



Cisco1921 – Cisco3945E

CONFIDENTIAL

Performance Summary

75% CPU, IMIX 1921 – 3945E

Baseline: 15.0(1)M	1921	1941	2901	2911	2921	2951	3925	3945	3925E	3945E
Test case	Mbps	Mbps	Mbps	Mbps	Mbps	Mbps	Mbps	Mbps	Mbps	Mbps
IP (CEF)	617	723	761	867	1,048	1,300	1,817	L/R	L/R	L/R
NAT	93	100	101	114	138	275	418	496	1,334	1,064
NAT+ACL	83	93	90	107	124	245	356	418	N/T	N/T
NAT+ACL+QoS	58	67	63	73	86	117	168	200	534	668
QoS	150	168	165	200	229	438	677	780	L/R	L/R
HQoS	110	120	125	125	168	293	455	572	1,368	1,704
HQoS+ L2TPv3	100	108	113	113	156	269	389	509	1,152	1,440
HQoS+ NBAR+ QinQ	55	61.2	60	60	84	139	204	301	518	648
L2TPv3 throughput									1,337	1,735
ZBFW (Stateful)	204	237	180	265	328	418	755	873	L/R	L/R
ZBFW + NAT (Stateful)	85	94	98	110	131	160	232	334	808	1,005
ZBFW + NAT+ ACL+QOS (Stateful)	68	31	77	81	105	114	165	223		
ZBFW + NAT + IOS IPS (Stateful)	25	26	23	30	31	29	41	50	195	258
IOS IPS only	28	35	26	27	33	33	49	57	235	304
SSL (Mbps) 100 user - RC4-MD5	17	18	18	20	24	27	37	43	N/T	N/T
SSL (Mbps) 100 user - 3DES-SHA1	10	11	10	9.8	13	34	45	55	N/T	N/T
IPSEC/AES-Single Tunnel	48	52	53	61	72	103	154	179	477	670
IPSEC/AES-100 Tunnel	42	43	45	52	61	86	125	139	420	599
IPSEC/3DES-Single Tunnel w/SHA	43	46	47	54	64	96	143	172	477	658
IPSEC/3DES-100 Tunnel w/SHA	37	40	40	45	53	82	116	132	438	590
IPSec/AES multi-tunnel (Mbps) (with SHA)	36	39	38	46	51	70	103	105	N/T	N/T
IPSEC+QoS+GRE (V3PN)	29	31	31	37	44	53	74	86	271	355
Inter VLAN (SVI to FE/GE) & HWIC-4ESW	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R
Inter VLAN (SVI to SVI) 2 HWIC-4ESW	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R
SVI: L3 IOS FW + IP ACL + NAT + QoS (HWIC-4ESW)	67	L/R	66	74	87	102	102	102	N/T	N/T

N/T – Not Tested

L/R – Line rate reached

New

CONFIDENTIAL

G1 vs G2 Comparison overview

1841 – 2911, IMIX @ 75% CPU

Testcase List 75% CPU	1921	1941	1841	2901	2801	2911	2811
IP (CEF)	617	723	127	761	142	867	142
NAT	93	100	24	101	22	114	24
NAT+ACL	83	93	22	90	20	107	21
NAT+ACL+QoS	58	67	14	63	14	73	13
QoS	150	168	63	165	60	200	61
HQoS	110	120	26	125	24	125	31
HQoS+ L2TPv3	100	108	21.6	113	19.2	113	19.3
HQoS+ NBAR+ QinQ	55	61.2	14.4	60	14.4	60	15.1
ZBFW (Stateful)	204	237	60	180	57	265	64
ZBFW + NAT (Stateful)	85	94	24	98	22	110	20
ZBFW + NAT+ ACL+QoS (Stateful)	68	31	18	77	18	81	16
ZBFW + NAT + IOS IPS (Stateful)	25	26	Insuff Mem	23	6.3	30	8.3
IOS IPS only	28	35	10	26	8.1	27	10
IPSEC/AES-Single Tunnel	48	52	9.4	53	9	61	9.7
IPSEC/AES-100 Tunnel	42	43	8.4	45	8.7	52	8.6
IPSEC/3DES-Single Tunnel w/SHA	43	46	7	47	7.5	54	9.6
IPSEC/3DES-100 Tunnel w/SHA	37	40	6.9	40	7	45	8.1
IPSec/AES multi-tunnel (Mbps) (with SHA)	36	39	6.7	38	6.6	46	8.5
IPSEC+QoS+GRE (V3PN)	29	31	6.3	31	6.1	37	6.1
Inter VLAN (SVI to FE/GE) & HWIC-4ESW	L/R	L/R	85	175	84	176	87
Inter VLAN Routing (SVI to SVI) 2 HWIC-4ESW	L/R	L/R	69	93	76	96	84.2
SVI: L3 IOS FW + IP ACL + NAT + QoS (HWIC-4ESW)	67	L/R	14.4	66	16	74	17.6

N/T – Not Tested

L/R – Line rate reached

All results in Mbps

CONFIDENTIAL

G1 vs G2 Comparison

2821 – 3945E, IMIX @ 75% CPU

Testcase List 75% CPU	2921	2821	2951	2851	3925	3925E	3825	3945	3945E	3845
IP (CEF)	1,048	216	1,300	267	1,817	L/R	745	2289	L/R	1,144
NAT	138	61	275	73	418	1,064	117	496	1,334	175
NAT+ACL	124	58	245	72	356	N/T	104	418	N/T	156
NAT+ACL+QoS	86	43	117	56	168	534	62	200	668	91
QoS	229	101	438	133	677	L/R	322	780	L/R	420
HQoS	168	61	293	72	455	1,368	138	572	1,704	180
HQOS+ L2TPv3	156	54	269	76.8	389	1,152	129	509	1,440	161
HQOS+ NBAR+ QinQ	84	43	139	57.6	204	518	87	301	648	121
ZBFW (Stateful)	328	159	418	204	755	L/R	312	873	L/R	453
ZBFW + NAT (Stateful)	131	84	160	108	232	808	115	334	1,005	174
ZBFW + NAT+ ACL+QOS (Stateful)	105	66	114	86	165	N/T	82	223	N/T	119
ZBFW + NAT + IOS IPS (Stateful)	31	18.8	29	24	41	195	23	50	258	32
IOS IPS only	33	22	33	27	49	235	28	57	304	37
IPSEC/AES-Single Tunnel	72	34	103	41	154	477	56	179	670	80
IPSEC/AES-100 Tunnel	61	24.8	86	26	125	420	42	139	599	57
IPSEC/3DES-Single Tunnel w/SHA	64	33	96	42	143	477	53	172	658	80
IPSEC/3DES-100 Tunnel w/SHA	53	23	82	26	116	438	43	132	590	55
IPSec/AES multi-tunnel (Mbps) (with SHA)	51	22	70	24	103	N/T	41	105	N/T	48
IPSEC+QoS+GRE (V3PN)	44	14.7	53	32	74	271	37	86	355	37
Inter VLAN (SVI to FE/GE) & HWIC-4ESW	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R
Inter VLAN Routing (SVI to SVI) 2 HWIC-4ESW	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R	L/R
SVI: L3 IOS FW + IP ACL + NAT + QoS (HWIC-4ESW)	87	57	L/R	66	L/R	N/T	76	L/R	N/T	84

N/T – Not Tested
L/R – Line rate reached

All results in Mbps

CONFIDENTIAL

Performance improvement multiplier @ 75% CPU

Results showing ISR G2 performance improvement over legacy ISR as "n" times

Testcase List 75% CPU	1921 vs 1841	1941 vs 1841	2901 vs 2801	2911 vs 2811	2921 vs 2821	2951 vs 2851	3925 vs 3825	3925E vs 3825	3945 vs 3845	3945E vs 3845
IP (CEF)	4.9	5.7	5.4	6.1	4.9	4.9	2.4	> 8	2.0	> 8
NAT	3.9	4.2	4.6	4.8	2.3	3.8	3.6	9.1	2.8	7.6
NAT+ACL	3.8	4.2	4.5	5.1	2.1	3.4	3.4	N/A	2.7	N/A
NAT+ACL+QoS	4.1	4.8	4.5	5.6	2.0	2.1	2.7	8.6	2.2	7.3
QoS	2.4	2.7	2.8	3.3	2.3	3.3	2.1	6.1	1.9	6.0
HQoS	4.2	4.6	5.2	4.0	2.8	4.1	3.3	9.9	3.2	9.5
HQoS+ L2TPv3	4.6	5.0	5.9	5.9	2.9	3.5	3.0	8.9	3.2	8.9
HQoS+ NBAR+ QinQ	3.8	4.3	4.2	4.0	2.0	2.4	2.3	6.0	2.5	5.4
ZBFW (Stateful)	3.4	4.0	3.2	4.1	2.1	2.0	2.4	7.4	1.9	5.5
ZBFW + NAT (Stateful)	3.5	3.9	4.5	5.5	1.6	1.5	2.0	7.0	1.9	5.8
ZBFW + NAT+ ACL+QOS (Stateful)	3.8	1.7	4.3	5.1	1.6	1.3	2.0	N/A	1.9	N/A
ZBFW + NAT + IOS IPS (Stateful)	N/T*	N/T*	3.7	3.6	1.6	1.2	1.8	8.5	1.6	8.1
IOS IPS only	2.8	3.5	3.2	2.7	1.5	1.2	1.8	8.4	1.5	8.2
IPSEC/AES-Single Tunnel	5.1	5.5	5.9	6.3	2.1	2.5	2.8	8.5	2.2	8.4
IPSEC/AES-100 Tunnel	5.0	5.1	5.2	6.0	2.5	3.3	3.0	10.0	2.4	10.5
IPSEC/3DES-Single Tunnel w/SHA	6.1	6.6	6.3	5.6	1.9	2.3	2.7	9.0	2.2	8.2
IPSEC/3DES-100 Tunnel w/SHA	5.4	5.8	5.7	5.6	2.3	3.2	2.7	10.2	2.4	10.7
IPSec/AES multi-tunnel (Mbps) (with SHA)	5.4	5.8	5.8	5.4	2.3	2.9	2.5	N/A	2.2	N/A
IPSEC+QoS+GRE (V3PN)	4.6	4.9	5.1	6.1	3.0	1.7	2.0	7.3	2.3	9.6

* Test not carried out on 1841 – Insufficient memory

CONFIDENTIAL