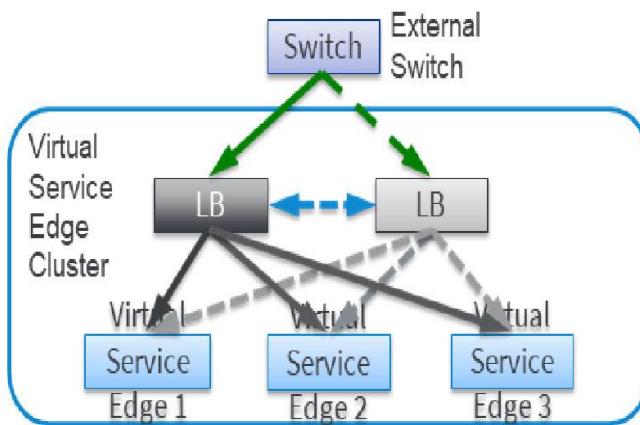
Virtual Service Edges have the capability to run in Standalone mode though this is generally only done in a Proof of concept test and is not supported in production. In production, Clustering is used for redundancy and increased performance.

Slide 9 - VZEN Clustering

Virtual Service Edge Clustering



- Zscaler LB technology provides Active / Passive redundancy
 - Uses CARP (Common Address Redundancy Protocol) with a floating IP
 - Virtual Service Edge instances are load balanced and have active-active redundancy
 - Horizontal scaling for increased load handling – just add more Virtual Service Edge s to the cluster
 - Software downloaded via the Admin interface



Slide notes

Virtual Service Edges are deployed in a cluster, which requires at least two Virtual Service Edges for active-active redundancy and load balancing. As shown in the diagram below, each Virtual Service Edge has a load balancer bundled in. The load balancer is specifically designed to distribute user traffic evenly across the Virtual Service Edges.

To ensure high availability, the Zscaler load balancers use Common Address Redundancy Protocol (CARP) for active-passive fault tolerance. As shown in the diagram, all Virtual Service Edge instances in the cluster are active, and one load balancer instance is active at a time. The active load balancer receives ingress traffic through the cluster IP address and directs the traffic to the appropriate Virtual Service Edge. If the active load balancer instance fails, then the passive load balancer instance automatically takes over, ensuring no disruption in service.

Slide 10 - Ease of deployment



Ease of Deployment

Slide notes

Let's briefly examine how easy setup and deployment of Virtual Service Edge Clusters is.

Slide 11 - Ease of Deployment



Ease of Deployment

Deploy Anywhere

- Deploy in DMZ
- Deploy in internal network
- No need for static public IP

Simple to Configure

- Only outbound connections – nothing inbound from the cloud
- Zscaler doesn't need to login to the VM

Configuration

- Configure in cloud UI, all configuration is downloaded and topology adjusted automatically
- Local configuration limited to basic network information necessary to contact and authenticate to Zscaler

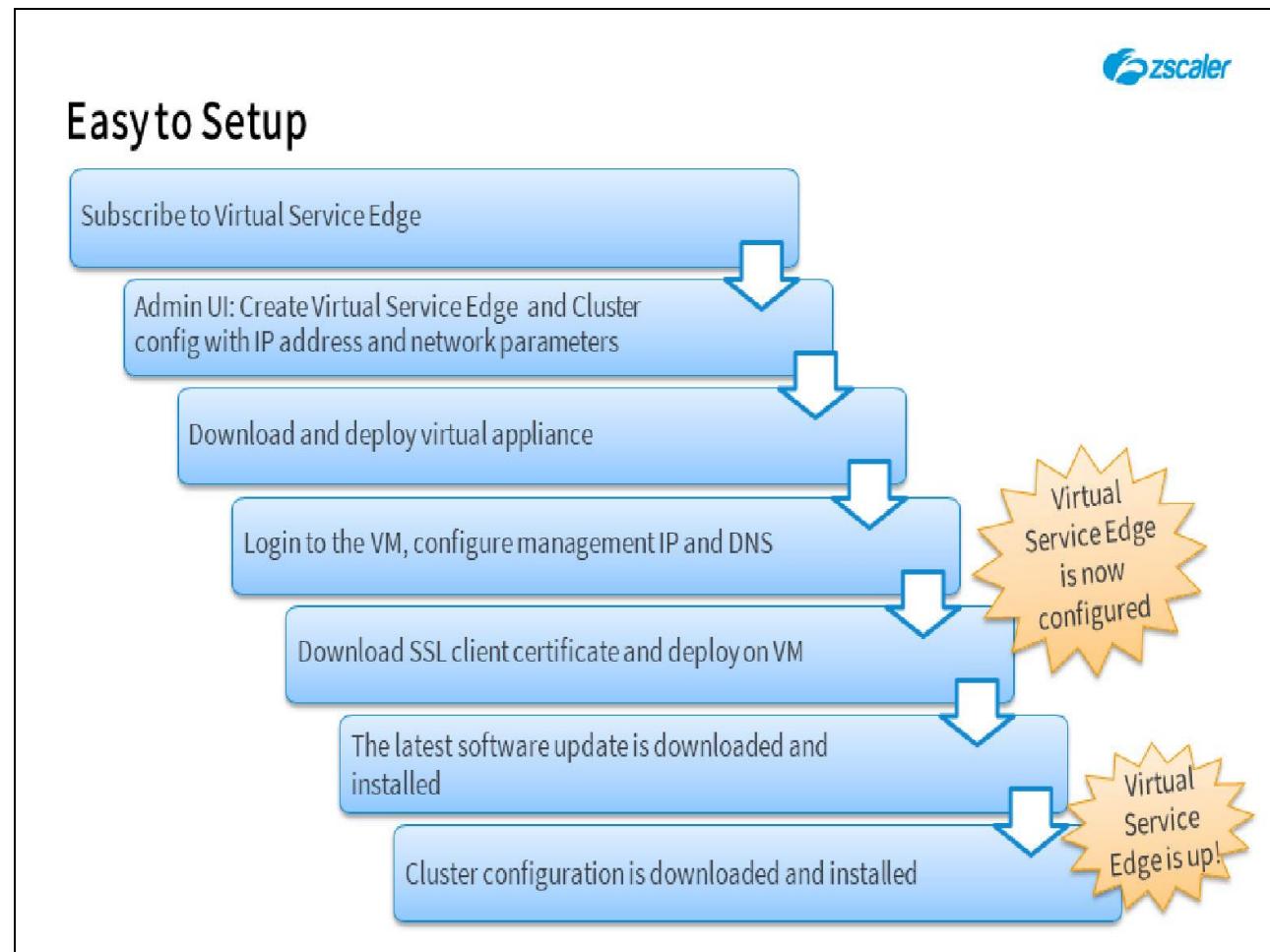
Maintenance

- Automatic updates from the cloud
- Customers have super-user (**root**) access to the VM

Slide notes

Virtual Service Edges are simple to deploy and can be located either in the DMZ or, more typically, in the internal network. They are simple to configure and typically only outbound connections to the Global Zscaler cloud are required. Configuration is done in the cloud UI and policies are pushed from the cloud to the Virtual Service Edge. Lastly, Virtual Service Edge software updates are automatic and kept in sync with the Global Zscaler cloud and customers have root access to the VM for local debugging. Zscaler TAC can also remotely troubleshoot and debug if access is permitted.

Slide 12 - Easy to setup



Slide notes

A Virtual Service Edge can be brought online with seven simple steps beginning with subscribing to the Virtual Service Edge service. Next, logging into the Zscaler Admin UI and creating the Virtual Service Edges and the Cluster config with the IP address and network parameters. Downloading and deploying the virtual appliance from the Zscaler Admin UI. Logging into the VM and configuring the management IP and DNS settings. Downloading the SSL client certificate and deploying it on the VM. And now the Virtual Service Edge itself is now configured.

Next, the latest software update is downloaded and installed on the Virtual Service Edge. And, lastly, the cluster configuration is downloaded and installed from the Zscaler Global Cloud.

Slide 13 - VZEN Sizing Guide and VM Specs



Virtual Service Edge Performance, VM Specs, and FW Rules

Slide notes

We will now look at Virtual Service Edge performance numbers, minimum required specs for the VM, and required outbound firewall rules for deployment.

Slide 14 - VZEN VM Requirements



Virtual Service Edge Performance

VM Package - single size

- Supports up to 600Mbps throughput
- SSL CPS with Acceleration Card : 3500 CPS
- SSL CPS without Acceleration Card : 400 CPS
- SSL Acceleration Card is recommended for deployments requiring a throughput of 100Mbps or greater.

Slide notes

As stated previously the VZEN VM download includes both the VZEN and the integrated Load Balancer. VM specs are shown here and applies to all three sizes. These specs are also displayed when downloading the VZEN VM from the Zscaler Admin UI.

Slide 15 - Virtual Service Edge VM Requirements



Virtual Service Edge VM Requirements

- VM Package**
 - One ZEN instance
 - One Load Balancer
- Host Requirements**
 - Hypervisor: VMWare ESX/ESXi
- VM Specs**
 - 64-bit Xeon or equivalent (at least 2.5GHz)
 - 32 GB RAM
 - 3 Virtual NICs
 - SSL Acceleration Card per VM: 1 x Marvell NITROX CNN3510-500-C5-NHB-2.0-G
 - 4 vCPUs (3 for ZEN, 1 for LB)
 - 500 GB Disk

Slide notes

As stated previously the Virtual Service Edge VM download includes both the Virtual Service Edge and the integrated Load Balancer. VM specs are shown here and are also available on the Zscaler Help Portal. These specs are also displayed when downloading the Virtual Service Edge VM from the Zscaler Admin UI. Last, for SSL performance an SSL Acceleration card is also required per VM. The recommended and supported card is the Marvel NITROX.

Slide 16 - VZEN Firewall Rule Requirements



Virtual Service Edge Firewall Rule Requirements

- Please visit <http://ips.zscaler<cloud name>.net/Virtual Service Edge> for the latest information on Firewall requirements and Zscaler Hub IP addresses

Source IP	Destination IP	Service Port	Description
vSE IP Addresses	Zscaler Hub IP	9422 (TCP)	Authentication and Policy Retrieval
vSE IP Addresses	Zscaler Hub IP	443 (TCP)	Download of software updates
vSE IP Addresses	Zscaler Hub IP	9431 (TCP)	Log transmission to Zscaler Nanolog for Analytics
vSE IP Addresses	Zscaler Hub IP	9422 (TCP)	vSE Network configuration download
vSE IP Addresses	Remote Support IP	12002 (TCP)	Reverse Tunnel for Remote Support Assistance from Zscaler. This feature is disabled by default, and must be explicitly enabled on the vSE. See the Troubleshooting Section in the vSE Guide for usage.
vSE IP Addresses	Local Nameserver IP	53 (TCP/UDP)	Name Resolution
vSE IP Addresses	All or Local NTP Server IP	123 (UDP)	Time sync with NTP Servers. vSE is extremely sensitive to VM and the cloud times being in sync. Please refer to the latest vSE Guide for configuring sync with local NTP Server.
vSE Proxy IP Address	Any	Any	Outbound Proxy/Firewall/Traffic Forwarding For Protected Traffic

Slide notes

Only outbound firewall rules are needed to permit the Virtual Service Edge to communicate with the Global Zscaler cloud. A list of outbound firewall rules is listed below. Please visit <http://ips.zscaler<cloud name>.net> for the latest information on Firewall requirements and Zscaler Hub IP addresses.

Slide 17 - VZEN Monitoring



Virtual Service Edge Monitoring

Slide notes

Virtual Service Edge can be monitored via SNMP via standard MIBs.

Slide 18 - SNMP Monitoring



SNMP Monitoring

- As Virtual Service Edge's are maintained by end-users and not Zscaler, monitoring of the Virtual Service Edge health is vital
- See the Zscaler Help Portal article titled "Monitoring Virtual Service Edge and VZEN Clusters" for complete details.

Supports SNMPv3

- Authentication and encryption supported

Performance Monitoring

- CPU
- Disk
- Memory
- Network Stats Mgmt Interface

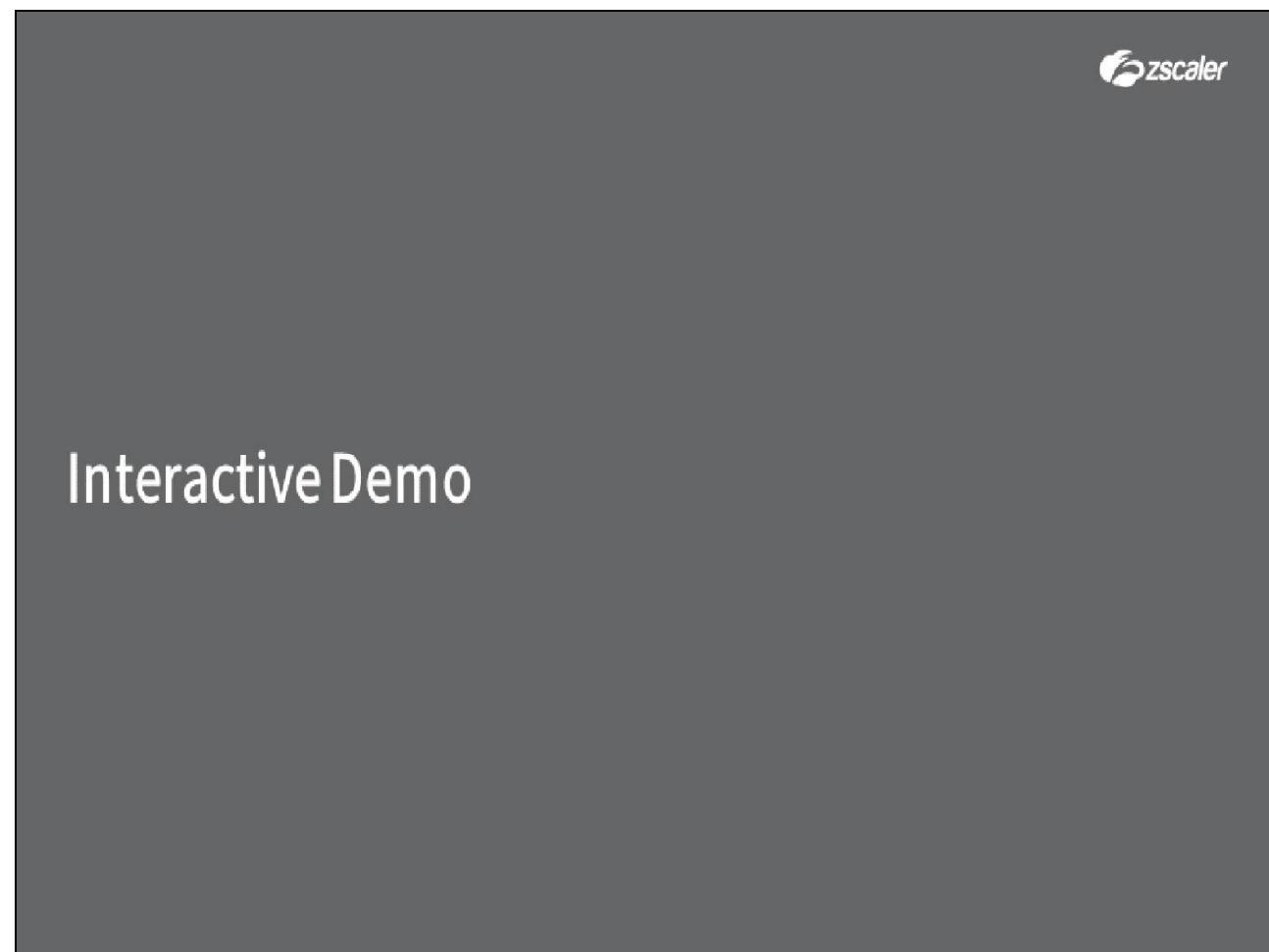
SNMP Traps (alerts)

- Process Monitoring
- Disk Monitoring
- System Load
- Interface Events

Slide notes

As Virtual Service Edges are maintained by end-users and not Zscaler monitoring of the Virtual Service Edges health by the end user is vital. SNMPv3 is used to monitor a Virtual Service Edge cluster. A Virtual Service Edges cluster includes an SNMP agent that collects data and stores it as objects in MIBs. You can query the objects in the MIBs to retrieve information about the Virtual Service Edges. The SNMP agent can also send traps (or notifications) to alert you when certain events occur in the Virtual Service Edges or on the network. Here is just a small sampling of the items that can be monitored via SNMP. For a complete listing of supported MIBs please see the Monitoring Virtual Service Edges document on the support portal.

Slide 19 - Interactive Demo



Slide notes

You will now participate in an interactive demo on configuring the Zscaler Admin UI to enable a Virtual Service Edge cluster. Configuring the Virtual Service Edge VM will also be shown though this section is not interactive.

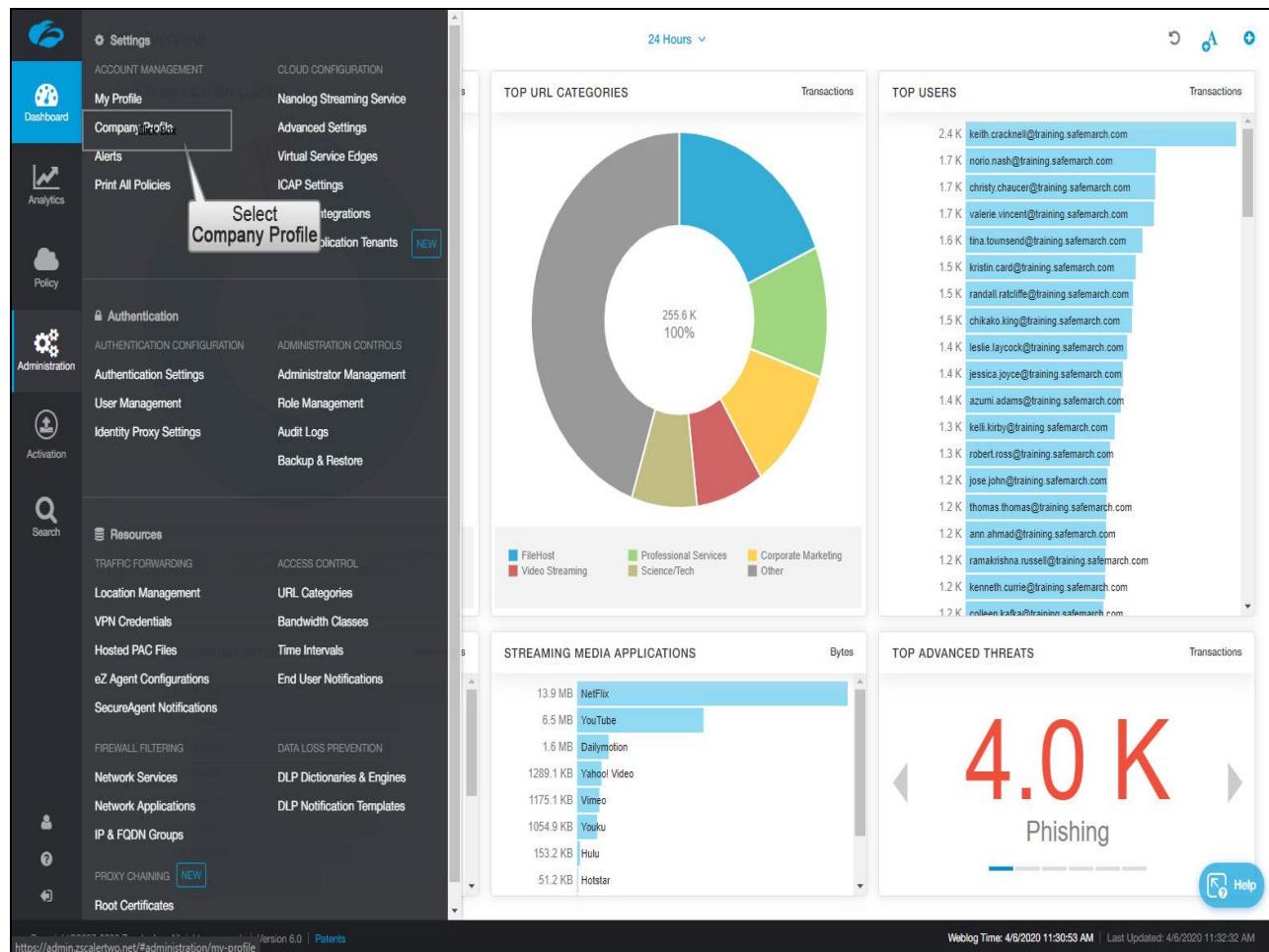
Slide 20 - Slide 20



Slide notes

Begin by checking that you have purchased the Virtual Service Edge subscription by going to **Administration**.

Slide 21 - Slide 21



Slide notes

Then Company Profile.

Slide 22 - Slide 22

The screenshot shows the 'Company Profile' section of the Zscaler Admin UI. On the left is a vertical navigation bar with icons for Dashboard, Analytics, Policy, Administration (selected), Activation, and Search. The main content area has a header 'GENERAL INFORMATION' and includes fields for 'Company ID' (zscalertwo.net-1703083), 'Name' (Training Zscaler), 'Domains' (training.safermarch.com), 'Address Line 1' (123 Main Street), 'Address Line 2' (empty), 'City' (Anytown), 'State' (CA), 'ZIP Code' (empty), and 'Country' (United States). A callout box highlights the 'SUBSCRIPTIONS' tab in the top navigation bar and points to a 'Select Subscriptions' button. At the bottom are 'Save' and 'Cancel' buttons, and a 'Help' link.

Slide notes

We will come back to the VM later once we have finished configuring the Zscaler Admin UI.

Slide 23 - Slide 23

The screenshot shows the 'Company Profile' section of the Zscaler interface. On the left, a vertical sidebar contains icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled 'Company Profile' and has tabs for 'ORGANIZATION' and 'SUBSCRIPTIONS'. A search bar at the top right includes a magnifying glass icon. Below the search bar is a table with 16 rows, each representing a subscription. The columns are labeled: No., Name, SKU, Status, Number of Licenses, Service Start Date (PST), and Service End Date (PST). The table also features a blue header row and a blue footer row containing a 'Help' button.

No.	Name	SKU	Status	Number of Licenses	Service Start Date (PST)	Service End Date (PST)
1	Analyze	ANA-I	Subscribed	100 Users	03/12/2015	12/30/2020
2	Cloud Identity Broker	Z-CLOUD-ID-BROKER	Subscribed	100 Users	10/21/2015	12/30/2020
3	Cloud Sandbox	Z-BA	Subscribed	100 Users	03/12/2015	12/30/2020
4	Comply	COM-I	Subscribed	100 Users	03/12/2015	12/30/2020
5	Custom Root Certificate	Z-CUSTOMROOTCERT	Subscribed	100 Users	03/12/2015	12/30/2020
6	Dedicated Proxy Ports	Z-PROXYPORTS	Subscribed	1 Proxy Ports	04/03/2015	12/30/2020
7	Firewall Advanced	Z-FIREWALL-ADVANCED	Subscribed	100 Users	03/12/2015	12/30/2020
8	Firewall Basic	Z-FIREWALL-BASIC	Subscribed	100 Users	03/12/2015	12/30/2020
9	Firewall Cloud IPS	Z-FIREWALL-IPS	Subscribed	100 Users	03/12/2015	12/30/2020
10	Firewall Full Logging	Z-FIREWALL-FULL-LOG	Subscribed	100 Users	03/12/2015	12/30/2020
11	ICAP	Z-ICAP	Subscribed	20 Servers	10/21/2015	12/30/2020
12	Manage - Advanced	MAN-II	Subscribed	100 Users	03/12/2015	12/30/2020
13	Manage - Bandwidth Control	MAN-III	Subscribed	100 Users	03/12/2015	12/30/2020
14	Manage - Standard	MAN-I	Subscribed	100 Users	03/12/2015	12/30/2020
15	Mobile Security	Z-MOBILE_SEC	Subscribed	100 Users	03/12/2015	12/30/2020
16	NSS	Z-LOGFEED	Subscribed	1 Servers	03/12/2015	12/30/2020

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Slide notes

Scroll down if necessary.

Slide 24 - Slide 24

The screenshot shows the 'Company Profile' section of the Zscaler interface. On the left is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled 'Company Profile' and contains a table of service subscriptions. The table has columns for No., Name, SKU, Status, Number of Licenses, Service Start Date (PST), Service End Date (PST), and a more options icon. A search bar and a help icon are also present.

No.	Name	SKU	Status	Number of Licenses	Service Start Date (PST)	Service End Date (PST)
1	Analyze	ANA-I	Subscribed	100 Users	03/12/2015	12/30/2020
2	Cloud Identity Broker	Z-CLOUD-ID-BROKER	Subscribed	100 Users	10/21/2015	12/30/2020
3	Cloud Sandbox	Z-BA	Subscribed	100 Users	03/12/2015	12/30/2020
4	Comply	COM-H	Subscribed	100 Users	03/12/2015	12/30/2020
5	Custom Root Certificate	Z-CUSTOMROOTCERT	Subscribed	100 Users	03/12/2015	12/30/2020
6	Dedicated Proxy Ports	Z-PROXYPORTS	Subscribed	1 Proxy Ports	04/03/2015	12/30/2020
7	Firewall Advanced	Z-FIREWALL-ADVANCED	Subscribed	100 Users	03/12/2015	12/30/2020
8	Firewall Basic	Z-FIREWALL-BASIC	Subscribed	100 Users	03/12/2015	12/30/2020
9	Firewall Cloud IPS	Z-FIREWALL-IPS	Subscribed	100 Users	03/12/2015	12/30/2020
10	Firewall Full Logging	Z-FIREWALL-FULL-LOG	Subscribed	100 Users	03/12/2015	12/30/2020
11	ICAP	Z-ICAP	Subscribed	20 Servers	10/21/2015	12/30/2020
12	Manage - Advanced	MAN-II	Subscribed	100 Users	03/12/2015	12/30/2020
13	Manage - Bandwidth Control	MAN-III	Subscribed	100 Users	03/12/2015	12/30/2020
14	Manage - Standard	MAN-I	Subscribed	100 Users	03/12/2015	12/30/2020
15	Mobile Security	Z-MOBILE_SEC	Subscribed	100 Users	03/12/2015	12/30/2020
16	NSS	Z-LOGFEED	Subscribed	1 Servers	03/12/2015	12/30/2020

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Slide notes

Slide 25 - Slide 25

The screenshot shows the Zscaler Company Profile interface. On the left is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled "Company Profile" and contains a table of "SUBSCRIPTIONS". The table has columns: No., Name, SKU, Status, Number of Licenses, Service Start Date (PST), and Service End Date (PST). A search bar and a help icon are at the bottom right. The table lists 27 rows, with row 19 highlighted in yellow.

No.	Name	SKU	Status	Number of Licenses	Service Start Date (PST)	Service End Date (PST)
12	Manage - Advanced	MAN-II	Subscribed	100 Users	03/12/2015	12/30/2020
13	Manage - Bandwidth Control	MAN-III	Subscribed	100 Users	03/12/2015	12/30/2020
14	Manage - Standard	MAN-I	Subscribed	100 Users	03/12/2015	12/30/2020
15	Mobile Security	Z-MOBILE_SEC	Subscribed	100 Users	03/12/2015	12/30/2020
16	NSS	Z-LOGFEED	Subscribed	1 Servers	03/12/2015	12/30/2020
17	Security - Advanced	SEC-II	Subscribed	100 Users	03/12/2015	12/30/2020
18	Security - AV & AS	SEC-I	Subscribed	100 Users	03/12/2015	12/30/2020
19	Virtual Service Edge	V-SVC-Edge	Trial	10 Servers	01/21/2020	12/30/2020
20	VPN - Mobile	Z-VPN-Mobile	Subscribed	100 Users	03/12/2015	12/30/2020
21	VPN - Site-to-site	Z-VPN-S2S	Subscribed	100 Users	03/12/2015	12/30/2020
22	Z NON HTTP	Z-NONHTTP	Subscribed	100 Users	03/12/2015	12/30/2020
23	Zscaler Application	ZSCALER-APP	Subscribed	100 Users	03/12/2015	12/30/2020
24	Zscaler Auth Bridge	Z-ZAB	Subscribed	1 Servers	03/12/2015	12/30/2020
25	Zscaler eZ Agent	Z-EZ-AGENT	Subscribed	100 Users	03/12/2015	12/30/2020
26	Zscaler Report Builder	Z-RPTBLDR	Subscribed	100 Users	03/12/2015	12/30/2020
27	Zscaler SyncBridge Agent	ZSC-SYNCBRIDGE	Subscribed	100 Users	03/12/2015	12/30/2020

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Slide notes

And verify that you are subscribed to the Virtual Service Edge service and have the appropriate number of licenses based on the number of Virtual Service Edges you plan on deploying.

Slide 26 - Slide 26

No.	Name	SKU	Status	Number of Licenses	Service Start Date (PST)	Service End Date (PST)
12	Manage - Advanced	MAN-II	Subscribed	100 Users	03/12/2015	12/30/2020
13	Manage - Bandwidth Control	MAN-III	Subscribed	100 Users	03/12/2015	12/30/2020
14	Manage - Standard	MAN-I	Subscribed	100 Users	03/12/2015	12/30/2020
15	Mobile Security	Z-MOBILE_SEC	Subscribed	100 Users	03/12/2015	12/30/2020
16	NSS	Z-LOGFEED	Subscribed	1 Servers	03/12/2015	12/30/2020
17	Security - Advanced	SEC-II	Subscribed	100 Users	03/12/2015	12/30/2020
18	Security - AV & AS	SEC-I	Subscribed	100 Users	03/12/2015	12/30/2020
19	Virtual Service Edge	V-SVC-Edge	Trial	10 Servers	01/21/2020	12/30/2020
20	VPN - Mobile	Z-VPN-Mobile	Subscribed	100 Users	03/12/2015	12/30/2020
21	VPN - Site-to-site	Z-VPN-S2S	Subscribed	100 Users	03/12/2015	12/30/2020
22	Z NON HTTP	Z-NONHTTP	Subscribed	100 Users	03/12/2015	12/30/2020
23	Zscaler Application	ZSCALER-APP	Subscribed	100 Users	03/12/2015	12/30/2020
24	Zscaler Auth Bridge	Z-ZAB	Subscribed	1 Servers	03/12/2015	12/30/2020
25	Zscaler eZ Agent	Z-EZ-AGENT	Subscribed	100 Users	03/12/2015	12/30/2020
26	Zscaler Report Builder	Z-RPTBLDR	Subscribed	100 Users	03/12/2015	12/30/2020
27	Zscaler SyncBridge Agent	ZSC-SYNCBRIDGE	Subscribed	100 Users	03/12/2015	12/30/2020

Slide notes

To download a copy of the VM go to **Administration**.

Slide 27 - Slide 27

The screenshot shows the Zscaler Administration interface. The left sidebar contains various navigation links such as Dashboard, Analytics, Policy, Administration, Activation, Search, and PROXY CHAINING. The main content area is titled "Virtual Service Edges". A tooltip "Select Virtual Service Edges" is displayed over the "Virtual Service Edges" link in the navigation menu. The main table lists service edge details with columns: Status, Number of Licenses, Service Start Date (PST), and Service End Date (PST). The table shows multiple entries, each with a "Subscribed" status, 100 Users, 03/12/2015 start date, and 12/30/2020 end date.

	Status	Number of Licenses	Service Start Date (PST)	Service End Date (PST)
1	Subscribed	100 Users	03/12/2015	12/30/2020
2	Subscribed	100 Users	03/12/2015	12/30/2020
3	Subscribed	100 Users	03/12/2015	12/30/2020
4	Subscribed	100 Users	03/12/2015	12/30/2020
5	Subscribed	100 Users	03/12/2015	12/30/2020
6	Trial	10 Servers	01/21/2020	12/30/2020
7	Subscribed	100 Users	03/12/2015	12/30/2020
8	Subscribed	100 Users	03/12/2015	12/30/2020
9	Subscribed	100 Users	03/12/2015	12/30/2020
10	Subscribed	100 Users	03/12/2015	12/30/2020
11	Subscribed	100 Users	03/12/2015	12/30/2020
12	Subscribed	100 Users	03/12/2015	12/30/2020
13	Subscribed	100 Users	03/12/2015	12/30/2020
14	Subscribed	100 Users	03/12/2015	12/30/2020
15	Subscribed	100 Users	03/12/2015	12/30/2020
16	Subscribed	100 Users	03/12/2015	12/30/2020
17	Subscribed	100 Users	03/12/2015	12/30/2020
18	Subscribed	100 Users	03/12/2015	12/30/2020
19	Subscribed	100 Users	03/12/2015	12/30/2020
20	Subscribed	100 Users	03/12/2015	12/30/2020
21	Subscribed	100 Users	03/12/2015	12/30/2020
22	Subscribed	100 Users	03/12/2015	12/30/2020
23	Subscribed	100 Users	03/12/2015	12/30/2020
24	Subscribed	100 Users	03/12/2015	12/30/2020
25	Subscribed	100 Users	03/12/2015	12/30/2020
26	Subscribed	100 Users	03/12/2015	12/30/2020
27	Subscribed	100 Users	03/12/2015	12/30/2020
28	Subscribed	100 Users	03/12/2015	12/30/2020
29	Subscribed	100 Users	03/12/2015	12/30/2020
30	Subscribed	100 Users	03/12/2015	12/30/2020
31	Subscribed	100 Users	03/12/2015	12/30/2020
32	Subscribed	100 Users	03/12/2015	12/30/2020
33	Subscribed	100 Users	03/12/2015	12/30/2020
34	Subscribed	100 Users	03/12/2015	12/30/2020
35	Subscribed	100 Users	03/12/2015	12/30/2020
36	Subscribed	100 Users	03/12/2015	12/30/2020
37	Subscribed	100 Users	03/12/2015	12/30/2020
38	Subscribed	100 Users	03/12/2015	12/30/2020
39	Subscribed	100 Users	03/12/2015	12/30/2020
40	Subscribed	100 Users	03/12/2015	12/30/2020
41	Subscribed	100 Users	03/12/2015	12/30/2020
42	Subscribed	100 Users	03/12/2015	12/30/2020
43	Subscribed	100 Users	03/12/2015	12/30/2020
44	Subscribed	100 Users	03/12/2015	12/30/2020
45	Subscribed	100 Users	03/12/2015	12/30/2020
46	Subscribed	100 Users	03/12/2015	12/30/2020
47	Subscribed	100 Users	03/12/2015	12/30/2020
48	Subscribed	100 Users	03/12/2015	12/30/2020
49	Subscribed	100 Users	03/12/2015	12/30/2020
50	Subscribed	100 Users	03/12/2015	12/30/2020
51	Subscribed	100 Users	03/12/2015	12/30/2020
52	Subscribed	100 Users	03/12/2015	12/30/2020
53	Subscribed	100 Users	03/12/2015	12/30/2020
54	Subscribed	100 Users	03/12/2015	12/30/2020
55	Subscribed	100 Users	03/12/2015	12/30/2020
56	Subscribed	100 Users	03/12/2015	12/30/2020
57	Subscribed	100 Users	03/12/2015	12/30/2020
58	Subscribed	100 Users	03/12/2015	12/30/2020
59	Subscribed	100 Users	03/12/2015	12/30/2020
60	Subscribed	100 Users	03/12/2015	12/30/2020
61	Subscribed	100 Users	03/12/2015	12/30/2020
62	Subscribed	100 Users	03/12/2015	12/30/2020
63	Subscribed	100 Users	03/12/2015	12/30/2020
64	Subscribed	100 Users	03/12/2015	12/30/2020
65	Subscribed	100 Users	03/12/2015	12/30/2020
66	Subscribed	100 Users	03/12/2015	12/30/2020
67	Subscribed	100 Users	03/12/2015	12/30/2020
68	Subscribed	100 Users	03/12/2015	12/30/2020
69	Subscribed	100 Users	03/12/2015	12/30/2020
70	Subscribed	100 Users	03/12/2015	12/30/2020
71	Subscribed	100 Users	03/12/2015	12/30/2020
72	Subscribed	100 Users	03/12/2015	12/30/2020
73	Subscribed	100 Users	03/12/2015	12/30/2020
74	Subscribed	100 Users	03/12/2015	12/30/2020
75	Subscribed	100 Users	03/12/2015	12/30/2020
76	Subscribed	100 Users	03/12/2015	12/30/2020
77	Subscribed	100 Users	03/12/2015	12/30/2020
78	Subscribed	100 Users	03/12/2015	12/30/2020
79	Subscribed	100 Users	03/12/2015	12/30/2020
80	Subscribed	100 Users	03/12/2015	12/30/2020
81	Subscribed	100 Users	03/12/2015	12/30/2020
82	Subscribed	100 Users	03/12/2015	12/30/2020
83	Subscribed	100 Users	03/12/2015	12/30/2020
84	Subscribed	100 Users	03/12/2015	12/30/2020
85	Subscribed	100 Users	03/12/2015	12/30/2020
86	Subscribed	100 Users	03/12/2015	12/30/2020
87	Subscribed	100 Users	03/12/2015	12/30/2020
88	Subscribed	100 Users	03/12/2015	12/30/2020
89	Subscribed	100 Users	03/12/2015	12/30/2020
90	Subscribed	100 Users	03/12/2015	12/30/2020
91	Subscribed	100 Users	03/12/2015	12/30/2020
92	Subscribed	100 Users	03/12/2015	12/30/2020
93	Subscribed	100 Users	03/12/2015	12/30/2020
94	Subscribed	100 Users	03/12/2015	12/30/2020
95	Subscribed	100 Users	03/12/2015	12/30/2020
96	Subscribed	100 Users	03/12/2015	12/30/2020
97	Subscribed	100 Users	03/12/2015	12/30/2020
98	Subscribed	100 Users	03/12/2015	12/30/2020
99	Subscribed	100 Users	03/12/2015	12/30/2020
100	Subscribed	100 Users	03/12/2015	12/30/2020

Slide notes

Then Virtual Service Edges.

Slide 28 - Slide 28

The screenshot shows the 'Virtual Service Edges' page of the ZCCP-IA interface. On the left is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area has tabs for 'VIRTUAL SERVICE EDGES' (selected) and 'VIRTUAL SERVICE EDGE CLUSTERS'. Below the tabs are buttons for 'Add Virtual Service Edge', 'Download Virtual Service Edge VM' (which is highlighted with a callout box), and 'Download MIB Files'. A search bar is at the top right. A table below lists columns: No., Name, Status, Type, Deployment Mode, Load Balancer IP Addr..., Proxy IP Address, Cluster Name, and SSL Certificate. At the bottom right is a 'Help' button.

Slide notes

Then click on the Download Virtual Service Edge VM link near the top of the page.

Slide 29 - Slide 29

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. On the left, there's a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". There's also a search bar. A message "No matching items found" is displayed. A modal window titled "Download Virtual Service Edge VM" is open, showing the following specifications:

Number of vCPUs	RAM(GB)
4	32

Disk(GB)	Virtual NICs
500	3

At the bottom of the modal, there are "Close" and "Download Virtual Service Edge VM" buttons. A callout bubble points to the "Download Virtual Service Edge VM" button.

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patients

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Help

Slide notes

The pop-up window describes the specifications for the VM. Click **Download Virtual Service Edge VM**.

Slide 30 - Slide 30

The screenshot shows the ZCCP-IA Virtual Service Edge interface. On the left, there is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar is also present. A message "No matching items found" is displayed. A modal dialog box titled "Download Virtual Service Edge VM" is open in the center. It contains the following configuration details:

Number of VCPUs	RAM(GB)
4	32

Disk(GB)	Virtual NICs
500	3

Below these tables, there is a section titled "Virtual Service Edge VM" with a "Download Virtual Service Edge VM" button. At the bottom of the dialog is a "Close" button.

At the bottom of the interface, there is a footer with copyright information: "Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents". It also shows the current time: "Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM". A file download progress bar for "vzen.ova" (11.1 MB) is shown at the bottom left, and a "Show all" link is at the bottom right.

Slide notes

Slide 43 - Slide 43

The screenshot shows the ZCCP-IA Virtual Service Edge interface. On the left, there's a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar is also present. The main content area displays a table with columns: No., Name, Status, Type, Deployment Mode, Load Balancer IP Addr..., Proxy IP Address, Cluster Name, and SSL Certificate. A message "No matching items found" is shown. A modal window titled "Download Virtual Service Edge VM" is open, containing fields for Number of VCpus (4), RAM(GB) (32), Disk(GB) (500), and Virtual NICs (3). At the bottom of the modal are buttons for "Download Virtual Service Edge VM" and "Close". A callout bubble points to the "Close" button with the text "Select Close". The bottom of the screen shows a footer with copyright information, a help icon, and a file download progress bar for "vzen.ova".

Slide notes

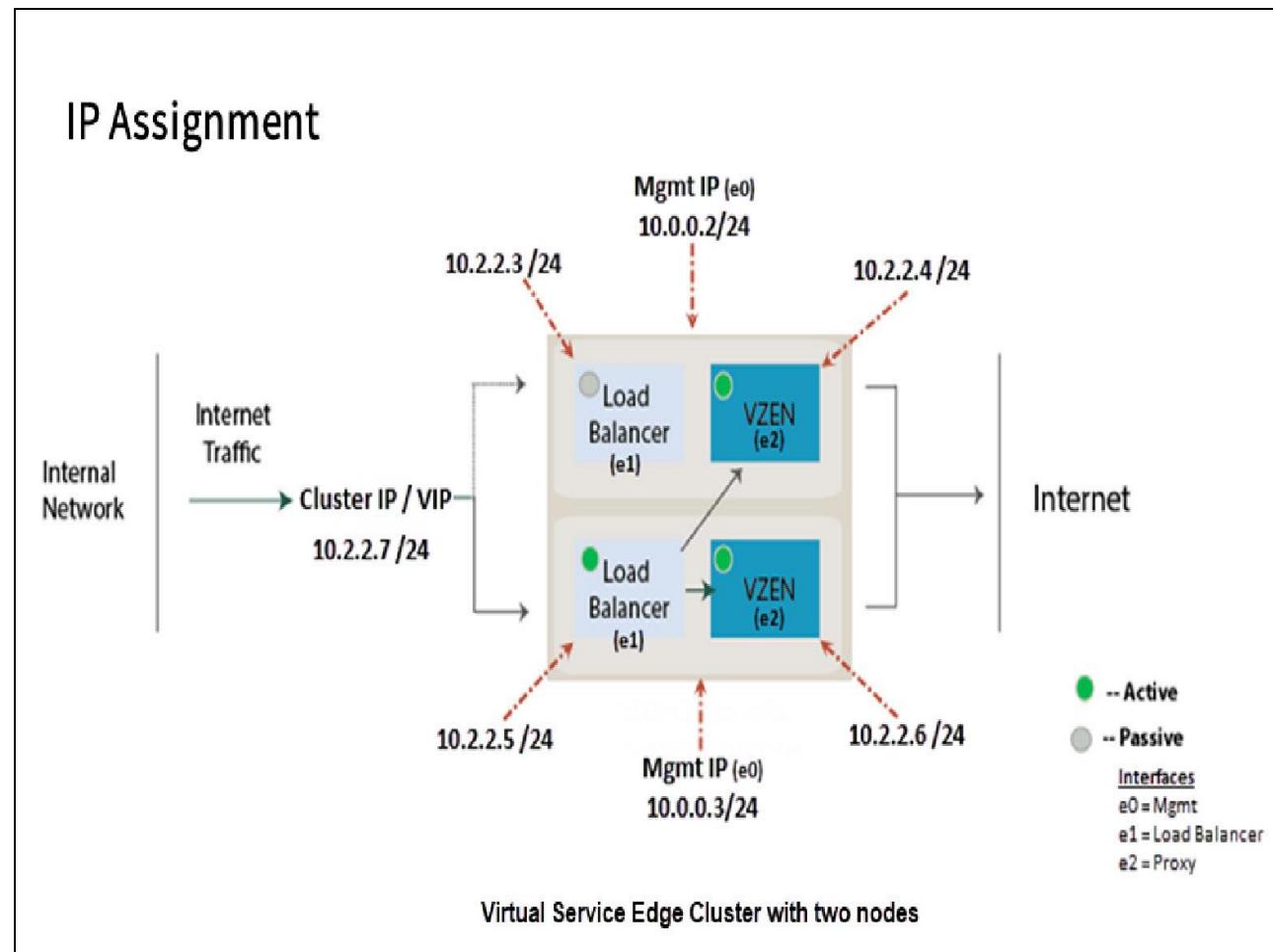
Slide 44 - Slide 44

The screenshot shows the Zscaler Admin UI interface. On the left is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, Search, and Help. The main content area is titled "Virtual Service Edges" and contains a sub-header "VIRTUAL SERVICE EDGES". Below this is a search bar with tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS", with "VIRTUAL SERVICE EDGES" selected. There are three action buttons: "+ Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar with placeholder "Search..." and a magnifying glass icon follows. Below these are several filter dropdowns: "No.", "Name", "Status", "Type", "Deployment Mode", "Load Balancer IP Addr...", "Proxy IP Address", "Cluster Name", and "SSL Certificate". A message "No matching items found" is displayed below the filters. At the bottom of the main content area is a footer bar with copyright information: "Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents". To the right of the footer are two status indicators: "Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM". A "Help" button is located in the bottom right corner of the main content area.

Slide notes

We will come back to the VM later once we have finished configuring the Zscaler Admin UI.

Slide 45 - IP Assignment



Slide notes

Let's pause for just a moment to examine IP addressing for the cluster. This diagram represents what you are about to configure. There is a Virtual Service Edge cluster consisting of two Virtual Service Edge nodes -- Virtual Service Edge-1 on top and Virtual Service Edge-2 on the bottom. Each Virtual Service Edge in a cluster is configured with three unique IP addresses -- one for the ZEN, or proxy, one for the integrated load balancer, and one for management and monitoring. There is one VIP address, or Cluster IP, for all nodes in the cluster. This is the IP address your users connect to. Please note that all the Cluster IP, Load Balancer IP, and Proxy IP must be in the same subnet. The management interface, as in this topology, can be in a separate management network.

Slide 46 - Slide 46

The screenshot shows the Zscaler Admin UI interface. On the left is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main content area is titled "Virtual Service Edges". It has two tabs: "VIRTUAL SERVICE EDGES" (selected) and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar is at the top right. A table below lists items with columns: No., Name, Status, Type, Deployment Mode, Load Balancer IP Addr..., Proxy IP Address, Cluster Name, and SSL Certificate. A message "No matching items found" is displayed. A callout box with the text "Select Add Virtual Service Edge" points to the "Add Virtual Service Edge" button. At the bottom, there is a copyright notice, a timestamp, and a help icon.

Slide notes

We will come back to the VM later once we have finished configuring the Zscaler Admin UI.

While still under the Administration > Virtual Service Edges page click “**Add Virtual Service Edge**” .

Slide 47 - Slide 47

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main window title is "Virtual Service Edges". A sub-dialog titled "Add Virtual Service Edge" is open in the center. The "BASIC PARAMETERS" section contains fields for "Name" (with placeholder "Type 'vSE-1' and hit enter") and "Status" (with options "Enabled" and "Disabled", where "Enabled" is selected). Below this, a message says "Your Used Virtual Service Edges 0/10". The "IP ADDRESSES" section includes fields for "Proxy IP Address" and "Subnet Mask", and "Default Gateway" and "Load Balancer IP Address". Under "Deployment Mode", the "Cluster" option is selected. At the bottom of the dialog are "Save" and "Cancel" buttons. The background shows a dark-themed dashboard with various icons for Dashboard, Analytics, Policy, Administration, Activation, and Search.

Slide notes

Provide the name of the ZEN such as “vSE-1”.

Slide 48 - Slide 48

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The central area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar is also present. The main content area displays a table with columns "No.", "Name", and "Status". A modal window titled "Add Virtual Service Edge" is open, containing the following fields:

- BASIC PARAMETERS**:
 - Name: vSE-1
 - Status: Enabled (selected)
- IP ADDRESSES**:
 - Proxy IP Address: Type "10.2.2.4" and hit enter
 - Subnet Mask: [empty]
 - Default Gateway: [empty]
 - Load Balancer IP Address: [empty]
- Deployment Mode**: Cluster (selected)

At the bottom of the modal are "Save" and "Cancel" buttons.

Slide notes

Make sure the status is “Enabled”. Set the Proxy IP address.

Slide 49 - Slide 49

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The central area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar is also present. The main content area displays a table with columns "No.", "Name", and "Status". A modal window titled "Add Virtual Service Edge" is open, containing the following fields:

- BASIC PARAMETERS**
 - Name: vSE-1
 - Status: Enabled Disabled
- IP ADDRESSES**
 - Proxy IP Address: 10.2.2.4
 - Subnet Mask: Type "255.255.255.0" and hit enter
 - Default Gateway:
 - Load Balancer IP Address:
- Deployment Mode: Cluster Standalone

At the bottom of the modal are "Save" and "Cancel" buttons.

At the bottom of the page, there is copyright information: "Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patients" and a timestamp: "Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM". A "Help" button is also visible.

Slide notes

The Subnet Mask.

Slide 50 - Slide 50

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The central area is titled 'Virtual Service Edges' with tabs for 'VIRTUAL SERVICE EDGES' and 'VIRTUAL SERVICE EDGE CLUSTERS'. Below the tabs are buttons for 'Add Virtual Service Edge', 'Download Virtual Service Edge VM', and 'Download MIB Files'. A search bar is also present. The main content area displays a table with columns 'No.', 'Name', and 'Status'. A modal window titled 'Add Virtual Service Edge' is open, containing two sections: 'BASIC PARAMETERS' and 'IP ADDRESSES'. In the 'BASIC PARAMETERS' section, the 'Name' field is set to 'vSE-1' and the 'Status' field is set to 'Enabled'. In the 'IP ADDRESSES' section, the 'Proxy IP Address' is '10.2.2.4' and the 'Subnet Mask' is '255.255.255.0'. The 'Default Gateway' field contains the placeholder 'Type "10.2.2.254" and hit enter'. The 'Load Balancer IP Address' field is empty. Under 'Deployment Mode', the 'Cluster' option is selected. At the bottom of the modal are 'Save' and 'Cancel' buttons. The footer of the page includes copyright information, a help icon, and a message about the last update.

Slide notes

Enter the Default Gateway.

Slide 51 - Slide 51

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main window title is "Virtual Service Edges". The left sidebar includes icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main content area has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar is at the top right. The central part of the screen displays the "Add Virtual Service Edge" dialog box. This dialog has sections for "BASIC PARAMETERS" (Name: vSE-1, Status: Enabled), "IP ADDRESSES" (Proxy IP Address: 10.2.2.4, Subnet Mask: 255.255.255.0; Default Gateway: 10.2.2.254, Load Balancer IP Address: empty field with placeholder "Type *10.2.2.3* and hit enter"), and "Deployment Mode" (Cluster selected). At the bottom are "Save" and "Cancel" buttons.

Slide notes

And the Load Balancer IP address.

Slide 52 - Slide 52

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. On the left, there is a vertical navigation bar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar is also present. The central part of the screen displays a modal dialog titled "Add Virtual Service Edge". The dialog is divided into sections: "BASIC PARAMETERS" (Name: vSE-1, Status: Enabled), "IP ADDRESSES" (Proxy IP Address: 10.2.2.4, Subnet Mask: 255.255.255.0; Default Gateway: 10.2.2.254, Load Balancer IP Address: 10.2.2.3), and "Deployment Mode" (Cluster is selected). At the bottom of the dialog are buttons for "Click Here", "Cancel", "Select", and "Save". The background shows a list of clusters with columns for Cluster Name and SSL Certificate.

Slide notes

By default, the Deployment Mode is set for “Cluster Mode”. “Standalone Mode” is used for Proof of Concept testing only. Click “Save”.

Slide 53 - Slide 53

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The central area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar is also present. The main content area displays a table with columns "No.", "Name", and "Status". A modal window titled "Add Virtual Service Edge" is open, containing fields for "Name" (vSE-1), "Status" (Enabled), "Proxy IP Address" (10.2.2.4), "Subnet Mask" (255.255.255.0), "Default Gateway" (10.2.2.254), "Load Balancer IP Address" (10.2.2.3), "Deployment Mode" (Cluster), and "Save" and "Cancel" buttons.

Slide notes

Slide 54 - Slide 54

The screenshot shows the 'Virtual Service Edges' page. At the top, there is a message 'All changes have been saved.' A navigation bar at the bottom includes links for 'Add Virtual Service Edge', 'Download Virtual Service Edge VM', 'Download MIB Files', and a search bar. On the left, a sidebar lists 'Dashboard', 'Analytics', 'Policy', 'Administration', 'Activation', and 'Search'. The main content area displays a table with one row of data:

No.	Name	Status	Type	Deployment Mode	Load Balancer IP Address	Proxy IP Address	Cluster Name	SSL Certificate
1	vSE-1	Enabled	Large	Cluster	10.2.2.3	10.2.2.4	...	Download

At the bottom right of the main area is a 'Help' button. The footer contains copyright information: 'Copyright©2007-2020 Zscaler Inc. All rights reserved.' and 'Version 6.0 | Patients'. It also shows the 'Weblog Time: 4/6/2020 11:30:53 AM' and 'Last Updated: 4/6/2020 11:32:32 AM'.

Slide notes

Slide 55 - Slide 55

The screenshot shows the 'Virtual Service Edges' page. At the top, there are tabs for 'VIRTUAL SERVICE EDGES' and 'VIRTUAL SERVICE EDGE CLUSTERS'. Below the tabs, there are buttons for 'Add Virtual Service Edge', 'Download Virtual Service Edge VM', and 'Download MIB Files'. A search bar is also present. The main area contains a table with columns: No., Name, Status, Type, Deployment Mode, Load Balancer IP Address, Proxy IP Address, Cluster Name, and SSL Certificate. One row is shown in the table:

No.	Name	Status	Type	Deployment Mode	Load Balancer IP Address	Proxy IP Address	Cluster Name	SSL Certificate
1	VSE-1	Enabled	Large	Cluster	10.2.2.3	10.2.2.4	---	Download

A callout box with the text 'Select Add Virtual Service Edge' points to the 'Add Virtual Service Edge' button. The left sidebar includes icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The bottom of the screen shows copyright information and a help icon.

Slide notes

As we're doing a cluster let's add a second node. Click "Add Virtual Service Edge".

Slide 56 - Slide 56

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main window displays a list of Virtual Service Edges, with one entry visible: "vSE-1" (Status: Enabled). Below this is a search bar and a download button. On the left, a sidebar lists various navigation options: Dashboard, Analytics, Policy, Administration, Activation, and Search. A message bubble icon is present on the Administration tab. The central part of the screen features a modal dialog titled "Add Virtual Service Edge". This dialog contains two main sections: "BASIC PARAMETERS" and "IP ADDRESSES". In the "BASIC PARAMETERS" section, the "Name" field is populated with "vSE-2" and the "Status" dropdown is set to "Enabled". The "IP ADDRESSES" section includes fields for "Proxy IP Address", "Subnet Mask", "Default Gateway", and "Load Balancer IP Address". Under "Deployment Mode", the "Cluster" option is selected. At the bottom of the dialog are "Save" and "Cancel" buttons.

Slide notes

Provide a name.

Slide 57 - Slide 57

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The central area is titled 'Virtual Service Edges' and shows a table with one entry: 'vSE-1' (Status: Enabled). A modal dialog box titled 'Add Virtual Service Edge' is open in the foreground. The dialog has two main sections: 'BASIC PARAMETERS' and 'IP ADDRESSES'. In 'BASIC PARAMETERS', the 'Name' field is empty and the 'Status' dropdown is set to 'Enabled'. In 'IP ADDRESSES', the 'Proxy IP Address' field contains the placeholder text 'Type "10.2.2.6" and hit enter'. The 'Subnet Mask' field is empty. Below these fields are 'Default Gateway' and 'Load Balancer IP Address' fields, both of which are empty. Under 'Deployment Mode', the 'Cluster' radio button is selected. At the bottom of the dialog are 'Save' and 'Cancel' buttons. The background shows a search bar and a table for 'Virtual Service Edge Clusters'.

Slide notes

Enter the Proxy IP Address.

Slide 58 - Slide 58

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The central area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar is also present. The main content area displays a table of existing Virtual Service Edges, with one entry: No. 1, Name vSE-1, Status Enabled. A modal dialog box titled "Add Virtual Service Edge" is open in the foreground. It contains sections for "BASIC PARAMETERS" and "IP ADDRESSES". In the "BASIC PARAMETERS" section, the "Name" field is set to "vSE-2" and the "Status" dropdown is set to "Enabled". In the "IP ADDRESSES" section, the "Proxy IP Address" field is set to "10.2.2.8", the "Subnet Mask" field has a placeholder "Type '255.255.255.0' and hit enter", and the "Default Gateway" and "Load Balancer IP Address" fields are empty. The "Deployment Mode" section shows "Cluster" selected. At the bottom of the dialog are "Save" and "Cancel" buttons. The footer of the interface includes copyright information ("Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patients") and a timestamp ("Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM").

Slide notes

The Subnet Mask.

Slide 59 - Slide 59

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main window displays a list of existing Virtual Service Edges, with one entry visible: "vSE-1" (Status: Enabled). Below this is a search bar and a download button. On the left, a sidebar lists various navigation options: Dashboard, Analytics, Policy, Administration, Activation, and Search. A message bubble icon is present on the Administration and Activation buttons. The central part of the screen features a modal dialog titled "Add Virtual Service Edge". This dialog contains two main sections: "BASIC PARAMETERS" and "IP ADDRESSES". In the "BASIC PARAMETERS" section, the "Name" field is set to "vSE-2" and the "Status" is set to "Enabled". The "IP ADDRESSES" section includes fields for "Proxy IP Address" (10.2.2.6), "Subnet Mask" (255.255.255.0), "Default Gateway" (a field with a tooltip: "Type \"10.2.2.254\" and hit enter"), and "Load Balancer IP Address" (an empty field). Under "Deployment Mode", the "Cluster" option is selected. At the bottom of the dialog are "Save" and "Cancel" buttons. The footer of the interface includes copyright information ("Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patients") and a timestamp ("Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM").

Slide notes

The Default Gateway.

Slide 60 - Slide 60

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main window displays a list of Virtual Service Edges, with one entry visible: "vSE-1" (Status: Enabled). Below this is a search bar and a download button. On the left, there's a sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. A modal dialog box titled "Add Virtual Service Edge" is open in the center. It contains two sections: "BASIC PARAMETERS" and "IP ADDRESSES". In "BASIC PARAMETERS", the "Name" field is set to "vSE-2" and the "Status" is set to "Enabled". In "IP ADDRESSES", the "Proxy IP Address" is "10.2.2.6", the "Subnet Mask" is "255.255.255.0", the "Default Gateway" is "10.2.2.254", and the "Load Balancer IP Address" field has a placeholder "Type *10.2.2.5* and hit enter". The "Deployment Mode" section shows "Cluster" selected. At the bottom of the dialog are "Save" and "Cancel" buttons.

Slide notes

And the Load Balancer IP Address.

Slide 61 - Slide 61

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main window displays a list of Virtual Service Edges, with one entry visible: "vSE-1" (Status: Enabled). Below this is a search bar and a download button. On the left, there's a sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. A modal dialog box is open in the center, titled "Add Virtual Service Edge". It contains two sections: "BASIC PARAMETERS" and "IP ADDRESSES". In "BASIC PARAMETERS", the "Name" field is set to "vSE-2" and the "Status" dropdown is set to "Enabled". In "IP ADDRESSES", the "Proxy IP Address" is "10.2.2.6", "Subnet Mask" is "255.255.255.0", "Default Gateway" is "10.2.2.254", and "Load Balancer IP Address" is "10.2.2.5". Under "Deployment Mode", the "Cluster" radio button is selected. At the bottom of the dialog are "Click Box", "Cancel", and "Select Save" buttons. The status bar at the bottom of the screen shows "Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patients" and "Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM".

Slide notes

Then click “Save”.

Slide 62 - Slide 62

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The central area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar and a "Help" button are also present. The main content area displays a table of existing Virtual Service Edges, with one entry: No. 1, Name vSE-1, Status Enabled. A modal dialog box titled "Add Virtual Service Edge" is open, containing fields for "Name" (vSE-2), "Status" (Enabled/Disabled), "Proxy IP Address" (10.2.2.6), "Subnet Mask" (255.255.255.0), "Default Gateway" (10.2.2.254), "Load Balancer IP Address" (10.2.2.5), and "Deployment Mode" (Cluster/Standalone). The "Save" button is highlighted in blue.

Slide notes

Slide 63 - Slide 63

The screenshot shows the 'Virtual Service Edges' section of the ZCCP-IA interface. On the left is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area has tabs for 'VIRTUAL SERVICE EDGES' (selected) and 'VIRTUAL SERVICE EDGE CLUSTERS'. Below the tabs are buttons for 'Add Virtual Service Edge', 'Download Virtual Service Edge VM', and 'Download MIB Files'. A search bar is at the top right. The main content is a table with columns: No., Name, Status, Type, Deployment Mode, Load Balancer IP Address, Proxy IP Address, Cluster Name, and SSL Certificate. The first row (vSE-1) has a yellow background in the SSL Certificate column, and the 'Download' link is highlighted. The second row (vSE-2) has a white background in the SSL Certificate column, and the 'Download' link is not highlighted. The bottom of the screen shows copyright information and a help icon.

No.	Name	Status	Type	Deployment Mode	Load Balancer IP Address	Proxy IP Address	Cluster Name	SSL Certificate
1	vSE-1	Enabled	Large	Cluster	10.2.2.3	10.2.2.4	---	Download
2	vSE-2	Enabled	Large	Cluster	10.2.2.5	10.2.2.6	---	Download

Slide notes

Now that the Virtual Service Edges are created you can download the SSL Certificates. Click on the “Download” link in the SSL Certificate column. We will use the certificates later when configuring the Virtual Service Edge VM. Download the certificate for vSE-1.

Slide 64 - Slide 64

The screenshot shows the Zscaler VSE management interface. On the left is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled "Virtual Service Edges" and contains two tabs: "VIRTUAL SERVICE EDGES" (selected) and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are three buttons: "+ Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar with placeholder "Search..." is also present. The main content area displays a table with two rows of data:

No.	Name	Status	Type	Deployment Mode	Load Balancer IP Address	Proxy IP Address	Cluster Name	SSL Certificate
1	vSE-1	Enabled	Large	Cluster	10.2.2.3	10.2.2.4	---	Download
2	vSE-2	Enabled	Large	Cluster	10.2.2.5	10.2.2.6	---	Download

At the bottom of the interface, there is a footer with copyright information ("Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents"), a timestamp ("Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM"), and a help button ("Help"). A file download progress bar for "VZenCertificate-vS...zip" is shown at the bottom left, along with "Show all" and "X" buttons.

Slide notes

And download the SSL Certificate for vSE-2.

Slide 65 - Slide 65

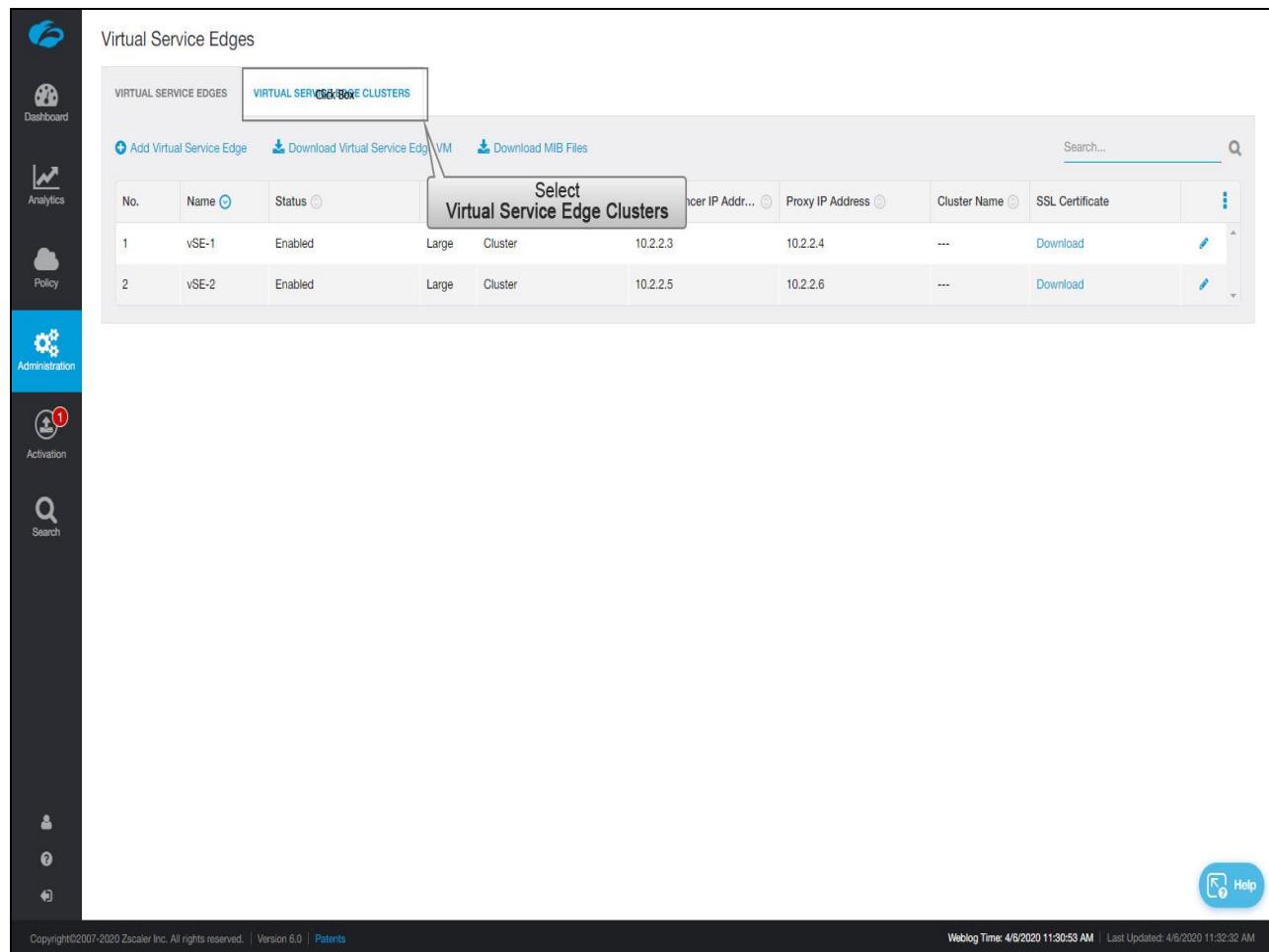
The screenshot shows the Zscaler Virtual Service Edge (VSE) management interface. On the left is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled "Virtual Service Edges" and contains two tabs: "VIRTUAL SERVICE EDGES" (selected) and "VIRTUAL SERVICE EDGE CLUSTERS". Below the tabs are three buttons: "+ Add Virtual Service Edge", "Download Virtual Service Edge VM", and "Download MIB Files". A search bar with placeholder "Search..." is also present. The main content area displays a table with two rows of data:

No.	Name	Status	Type	Deployment Mode	Load Balancer IP Address	Proxy IP Address	Cluster Name	SSL Certificate
1	vSE-1	Enabled	Large	Cluster	10.2.2.3	10.2.2.4	---	Download
2	vSE-2	Enabled	Large	Cluster	10.2.2.5	10.2.2.6	---	Download

At the bottom of the interface, there are copyright information ("Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents"), a timestamp ("Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM"), and a help button ("Help"). The bottom navigation bar shows two items: "VZenCertificate-vS...zip" and "VZenCertificate-vS...zip".

Slide notes

Slide 66 - Slide 66



The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. On the left is a vertical navigation bar with icons for Dashboard, Analytics, Policy, Administration (selected), Activation, and Search. The main content area is titled "Virtual Service Edges". At the top, there are tabs: "VIRTUAL SERVICE EDGES" (selected) and "VIRTUAL SERVICE EDGE CLUSTERS" (highlighted with a callout box). Below the tabs are buttons for "Add Virtual Service Edge", "Download Virtual Service Edge VM", "Download MIB Files", and a search bar. A table lists two entries: vSE-1 and vSE-2. The table columns include No., Name, Status, Type, Cluster, Inner IP Address, Proxy IP Address, Cluster Name, SSL Certificate, and actions (Download, Edit). At the bottom of the page, there are copyright information ("Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents"), a timestamp ("Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM"), and a help button.

No.	Name	Status	Type	Cluster	Inner IP Address	Proxy IP Address	Cluster Name	SSL Certificate	
1	vSE-1	Enabled	Large	Cluster	10.2.2.3	10.2.2.4	...	Download	Edit
2	vSE-2	Enabled	Large	Cluster	10.2.2.5	10.2.2.6	...	Download	Edit

Slide notes

Next, while still under Administration > Virtual Service Edges, click on the “Virtual Service Edge Clusters” tab.

Slide 67 - Slide 67

The screenshot shows the 'Virtual Service Edges' section of the ZCCP-IA interface. On the left, a vertical sidebar contains icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area has tabs for 'VIRTUAL SERVICE EDGES' (selected) and 'VIRTUAL SERVICE EDGE CLUSTERS'. A 'Click Box' highlights the 'Add Virtual Service Edge Cluster' button. A callout box labeled 'Select Add Virtual Service Edge Cluster' points to this button. The table below shows no results: 'No matching items found'. The bottom of the screen includes copyright information, a help icon, and a timestamp.

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Help

Slide notes

Click “Add Virtual Service Edge Cluster”.

Slide 68 - Slide 68

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main window title is "Virtual Service Edges". On the left, there is a sidebar with icons for Dashboard, Analytics, Policy, Administration (selected), Activation, and Search. The main content area shows a table with columns "No." and "Name". A modal dialog box titled "Add Virtual Service Edge Cluster" is open in the center. The dialog has a "BASIC PARAMETERS" section with fields for "Name" (containing "CLUSTER-1") and "Status" (set to "Enabled"). Below this are sections for "VIRTUAL SERVICE EDGES" (with a dropdown set to "None") and "IP ADDRESSES" (with fields for "Cluster IP Address" and "Subnet Mask", and a "Default Gateway" field). At the bottom of the dialog are "Save" and "Cancel" buttons. The background shows a search bar and a help icon.

Slide notes

Provide a name for the cluster.

Slide 69 - Slide 69

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. On the left is a dark sidebar with various icons: Dashboard, Analytics, Policy, Administration (with a red notification dot), Activation (with a red notification dot), and Search. The main area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". A modal window titled "Add Virtual Service Edge Cluster" is open. It contains a "BASIC PARAMETERS" section with "Name" set to "CLUSTER-1" and "Status" set to "Enabled". Below this is a "VIRTUAL SERVICE EDGES" section with a dropdown menu labeled "Virtual Service Edges" containing "None" and "Click Box". A callout bubble points to this dropdown with the text "Select Virtual Service Edges drop-down". Further down are sections for "IP ADDRESSES" (Cluster IP Address) and "Default Gateway". At the bottom are "Save" and "Cancel" buttons. The background shows a list of clusters with columns for "No.", "Name", "Cluster IP", and a "More" button.

Slide notes

Then from the “Virtual Service Edges” drop-down box select the nodes you wish to add to the cluster.

Slide 70 - Slide 70

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The central area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". A sub-menu "Add Virtual Service Edge Cluster" is open. The "Add Virtual Service Edge Cluster" dialog box contains fields for "Name" (set to "CLUSTER-1") and "Status" (set to "Enabled"). Below these, there is a section titled "VIRTUAL SERVICE EDGES" with a table header "Unselected Items" and "Selected Items (0)". The table lists two items: "vSE-1" and "vSE-2". A callout box points to the "vSE-1" row with the text "Select vSE-1". At the bottom of the dialog are buttons for "Done", "Cancel", and "Clear Selection". The background shows a blurred view of the "Virtual Service Edges" list.

Slide notes

Slide 71 - Slide 71

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The current view is under the 'Virtual Service Edges' tab. A modal window titled 'Add Virtual Service Edge Cluster' is open. It has a 'BASIC PARAMETERS' section where 'Name' is set to 'CLUSTER-1' and 'Status' is set to 'Enabled'. Below this is a 'VIRTUAL SERVICE EDGES' section. A list of 'Virtual Service Edges' shows 'vSE-1' selected. A tooltip 'Select vSE-2' points to the checkbox for 'vSE-2'. At the bottom of the modal are 'Done', 'Cancel', and 'Clear Selection' buttons.

Slide notes

Slide 72 - Slide 72

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main window title is "Virtual Service Edges". A sub-dialog titled "Add Virtual Service Edge Cluster" is open. In the "BASIC PARAMETERS" section, the "Name" field contains "CLUSTER-1" and the "Status" dropdown is set to "Enabled". Below this, a "VIRTUAL SERVICE EDGES" section lists "vSE-1" under "Virtual Service Edges". A modal dialog titled "Select Items" is displayed, showing a list of items. The item "vSE-1" is selected, indicated by a blue background and a checked checkbox. The "Selected Items (1)" count is shown as "vSE-1". At the bottom of the modal are buttons for "Select Done" and "Cancel". The background of the main interface shows a search bar and a list of other service edges.

Slide notes

Slide 73 - Slide 73

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main menu on the left includes options like Dashboard, Analytics, Policy, Administration, Activation, and Search. The central area is titled 'Virtual Service Edges' and shows tabs for 'VIRTUAL SERVICE EDGES' and 'VIRTUAL SERVICE EDGE CLUSTERS'. A modal window titled 'Add Virtual Service Edge Cluster' is open. In the 'BASIC PARAMETERS' section, the 'Name' field contains 'CLUSTER-1' and the 'Status' dropdown is set to 'Enabled'. Under 'VIRTUAL SERVICE EDGES', 'vSE-1; vSE-2' is selected. In the 'IP ADDRESSES' section, the 'Cluster IP Address' field has a placeholder 'Type "10.2.2.7" and hit enter' and contains '255.255.255.0'. The 'Default Gateway' field contains '10.2.2.254'. At the bottom of the modal are 'Save' and 'Cancel' buttons. The background shows a list of existing clusters.

Slide notes

Enter the Cluster IP address.

Slide 74 - Slide 74

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. On the left, there is a sidebar with various icons: Dashboard, Analytics, Policy, Administration (selected), Activation, and Search. The main area is titled "Virtual Service Edges" and has tabs for "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". A modal window titled "Add Virtual Service Edge Cluster" is open. Inside the modal, there are sections for "BASIC PARAMETERS" (Name: CLUSTER-1, Status: Enabled), "VIRTUAL SERVICE EDGES" (Virtual Service Edges: vSE-1; vSE-2), and "IP ADDRESSES" (Cluster IP Address: 10.2.2.7, Subnet Mask: 255.255.255.0, Default Gateway: 10.2.2.254). At the bottom of the modal, there are "Click Box" and "Cancel" buttons, with a callout pointing to the "Select Save" button.

Slide notes

And click “Save”.

Slide 75 - Slide 75

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The main title bar at the top reads "ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0" and "Wednesday, April 15, 2020". Below the title bar, there is a navigation menu with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main content area is titled "Virtual Service Edges" and contains two tabs: "VIRTUAL SERVICE EDGES" and "VIRTUAL SERVICE EDGE CLUSTERS". A sub-menu item "Add Virtual Service Edge Cluster" is highlighted. A search bar with the placeholder "Search..." and a magnifying glass icon is located at the top right of the main content area. In the center, a modal dialog box titled "Add Virtual Service Edge Cluster" is open. The dialog has a "BASIC PARAMETERS" section where "Name" is set to "CLUSTER-1" and "Status" is set to "Enabled". It also has sections for "VIRTUAL SERVICE EDGES" (listing "VSE-1; VSE-2") and "IP ADDRESSES" (Cluster IP Address: 10.2.2.7, Subnet Mask: 255.255.255.0, Default Gateway: 10.2.2.254). At the bottom of the dialog are "Save" and "Cancel" buttons. The background of the main content area shows a list of clusters with columns for "No.", "Name", "Cluster IP", and a "More" button.

Slide notes

Slide 76 - Slide 76

The screenshot shows the 'Virtual Service Edges' section of the ZCCP-IA interface. A message at the top right says 'All changes have been saved.' Below it, there are two tabs: 'VIRTUAL SERVICE EDGES' (selected) and 'VIRTUAL SERVICE EDGE CLUSTERS'. A button '+ Add Virtual Service Edge Cluster' is visible. A search bar 'Search...' is also present. The main area displays a table with one row:

No.	Name ⓘ	Status ⓘ	Virtual Service Edges ⓘ	Cluster IP ⓘ
1	CLUSTER-1	Enabled	vSE-2, vSE-1	10.2.2.7

The left sidebar contains navigation links: Dashboard, Analytics, Policy, Administration, Activation, and Search. At the bottom, there are copyright information and help links.

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Help

Slide notes

And “Activate Your Changes”.

Slide 77 - Slide 77

The screenshot shows the ZCCP-IA Virtual Service Edge Student Guide 6.0 v.1.0 interface. The left sidebar has tabs for Dashboard, Analytics, Policy, Administration, Activation (which is selected), and Search. The main content area shows 'MY ACTIVATION STATUS' with a red 'Editing' status. It lists 'CURRENTLY EDITING (1)' under 'admin@training.safemarch.com'. Below that is 'QUEUED ACTIVATIONS (0)' with 'None'. A table header includes columns for Status, Virtual Service Edges, Cluster IP, and actions. One row shows 'Enabled', 'vSE-2, vSE-1', '10.2.2.7', and edit/refresh icons. A large blue 'Activate' button is at the bottom of the table. The bottom of the screen shows copyright information and a help icon.

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Help

Slide notes

Slide 78 - Slide 78

The screenshot shows the 'Virtual Service Edges' section of the ZCCP-IA interface. A message at the top right says 'Activation Completed!'. Below it, there are two tabs: 'VIRTUAL SERVICE EDGES' (selected) and 'VIRTUAL SERVICE EDGE CLUSTERS'. A button '+ Add Virtual Service Edge Cluster' is visible. A search bar 'Search...' is also present. A table lists one cluster entry:

No.	Name	Status	Virtual Service Edges	Cluster IP
1	CLUSTER-1	Enabled	vSE-2, vSE-1	10.2.2.7

The left sidebar contains navigation icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. At the bottom, there is copyright information and a help icon.

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Help

Slide notes

Slide 79 - Slide 79

The screenshot shows the 'Virtual Service Edges' section of the ZCCP-IA interface. A message at the top right says 'Activation Completed!'. Below it, there are two tabs: 'VIRTUAL SERVICE EDGES' (selected) and 'VIRTUAL SERVICE EDGE CLUSTERS'. A button '+ Add Virtual Service Edge Cluster' is visible. A search bar 'Search...' is also present. The main area displays a table with one row:

No.	Name ⓘ	Status ⓘ	Virtual Service Edges ⓘ	Cluster IP ⓘ
1	CLUSTER-1	Enabled	vSE-2, vSE-1	10.2.2.7

The left sidebar contains navigation icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. At the bottom, there is copyright information and a help icon.

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Help

Slide notes

Slide 80 - Slide 80

The screenshot shows the 'Virtual Service Edges' section of the ZCCP-IA interface. On the left, a vertical sidebar contains icons for Dashboard, Analytics, Policy, Click Box Administration, Activation, Search, and Help. A callout box labeled 'Select Administration' points to the Click Box Administration icon. The main content area displays a table of Virtual Service Edge Clusters:

No.	Name	Status	Virtual Service Edges	Cluster IP
1	CLUSTER-1	Enabled	vSE-2, vSE-1	10.2.2.7

Below the table, there is a search bar labeled 'Search...' and a help icon.

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Slide notes

And last, we need to bind the cluster to the location. Go to “Administration”.

Slide 81 - Slide 81

The screenshot shows the ZCCP interface with the left sidebar expanded. The 'Administration' section is selected, and the 'Location Management' option under 'Traffic Forwarding' is highlighted with a red box and a callout bubble saying 'Select Location Management'. The main pane displays a table with columns for 'Virtual Service Edges' and 'Cluster IP'. A search bar at the top right of the main pane contains the text 'Virtual Service Edges'.

Slide notes

Then “Location Management”.

Slide 82 - Slide 82

The screenshot shows the 'Location Management' section of the ZCCP-IA interface. On the left, a vertical sidebar lists various navigation options: Dashboard, Analytics, Policy, Administration, Activation, and Search. The main content area is titled 'Location Management' and displays a table of locations. The table has columns for No., Name, IP Address, Proxy Ports, Use XFF, Authentication, SSL, Firewall F..., Bandwidth, Virtual Se..., IPS Control, Group, and actions. A single row is present in the table, labeled '1' and containing the values: trainingsafemar..., 52.26.238.29, 10230, ---, Enabled, Enabled, Enabled, ---, ---, ---, ---, Click Box. An arrow-shaped callout box points from the text 'Select edit icon' to the 'Click Box' icon in the table's header row.

No.	Name	IP Addre...	Proxy Ports	Use XFF ...	Authentic...	SSL	Firewall F...	Bandwidth	Virtual Se...	IPS Control	Group	
1	trainingsafemar...	52.26.238.29	10230	---	Enabled	Enabled	Enabled	---	---	---	---	Click Box

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Slide notes

Let's begin by modifying one of the existing sites for use with the Virtual Service Edge Cluster. Click on the "Edit" icon to the right of Site_1.

Slide 83 - Slide 83

The screenshot shows the Zscaler Location Manager interface. On the left, there's a sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area is titled 'Location Manager' and shows a list of locations with one item: 'trainingsafemarch2 / Headquarters'. The 'Edit Location' dialog box is open over this list.

LOCATION

- Name: trainingsafemarch2 / Headquarters
- Country: United States
- City/State/Province: America/Los Angeles
- Manual Location Groups: None
- Dynamic Location Groups: None
- Exclude from Manual Location Groups:
- Exclude from Dynamic Location Groups:

ADDRESSING

- Static IP Addresses: 52.26.238.29
- Proxy Ports: 10230
- VPN Credentials: None
- GRE Tunnel Information

No.	Tunnel Sourc...	Primary Dest...	Secondary D...	Primary Destination Internal Ra...	Secondary Destination
1	52.26.238.29	104.129.194.41	199.168.151.10	172.17.73.40 - 172.17.73.43	172.17.73.44 - 172.17.73.45
- Virtual Service Edges: None
- Virtual Service Edge Clusters: Click Box

GATEWAY OPTIONS

Save Cancel Delete Help

A callout bubble points to the 'Virtual Service Edge Clusters' dropdown with the text: "Select Virtual Service Edge Clusters drop-down".

Slide notes

Select the “Virtual Service Edge Clusters” drop-down box.

Slide 84 - Slide 84

The screenshot shows the 'Edit Location' dialog box. In the 'LOCATION' section, the 'Name' field is set to 'trainingsafemarch2 / Headquarters', 'Country' is 'United States', and 'Time Zone' is 'America/Los Angeles'. Under 'ADDRESSING', there is a 'Static IP Addresses' dropdown containing '52.26.238.29'. In the 'GATEWAY OPTIONS' section, there is a 'Virtual Service Edges' dropdown set to 'None'. A modal window titled 'Select CLUSTER-1' is overlaid on the dialog box, showing an 'Unselected Items' list with one item: 'CLUSTER-1'. The 'Selected Items (0)' list is empty. Buttons at the bottom of the modal are 'Done' (blue), 'Cancel' (white), and 'Clear Selection' (gray).

Slide notes

Select “CLUSTER-1”.

Slide 85 - Slide 85

The screenshot shows the 'Edit Location' dialog box. In the 'LOCATION' section, the 'Name' field is set to 'trainingsafemarch2 / Headquarters'. Under 'ADDRESSING', there is a 'Static IP Addresses' dropdown containing '52.26.238.29'. In the 'GATEWAY OPTIONS' section, there is a 'Virtual Service Edges' dropdown set to 'None'. A modal window titled 'Select Cluster' is overlaid on the dialog. It has two tabs: 'Unselected Items' (containing 'CLUSTER-1') and 'Selected Items (1)' (containing 'CLUSTER-1'). At the bottom of the modal are buttons for 'Click Box', 'Cancel', 'Select Done', and 'Delete'.

Slide notes

Then “Done”.

Slide 86 - Slide 86

The screenshot shows the 'Edit Location' dialog box. In the 'ADDRESSING' section, a tooltip 'Select Static IP Addresses drop-down' points to a dropdown menu containing '52.26.238.29 Click Box'. The 'GRE Tunnel Information' table has one row:

No.	Tunnel Sourc...	Primary D...	Primary Destination Internal Ra...	Secondary Destination Internal...
1	52.26.238.29	104.129.194.41	199.168.151.10	172.17.73.40 - 172.17.73.43

Slide notes

Now that we are using a Virtual ZEN as opposed to the public cloud let's remove the Public IP addressing from this site. Select the "Static IP Address" drop-down box.

Slide 87 - Slide 87

The screenshot shows the 'Edit Location' dialog box over a dark background. The 'LOCATION' tab is selected. In the 'ADDRESSING' section, under 'Static IP Addresses', there is a table with two columns: 'Unselected Items' and 'Selected Items (1)'. The 'Selected Items' column contains one item: '52.26.238.29'. A tooltip 'un-check selected IP addresses' points to the checkbox next to '52.26.238.29'. Below the table are buttons for 'Done', 'Cancel', 'Clear Selection', and 'Delete'. At the bottom of the dialog are 'Save' and 'Cancel' buttons.

Slide notes

And un-check the currently set IP address.

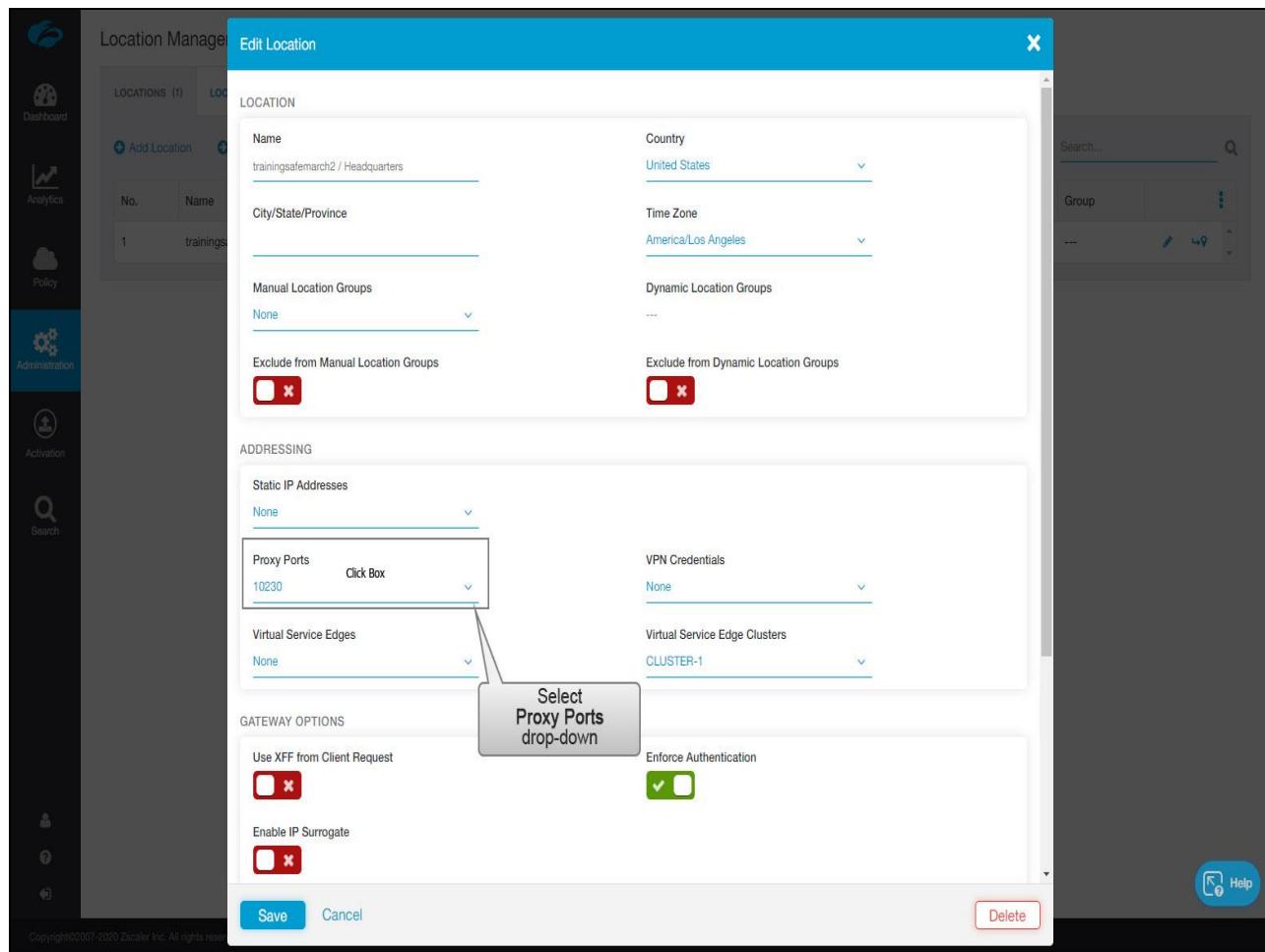
Slide 88 - Slide 88

The screenshot shows the 'Edit Location' dialog box over a dark background. The dialog has a blue header bar with the title 'Edit Location'. Below it, the 'LOCATION' section contains fields for 'Name' (set to 'trainingsafemarch2 / Headquarters'), 'Country' (set to 'United States'), and 'Time Zone' (set to 'America/Los Angeles'). The 'ADDRESSING' section contains a table for 'Static IP Addresses' with two entries: '52.26.238.29' and '99.158.155.198'. A callout bubble with the text 'Select Done' points to a button at the bottom of the table. At the bottom of the dialog, there are 'Save' and 'Cancel' buttons.

Slide notes

Then click “Done”.

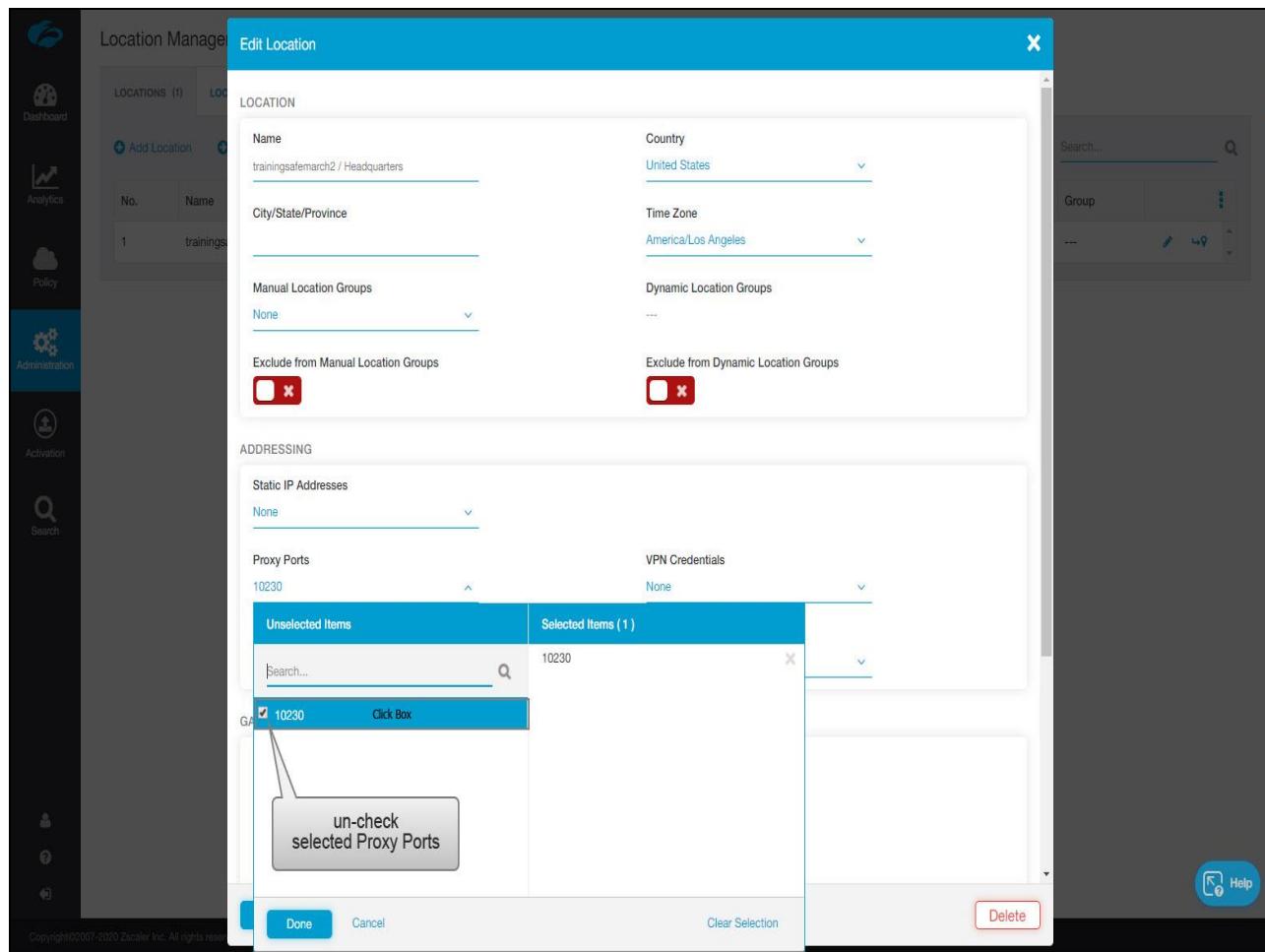
Slide 89 - Slide 89



Slide notes

Next, select the “Proxy Ports” drop-down box.

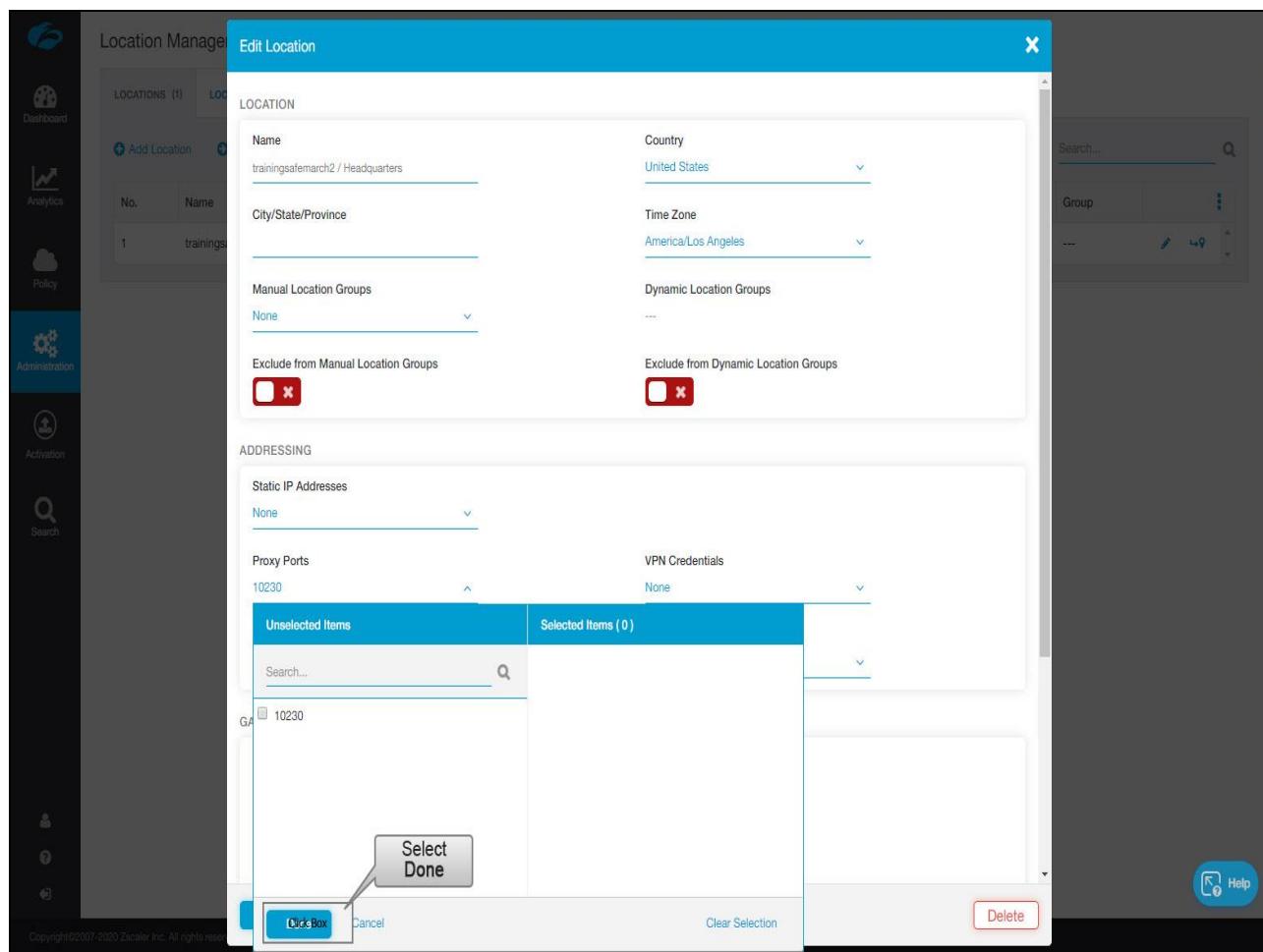
Slide 90 - Slide 90



Slide notes

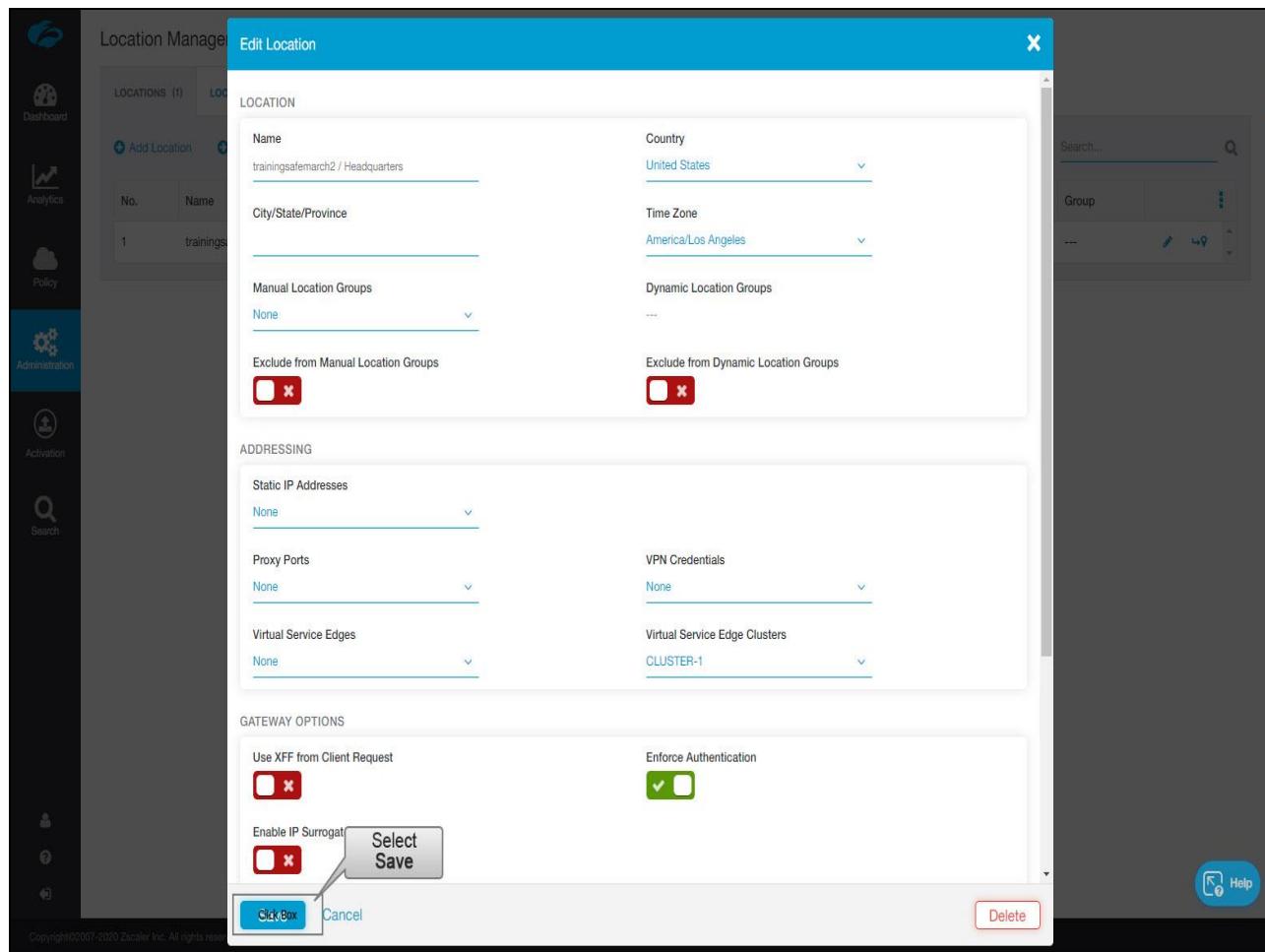
Then un-select the currently selected Proxy port.

Slide 91 - Slide 91



Slide notes

Slide 92 - Slide 92



Slide notes

And click "Save".

Slide 93 - Slide 93

The screenshot shows the 'Edit Location' dialog box over a dark background. The dialog has a light blue header bar with the title 'Edit Location'. The main area is divided into several sections:

- LOCATION**:
 - Name: traininggafensch2 / Headquarters
 - Country: United States
 - City/State/Province: America/Los Angeles
 - Manual Location Groups: None
 - Dynamic Location Groups: None
 - Exclude from Manual Location Groups:
 - Exclude from Dynamic Location Groups:
- ADDRESSING**:
 - Static IP Addresses: None
 - Proxy Ports: None
 - VPN Credentials: None
 - Virtual Service Edges: None
 - Virtual Service Edge Clusters: CLUSTER-1
- GATEWAY OPTIONS**:
 - Use XFF from Client Request:
 - Enable IP Surrogate:
 - Enforce Authentication:

At the bottom are 'Save' and 'Cancel' buttons, and a 'Delete' button on the right.

Slide notes

Slide 94 - Slide 94

The screenshot shows the 'Location Management' section of the ZCCP-IA Virtual Service Edge interface. On the left, there is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area has a title bar 'Location Management' with a message 'All changes have been saved.' and a close button. Below this is a navigation bar with tabs: 'LOCATIONS (1)', 'LOCATION GROUPS (0)', and 'UPDATED'. There are also buttons for '+ Add Location', 'Import Locations', 'Download CSV', and 'Sample Import CSV file'. A search bar labeled 'Search...' is followed by a magnifying glass icon. The main content is a table with the following data:

No.	Name	IP Addre...	Proxy Ports	Use XFF ...	Authentic...	SSL	Firewall F...	Bandwidth	Virtual Se...	IPS Control	Group
1	trainingsafemar...	---	---	---	Enabled	Enabled	Enabled	---	CLUSTER-1	---	---

At the bottom right of the main area is a 'Help' button with a question mark icon. At the very bottom of the screen, there is a footer bar with the text 'Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents'.

Slide notes

Slide 95 - Slide 95

The screenshot shows the 'Location Management' section of the ZCCP-IA Virtual Service Edge interface. The left sidebar contains icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main area has a title bar with 'Location Management' and a message 'All changes have been saved.' It includes tabs for 'LOCATIONS (1)', 'LOCATION GROUPS (0)', and 'UPDATED'. Below is a table with columns: No., Name, IP Addre..., Proxy Ports, Use XFF ..., Authentic..., SSL, Firewall F..., Bandwidth, Virtual Se..., IPS Control, Group, and actions. One row is shown with values: 1, trainingsafemar..., ---, ---, ---, Enabled, Enabled, Enabled, ---, CLUSTER-1, ---, ---, and edit/refresh icons. At the bottom are buttons for 'Add Location', 'Import Locations', 'Download CSV', and 'Sample Import CSV file', along with search and filter tools. A 'Help' button is in the bottom right.

No.	Name	IP Addre...	Proxy Ports	Use XFF ...	Authentic...	SSL	Firewall F...	Bandwidth	Virtual Se...	IPS Control	Group
1	trainingsafemar...	---	---	---	Enabled	Enabled	Enabled	---	CLUSTER-1	---	---

Slide notes

Slide 96 - Slide 96

The screenshot shows the 'Location Management' section of the ZCCP-IA interface. On the left, there is a vertical sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main content area has a header with tabs for 'LOCATIONS (1)', 'LOCATION GROUPS (0)', and 'UPDATED'. Below the header are buttons for '+ Add Location', 'Import Locations', 'Download CSV', and 'Sample Import CSV file'. There is also a search bar and a refresh icon. A table lists one location entry:

No.	Name	IP Addre...	Proxy Ports	Use XFF ...	Authentic...	SSL	Firewall F...	Bandwidth	Virtual Se...	IPS Control	Group
1	trainingsafemar...	---	---	---	Enabled	Enabled	Enabled	---	CLUSTER-1	---	---

At the bottom right of the main area is a 'Help' button. At the very bottom of the screen, there is a footer with copyright information and a timestamp.

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Slide notes

And “Activate Your Changes”.

Slide 97 - Slide 97

The screenshot shows the Zscaler Virtual Service Edge interface. On the left, there is a dark sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation (which is selected), and Search. The main content area has a header with 'MY ACTIVATION STATUS' and 'CURRENTLY EDITING (1)'. It shows a table with one row for 'admin@training.zsclearn.com'. The table columns include IP Address, Proxy Ports, Use XFF, Authentication, SSL, Firewall F..., Bandwidth, Virtual Se..., IPS Control, Group, and Actions. A blue 'Activate' button is visible at the bottom left of the main area. At the bottom right, there is a 'Help' icon.

IP Address	Proxy Ports	Use XFF	Authentication	SSL	Firewall F...	Bandwidth	Virtual Se...	IPS Control	Group	Action
---	---	---	Enabled	Enabled	Enabled	---	CLUSTER-1	---	---	Edit Delete

Slide notes

Slide 98 - Slide 98

The screenshot shows the 'Location Management' section of the ZCCP-IA Virtual Service Edge interface. At the top, there is a message 'Activation Completed!' with a close button. Below it, there are tabs for 'LOCATIONS (1)' and 'LOCATION GROUPS (0)'. A blue box highlights the 'UPDATED' status. There are buttons for '+ Add Location', 'Import Locations', 'Download CSV', and 'Sample Import CSV file'. A search bar with the placeholder 'Search...' and a magnifying glass icon is also present. The main table displays one location entry:

No.	Name	IP Addre...	Proxy Ports	Use XFF ...	Authentic...	SSL	Firewall F...	Bandwidth	Virtual Se...	IPS Control	Group
1	trainingsafemar...	---	---	---	Enabled	Enabled	Enabled	---	CLUSTER-1	---	---

The interface includes a left sidebar with icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. A bottom footer contains copyright information and a help button.

Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents

Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM

Help

Slide notes

Slide 99 - Slide 99

The screenshot shows the 'Location Management' page. At the top, there's a message 'Activation Completed!' with a close button. Below it, tabs for 'LOCATIONS (1)' and 'LOCATION GROUPS (0)' are visible, with 'LOCATIONS' being the active tab. An 'UPDATED' badge is next to the tabs. Below the tabs are buttons for '+ Add Location', '+ Import Locations', 'Download CSV', and 'Sample Import CSV file'. A search bar labeled 'Search...' is also present. The main area is a table with the following data:

No.	Name	IP Addre...	Proxy Ports	Use XFF ...	Authentic...	SSL	Firewall F...	Bandwidth	Virtual Se...	IPS Control	Group	
1	trainingsafemar...	---	---	---	Enabled	Enabled	Enabled	---	CLUSTER-1	---	---	Edit Delete

On the left side, a vertical sidebar contains icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. At the bottom right is a 'Help' button. The footer includes copyright information and a timestamp: 'Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents' and 'Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM'.

Slide notes

Slide 100 - Slide 100

The screenshot shows the 'Location Management' screen within the ZCCP-IA interface. The left sidebar contains icons for Dashboard, Analytics, Policy, Administration, Activation, and Search. The main content area has tabs for 'LOCATIONS (1)' and 'LOCATION GROUPS (0)'. It includes buttons for '+ Add Location', 'Import Locations', 'Download CSV', and 'Sample Import CSV file'. A search bar and a help icon are also present. The table lists one location entry:

No.	Name	IP Addre...	Proxy Ports	Use XFF ...	Authentic...	SSL	Firewall F...	Bandwidth	Virtual Se...	IPS Control	Group
1	trainingsafemar...	---	---	---	Enabled	Enabled	Enabled	---	CLUSTER-1	---	---

At the bottom, there is a copyright notice: 'Copyright©2007-2020 Zscaler Inc. All rights reserved. | Version 6.0 | Patents' and a timestamp: 'Weblog Time: 4/6/2020 11:30:53 AM | Last Updated: 4/6/2020 11:32:32 AM'.

Slide notes

Slide 101 - Configuring the VZEN VM



Configuring the Virtual Service Edge VM

Slide notes

We have completed the required configs in the Admin UI. Let's now configure the Virtual Service Edge VM.

Slide 102 - Slide 102

```
for your release first as it's u...juently.

o The Handbook and FAQ documents are at http://www.FreeBSD.org/ and, along with the mailing lists, can be searched by going to http://www.FreeBSD.org/search/. If the doc distribution has been installed, they're also available formatted in /usr/share/doc.

If you still have a question or problem, please take the output of 'uname -a', along with any relevant error messages, and email it as a question to the questions@FreeBSD.org mailing list. If you are unfamiliar with FreeBSD's directory layout, please refer to the hier(7) manual page. If you are not familiar with manual pages, type 'man man'.

You may also use sysinstall(8) to re-enter the installation and configuration utility. Edit /etc/motd to change this login announcement.

[zsroot@ ~]# link DOWN
em1: link UP: 1000 Mbps Full Duplex (FC NONE of RX/TX)

[zsroot@ ~]# exit
logout

FreeBSD/amd64 (Amnesiac) (ttyv0)

login: [REDACTED]
```

Slide notes

Begin by logging in with the username and password of “zsroot” and “zsroot”.

Configure basic network settings using the command “sudo vzen configure network”.

Enter the DNS server or accept the default.

And answer “yes” or “no” if you would like to add a second NameServer.

Enter the management IP with the netmask.

Then enter the management IP Default Gateway.

Then enter a host name for this VZEN.

We will now step out of the console and connect via SSH to finish our configuration.

Slide 103 - Slide 103

```
Last Login: Tue Mar 1 06:39:23 2016 From 104.129.192.84
FreeBSD 8.4-RELEASE (SMKERNEL) #0: Tue Dec 3 17:46:10 PST 2013

Welcome to FreeBSD!

Before seeking technical support, please use the following resources:

o Security advisories and updated errata information for all releases are
at http://www.FreeBSD.org/releases/ - always consult the ERRATA section
for your release first as it's updated frequently.

o The Handbook and FAQ documents are at http://www.FreeBSD.org/ and,
along with the mailing lists, can be searched by going to
http://www.FreeBSD.org/search/. If the doc distribution has
been installed, they're also available formatted in /usr/share/doc.

If you still have a question or problem, please take the output of
`uname -a`, along with any relevant error messages, and email it
as a question to the questions@freebsd.org mailing list. If you are
unfamiliar with FreeBSD's directory layout, please refer to the hier(7)
manual page. If you are not familiar with manual pages, type `man man`.

You may also use sysinstall(8) to re-enter the installation and
configuration utility. Edit /etc/motd to change this login announcement.

[zsroot@VZEN-1 ~]$
```

Slide notes

Now we will install the SSL certificate that was downloaded from the Zscaler Admin UI for this VZEN instance. Prior to installation the certificate must be copied to the VZEN via FTP, SFTP, or SCP. For the purpose of this demo I have already copied it over.

Use the "ls" command to view the certificate you copied over then use the command "sudo vzen install-certificate" followed by the file name to add the cert.

Slide 104 - Slide 104

```
Last Login: Tue Mar 1 07:13:17 2016 From 104.129.192.84
FreeBSD 8.4-RELEASE (SMKERNEL) #0: Tue Dec 3 17:46:10 PST 2013

Welcome to FreeBSD!

Before seeking technical support, please use the following resources:

o Security advisories and updated errata information for all releases are
at http://www.FreeBSD.org/releases/ - always consult the ERRATA section
for your release first as it's updated frequently.

o The Handbook and FAQ documents are at http://www.FreeBSD.org/ and,
along with the mailing lists, can be searched by going to
http://www.FreeBSD.org/search/. If the doc distribution has
been installed, they're also available formatted in /usr/share/doc.

If you still have a question or problem, please take the output of
`uname -a`, along with any relevant error messages, and email it
as a question to the questions@freebsd.org mailing list. If you are
unfamiliar with FreeBSD's directory layout, please refer to the hier(7)
manual page. If you are not familiar with manual pages, type `man man`.

You may also use sysinstall(8) to re-enter the installation and
configuration utility. Edit /etc/motd to change this login announcement.

[zsroot@ZEN-1 ~]$ ls
VzenCertificate-VZEN-1.zip
[zsroot@ZEN-1 ~]$ sudo vzen install-cert ./VzenCertificate-VZEN-1.zip
Password:
Certificates successfully installed
[zsroot@ZEN-1 ~]$
```

Slide notes

Use the command “sudo vzen download-build” to download and install the complete and up to date software package. This process can take up to 15 or 20 minutes, depending on your internet connection as the file is just larger than 1 Gig. For the purpose of this demo I have compressed the 20 minute process into 2 minutes so you can see what the entire process looks like.

Verify the VZEN is up and running using the command “sudo vzen status”. You should see that the SME, which is the ZEN itself, and the Load Balancer are running with their process IDs indicated.

Slide 105 - Troubleshooting



Troubleshooting

Slide notes

Congratulations! The VZEN configuration is now complete. Next, I will walk you through troubleshooting commands to verify connectivity and information collection in the event you need assistance from TAC.

Slide 106 - Slide 106

```
Last login: wed Mar 2 04:51:30 2016 From 23.119.162.188
FreeBSD 8.4-RELEASE (SMKERNEL) #0: Tue Dec 3 17:46:10 PST 2013

Welcome to FreeBSD!

Before seeking technical support, please use the following resources:

o Security advisories and updated errata information for all releases are
at http://www.FreeBSD.org/releases/ - always consult the ERRATA section
for your release first as it's updated frequently.

o The Handbook and FAQ documents are at http://www.FreeBSD.org/ and,
along with the mailing lists, can be searched by going to
http://www.FreeBSD.org/search/. If the doc distribution has
been installed, they're also available formatted in /usr/share/doc.

If you still have a question or problem, please take the output of
uname -a, along with any relevant error messages, and email it
as a question to the questions@freebsd.org mailing list. If you are
unfamiliar with FreeBSD's directory layout, please refer to the hier(7)
manual page. If you are not familiar with manual pages, type 'man man'.

You may also use sysinstall(8) to re-enter the installation and
configuration utility. Edit /etc/motd to change this login announcement.

[zsroot@VZEN-1 ~]$
```

Slide notes

To see a basic list of available commands type “sudo vzen” then press enter.

To see a complete list of commands, plus a description of each command, type “sudo vzen help”.

To allow TAC access for remote diagnostics type “sudo vzen support-access-start”. No inbound firewall rules are needed. Only an outbound rule for port 12002 is needed to set up the connection then a reverse tunnel is created. You can see that the tunnel is now created from the management IP of the VZEN to Zscaler on port 12002.

To disable support access type “sudo vzen support-access-stop”.

If it is not possible to enable support access, due to your internal policies, you can collect diagnostic information and send it to TAC using the command “sudo vzen collect-diagnostics”. This will create a .tar file and place it in the directory /sc/sme//log. The filename will begin with “debuginfo” and end in “.tgz”. The number in the filename will increment each time you run this command.

Type “sudo vzen troubleshoot connection|grep 9422”. The output should show an established connection to the Zscaler Central Authority.

Alternatively, “sudo vzen troubleshoot connection” shows all connections to the Zscaler cloud infrastructure. Again, port 9422 is the Zscaler Central Authority and port 9431 is to the Nanolog Cluster.

“sudo vzen troubleshoot netstat” shows all active connections.

“sudo vzen test-firewall” will identify if any required outbound ports to the Zscaler cloud are blocked by your firewall. This command can only be run if the VZEN is stopped. Use the command “sudo vzen stop”. This should also be run from the console rather than SSH as the SSH connection will get dropped.

Re-start all services using “sudo vzen start”.

Then verify that all services are running using “sudo vzen status”.

Slide 107 - Slide 107

```
Last login: wed Mar 2 04:53:56 2016 from 23.119.162.188
FreeBSD 8.4-RELEASE (SMKERNEL) #0: Tue Dec 3 17:46:10 PST 2013

Welcome to FreeBSD!

Before seeking technical support, please use the following resources:

o Security advisories and updated errata information for all releases are
at http://www.FreeBSD.org/releases/ - always consult the ERRATA section
for your release first as it's updated frequently.

o The Handbook and FAQ documents are at http://www.FreeBSD.org/ and,
along with the mailing lists, can be searched by going to
http://www.FreeBSD.org/search/. If the doc distribution has
been installed, they're also available formatted in /usr/share/doc.

If you still have a question or problem, please take the output of
`uname -a`, along with any relevant error messages, and email it
as a question to the questions@FreeBSD.org mailing list. If you are
unfamiliar with FreeBSD's directory layout, please refer to the hier(7)
manual page. If you are not familiar with manual pages, type `man man`.

You may also use sysinstall(8) to re-enter the installation and
configuration utility. Edit /etc/motd to change this login announcement.

[zsroot@VZEN-1 ~]$
```

Slide notes

And last, don't forget to change your password using the command “passwd”.

Enter your old password.

Then the new password.

And re-type your new password to confirm.

Log out using the “exit” command and then log back in with the new password.

Slide 108 - Thank You and Quiz



Thank You and Quiz

Slide notes

This completes the Virtual Service Edge module. We hope this module has been useful to you and thank you for your time. What will follow is a short quiz to test your knowledge of the material presented during this module. Click the 'X' in the upper right corner of the window to close this module then launch the quiz. You may retake the quiz as many times as necessary to pass.