

- **Vendor: Oracle**
- **Exam Code: 1Z0-821**
- **Exam Name: Oracle Solaris 11 System Administration**
- **Question 1 -- Question 50**

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QUESTION 1

What determines which bits in an IP address represent the subnet, and which represent the host?

- A. Subnet
- B. unicast
- C. netmask
- D. multicast
- E. broadcast

Answer: C

Explanation:

A subnetwork, or subnet, is a logically visible subdivision of an IP network. The practice of dividing a network into two or more networks is called subnetting. The routing prefix of an address is written in a form identical to that of the address itself. This is called the network mask, or netmask, of the address. For example, a specification of the most- significant 18 bits of an IPv4 address, 11111111.11111111.11000000.00000000, is written as 255.255.192.0.

QUESTION 2

Which two accurately identify features of a Solaris 10 branded zone?

- A. executes in a Solaris 10 global zone
- B. is created by importing a Solaris 10 flash archive
- C. enables Linux binary applications to run unmodified
- D. provides a complete runtime environment for Solaris 9 applications
- E. allows a Solaris 10 global zone to be migrated into a Solaris 10 non-global zone on a Solaris 11 system

Answer: BE

Explanation:

B: It can be created by importing a Solaris 10 flash archive. You can use the Oracle Solaris Flash archiving tools to create an image of an installed system that can be migrated into a zone. The system can be fully configured with all of the software that will be run in the zone before the image is created. This image is then used by the installer when the zone is installed.

Note: You can use alternate methods for creating the archive. The installer can accept the following archive formats:

- * cpio archives
- * gzip compressed cpio archives
- * bzip2 compressed cpio archives
- * pax archives created with the -x xustar (XUSTAR) format ?ufsdump level zero (full) backups

Note:

Branded zones that run an environment different than the OS release on the system

* The lx branded zone introduced in the Solaris 10 8/07 release provides a Linux environment for your applications and runs on x86 and x64 machines on the Oracle Solaris 10 OS.

* The solaris8 and solaris9 branded zones enable you to migrate an Oracle Solaris 8 or Oracle Solaris 9 system to an Oracle Solaris 8 or Oracle Solaris 9 Container on a host running the Oracle Solaris 10 8/07 Operating System or later Oracle Solaris 10 release.

* The Oracle Solaris 10 Container brand is available in OpenSolaris build 127. These branded zones host Oracle Solaris 10 user environments.

Note: One of the powerful features of Solaris 11 is the ability to run a Solaris 10 environment in a zone. Solaris 10 allows you to run Solaris 8 and 9 environments in zones, but only on SPARC.

Reference: Solaris10-Branded Zone Developer Guide

QUESTION 3

You are troubleshooting a newly installed desktop Oracle Solaris 11 system with a single network interface. From this system, you can connect to other systems within the company intranet, but cannot access any external services (such as websites and email), even when using IP addresses. Examining the routing table confirms that the default route to 192.168.1.1 is missing. DHCP is not used at this site. Which two commands will temporarily and permanently configure the default route?

- A. `ipadm set-gateway 192.168.1.1`
- B. `route add default 192.168.1.1`
- C. `ipadm set-default 192.168.1.1`
- D. `dladm route-add -d 192.168.1.1`
- E. `echo 192.168.1.1 >/etc/gateway`
- F. `echo 192.168.1.1 >/etc/defaultrouter`

Answer: BF

Explanation:

B: Setting the default route on Solaris is easy. If you are trying to just set the route temporarily you can use the route command:

`Route add default <ipaddress>`

Example:

`Route add default 192.168.1.1`

Note: Route command manipulates the kernel routing tables. Routing is the process of forwarding a packet from one computer to another. It is based on the IP address in the IP packet header and netmask.

F: If you want the route to be persisted when you reboot the system, you will need to set the route in the /etc/defaultrouter file.

`/etc/defaultrouter`

Example:

`Echo 192.168.1.1 > /etc/defaultrouter`

QUESTION 4

You want the system to generate an email notification each time one of the services has changed its state. Which option would send an email message to the system administrator whenever a service changes to the maintenance state?

- A. Use the setsd command in ALOM to enable the mail alerts to be sent to a specified email address whenever the fault management facility detects a service change to the maintenance state.

- B. Make an entry in the /etc/syslog.conf file to instruct syslogd to send an email alert when it receives a message from the SMF facility that a service has changed to the maintenance state.
- C. Use the svccfg setnotify command to create a notification and send an email when a service enters the maintenance state.
- D. Use the scvadm command to enable the notification service. Set the -gmaintenance option on the netnotify service to send an email when a service enters the maintenance state.

Answer: C

Explanation:

This procedure causes the system to generate an email notification each time one of the services or a selected service has a change in state. You can choose to use either SMTP or SNMP. Normally, you would only select SNMP if you already have SNMP configured for some other reason.

By default, SNMP traps are sent on maintenance transitions. If you use SNMP for monitoring, you can configure additional traps for other state transitions.

1. Become an administrator or assume a role that includes the Service Management rights profile.
2. Set notification parameters.

Example:

The following command creates a notification that sends email when transactions go into the maintenance state

```
# /usr/sbin/svccfg setnotify -g maintenance mailto:sysadmins@example.com
```

Reference: Oracle Solaris Administration: Commons Tasks

How to Set Up Email Notification of SMF Transition Events

QUESTION 5

How are operating system updates distributed in the Oracle Solaris 11 environment?

- A. Updates are only available to customers with an active support contract. The updates are distributed through the My Oracle Support web portal and installed in a central location. All software packages are then updated manually from the command line using the smpatch command.
- B. Patches are download from <http://support.oracle.com> either automatically or manually. All software packages are then updated manually from the command line using the smpatch or patchadd commands.
- C. Software updates are published as packages to a repository. All software packages are then updated manually from the command line using the pkg command.
- D. Software updates, published as packages to an OS image. All software packages are then updated manually from the command line using the pkg command.

Answer: C

Explanation:

* Updating all of the packages on your installed system ?To update all of the packages on your system that have available updates, use the pkg update command, as follows:

```
# pkg update
```

Running this command updates packages that you might not otherwise consider updating, for example, kernel components and other low-level system packages.

* Adding or updating individual packages - To add individual software packages, use the pkg install command. Any dependent packages are also updated at the same time.

* install package updates that deliver fixes?A pkg update operation might include bug fixes, so the operation is similar to applying a specific patch or patches in previous Oracle Solaris releases.

Note: The IPS interfaces first check for updates for currently installed packages before retrieving them via the network. By default, interfaces check repository catalogs in the following locations:

* The default installation repository at pkg.oracle.com/solaris/release.

* The support repository in My Oracle Support. This repository is restricted to users with Oracle Solaris 11 Express support contracts, and it contains packages with the latest bug fixes. For this reason, a support contract must be purchased for production deployments.

Reference: Updating the Software on Your Oracle Solaris 11 System

QUESTION 6

User jack, whose account is configured to use the korn shell, logs in and examines the value of his PATH environment variable:

```
jack@solaris: echo $PATH  
/usr/gnu/bin:/usr/bin:/usr/sbin:/sbin
```

There is a shell script in jack's home directory called useradd:

```
-r-xr-xr-x 2 jack other 1239 2012-01-05 11:42 useradd
```

While in his home directory, jack attempts to run the script:

```
jack@solaris: useradd
```

What will happen, and why?

- A. He will get a "file not found" error, because the current directory is not in his search path.
- B. He will get a "file not found" error, because his home directory is not in his search path.
- C. The useradd script will execute, because jack is in the same directory that the script is located in.
- D. The command /user/sbin/useradd will execute, because it is the last match in the search path.
- E. The command /user/sbin/useradd will execute, because it is the first match in the search path.

Answer: E

QUESTION 7

User jack on host solaris attempts to use ssh to log in to host oracle and receives this message:

```
jack@solaris:~$ ssh oracle  
ssh: connect to host oracle port 22: connection refused
```

What is the problem?

- A. Host oracle does not have a valid host public key.
- B. Host oracle does not have a valid host private key.
- C. Host solaris does not have a valid host public key.
- D. Host does not have a valid host private key.
- E. Host solaris is not configured for host-based authentication.
- F. Host oracle is not configured for host-based authentication.
- G. Host oracle is not running the ssh service.
- H. Host solaris is not running the ssh service.

Answer: G

Explanation:

The host he is trying to connect to (oracle) is not running the required service (ssh).

QUESTION 8

When speaking in an Oracle Support Engineer, you are asked to verify the version of the Solaris 11 build currently running on your system. Which command would display the Solaris 11 build version currently running on your system?

- A. pkg info all
- B. cat /etc/release
- C. cat /etc/update
- D. prtconf | grep -i update
- E. pkg info entire

Answer: E

Explanation:

Right answer is E.

pkg info entire

Name: entire

Summary: entire incorporation including Support Repository Update (Oracle Solaris 11.1.18.5.0).

Description: This package constrains system package versions to the same build. WARNING: Proper system update and correct package selection depend on the presence of this incorporation.

Removing this package will result in an unsupported system. For more information see <https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&doctype=REFERENCE&id=1501435.1>.

Category: Meta Packages/Incorporations

State: Installed

Publisher: solaris

Version: 0.5.11 (Oracle Solaris 11.1.18.5.0)

Build Release: 5.11

Branch: 0.175.1.18.0.5.0

Packaging Date: April 11, 2014 10:19:03 PM

Size: 5.46 kB

FMRI: pkg://solaris/entire@0.5.11,5.11-0.175.1.18.0.5.0:20140411T221903Z

QUESTION 9

You need to configure an iSCSI target device on your x86 based Oracle Solaris II system. While configuring the iSCSI device, the following error is displayed:

```
bash: stmfadm: command not found
```

Which option describes the solution to the problem?

- A. The COMSTAR feature is not supported on the x86 platform. The feature is supported only on the SPARC platform.
- B. Use the iscsitadm command on the x86 platform when configuring an iSCSI target.
- C. Install the storage-server group package on this system.
- D. Start the iSCSI target daemon on this system.

Answer: C

Explanation:

STMF - Manages transactions, such as context and resources for Small Computer System Interface (SCSI) command execution, and tracking logical unit and port providers. STMF also handles logical unit mappings, allocating memory, recovering failed operations, enumeration, and other necessary functions of an I/O stack.

STMF is controlled by stmfadm, and stmfadm is the majority of the commands you will be using to administer COMSTAR (COMmon Multiprotocol Scsi TARget). Install the packages you need for COMSTAR with iSCSI and reboot:

```
# pfexec pkg install storage-server
```

```
# pfexec pkg install SUNWiscsit
```

```
# shutdown -y -i6 -g0
```

Note: You can set up and configure a COMSTAR Internet SCSI (iSCSI) target and make it available over the network. The iSCSI features can work over a normal Internet connection (such as Ethernet) using the standard iSCSI protocol. The iSCSI protocol also provides naming and discovery services, authentication services using CHAP and RADIUS, and centralized management through iSNS.

The COMSTAR target mode framework runs as the stmf service. By default, the service is disabled. You must enable the service to use COMSTAR functionality. You can identify the service with the svcs command. If you have not rebooted the server since installing the group/feature/storage-server package, the service might not be enabled correctly.

Reference: Oracle Solaris Administration, Configuring iSCSI Devices With COMSTAR

QUESTION 10

Your SPARC server will not boot into multi user-server milestones and you need to troubleshoot to out why. You need to start the server with minimal services running so that you can go through each milestone manually to troubleshoot the issue.

Select the option that boots the server with the fewest services running.

- A. boot -s
- B. boot milestone none
- C. boot -m milestone=single-user
- D. boot -m milestone=none
- E. boot -m none

Answer: D

Explanation:

The command boot -m milestone=none is useful in repairing a system that have problems booting early.

Boot Troubleshooting:

To step through the SMF portion of the boot process, start with:

boot -m milestone=none

Then step through the milestones for the different boot levels:

svcadm milestone svc:/milestone/single-user:default

svcadm milestone svc:/milestone/multi-user:default

svcadm milestone svc:/milestone/multi-user-server:default

QUESTION 11

user1 is attempting to assist user2 with terminating user2's process 1234.

user1 entered the following: kill -9 1234

Why does the process continue to run?

- A. You can kill a process only if you are root.
- B. You can kill only a process that you own.
- C. You can kill the process only with the pkill command.
- D. You need to kill the process with a stronger kill signal.

Answer: B

Explanation:

Kill -9

Kill (terminates without cleanup)

Only works if issued by process owner or super user (root) The program cannot respond to this signal; it must terminate

Note: Unix provides security mechanisms to prevent unauthorized users from killing other processes. Essentially, for a process to send a signal to another, the owner of the signaling process must be the same as the owner of the receiving process or be the superuser.

Reference: Solaris Common Desktop Environment: User's Guide, Sending Kill Signals to a Process

QUESTION 12

Your server has one zone named dbzone (that has been configured, but not yet installed). Which command would you use to view all the options that were used to configure this zone?

- A. zoneadm list -icv dbzone
- B. zones tat -c summary dbzone
- C. zonecfg -z dbzone info
- D. zonecfg -icv dbzone info

Answer: C

Explanation:

zonecfg info

Display information about the current configuration. If resource-type is specified, displays only information about resources of the relevant type. If any property-name value pairs are specified, displays only information about resources meeting the given criteria. In the resource scope, any arguments are ignored, and info displays information about the resource which is currently being added or modified.

Note:

zonecfg -z

zonename. Specify the name of a zone. Zone names are case sensitive. Zone names must begin with an alphanumeric character and can contain alphanumeric characters, the underscore (_) the hyphen (-), and the dot (.). The name global and all names beginning with SUNW are reserved and cannot be used.

ncorrect answer:

A: The zoneadm utility is used to administer system zones. A zone is an application container that is maintained by the operating system runtime.

list option:

Display the name of the current zones, or the specified zone if indicated.

B: No such command.

D: no such options zonecfg -icv

Reference: man zonecfg

QUESTION 13

Your users are experiencing delay issues while using their main application that requires connections to remote hosts. You run the command uptime and get the following output:

```
1:07am up 346 day(s), 12:03, 4 users, load average: 0.02, 0.02, 0.01
```

Which command will be useful in your next step of troubleshooting?

- A. ipadm
- B. traceroute
- C. dladm
- D. snoop
- E. arp

Answer: B

Explanation:

Test the remote connection with traceroute.

The Internet is a large and complex aggregation of network hardware, connected together by gateways. Tracking the route one's packets follow (or finding the miscreant gateway that's discarding your packets) can be difficult. traceroute utilizes the IP protocol 'time to live' field and attempts to elicit an ICMP TIME_EXCEEDED response from each gateway along the path to some host.

This program attempts to trace the route an IP packet would follow to some internet host by launching UDP probe packets with a small ttl (time to live) then listening for an ICMP "time exceeded" reply from a gateway.

Reference: man traceroute

QUESTION 14

When upgrading an existing system from Solaris 10 to Oracle Solaris 11, what happens to the datalink names?

- A. They follow the default naming convention for the newly installed version.

- B. They maintain their names.
- C. They are called eth#.
- D. They are called el00g#.
- E. They are left unnamed, to avoid conflicts, and need to be renamed after the installation process is complete.

Answer: A

Explanation:

Network configuration in Oracle Solaris 11 includes

* Generic datalink name assignment ?Generic names are automatically assigned to datalinks using the net0, net1, netN naming convention, depending on the total number of network devices that are on the system

Note: There is no upgrade path from Oracle Solaris 10 to Oracle Solaris 11. You must perform a fresh installation.

Reference: Transitioning From Oracle Solaris 10 to Oracle Solaris 11, Network Configuration Features

QUESTION 15

You have installed software updates to a new boot environment (BE) and have activated that the booting to the new BE, you notice system errors. You want to boot to the last known good configuration.

Which option would you use on a SPARC system to boot to the currentBE boot environment?

- A. boot -l currentBE
- B. boot -z rpool/ROOT/currentBE
- C. boot -a Enter the currentBE dataset name when prompted.
- D. boot rpool/ROOT/currentBE
- E. boot -m currentBE
- F. beadm activate currentBE

Answer: B

Explanation:

B is correct answer according to the subject of this question.

If boot failed you can use boot -Z to specify ZFS boot environment on SPARC system.

QUESTION 16

Oracle Solaris 11 limits access to the system with usernames and passwords

The usernames are held in _____, and the passwords are held in _____.

Select the correct pair.

- A. /etc/security/policy.conf /etc/passwd
- B. /etc/passwd /etc/shadow
- C. /etc/security /etc/passwd
- D. /etc/shadow /etc/passwd

Answer: B

Explanation:

The /etc/passwd file contains basic user attributes. This is an ASCII file that contains an entry for each user. Each entry defines the basic attributes applied to a user.

/etc/shadow file stores actual password in encrypted format for user's account with additional properties related to user password i.e. it stores secure user account information. All fields are separated by a colon (:) symbol. It contains one entry per line for each user listed in /etc/passwd file.

QUESTION 17

_____ serves as the interface between the SMF repository and the user to ensure that a consistent, picture of the repository is presented to the user.

- A. repository.db
- B. service manifest
- C. svc.startd
- D. svc.configd

Answer: D

Explanation:

SVC.CONFIGD is the repository daemon responsible for maintaining /etc/svc/repository.db. The repository.db must come clean during this integrity check otherwise it is a "no go" for usual boot sequence to run level 3. The repository may get corrupted due to various hardware issues, software bugs, disk write failures, etc.

Note: When svc.configd(1M), the Solaris Repository Daemon, is started, it does an integrity check of the smf(5) repository, stored in /etc/svc/repository.db. This integrity check can fail due to a disk failure, the database file being corrupted either due to a hardware bug, a software bug, or an accidental overwrite. If the integrity check fails, svc.configd will write a message to the console.

QUESTION 18

You are attempting to edit your crontab file in the bash shell. Instead of getting your usual vi interface, you are presented with an unfamiliar interface. In order to have your editor of choice-vi-what command must you type after exiting the unfamiliar editor?

- A. EDITOR=vi
- B. crontab=vi
- C. crontab ?e vi
- D. env

Answer: A

Explanation:

Set the EDITOR variable to vi.

Commands like `crontab -e` will use ed per default. If you'd like to use some better editor (like vi) you can use the environment variable EDITOR:

EDITOR=vi; crontab -e will open the users crontab in vi. Of course you can set this variable permanently.

Incorrect answers

C: -e Edits a copy of the current user's crontab file, or creates an empty file to edit if crontab does not exist. When editing is complete, the file is installed as the user's crontab file. If a username is given, the specified user's crontab file is edited, rather than the current user's crontab file; this can only be done by a user with the solaris.jobs.admin authorization. The environment variable EDITOR determines which editor is invoked with the -e option. The default editor is ed(1). All crontab jobs should be submitted using crontab. Do not add jobs by just editing the crontab file, because cron is not aware of changes made this way.

Reference: Setting the default editor

QUESTION 19

You want to display the IP address assignments of the network interfaces. Which command should you use?

- A. ipadm show-if

- B. ipadm show-addr
- C. ipadm show-prop
- D. ipadm show-addrprop

Answer: B

Explanation:

'ipadm show-addr' displays all the configured addresses on the system.

Example:

```
# ipadm show-addr
ADDROBJ TYPE STATE ADDR
lo0/v4 static ok 127.0.0.1/8
lo0/v6 static ok ::1/128
```

Reference: ipadm(1M) - the new ifconfig(1M)

QUESTION 20

The following image properties are displayed on your system:

PROPERTY	VALUE
be-policy	always-new
ca-path	/etc/openssl/certs
check-certificate-revocation	False
flush-content-cache-on-success	True
mirror-discovery	False
preferred-authority	
publisher-search-order	['solaris']
send-uuid	True
signature-policy	verify
signature-required-name	[]
trust-anchor-directory	etc/certs/CA
use-system-repo	False

Which two options describe the boot environment policy property that is currently set for this image?

- A. All package operations are performed in a new BE set as active on the next boot.
- B. Do not create a new BE. The install, update, uninstall, or revert operation is not performed if a new BE is required.
- C. If a BE is created, do not set it as the active BE on the next boot
- D. A reboot is required for all package operations
- E. A reboot is not required after a package operation.
- F. For package operations that require a reboot, this policy creates a new BE set as active on the next boot.

Answer: AD

Explanation:

Correct answers are A and D.

be-policy

Specifies when a boot environment is created during packaging operations. The following values are allowed:

default

Apply the default BE creation policy: create-backup.

always-new

Require a reboot for all package operations by performing them in a new BE set as active on the next boot . A backup BE is not created unless explicitly requested.

This policy is the safest, but is more strict than most sites need since no packages can be added without a reboot.

QUESTION 21

dbzone is currently running on your server.

Which two methods would you use to safely and cleanly shut down dbzone and all of its applications?

- A. zlogin -z dbzone halt
- B. zoneadm -z dbzone shutdown -i0
- C. zoneadm -z dbzone shutdown
- D. zoneadm -z dbzone halt
- E. zlogin dbzone shutdown -i0

Answer: CE

QUESTION 22

View the Exhibit to see the information taken from the installation log file.

Based on the information presented in the Exhibit, which two options describe the state of the system when the server is booted for the first time after the installation is complete?

```
Disk: 16.0GB sata
Partition: 16.0GB Solaris2
Slice 0: 16.0GB rpool

Time Zone: US/Eastern

Language: *The following can be changed when logging in.
Default language: English

Keyboard layout: *The following can be changed when logging in.
Default keyboard layout: US-English

Terminal type: sun-color

Users:
No user account

Network:
Computer name: solaris
Network Configuration: None
```

- A. NWAM will be used to configure the network interface.
- B. The network/physical service is offline.
- C. You cannot log in from the console as root. You must first log in as a user and then su to root account.
- D. The root user can log in from the console login.
- E. You will be prompted to configure the network interface after the initial login.

Answer: AD

Explanation:

As because the network/physical service is online and network interface configuration isn't prompted after install, the only correct answer, beside D should be A. Probably 'noloc' NCP is configured by NWAM.

QUESTION 23

In order to display the IP addresses of network interfaces, what command would you use?

- A. dladm
- B. ipconfig
- C. sves
- D. ipadm
- E. ipaddr

Answer: D

Explanation:

'ipadm show-addr' displays all the configured addresses on the system.

Example:

```
# ipadm show-addr
ADDROBJ TYPE STATE ADDR
lo0/v4 static ok 127.0.0.1/8
lo0/v6 static ok ::1/128
```

QUESTION 24

The su command by default makes an entry into the log file for every su command attempt. The following is a single line from the file:

```
SU 12/18 23:20 + pts/1 user1-root
```

What does the + sign represent?

- A. unsuccessful attempt
- B. successful attempt
- C. The attempt was from a pseudo terminal, and not the console.
- D. The attempt was from a user that is in the adm group, same as root.
- E. Time zone is not set.

Answer: B

Explanation:

The sulog file, /var/adm/sulog, is a log containing all attempts (whether successful or not) of the su command. An entry is added to the sulog file every time the su command is executed. The fields in sulog are: date, time, successful (+) or unsuccessful (-), port, user executing the su command, and user being switched to. In the preceding example, all su attempts were successful, except for the attempt on 2/23 at 20:51, when user pete unsuccessfully attempted to su to user root.

Look for entries where an unauthorized user has used the command inappropriately. The following entry shows a successful (indicated by +) su from user userid to root.

```
SU 03/31 12:52 + pts/0 <userid>-root
```

Reference: /var/log/sulog, Solaris System Logs

QUESTION 25

A user brian is configured to use the bash shell. His home directory is /export/home/brian, and contains a .profile and a .bashrc file.

In the .profile, there are these lines:

```
genius =ritchie
export genius
```

In the .bashrc us this line:

```
genius=kernighan
```

In /etc/profile are these lines:

```
genius=thompson
export genius
```

When brian logs in and asks for the value of genius, what will he find, and why?

- A. genius will be ritchie, because that was the value exported in .profile.

- B. genius will be kernighan, because .bashrc executes after .profile.
- C. genius will be ritchie because variable settings in .profile take precedence over variable settings in .bashrc.
- D. genius will be ritchie because .profile executes after .bashrc.
- E. genius will be thompson because /etc/profile system settings always override local settings.

Answer: C

QUESTION 26

Consider the following commands:

```
rm file1  
echo "Hello, world" > file2  
cat file1 || cat file2
```

What is displayed when this sequence of commands is executed using the bash shell?

- A. Hello, world
- B. cat: cannot open file1: No such file or directory Hello, world
- C. cat: cannot open file1: No such file or directory
- D. bash: syntax error near unexpected token '|'
- E. bash: syntax error broker pipe

Answer: B

Explanation:

Reference: Bash Reference Manual, Lists of Commands

QUESTION 27

You are logged in as root to a newly installed Solaris 11 system. You issue the command `useradd -d`, and then examine the `/usr/sadm/defadduser` file. This file includes the entry `defshell=/bin/sh`. Which shell will now be the default for the next account created?

- A. bash shell
- B. C shell
- C. korn shod
- D. bourne shell

Answer: A

Explanation:

Oracle Solaris 11 introduces user environment and command-line argument changes that include the following:

- * Shell changes - The default shell, `/bin/sh`, is now linked to `ksh93`. The default user shell is the Bourne-again (bash) shell.
- * The legacy Bourne shell is available as `/usr/sunos/bin/sh`.
- * The legacy `ksh88` is available as `/usr/sunos/bin/ksh` from the `shell/ksh88` package.
- * Korn shell compatibility information is available in `/usr/share/doc/ksh/COMPATIBILITY`.

Reference: Oracle Solaris 11 Information Library, User Environment Feature Changes

QUESTION 28

You want to display network interface information. Which command should you use?

- A. ipadm show-if
- B. ipadm show-addr
- C. ipadm show-prop
- D. ipadm show-addrprop

Answer: A

Explanation:

Reference: ipadm(1M) - the new ifconfig(1M)

QUESTION 29

Which two options accurately describe the network characteristics of a zone?

- A. DHCP address assignment cannot be configured in a shared IP zone.
- B. Shared IP is the default type of network configuration.
- C. Exclusive IP is the default type of network configuration.
- D. By default, all IP addresses, netmasks, and routes are set by the global zone and cannot be altered in a non global zone.
- E. IPMP cannot be managed within the non-global zone.
- F. Commands such as snoop and dladm cannot be used on datalinks that are in use by a running zone.

Answer: AC

Explanation:

http://docs.oracle.com/cd/E23824_01/html/E24456/glhcg.html

QUESTION 30

To confirm the IP address and netmask have been correctly configured on the network interfaces which command should you use?

- A. ipdilm show-if
- B. ipadm show-nic
- C. ipadm show-addr
- D. ipadm show-ifconfig
- E. ipadm show-addr ipadm show-mask

Answer: C

Explanation:

Show address information, either for the given addrobj or all the address objects configured on the specified interface, including the address objects that are only in the persistent configuration.

State can be: disabled, down, duplicate, inaccessible, ok, tentative

Example:

```
# ipadm show-addr
ADDROBJ TYPE STATE ADDR
lo0/v4 static ok 127.0.0.1/8
lo0/v6 static ok ::1/128
```

QUESTION 31

Which option displays the result of running the zfs list command?

```

A) NAME      SIZE      ALLOC      FREE      CAP      DEDUP      HEALTH      ALTROOT
   pool1     15.9G    144K       15.9G     0%       1.00x      ONLINE      -

B) NAME      USED      AVAIL      REFER      MOUNTPOINT
   pool1     144K     15.6G      31K       none

C) pool: pool1
   state: ONLINE
   scan: none requested
   config:
        NAME      STATE      READ      WRITE      CKSUM
        pool1     ONLINE    0         0         0
        c3t3d0    ONLINE    0         0         0

D)
   capacity      operations      bandwidth
   alloc      free      read      write      read      write
-----
pool1         144K    15.9G           0           0           62          754
rpool         6.35G    9.52G           5           1         44.4K       10.6K
zone          3.41G    12.5G           0           0           76           17
-----

```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: B

Explanation:

The zfs list command provides an extensible mechanism for viewing and querying dataset information.

You can list basic dataset information by using the zfs list command with no options. This command displays the names of all datasets on the system and the values of their used, available, referenced, and mountpoint properties. For more information about these properties, see *Introducing ZFS Properties*.

For example:

```
# zfs list
```

```

NAME USED AVAIL REFER MOUNTPOINT
pool 476K 16.5G 21K /pool
pool/clone 18K 16.5G 18K /pool/clone
pool/home 296K 16.5G 19K /pool/home
pool/home/marks 277K 16.5G 277K /pool/home/marks
pool/home/marks@snap 0 - 277K -
pool/test 18K 16.5G 18K /test

```

Reference: *Querying ZFS File System Information, Oracle Solaris ZFS Administration Guide*

QUESTION 32

You are the administrator of a system that a large number of developers work on. These developers crash the system, and their applications, on a regular basis.

What command would you use to configure where the core files are saved?

- A. savecore
- B. dumpadm
- C. svcadm

- D. proc
- E. coreadm

Answer: E

Explanation:

The coreadm command is used to specify the name and location of core files produced by abnormally-terminating processes.

Reference: man coreadm

QUESTION 33

Which network protocol provides connectionless, packet-oriented communication between applications?

- A. TCP
- B. UDP
- C. IP
- D. ICMP
- E. NFS
- F. IPSec

Answer: B

Explanation:

The User Datagram Protocol (UDP) is one of the core members of the Internet Protocol Suite, the set of network protocols used for the Internet. With UDP, computer applications can send messages, in this case referred to as datagrams, to other hosts on an Internet Protocol (IP) network without requiring prior communications to set up special transmission channels or data paths. Compared to TCP, UDP is a simpler message-based connectionless protocol.

QUESTION 34

A datalink can best be described as_____.

- A. a driver for a Network Interface Card
- B. the software connecting the Internet Layer and the Physical Layer
- C. a device that provides Classless Inter-Domain Routing
- D. a logical object used for IP Multipathing
- E. a device instance

Answer: E

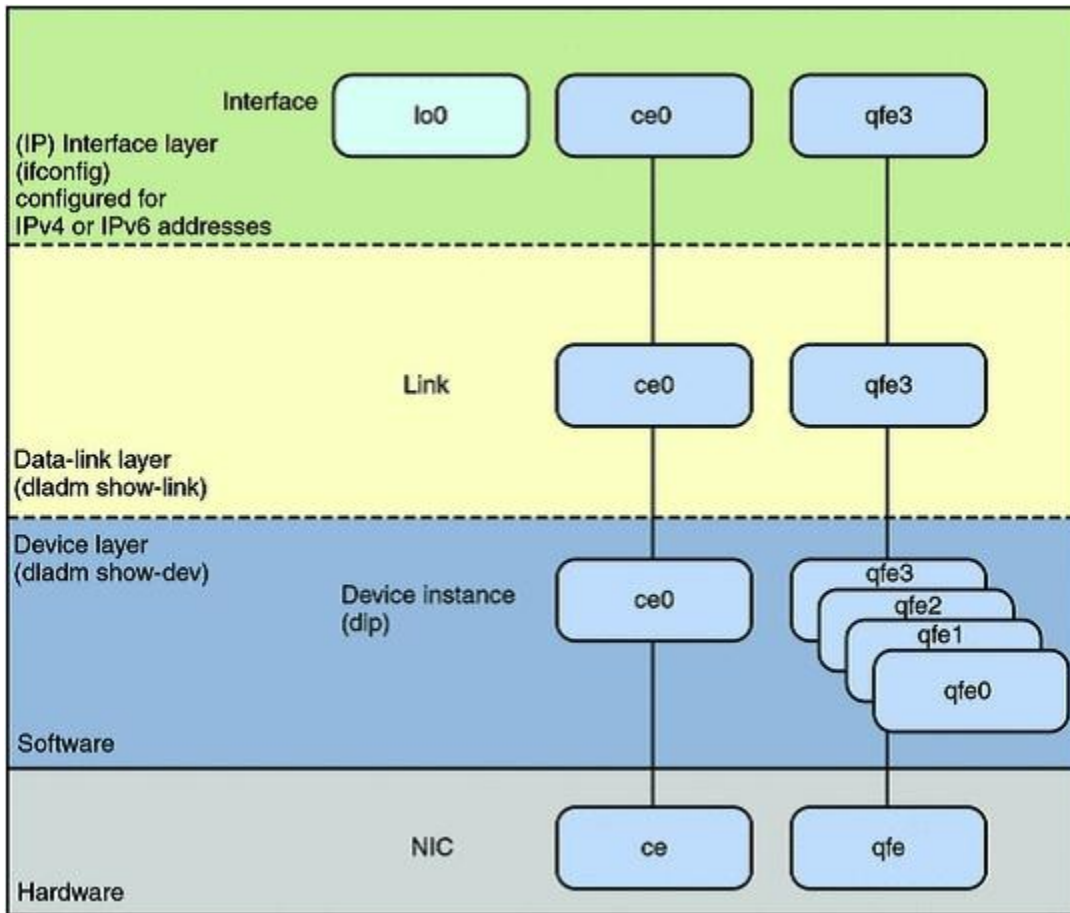
Explanation:

The command dladm is used to configure data-link interfaces in Sun Solaris. A configured data-link is represented in the system as interface that can be used for TCP/IP. Each data-link relies on either a single network device or an link aggregation device to send & receive packets.

Network interfaces provide the connection between the system and the network. These interfaces are configured over data links, which in turn correspond to instances of hardware devices in the system.

In the current model of the network stack, interfaces and links on the software layer build on the devices in the hardware layer. More specifically, a hardware device instance in the hardware layer has a corresponding link on the data-link layer and a configured interface on the interface layer. This one-to-one relationship among the network device, its data link, and the IP interface is illustrated in the figure that follows.

Network Stack Showing Network Devices, Links, and Interfaces:



Reference: System Administration Guide: Network Interfaces and Network Virtualization

QUESTION 35

View the exhibit to inspect the file system configuration on your server.

Exhibit: *Missing*

Your department's backup policy is to perform a full backup to a remote system disk on Saturday. On Sunday through Friday, you are to perform an incremental backup to the same remote system disk.

- Each incremental backup will contain only data that has been modified since the previous Saturday backup.
- The server file systems must remain available at all times and can never be taken offline,
- The backup must not only provide for the recovery of the most recent version of a file, but must also allow recovery of previous versions of a file created since Saturday's full backup.

Following your company policy, which option describes a valid procedure for backing up the /data file system to a remote disk named /remote/backup?

- A. On Saturday:
- ```
zfs create snapshot pool1/data@sat.
zfs send pool1/data@sat > /remote/backup/full
```
- On each weekday:
- ```
Remove the previous daily snapshot.
zfs snapshot pool1/data@daily
```

- zfs send -i pool1/data@sat pool1/data@daily > /remote/backup/full
- B. On Saturday:
zfs create snapshot pool1/data@sat.
zfs send pool1/data@sat | zfs recv remote/backup/'date +%m%d%Y' '
On each weekday:
Remove the previous daily snapshot.
zfs create pool1/data@daily
zfs send -i pool1/data@sat pool1/data@daily | zfs recv remote/backup d%' '
- C. On Saturday:
zfs snapshot pool1/data@sat
zfs send pool1/data@sat > /remote/backup/full
On each weekday:
Remove the previous daily snapshot.
zfs snapshot pool1/data@daily
zfs send -i pool1/data@sat pool1/data@daily > /remote/backup/daily
- D. On Saturday:
zfs create snapshot pool1/data@sat
zfs send pool1/data@sat | zfs recv remote/backup
On each weekday:
Remove the previous daily snapshot.
zfs create -i pool1/data@sat pool1/data@daily
zfs send pool1/data@daily | zfs recv remote/backup
- E. On Saturday:
zfs snapshot pool1/data@sat
zfs pool1/data@sat > /remote/backup/full
On each weekday:
Remove the previous daily snapshot.
zfs snapshot pool1/data@daily
zfs send -i pool1/data@sat pool1/data@daily > /remote/backup/full

Answer: C

QUESTION 36

A user account must be a member of a primary group, and may also be a member of one or more secondary groups. What is the maximum total number of groups that one user can concurrently belong to?

- A. 15
- B. 16
- C. 17
- D. 63
- E. 64
- F. 65
- G. The number of groups one user can concurrently belong to is unlimited in Solaris 11.

Answer: B

Explanation:

Each user belongs to a group that is referred to as the user's primary group. The GID number, located in the user's account entry within the /etc/passwd file, specifies the user's primary group.

Each user can also belong to up to 15 additional groups, known as secondary groups. In the /etc/group file, you can add users to group entries, thus establishing the user's secondary group affiliations.

Note (4 PSARC/2009/542):

his project proposes changing the maximum value for NGROUPS_MAX from 32 to 1024 by changing the definition of NGROUPS_UMAX from 32 to 1024.

The use for a larger number of groups is described in CR 4088757, particular in the case of Samba servers and ADS clients; the Samba servers map every SID to a Unix group. Users with more than 32 groups SIDs are common. We've seen reports varying from "64 is enough", "128 is absolutely enough" and "we've users with more 190 group SIDs).

NGROUPS_MAX as defined by different Unix versions are as follows (<http://www.j3e.de/ngroups.html>):

Linux Kernel >= 2.6.3 65536

Linux Kernel < 2.6.3 32

Tru64 / OSF/1 32

IBM AIX 5.2 64

IBM AIX 5.3 ... 6.1 128

OpenBSD, NetBSD, FreeBSD, Darwin (Mac OS X) 16

Sun Solaris 7, 8, 9, 10 16 (can vary from 0-32)

HP-UX 20

IRIX 16 (can vary from 0-32)

Plan 9 from Bell Labs 32

Minix 3 0 (Minix-vmd: 16)

QNX 6.4 8

Reference: Increase the maximum value of NGROUPS_MAX to 1024 PSARC/2009/542

QUESTION 37

Identify three differences between the shutdown and init commands.

- A. init shuts a system down faster than the shutdown command.
- B. Only shutdown broadcasts a final shutdown warning to all logged in users.
- C. init does not terminate all services normally. The shutdown command performs a total shutdown of all services.
- D. The shutdown command can only bring the system to the single-user milestone. The command must be used to shut the system down to run level 0.
- E. The shutdown sends a shutdown message to any systems that are mounting resource-tern that is being shut down.
- F. The shutdown command will shut the system down and turn off power; init will only shut system down.

Answer: ABE

Explanation:

Note shutdown:

Shutdown is executed by the super user to change the state of the machine. In most cases, it is used to change from the multi-user state (state 2) to another state.

By default, shutdown brings the system to a state where only the console has access to the operating system. This state is called single-user.

Before starting to shut down daemons and killing processes, shutdown sends a warning message and, by default, a final message asking for confirmation. message is a string that is sent out following the standard warning message "The system will be shut down in ..." If the string contains more than one word, it should be contained within single (') or double (") quotation marks.

Note init:

If a 0 through 6 is entered, init enters the corresponding run level. Run levels 0, 5, and 6 are reserved states for shutting the system down. Run levels 2, 3, and 4 are available as multi-user operating states.

OPTIONS

0 Go into firmware.

5 Shut the machine down so that it is safe to remove the power. Have the machine remove power,

if possible.

6 Stop the operating system and reboot to the state defined by the initdefault entry in /etc/inittab.

Reference: man init, man shutdown

QUESTION 38

View the exhibit. The configuration information in the exhibit is displayed on your system immediately after installing the OS. Choose the option that describes the selection made during the Installation of the OS to obtain this configuration.



ADDROBJ	TYPE	STATE	ADDR
lo0/v4	static	ok	127.0.0.1/8
net0/_b	dhcp	ok	10.0.2.15/24
net1/_b	dhcp	ok	10.0.3.15/24
lo0/v6	static	ok	::1/128
net0/_a	addrconf	ok	fe80::a00:27ff:fee5:38b9/10
net1/_a	addrconf	ok	fe80::a00:27ff:fe2b:498a/10

- A. The automatic network configuration option was chosen during the installation of the OS.
- B. The manual network configuration option was chosen during the installation of the OS.
- C. The network was not configured during the installation of the OS.
- D. The DHCP network configuration option was chosen during the Installation of the OS.

Answer: A

Explanation:

There are two ways to configure the network configuration: automatic or manual. In the exhibit we see that DHCP has been used. This indicates an automatic network configuration.

QUESTION 39

Which command would you use to determine which package group is installed on your system?

- A. pkg list group/system^*
- B. pkg info
- C. uname -a
- D. cat /var/sadm/system/admin/CLUSTEP

Answer: A

QUESTION 40

Oracle Solaris 11 kernel encounters a fatal error, and it results in a system panic. What type of file does this generate?

- A. a.out
- B. objdump
- C. core dump
- D. tape dump
- E. crash dump

Answer: E

Explanation:

Because in case of kernel panic crash dump occurs, when core dump is generated in case of application failure.

QUESTION 41

The following information is displayed for the svc:/network/ssh service:

```
fMRI          svc:/network/ssh:default
name          SSH server
enabled       true
state         offline
next_state    none
state_time    December 31, 2011 07:10:08 AM EST
logfile       /var/svc/log/network-ssh:default.log
restarter     svc:/system/svc/restarter:default
contract_id   321
manifest      /etc/svc/profile/generic.xml
manifest      /lib/svc/manifest/network/ssh.xml
dependency    require_all/none svc:/system/filesystem/local (online)
dependency    optional_all/none svc:/system/filesystem/autofs (online)
dependency    require_all/none svc:/network/loopback (online)
dependency    require_all/none svc:/network/physical:default (online)
dependency    require_all/none svc:/system/cryptosvc (disabled)
dependency    require_all/none svc:/system/utmp (online)
dependency    optional_all/error svc:/network/ipfilter:default (disabled)
dependency    require_all/restart file:///localhost/etc/ssh/sshd_config (online)

svc:/network/ssh:default (SSH server)
State: offline since January 31, 2012 09:12:45 AM EST
Reason: Service svc:/system/cryptosvc:default is disabled.
See: http://sun.com/msg/SMF-8000-GE
Path: svc:/network/ssh:default
      svc:/system/cryptosvc:default
See: man -M /usr/share/man -s 1M sshd
See: /var/svc/log/network-ssh:default.log
Impact: This service is not running.
```

Which describes the minimum set of commands to be executed to bring the svc: /network/ssh: default service back online?

- A. svcadm refresh svc:/network/ssh:default
- B. svcadm restart svc:/network/ssh:default
- C. svcadm enable svc:/system/cryptosvc
- D. svcadm enable svc:/system/cryptosvcsvcadm enable svc:/network/ipfilter:defaultsvcadm enable svc:/network/ssh:default
- E. svcadm enable svc:/system/cryptosvcsvcadm enable svc:/network/ipfilter:defaultsvcadm refresh svc:/network/ssh:default
- F. svcadm restart svc:/system/cryptosvcsvcadm restart svc:/network/ipfilter:defaultsvcadm restart svc:/network/ssh:default
- G. svcadm enable svc:/system/ssh:default

Answer: C

QUESTION 42

You are the administrator for a group of shell script developers. They use vi, and have asked you to make their scripts automatically executable when they save their files. How can this be accomplished?

- A. Enter set -o vi on the command line, or include it in each user's startup script.
- B. Enter umask -s on the command line, or include it in each user's startup script.
- C. Enter umask 000 on the command line, or include it in each user's startup script.
- D. Enter umask 777 on the command line, or include it in each user's startup script.
- E. It is not possible to automatically set the execute bit on with the umask setting, or vi option.
- F. Enter umask 766 the command line, or include it in the global startup script for the default shell.

Answer: E

Explanation:

<http://docs.oracle.com/cd/E19683-01/806-7612/customize-17/index.html>

QUESTION 43

You have connected a new printer at a fixed IP address. It appears to work correctly most of the time, but at other times does not respond. You suspect that the assigned address may not be unique within the network. What command will be useful to confirm this?

- A. arp
- B. netstat
- C. ipadm show-if
- D. dladm show-addr
- E. ipadm show-addr

Answer: E

Explanation:

'ipadm show-addr' displays all the configured addresses on the system.

Example:

```
# ipadm show-addr
ADDROBJ TYPE STATE ADDR
lo0/v4 static ok 127.0.0.1/8
lo0/v6 static ok ::1/128
```

QUESTION 44

Your server has a ZFS storage pool that is configured as follows:

```
state: ONLINE
scan: none requested
config:
```

NAME	STATE	READ	WRITE	CKSUM
pool1	ONLINE	0	0	0
c3t3d0	ONLINE	0	0	0
c3t4d0	ONLINE	0	0	0

The server has two spate 140-GB disk drives: c3t5d0 c3t6d0
Which command would add redundancy to the pool1 storage pool?

- A. zpool attach pool1 c3t5d0 c3t6d0
- B. zpool attach pool1 c3t3d0 c3c5d0; zpoo1 attach pool1 c3t4d0 c3t6d0
- C. zpool mirror pool1 c3t5d0 c3t6d0
- D. zpool add pool1 mirror c3t5d0 c3t6d0
- E. zpool add raidz pool1 c3t5d0 c3t6d0

Answer: B

Explanation:

You can only attach to top level devices.

QUESTION 45

A user on the system has started a process, but it needs to be terminated.

The process ID was determined as follows:

```
pgrep userprogram  
15317
```

The user attempted to terminate the program as follows:

```
pkill 15317
```

This command runs without an error message, and the process continues to run.

What is the issue?

- A. You need to run the kill command with the process name.
- B. You need to switch to super user to kill the process.
- C. You need to run the ps command to get more information.
- D. You need to run the prstat command to get more information.

Answer: A

Explanation:

To terminate process with pkill use it with pattern (regex) - not PID.

QUESTION 46

You are logged in to a Solaris 11 system as user jack.

You issue the following sequence of commands:

```
jack@solaris:~$ id  
uid=65432 (jack) gid=10(staff) groups=10(staff)  
jack@solaris:~$ su  
Password:  
jack@solaris:~#
```

Identify two correct statements.

- A. You have the effective privilege of the account root.
- B. Your GID is 10.
- C. Your home directory is /root.
- D. You are running the shell specified for the account root.
- E. Your UID is 1.

Answer: AB

Explanation:

Oracle Solaris provides predefined rights profiles. These profiles, listed in the /etc/security/prof_attr, can be assigned by the root role to any account. The root role is assigned all privileges and all authorizations, so can perform all tasks, just as root can when root is a user.

To perform administrative functions, you open a terminal and switch the user to root. In that terminal, you can then perform all administrative functions.

```
$ su - root
```

```
Password: Type root password
```

```
#
```

When you exit the shell, root capabilities are no longer in effect.

Reference: User Accounts, Roles, and Rights Profiles

QUESTION 47

.Which two are user definable OpenBoot parameters that can be set in the OpenBoot PROM?

- A. IP address for the system console
- B. host ID

- C. system date and time
- D. default boot device
- E. verbose hardware diagnostics
- F. powering off the hardware

Answer: DE

Explanation:

The NVRAM chip stores user-definable system parameters, also referred to as NVRAM variables or EEPROM parameters. The parameters allow administrators to control variables such as the default boot device and boot command. The NVRAM also contains writeable areas for user-controlled diagnostics, macros, and device aliases. NVRAM is where the system identification information is stored, such as the host ID, Ethernet address, and time-of-day (TOD) clock.

Examples of NVRAM variables:

Variable	Default	Description
boot-device	disk or net	The device from which to start up.
diag-device	net	The diagnostic startup source device.
diag-file	Empty string	Arguments passed to the startup program in diagnostic mode.
diag-switch	false	Whether to run in diagnostic mode

Reference: OpenBoot 4.x Command Reference Manual

QUESTION 48

Which two capabilities are provided by the OpenBoot PROM?

- A. a command to safely shut down the system
- B. hardware testing and initialization
- C. booting from a disk or network
- D. starting the GRUB loader

Answer: BC

Explanation:

OpenBoot firmware is executed immediately after you turn on your system.

The primary tasks of OpenBoot firmware are to:

* Test and initialize the system hardware (B)

* Determine the hardware configuration

*Boot the operating system from either a mass storage device or from a network (C) *Provide interactive debugging facilities for testing hardware and software

Reference: OpenBoot 4.x Command Reference Manual

QUESTION 49

On which is the open boot prom available?

- A. x86 only
- B. x86 64-Bit only
- C. SPARC only
- D. both x86 and x86 64-Bit
- E. x86, x86 64-Bit and SPARC

Answer: C

Explanation:

No OpenBoot Environment on the Intel Platform. The Intel environment has no OpenBoot PROM or NVRAM. On Intel systems, before the kernel is started, the system is controlled by the basic input/output system (BIOS), the firmware interface on a PC. Therefore, many features provided by OpenBoot are not available on Intel systems.

Note: The Open Boot PROM (OBP) bootloader only exists within SPARC. Before Solaris 10 01/06, the bootloader for Solaris x86 was a Sun customized bootstrap software. After Solaris 10 01/06, it

uses GRUB, a well known bootloader that's commonly used in the Linux world. With GRUB, it's much easier to make the system dual-boot Linux and Solaris. GRUB extends the capabilities of the bootloader that was not available previously such as the ability to boot from a USB DVD drive. Those who have used Linux will be quite familiar with GRUB and its options.

QUESTION 50

Review the storage pool information:

```
pool: pool1
state: ONLINE
scan: none requested
config:
  NAME          STATE      READ      WRITE     CKSUM
  pool1         ONLINE    0         0         0
  raidz1-0     ONLINE    0         0         0
  c3t3d0        ONLINE    0         0         0
  c3t4d0        ONLINE    0         0         0
  c3t5d0        ONLINE    0         0         0
  c3t6d0        ONLINE    0         0         0
```

Which statement describes the status of this storage pool?

- A. It is a RAIDZ storage pool and can withstand a single disk failure; data will be striped at: disk components.
- B. It is a double-parity RAIDZ storage pool and can withstand two disk failures; data will be striped across four disk components.
- C. It is an improperly configured RAIDZ storage pool; data will be striped across four disk components, but only three drives are protected with redundancy.
- D. It is an improperly configured RAIDZ storage pool; data will be striped across three disk components, but only three drives are protected with redundancy.

Answer: C

Explanation:

ZFS dynamically stripes data across all devices.

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