HP2-Z31 Q&As

Creating HP Software-defined Networks

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QUESTION 1

Which Open Flow plane is responsible for forwarding the packets?

A. Control plane

B. Application plane

C. Management plane

D. Data plane

Correct Answer: D

The forwarding table is delivered to the data plane by the management plane as part of the device operating system. Thus when an Ethernet frame arrives on the switch interface, the data plane then forwards it to output port.

Note: OpenFlow defines a standard for sending flow rules to network devices so that the Control Plane can add them to the forwarding table for the Data Plane.

Incorrect:

Not A: The control plane will use the routing table to build the forwarding table used by data plane.

Not C: The Management Plane handles functions such device management, firmware updates, SNMP and external configuration via the CLI.

Reference: OpenFlow and Software Defined Networking: Is it Routing or Switching ?

QUESTION 2

What are the addressing requirements for an HP VAN SDN Controller team?

A. A team requires two IP addresses for each controller, plus one IP address assigned to the team.

B. A team requires one IP address for each controller, plus one IP address assigned to the team.

C. A team requires one IP address, and members communicate using their MAC addresses.

D. A team requires one IP address for each controller; each is configured with the same multicast address.

Correct Answer: B

Explanation: A team requires one IP address for each controller, plus one IP address assigned to the team. If the current team manager goes down, the failover process includes keeping the team IP address active on the new team manager. Reference: HP VAN SDN Controller Administrator Guide

http://h20566.www2.hp.com/portal/site/hpsc/template.BINARYPORTLET/public/kb/docDisplay/resourc e.process/?

spf_p.tpst=kbDocDisplay_ws_BIandspf_p.rid_kbDocDisplay=docDisplayResURLandjavax.portlet.begCacheTok=com.vignette.cachetokenandspf_p.rst_kbDocDisplay=wsrp-resourceState%3DdocId%253Demr_na(page 54)c04003114-2%257CdocLocale%253Dandjavax.portlet.endCacheTok=com.vignette.cachetoken

QUESTION 3

A customer has a network consisting of 90 switches running OpenFlow 1.0. High Availability is not required as a hybrid network is being used. Which license types does the customer need to purchase? (Select two.)

A. HP VAN SDN Ctrl 100-node E-LTU

B. HP VAN SDN Ctrl HA E-LTU

C. HP VAN SDN Ctrl Base SWw/ 100-node E-LTU

D. HP VAN SDN Ctrl Base SW w/ 50-node E-LTU

E. HP VAN SDN Ctrl 50-node E-LTU

Correct Answer: DE

The following licenses are available for the HP VAN SDN Controller:

* (D) Base controller license (HP VAN SDN Ctrl Base SW w/ 50node E-LTU)--Enables the HP VAN SDN Controller to communicate with up to 50 OpenFlow switches. This license is a prerequisite for the other licenses, and must be installed for you to receive technical support during your first 90 days of use. *(E) Base controller plus 50 "Add Nodes" license (HP VAN SDN Ctrl 50node E-LTU)-- Extends by 50 the number of switches the base controller can communicate with using OpenFlow. In addition, you can install the Add Nodes license multiple times. For example: If you install one Add Nodes license on an HP VAN SDN Controller with a base license present, the total number of OpenFlow switches supported is 100. If you install three Add Nodes licenses on an HP VAN SDN controller with a base license, the total number of OpenFlow switches supported is 200. Etc.

Reference: HP VAN SDN Controller License Registration and Activation Guide

QUESTION 4

Which statement best describes software-defined networking (SDN)?

A. SDN allows software to leverage the network infrastructure, enabling a centralized and policy-based approach to network provisioning and traffic forwarding.

B. SDN allows administrators to share software, policies, templates, and applications between multiple virtual machines that are running on the same network.

C. SDN is another name for OpenFlow, a protocol that lets switches handle traffic with OpenFlow tables rather than MAC forwarding tables and routing tables.

D. SDN lets IT developers manage physical infrastructure devices directly without pre-defined templates or intermediary devices.

Correct Answer: A

The HP VAN SDN Controller is a Java-based OpenFlow controller enabling SDN solutions such as network controllers

for the data center, public cloud, private cloud, and campus edge networks. This includes providing an open platform for developing experimental and special- purpose network control protocols using a built-in OpenFlow controller. The HP VAN SDN Controller is a platform for developing SDN applications and deploying SDN applications. The controller can be characterized as providing a Base Control Platform, a Distributed Platform for High-Availability and Scalability, and an Extensible Platform.

Reference: HP VAN SDN Controller Administrator Guide

QUESTION 5

Which service on the HP VAN SDN Controller allows Observation posts to be set on a network?

A. Network Node Service

B. Path Diagnostic Service

C. Path Daemon Service

D. Topology Service

Correct Answer: B

Path Diagnostics Determines and verifies the path taken by a specific packet from a source host to destination host. Evaluates flows configured across the switches in the control domain for diagnosis Creates `Observation posts\\' on every switch in the path that the packet would take Tallys packet_ins from the observation posts to figure out where a path is broken Lists neighbors for any given device

Reference: HP VAN SDN Controller Administrator Guide

QUESTION 6

Refer to the exhibit.

```
Mode                      : Active
Flow Location             : Hardware and Software
No. of Hw Flows           : 6
No. of Sw Flows           : 1
Hw. Rate Limit            : 0 kbps
Sw. Rate Limit            : 100 pps
Conn. Interrupt Mode      : Fail-Secure
Maximum Backoff Interval  : 60 seconds
Probe Interval            : 10 seconds
Hw. Table Miss Count      : NA
No. of Sw Flow Tables     : 1
Egress Only Ports         : None
Table Model               : Policy Engine and Software
```

A network engineer wants to use dpctl to make flow modifications directly on an HP 3800 switch flow table. Can the engineer make the changes using dpctl on the switch in the exhibit?

A. The engineer is unable to connect to the switch directly. Dpctl requires OpenFlow 1.0, and (he switch is currently configured to use OpenFlow 1.3.

B. The engineer is able to connect to the switch directly using dpctl, but is unable to use dpctl to update the flow entries on the switch. Ovs-ofctl is required to make flow modifications when using OpenFlow

1.3.

C. The engineer is able to connect to the switch directly using dpctl. The engineer will then need to use the correct OpenFlow 1 3 syntax to make flow modifications using dpctl.

D. The engineer is unable to connect to the switch directly. Once the correct configuration is completed on the switch, the engineer will be able to connect directly and then use the correct OpenFlow 1.3 syntax to make flow modifications using dpctl

Correct Answer: C

dpctl

The HP supports a passive listening port per OpenFlow instance. This is super-useful when you want to

debug an individual switch without going through the controller.

Add a listener port:

openflow listener ptcp:6633

Then use dpctl. Examples:

dpctl dump-tables tcp::

dpctl dump-flows tcp::

dpctl add-flow tcp:: \\'in_port=104 actions=output:98\\'

QUESTION 7

Which HP IMC SDN Manager functionality provides a logical overview of the OpenFlow network?

A. SDN Manager reports

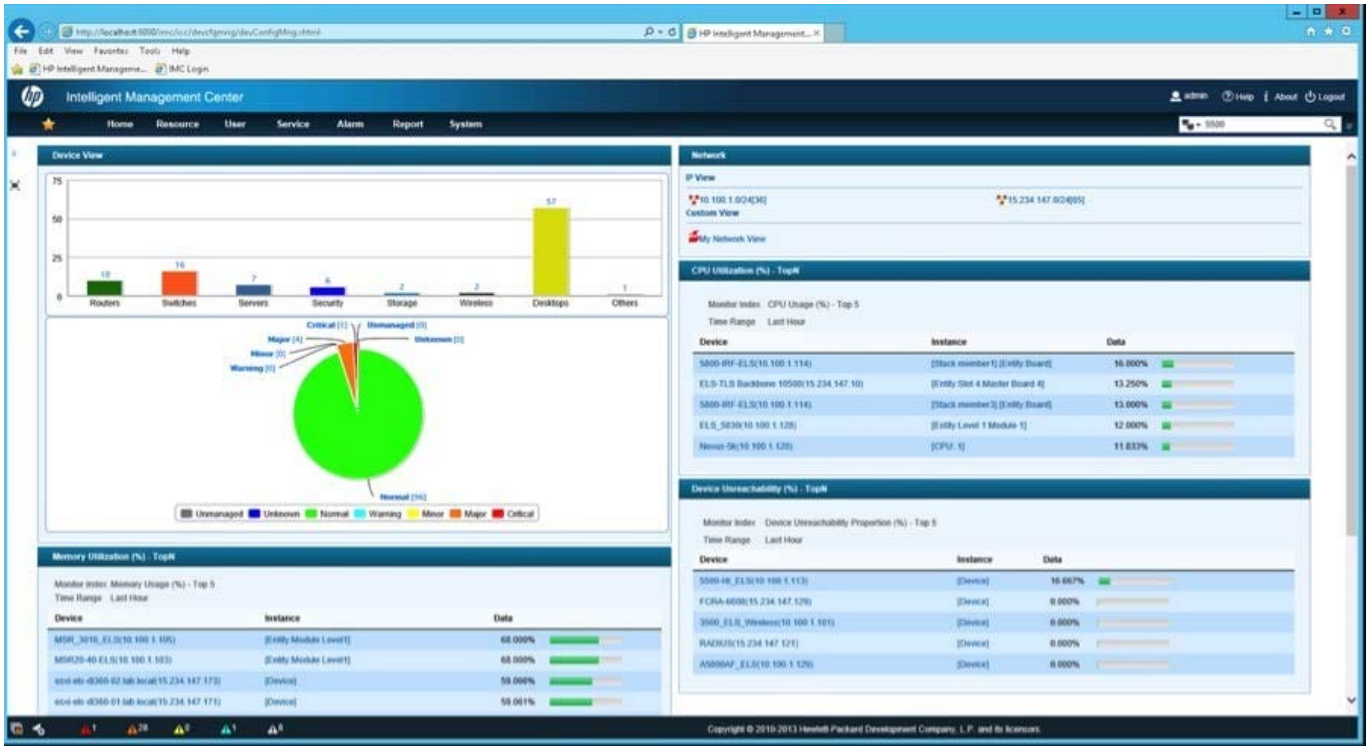
B. SDN Manager dashboard

C. SDN Manager flow entry management

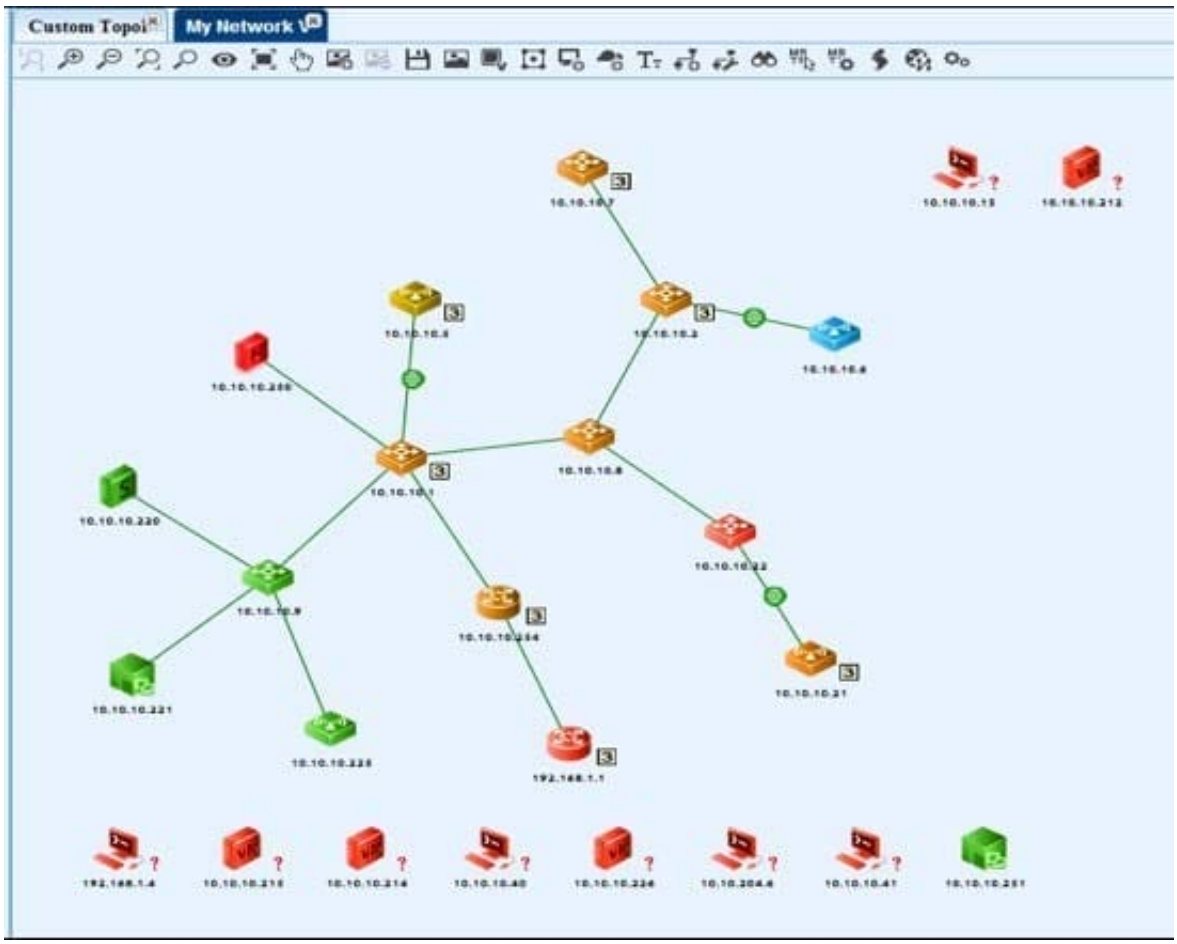
D. SDN Manager OpenFlow topology

Correct Answer: B

HP IMC Dashboard figure:



My Network view (within SDN Manager Dashboard):



Reference: Review: HP Intelligent Management Center (IMC)

QUESTION 8

Refer to the exhibit.

User	Occurred	Activity	Data	Origin	Controller ID
sdn	today 07:29:54	Start	Topology Viewer has been started	Application Management	d0152bbe-d3e1-4170-a7ec-db0...
sdn	today 07:29:48	Stop	Topology Viewer has been stopped	Application Management	d0152bbe-d3e1-4170-a7ec-db0...
sdn	2014-02-14 22:31:02	Start	Node Manager has been started	Application Management	d0152bbe-d3e1-4170-a7ec-db0...
sdn	2014-02-14 22:29:45	Stop	Node Manager has been stopped	Application Management	d0152bbe-d3e1-4170-a7ec-db0...
sdn	2014-02-05 12:18:33	Download	sdn_controller_backup_2014-02-05_03:5...	Backup Management	d0152bbe-d3e1-4170-a7ec-db0...
sdn	2014-02-05 12:17:54	Download	sdn_controller_backup_2014-02-05_03:5...	Backup Management	d0152bbe-d3e1-4170-a7ec-db0...
sdn	2014-02-05 12:16:06	Download	sdn_controller_backup_2014-02-05_03:5...	Backup Management	d0152bbe-d3e1-4170-a7ec-db0...
sdn	2014-02-05 12:14:09	Download	sdn_controller_backup_2014-02-05_03:5...	Backup Management	d0152bbe-d3e1-4170-a7ec-db0...
sdn	2014-02-05 12:12:24	Download	sdn_controller_backup_2014-02-05_03:5...	Backup Management	d0152bbe-d3e1-4170-a7ec-db0...
sdn	2014-02-05 12:11:24	Download	sdn_controller_backup_2014-02-05_03:5...	Backup Management	d0152bbe-d3e1-4170-a7ec-db0...

Which HP VAN SDN Controller feature displays the output in the exhibit?

A. Audit Log

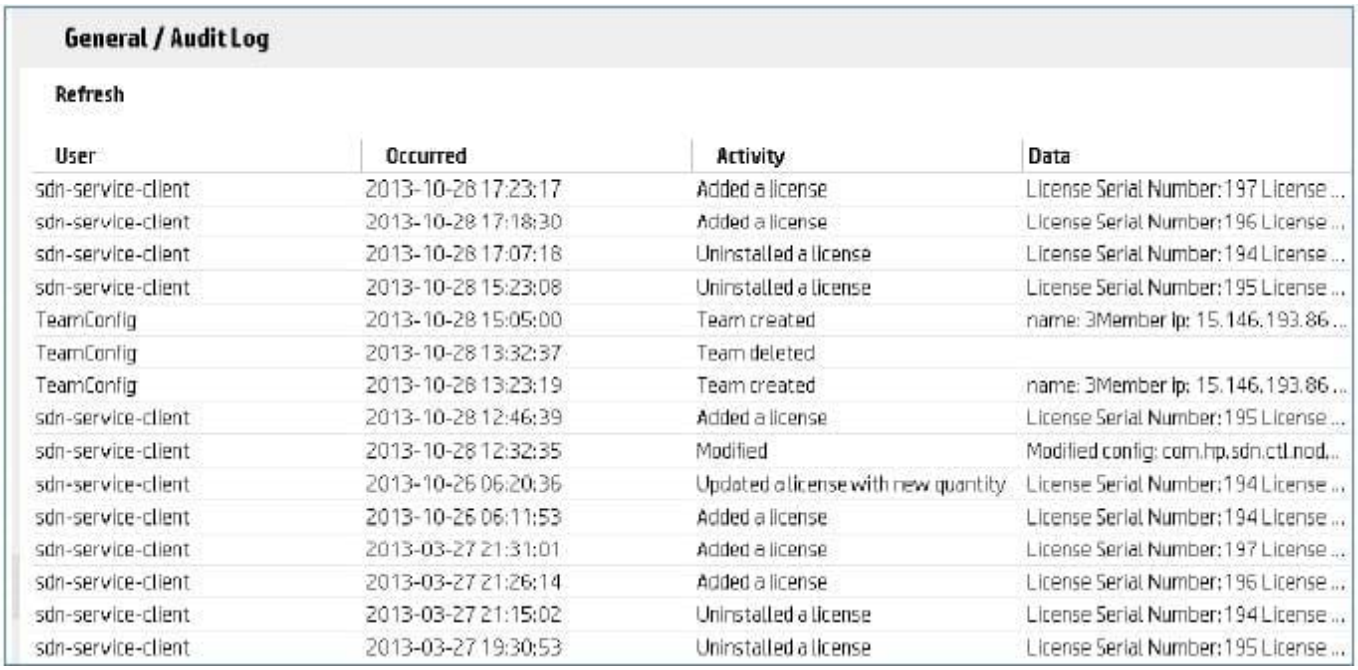
B. OpenFlow Monitor

C. Support Log

D. Alerts

Correct Answer: A

For example, the audit log displays software license and teaming activity: Reference: HP VAN SDN Controller Administrator Guide


General / Audit Log

Refresh

User	Occurred	Activity	Data
sdn-service-client	2013-10-28 17:23:17	Added a license	License Serial Number:197 License ...
sdn-service-client	2013-10-28 17:18:30	Added a license	License Serial Number:196 License ...
sdn-service-client	2013-10-28 17:07:18	Uninstalled a license	License Serial Number:194 License ...
sdn-service-client	2013-10-28 15:23:08	Uninstalled a license	License Serial Number:195 License ...
TeamConfig	2013-10-28 15:05:00	Team created	name: 3Member Ip: 15.146.193.86 ...
TeamConfig	2013-10-28 13:32:37	Team deleted	
TeamConfig	2013-10-28 13:23:19	Team created	name: 3Member Ip: 15.146.193.86 ...
sdn-service-client	2013-10-28 12:46:39	Added a license	License Serial Number:195 License ...
sdn-service-client	2013-10-28 12:32:35	Modified	Modified config: com.hp.sdn.ctl.nod...
sdn-service-client	2013-10-26 06:20:36	Updated a license with new quantity	License Serial Number:194 License ...
sdn-service-client	2013-10-26 06:11:53	Added a license	License Serial Number:194 License ...
sdn-service-client	2013-03-27 21:31:01	Added a license	License Serial Number:197 License ...
sdn-service-client	2013-03-27 21:26:14	Added a license	License Serial Number:196 License ...
sdn-service-client	2013-03-27 21:15:02	Uninstalled a license	License Serial Number:194 License ...
sdn-service-client	2013-03-27 19:30:53	Uninstalled a license	License Serial Number:195 License ...

QUESTION 9

Which important functions does the HP VAN SDN Controller provide for an SDN deployment? (Select two.)

A. It discovers HP switches using SNMP. configures OpenFlow on them, and enables the OpenFlow instances.

B. It provides a platform for SDN applications and mediates between these applications and network infrastructure devices.

C. It delivers comprehensive, policy-based management for both traditional networks and SDN networks, enabling gradual integration of SDN applications.

D. It uses APIs to expose an abstracted and centralized control plane to network applications.

E. It provides built-in templates for provisioning virtual machine network connectivity and automatically applies those templates as required.

Correct Answer: BC

The HP VAN SDN Controller is a Java-based OpenFlow controller enabling SDN solutions such as network controllers for the data center, public cloud, private cloud, and campus edge networks. This includes providing an open platform for developing experimental and special- purpose network control protocols using a built-in OpenFlow controller.

The HP VAN SDN Controller is a platform for developing SDN applications and deploying SDN applications. The controller can be characterized as providing a Base Control Platform, a Distributed Platform for High-Availability and Scalability, and an Extensible Platform.

Reference: HP VAN SDN Controller Administrator Guide

QUESTION 10

A customer wants to deploy an HP ProVision-based network with laptops daisy chained to physical IP phones. The customer also wants the laptop traffic to be managed by OpenFlow, while the phones use traditional QoS. Which OpenFlow switch instance configuration option should the customer use?

A. QoS passthrough

B. Aggregate

C. Virtualization

D. Passive

Correct Answer: C

QUESTION 11

Which command installs the HP VAN SDN Controller software?

A. sudo dpkg -1 *hp-sdn-ctl

B. sudo dpkg -i hp-sdn-ctl_2.0.0.4253_amd64.deb

C. sudo dpkg -P hp-sdn-ctl_2.0.0.4253_amd64.deb

D. sudo dpkg -1 hp-sdn-ccl 2.0.0.4253 amd64.deb

Correct Answer: B

Install the HP VAN SDN Controller from the directory in which it is stored: ~$ sudo dpkg i hp-sdn-ctl_version_amd64.deb · Replace version with a value for release version 2.0.1.4254 or greater, as shown in Example. Example: Installing the controller software ~$ sudo dpkg -i hp-sdn-ctl_2.0.1.4254_amd64.deb

Reference: HP VAN SDN Controller Installation Guide

QUESTION 12

Which mechanism provides authentication of API calls via the REST API within the HP VAN SDN Controller?

A. Openstack Keystone

B. Java

C. RabbitMQ

D. Openstack

Correct Answer: A

The SDN controller uses Openstack Keystone as an identity management for managing users, generating tokens, as well as token validation.

Reference: HP VAN SDN Controller Administrator Guide

QUESTION 13

What are two challenges when planning to implement a BYOD environment? (Select two.)

A. device state unknown

B. device software inspection

C. device not under central control

D. device CA enrollment

E. device inventory control

Correct Answer: BD

* HP identifies the following main BYOD security challenges:

(B)

Protecting the network from malware

(D)

Providing secure access to the network

Scaling the network to meet demand

Ensuring an optimized Wi-Fi experience

* The top BYOD security concerns for enterprise companies are:

+

loss of company or client data (picked by 67%)

+

(D) unauthorized access to company data or systems (57%) + (B) users downloading app or content with embedded security exploits (47%) + (B) malware infections (45%)

+

and lost or stolen devices (41%)

Reference: Bring your own device (BYOD), FAQs http://h17007.www1.hp.com/docs/byod/faq_4AA4-5466ENW.pdf

QUESTION 14

Which protocol is used for link discovery when OpenFlow switches are separated by a non- OpenFlow switch?

A. BDDP

B. RSTP

C. LLDP

D. LACP

Correct Answer: A

LLDP is used to discover direct links between switches and BDDP is used to discover the switches in the same broadcast domain.

Note: Using a link-discovery module, the controller generates both LLDP and broadcast packets (referred to as BDDPs) and sends them to all neighboring switches on a regular basis.

Reference: OpenFlow Controller

QUESTION 15

What are the OpenFlow flow entry timeout values? (Select two.)

A. Flow timeout

B. Idle timeout

C. Soft timeout

D. Controller timeout

E. Hard timeout

Correct Answer: BE

OpenFlow flow entry timers include the idle timeout, the hard timeout, and the purge flow timer.

Reference: Understanding OpenFlow Flow Entry Timers on Devices Running Junos OS http://www.juniper.net/techpubs/en_US/junos13.3/topics/concept/junos-sdn-openflow-flow- entry-timersoverview.html