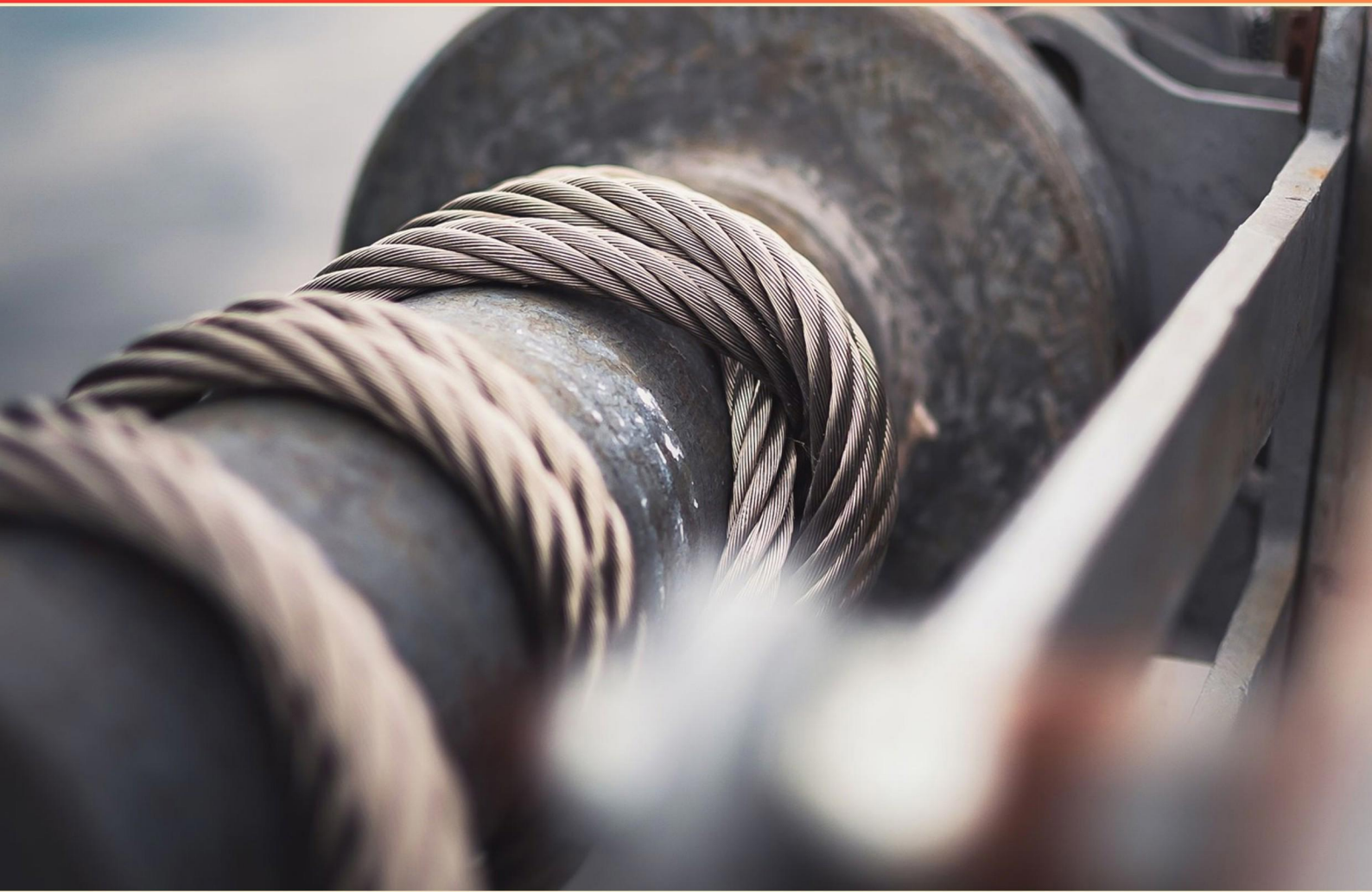


INTERNET PROTOCOL VERSION 6 (IPV6) PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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1. What is the all-routers multicast address in IPv6?

- A. ff02::2
- B. ff02::1
- C. ff02::fb
- D. ff02::ff

2. Which IPv6 prefix is associated with Teredo?

- A. FE80::/10
- B. 2001:0DB8::/32
- C. 2002::/16
- D. 2001:0000::/32

3. Which of the following is a valid compressed representation of the full address fddd:f00d:cafe:0000:0000:0000:0000:0001 using the double colon rule?

- A. fddd:f00d:cafe:0:0:0:0:0001
- B. fddd:f00d:cafe::0001
- C. fddd::f00d:cafe:0:0:0:0:1
- D. fddd:f00d:cafe:0000:0000:0000:0000:0001

4. Which addressing mechanism allows a device to configure its own IPv6 address on a link without a DHCP server?

- A. SLAAC relies on a DHCPv6 server to assign addresses.
- B. SLAAC uses 128-bit interface IDs generated randomly.
- C. SLAAC uses a 32-bit network prefix to generate the interface ID.
- D. SLAAC-based addressing requires a 64-bit network prefix to generate the interface identifier deterministically.

5. What does the prefix definition consist of?

- A. Network portion only
- B. Subnet ID only
- C. Network portion plus subnet ID
- D. Interface ID

- 6. Which statement correctly reflects the interaction of DHCPv6 and SLAAC under certain router configurations?**
- A. Both can be used together depending on router flags
 - B. Only one of them can be used even if flags permit both
 - C. SLAAC must be disabled
 - D. DHCPv6 is the only method for address assignment
- 7. What is the multicast scope associated with ff02 IPv6 multicast addresses?**
- A. Site-local scope
 - B. Link-local scope
 - C. Global scope
 - D. Node-local scope
- 8. What is the purpose of the Flow Label field in the IPv6 header?**
- A. To identify and provide special handling for packets in the same flow for QoS or routing decisions; typically 0
 - B. To carry an authentication tag
 - C. To identify the next header
 - D. To specify the hop limit
- 9. Which pair of messages characterizes the final exchange in DHCPv6 completion?**
- A. Client sends Request, Server sends Reply
 - B. Client sends Solicit, Server sends Advertise
 - C. Client sends Confirm, Server sends Acknowledge
 - D. Client sends Renew, Server sends Reply
- 10. In a typical IPv6 global unicast address, how long is the interface identifier?**
- A. 32 bits
 - B. 48 bits
 - C. 64 bits
 - D. 96 bits

Answers

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1. A
2. D
3. B
4. D
5. C
6. A
7. B
8. A
9. A
10. C

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Explanations

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1. What is the all-routers multicast address in IPv6?

- A. ff02::2
- B. ff02::1
- C. ff02::fb
- D. ff02::ff

IPv6 uses on-link multicast groups to reach multiple devices on the same local link without broadcasting. The ff02::/16 range is reserved for link-local multicast, meaning only devices on the same link will receive these packets. The all-routers group is ff02::2, so sending to this address reaches every router on the local link that has joined the group. This is exactly what's used when a host wants to discover routers on the link, such as with a Router Solicitation message. The other options are different multicast groups: ff02::1 targets all nodes on the link, ff02::fb is commonly used for multicast DNS on the local link, and ff02::ff is used for other purposes and not the all-routers group.

2. Which IPv6 prefix is associated with Teredo?

- A. FE80::/10
- B. 2001:0DB8::/32
- C. 2002::/16
- D. 2001:0000::/32

Teredo is an IPv6 transition mechanism that allows IPv6 connectivity over IPv4 networks, especially through NATs. To identify and route Teredo traffic, a specific IPv6 prefix is reserved for Teredo addresses. That prefix is 2001:0000::/32. Addresses in this range indicate a Teredo-enabled endpoint and are used to set up the tunneling between IPv6 and IPv4. The other prefixes serve different purposes: FE80::/10 defines link-local addresses used only on the local link; 2001:0DB8::/32 is reserved for documentation and examples; 2002::/16 is the 6to4 transition prefix for IPv6 over IPv4 without NAT.

3. Which of the following is a valid compressed representation of the full address fddd:f00d:cafe:0000:0000:0000:0000:0001 using the double colon rule?

- A. fddd:f00d:cafe:0:0:0:0:0001
- B. fddd:f00d:cafe::0001
- C. fddd::f00d:cafe:0:0:0:0:1
- D. fddd:f00d:cafe:0000:0000:0000:0000:0001

The concept being tested is how to compress an IPv6 address using the double colon to replace a run of consecutive zero 16 bit groups. You can drop leading zeros within any group, and you can replace the longest run of zeros with ::, but you can use :: only once. In the given full address, there are four consecutive zero groups between cafe and the final 0001: 0000:0000:0000:0000. That's the longest run of zeros, so it can be replaced with a single ::. After applying this, you get fddd:f00d:cafe::0001. Dropping the leading zeros in the last group is optional, so fddd:f00d:cafe::1 would also be valid, but keeping 0001 is still a valid compressed form. Why the other forms aren't correct: one form shows the zeros expanded without using the double colon at all, so it isn't using the requested compression. Another form attempts to compress across a nonzero boundary, which doesn't reflect the actual contiguous run of zeros. The last form keeps all the zeros without compression, so it isn't a compressed representation. Thus, the valid compressed representation is fddd:f00d:cafe::0001.

4. Which addressing mechanism allows a device to configure its own IPv6 address on a link without a DHCP server?

- A. SLAAC relies on a DHCPv6 server to assign addresses.
- B. SLAAC uses 128-bit interface IDs generated randomly.
- C. SLAAC uses a 32-bit network prefix to generate the interface ID.
- D. SLAAC-based addressing requires a 64-bit network prefix to generate the interface identifier deterministically.**

SLAAC, or Stateless Address Autoconfiguration, lets a device on a local link configure its own IPv6 address without any DHCP server. The local router periodically sends Router Advertisements that announce a 64-bit network prefix for the link. The device then combines that prefix with a 64-bit interface identifier to form a full 128-bit IPv6 address. The interface identifier can come from the hardware MAC (via EUI-64) or be generated randomly for privacy, so the host can create a valid address autonomously. The key point is that the 64-bit network prefix is used alongside a 64-bit interface ID to build the address, enabling automatic configuration without a DHCPv6 server.

5. What does the prefix definition consist of?

- A. Network portion only
- B. Subnet ID only
- C. Network portion plus subnet ID**
- D. Interface ID

In IPv6, a prefix defines the part of an address that routers use for routing toward the destination. That prefix is made up of the network portion and the subnet ID, which together identify a specific network within a larger scope. The Interface ID, on the other hand, identifies a particular device on that network segment and is not part of the routing prefix. So the prefix definition consists of the network portion plus the subnet ID. For example, with a typical /64 prefix, the first 64 bits include the network prefix plus the subnet ID, while the last 64 bits form the interface identifier.

6. Which statement correctly reflects the interaction of DHCPv6 and SLAAC under certain router configurations?

- A. Both can be used together depending on router flags**
- B. Only one of them can be used even if flags permit both
- C. SLAAC must be disabled
- D. DHCPv6 is the only method for address assignment

The idea being tested is how IPv6 autoconfiguration can mix SLAAC and DHCPv6 choices based on router advertisements. Routers send a prefix and two flags in their advertisements: the Managed flag and the Other configuration flag. The Managed flag tells hosts to use DHCPv6 for address assignment, while the Other flag tells hosts to use DHCPv6 to obtain additional configuration like DNS servers. But this doesn't force a single method for everything. In many setups you can have the address itself come from SLAAC (using the advertised prefix) while still using DHCPv6 to provide other information. That means both methods can operate together, depending on how the router flags are set. This flexibility is exactly what option choices describe as the correct idea.

7. What is the multicast scope associated with ff02 IPv6 multicast addresses?

- A. Site-local scope
- B. Link-local scope**
- C. Global scope
- D. Node-local scope

IPv6 multicast addresses include a scope field that defines how far the traffic can travel. Addresses that begin with ff02 are designated for the local link only, meaning the packet is delivered to all nodes on the same network segment and is not forwarded by routers to other links. This is what link-local multicast is for, enabling local-neighbor communications such as initial discovery messages. For context, the all-nodes on the link address ff02::1 and the all-routers on the link address ff02::2 illustrate this local scope. Other scopes would extend beyond the local link (site-local, global) or stay within a single node or interface, which is not the case for ff02.

8. What is the purpose of the Flow Label field in the IPv6 header?

- A. To identify and provide special handling for packets in the same flow for QoS or routing decisions; typically 0**
- B. To carry an authentication tag
- C. To identify the next header
- D. To specify the hop limit

The Flow Label is used to identify packets that belong to the same traffic flow so routers can treat them in a consistent way, enabling per-flow QoS or routing decisions. It is a 20-bit field set by the sender; when multiple packets share the same nonzero Flow Label, network devices can recognize they're part of the same flow and apply the corresponding handling without re-inspecting every header. In practice, many networks leave this field as zero unless special per-flow treatment is needed, hence "typically 0." This field is not for authentication (that would involve authentication mechanisms), it does not identify the next header (that's the Next Header field), and it does not control the hop limit (that's the Hop Limit field).

9. Which pair of messages characterizes the final exchange in DHCPv6 completion?

- A. Client sends Request, Server sends Reply**
- B. Client sends Solicit, Server sends Advertise
- C. Client sends Confirm, Server sends Acknowledge
- D. Client sends Renew, Server sends Reply

In DHCPv6, the final step of obtaining configuration on a link is when the client requests the chosen settings and the server confirms with those settings. After the client has discovered available servers, it sends a Request to bind to the offered address and provide the needed configuration. The server replies with a Reply that contains the assigned IPv6 address and any additional options (like DNS servers). This Pair completes the DHCPv6 configuration for the client on the link. The initial discovery happens earlier with a Solicit from the client and an Advertise from the server. A Confirm message is used later, if the client needs to verify the address after a link change, and the server's response to Confirm is still a Reply, not an Acknowledge. Renewal happens later, with a Renew from the client and a Reply from the server, not the initial completion.

10. In a typical IPv6 global unicast address, how long is the interface identifier?

- A. 32 bits
- B. 48 bits
- C. 64 bits
- D. 96 bits

IPv6 addresses are 128 bits long, and most global unicast addresses are divided into a 64-bit network prefix and a 64-bit interface identifier. The common practice is to use a /64 subnet, which leaves the rightmost 64 bits for the interface identifier. This 64-bit identifier provides a large space for unique IDs for each interface, whether derived from a MAC address (EUI-64) or generated for privacy. Because of this standard division, the interface identifier is 64 bits in length.

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Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://ipv6.examzify.com>

We wish you the very best on your exam journey. You've got this!

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