USGv6 Test Selection Tables

BGP for IPv6

I9-Interoperability: Routing Protocol R1v1.1

Applicable Profile: NIST SP 500-267B Revision 1 USGv6 Profile – November 2020.

Test Specification Id:

- [BGP4+-Interoperability] BGP4+ Interoperability Test Plan, [editor: UNH InterOperability Laboratory].

Interoperability Partner Requirements:

- Any host or router claiming compliance with the USGv6 profile MUST demonstrate evidence of interoperability with three **or more** independent implementations of IPv6. The three implementations must include at least one Host and at least one Router.
- Target nodes must not change once testing has begun.

If your Device Under Test (DUT) Type is **Router**:

- DUT = TR1 for all tests.
- TAR-Router1 = Independent Implementation Device B
- TAR-Router2 = Independent Implementation Device C
- TAR-Router3 = Independent Implementation Device D
- H1, H2, H3 and H4 = Any devices which can execute ping6 function

BGP for IPv6 Test Check List			
Reference	**Test Specification Id**	**Test Number**	**Device Type**
RFC 4271 RFC 8212	BGP4+-Interoperability	BGP.IO.1.1 External BGP Peer (A)(B)	Router
RFC 4271	BGP4+-Interoperability	BGP.IO.1.2 External Peer Shortest Path Selection (A)(B)(C)	Router
RFC 4271	BGP4+-Interoperability	BGP.IO.1.3 Internal BGP Peer (A)(B)(C)	Router
RFC 4271	BGP4+-Interoperability	BGP.IO.1.4 Transit AS for External BGP Peer (A)(B)(C)	Router
RFC 4271 RFC 7705	BGP4+-Interoperability	BGP.IO.2.1 ASN in OPEN Message (A)(B)	Router
RFC 4271	BGP4+-Interoperability	BGP.IO.2.2 Hold Time Negotiation (A)(B)	Router
RFC 4271 RFC 4760 RFC 2545 RFC 5492	BGP4+-Interoperability	BGP.IO.3.1 Multiprotocol (A)(B)	Router

RFC 4271 RFC 6286	BGP4+- Interoperability	BGP.IO.3.2 AS-Wide Unique BGP ID (A)(B)(C)(D)(E)	Router
RFC 4271 RFC 6793	BGP4+- Interoperability	BGP.IO.3.3 4-Octet AS (A)(B)(C)	Router

References:

- [RFC4271] Rekhter, Y., Ed., Li, T., Ed., and S. Hares, Ed., "A Border Gateway Protocol 4 (BGP-4)", RFC 4271, DOI 10.17487/RFC4271, January 2006. Online at: https://tools.ietf.org/html/rfc4271
- [RFC4760] Bates, T., Chandra, R., Katz, D., and Y. Rekhter, "Multiprotocol Extensions for BGP-4", RFC
- 4760, DOI 10.17487/RFC4760, January 2007. Online at: https://tools.ietf.org/html/rfc4760
- [RFC2545] Marques, P. and F. Dupont, "Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain
- Routing", RFC 2545, DOI 10.17487/RFC2545, March 1999. Online at: https://tools.ietf.org/html/rfc2545
- [RFC5492] Scudder, J. and R. Chandra, "Capabilities Advertisement with BGP-4", RFC 5492, DOI
- 10.17487/RFC5492, February 2009. Online at: https://tools.ietf.org/html/rfc5492
- [RFC6286] Chen, E. and J. Yuan, "Autonomous-System-Wide Unique BGP Identifier for BGP-4", RFC
- 6286, DOI 10.17487/RFC6286, June 2011. Online at: https://tools.ietf.org/html/rfc6286)
- [RFC6793] Vohra, Q. and E. Chen, "BGP Support for Four-Octet Autonomous System (AS) Number
- Space", RFC 6793, DOI 10.17487/RFC6793, December 2012. Online at: https://tools.ietf.org/html/rfc6793
- [RFC7607] Kumari, W., Bush, R., Schiller, H., and K. Patel, "Codification of AS 0 Processing", RFC 7607,
- DOI 10.17487/RFC7607, August 2015. Online at: https://tools.ietf.org/html/rfc7607
- [RFC7705] George, W. and S. Amante, "Autonomous System Migration Mechanisms and Their Effects
- on the BGP AS_PATH Attribute", RFC 7705, DOI 10.17487/RFC7705, November 2015. Online at: https://tools.ietf.org/html/rfc7705
- [RFC8212] Mauch, J., Snijders, J., and G. Hankins, "Default External BGP (EBGP) Route Propagation Behavior without Policies", RFC 8212, DOI 10.17487/RFC8212, July 2017. Online at: https://tools.ietf.org/html/rfc8212

The objective of this test selection sheet is to provide a reference for available test specifications that identifies tests applicable to the USGv6 Profile.