

## MikroTik Certified Traffic Control Engineer (MTCTCE) DUMPS

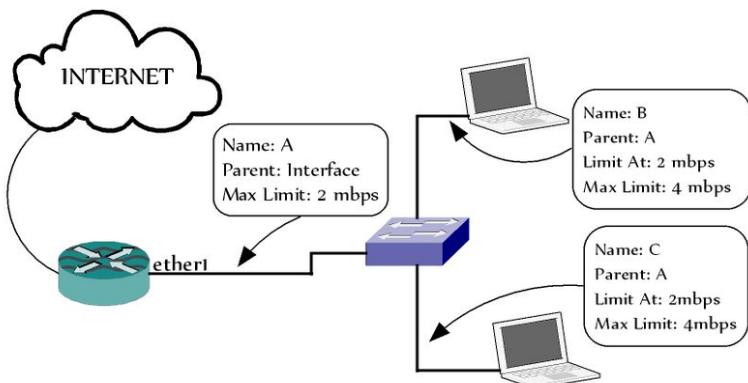
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1. According to the picture, if both laptops have same priority, how much bandwidth will be available for every laptop ?

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



2. Choose the correct PCQ argument values to allow 256kbps maximum download and upload for each client:

- A. kind=pcq pcq-rate=5000000 pcq-classifier=dst-address
- B. kind=pcq pcq-rate=5000000 pcq-classifier=src-address
- C. kind=pcq pcq-rate=1256000 pcq-classifier=dst-address
- D. kind=pcq pcq-rate=256000 pcq-classifier=dst-address**
- E. kind=pcq pcq-rate=256000 pcq-classifier=src-address

3. It is required to set up a web server residing on a private subnet in a LAN to be accessible from the public Internet. The web server is directly connected to a router which is facing the public Internet. Only the web server port should be accessible from the public. Which of the following configuration steps must be met (select all that apply):

- A. A route between the router and the web server must exist
- B. The private IP address of the web server should be routable on the Internet
- C. Connection tracking must be enabled on the router**
- D. In IP firewall NAT there should be a dst-nat rule between the public IP address of the web server and the private IP of the web server**
- E. The public IP address of the web server must be installed on the router

**4. How can mangle rules be applied to dynamically created PPTP client interfaces (select all that apply):**

- A. It is not possible to do this
- B. By using the Address List feature in the associated PPP Profile**
- C. By using 'all ppp' as the mangle 'In interface'**
- D. By enabling the 'PPTP Use Firewall' setting in the associated PPP Profile

**5. In RouterOS queue configurations the word "total" usually represents**

- A. download - upload
- B. download
- C. upload + download**
- D. upload

**6. Which action do you need to use in a NAT rule, to NAT a private address range to the same size public address range ensuring one-to-one NAT?**

- A. same
- B. masquerade
- C. netmap**
- D. src-nat

**7. Choose correct statements about the queue tree**

- A. Order is important for Queue Tree.
- B. Queue Tree is the only way how to add a queue on the separate interface.**
- C. Queue Tree creates up to three directional queues in one of the HTBs.

**8. Is it possible to have 2 working DHCP servers on the same interface?**

- A. Yes, as long as only 1 is Authoritative
- B. Yes, as long as 1 is set to Always Broadcast
- C. No it is not possible**
- D. Yes, as long as 1 has a relay specified

**9. You have a queue structure:**

```
queue "GP" max-limit=10M  
- queue "M" parent="GP" limit-at=4M max-limit=6M  
-- queue "C1" parent="M" limit-at=1M max-limit=7M priority=4  
-- queue "C2" parent="M" limit-at=1M max-limit=4M priority=1  
-- queue "C3" parent="M" limit-at=2M max-limit=7M priority=8  
- queue "F" parent="GP" limit-at=5M max-limit=8M  
-- queue "D1" parent="F" limit-at=3M max-limit=4M priority=5  
-- queue "D2" parent="F" limit-at=2M max-limit=5M priority=2
```

**Which queue will get more than limit-at in worst case scenario?**

- A. D1
- B. D2
- C. C3
- D. C1
- E. C2

**10. Router has wireless and ethernet client interfaces, all client interfaces are bridged. To create a DHCP service for all clients, DHCP server must be configured on:**

- A. Only on the bridge interface
- B. DHCP service is not possible in this setup
- C. Every bridge port
- D. Ethernet and wireless interfaces

**11. An IP packet has matched the conditions of a firewall rule and the rule actions 'action=reject reject-with=icmp-network-unreachable' were initiated. What will happen to the contents of the packet?**

- A. The packet header will receive a flag of 'icmp-network-unreachable'
- B. The packet will be discarded regardless of its content
- C. The packet will be rejected only if the destination network is unreachable
- D. The whole packet will be forwarded back to the sender regardless of its contents

**12. What kind of packet is marked by connection-state=established matcher?**

- A. Packet does not correspond to any known connection
- B. Packet begins a new TCP connection
- C. Packet belongs to an existing connection, for example a reply packet or a packet which belongs to already replied connection**
- D. Packet is related to, but not part of an existing connection

**13. Simple Queue number 0 defines 2M for upload and download for target IP 10.10.0.33.**

**Simple Queue number 1 defines 4M for upload and download for target IP 10.10.0.33.**

**The maximum bandwidth that the client 10.10.0.33 is be able to obtain is:**

- A. 2M upload/download**
- B. 6M upload/download
- C. 0M upload/download
- D. 4M upload/download

**14. If ARP=reply-only is configured on an interface, this interface will**

- A. accept all MAC-addresses listed in '/ip arp' as static entries
- B. add new MAC addresses in '/ip arp' list
- C. accept all IP addresses listed in '/ip arp' as static entries
- D. add new IP addresses in '/ip arp' list
- E. accept IP and MAC address combinations listed in '/ip arp' list**

**15. It is required to configure RouterOS DNS cache to function as domain name server for your local network with local static entries. Which are the minimum settings you will need?**

- A. Enable \"Allow Remote Requests\"**
- B. Enter at least two domain name server IP addresses
- C. Enter at least one domain name server IP address**
- D. Add a new static DNS entry**
- E. Set cache size to 4096

**16. What is the correct action for a NAT rule on a router that should intercept SMTP traffic and send it over to a specified mail server?**

- A. passthrough
- B. dst-nat**
- C. tarpit
- D. redirect

**17. The DHCP server assigns addresses from the pool 10.1.1.1-10.1.1.14. A client has been assigned IP address 10.1.1.1. From the client's point of view, it can be concluded, that**

- A. there are totally 14 clients connected to the server at that time
- B. there is no additional information available about number of clients using the same DHCP server**
- C. there are totally 13 clients connected to the server at that time
- D. this client is the only one client connected to the server at that time

**18. What is the recommended sequence for traffic marking by mangle for QoS?**

- A. Add only mark-connection
- B. Add mark-connection then mark-packet**
- C. Add only mark-packet
- D. Add action=passthrough

**19. SFQ - Stochastic Fairness Queueing (SFQ) is ensured by hashing and round-robin algorithms. How many different hash values (substreams) can SFQ have ?**

- A. 128
- B. depends on free memory
- C. 65535
- D. 1024**

**20. Which port(s) and protocol(s) are used by MikroTik RouterOS DNS forwarder:**

- A. TCP 80
- B. UDP 53**
- C. TCP 53**
- D. UDP 80

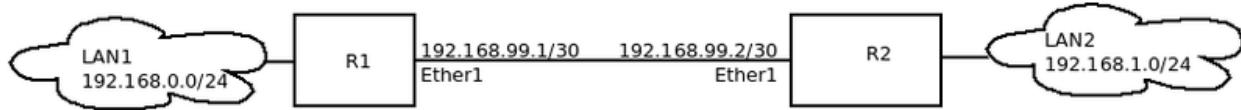
**21. If we have the following queue structure:**

```
queue "A" max-limit=8M  
- queue "B" parent="A" limit-at=2M max-limit=5M priority=1  
- queue "C" parent="A" limit-at=3M max-limit=6M  
-- queue "C1" parent="C" limit-at=1M max-limit=2M priority=2  
-- queue "C2" parent="C" limit-at=2M max-limit=4M priority=3
```

**If all queues are utilizing the maximum. what will be the traffic distribution ?**

- A. B-5M, C1-2M, C2- 1M
- B. B-4M, C1-2M, C2- 4M
- C. B-2M, C1-2M, C2- 4M
- D. B-4M, C1-2M, C2- 2M
- E. B-5M, C1-1M, C2- 2M**

**22. Consider the following network diagram. In R1, you have the following configuration:**



**/ip route**

```
add dst-address=192.168.1.0/24 gateway=192.168.99.2
```

**/ip firewall nat**

```
add chain=srcnat out-interface=Ether1 action=masquerade
```

**On R2, if you wish to prevent all access to a server located at 192.168.1.10 from LAN1 devices, which of the following rules would be needed?**

- A. /ip firewall filter add chain=input src-address=192.168.99.1 dst-address=192.168.1.10 action=drop
- B. /ip firewall nat add chain=dstnat src-address=192.168.99.1 dst-address=192.168.1.10 action=drop
- C. /ip firewall filter add chain=forward src-address=192.168.99.1 dst-address=192.168.1.10 action=drop**
- D. /ip firewall filter add chain=forward src-address=192.168.0.0/24 dst-address=192.168.1.10 action=drop

**23. What does the firewall action "Redirect" do? Select all true statements.**

- A. Redirects a packet to a specified port on the router
- B. Redirects a packet to a specified port on a host in the network**
- C. Redirects a packet to the router
- D. Redirects a packet to a specified IP**

**24. You have a queue structure:**

```
queue "GP" max-limit=10M
```

```
- queue "M" parent="GP" limit-at=4M max-limit=6M
-- queue "C1" parent="M" limit-at=1M max-limit=7M priority=4
-- queue "C2" parent="M" limit-at=1M max-limit=4M priority=1
-- queue "C3" parent="M" limit-at=3M max-limit=7M priority=8
- queue "F" parent="GP" limit-at=5M max-limit=8M
-- queue "D1" parent="F" limit-at=3M max-limit=4M priority=5
-- queue "D2" parent="F" limit-at=2M max-limit=5M priority=2
```

If queues "C2" and "C3" are not requiring any traffic, how is all the available bandwidth going to be distributed in worst case scenario when all other queues are trying to get all available traffic?

- A. queue "C1" will get 4M, "D2" 3M, "D1" 3M**
- B. queue "C1" will get 4M, "D2" 7M, "D1" 4M
- C. queue "C1" will get 5M, "D2" 2M, "D1" 3M
- D. queue "C1" will get 3M, "D2" 3M, "D1" 5M
- E. queue "C1" will get 2M, "D2" 5M, "D1" 3M

**25. You want to offer a static route to your DHCP clients (besides the default-route). What is the best way to do that?**

- A. Set DHCP options 121**
- B. There is no way to send a static-route to DHCP clients
- C. Set a static IP into /ip route and it will automatically be sent to clients
- D. Set DHCP options 3

**26. Which configuration steps do we have to set, so that only DHCP clients can get connected in DHCP server LAN environment?**

- A. Under appropriate interface - set arp to \reply only\
- B. In IP Firewall Filter - add rule with action=reject if MAC address is not listed in address list
- C. In IP Firewall Filter - add rule with action=reject if IP address is not listed in address list
- D. On dhcp server - set \add ARP for leases\

**27. DNS configuration of the router,**

```
/ip dns static add address=192.168.0.1 name=www.test.com
```

**Computer DNS server address is router. You are sending ping to www.test.com from the computer. Which is the resolved address?**

- A. www.test.com is resolved to its public IP address
- B. It is not possible to resolve www.test.com
- C. www.test.com is resolved as 192.168.0.1

**28. Firewall configuration is the following:**

- 1) /ip firewall filter add chain=input protocol=icmp action=jump jump-target=ICMP
- 2) /ip firewall filter add chain=input protocol=icmp action=log log-prefix=ICMP-DENY
- 3) /ip firewall filter add chain=input protocol=icmp action=drop
- 4) /ip firewall filter add chain=ICMP protocol=icmp action=drop log=yes log-prefix=JUMP-ICMP-DENY

**Client sends "ping" to router. What will the router do?**

- A. Router will log it with prefix: ICMP-DENY
- B. Router will drop the packet at the Input drop rule (3rd rule)
- C. Router will log it with prefix: JUMP-ICMP-DENY
- D. Router will drop the packet at ICMP (jump) chain drop rule (4th rule)

**29. SFQ queue types increase the drop probability even if the queue is not full. This is useful to equalize similar connections.**

true

**30. You have a queue structure:**

```
queue "MK" max-limit=23M  
-queue "A" parent="MK" limit-at=10M max-limit=18M  
--queue "AA" parent="A" limit-at=3M max-limit=5M priority=1  
--queue "AB" parent="A" limit-at=1M max-limit=2M priority=2  
--queue "AC" parent="A" limit-at=4M max-limit=8M priority=4  
-queue "B" parent="MK" limit-at=10M max-limit=18M  
--queue "BA" parent="B" limit-at=1M max-limit=10M priority=1  
--queue "BB" parent="B" limit-at=2M max-limit=3M priority=3
```

**Select the correct answer for the worst case scenario when all queues are trying to get all available traffic.**

- A. queue "AA" will get 5M, "AB" 2M, "AC" 8M, "BA" 10M, "BB" 2M
- B. queue "AA" will get 3M, "AB" 1M, "AC" 8M, "BA" 1M, "BB" 3M
- C. queue "AA" will get 3M, "AB" 2M, "AC" 4M, "BA" 10M, "BB" 2M
- D. queue "AA" will get 5M, "AB" 2M, "AC" 8M, "BA" 10M, "BB" 3M
- E. queue "AA" will get 5M, "AB" 2M, "AC" 4M, "BA" 10M, "BB" 2M**

**31. Which of the following is true for mangle facility in RouterOS?**

- A. Mangle facility can be used to modify some fields in the IP header and TTL fields**
- B. The mangle mark can be transmitted across the network, and used by other routers
- C. Mangle facility is used to mark IP packets with special marks for future processing**
- D. Marks packet can be used by other router facilities like routing and bandwidth management**

**32. The following command is entered: /ip dhcp-server alert add alert-timeout=1h disabled=no interface="LAN" on-alert=":log info \"server detected\" valid-server=00:0C:42:09:2A:90**  
**Mark all correct answers :**

- A. Alert script (on-alert) will repeat every 1h when DHCP rogue server exists on LAN interface**
- B. Alert script (on-alert) will work once when rogue DHCP server is present.
- C. When anyone enables rogue DHCP server on network connected to interface LAN - DHCP server will be disabled on address 00:0C:42:09:2A:90
- D. When anyone enables rogue DHCP server on network connected to interface LAN - router will log the message "server detected"**
- E. Alert script (on-alert) will disable local DHCP server once when rogue DHCP server will be present

**33. Action Tarpit can be applied to**

- A. TCP Protocol
- B. UDP Protocol
- C. Any Protocol
- D. ICMP Protocol

**34. Which of the following actions have an implicit "passthrough"? (select all that apply)**

- A. accept
- B. drop
- C. add src to address list
- D. log

**35. An SNMP trap can be sent from a MikroTik RouterOS device:**

- A. As an alarm for a cpu load that passes a defined limit without using a script to do it
- B. As an alarm for a cpu load that passes a defined limit, using a scheduled script to start it
- C. As an alarm for the connection/disconnection of an ethernet port, without using scripts

**36. If we change TTL to 2 in mangle chain prerouting**

- A. packet will not be forwarded
- B. packet will be forwarded to the next 2 L3 devices
- C. packet will be forwarded only to next L3 device
- D. packet will always reach its destination

**37. Possible actions of ip firewall filter are:**

- A. tarpit
- B. netmap
- C. bounce
- D. log
- E. accept
- F. tarp

**38. MikroTik RouterOS commands can be run once a day by:**

- A. /system cron
- B. /system scheduler**
- C. /system watchdog
- D. /system log

**39. Where can a routing mark be used?**

- A. In routing**
- B. In firewall mangle**
- C. In firewall filters
- D. In queues

**40. There is an HTTP server 10.0.0.1 in your private network. You have made a DST-NAT rule that sends all HTTP traffic received on your router's address 80.232.50.100 to this server. If you make a firewall rule on the router to disallow address 159.148.20.30 to communicate with the server, how would you identify this communication in this rule?**

- A. src-address=159.148.20.30 dst-address=80.232.50.100
- B. src-address=80.232.50.100 dst-address=159.148.20.30
- C. src-address=159.148.20.30 dst-address=10.0.0.1**
- D. src-address=80.232.50.100 dst-address=10.0.0.1

**41. Mark the queue types that are available in RouterOS**

- A. SFQ - Stochastic Fairness Queuing**
- B. PCQ - Per Connection Queuing**
- C. RED - Random Early Detect (or Drop)**
- D. FIFO - First In First Out (for Bytes or for Packets)**
- E. LIFO - Last In First Out
- F. DRR - Deficit Round Robin

**42. Using the mangle facility, it is more efficient (uses less router CPU) to mark packets than to mark connections.**

**false**

**43. Consider the example Queue Tree diagram. Customers B, C and D are downloading. What is the bandwidth allocation given to each of these customers?**

- A. B. 10M - C. 1M - D. 9M
- B. B. 10M - C. 1.5M - D. 8.5M
- C. B. 20M - C. None - D. None
- D. B. 10M - C. 4.5M - D. 5.5M

Name	Parent	Priority	Limit At (b...)	Max Limit ...
Parent	global-in	8		20M
Business	Parent	8	20M	20M
Customer A	Business	5	10M	10M
Customer B	Business	8	10M	10M
Residential	Parent	8		20M
Customer C	Residential	8	1M	6M
Customer D	Residential	7	2M	10M
Customer E	Residential	8	5M	10M

**44. A router is connected to 10.10.10.0/24 (public) and 10.1.1.0/24 (local) networks. There are two routes in the routing table:**

**0 dst-addr=0.0.0.0/0 gateway=10.10.10.10**

**1 dst-addr=0.0.0.0/0 gateway=10.10.10.11 routing-mark=server\_traffic**

**and 2 rules in firewall mangle**

**1 chain=prerouting src-address=10.1.1.12 connection-mark=server\_conn action=mark-routing new-routing-mark=server\_traffic**

**Through which gateway will a client, with an IP address of 10.1.1.12, establish a connection to the Internet?**

- A. Through both gateways
- B. Through 10.10.10.11**
- C. Through 10.10.10.10
- D. Connections are not possible in this configuration

**45. In MikroTik Queue System, there are 8 distinct priorities in Simple Queues.**

**true**

**46. Someone has installed an illegal DHCP server on your broadcast domain. While organizing everything for removal of the server, you want to minimize the problems caused on your network. On your DHCP server, you should**

- A. enable authoritative mode**
- B. specify "Src. Address"
- C. enable "Always Broadcast"
- D. increase "delay-threshold" value

**47. What is the second stage in a DHCP communication scenario?**

- A. Offer
- B. Authorization
- C. Request
- D. Discovery
- E. Acknowledgement

**48. Mangle rule "Change MSS" applies to**

- A. ICMP
- B. GRE
- C. TCP
- D. UDP
- E. IGMP

**49. The DHCP client - server communication steps are**

- A. client discovery, client request, client ack, server offer
- B. client request, server offer, client discovery, server ack
- C. client discovery, server ack, client request, server offer
- D. client discovery, server offer, client request, server ack

**50. IP Firewall Mangle is used for:**

- A. Marking Connections
- B. Marking Packets
- C. Changing TTL Values
- D. Changing Source Ports for IP Packets

**51. What are the benefits of an "Authoritative DHCP server"?**

- A. Prevent rogue DHCP servers
- B. DHCP server responds only to known clients
- C. Faster network adaption to DHCP configuration changes
- D. Don't answer on broadcast

**52. A firewall rule is used to redirect all incoming DNS requests. What is the source IP address generated in the response by the router?**

- A. Source IP address of the response is the highest active loopback bridge interface of the router
- B. Source IP address of the response is the same as destination IP address of the original request
- C. Source IP address of the response is broadcast to indicate the response was generated by proxy
- D. Source IP address of the response is IP address of router's out interface

**53. Which of the following chains are NOT available to mangle rules:**

- A. output
- B. dst-nat
- C. prerouting
- D. src-nat

**54. DHCP-server configuration,**

**dhcp-server set 0 address-pool=static-only**

**/ip dhcp-server lease add mac-address=00:0C:42:01:02:03 address=192.168.0.1**

**/ip dhcp-server lease add mac-address=00:0C:42:01:02:02 address=192.168.0.2**

**/ip dhcp-server lease add mac-address=00:0C:42:01:02:04 address=192.168.0.3**

**Which IP addresses will be handed out to client?**

- A. Any host from 192.168.0.0/24 network except 192.168.0.254
- B. 192.168.0.1, 192.168.0.2, 192.168.0.3
- C. 192.168.0.1, 192.168.0.2
- D. 192.168.0.1

**55. Which RouterOS management methods can be used encrypted?**

- A. API
- B. Webfig
- C. Winbox
- D. SSH
- E. Telnet

**56. Which configuration ensures correct burst behavior?**

- A. limit-at < max-limit < burst-threshold < burst-limit
- B. burst-threshold < limit-at < burst-limit < max-limit
- C. limit-at < burst-threshold < max-limit < burst-limit**
- D. limit-at < burst-limit < burst-threshold < max-limit
- E. limit-at < max-limit < burst-limit < burst-threshold

**57. An IP packet has matched the conditions of a firewall rule and the rule actions 'action=reject reject-with=icmp-network-unreachable' were initiated. What will happen to the contents of the packet?**

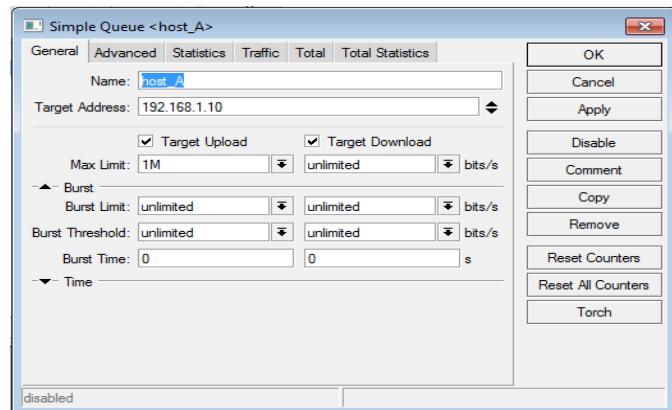
- A. The packet will be rejected only if the destination network is unreachable
- B. The packet will be discarded regardless of its content**
- C. The packet header will receive a flag of 'icmp-network-unreachable'
- D. The whole packet will be forwarded back to the sender regardless of its contents

**58. RouterOS IP Firewall mangle facility can be used to identify traffic by port, protocol or IP address and then modify the IP header information of the packet to include a DSCP bit:**

true

**59. What does this simple queue do (check the image)?**

- A. Queue limits host 192.168.1.10 download data rate to one megabit per second.
- B. Queue guarantees download data rate of one megabit per second for host 192.168.1.10
- C. Queue limits host 192.168.1.10 upload data rate to one megabit per second.**
- D. Queue guarantees upload data rate of one megabit per second for host 192.168.1.10



**60. There is a src-nat rule in firewall:**

**/ip firewall nat add chain=src-nat src-address=192.168.10.0/24 action=src-nat to-address=203.115.1.4**

**To block client traffic to IP 115.14.3.110, the following rule has to be added:**

A. /ip firewall filter add chain=input src-address=192.168.10.0/24 dst-address=115.14.3.110 action=drop

**B. /ip firewall filter add chain=forward src-address=192.168.10.0/24 dst-address=115.14.3.110 action=drop**

C./ip firewall filter add chain=postrouting src-address=203.115.1.4/32 dst-address=115.14.3.110 action=drop

D. /ip firewall filter add chain=forward src-address=203.115.1.4/32 dst-address=115.14.3.110 action=drop