



K-20 Layer-2 Test Results

Job Information

Job ID	ITASK1317397
Contractor	University of Washington
Customer	clarkston-k12
Report Date	2020-03-10 18:23:37
Operator Name	enneking
Circuit ID	Wholesail:2268-00

File Name: C:\inetpub\wwwroot\k20_performance_reports\clarkston-k12\2020-03-10-b_clarkston-k12_pass.pdf

Comment: Pass through K-20 router, 950Mbps.

Table of Contents

1. Setup	3
2. Summary	4
3. Optical [P1]/Port	7
4. EtherSAM Configuration	10
5. EtherSAM Results	16
6. Optical [P1]/Ethernet Framed Layer 2/Traffic Analyzer	20
7. Clock Synchronization	22
8. Software Options	24
9. Ping [P1]/Ping	25

1. Setup

1.1. IPversion Status

Port	IP Version
Port1	IPv4

1.2. Transceiver Mode

Item	Value
Transceiver Mode	10GigE LAN

2. Summary

2.1. Alarm

2.1.1. Alarms

2.1.1.1. Global

Alarm	H
Global	Fault
Log Full	No Fault

2.1.1.2. Physical

Alarm	H
LOS	No Fault
Frequency	No Fault
LOC	No Fault

Signal Analysis	Value
Pwr (dBm)	-2.7

Frequency Analysis	Value
Freq (bps)	10312533696.0
Offset (ppm)	3

2.1.1.3. WIS

No information is available

2.1.1.4. Ethernet

Alarm	H
Error	Fault
Link	No Fault
Fault	No Fault

2.1.1.5. Higher Layer Protocol

Alarm	H
Error	No Fault

2.1.1.6. Pattern

No information is available

2.1.1.7. Other

Alarm	H
SDT	No Fault

2.1.2. Logger**2.1.2.1. Logger Events**

ID	Date/Time	Data Path	Event	Duration	Count	Rate
1	2020-03-10 18:12:39	Test 1	Test Started			
2	2020-03-10 18:14:21	Optical [P1]/Ethernet Framed Layer 2/Traffic Stream/Stream[1]	Frame Loss	00:00:02	204	2.19E-05
3	2020-03-10 18:18:39	Optical [P1]/Ethernet Framed Layer 2/Traffic Stream/Stream[1]	Frame Loss	00:00:02	157	7.67E-06
4	2020-03-10 18:18:42	Optical [P1]/Ethernet Framed Layer 2/Traffic Stream/Stream[1]	Frame Loss	00:00:01	63	8.95E-06
5	2020-03-10 18:18:44	Optical [P1]/Ethernet Framed Layer 2/Traffic Stream/Stream[1]	Frame Loss	00:00:01	4	8.98E-06
6	2020-03-10 18:18:57	Optical [P1]/Ethernet Framed Layer 2/Traffic Stream/Stream[1]	Frame Loss	00:00:01	122	1.11E-05
7	2020-03-10 18:19:28	Optical [P1]/Ethernet Framed Layer 2/Traffic Stream/Stream[1]	Frame Loss	00:00:01	379	1.71E-05
8	2020-03-10 18:20:45	Optical [P1]/Ethernet Framed Layer 2/Traffic Stream/Stream[1]	Frame Loss	00:00:01	7	1.43E-05
9	2020-03-10 18:23:27	Test 1	Test Stopped			

2.2. Test

2.2.1. Test Status

Item	Value
Start Time:	2020-03-10 18:12:39
Port 1 Link	Up

2.2.2. Test Configuration

Item	Value
Application Type	EtherSAM (Y.1564)
Test Name	BV10.EtS
Test Description	

2.2.3. Test Preferences

No information is available

2.2.4. Clock Configuration

Item	Value
Clock Mode	Internal

2.2.5. Alarm Analysis

Alarm	H	Seconds
LOC	No Fault	0

2.2.6. Timer Configuration

Item	Value
Start Time Status	Disabled
Start Time	2015-07-20 12:19:45
Stop Time Status	Disabled
Stop Time	2015-07-20 12:19:45
Duration Status	Disabled
Duration	15 minutes
On/Off State	Disabled

3. Optical [P1]/Port

3.1. TX

3.1.1. Signal Analysis

Item	Value
Output Presence	Active

3.1.2. Alarm Generation

Item	Value
Type	LOS
On/Off	Disabled

3.1.3. Frequency

Item	Value
Frequency Offset (ppm)	0
On/Off	Disabled
Actual Frequency (bps)	10312499904
Nominal Frequency (bps)	10312500000

3.2. RX

3.2.1. Signal Analysis

Item	Value
Range (dBm)	-14.0 to 2.0
Power (dBm)	-2.7

3.2.2. Alarm Analysis

Alarm	H	Seconds
LOS	No Fault	0
Frequency	No Fault	0

3.2.3. Frequency Analysis

Item	Value
Frequency (bps)	10312533696
Frequency Offset (bps)	33696
Max. Negative Offset (bps)	0
Max. Positive Offset (bps)	33760

3.3. Interface**3.3.1. Configuration**

Item	Value
Flow Control	None

3.3.2. Status

Item	Value
Link	Up

3.4. Network**3.4.1. MAC Configuration**

Item	Value
MAC Address	00:03:01:08:9E:3D

3.4.1.1. VLAN

Item	Value
Enable VLAN	Disabled

3.4.2. IP Configuration

Item	Value
IP Address	10.10.114.173
Subnet Mask	255.255.255.0
Enable DHCP	Disabled
Enable Default Gateway	Disabled
Default Gateway	N/A

3.4.3. Frame Format

Item	Value
Format	Ethernet II
OUI	N/A

4. EtherSAM Configuration

4.1. Overview

4.1.1. EtherSAM Configuration Overview

Service	Profile	Enable	Service Name	Frame Size	CIR (Mbps)	Max Jitter (ms)	Max Latency (ms)	Frame Loss (%)	CBS (Bytes)
1	Data	Enabled	1Gb CIR	Random	950.0	2	28	0.01	N/A
2	Data	Disabled	Service 2	74	5000.0	2	15	0.1	N/A
3	Data	Disabled	Service 3	74	5000.0	2	15	0.1	N/A
4	Data	Disabled	Service 4	74	5000.0	2	15	0.1	N/A
5	Data	Disabled	Service 5	74	5000.0	2	15	0.1	N/A
6	Data	Disabled	Service 6	74	5000.0	2	15	0.1	N/A
7	Data	Disabled	Service 7	74	5000.0	2	15	0.1	N/A
8	Data	Disabled	Service 8	74	5000.0	2	15	0.1	N/A
9	Data	Disabled	Service 9	74	5000.0	2	15	0.1	N/A
10	Data	Disabled	Service 10	74	5000.0	2	15	0.1	N/A

4.1.2. Global Verdict

4.1.3. Enable Sub-Tests

Item	Value
Service Configuration Test	Enabled
Ramp Test	Enabled
Burst Test	Disabled
Service Performance Test	Enabled

4.1.4. Sub-Tests Duration

Item	Duration
Service Configuration Test	00d:00:00:20
Service Performance Test	00d:00:10:00

4.1.5. Total TX Rate (%)

Item	Value
Available	90.5
Committed	9.5

4.2. Services**4.2.1. 1Gb CIR****4.2.1.1. SLA Parameters**

Item	Value
CIR (Mbit/s)	950.0
CIR+EIR (Mbit/s)	N/A
Traffic Policing (Mbit/s)	N/A
CBS (Bytes)	N/A
EBS (Bytes)	N/A
Burst Max Rate (Mbit/s)	N/A
Max Jitter (ms)	2
Max Latency (ms)	28
Frame Loss (%)	0.01

4.2.1.2. Frame Configuration**4.2.1.2.1. Service Profile**

Item	Value
Profile Type	Data

4.2.1.2.2. Frame Configuration

Item	Value	Size
Data Link	Ethernet II	Random
Network	IPv4	Random
Transport	UDP	Random

4.2.1.3. MAC**4.2.1.3.1. Source**

Item	Value
MAC Address	00:03:01:08:9E:3D

4.2.1.3.2. Destination

Item	Value
MAC Address	08:4F:A9:4D:47:3F
Resolve MAC Address	Enabled
Status	Resolved

4.2.1.3.2.1. VLAN

Item	Value
Enable VLAN	Disabled

4.2.1.3.3. Frame Format

Item	Value
Format	Ethernet II
OUI	N/A
User Defined OUI	N/A
EtherType	0800

4.2.1.4. MPLS Configuration

Item	Value
Label #2	N/A
COS / EXP #2	N/A
TTL #2	N/A

4.2.1.5. IP**4.2.1.5.1. Source**

Item	Value
IP Address	68.179.213.10
Subnet Mask	255.255.255.254

4.2.1.5.1.1. IP Multiplier

Item	Value
Enable	Disabled
Range	N/A

4.2.1.5.2. Destination

Item	Value
IP Address	216.186.0.18
TTL	128
IP TOS/DS	00

4.2.1.5.2.1. Advanced TOS/DS

Item	Value
Enable Differentiated Services	Disabled

4.2.1.5.2.1.1. DS

No information is available

4.2.1.5.2.1.2. TOS

Item	Value
Precedence	000 (Routine)
Delay	Normal
Throughput	Normal
Reliability	Normal
Monetary Cost	Normal
Reserved Bit	0

4.2.1.5.2.2. Default Gateway

Item	Value
Enable	Enabled
Default Gateway	68.179.213.11

4.2.1.6. UDP**4.2.1.6.1. Source**

Item	Value
Port	49184

4.2.1.6.2. Destination

Item	Value
Port	7

4.2.1.7. Payload

No information is available

4.3. Ramp

Step List	Value (% of CIR)
Step Time (s)	5
Ramp Duration (s)	25

Step1 (%)	50.0
Step2 (%)	75.0
Step3 (%)	90.0
Step4	CIR
Step5	Traffic Policing

4.4. Burst

Item	Value
Number of Burst Sequence	2
Refill Delay Ratio (%)	50
Burst/IR Frame Ratio (%)	90

4.4.1. Burst Test

Service No.	CBS Test Time (s)	EBS Test Time (s)	Total Burst Test Time (s)
1	N/A	N/A	--
2	N/A	N/A	--
3	N/A	N/A	--
4	N/A	N/A	--
5	N/A	N/A	--
6	N/A	N/A	--
7	N/A	N/A	--
8	N/A	N/A	--
9	N/A	N/A	--
10	N/A	N/A	--
Total	0	0	0

5. EtherSAM Results

5.1. Overview

5.1.1. Global Progress

Item	Value
Test Status	Completed
Verdict	PASS

5.1.2. Configuration Test Overview

5.1.2.1. 1Gb CIR

Item	Value	Verdict
Frame Loss (%)	0.000	PASS
Max Jitter (ms)	0.101	PASS
Max Latency (ms)	8.567	PASS
Max RX Rate (Mbit/s)	949.991	PASS

5.1.3. Performance Test Overview

5.1.3.1. 1Gb CIR

Item	Value	Verdict
Average RX Rate (Mbps)	949.988	PASS
Frame Loss (%)	0.001	PASS
Max Jitter (ms)	0.139	PASS
Max Latency (ms)	9.518	PASS
Verdict	PASS	PASS

5.2. Service Configuration Test

5.2.1. 1Gb CIR

5.2.1.1. Service Verdict

Item	Verdict
Service Verdict	PASS

5.2.1.2. Max RX Rate

Item	Value	Verdict
Max RX Rate (Mbit/s)	949.991	PASS

5.2.1.3. Step 1

Item	Value	Verdict
Percentage of CIR	50.0	Not Applicable
Frame Loss (%)	0.000	PASS
Max Jitter (ms)	0.101	PASS
Max Latency (ms)	8.565	PASS
Verdict	PASS	PASS
Average RX Rate (Mbps)	474.994	N/A

5.2.1.4. Step 2

Item	Value	Verdict
Percentage of CIR	75.0	Not Applicable
Frame Loss (%)	0.000	PASS
Max Jitter (ms)	0.079	PASS
Max Latency (ms)	8.559	PASS
Verdict	PASS	PASS
Average RX Rate (Mbps)	712.499	N/A

5.2.1.5. Step 3

Item	Value	Verdict
Percentage of CIR	90.0	Not Applicable
Frame Loss (%)	0.000	PASS
Max Jitter (ms)	0.062	PASS
Max Latency (ms)	8.556	PASS
Verdict	PASS	PASS
Average RX Rate (Mbps)	854.999	N/A

5.2.1.6. Step CIR

Item	Value	Verdict
Frame Loss (%)	0.000	PASS
Max Jitter (ms)	0.051	PASS
Max Latency (ms)	8.567	PASS
Verdict	PASS	PASS
Average RX Rate (Mbps)	949.991	N/A

5.3. Service Performance Test**5.3.1. Port 1****5.3.1.1. 1Gb CIR****5.3.1.1.1. Sequence Tracking**

Error	H	Seconds	Count	Rate	Percentage
Out-Of-Sequence	No Fault	0	0	0.00E00	0.000
Frame Loss	Fault	9	936	1.07E-05	0.001

5.3.1.1.2. RX Rate

Item	Value
Minimum (%)	9.472
Maximum (%)	9.5
Current (%)	9.5
Average (%)	9.499
RX Frame Count	87887486

5.3.1.1.3. Round Trip Latency

Item	Value
Minimum (ms)	8.469
Maximum (ms)	9.518
Current (ms)	8.510
Average (ms)	8.514

5.3.1.1.4. Jitter

Item	Value
Minimum (ms)	< 0.015
Maximum (ms)	0.140
Current (ms)	< 0.015
Average (ms)	< 0.015
Number of Samples	87473729
Estimate (ms)	< 0.015

6. Optical [P1]/Ethernet Framed Layer 2/Traffic Analyzer

6.1. Eth. RX

6.1.1. Configuration

Item	Value
Oversize Monitoring	Disabled

6.1.2. Alarm Analysis

Alarm	H	Seconds
Link Down	No Fault	0
Local Fault	No Fault	0
Remote Fault	No Fault	0

6.1.3. Error Analysis

Error	H	Seconds	Count	Rate
Block	No Fault	0	0	0.00E00
FCS	No Fault	0	0	0.00E00
Jabber/Giant	No Fault	0	0	0.00E00
Oversize	N/A	N/A	N/A	N/A
Runt	No Fault	0	0	0.00E00
Undersize	No Fault	0	0	0.00E00
Total Error Count			0	

6.2. Eth. Stats

6.2.1. Total Frame Counts

	RX Count	TX Count
Total Count	90194405	90194792

6.2.2. Valid Frame Counts

Frames	TX Count	RX Count
Multicast	0	496
Broadcast	11	0
Unicast	90194781	90193909
N-Unicast	11	496
Total	90194792	90194405

6.2.3. Frame Size

Frame Size	Count	Total (%)
< 64	0	0.000
64	63618	0.071
65 - 127	3911683	4.337
128 - 255	7942362	8.806
256 - 511	15857581	17.582
512 - 1023	31725384	35.174
1024 - 1518	30693777	34.031
> 1518	0	0.000

6.2.4. Throughput

Item	Value
Bandwidth (Mbps)	0.0
Utilization (%)	0.0
Frame Rate (fps)	0

6.3. Higher Layers**6.3.1. Higher Layer Protocol**

Error	H	Seconds	Count	Rate
IP Header Checksum	No Fault	0	0	0.00E00
UDP Checksum	No Fault	0	0	0.00E00
TCP Checksum	No Fault	0	0	--

7. Clock Synchronization

7.1. RX

7.1.1. Configuration

Item	Value
Interface Type	None
Termination Mode	N/A
Line Coding	N/A
Framing	N/A

7.1.2. Alarm Analysis

Alarm	State
LOS	N/A
AIS	N/A
LOF	N/A
Frequency	N/A

7.1.3. Frequency Analysis

Item	Value
Frequency (bps)	--
Frequency Offset (ppm)	--

7.2. Backplane

7.2.1. Configuration

Item	Value
Clock Mode	Internal
Enable	Disabled

7.2.2. Alarm Analysis

Alarm	State
LOC	No Fault

7.3. Clock Out

7.3.1. Configuration

Item	Value
Clock Out Divider	16

8. Software Options

8.1. Available Options

Category	Name	Description	Status
Feature	SK-ADV-FILTERS	Advanced Traffic Filtering	Enabled
Feature	SK-DATA-CAPTURE	Ethernet Frame Capture for Advanced Troubleshooting	Disabled
Feature	SK-ETHERSAM	Ethernet Service Activation Methodology Application Type	Enabled
Feature	SK-IPV6	Internet Protocol Version 6 (IPv6)	Disabled
Feature	SK-MPLS	Multi Protocol Label Switching	Disabled
Feature	SK-PBB-TE	Provider Backbone Bridge with Traffic Engineering	Disabled
Feature	SK-TRAFFIC-SCAN	Traffic Scan Troubleshooting Feature	Disabled
Network	SK-LAN	Local Area Network	Enabled
Network	SK-WAN	Wide Area Network	Enabled

9. Ping [P1]/Ping

9.1. Configuration

9.1.1. Ping

9.1.1.1. Setup

Item	Value
IP Address	10.10.114.172
Run	Disabled

9.1.1.1.1. Configuration

Item	Value
Timeout (ms)	4000
Delay (ms)	1000
Data Size (Bytes)	32
Time To Live (TTL)	128
Attempts	4
Continuous	Disabled
Type Of Service (TOS)	00

9.1.1.2. Results

#	Status	Replied From	Bytes	Time (ms)	TTL
1	Successful	216.186.0.18	32	9	62
2	Successful	216.186.0.18	32	9	62
3	Successful	216.186.0.18	32	9	62
4	Successful	216.186.0.18	32	9	62

9.1.1.2.1. Statistics

Item	Value
TX (packets)	4
RX (packets)	4
Lost (%)	0
Minimum Round Trip Time (ms)	9
Maximum Round Trip Time (ms)	9
Average Round Trip Time (ms)	9

9.1.2. TraceRoute**9.1.2.1. Setup**

Item	Value
IP Address	10.10.114.172
Run	Disabled

9.1.2.1.1. Configuration

Item	Value
Timeout (ms)	4000
Max. Hop Count	128

9.1.2.2. Results

No information is available

9.1.2.2.1. Statistics

No information is available