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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21			
Туре	FRR	FRR	FRR	FRR	FRR	FRR	FRR			
Commit ID	99477bc	62ac43d	86a5e5a	933b834	7a2b85a	61ba3a4	852b11e			
Commit Date	2022-11-03	2023-01-10	2023-03-13	2023-03-16	2023-04-23	2023-06-14	2023-11-22			
ANVL-OSPF-	ANVL Setup Valio	dation Test								
MUST	Test Setup Validate OS	PF Hello pac	ket from DUT							
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328 Section 12									
MUST	The collection of LSAs forms the link-state database. Each separate type of LSA has a separate function. Router-LSAs and network-LSAs describe how an area"s routers and networks are interconnected. Summary-LSAs provide a way of condensing an area"s routing information. AS-external-LSAs provide a way of transparently advertising externally-derived routing information throughout the Autonomous System. Note: ANVL Setup Validation Test									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF- 2.1 MUST	RFC 1583, s13.3 (see also sA.3.5 RFC 2328, s13.3 (see also sA.3.5	p132 Next step in p179) p148 Next step in p199)	the flooding proce	dure dure	-					
	OSPF Floodi: Validate Li:	ng nk State Upda	ate packet fo	ormat.						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			



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ANVL-OSPF- 2.2 MUST	RFC 1583, s13.3 p131 Next step in the flooding procedure (see also s4.2 p35 and s12.1.3 p103) RFC 2328, s13.3 p148 Next step in the flooding procedure (see also s4.2 p41 and s12.1.3 p117)										
	OSPF Flooding AS external link advertisements are not flooded into/throughout stub areas.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 2.3	RFC 1583, s13.3 p132 Next step in the flooding procedure RFC 2328, s13.3 p149 Next step in the flooding procedure										
MUST	OSPF Flooding If a neighbor is in a lesser state than Exchange, it does not participate in flooding.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 2.4	RFC 1583, s13.3 RFC 2328, s13.3	p132 Next step in p149 Next step in	the flooding proce the flooding proce	edure edure							
MUST	OSPF Floodi: Verify that who appear	ng advertisemen on the Link :	nts for neig State Request	nbors in stat t list are pr	ce Exchange cocessed corr	rectly					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF- 2.5	RFC 1583, s13 p RFC 2328, s13 p	127 The Flooding 144 The Flooding	Procedure Procedure								
MUST	OSPF Flooding If a new advertisement was received from a neighbor such that the receiving interface is DR and sender is not BDR, then the advertisement must be flooded back out the receiving interface.										
	FreeBSD <t< th=""></t<>										
	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: unpredict	Ubuntu 18.04: FAIL	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: FAIL	Debian 12: FAIL	Debian 12: unpredict				
ANVL-OSPF- 2.6	RFC 1583, s13.3 p133 The Flooding Procedure RFC 2328, s13.3 p150 The Flooding Procedure										
MUST	OSPF Flooding Do not flood an advertisement back to an interface if it was received from the Designated Router or the Backup Designated Router										
	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: unpredict	Ubuntu 18.04: pass	Ubuntu 18.04: unpredict	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: unpredict				
ANVL-OSPF- 2.7	RFC 1583, s13.3 RFC 2328, s13.3	p133 Next step in p150 Next step in	the flooding proce the flooding proce	dure dure							
MUST	OSPF Floodi: Do not floo if that inte	ng d a new adve: erface is in	rtisement bao state Backuj	ck onto the m	receiving int	erface					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF- 2.8 MUST	RFC 1583, s13.3 p133 Next step in the flooding procedure (see also s12.1.1 p101 and s14 p139) RFC 2328, s13.3 p150 Next step in the flooding procedure (see also s12.1.1 p116 and s14 p156)										
	OSPF Flooding The LS age field must be incremented by InfTransDelay on every hop of the flooding procedure.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 2.9 MUST	PF-RFC 1583, s13.3 p133-134 Next step in the flooding procedure (see also s7.3 p47 and s8.1 p51) RFC 2328, s13.3 p150-151 Next step in the flooding procedure (see also s7.3 p54 and s8.1 p58)										
	OSPF Flooding The Designated Router and its Backup send Link State Update packets to the multicast address AllSPFRouters.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 2.10 MUST	RFC 1583, s13.3 (see also s8.1 p5 RFC 2328, s13.3 (see also s8.1 p5	p134 Next step in 1) p151 Next step in 8)	the flooding proce	dure dure							
	OSPF Floodin All routers Link State	ng other than d Update packed	the Designate ts to the mul	ed Router and lticast addre	l its Backup ess AllDRoute	send their ers.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF- 2.11	NEGATIVE: RFC NEGATIVE: RFC	1583, s13.3 p133 2328, s13.3 p150	Next step in the flo Next step in the flo	ooding procedure ooding procedure							
SHOULD	OSPF Flooding DUT should ignore unexpected Link State Ack during adjacency establishment.FreeBSD 12.3: passFreeBSD 12.3: passFreeBSD 										
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13 p	145 The flooding p	orocedure								
MUST	OSPF Floodi: When a rece database coj	ng ived LSA ins py, the route	tance is less er will respo	s recent that ond by flood:	n a router"s ing back its	current DB copy.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.6	p100 Receiving D	atabase Descriptic	on Packets							
MUST	OSPF Floodi: Duplicate D	ng atabase Desc:	ription packe	ets are disca	arded by the	master.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.6	p100 Receiving D	atabase Descriptic	on Packets							
MUST	OSPF Floodi: Duplicate D the last Da	ng atabase Desc tabase Descr	ription packe iption packet	ets cause the t that it had	e slave to re 1 sent.	etransmit					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s10.6	p99 Receiving Da	tabase Descriptior	Packets							
MUST	OSPF Flooding If the Interface MTU field in a Database Description packet is larger than the router can accept without framentation, then it is rejected.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 3.1	RFC 1583, s11.1 p96 Routing table lookup RFC 2328, s11.1 p111 Routing table lookup										
MUST	OSPF Routing Table Lookups This routing table entry then provides the outgoing interface and next hop router to use in forwarding the packet. (NOTE: Here we are testing the DUT forwards IP packet to the correct interface and next hop based on an entry in the OSPF routing table.)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 3.2	RFC 1583, s11.1 RFC 2328, s11.1	p96 Routing table p111 Routing tabl	e lookup e lookup								
MUST	OSPF Routing In this case Instead of I destination source. (NOTE: Here if there is	g Table Look e, the packet being forward unreachable we are test no route to	ups t"s IP destin ded, the pacl message show ing the DUT s the destinat	nation is cor ket should be uld be returr sends an ICMM tion.)	nsidered unre e dropped and ned to the pa ? destination	achable. an ICMP cket"s unreachable					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF- 3.3	RFC 1583, s11.1 RFC 2328, s11.1	RFC 1583, s11.1 p96 Routing table lookup RFC 2328, s11.1 p111 Routing table lookup										
SHOULD	OSPF Routing Table Lookups If there is no matching routing table entry then the packet"s IP destination is considered unreachable. Instead of being forwarded, the packet should then be discarded and an ICMP destination unreachable message should be returned to the packet"s source. (NOTE: Here we are testing DUT sends an ICMP destination unreachable if there is no intra-area route for a packet destined for the router"s configured area.)											
	FreeBSD <t< th=""></t<>											
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF- 3.4	RFC 1583, s11.1 RFC 2328, s11.1	RFC 1583, s11.1 p96 Routing table lookup RFC 2328, s11.1 p96 Routing table lookup										
MUST	OSPF Routing Table Lookups DUT forwards IP packets based on the most preferential path type.											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF- 3.5	RFC 1583, s11.1 RFC 2328, s11.1	p96 Routing table p111 Routing tabl	e lookup e lookup									
MUST	OSPF Routing In this case provides the (NOTE: here the most sp	g Table Look e, the "best e most speci we are test ecific addre	ups match" is th fic (longest) ing DUT forwa ss/mask match	ne routing ta) match. ards IP packe n.)	able entry th ets based on	lat						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					



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ANVL-OSPF- 3.7	STRESS: RFC 1 STRESS: RFC 2	TRESS: RFC 1583, s11.1 p98 Routing table lookup TRESS: RFC 2328, s11.1 p112 Routing table lookup										
MUST	OSPF Routing DUT stays up Updates.	OSPF Routing Table Lookups DUT stays up when receiving an excessive number of Link State Updates.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF-	RFC 2328, s16.2	p169 Calculating	the Inter-area route	es								
MAY	OSPF Routing Table Lookups Range summaries of an area may contain subnets in different areas provided that subnets belonging to other areas are not summarized.											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF-	RFC 2328, s16.4.1 p175 External Path Preferences											
MUST	OSPF Routing Table Lookups Note that as a result of these rules, there may still be multiple paths of the highest preference. In this case, the path to use must be determined based on cost (NOTE: Here we are testing Intra-area backbone and inter-area paths are of equal preference. In this case, the path to use must be determined based on cost.)											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					



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ANVL-OSPF- 4.1 MAY	RFC 1583, s16.7 table changes RFC 2328, s16.7 table changes	RFC 1583, s16.7 p157 Events generated as a result of routing table changes RFC 2328, s16.7 p177 Events generated as a result of routing table changes										
	OSPF Routin New summary type of a r	g Table Chan link advert outing table	ges isements are entry change	generated whes.	nen the cost	or path						
	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL					
	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: FAIL	Debian 12: FAIL	Debian 12: FAIL					
ANVL-OSPF- 4.2 MUST	F- RFC 1583, s16.7 p157 Events generated as a result of routing table changes (see also s12.4.3 p120) RFC 2328, s16.7 p177 Events generated as a result of routing table changes (see also s12.4.3 p135) OSPF Routing Table Changes New summary link advertisements are reflooded with LS Age = MaxAge when routing table entries are deleted or are no longer advertisable.											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF- 4.3 MUST	RFC 1583, s16.7 table changes (see also s15 p1/ RFC 2328, s16.7 table changes (see also s15 p1	p158 Events gene 41) p178 Events gene 59)	erated as a result o	f routing f routing								
	OSPF Routing Table Changes If the entry indicates that the area border router is newly reachable, the corresponding virtual link is now operational. An InterfaceUp event should be generated for the virtual link, which will cause a virtual adjacency to begin to form. (NOTE: Here we are testing DUT attempts to bring up a virtual link when a changed routing table entry indicates that the endpoint of the virtual link is reachable.)											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					



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ANVL-OSPF- 4.4 MUST	RFC 1583, s16.7 p158 Events generated as a result of routing table changes RFC 2328, s16.7 p178 Events generated as a result of routing table changes											
	OSPF Routin If the entr reachable,t destroyed. the associa (NOTE: Here changed rou no longer r	g Table Chan y indicates he virtual 1 This means a: ted virtual we are test ting table e: eachable.)	ges that the area ink and its a n InterfaceDa link. ing the DUT 1 ntry indicata	a border rout associated ac own event sho orings down a es that the v	ter is no lor djacency shou buld be gener a virtual lir virtual link	nger ald be cated for ak when a endpoint is						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF- 4.5 MUST	PF- RFC 1583, s16.7 p158 Events generated as a result of routing table changes RFC 2328, s16.7 p178 Events generated as a result of routing table changes											
	OSPF Routin If the cost virtual adj (NOTE: Here when the co table.)	g Table Chang of the entr acency, a new we are test st of a path	ges y has changed w router-LSA ing DUT gene: to a virtua	d, and there for the back rates new sum l link endpoi	is a fully e abone must be mmary link ad int changes i	established originated. lvertisements n the routir	3 1g					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF- 5.1	RFC 1583, s16.1 RFC 2328, s16.1	p146 Calculating p164 Calculating	the shortest-path to the shortest-path to	ree for an area ree for an area								
SHOULD	Intra-Area DUT should route dista	Shortest Path use the shor nce metric)	h Calculation test of two of when forward:	n or more paths ing packets.	s (according	to OSPF						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12	Debian 12:	Debien 40					



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ANVL-OSPF- 5.2	RFC 1583, s16.1 RFC 2328, s16.1	p145 Calculating p163 Calculating	the shortest-path to the shortest-path to	ree for an area ree for an area							
MUST	Intra-Area Shortest Path Calculation If the LSA LS age is equal to MaxAge, examine the next link in V"s LSA. (NOTE: Here we are testing router links or network links advertisements with LS age = MaxAge are not used when building the shortest-path tree for an area.)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 5.3	RFC 1583, s16.1 p145 Calculating the shortest-path tree for an area RFC 2328, s16.1 p163 Calculating the shortest-path tree for an area										
MUST	Intra-Area Shortest Path Calculation If the LSA does not have a link back to vertex V, examine the next link in V"s LSA. (NOTE: Here we are testing DUT does not calculate routes from an entry in the link state database if that entry has no path back to the DUT.)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 5.4	RFC 1583, s16.1 RFC 2328, s16.1	p146 Calculating p164 Calculating	the shortest-path to the shortest-path to	ree for an area ree for an area							
MUST	Intra-Area Multiple se when multip	Shortest Path ts of next h le equal-cos	h Calculation op values are t destination	n e calculated ns to a netwo	for intra-ar ork exist.	ea routes					
	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21					
ANVL-OSPF- 5.5	RFC 1583, s16.1 p147 Calculating the shortest-path tree for an area RFC 2328, s16.1 p165 Calculating the shortest-path tree for an area											
MUST	Intra-Area Shortest Path Calculation If intra-area routes exist to an AS boundary router in more than one area, the area providing the shortest path is always chosen.											
	FreeBSD 12.3: passFreeBSD 12.3: passFreeBSD 											
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF- 5.6	RFC 1583, s16.1 p147 Calculating the shortest-path tree for an area RFC 2328, s16.1 p165 Calculating the shortest-path tree for an area											
MUST	Intra-Area Shortest Path Calculation If equal-cost intra-area routes exist to an AS boundary router in different areas, the area with largest OSPF Area ID is chosen.											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF- 5.7	RFC 1583, s16.1 RFC 2328, s16.1	p147 Calculating t p165 Calculating t	the shortest-path to the shortest-path to	ree for an area ree for an area								
SHOULD	Intra-Area In this cas if and only routing tab than the ne	Shortest Path e, the curren if the newl le entry"s L wly added ve	h Calculation nt routing ta y found path ink State Or: rtex" LSA.	n able entry sh is just as s igin has a sn	hould be over short and the maller Link S	written e current State ID						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF- 5.8	RFC 1583, s16.1 RFC 2328, s16.1	p148 Calculating t p166 Calculating t	he shortest-path to he shortest-path to	ree for an area ree for an area							
MUST	ST Intra-Area Shortest Path Calculation Multiple sets of next hop values are calculated for intra-area routes to stub networks when multiple equal-cost paths exist. FreeBSD Fre										
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 5.9	RFC 1583, s16.1 p148-149 Calculating the shortest-path tree RFC 2328, s16.1 p166-167 Calculating the shortest-path tree										
MUST	Intra-Area Shortest Path Calculation Otherwise D is smaller than the routing table cost. Overwrite the current routing table entry by setting the routing table entry"s cost to D, and by setting the entry"s list of next hops to the newly calculated set. (NOTE: Here we are testing stub network routing table entries are updated when a new path with smaller distance is calculated due to received routing information.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 6.1	RFC 1583, s16.2 RFC 2328, s16.2	p150 Calculating t p169 Calculating t	he inter-area route he inter-area route	95 95							
MUST	Use of Summ For each sum then examin (NOTE: here LSInfinity	aries mmary-LSA: I: e the the ne: we are test: are not used	f the cost s kt LSA. ing summary i when calcula	pecified by t link advertis ating inter-a	the LSA is LS sements with area routes.)	Infinity					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF- 6.2	RFC 1583, s16.2 RFC 2328, s16.2	p150 Calculating t p169 Calculating t	the inter-area route the inter-area route	es es							
MUST	Use of Summaries For each summary-LSA: if the LSA"s LS age is equal to MaxAge, then examine the the next LSA. (NOTE: here we are testing summary link advertisements with LS age of MaxAge are not used when calculating inter-area routes.)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 6.3	RFC 1583, s16.2 p150 Calculating the inter-area routes RFC 2328, s16.2 p169 Calculating the inter-area routes										
MUST	Use of Summaries For each summary-LSA: If the LSA was originated by the calculating router itself, examine the next LSA. (NOTE: Here we are testing if a summary link advertisement was originated by the router itself, it is not used when calculating inter-area routes.) FreeBSD FreeBSD FreeBSD FreeBSD FreeBSD FreeBSD FreeBSD FreeBSD 12.3: pass 12.3: pas 12.3: pas 12.3: pas 12.3: pas 12.3: pas 12.3: pas 12										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested				
	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
ANVL-OSPF- 6.4	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 1583, s16.2 RFC 2328, s16.2	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p151 Calculating to p169 Calculating to	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested the inter-area route the inter-area route	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
ANVL-OSPF- 6.4 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 1583, s16.2 RFC 2328, s16.2 Use of Summ If it is a described by area address then the sum (NOTE: Here its destina address ram	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p151 Calculating f p169 Calculating f aries Type 3 summary the summary s ranges, and we are test; tions fall in ges.	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested the inter-area route the inter-area	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Debian 12: untested es es the collection one of the r ular area add red. y link advert ne router"s a	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass on of destina couter"s conf dress range i cisement is i active config	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass tions figured .s active, .gnored if gured	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
ANVL-OSPF- 6.4 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 1583, s16.2 RFC 2328, s16.2 Use of Summ If it is a described by area address then the sum (NOTE: Here its destina address rand FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p151 Calculating to p169 Calculating to aries Type 3 summary the summary s ranges, and mmary-LSA show we are test. tions fall in ges. FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested the inter-area route the inter-area	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested cone of the rular area add red. y link advert he router"s a FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass on of destination couter"s confidences range in cisement is in active configence. FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass tions figured .s active, .gnored if gured FreeBSD 12.3: pass	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passPassFreeBSD 12.3: pass				
ANVL-OSPF- 6.4 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 1583, s16.2 RFC 2328, s16.2 Use of Summ. If it is a described by area address then the sum (NOTE: Here its destina address rand FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p151 Calculating to p169 Calculating to aries Type 3 summary the summary s ranges, and mmary-LSA show we are test. tions fall in ges. FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested the inter-area route the inter-area route ry-LSA, and t y-LSA equals d the particular ould be ignoring a summary nto one of the FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested cone of the r ular area add red. y link advert he router"s a FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass on of destination couter"s confidences range i cisement is in active configence FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass sigured s active, egnored if gured FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passPassFreeBSD 12.3: passUbuntu 18.04: untested				



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ANVL-OSPF- 6.5	RFC 1583, s16.2 RFC 2328, s16.2	p151 Calculating t p169 Calculating t	the inter-area route the inter-area route	es es							
MUST	Use of Summaries Ignore summary links advertisements originated by an area border router if there is no entry for that ABR in the routing table.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 6.6	RFC 1583, s16.2 RFC 2328, s16.2	p151 Calculating t p169 Calculating t	the inter-area route the inter-area route	2S 2S							
SHOULD	Use of Summaries Summary (inter-area) routes should be installed into the routing table in preference to existing external type 1 or type 2 routes.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 6.7	RFC 1583, s16.3 RFC 2328, s16.3	p152 Examining to p170 Examining to	ransit areas" summ ransit areas" summ	nary links nary links							
MUST	Use of Summaries The purpose of the calculation below is to examine the transit areas to see whether they provide any better (shorter) paths than the paths previously calculated in Sections 16.1 and 16.2. Any paths found that are better than or equal to previously discovered paths are installed in the routing table. (NOTE: Here we are testing the DUT uses a summary link advertisement in a transit area if it has a better cost route to a backbone area network than the virtual link)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF- 7.1	RFC 1583, s16.4 RFC 2328, s16.4	p155 Calculating p173 Calculating p	AS external routes AS external routes								
MUST	OSPF AS External Route Calculation If the cost specified by the LSA is LSInfinity, or if the LSA"s LS age is equal to MaxAge, then examine the next LSA. (NOTE: Here we are testing the DUT does not use AS external link advertisements with either a metric of LSInfinity or an LS age of MaxAge.)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 7.2	RFC 1583, s16.4 RFC 2328, s16.4	p155 Calculating p173 Calculating	AS external routes AS external routes								
MUST	OSPF AS External Route Calculation If the LSA was originated by the calculating router itself, examine the next LSA. (NOTE: He we are testing the DUT does not use AS external link advertisements originated by the device itself.)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 7.3	RFC 1583, s16.4 RFC 2328, s16.4	p155 Calculating p173 Calculating	AS external routes AS external routes	-							
MUST	OSPF AS Ext If no entri do nothing (NOTE: Here advertiseme: router orig	ernal Route (es exist for with this LS, we are test; nt if there ; inating the ;	Calculation router ASBR A and conside ing the DUT of is no routing advertisement	(i.e., ASBR er the next i does not use g table entry t.)	is unreachat in the list. an AS extern for the AS	ole), nal link boundary					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF- 7.4	RFC 1583, s16.4 RFC 2328, s16.4	p155 Calculating p173 Calculating	AS external routes AS external routes								
MUST	OSPF AS External Route Calculation If the forwarding address is non-zero, look up the forwarding address in the routing table. The matching routing table entry must specify an intra-area or inter-area path; if no such path exists, do nothing with the LSA and consider the next in the list. (NOTE: Here we are testing DUT ignores an AS external link advertisement if there is no intra-area or inter-area routing table entry for the forwarding address.)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 7.5	RFC 1583, s16.4 RFC 2328, s16.4	RFC 1583, s16.4 p155 Calculating AS external routes RFC 2328, s16.4 p174 Calculating AS external routes									
MUST	OSPF AS External Route Calculation Type 1 external paths are always preferred over type 2 external paths. (NOTE: Here we are testing DUT always treats Type 1 external paths as shorter than type 2 external paths.)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 7.6	RFC 1583, s16.4 RFC 2328, s16.4	p155 Calculating p174 Calculating p	AS external routes AS external routes								
MUST	OSPF AS Extended If the extended external and (NOTE: Here at the sum type 1 metr	ernal Route (rnal metric) d the cost is we are test: of the distan ic.)	Calculation type is 1, th s equal to X- ing DUT compa nce to the fo	nen the path- +Y. ares Type 1 e orwarding add	type is set external path dress and the	to type 1 ns by looking advertised	ī				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



RFC Compliance Test Report





	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21					
ANVL-OSPF- 7.7	RFC 1583, s16.4 p155 Calculating AS external routes RFC 2328, s16.4 p174 Calculating AS external routes											
MUST	OSPF AS Ext If the exter external, t and the typ (NOTE: Here advertised if type 2 m	ernal Route (rnal metric he link state e 2 cost is we are test type 2 metric etrics are e	Calculation type is 2, the component of Y. ing DUT compa cs or by dist qual.)	ne path-type of the route' ares type 2 e tance to the	is set to ty 's cost is X, external path forwarding a	rpe 2 us by uddresses						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF-	RFC 2328, s2.3 p23 Use of external routing information											
MUST	External Routing Information Use External routing information is flooded unaltered throughout the AS.											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF-	RFC 2328, s4 p4	0 Functional Sumr	nary									
MUST	OSPF Operat The router receives the	ions sends Hello pac eir Hello pac	packets to it ckets.	ts neighbors,	, and in turn	L						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					



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ANVL-OSPF-	RFC 2328, s4 p40 Functional Summary											
MUST	OSPF Operations On broadcast networks, the router dynamically detects its neighboring routers by sending its Hello packets to the multicast address AllSPFRouters.											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF-	RFC 2328, s4 p4	0 Functional Sumr	nary									
MUST	OSPF Operat A router pe link state.	OSPF Operations A router periodically advertises its state, which is also called link state.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF-	RFC 2328, s4 p40 Functional Summary											
MUST	OSPF Operations Link state is also advertised when a router"s state changes.											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF-	RFC 2328, s4.3 p	042 Routing protoc	ol packets									
MUST	OSPF Operat The OSPF pr	ions otocol runs d	directly over	r IP, using I	IP protocol 8	9.						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF-	RFC 2328, s4.3 p42 Routing protocol packets										
SHOULD	OSPF Operat Routing pro set to 0.	ions tocol packet	s should alwa	ays be sent w	vith the IP 1	COS field					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s4.3 p	042 Routing protoc	ol packets								
SHOULD	OSPF Operat OSPF protoc the value I	ions ol packets s nternetwork (hould have th Control.	neir IP prece	edence field	set to					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s4.3 p	043 Routing proto	col packets								
MUST	OSPF Operat Each LSA is checksum of	ions tagged with its link sta	the ID of tl ate contents	ne originatir . This test i	ng router and is for Router	l a LSA.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s4.3 p	043 Routing proto	col packets								
MUST	OSPF Operat Each LSA is checksum of	ions tagged with its link sta	the ID of tl ate contents	ne originatir . This test i	ng router and is for Networ	l a k-LSA.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF-	RFC 2328, s4.3 p43 Routing protocol packets										
MUST	OSPF Operations Each LSA is tagged with the ID of the originating router and a checksum of its link state contents. This test is for a Type-3 Summary LSA.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s7.1 p	52 The Hello Prot	ocol								
MUST	Bringing up Bidirection listed in t	Adjacencies al communica he neighbor":	tion is indic s Hello Packe	cated when thet.	ne router see	s itself					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s7.1 p52 The Hello Protocol										
MUST	Bringing up Adjacencies On broadcast networks, each router advertises itself by multicasting Hello Packets.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s7.1 p	52 The Hello Prot	ocol								
MUST	Bringing up On broadcas multicastin	Adjacencies t networks, o g Hello Packo	each router a ets.	advertises it	cself by peri	odically					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21					
ANVL-OSPF-	RFC 2328, s7.2 p53 The Synchronization of Databases											
MUST	Bringing up Adjacencies Each router describes its database by sending a sequence of Database Description packets to its neighbor. This is an indirect test which verifies that the DUT recognizes the LSA headers contained in the Database Description packets received from ANVL.											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF-	RFC 2328, s7.2 p	53 The Synchroni	zation of Database	es								
SHOULD	Bringing up Adjacencies When the neighbor sees an LSA that is more recent than its own database copy, it makes a note that this newer LSA should be requested.											
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					
ANVL-OSPF-	RFC 2328, s7.2 p	53 The Synchroni	zation of Database	25								
SHOULD	Bringing up When the ne database co newer) shou	Adjacencies ighbor sees a py, it does n ld be reques	an LSA that : not make a no ted.	is not more note that this	recent than i s LSA (which	ts own is not						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass					
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested					
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass					



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF-	RFC 2328, s7.2 p53 The Synchronization of Databases										
MUST	Bringing up Database De acknowledge	Adjacencies scription Pa d by the sla	ckets sent by ve through e	y the master choing of the	(polls) are e sequence nu	umber.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s7.2 p	54 The Synchroni	zation of Database	es							
MUST	Bringing up The master Packets.	Adjacencies is the only	one allowed	to retransmit	t Database De	escription					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s7.2 p54 The Synchronization of Databases										
MUST	Bringing up Adjacencies The slave is not allowed to retransmit Database Description packets.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s7.2 p	54 The Synchroni	zation of Database	es							
MUST	Bringing up Each Databa more packet	Adjacencies se Descriptions to follow	on contains a	an indication t.	n that there	are					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21		
ANVL-OSPF-	RFC 2328, s7.2 p	54 The Synchroni	zation of Database	es			•		
MUST	Bringing up Database Ex sent Databa	Adjacencies change Proce se Descripti	ss is over wi on Packets wi	hen a router ith the M-bit	has received off.	l and			
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass		
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested		
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass		
ANVL-OSPF-	RFC 2328, s7.3 p	54 The Designate	d Router						
MUST	Bringing up The Designa network.	Adjacencies ted Router o	riginates a n	network-LSA (on behalf of	the			
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass		
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested		
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass		
ANVL-OSPF-	RFC 2328, s7.3 p	54 The Designate	d Router						
MUST	Bringing up Adjacencies If a router is not the DR, it does not generate a network-LSA for the network. This test is with DUT as BDR.								
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass		
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested		
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass		
ANVL-OSPF-	RFC 2328, s7.3 p	54 The Designate	d Router						
MUST	Bringing up If a router network. This test i	Adjacencies is not the s with DUT a	DR, it does n s DR-Other	not generate	a network-LS	SA for the			
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass		
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested		
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass		



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ANVL-OSPF-	RFC 2328, s7.3 p54 The Designated Router										
13.15 MUST	Bringing up Adjacencies The Link State ID for network-LSA is the IP interface address of the Designated Router.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s7.4 p	56 The Backup D	esignated Router								
MUST	Bringing up Backup Desi Designated	Adjacencies gnated Route: Router fails	r becomes De:	signated Rout	ter when the	previous					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s7.4 p56 The Backup Designated Router										
MUST	Bringing up Adjacencies Each Hello Packet has a field that specifies the Backup Designated Router for the network.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s8.1 p	58 Sending proto	col packets								
MUST	Protocol Pa In the OSPF version num	cket Process protocol pa ber of the p	ing cket headers rotocol as do	version Numb ocumented in	per is set to this specifi	02, the cation.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12:	Debian 12:	Debian 12:				



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ANVL-OSPF-	RFC 2328, s8.1 p59 Sending protocol packets										
MUST	Protocol Packet Processing In OSPF protocol packet headers Router ID is set to the identity of the router itself (who is originating the packet).										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s8.1 p	59 Sending protoc	col packets								
MUST	Protocol Packet Processing Area ID in the OSPF packet header must be set to the ID of the area that the packet is being sent into. (This test checks Hello packet)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s8.1 p	59 Sending protoc	col packets								
MUST	Protocol Pa The IP chec complement authenticat (This test	cket Process ksum of any (checksum of ion field. checks the ca	ing OSPF packet : the entire OS ase of sendin	is the standa SPF packet, e ng a Hello pa	ard IP 16-bit excluding the acket)	one"s 64-bit					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21							
ANVL-OSPF- 14.5	RFC 2328, s8.1 p s10.5 p96 Receiv	59 Sending protoc ving Hello packets	col packets	-										
MUST	Protocol Packet Processing A router discards any received Hello packet with an invalid IP checksum i.e. which is not the standard IP 16-bit one"s complement checksum of the entire OSPF packet, excluding the 64-bit authentication field.													
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass							
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested							
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass							
ANVL-OSPF-	RFC 2328, s8.1 p	060 Sending protoc	col packets											
MUST	Protocol Pa Retransmiss to the neig	cket Process ions of Link hbor.	ing State Update	e packets are	e ALWAYS sent	directly								
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass							
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested							
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass							
	RFC 2328, s8.2 p62 Receiving protocol packets													
ANVL-OSPF-	RFC 2328, s8.2 p	062 Receiving prot				Protocol Packet Processing The Received packet"s IP source address is required to be on the same								
ANVL-OSPF- 14.8 MUST	RFC 2328, s8.2 p Protocol Pa The Receive network as	062 Receiving prot cket Process d packet"s I the receiving	ing P source add g interface.	ress is requi	ired to be on	the same								
ANVL-OSPF- 14.8 MUST	RFC 2328, s8.2 p Protocol Pa The Received network as FreeBSD 12.3: pass	of 2 Receiving prot cket Process d packet"s I the receiving FreeBSD 12.3: pass	ing P source add g interface. FreeBSD 12.3: pass	ress is requi FreeBSD 12.3: pass	ired to be or FreeBSD 12.3: pass	the same FreeBSD 12.3: pass	FreeBSD 12.3: pass							
ANVL-OSPF- 14.8 MUST	RFC 2328, s8.2 p Protocol Pa The Received network as FreeBSD 12.3: pass Ubuntu 18.04: pass	of 2 Receiving prot cket Process d packet"s I the receiving FreeBSD 12.3: pass Ubuntu 18.04: pass	ing P source addr g interface. FreeBSD 12.3: pass Ubuntu 18.04: pass	ress is requi FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	The same FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested							
ANVL-OSPF- 14.8 MUST	RFC 2328, s8.2 p Protocol Pa The Receive network as FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	obec Receiving prot cket Process d packet"s I the receiving FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	ing P source addr g interface. FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	ress is requi FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	The same FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass							
ANVL-OSPF- 14.8 MUST ANVL-OSPF- 14.9	RFC 2328, s8.2 p Protocol Parthe Receiver network as FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested NEGATIVE: RFC 2328, s8.2 p	062 Receiving prot cket Process d packet"s I the receiving FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	ing P source addr g interface. FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	ress is requi FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	TreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass							
ANVL-OSPF- 14.8 MUST ANVL-OSPF- 14.9 MUST	RFC 2328, s8.2 p Protocol Parthe Receiver network as a FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested NEGATIVE: RFC 2328, s8.2 p Protocol Parthe Receiver network as a	062 Receiving prot cket Process d packet"s I the receiving FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 062 Receiving prot cket Process d packet"s I the receiving	ing P source addr freeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested ocol packets ing P source addr g interface.	ress is requi FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	the same FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass the same	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass							
ANVL-OSPF- 14.8 MUST ANVL-OSPF- 14.9 MUST	RFC 2328, s8.2 p Protocol Parthe Received network as a FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested NEGATIVE: RFC 2328, s8.2 p Protocol Parthe Received network as a FreeBSD 12.3: pass	062 Receiving prot cket Process d packet"s I: the receiving FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 062 Receiving prot cket Process d packet"s I: the receiving FreeBSD 12.3: pass	ing P source addr g interface. FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested ocol packets ing P source addr g interface. FreeBSD 12.3: pass	ress is requi FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested ress is requi FreeBSD 12.3: pass	ired to be on FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass ired to be on FreeBSD 12.3: pass	the same FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass the same FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass							
ANVL-OSPF- 14.8 MUST ANVL-OSPF- 14.9 MUST	RFC 2328, s8.2 p Protocol Parthe Received network as a FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested NEGATIVE: RFC 2328, s8.2 p Protocol Parthe Received network as a FreeBSD 12.3: pass Ubuntu 18.04: pass	b62 Receiving prot cket Process d packet"s I: the receiving FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested b62 Receiving prot cket Process d packet"s I: the receiving FreeBSD 12.3: pass Ubuntu 18.04: pass	ing P source addr g interface. FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested ocol packets ing P source addr g interface. FreeBSD 12.3: pass Ubuntu 18.04: pass	ress is requi FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested ress is requi FreeBSD 12.3: pass Ubuntu 18.04: pass	ired to be on FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass ired to be on FreeBSD 12.3: pass Ubuntu 18.04: pass	the same FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass the same FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested							



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ANVL-OSPF- 14.10	NEGATIVE: RFC 2328, s8.2 p62 Receiving protocol packets										
MUST	Protocol Packet Processing The AuType specified in the packet must match the AuType specified for the associated area.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.5 p	o78 Sending Hello	packets								
MUST	Interface D The Hello P from to rem	ata Structure acket also in ain active (1	e ndicates how RouterDeadIn	often a neig terval).	ghbor must be	e heard					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9 p66 The Interface Data Structure										
MUST	Interface Data Structure The Designated Router is initialized to 0.0.0.0, which indicates the lack of a Designated Router.										
	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL				
	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: pass	Ubuntu 18.04: FAIL	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9 p6	6 The Interface Da	ta Structure								
MUST	Interface D The Backup lack of a B	ata Structure Designated Re ackup Designa	e outer is init ated Router	tialized to ().0.0.0, indi	cating the					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s9 p66 The Interface Data Structure										
15.4 MUST	Interface Data Structure RxmtInterval is the number of seconds between Database Description packet retransmissions. This tests for Database Description packet retransmission in ExStart state.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9 p6	6 The Interface Da	ta Structure								
MUST	Interface Data Structure RxmtInterval is the number of seconds between Link State Request packet retransmissions. This tests for Database Description packet retransmission in Loading state.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9 p6	6 The Interface Da	ta Structure								
MUST	Interface D RxmtInterva adjacencies	ata Structure l is the num belonging te	e ber of second o this inter:	ds between LS face.	SA retransmis	sions, for					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s9.1 p67 The Interface Data Structure										
MUST	Interface Data Structure No protocol traffic at all will be sent or received on a down interface.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.1 p	o69 Interface states	6								
MUST	Interface D In DR Other Designated Designated	ata Structure state, the Router eithe Router and th	e router itsel: r. The route: he Backup De:	f has not bee r forms adjac signated Rout	en selected E cencies to bo cer (if they	Backup oth the exist).					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.1 p69 Interface states										
MUST	Interface Data Structure In Backup state the router establishes adjacencies to all other routers attached to the network.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.1 p	o69 Interface states	6								
MUST	Interface D In DR state to the netw	ata Structuro Adjacencies ork.	e are establi:	shed to all o	other routers	attached					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s9.3 p73 The Interface state machine										
MUST	Interface Data Structure When router is in Waiting state, if BackupSeen event occurs then router calculates the attached network"s Backup Designated Router and Designated Router.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.3 p	o73 The Interface s	tate machine								
MUST	Interface D When router calculates Designated	ata Structure is in Waitin the attached Router.	e ng state, if network"s Ba	WaitTimer ev ackup Designa	vent fires th ated Router a	en router nd					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.3 p74 The Interface state machine										
MUST	Interface Data Structure When NbrChange event fires then router recalculates the attached network"s Backup Designated Router and Designated Router.										
	network"s B	ackup Designa	ated Router a	and Designate	ed Router.	enca					
	network"s B FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	retwork"s B FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested				
	network "s B FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
ANVL-OSPF-	network "s B FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s9.4 p	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
ANVL-OSPF- 15.14 MUST	network"s B FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s9.4 p Interface D If more that but not as Priority is	Inge event 11. ackup Designa FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 075 Electing the Designated Resignated R	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested esignated Router es have declar outer, the or be Backup De	red themselve esignated Rou	Es as Backup e highest Rou	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass designated ter	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
ANVL-OSPF- 15.14 MUST	network"s B FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s9.4 p Interface D If more that but not as p Priority is FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 075 Electing the De ata Structure n one routers Designated Re declared to FreeBSD 12.3: pass	FreeBSD Debian 12: untested Debian 12: untested esignated Router es have declar puter, the or be Backup De FreeBSD 12.3: pass	red themselve esignated Rou FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested red themselve the having the esignated Rou FreeBSD 12.3: pass	PreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass Debian 12: pass es as Backup highest Rou iter. FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass designated ter FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass				
ANVL-OSPF- 15.14 MUST	network"s B FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s9.4 p Interface D If more that but not as Priority is FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 075 Electing the De ata Structure n one routers Designated Re declared to FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested esignated Router esignated Router be Backup De FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Debian 12: untested FreeBSD 12.3: pass Ubuntu 18.04: pass	PreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass Debian 12: pass Es as Backup highest Rou iter. FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass designated ter FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passFreeBSD 12.3: passUbuntu 18.04: untested				



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ANVL-OSPF-	RFC 2328, s9.4 p	o75 Electing the De	esignated Router								
15.15 MUST	Interface Data Structure When selecting a Backup Designated Router among more than one Routers declaring themselves as Backup Designated Router, if there is a tie in the Router Priority, the one having highest Router ID is chosen.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.4 p	o76 Electing the De	esignated Router								
MUST	Interface D If no route the router	ata Structur rs have decl having highe	e ared themselv st Router Pri	ves Backup De iority as Bac	esignated Rou ckup Designat	ter, choose ed Router.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.4 p	o76 Electing the De	esignated Router								
MUST	Interface D If no route the router break ties.	Interface Data Structure If no routers have declared themselves Backup Designated Router, choose the router having highest Router Priority, again use the Router ID to break ties.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.4 p	o76 Electing the De	esignated Router								
MUST	Interface D If one or m the one hav Router.	ata Structur ore of the r ing highest i	e outers have o Router Prior:	declared then ity is declar	nselves Desig red to be Des	mated Router ignated	-				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s9.4 p76 Electing the Designated Router										
MUST	Interface Data Structure In case of a tie in the router priority among routers declaring themselves Designated Router, the one having the highest Router ID is chosen.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.4 p	o76 Electing the De	esignated Router								
MUST	Interface D If no route Designated I Router.	ata Structur rs have decl Router to be	e ared themselv the same as	ves Designate the newly el	ed Router, as lected Backur	sign the Designated					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.5 p78 Sending Hello packets										
SHOULD	Interface Data Structure While sending a Hello packet into a stub area the E-bit of the Options field should be clear.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.5 p	78 Sending Hello	packets								
SHOULD	Interface D While sendi: Options fie	ata Structur ng a Hello pa ld should be	e acket into a set.	non-stub are	ea the E-bit	of the					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s9.5 p78 Sending Hello packets										
MUST	Interface Data Structure In order to ensure two-way communication between adjacent routers, the Hello packet contains the list of all routers on the network from which Hello Packets have been seen recently.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.5 p	78 Sending Hello	packets								
MUST	Interface D Hello packe Router and	ata Structure t also conta: Backup Design	e ins the route nated Router	er"s current	choice for D	esignated					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.5 p78 Sending Hello packets										
MUST	Interface Data Structure On broadcast networks, Hello packets are sent to the IP multicast address AllSPFRouters.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.5 p	o78 Sending Hello	packets								
MUST	Interface D On broadcas seconds.	ata Structure t networks, 1	e Hello packet:	s are sent ev	very HelloInt	erval					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s9.5 p78 Sending Hello packets										
MUST	Interface Data Structure On virtual links, Hello packets are sent as unicasts (addressed directly) to the other end of the virtual link)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s9.5 p	o78 Sending Hello	packets								
MUST	Interface D On virtual	ata Structuro links, Hello	e packets are	sent every H	HelloInterval	seconds.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10 p	80 The neighbor D	ata Structure	-							
MUST	Neighbor Da The Databas to retransm	ta Structure e Description it.	n Packet sent	t by slave is	s not allowed	1					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10 p	81 The neighbor D	ata Structure								
MUST	Neighbor Da The initial sequence num received fr Database De	ta Structure ize(I), more mber contain om the neighl scription pac	(M) and mast ed in the las bor are used cket received	ter(MS) bits st Database I to determine d from the ne	, Options fie Description p e whether the eighbor is a	eld, and DD backet e next duplicate.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s10.1 p83 neighbor states										
MUST	Neighbor States After the two routers discover their master/slave status, the state transitions to Exchange. (This test checks the case when DUT eventually becomes master)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.1	p83 neighbor state	es								
MUST	Neighbor States After the two routers discover their master/slave status, the state transitions to Exchange. (This test checks the case when DUT eventually becomes slave)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.1	p86 neighbor state	es								
MUST	Neighbor St. Only one Da time. So wh Description Database De	ates tabase Descri en a router i packet with scription pac	iption Packet is slave it t the DD seque cket received	t is allowed will always s ence number s d from master	outstanding send a Databa same as that c.	at any one se of the					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				


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ANVL-OSPF-	RFC 2328, s10.1	p86 neighbor state	es								
MUST	Neighbor States Only one Database Description Packet is allowed outstanding at any one time. So when a router is master it will retransmit a Database Description packet unless slave sends a Database Description packet echoing the DD sequence number of the last sent Database Description packet.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.1	p86 neighbor state	es								
MAY	Neighbor Sta In Exchange the neighbor	Neighbor States In Exchange state Link State Request Packets may also be sent asking for the neighbor"s more recent LSAs.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.3	p90-91 The neigh	bor state machine								
SHOULD	Neighbor St. In Init sta if it is de neighbor, t this state, neighbor da	ate Machine te if the ne termined that he neighbor a the router ta structure	ighbor event t adjacency s state transit increments th	2-WayReceive should be est tions to ExSt ne DD sequence	ed is trigger tablished wit tart. Upon en te number in	red and h the ttering the					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s10.3	p91 The neighbor	state machine				
MUST	Neighbor St. The area li: and summary AS-external	twork-LSAs the					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s10.3	p91 The neighbor	state machine				
MUST	Neighbor State Machine AS-external-LSAs are omitted from the Database summary list if the area has been configured as a stub area.						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s10.3	p92 The neighbor	state machine				
MUST	Neighbor St. When in Exc. neighbor Li: Loading sta packets to	ate Machine hange state nk state req te and start the neighbor	if ExchangeDo uest list is s (or conting	one event has not empty, n ues) sending	s fired then couter transi Link State F	if the tions to equest	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass



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ANVL-OSPF-	RFC 2328, s10.3	p93 The neighbor	state machine								
MUST	Neighbor State Machine If the router is in Exchange or greater state and the neighbor event SeqNumberMismatch has occurred then the router increments the DD sequence number in the neighbor data structure. This test is for Exchange State.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.3	p93 The neighbor	state machine								
MUST	Neighbor State Machine If the router is in Exchange or greater state and the neighbor event SeqNumberMismatch has occurred then the router increments the DD sequence number in the neighbor data structure. This test is for Loading State.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.3	p94 The neighbor	state machine								
MUST	Neighbor Sta The action s event SeqNua torn down, a This test is	ate Machine for event Bac mberMismatch and then an a for Exchang	dLSReq is exa . The (possil attempt is ma ge State.	actly the san oly partially ade at reesta	ne as for the / formed) adj ablishment.	e neighbor acency is					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s10.3	p94 The neighbor	state machine								
MUST	Neighbor State Machine The action for event BadLSReq is exactly the same as for the neighbor event SeqNumberMismatch. The (possibly partially formed) adjacency is torn down, and then an attempt is made at reestablishment. This test is for Loading State.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.4	p95 Whether to be	ecome adjacent								
MUST	Adjacency Decision On broadcast, all routers become adjacent to both the Designated Router and the Backup Designated Router.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.5	p96 Receiving He	llo Packets								
MUST	Receiving H The values be checked Any mismatc	ello Packets of the Netwo: against the h causes proc	rk Mask field values config cessing to st	d in the rece gured for the top and the p	eived Hello p e receiving i packet to be	acket must nterface. dropped.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				



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ANVL-OSPF-	RFC 2328, s10.5	p96 Receiving He	llo Packets		-						
20.2 MUST	Receiving Hello Packets The values of the HelloInterval field in the received Hello packet must be checked against the values configured for the receiving interface. Any mismatch causes processing to stop and the packet to be dropped.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.5	p96 Receiving He	llo Packets								
MUST	Receiving H The values packet must interface. dropped.	eceiving Hello Packets 'he values of the RouterDeadInterval fields in the received Hello packet must be checked against the values configured for the receiving .nterface. Any mismatch causes processing to stop and the packet to be dropped.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.5	p96 Receiving He	llo Packets								
MUST	Receiving H If the rece be clear in to stop and	ello Packets iving interf received He the packet	ace is attac llo Packets a to be dropped	ned to a stub and a mismato 1.	o area the E- ch causes pro	bit must cessing					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s10.5	p96 Receiving He	llo Packets							
MUST	Receiving He If the rece must be set to stop and	ello Packets iving interfa in received the packet	ace is attach Hello Packet to be dropped	ned to a non- ts and a mism d.	-stub area th match causes	e E-bit processing				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s10.6	p100 Receiving D	atabase Descriptic	on Packets						
MUST	Receiving DB Description Packets In ExStart state if the received Database Description packet has the I, M and MS bits set, the packet is empty, and the neighbor"s Router ID is larger than the router"s own then the router is slave, and it sets the neighbor data structure"s DD sequence number to that specified by master.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s10.6	p100 Receiving D	atabase Descriptic	on Packets						
MUST	Receiving DI In ExStart a I and MS bi data structure smaller that	B Description state if the ts off, the p ure"s DD sequent n the router	n Packets received Dat packet"s DD s uence number "s own then t	tabase Descri sequence numb and the neig the router is	ption packet per equals th ghbor"s Route s Master.	has the e neighbor r ID is				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			



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ANVL-OSPF-	RFC 2328, s10.6	p102 Receiving D	atabase Descriptio	on Packets							
SHOULD	Receiving DB Description Packets When the router accepts a received Database Description Packet as the next in sequence, if the router is master and the accepted packet has more bit (M) set to 1, it should send a new Database Description to the slave.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.6	RFC 2328, s10.6 p102 Receiving Database Description Packets									
SHOULD	Receiving D When the ro next in seq its entire new Databas	B Description uter accepts uence, if the sequence of 1 e Description	n Packets a received 1 e router is 1 Database Desc n to the slav	Database Desc master and th cription pack e.	cription Pack ne router has cets, it shou	et as the not sent ld send a					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.6	p102 Receiving D	atabase Descriptic	on Packets							
MUST	Receiving D When the ro next in seq sequence nu	B Description uter accepts uence, if the mber in the n	n Packets a received l e router is n neighbor data	Database Desc master it inc a structure.	cription Pack crements the	et as the DD					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21			
ANVL-OSPF-	RFC 2328, s10.6	p102 Receiving D	atabase Descriptic	on Packets			•			
MUST	Receiving DB Description Packets When the router accepts a received Database Description Packet as the next in sequence, if the router is slave, it sets the DD sequence number in the neighbor data structure to the DD sequence number appearing in the received packet and also it must send a Database Description packet in response.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s10.7	p102 Receiving Li	nk State Request	Packets						
SHOULD	Receiving LS Request Packets Link State Request Packets should be accepted when the neighbor is in state Exchange.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s10.7	p102 Receiving Li	nk State Request	Packets						
SHOULD	Receiving L Link State : state Loadi	S Request Pac Request Pack ng.	ckets ets should be	e accepted wh	nen the neigh	bor is in				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s10.7	p102 Receiving Li	nk State Request	Packets						
SHOULD	Receiving L Link State state Full.	S Request Pa Request Pack	ckets ets should be	e accepted wł	nen the neigh	bor is in				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			



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OpenSourceRouting a project by the Network Device Education Foundation, Inc (www.NetDEF.org)

	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21
ANVL-OSPF-	RFC 2328, s10.7	p102 Receiving Li	nk State Request	Packets			
SHOULD	Receiving L Link State I ExStart sta	S Request Pac Request Packo te.	ckets ets should be	e ignored whe	en neighbor i	s in	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s10.7	p102 Receiving Li	nk State Request	Packets			
SHOULD	Receiving L Link State : state.	S Request Pac Request Packo	ckets ets should be	e ignored whe	en neighbor i	s in Init	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s10.7	p102 Receiving Li	nk State Request	Packets			
SHOULD	Receiving L Link State : state.	S Request Pac Request Packo	ckets ets should be	e ignored whe	en neighbor i	s in Down	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s10.7	p103 Receiving Li	nk State Request	Packets			
SHOULD	Receiving L If an LSA s in the data process, and	S Request Pac pecified in t base, someth d neighbor e	ckets the Link Stat ing has gone vent BadLSRec	te Request pa wrong with t q should be o	acket cannot the Database generated.	be found Exchange	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass



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	Release	Release	Release	Release	Release	Dev-9.0	Stable	
	8.4	8.4.2	8.5	8.4.3	8.5.1	2023-06-13	9.1 @2023-11-21	
ANVL-OSPF-	RFC 2328, s10.8	p103 Sending Dat	abase Description	Packets				
SHOULD	Sending DB I Interface M over virtua	Description TU should be l links.	Packets set to 0 in	Database Des	scription pac	kets sent		
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	
ANVL-OSPF-	RFC 2328, s10.8	p103 Sending Da	abase Description	Packets				
SHOULD	Sending DB Description Packets In Database Description packet the unrecognized bits in the Options field should be set to zero. (Note: we are only checking the option-bit 1 since it is currently reserved and not recognized)							
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	
ANVL-OSPF-	RFC 2328, s10.8	p103 Sending Da	abase Description	Packets				
MUST	Sending DB I In state Ex with the in	Description : Start the ro itialize (I)	Packets uter sends en , more (M) an	npty Database nd master (MS	e Description 5) bits set.	packets,		
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	
ANVL-OSPF-	RFC 2328, s10.8	p103 Sending Da	abase Description	Packets				
MUST	Sending DB I In state Ex RxmtInterva	Description Start Databas start Databas	Packets se Descriptio	on packets ar	re retransmit	ted every		
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF-	RFC 2328, s10.8	p104 Sending Dat	abase Description	Packets							
MUST	Sending DB Description Packets In state Exchange, if the router is master, Database Description packets are sent when slave acknowledges the previous Database Description packet by echoing the DD sequence number.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.8	p104 Sending Dat	abase Description	Packets							
ANDST	Sending DB Description Packets In state Exchange, if the router is slave, Database Description packets are sent only in response to Database Description packets received from the master.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s10.8	p104 Sending Dat	abase Description	Packets							
MUST	Sending DB I In state Ex packet rece packet is s resent.	Description 1 change, if the ived from the ent, otherwis	Packets he router is e master is n se the previo	slave, if th new, a new Da ous Database	ne Database I atabase Descr Description	escription iption packet is					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21	
ANVL-OSPF-	RFC 2328, s10.8	p104 Sending Dat	tabase Description	Packets				
MUST	Sending DB Description Packets In state Loading the slave must resend its last Database Description packet in response to duplicate Database Description packets received from the master.							
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	
ANVL-OSPF-	RFC 2328, s10.8	p104 Sending Dat	tabase Description	Packets				
MUST	Sending DB Description Packets In state Full the slave must resend its last Database Description packet in response to duplicate Database Description packets received from the master.							
		ster.	-					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested	
	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	
ANVL-OSPF-	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s10.8	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p104 Sending Dat	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Packets	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	
ANVL-OSPF- 23.10 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s10.8 Sending DB 3 In state Loo master afte: SeqNumberMi	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p104 Sending Dat Description 1 ading recept: r this intervismatch neigh	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested tabase Description Packets ion of a Data val (RouterDebor event.	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Packets abase Descrip eadInterval)	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	
ANVL-OSPF- 23.10 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s10.8 Sending DB In state Loo master afte: SeqNumberMi FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p104 Sending Dat Description Dat ding recept: r this inter- smatch neighl FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested tabase Description Packets ion of a Data val (RouterDa bor event. FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Packets Packets abase Descrip eadInterval) FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass Debian 12: gass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass from the i.e a FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass	
ANVL-OSPF- 23.10 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s10.8 Sending DB In state Loo master afte: SeqNumberMi FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p104 Sending Dat Description Dat ding recept: r this inter smatch neighl FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested tabase Description Packets ion of a Data val (RouterDa bor event. FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Packets Packets Abase Descrip adInterval) FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass Otion packet will generat FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass from the a FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested	



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ANVL-OSPF-	RFC 2328, s10.8	p104 Sending Dat	tabase Description	Packets			
MUST	Sending DB I In state Fu master after a SeqNumber	Description 1 11 reception r this inter Mismatch neig	Packets of a Databas val (RouterDe ghbor event.	se Descriptic eadInterval)	on packet fro will generat	om the ce	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s10.9	p105 Sending Lin	k State Request Pa	ackets			-
MUST	Sending LS : When the ne with the pro- list is tru: process con	Request Packo ighbor respon oper Link Sta ncated and a tinues until	ets nds to these ate Update pa new Link Sta the Link sta	requests (Li acket(s), the ate Request p ate request]	ink State Req e Link state packet is sen list becomes	quest) request nt. This empty.	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s10.9	p105 Sending Lin	k State Request Pa	ackets			-
MUST	Sending LS i Link state i are package intervals o	Request Packo request list d into Link S f RxmtInterva	ets that have be State Request al.	een requested t packets for	l, but not ye r retransmiss	et received, sion at	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.1 p116 LS age	-				-
MUST	Sending LS LSAs are al	Request Pack so aged as tl	ets hey are held	in each rout	ter"s databas	se.	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass



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ANVL-OSPF-	RFC 2328, s12.1	.1 p116 LS age					
24.4 MUST	Sending LS The age of	Request Pack an LSA is ne	ets ver incremen ^t	ted past Max#	Age.		
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.1 p116 LS age					
MUST	Sending LS When an LSA	Request Pack "s age first	ets reaches Maxi	Age, it is re	eflooded.		
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.1 p116 LS age					
MUST	Sending LS LSA of age longer need	Request Packo MaxAge is fin ed to ensure	ets nally flushed database syn	d from the da nchronizatior	atabase when 1.	it is no	
	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL
	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: FAIL	Debian 12: FAIL	Debian 12: FAIL
ANVL-OSPF-	RFC 2328, s12.1	.1 p117 LS age	-				
MUST	Sending LS If the two checksum, a recent.	Request Pack instances of n instance o:	ets a LSA have : f age MaxAge	identical LS is then alwa	sequence num ays accepted	ber and LS as most	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass



RFC Compliance Test Report



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ANVL-OSPF-	RFC 2328, s12.1	.1 p117 LS age					
MUST	Sending LS : If the two Checksum and more than M as most rec	Request Pack instances of d none of the axAgeDiff, the ent.	ets a LSA have : em is of age he instance l	identical LS MaxAge then naving the sm	sequence num if their age maller age is	ber and LS s differ by accepted	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.2 p117 Options					
SHOULD	LSA Header The E-bit r be set in a	epresents OS 11 LSAs asso	PF"s External ciated with t	lRoutingCapak the backbone.	oility. This	bit should	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.2 p117 Options					
SHOULD	LSA Header The E-bit r be set in a (This test	epresents OS 11 LSAs asso checks for Ro	PF"s Externa ciated with outer-LSA)	lRoutingCapak (non-backbone	oility. This e) non-stub a	bit should reas.	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21
ANVL-OSPF-	RFC 2328, s12.1	.2 p117 Options					
SHOULD	LSA Header The E-bit r be set in a (This test	epresents OS 11 LSAs asso checks for No	PF"s Externa ciated with etwork-LSA)	lRoutingCapak (non-backbone	oility. This e) non-stub a	bit should reas.	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.2 p117 Options					
SHOULD	LSA Header The E-bit represents OSPF"s ExternalRoutingCapability. This bit should be set in all LSAs associated with (non-backbone) non-stub areas. (This test checks for Type-3 Summary-LSA)						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.2 p117 Options					
SHOULD	LSA Header The E-bit r be set in a (This test	epresents OS 11 LSAs asso checks for T	PF"s Externa ciated with ype-4 Summary	lRoutingCapak (non-backbone y-LSA)	pility. This e) non-stub a	bit should reas.	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.2 p117 Options					
SHOULD	LSA Header E-bit shoul a stub area	d be reset (;	set to 0) in	all router-I	LSAs associat	ed with	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass



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ANVL-OSPF-	RFC 2328, s12.1	.2 p117 Options					
SHOULD	LSA Header E-bit should a stub area	d be reset (; ·	set to 0) in	all network-	-LSAs associa	ted with	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.2 p117 Options					
SHOULD	LSA Header E-bit should a stub area	d be reset (;	set to 0) in	all summary-	-LSAs associa	ted with	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.3 p117 LS type					
MUST	LSA Header All LSA type (LS type =	es defined b 5), are flood	y this memo, ded throughou	except the A ut a single a	AS-external-I area only.	SAS	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.4 p119 Link State	ID				
MUST	LSA Header When the LS. ID is alway	A is describ s the descril	ing a router bed router"s	(LS type =) OSPF Router	l or 4), the ID.	Link State	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass



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ANVL-OSPF-	RFC 2328, s12.1	.5 p119 Advertising	g Router				
25.11 MUST	LSA Header The Advertis originator.	sing Router :	field specif:	ies the OSPF	Router ID of	the LSA"s	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.5 p119 Advertising	g Router				
MUST	LSA Header For router-: State ID fic	LSAs, the Adveld.	vertising Rou	iter field is	s identical t	o the Link	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.5 p120 Advertising	g Router				
25.13 MUST	LSA Header Summary-LSA	s are origina	ated by area	border route	ers.		
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.6 p120 LS sequer	nce number				
MUST	LSA Header A router us LSA. (This test o	es InitialSec	quenceNumber outer-LSAs)	the first ti	me it origin.	ates any	
	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL
	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: FAIL	Debian 12: FAIL	Debian 12: FAIL



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ANVL-OSPF-	RFC 2328, s12.1	.6 p120 LS sequer	nce number				
MUST	LSA Header A router us LSA. (This test	es InitialSec checks for Ne	quenceNumber etwork-LSAs)	the first ti	me it origin.	ates any	
	FreeBSD 12.3: FAIL	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: FAIL	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, s12.1	.6 p120 LS sequer	nce number				
MUST	LSA Header A router uses InitialSequenceNumber the first time it originates any LSA. (This test checks for Type-3 Summary-LSAs)						
	(IIIIS CESC	CHECKS IOL I	ype-s Summary	7-LSAS)			
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested
	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass
ANVL-OSPF-	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.1	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested .6 p120 LS sequer	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass
ANVL-OSPF- 25.17 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.1 LSA Header A router usu LSA. (This test	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested .6 p120 LS sequer es InitialSec checks for T	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested nce number quenceNumber	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested the first ti	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass
ANVL-OSPF- 25.17 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.1 LSA Header A router usu LSA. (This test FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested .6 p120 LS sequer es InitialSec checks for Ty FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested nce number guenceNumber gpe-4 Summary FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested the first ti 7-LSAs) FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass .me it origin FreeBSD 12.3: pass	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passates anyFreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass
ANVL-OSPF- 25.17 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.1 LSA Header A router usu LSA. (This test FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested .6 p120 LS sequer es InitialSec checks for Ty FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested nce number quenceNumber gpe-4 Summary FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested the first ti 7-LSAs) FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass .me it origin FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passates anyFreeBSD 12.3: passUbuntu 18.04: untested	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passFreeBSD 12.3: passUbuntu 18.04: untested



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ANVL-OSPF-	RFC 2328, s12.1	.6 p120 LS sequer	nce number					
25.18 MUST	LSA Header A router uses InitialSequenceNumber the first time it originates any LSA. Afterwards, the LSA"s sequence number is incremented each time the router originates a new instance of the LSA. (This test checks for Router-LSA)							
	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	
	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: FAIL	Debian 12: FAIL	Debian 12: FAIL	
ANVL-OSPF-	RFC 2328, s12.1	.6 p120 LS sequer	nce number					
MUST	LSA Header A router uses InitialSequenceNumber the first time it originates any LSA. Afterwards, the LSA"s sequence number is incremented each time the router originates a new instance of the LSA. (This test checks for Network-LSA)							
	FreeBSD 12.3: FAIL	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: FAIL	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	
ANVL-OSPF-	RFC 2328, s12.1	.6 p120 LS sequer	nce number					
MUST	LSA Header A router us LSA. Afterw the router (This test	es InitialSe ards, the LS originates a checks for T	quenceNumber A"s sequence new instance ype-3 Summary	the first ti number is ir e of the LSA. y-LSA)	ime it origin ncremented ea	ates any Ich time		
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	



RFC Compliance Test Report



	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21	
ANVL-OSPF-	RFC 2328, s12.1	.6 p120 LS sequer	nce number					
MUST	LSA Header A router uses InitialSequenceNumber the first time it originates any LSA. Afterwards, the LSA"s sequence number is incremented each time the router originates a new instance of the LSA. (This test checks for Type-4 Summary-LSA)							
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	
ANVL-OSPF-	RFC 2328, s12.1	.6 p120 LS sequer	nce number					
MUST	LSA Header When an attempt is made to increment the sequence number past the maximum value of N - 1 ($0x7fffffff$; also referred to as MaxSequenceNumber), the current instance of the LSA must first be flushed from the routing domain.							
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	
ANVL-OSPF-	RFC 2328, s12.1	.6 p120 LS sequer	nce number					
ADDET	LSA Header As soon as MaxSequence new instance InitialSeque	this flooding Number has be e can be orig enceNumber.	g of a LSA wi een acknowled ginated with	ith LS sequer dged by all a sequence nur	nce number adjacent neig nber of	hbors, a		
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	



RFC Compliance Test Report



	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF-	RFC 2328, s12.1	.7 p121 LS checks	um								
MUST	LSA Header The LSA header also contains the length of the LSA in bytes; subtracting the size of the LS age field (two bytes) yields the amount of data to checksum. (This test checks for Router-LSA)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.1	.7 p121 LS checks	um								
MUST	LSA Header The LSA header also contains the length of the LSA in bytes; subtracting the size of the LS age field (two bytes) yields the amount of data to checksum. (This test checks for Network-LSA)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.1	.7 p121 LS checks	um								
25.26 MUST	LSA Header The LSA head subtracting amount of da (This test	der also con the size of ata to checks checks for T	tains the ler the LS age f sum. ype-3 Summary	ngth of the I field (two by Y-LSA)	LSA in bytes; /tes) yields	the					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



RFC Compliance Test Report



	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21		
ANVL-OSPF-	RFC 2328, s12.1	.7 p121 LS checks	um						
MUST	LSA Header The LSA header also contains the length of the LSA in bytes; subtracting the size of the LS age field (two bytes) yields the amount of data to checksum. (This test checks for Type-4 Summary-LSA)								
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass		
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested		
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass		
ANVL-OSPF-	RFC 2328, s12.1	.7 p121 LS checks	um						
SHOULD	LSA Header The LS checksum field cannot take on the value of zero; the occur of such a value should be considered a checksum failure.								
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass		
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested		
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass		
ANVL-OSPF-	RFC 2328, s12.2	p122 The link stat	e database						
MUST	LS Database An LSA is d overwritten (This test	eleted from a by a newer a checks for Ro	a router"s da instance dur: outer-LSA)	atabase when ing the flood	it has been ling process.				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass		
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested		
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass		



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21	
ANVL-OSPF-	RFC 2328, s12.2	p122 The link stat	e database					
MUST	LS Database An LSA is deleted from a router"s database when it has been overwritten by a newer instance during the flooding process. (This test checks for Network-LSA)							
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested	
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass	
ANVL-OSPF-	RFC 2328, s12.2	p122 The link stat	e database					
MUST	LS Database An LSA is deleted from a router's database when it has been overwritten by a newer instance during the flooding process. (This test checks for Type-3 Summary-LSA)							
	(IIIIS CESC	CHECKS IOL I	ype-s summary	Y-LSA)				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	
	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested	
	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	
ANVL-OSPF-	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.2	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	
ANVL-OSPF- 26.4 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.2 LS Database An LSA is d overwritten (This test	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p122 The link stat eleted from a by a newer	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested e database a router"s da instance dur: ype-4 Summary	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass it has been ling process.	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	
ANVL-OSPF- 26.4 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.2 LS Database An LSA is d overwritten (This test FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p122 The link stat eleted from a by a newer a checks for T FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested e database a router"s da instance dur: ype-4 Summary FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Debian 12: untested atabase when ing the flood y-LSA) FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass it has been ling process. FreeBSD 12.3: pass	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passFreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass	
ANVL-OSPF- 26.4 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.2 LS Database An LSA is d overwritten (This test FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p122 The link stat eleted from a by a newer checks for T FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested e database a router "s da instance dur: ype-4 Summary FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Debian 12: untested atabase when ing the flood y-LSA) FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass it has been ding process. FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passFreeBSD 12.3: passUbuntu 18.04: untested	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passFreeBSD 12.3: passUbuntu 18.04: untested	



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21			
ANVL-OSPF-	RFC 2328, s12.2 p122 The link state database									
MUST	LS Database An LSA is deleted from a router"s database when it has been overwritten by a newer instance during the flooding process. (This test checks for Type-5 AS-External-LSA)									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.2	p122 The link stat	e database							
MUST	LS Database An LSA is deleted from a router"s database when the router originates a newer instance of one of its self-originated LSAs. (This test checks for Router-LSA)									
	(This test	checks for Ro	outer-LSA)							
	(This test FreeBSD 12.3: pass	checks for Ro FreeBSD 12.3: pass	outer-LSA) FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	(This test FreeBSD 12.3: pass Ubuntu 18.04: pass	checks for Ro FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested			
	(This test FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	Checks for Ro FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF-	(This test of FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.2	checks for Ro FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p122 The link stat	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested e database	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF- 26.7 MUST	(This test of FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.2 LS Database An LSA is da a newer ins (This test of	checks for Ro FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p122 The link stat eleted from a tance of one checks for No	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested e database a router "s da of its self- etwork-LSA)	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF- 26.7 MUST	(This test of FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.2 LS Database An LSA is da a newer ins (This test of FreeBSD 12.3: pass	checks for Ro FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p122 The link stat eleted from a tance of one checks for No FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested e database a router "s da of its self- etwork-LSA) FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Debian 12: untested atabase when -originated I FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass the router of LSAs. FreeBSD 12.3: pass	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passoriginatesFreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass			
ANVL-OSPF- 26.7 MUST	(This test of FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.2 LS Database An LSA is da a newer ins (This test of FreeBSD 12.3: pass Ubuntu 18.04: pass	checks for Ro FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p122 The link stat eleted from a tance of one checks for No FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested e database a router "s da of its self- etwork-LSA) FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Debian 12: untested Tatabase when -originated I FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass the router of LSAs. FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass Debian 12: pass originates FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passFreeBSD 12.3: passUbuntu 18.04: untested			



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21			
ANVL-OSPF-	RFC 2328, s12.2 p122 The link state database									
MUST	LS Database An LSA is deleted from a router"s database when the router originates a newer instance of one of its self-originated LSAs. (This test checks for Type-3 Summary-LSA)									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.2	p122 The link stat	e database							
MUST	LS Database An LSA is deleted from a router"s database when the router originates a newer instance of one of its self-originated LSAs. (This test checks for Type-4 Summary-LSA)									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.2 p122 The link state database									
MUST	LS Database An LSA is d is flushed (This test	eleted from a from the rou is for Route:	a router"s da ting domain. r-LSA)	atabase when	the LSA ages	out and				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21			
ANVL-OSPF-	RFC 2328, s12.2 p122 The link state database									
26.11 MUST	LS Database An LSA is deleted from a router"s database when the LSA ages out and is flushed from the routing domain. (This test is for Network-LSA)									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.2	p122 The link stat	e database							
MUST	LS Database An LSA is do is flushed (This test	eleted from a from the rout is for Type-3	a router"s da ting domain. 3 Summary-LSA	atabase when A)	the LSA ages	out and				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.2	p122 The link stat	e database							
MUST	LS Database An LSA is do is flushed (This test	eleted from a from the rout is for Type-4	a router"s da ting domain. 4 Summary-LSA	atabase when A)	the LSA ages	out and				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21			
ANVL-OSPF-	RFC 2328, s12.2 p122 The link state database									
MUST	LS Database An LSA is deleted from a router"s database when the LSA ages out and is flushed from the routing domain. (This test is for Type-5 AS External-LSA)									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.4	p123 Originating L	SAs							
MUST	LSA Origina Destination single rout of routes. This test i	tion s are advert: e can be floo s for Type-3	ised one at a oded without Summary-LSA	a time so tha reflooding t	t the change he entire co	in any llection				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04:	Ubuntu 18.04:	Ubuntu 18.04:				
				pass	pass	untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	pass Debian 12: pass	Debian 12: pass	Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF-	Debian 12: untested RFC 2328, s12.4	Debian 12: untested p123 Originating L	Debian 12: untested	pass Debian 12: untested	pass Debian 12: pass	Debian 12: pass	Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF- 27.2 MUST	Debian 12: untested RFC 2328, s12.4 LSA Origina During the Link State This test v in a single	Debian 12: untested p123 Originating L tion flooding prod Update packet erifies wheth Link State T	Debian 12: untested SAS cedure, many t. ier the DUT r Jpdate packet	Debian 12: untested LSAs can be recognizes mu	pass Debian 12: pass carried by a ltiple LSAs	Debian 12: pass	Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF- 27.2 MUST	Debian 12: untested RFC 2328, s12.4 LSA Origina During the Link State 1 This test vi in a single FreeBSD 12.3: pass	Debian 12: untested p123 Originating L tion flooding prod Update packet erifies wheth Link State T FreeBSD 12.3: pass	Debian 12: untested -SAs cedure, many t. her the DUT r Jpdate packet FreeBSD 12.3: pass	Debian 12: untested LSAs can be recognizes mu FreeBSD 12.3: pass	pass Debian 12: pass carried by a ltiple LSAs FreeBSD 12.3: pass	Debian 12: pass	Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass			
ANVL-OSPF- 27.2 MUST	Debian 12: untested RFC 2328, s12.4 LSA Origina During the Link State 1 This test v in a single FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: untested p123 Originating L tion flooding prod Update packet erifies wheth Link State U FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: untested -SAs cedure, many t. her the DUT r Jpdate packet FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: untested LSAs can be recognizes mu FreeBSD 12.3: pass Ubuntu 18.04: pass	pass Debian 12: pass carried by a ltiple LSAs FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: pass single residing FreeBSD 12.3: pass Ubuntu 18.04: untested	Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested			



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ANVL-OSPF-	RFC 2328, s12.4 p124 Originating LSAs										
MUST	LSA Origination Whenever a new instance of an LSA is originated, its LS sequence number is incremented, its LS age is set to 0.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	p125 Originating I	_SAs								
MAY	LSA Origina A change in produce a no	tion an interface ew instance o	e"s state may of the router	y mean that i r-LSA.	it is necessa	ry to					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	p125 Originating I	_SAs								
SHOULD	LSA Origina If an attac router-LSA	tion hed network"; should be or:	s Designated iginated.	Router gets	changed a ne	2W					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	p125 Originating I	_SAs								
SHOULD	LSA Origina When Designa Designated D	tion ated Router (Router, a new	changes and : w network-LSA	if the router A should be r	r itself is r produced.	low the					
	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL				
	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: FAIL	Debian 12: FAIL	Debian 12: FAIL				



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ANVL-OSPF-	RFC 2328, s12.4 p125 Originating LSAs									
SHOULD	LSA Origination If the router itself is no longer the Designated Router, any network-LSA that it might have originated for the network should be flushed from the routing domain.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.4	p125 Originating I	_SAs							
MAY	LSA Origination If one of the neighboring routers changes to the FULL state then this may mean that it is necessary to produce a new instance of the router-LSA.									
	IOUCCI IDA.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested			
	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF-	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.4	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p125 Originating I	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF- 27.9 MAY	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.4 LSA Origina If one of ti this may mea router-LSA.	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p125 Originating I tion he neighborin an that it is	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested _SAs	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF- 27.9 MAY	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.4 LSA Origina If one of ti this may mer router-LSA. FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p125 Originating I tion he neighborin an that it is FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested _SAs ng routers ch s necessary to FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass the FULL stat new instance FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass e then of the FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass			
ANVL-OSPF- 27.9 MAY	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.4 LSA Origina If one of ti this may mer router-LSA. FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p125 Originating I tion he neighborin an that it is FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested -SAs and routers ch s necessary the FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Debian 12: untested The produce at FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass the FULL stat new instance FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass e then of the FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passFreeBSD 12.3: passUbuntu 18.04: untested			



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF-	RFC 2328, s12.4 p125 Originating LSAs										
MAY	LSA Origina An intra-ar cause a new originated	tion ea route has instance of in each atta	been added : a summary-L ched area.	in the routir SA (for this	ng table. Thi route) to be	s may					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	p125 Originating I	_SAs								
MAY	LSA Origination An intra-area route has been modified in the routing table. This may cause a new instance of a summary-LSA (for this route) to be originated in each attached area.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4 p125 Originating LSAs										
MAY	LSA Origination An intra-area route has been deleted in the routing table. This may cause a new instance of a summary-LSA (for this route) to be originated in each attached area.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21			
ANVL-OSPF-	RFC 2328, s12.4 p125 Originating LSAs									
27.13 MAY	LSA Origina In case of in the rout (for this r	tion an area bordo ing table. Tl oute) to be o	er router an his may cause originated in	inter-area n e a new insta n each attach	route has bee ance of a sum hed non-backb	en added mary-LSA pone area.				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.4	p125 Originating I	SAs							
27.14 MAY	LSA Origination In case of an area border router an inter-area route has been modified in the routing table. This may cause a new instance of a summary-LSA (for this route) to be originated in each attached non-backbone area.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.4	p125 Originating I	_SAs							
MAY	LSA Origination In case of an area border router an inter-area route has been deleted in the routing table. This may cause a new instance of a summary-LSA (for this route) to be originated in each attached non-backbone area.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21			
ANVL-OSPF-	RFC 2328, s12.4 p125 Originating LSAs									
MUST	LSA Origina In case of a in the rout (for this ro	tion an area bordo ing table. Tl pute) to be o	er router an his never cau priginated in	inter-area n uses a new ir n the attache	coute has beenstance of a debackbone a	en added summary-LSA area.				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.4	p125 Originating I	_SAs							
MUST	LSA Origination In case of an area border router an inter-area route has been modified in the routing table. This never causes a new instance of a summary-LSA (for this route) to be originated in the attached backbone area.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested			
	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF-	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.4	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p125 Originating I	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF- 27.18 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.4 LSA Origina In case of a deleted in summary-LSA backbone are	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p125 Originating I tion an area borde the routing f (for this re ea.	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested -SAs er router an table. This r pute) to be o	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass coute has bee a new instant the attache	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass			
ANVL-OSPF- 27.18 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.4 LSA Origina In case of a deleted in summary-LSA backbone are FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p125 Originating I tion an area borded the routing for (for this re ea. FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested SAs er router an table. This r poute) to be of FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested inter-area r hever causes priginated ir FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass coute has bee a new instant the attache FreeBSD 12.3: pass	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: pass:::::::::::::::::::::::::::::::::::	FreeBSD 12.3: passUbuntu 18.04: untestedDebian 12: passFreeBSD 12.3: pass			
ANVL-OSPF- 27.18 MUST	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s12.4 LSA Origina In case of a deleted in summary-LSA backbone ard FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested p125 Originating I tion an area borded the routing for (for this re ea. FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested SAs er router an table. This r bute) to be of FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested inter-area r hever causes priginated ir FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass coute has bee a new instant the attache FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass Debian 12: pass En ed State FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested			



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF-	RFC 2328, s12.4 p126 Originating LSAs,										
MUST	LSA Origina If the route summary-LSA inter-area	tion er becomes ne s into the ne routes in the	ewly attached ewly attached e router"s ro	l to an area l area for al puting table.	it must then l intra-area	originate and					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	p126 Originating L	SAs								
MAY	LSA Origina When the sta it may be na link"s Trans backbone. This test is areas.	tion ate of one o ecessary to o sit area, as s for DUT wh:	f the router priginate a r well as orig ich is ABR be	's configured new router-LS ginating a ne etween backbo	d virtual lin SA into the v ew router-LSA one and non-b	ks changes, irtual into the packbone					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	.1 p127 Router-LS	As								
MUST	LSA Origina A router als the appropri	tion so indicates iate bits (b:	whether it : it B, respect	is an area bo cively) in it	order router, s router-LSA	by setting s.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21			
ANVL-OSPF-	RFC 2328, s12.4	.1 p127 Router-LS	As							
SHOULD	LSA Origination Bit B should be set whenever the router is actively attached to two or more areas, even if the router is not currently attached to the OSPF backbone area.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.4	.1 p128 Router-LS	As							
MUST	LSA Origina The router router is t having Area	tion sets bit V i he endpoint A as their '	n its router of one or mon Transit area	-LSA for Area re fully adja	a A if and on acent virtual	ly if the links				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.4	.1 p129 Router-LS	As,							
MUST	LSA Origina If the rout interface i are added t	tion er wishes to f the attach o the LSA.	build a rout ed network do	ter-LSA for A bes not belor	Area A then f ng to Area A,	or each no links				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s12.4	.1.3 p131 Describi	ng virtual links							
MUST	LSA Origina For virtual	tion links, a lin	nk descriptio or is fully a	on is added t adjacent.	to the router	-LSA only				
	when the vi	redui neigno								
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested			



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ANVL-OSPF-	RFC 2328, s12.4.2 p134 Network-LSAs										
SHOULD	LSA Origina A router the but is no lo originated.	tion at has forme: onger, should	rly been the d flush the 1	Designated H network-LSA t	Router for a chat it had p	network, previously					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	.3. p136 Summary	r-LSAs								
MUST	LSA Origination If for a route the area associated with this set of paths is the Area A itself, do not generate a summary-LSA for the route for advertising into Area A.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	.3. p136 Summary	r-LSAs								
MUST	LSA Origina If for a ro but the nex itself, do : into Area A	tion ute the area t hops assoc not generate	associated with the a summary-LS	with the set nis set of pa SA for the ro	of paths is aths belong t oute for adve	not Area A o Area A ertising					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				


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ANVL-OSPF-	RFC 2328, s12.4.3. p136 Summary-LSAs										
SHOULD	LSA Origination If the destination of a route is an AS boundary router, a summary-LSA should be originated if and only if the routing table entry describes the preferred path to the AS boundary router. If so, a Type 4 summary-LSA is originated for the destination.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	.3. p136 Summary	r-LSAs								
MUST	LSA Origination While originating summary-LSAs for networks reachable by inter-area routes at most a single Type 3 summary-LSA is originated for each area address range.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s12.4	.4 p139 AS-extern	al-LSAs								
MUST	LSA Origina A default r AS-external DefaultDest	tion oute for the -LSA by sett ination (0.0	Autonomous : ing the LSA"; .0.0).	System can be s Link State	e described i ID to	n an					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s13 p143 The Flooding Procedure										
28.1 MUST	Flooding Pr To make the separately. packets.	Flooding Procedure To make the flooding procedure reliable, each LSA must be acknowledged separately. Acknowledgments are transmitted in Link State Acknowledgment packets.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13 p	143 The Flooding	Procedure								
MUST	Flooding Pro For each LS. LSA"s LS cho the LSA.	ocedure A contained ecksum. If	in a Link Sta the checksum	ate Update pa turns out to	acket, valida b be invalid,	te the discard					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	Debian 12: untested RFC 2328, s13 p	Debian 12: untested 143 The Flooding	Debian 12: untested Procedure	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 28.3 MUST	Debian 12: untested RFC 2328, s13 p Flooding Pr For each LS. LSA"s LS ty	Debian 12: untested 143 The Flooding ocedure A contained pe. If the	Debian 12: untested Procedure in a Link Sta LS type is un	Debian 12: untested ate Update pa nknown, disca	Debian 12: pass acket, examin ard the LSA.	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 28.3 MUST	Debian 12: untested RFC 2328, s13 p Flooding Pr For each LS. LSA"s LS typ FreeBSD 12.3: pass	Debian 12: untested 143 The Flooding ocedure A contained oe. If the FreeBSD 12.3: pass	Debian 12: untested Procedure in a Link Sta LS type is un FreeBSD 12.3: pass	Debian 12: untested ate Update pa nknown, disca FreeBSD 12.3: pass	Debian 12: pass acket, examin ard the LSA. FreeBSD 12.3: pass	Debian 12: pass the the FreeBSD 12.3: pass	Debian 12: pass FreeBSD 12.3: pass				
ANVL-OSPF- 28.3 MUST	Debian 12: untested RFC 2328, s13 p Flooding Pr For each LS. LSA"s LS typ FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: untested 143 The Flooding ocedure A contained pe. If the 2 FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: untested Procedure in a Link Sta LS type is un FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: untested ate Update pa nknown, disca FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: pass acket, examin ard the LSA. FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: pass te the FreeBSD 12.3: pass Ubuntu 18.04: untested	Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested				
ANVL-OSPF- 28.3 MUST	Debian 12: untested RFC 2328, s13 p Flooding Pr For each LS. LSA"s LS ty FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	Debian 12: untested 143 The Flooding Decedure A contained pe. If the 2 FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	Debian 12: untested Procedure in a Link Sta LS type is un FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	Debian 12: untested ate Update pa nknown, disca FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	Debian 12: pass acket, examin ard the LSA. FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	Debian 12: pass te the FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
ANVL-OSPF- 28.3 MUST ANVL-OSPF- 28.4	Debian 12: untested RFC 2328, s13 p Flooding Pre- For each LS. LSA"s LS typ FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s13 p	Debian 12: untested 143 The Flooding Decedure A contained pe. If the FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 143 The Flooding	Debian 12: untested Procedure in a Link Sta LS type is un FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Procedure	Debian 12: untested ate Update panknown, disca FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	Debian 12: pass acket, examin ard the LSA. FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	Debian 12: pass te the FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
ANVL-OSPF- 28.3 MUST ANVL-OSPF- 28.4 MUST	Debian 12: untested RFC 2328, s13 p Flooding Pro- For each LS. LSA"s LS typ FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s13 p Flooding Pro- For each LS. AS-external stub area d	Debian 12: untested 143 The Flooding Decedure A contained pe. If the 2 FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 143 The Flooding Decedure A contained -LSA (LS type iscard the Li	Debian 12: untested Procedure in a Link Sta LS type is un FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Procedure in a Link Sta SA.	Debian 12: untested ate Update pa nknown, disca FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested ate Update pa ne area has h	Debian 12: pass acket, examinard the LSA. FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass Debian 12: pass	Debian 12: pass the the FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
ANVL-OSPF- 28.3 MUST ANVL-OSPF- 28.4 MUST	Debian 12: untested RFC 2328, s13 p Flooding Pro- For each LS. LSA"s LS typ FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s13 p Flooding Pro- For each LS. AS-external stub area d FreeBSD 12.3: pass	Debian 12: untested 143 The Flooding Decedure A contained pe. If the 1 FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 143 The Flooding Decedure A contained -LSA (LS type iscard the Ling FreeBSD 12.3: pass	Debian 12: untested Procedure in a Link Sta LS type is un FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Procedure in a Link Sta e = 5) and th SA. FreeBSD 12.3: pass	Debian 12: untested ate Update pa hknown, disca FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested ate Update pa he area has h FreeBSD 12.3: pass	Debian 12: pass acket, examin ard the LSA. FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass Debian 12: pass Acket, if thi been configur FreeBSD 12.3: pass	Debian 12: pass the the FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass				
ANVL-OSPF- 28.3 MUST ANVL-OSPF- 28.4 MUST	Debian 12: untested RFC 2328, s13 p Flooding Pro- For each LS. LSA"s LS typ FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, s13 p Flooding Pro- For each LS. AS-external stub area d FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: untested 143 The Flooding Decedure A contained pe. If the FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 143 The Flooding Decedure A contained -LSA (LS type iscard the Ling FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: untested Procedure in a Link Sta LS type is un FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Procedure in a Link Sta e = 5) and th SA. FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: untested ate Update pa hknown, disca FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested ate Update pa he area has h FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: pass acket, examin ard the LSA. FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass Debian 12: pass Cheen configur FreeBSD 12.3: pass Ubuntu 18.04: pass	Debian 12: pass the the FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass .s is an red as a FreeBSD 12.3: pass Ubuntu 18.04: untested	Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested				



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ANVL-OSPF-	RFC 2328, s13 p144 The Flooding Procedure,										
MUST	Flooding Procedure If the LSA"s LS age is equal to MaxAge, and there is currently no instance of the LSA in router"s link state database, and none of router"s neighbors are in state Exchange or Loading send direct Acknowledgement packet to the sending neighbor and discard the LSA.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13 p144 The Flooding Procedure										
MUST	Flooding Procedure If there is already a database copy, and if the database copy was received via flooding and installed less than MinLSArrival seconds ago, discard the new LSA (without acknowledging it).										
	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: FAIL	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass				
	Ubuntu 18.04: FAIL	Ubuntu 18.04: unpredict	Ubuntu 18.04: FAIL	Ubuntu 18.04: unpredict	Ubuntu 18.04: FAIL	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: FAIL	Debian 12: FAIL	Debian 12: unpredict				
ANVL-OSPF-	RFC 2328, s13 p144 The Flooding Procedure										
MUST	Flooding Pro If there is the database MinLSArriva subset of th	ocedure no database e copy and tl l seconds ago he router"s i	copy or the he database o o, immediate interfaces.	received LSA copy was inst ly flood the	A is more rec called more t new LSA out	eent than han some					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



RFC Compliance Test Report



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ANVL-OSPF-	RFC 2328, s13 p144 The Flooding Procedure										
MUST	Flooding Procedure When a new instance of a LSA is installed in database, a router possibly acknowledges the receipt of the LSA by sending a Link State Acknowledgment packet on the receiving interface.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13 p	145 The Flooding	Procedure,								
MUST	Flooding Procedure When the received LSA is at most as recent as the database copy of that LSA then if there is an instance of the LSA on the sending neighbor"s Link State Request list, generate the neighbor event BadLSReq.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13 p	145 The Flooding	Procedure								
SHOULD	Flooding Pro If the rece listed in the adjacency, LSA. The rot retransmiss	ocedure ived LSA is ne Link state the router i uter should : ion list.	the same inst e retransmiss tself is expe remove the LS	cance as the sion list for ecting an ack SA from the I	database cop the receivi nowledgment ink state	y and is ng for this					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s13 p145 The Flooding Procedure									
MUST	Flooding Pr If the data equal to Ma acknowledgi	ocedure base copy ha: xSequenceNuml ng it.	s LS age equa ber, simply o	al to MaxAge discard the 1	and LS seque received LSA	ence number without				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s13.1	p145 Determining	which LSA is new	er						
MUST	Newer LSA D The LSA hav	etermination ing the newe:	r LS sequence	e number is r	more recent.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s13.3 p149 Next step in the Flooding Procedure									
MUST	Flooding Procedure Next Step If the adjacency is not yet full and there is an instance of new LSA in Link State request list and if the new LSA is more recent delete the LSA from the Link state request list.									
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, s13.3	p150 Sending pro	tocol packets							
MUST	Flooding Pro On broadcas Link State directly to	ocedure Next t network, tl Update packe the neighbo:	Step he Link State ts carrying n r.	e Update pack retransmissio	kets are mult ons are alway	icast but vs sent				
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			



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ANVL-OSPF-	RFC 2328, s13.4 p151 Receiving self-originated LSAs										
MUST	Self-Originated LSA Receipt A self-originated LSA is detected when the LSA"s Advertising Router is equal to the router"s own Router ID and in most cases (when the LS sequence number of the received LSA is greater than that of the current instance), the router must then advance the LSA"s LS sequence number one past the received LS sequence number, and originate a new instance of the LSA.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.4	p151 Receiving se	elf-originated LSAs								
MUST	Self-Originated LSA Receipt A self-originated LSA is detected when the LSA is a network-LSA and its Link State ID is equal to one of the router"s own IP interface addresses. In this case the LSA is flushed from the routing domain.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.4	p151 Receiving se	elf-originated LSAs								
SHOULD	Self-Origina If the rece no longer ha updating the by incremen	ated LSA Rece ived self-or as an (advert e LSA, the L ting the rece	eipt iginated LSA tisable) rout SA should be eived LSA"s I	is a summary te to the des flushed from LS age to May	7-LSA and the stination ins a the routing Age and refl	e router tead of domain .ooding.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s13.4 p151 Receiving self-originated LSAs										
31.4 SHOULD	Self-Origina If the rece router no linstead of routing doma and reflood	ated LSA Reco ived self-or: onger has an updating the ain by increa ing.	eipt iginated LSA (advertisab) LSA, the LSJ menting the :	is an AS-ext le) route to A should be f received LSA'	ternal-LSA an the destinat Elushed from 's LS age to	nd the ion the MaxAge					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.4	p151 Receiving se	elf-originated LSAs	3							
SHOULD	Self-Originated LSA Receipt If the received self-originated LSA is a network-LSA but the router is no longer Designated Router for the network, instead of updating the LSA, the LSA should be flushed from the routing domain by incrementing the received LSA"s LS age to MaxAge and reflooding.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.5	p152-153 Sending	g Link State Ackno	wledgment packets	3						
MUST	Sending LSA If the new a acknowledge	Packets LSA has been ment is sent	flooded back	k out receivi	ing interface	e no					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF-	RFC 2328, s13.5 p152-153 Sending Link State Acknowledgment packets										
MUST	Sending LSA Packets If the new LSA is more recent than database copy, but was not flooded back out receiving interface and if the router is in state Backup then delayed acknowledgement is sent if advertisement is received from Designated Router, otherwise nothing is done.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.5	p152-153 Sending	g Link State Acknor	wledgment packets	3						
MUST	Sending LSA Packets If the new LSA is more recent than database copy, but was not flooded back out receiving interface and if the receiving router is not in state Backup then delayed acknowledgement is sent. (This test checks the case when router state is DR Other)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.5	p152-153 Sendin	g Link State Acknor	wledgment packets	3						
MUST	Sending LSA If the new back out restate Backup (This test	Packets LSA is more : ceiving inte: p then delaye checks the ca	recent than or face and if ed acknowledges when rout	database copy the receivir gement is ser ter state is	y, but was no ng router is nt. DR)	not in					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s13.5 p152-153 Sending Link State Acknowledgment packets										
MUST	Sending LSA Packets If the new LSA is a duplicate, and was treated as implied acknowledgement and if the receiving router is in state Backup then delayed acknowledgement is sent if advertisement is received from Designated Router, otherwise nothing is done.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.5	p152-153 Sending	g Link State Acknor	wledgment packets	5						
MUST	Sending LSA Packets If the new LSA is a duplicate, and was treated as implied acknowledgement and if the receiving router is not in state Backup then no acknowledgement is sent. (This test checks the case when router state is DR Other)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.5	p152-153 Sending	g Link State Acknor	wledgment packets	8						
MUST	Sending LSA If the new is acknowledged then no ack: (This test	Packets LSA is a dup ment and if nowledgement checks the ca	licate, and the receiving is sent. ase when rout	was treated a g router is n ter state is	as implied not in state DR)	Backup					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s13.5 p152-153 Sending Link State Acknowledgment packets										
MUST	Sending LSA Packets If the new LSA is a duplicate, and was not treated as implied acknowledgement and if the receiving router is in state Backup then direct acknowledgement is sent.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.5	p152-153 Sending	g Link State Acknor	wledgment packets	5						
MUST	Sending LSA If the new a acknowledged then direct	Packets LSA is a dup ment and if acknowledger	licate, and w the receiving ment is sent	was not treat g router is r	ted as implie not in state	ed Backup					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s13.7 p156 Receiving link state acknowledgments										
MUST	LSA Receipt If the acknowledgment is for the same instance that is contained on the Link state retransmission list, remove the item from the list.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s15 p	158 Virtual Links									
MUST	Virtual Lin When an adj link will b	ks acency is es e included in	tablished ove n backbone re	er a virtual Duter-LSAs.	link, the vi	rtual					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s15 p158 Virtual Links										
MUST	Virtual Lin When an adj packets per	ks acency is es taining to tl	tablished ove ne backbone a	er a virtual area will flo	link, then C w over the a	SPF djacency.					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s15 p	158 Virtual Links									
MUST	Virtual Lin AS-external	ks -LSAs are NE'	VER flooded o	over virtual	adjacencies.						
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s15 p159 Virtual Links										
MUST	Virtual Links The cost of a virtual link is NOT configured. It is defined to be the cost of the intra-area path between the two defining area border routers.										
	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s15 p	159 Virtual Links									
SHOULD	Virtual Lin When the co originated	ks st of a virt for the backl	ual link char cone area.	nges, a new r	router-LSA sh	ould be					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, s15 p159 Virtual Links										
MUST	Virtual Links In each endpoint"s router-LSA for the backbone, the virtual link is represented as a Type 4 link whose Link ID is set to the virtual neighbor"s OSPF Router ID and whose Link Data is set to the virtual interface"s IP address.(This test checks the case of router between backbone area and a non-backbone area)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s15 p159 Virtual Links										
MUST	Virtual Links In each endpoint"s router-LSA for the backbone, the virtual link is represented as a Type 4 link whose Link ID is set to the virtual neighbor"s OSPF Router ID and whose Link Data is set to the virtual interface"s IP address.(This test checks the case of router between two non-backbone areas)										
	FreeBSD 12.3: unpredict	FreeBSD 12.3: unpredict	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, s15 p159 Virtual Links										
MUST	Virtual Lin The time be configured	ks tween link s for a virtua	tate retransm l link.	missions, Rxm	ntInterval, i	.S					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: FAIL	Debian 12: FAIL	Debian 12: FAIL				



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	Release 8.4	Release 8.4.2	Release 8.5	Release 8.4.3	Release 8.5.1	Dev-9.0 2023-06-13	Stable 9.1 @2023-11-21				
ANVL-OSPF-	RFC 2328, s16.2 p168 Calculating the inter-area routes										
MUST	Interarea Route Calculation If the router has active attachments to multiple areas, only backbone summary-LSAs are examined.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sA.1	p185 Encapsulation	n of OSPF packets	;							
MUST	OSPF Packet Encapsulation To ensure that the OSPF packets sent to multicast addresses will not travel multiple hops, their IP TTL must be set to 1.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sA.1	p186 Encapsulatio	n of OSPF packets	;							
SHOULD	OSPF Packet Encapsulation All routers running OSPF should be prepared to receive packets sent to the address 224.0.0.5. Hello packets are always sent to this destination. (This test checks the case when router is in state DR Other)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, sA.1 p186 Encapsulation of OSPF packets										
SHOULD	OSPF Packet Encapsulation All routers running OSPF should be prepared to receive packets sent to the address 224.0.0.5. Hello packets are always sent to this destination. (This test checks the case when router is in state DR)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sA.1 p186 Encapsulation of OSPF packets										
36.4 SHOULD	OSPF Packet Encapsulation All routers running OSPF should be prepared to receive packets sent to the address 224.0.0.5. Hello packets are always sent to this destination. (This test checks the case when router is in state Backup)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sA.1	RFC 2328, sA.1 p186 Encapsulation of OSPF packets									
MUST	OSPF Packet The Designa the multica	Encapsulation ted Router mu st address 2	on ust be prepa: 24.0.0.6.	red to receiv	ve packets de	estined to					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, sA.1	p186 Encapsulatio	n of OSPF packets	5			
MUST	OSPF Packet The Backup I destined to	kets					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF- 36.7	RFC 2328, sA.3.2	2 p194 The Hello p	acket				
MUST	OSPF Packet If Router P become Back (This test	Encapsulation riority set up Designated checks the ca	on to 0, the rou d Router. ase when rout	uter will be ter itself ha	ineligible t as Router Pri	o. .ority 0)	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, sA.3.2	2 p194 The Hello p	oacketa				
MUST	OSPF Packet If Router P become Back (This test	Encapsulation riority set up Designated checks the ca	on to 0, the rou d Router ase when a ne	uter will be eighbor has F	ineligible t Router Priori	.o .ty 0)	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass
ANVL-OSPF-	RFC 2328, sA.3.2	2 p194 The Hello p	acket				
MUST	OSPF Packet If Router P become Desi (This test	Encapsulation riority set gnated Route checks the ca	on to 0, the rou r ase when rout	uter will be ter itself ha	ineligible t as Router Pri	o. ority 0)	
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass



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ANVL-OSPF-	RFC 2328, sA.3.2 p194 The Hello packet										
36.10 MUST	OSPF Packet Encapsulation If Router Priority set to 0, the router will be ineligible to become Designated Router. (This test checks the case when a neighbor has Router Priority 0)										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sA.3.	6 p201 The Link St	ate Acknowledgme	ent packet							
MUST	OSPF Packet A Link Stat address All a unicast	Encapsulation e Acknowledge SPFRouters,	on ment packet : to the multic	is sent eithe cast address	er to the mul AllDRouters,	ticast or as					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sA.4.2 p206-207 Router-LSAs										
30.12	OSPF Packet Encapsulation When bit V is set, the router is an endpoint of one or more fully adjacent virtual links having the described area as Transit area.										
MUST	OSPF Packet When bit V adjacent vi:	Encapsulations set, the structure of the set	on router is an naving the de	endpoint of escribed area	one or more a as Transit	fully area.					
MUST	OSPF Packet When bit V adjacent vi: FreeBSD 12.3: pass	Encapsulation is set, the s rtual links d FreeBSD 12.3: pass	on router is an naving the de FreeBSD 12.3: pass	endpoint of escribed area FreeBSD 12.3: pass	one or more a as Transit FreeBSD 12.3: pass	fully area. FreeBSD 12.3: pass	FreeBSD 12.3: pass				
MUST	OSPF Packet When bit V adjacent vi: FreeBSD 12.3: pass Ubuntu 18.04: pass	Encapsulation is set, the strual links links links FreeBSD 12.3: pass Ubuntu 18.04: pass	on router is an naving the de FreeBSD 12.3: pass Ubuntu 18.04: pass	endpoint of escribed area FreeBSD 12.3: pass Ubuntu 18.04: pass	one or more as Transit FreeBSD 12.3: pass Ubuntu 18.04: pass	fully area. FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested				
MUST	OSPF Packet When bit V adjacent vi: FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	Encapsulation is set, the strual links of FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	on router is an naving the de FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	endpoint of escribed area FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	fully area. FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
MUST ANVL-OSPF-	OSPF Packet When bit V adjacent vi: FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, sA.4.2	Encapsulation is set, the strual links links links FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested 2 p208 Router-LSA	on router is an having the de FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	endpoint of escribed area FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	one or more as Transit FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass	fully area. FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
MUST ANVL-OSPF- 36.13 MUST	OSPF Packet When bit V adjacent vi: FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, sA.4.2 OSPF Packet When connec router or a LSA"s Link	Encapsulation is set, the set rtual links of 12.3: pass Ubuntu 18.04: pass Debian 12: untested 2 p208 Router-LSA Encapsulation transit net State ID.	on router is an having the de FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested NS Debian 12: untested	endpoint of escribed area FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested	one or more a as Transit FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass es an LSA (i.	fully area. FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass e., another ghboring	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass				
MUST ANVL-OSPF- 36.13 MUST	OSPF Packet When bit V adjacent vi: FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, sA.4.2 OSPF Packet When connec router or a LSA"s Link of FreeBSD 12.3: pass	Encapsulation is set, the set rtual links of 12.3: pass Ubuntu 18.04: pass Debian 12: untested 2 p208 Router-LSA Encapsulation transit net State ID. FreeBSD 12.3: pass	on router is an having the de FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested NS Debian 12: untested NS Debian 12: untested NS Debian 12: untested NS Debian 12: untested NS Debian 12: untested NS	endpoint of escribed area FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Lso originate nk ID is equa FreeBSD 12.3: pass	one or more a as Transit FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass es an LSA (i. al to the nei FreeBSD 12.3: pass	fully area. FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass e., another shboring FreeBSD 12.3: pass	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass				
MUST ANVL-OSPF- 36.13 MUST	OSPF Packet When bit V adjacent vi: FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested RFC 2328, sA.4.2 OSPF Packet When connec router or a LSA"s Link of FreeBSD 12.3: pass Ubuntu 18.04: pass	Encapsulation is set, the set rtual links of 12.3: pass Ubuntu 18.04: pass Debian 12: untested 2 p208 Router-LSA Encapsulation transit net State ID. FreeBSD 12.3: pass Ubuntu 18.04: pass	on router is an having the de FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested as Debian 12: untested as Debian 12: untested The Lin FreeBSD 12.3: pass Ubuntu 18.04: pass	endpoint of escribed area FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: untested Lso originate nk ID is equa FreeBSD 12.3: pass Ubuntu 18.04: pass	one or more as Transit FreeBSD 12.3: pass Ubuntu 18.04: pass Debian 12: pass es an LSA (i. al to the nei FreeBSD 12.3: pass Ubuntu 18.04: pass	fully area. FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass e., another shooring FreeBSD 12.3: pass Ubuntu 18.04: untested	FreeBSD 12.3: pass Ubuntu 18.04: untested Debian 12: pass FreeBSD 12.3: pass Ubuntu 18.04: untested				



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ANVL-OSPF-	RFC 2328, sA.4.2 p208 Router-LSAs										
MUST	OSPF Packet Encapsulation For connections to stub networks, Link Data specifies the network"s IP address mask.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF- 36.16	RFC 2328, sA.4.2	2 p208 Router-LSA	ls								
MUST	OSPF Packet For connect interface"s	Encapsulations to trans IP address.	on sit network 1	Link Data spe	ecifies the r	router					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sA.4.4	4 p212 Summary-L	SAs								
MUST	OSPF Packet Encapsulation Type 3 summary-LSAs are used when the destination is an IP network.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sA.4.4	4 p212 Summary-L	SAs								
MUST	OSPF Packet When the de is used.	Encapsulation is	on an AS bounda	ary router, a	a Type 4 summ	ary-LSA					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, sB p217 Architectural Constants										
MUST	Architectural Restraints MinLSInterval is the minimum time between distinct originations of any particular LSA. The value of MinLSInterval is set to 5 seconds.										
	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: unpredict				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sB p2	18 Architectural C	onstants								
MUST	Architectural Restraints LSInfinity is the metric value indicating that the destination described by an LSA is unreachable. Used in summary-LSAs as an alternative to premature aging. It is defined to be the 24-bit binary value of all ones: 0xffffff.										
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				
ANVL-OSPF-	RFC 2328, sB p2	18 Architectural C	onstants								
MUST	Architectur LSInfinity described by alternative value of al	al Restraint; is the metri y an LSA is to prematur; l ones: 0xff;	s c value indio unreachable. e aging. It : ffff.	cating that t Used in AS-e is defined to	the destinati external-LSAs be the 24-b	on as an it binary					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, sB p218 Architectural Constants										
37.4 MUST	Architectural Restraints InitialSequenceNumber is the value used for LS Sequence Number when originating the first instance of any LSA. Its value is the signed 32-bit integer 0x80000001.										
	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL	FreeBSD 12.3: FAIL				
	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: FAIL	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: FAIL	Debian 12: FAIL	Debian 12: FAIL				
ANVL-OSPF-	RFC 2328, sD.3 p229 Cryptographic Authentication										
MUST	Cryptographic Authentication When cryptographic authentication is used, the 64-bit Authentication field in the standard OSPF packet header is redefined as										
	0 0 1 2 3 4 5 +-+-++-+ 0 +-+-++-++-+ +-++-++-++-++-++-++-++-++-++-++-++-++-+	1 6 7 8 9 0 1 -+-+-+-+-+-+ Cryptogra	2 3 4 5 6 7 -+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+	2 8 9 0 1 2 3 -+-+-+-+-+- 	4 5 6 7 8 9 -+-+-+-+-+- Auth Data Le -+-+-+-+-+-+-+-+-	3 0 1 +-+-+ m +-+-+ +-+-+					
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass				
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested				
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass				



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ANVL-OSPF-	RFC 2328, sD.3 p229 Cryptographic Authentication									
38.2 MUST	Cryptograph (6) The mes the OSPF pa used in cal itself. In of the OSPF the authent calculation (a) The 16 (b) Trailin specified i (c) The MD5 concatenati and length digest (see (d) The MD5 appended to not counted is included trailing pa	ic Authentic sage digest cket. The a culating the put to the a packet and ication algos proceeds as byte MD5 key g pad and les n [Ref17]. authenticat on of the OS fields, prod [Ref17]). digest is w the origina in the OSPF in the pack d or length	ation is then calcu uthentication digest is in uthentication the secret ke follows: is appended ngth fields a ion algorithm PF packet, se ucing a 16 by ritten over f l OSPF packet packet"s len et"s IP lengi fields beyond	ulated and and n algorithm t ndicated by t n algorithm o ey. When usin essage digest to the OSPF are added, as m is run over ecret key, pa yte message the OSPF key t). The diges	ppended to to be the ke consists ng MD5 as packet. packet. s the ad (i.e., st is put / are					
	rot counted	or transmit	FreeBSD	FreeBSD	FreeBSD	FreeBSD	FreeBSD			
	12.3: pass	12.3: pass	12.3: pass	12.3: pass	12.3: pass	12.3: pass	12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			
ANVL-OSPF-	RFC 2328, sD4.3	p233 Generating	Cryptographic auth	hentication						
MUST	Cryptograph (2) The che calculated,	ic Authentic cksum field but is inst	ation in the standa ead set to 0	ard OSPF head	ler is not		-			
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			



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ANVL-OSPF-	RFC 2328, p243	Security Consideration	ations							
MUST	Cryptograph When using a "message the shared OSPF packet	Cryptographic Authentication When using the Cryptographic authentication option, each router appends a "message digest" to its transmitted OSPF packets. Receivers then use the shared secret key and received digest to verify that each received OSPF packet is authentic.								
	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass	FreeBSD 12.3: pass			
	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: pass	Ubuntu 18.04: untested	Ubuntu 18.04: untested			
	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: untested	Debian 12: pass	Debian 12: pass	Debian 12: pass			