

Vendor: EMC

Exam Code: E20-260

Exam Name: VPLEX Specialist Exam for Implementation

Engineers

Version: Demo

QUESTION 1

Which VPLEX volume contains virtual-to-physical mapping information?

- A. Logging volume
- B. Metadata volume
- C. Virtual volume
- D. Repository volume

Correct Answer: B

QUESTION 2

A customer has a VPLEX Metro configuration across two data centers 200 km apart. During an overnight backup, the WAN-COM link between the two data centers fails.

Which volume allows for future incremental re-synchronization with the remote mirror once the link is restored?

- A. Logging Volume
- B. Storage Volume
- C. Metadata Volume
- D. Virtual Volume

Correct Answer: A

QUESTION 3

What is the maximum supported latency for a VPLEX Metro implementation?

- A. 2 ms
- B. 50 ms
- C. 5 ms
- D. 15 ms

Correct Answer: C

QUESTION 4

medium-sized VPLEX clusters are connected via IP with a round-trip latency of approximately 35 ms.

What type of configuration is this?

- A. Geo
- B. Metro
- C. Local
- D. Global

Correct Answer: A

QUESTION 5

What is the total number of engines for a small VPLEX Metro configuration?

- A. 1
- B. 8
- C. 4
- D. 2

Correct Answer: D

QUESTION 6

A customer wants to implement VPLEX between two datacenters 200 km apart. The latency between the sites is 15 ms.

Which VPLEX topology is recommended?

- A. Metro
- B. Geo
- C. Local
- D. Global

Correct Answer: B

QUESTION 7

When creating logging and metadata volumes, which LUN requirement applies to both volumes?

- A. Array LUNs must be zeroed-out.
- B. Array LUNs must be RAID 0
- C. Array LUNs must be thin.
- D. Array LUNs must be RAID 1

Correct Answer: A

QUESTION 8

How much distributed storage can be managed by a 20 GB logging volume?

- A. Up to 960 TB
- B. Up to 320 TB
- C. Up to 640 TB
- D. Up to 1.2 PB

Correct Answer: C

QUESTION 9

What is the maximum cache of a single engine in a medium VPLEX VS2 cluster?

- A. 72 GB
- B. 36 GB
- C. 144 GB
- D. 78 GB

Correct Answer: A

QUESTION 10

A dual fan failure occurs on a single VPLEX engine.

What will be the result?

- A. The engine will shut down immediately.
- B. Director B only will shut down.
- C. Director A only will shut down.
- D. The engine will shut down after three minutes.

Correct Answer: D

QUESTION 11

What is the purpose of I/O module 2 in a the VPLEX VS2 hardware configuration?

- A. WAN-COM connectivity
- B. Front-end connectivity
- C. Back-end connectivity
- D. Local-COM connectivity

QUESTION 12

You present additional LUNs to VPLEX. Which command must be executed to make them visible to VPLEX?

- A. Array discover
- B. Array re-discover
- C. Array claim
- D. Storage-volume find-array

Correct Answer: B

QUESTION 13

What are key benefits of storage virtualization with VPLEX?

- A. Ease of consolidations; device mobility; simplifying management; provisioning of multiple arrays.
- B. Consolidations; point-in-time backups; simplifying management; third-party array support.
- C. Device performance; point-in-time backups; third party array support; device mobility
- D. Synchronous SAN extension across long distances; device mobility; and third-party array support

Correct Answer: D

QUESTION 14

What three elements are part of the VPLEX Storage View?

A. VPLEX FE Port

Top-Level Device

Host IP address

B. VPLEX FE Port

Initiator Port

Virtual Volume

C. VPLEX BE Port

VPLEX FE Port

Virtual Volume

D. VPLEX BE Port

Initiator Port

Virtual Volume

Correct Answer: B

QUESTION 15

A host attempted a read from a volume in a VPLEX Metro configuration. The data does not exist in cache at all.

What process does VPLEX use to service the read request?

- A. VPLEX first searches the local cache for the data, then the cache coherency directory before reading from the array.
- B. VPLEX first searches the cache coherency directory for the data before reading from the array.
- C. VPLEX first searches the local cache for the data before reading from the array.
- D. VPLEX first searches the cache coherency directory for the data, and then searches the local cache before reading from the array.

QUESTION 16

In the distributed cache architecture, how much local cache does a VS2 director have?

- A. 36GB
- B. 64GB
- C. 32GB
- D. 72GB

Correct Answer: C

QUESTION 17

Which command allows you to navigate vplexcli history by string?

- A. CTRL + R string
- B. history find string
- C. history | grep string
- D. UP arrow key

Correct Answer: A

QUESTION 18

Which command-line option can be invoked within VPlexcli as a task to recognize and use new LUNs provisioned to a cluster?

- A. storage-volume discover
- B. storage-volume resurrect
- C. storage-volume find-array
- D. storage-volume claim

Correct Answer: D

QUESTION 19

In which directory is a session log file created whenever the Management Console is launched?

- A. /var/log/VPlex/cli/
- B. /var/log/sessions
- C. /diag
- D. /tmp/log/sessions

Correct Answer: A

QUESTION 20

You are using VPLEX Unisphere to perform management functions in your environment. You are tasked with creating several volume migrations to a new storage array.

What tab should you use to perform this migration?

- A. Provision Storage
- B. Mobility Central
- C. System Status
- D. Performance Dashboard

Correct Answer: B

QUESTION 21

Following EMC best practices, what information is required to register a VPLEX on an ESRS portal?

- A. Site ID; cluster TLA serial number; Management server eth3 IP address
- B. License ID; engine serial number; Management server eth3 IP address
- C. Site ID; engine serial number; Management server eth3 IP address
- D. Site ID; cluster TLA serial number; Witness IP address

Correct Answer: A

QUESTION 22

When inspecting a VS1 director's status LEDs, you see that a status LED is blue. What does this indicate?

- A. The VPLEX Standby Power Supply battery is low.
- B. GeoSynchrony code cannot be downloaded from the Management Server
- C. The director is downloading GeoSynchrony code from the Management Server.
- D. The VPLEX cannot connect with the other cluster

Correct Answer: C

QUESTION 23

You are preparing a site for a large Metro VPLEX cluster. The storage administrator wants to prepare the storage network configuration and needs to ensure easy troubleshooting of storage path faults.

How many WAN-COM zones per fabric will need to be created?

- A. 16
- B. 12
- C. 8
- D. 32

Correct Answer: A

QUESTION 24

You are preparing a site for a large Metro VPLEX cluster. The storage administrator wants to prepare the storage network configuration and needs to ensure easy troubleshooting of storage path faults.

How many WAN-COM zones will need to be created?

- A. 24
- B. 16
- C. 8
- D. 32

Correct Answer: D

QUESTION 25

What can you use to generate a list of VPLEX fabric initiator and target identifiers?

- A. WWN Utility
- B. Procedure Generator
- C. Powerlink
- D. Command Line

Correct Answer: A

QUESTION 26

When configuring a VPLEX local cluster, according to EMC best practices, how many metadata volumes are required?

- A. 3
- B. 4
- C. 2
- D. 1

QUESTION 27

You are configuring a single engine VPLEX Metro to support both local and distributed volumes. The VPLEX will utilize 10Gb WAN-COM modules in a routed configuration.

According to EMC best practices, what is the minimum number of subnets and IPs required?

A. 7 subnets; 15 IPsB. 5 subnets; 15 IPsC. 3 subnets; 7 IPsD. 3 subnets; 30 IPs

Correct Answer: A

QUESTION 28

Which VPLEX component is configured with a public IP address during the installation process?

- A. LCOM Switch
- B. Director A
- C. Management Server
- D. Director B

Correct Answer: C

QUESTION 29

You are configuring an FC Switch for a VPLEX implementation using VS2 engines. What is the required speed setting for the switch ports connected to the VPLEX FE ports in order to achieve the maximum throughput of VS2 engines?

- A. 8 Gbps
- B. 4 Gbps
- C. 16 Gbps
- D. 10 Gbps

Correct Answer: A

QUESTION 30

What are the recommended protection and disk type when selecting a VPLEX Logging Volume?

- A. RAID6(6+2) and FC Disks
- B. RAID6(14+2) and SATA Disks
- C. RAID1 and SSD Disks
- D. RAID5 and FC Disks

Correct Answer: D

QUESTION 31

In addition to Active Directory, with what other directory service can VPLEX integrate for user authentication?

A. LDAP

- B. NIS
- C. NDS
- D. PAM

QUESTION 32

A customer has ordered a two-engine VPLEX cluster to be installed in a custom rack. A minimal VNX5300 is already installed in the middle of the rack, occupying nine rack unit spaces.

What is the correct approach to deploy the two-engine VPLEX cluster?

- A. The engines and SPSs can be placed under the VNX5300 and the other components above the VNX5300 using longer cables.
- B. Use a rack with sufficient space to install all the VPLEX cluster components together according to the predefined EMC layout.
- C. The installation of a two engine cluster is not supported in a customer rack without a formal EMC RPQ.
- D. The EMC account team must order a factory installed VPLEX two engine configuration and ship the custom install VPLEX back to EMC.

Correct Answer: B

QUESTION 33

What information is required to configure ESRS for VPLEX?

A. VPLEX model type

Top Level Assembly

Site ID

IP address of the Management Server public port

B. Top Level Assembly

Site ID

IP address of the Management Server public port VPLEX Configuration (1, 2 or 4 Engines)

C. VPLEX model type

Top Level Assembly

Primary customer contact

IP address of the Management Server public port

D. VPLEX model type

Site ID

IP address of the Management Server public port

Primary Customer contact

Correct Answer: A

QUESTION 34

According to EMC best practices, how many metadata volumes for a VPLEX Metro configuration are required on each cluster?

- A. 4 Metadata volumes and 4 Metadata Backup volumes
- B. 2 Metadata volumes and 1 Metadata Backup volume
- C. 2 Metadata volumes and 2 Metadata Backup volumes
- D. 4 Metadata Volumes and no Metadata Backup volumes

Correct Answer: C

QUESTION 35

Which VPLEX management NIC Interface must be connected to customer IP public LAN?

A. eth3

- B. eth2
- C. eth1
- D. eth0

QUESTION 36

Which VPLEX management interface is used for initial configuration?

- A. eth3
- B. eth2
- C. eth0
- D. eth1

Correct Answer: D

QUESTION 37

Where is the wwn-seed physically located on VS2 engines?

- A. On the back of the engine on the bottom of the chassis
- B. On the front of the management server
- C. On the front of the director
- D. On the front of the director bezel cover

Correct Answer: A

QUESTION 38

A customer has ordered a new VPLEX, and you are on site doing the initial installation. When creating metadata volumes for the VPLEX Local configuration, the customer asks you how much total storage is needed for the VPLEX metadata. According to EMC best practices, what is the total minimum storage needed for this configuration?

- A. 10 GB
- B. 312 GB
- C. 156 GB
- D. 234 GB

Correct Answer: B

QUESTION 39

You are zoning a dual-engine Local VPLEX cluster to a Symmetrix array to see LUNs 0010 and 0020 for metadata backups.

How many directors in the cluster must be zoned and masked to these LUNs?

- A. All of the directors
- B. Any two directors
- C. One from each engine
- D. Only one director

Correct Answer: A

QUESTION 40

A customer has purchased a dual engine VPLEX Metro cluster. During installation, there are not enough free SAN ports to connect all WAN-COM ports to the SAN. What is the recommended approach?

A. The customer must connect the WAN-COM ports of the first engine only and disable the second engine from the VPLEX CLI.

- B. It is sufficient to connect the WAN-COM ports of either engine 1 or 2 because redundancy is provided by leveraging two separate SAN fabrics.
- C. The customer must provide additional SAN ports or acquire additional SAN ports to connect all WAN-COM ports of both VPLEX engines to the SAN.
- D. The customer must connect the WAN-COM ports of the first engine only and disable the second engine from the Unisphere for VPLEX GUI.

QUESTION 41

What is the EMC best practice for the optimum number of back-end storage paths per director presented to a LUN?

- A. 4 paths
- B. 2 paths
- C. 8 paths
- D. 16 paths

Correct Answer: A

QUESTION 42

When configuring a RAID-1 logging volume, what flags must be used in the command line?

- A. -d -n -g -e
- B. -n -d e
- C. -n -g -e
- D. -d -g -e

Correct Answer: C

QUESTION 43

What is EMC's best practice for fault tolerance when zoning a VPLEX Metro together over fibre channel for successful communication between the sites?

- A. Ensure that all fibre channel WAN-COM ports are zoned to each other in both SAN fabrics (Many-to-Many Zoning).
- B. Ensure that all fibre channel Local-COM ports are zoned to the WAN-COM ports in both SAN fabrics (One-to-Many Zoning).
- C. Ensure that all fibre channel Local-COM ports are zoned to each other in both SAN fabrics (Many-to-Many Zoning).
- D. Ensure that all fibre channel WAN-COM ports are zoned to each other in both SAN fabrics (One-to-Many Zoning).

Correct Answer: D

QUESTION 44

During the installation of a small VPLEX Metro, the command `configuration continue-system- setup' is issued. What is accomplished by this command?

- A. Back-end array discovery
- B. Host initiator discovery
- C. Second cluster initial setup
- D. Witness configuration

Correct Answer: A

QUESTION 45

You need to claim storage that is presented to VPLEX from a VNX. What is required in order to create the

mapping file needed by the VPLEX Claim Storage Wizard?

- A. A host with solutions enabler installed and zoned to SPA and SPB
- B. The user name, password and management address of the VNX
- C. A host with WinSCP installed, with an IP connection to the VPLEX Management Server
- D. The username and password of the VPLEX Management Server

Correct Answer: B

QUESTION 46

When performing an installation you notice DHCP has set your Management Server subnet mask to 255.255.252. Based on EMC best practices, what is the appropriate subnet mask value for Management Server network 128.221.252.0?

- A. 255.255.254
- B. 255.255.255.248
- C. 255.255.255.192
- D. 255.255.255.128

Correct Answer: A

QUESTION 47

After registering Cluster-2 with ESRS during a VPLEX Metro cluster build, what is the next step to perform before the cluster is successfully built?

- A. Complete EZ-Setup Wizard on Cluster-2
- B. Configure WAN connections on Cluster-1
- C. Complete EZ-Setup Wizard on Cluster-1
- D. Configure WAN connections on Cluster-2

Correct Answer: C

QUESTION 48

What VPLEX user account is required to manage user security?

- A. admin
- B. service
- C. root
- D. user

Correct Answer: A

QUESTION 49

What is required of an ESX host for the Witness to be installed?

- A. Promiscuous mode set to Accept
- B. ESX host in Cluster 1 failure domain
- C. MAC address change set to Accept
- D. ESX host in Cluster 2 failure domain

Correct Answer: C

QUESTION 50

A customer has a VPLEX Metro/GEO environment and is requesting that the VPLEX Witness be installed.

The requirements for the Witness are:

- One vCPU
- 512MB ram

2.5GB storage space

What platform type is supported?

- A. 64bit ESX4.0 and above
- B. 32/64bit ESXi 5.0
- C. 64bit MS Hyper-V 2012
- D. VMware Workstation 9.0 and above

Correct Answer: A

QUESTION 51

Which element does VPLEX Witness require?

- A. Virtual Volume
- B. Distributed Volume
- C. Distributed Device
- D. Consistency Group

Correct Answer: D

QUESTION 52

A customer has a VPLEX Metro with VPLEX Witness installed and configured. The detach rule for consistency group is "no-automatic-winner".

What will VPLEX Witness do in case of a Site 1 failure?

- A. VPLEX Witness will have no effect.
- B. VPLEX Witness will set the consistency group detach rule.
- C. VPLEX Witness will suspend I/O at Site 1
- D. VPLEX Witness will suspend I/O at Site 2

Correct Answer: A

QUESTION 53

A customer is performing maintenance on their network that might affect their VPLEX Witness VM.

What can be done to ensure there are no adverse effects due to a Witness outage?

- A. Disable the cluster's management server ipsec.
- B. Disable the VPLEX Witness.
- C. Shut down the VPLEX Witness VM.
- D. Shut down the cluster's management server.

Correct Answer: B

QUESTION 54

Which VPLEX component can determine the difference between a partition and a site failure of a VPLEX Metro configuration?

- A. VPLEX Witness
- B. Management Server
- C. Cluster 1 Engine 1
- D. Consistency Group

Correct Answer: A

QUESTION 55

During an installation, the physical equipment inspection reveals an ESX host used for VPLEX Witness is located in the same rack as VPLEX cluster 1 Engine.

What needs to be done?

- A. VPLEX Witness server must be in a separate cabinet in the same data center.
- B. The VPLEX Witness server must be placed in a separate failure domain.
- C. Decrease network delay to reduce effects of equipment proximity.
- D. The ESX host must be placed in a separate cabinet due to cooling requirements.

Correct Answer: B

QUESTION 56

During ndu pre-check, a partner found that metadata-backup is not working. In addition, metadata-backup volume components have been renamed.

How can the problem be resolved?

- A. Provision two new metadata volumes Re-run configuration metadata-backup
- B. Meta-volume destroy the actual metadata_backup Re-run configuration metadata-backup unclaimmetadata_backup
- C. unclaimmetadata_backup
 Re-run configuration metadata-backup
- D. Meta-volume destroy the actual metadata_backup schedule remove actual backup job unclaimmetadata_backup re-run configuration metadata-backup

Correct Answer: D

QUESTION 57

A customer is verifying the host environment before scheduling a VPLEX NDU. According to EMC best practices, which PowerPath load-balancing policy is applied by default to all platforms?

- A. Adaptive
- B. RoundRobin
- C. LeastIO
- D. StreamIO

Correct Answer: B

QUESTION 58

Which vplexcli command will ensure that the directors SSD firmware has been upgraded to the correct version after the VPLEX NDU?

- A. director firmware show-banks
- B. version a
- C. version -a --verbose
- D. II /**/internal-disks/*

Correct Answer: C

QUESTION 59

You have attempted to upgrade a VPLEX system to the latest Geosynchrony code. During the upgrade, an error appeared and caused the upgrade to fail.

Which file should you review to gather more information about the failure?

- A. firmware.log_<date>
- B. session.log
- C. VPlexconfiguration-session.txt
- D. ndu-pre-check-stderr.txt

QUESTION 60

How do you verify that the VPLEX upgrade has completed successfully?

- A. Log into the VPLEX Unisphere interface.
- B. Run the cluster-summary command.
- C. Check that the system LED is green on each director.
- D. Run the ndu pre-check command.

Correct Answer: D

QUESTION 61

VPLEX ndu pre-check command reports a time drift between directors and the Management Server. How must the NDU be performed?

- A. The NDU cannot be started, the time drift must be resolved.
- B. The NDU can be started using --skip-confirmations option.
- C. The NDU can be started. the time drift will be automatically fixed during upgrade.
- D. The NDU must be started using the --force option.

Correct Answer: A

QUESTION 62

You are doing a code upgrade on a VPLEX. In which directory do you put the upgrade files in order to execute the code upgrade?

- A. /tmp/vfs
- B. /diags/collect-diagnostics-out
- C. /tmp/VPlexInstallPackages
- D. /tmp/diags

Correct Answer: C

QUESTION 63

You are planning to perform a topology upgrade of VPLEX Local to VPLEX Metro.

What is the process you should follow to complete the upgrade successfully?

- A. 1. Upgrade the existing cluster
 - 2. Run the I/O module upgrade script
 - 3. Cable the WAN COM connections
 - 4. Register the cluster
 - 5. Configure the new cluster
- B. 1. Run the I/O module upgrade script
 - 2. Cable the WAN COM connections
 - 3. Upgrade the existing cluster
 - 4. Configure the new cluster
 - 5. Register the cluster
- C. 1. Upgrade the existing cluster
 - 2. Register the cluster
 - 3. Configure the new cluster

- 4. Run the I/O module upgrade script
- 5. Cable the WAN COM connections
- D. 1. Cable the WAN COM connections
 - 2. Run the I/O module upgrade script
 - 3. Configure the new cluster
 - 4. Register the cluster
 - 5. Upgrade the cluster

QUESTION 64

What is the purpose of the I/O Module Upgrade Script?

- A. To manage the I/O module change during a Metro to Geo topology upgrade.
- B. To install the I/O load balancer module on the Management Server.
- C. To configure the GbE I/O modules when installing VPLEX Geo.
- D. To automate the installation of I/O modules and configuration of the directors.

Correct Answer: D

QUESTION 65

Which command script must be executed when upgrading a small VPLEX to medium VPLEX?

- A. VPlexadmin add-engines
- B. director add
- C. VPlexadmin set
- D. VPlexadmin add-directors

Correct Answer: A

QUESTION 66

You are preparing to migrate the topology of an installed VPLEX Local system. What is a supported upgrade path?

- A. Local to Geo to Global
- B. Local to Metro
- C. Local to Global
- D. Local to Metro to Geo

Correct Answer: B

QUESTION 67

You created a synchronous consistency group, which contains two distributed volumes configured with the rule "set cluster-1-detaches".

What is the expected behavior of the virtual volumes in the event of a WAN-COM failure?

- A. cluster-2 is declared the winner after 5 seconds and I/O will continue at that cluster.
- B. I/O will continue at both clusters.
- C. I/O will be suspended at both clusters until the WAN-COM is repaired.
- D. cluster-1 is declared the winner after 5 seconds and I/O will continue at that cluster.

Correct Answer: A

QUESTION 68

A new VPLEX cluster has been configured. However, you are unable to register any host initiators. After verifying that the host has been properly zoned to the VPLEX cluster, you still cannot register them. What is a possible cause?

- A. Front end ports have not been enabled.
- B. Back-end ports have not been enabled.
- C. Back-end arrays have not presented any LUNs.
- D. Storage View for host has not been created.

QUESTION 69

A customer is moving some VMAX devices under a VPLEX Local and is using PowerPath as multipath software

What is the SCSI product ID assigned to VPLEX volumes?

- A. Invista
- B. VPLEX
- C. PowerPath
- D. VMAX

Correct Answer: A

QUESTION 70

What components are required to create a storage view?

- A. One or more BE ports; One or more devices; Metadata volume and Logging Volumes
- B. One or more Host Initiators; One or more Virtual Volumes; One or more FE ports
- C. One or more FE ports; One or more BE ports; One or more Virtual Volumes
- D. One or more Host Initiators; One or more extents; One or more BE ports

Correct Answer: B

QUESTION 71

A VPlex administrator claims a 100GB Storage Volume that is thin provisioned on the storage array and has 25GB physically allocated and creates a 1:1 encapsulated virtual volume. After a local data mobility job for that Virtual Volume, the storage array administrator notices that the allocated capacity has increased to 100GB.

Why did this happen?

- A. The destination Storage Volume was not claimed with the thin-rebuild parameter in VPLEX.
- B. VPLEX does not support thin devices.
- C. Neither the source nor the destination Storage Volume were claimed with the thin-rebuild parameter in VPLEX.
- D. The source Storage Volume was not claimed with the thin-rebuild parameter in VPLEX.

Correct Answer: A

QUESTION 72

What unique logical identifier is recommended when determining the relationship between a virtual volume and the back-end storage array?

- A. WWPN
- B. LUNID
- C. VPD ID
- D. FCID

Correct Answer: C

QUESTION 73

After an expansion of a RAID-0 device in VPLEX, the customer notices a slight degradation of

performance. What could cause this?

- A. After the expansion operation is complete, the original mapped device has been converted into type RAID-C
- B. After the expansion operation is complete, the original mapped device has been converted into type RAID-S.
- C. The device is striped across mismatched array types.
- D. The device is striped across RAID-S devices.

Correct Answer: A

QUESTION 74

A customer wants to add a mirror to a VPLEX Local RAID-0 device.

Which RAID type is created after the command "device attach-mirror"?

- A. RAID-0
- B. RAID-S
- C. RAID-1
- D. RAID-C

Correct Answer: C

QUESTION 75

What steps must be performed to encapsulate LUNs into virtual volumes?

- A. 1. Claim native array LUN with data into VPLEX
 - 2. Create extent, create a device on the extent
 - 3. Create a virtual volume
 - 4. Present virtual volume to the host
- B. 1. Present a Virtual volume to the host
 - 2. Create device
 - 3. Create extent on the device
 - 4. Execute storage claim wizard
- C. 1. Create a new virtual volume
 - 2. Mirror the virtual volume to native volume with data
 - 3. Create device and create extent
 - 4. Present virtual volume to host
- D. 1. Discover new storage
 - 2. Create extent
 - 3. Create device
 - 4. Create virtual volume

Correct Answer: A

QUESTION 76

In addition to HP-UX, RecoverPoint, SUN-VCS, and AIX, which host type option is available when registering a host initiator in VPLEX?

- A. Windows
- B. Linux
- C. Default
- D. VMware

Correct Answer: C

QUESTION 77

Starting in Geosyncrony version 5.1 what are the minimum password requirements?

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