

TEIN / Asi@Connect NOC Report

Zhonghui Li

6 Aug 2018

Outline

- TEIN General Operation Updates
- TEIN Backbone Traffic Statistics
- Total Traffic over TEIN Backbone

Outline

- **TEIN General Operation Updates**
- TEIN Backbone Traffic Statistics
- Total Traffic over TEIN Backbone

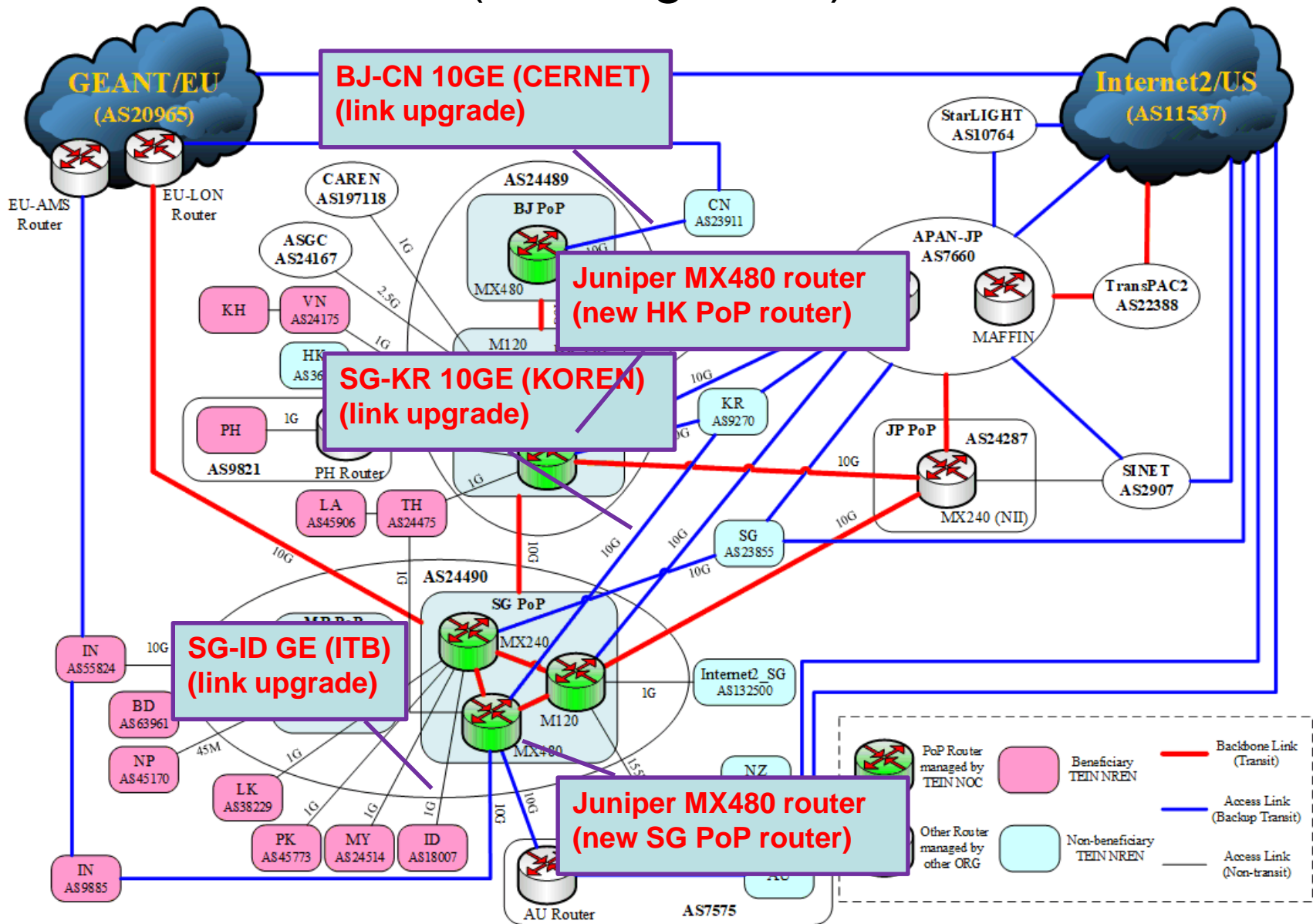
TEIN General Operation Updates

(Mar 2018 – Jul 2018)

- TEIN Topology
- Major Operation Issues
- Trouble Ticket Statistics
- Link Availability
- Link Utilization
- Peering Status

TEIN Topology

(~ 5 Aug 2018)

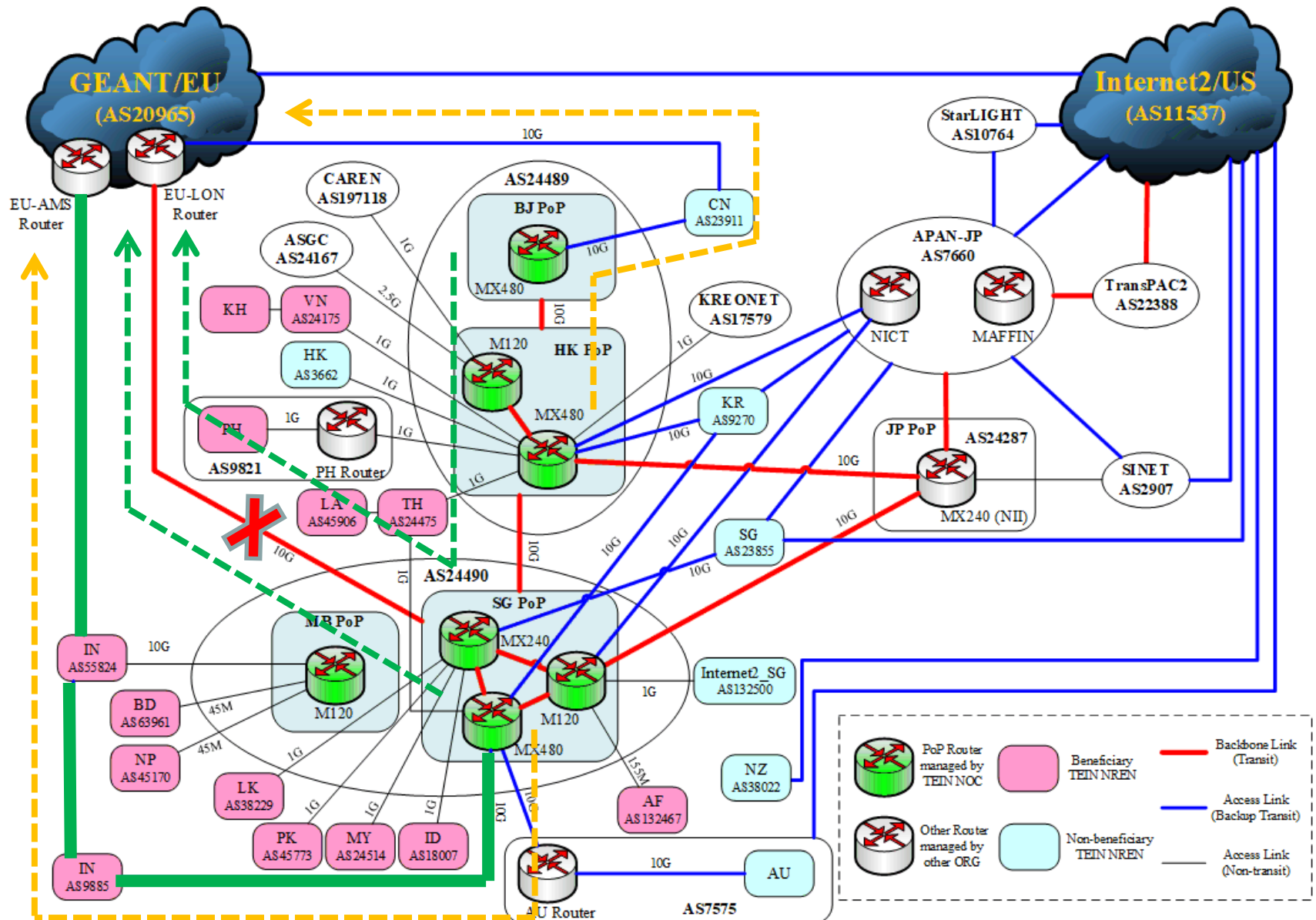


Major Operation Issues

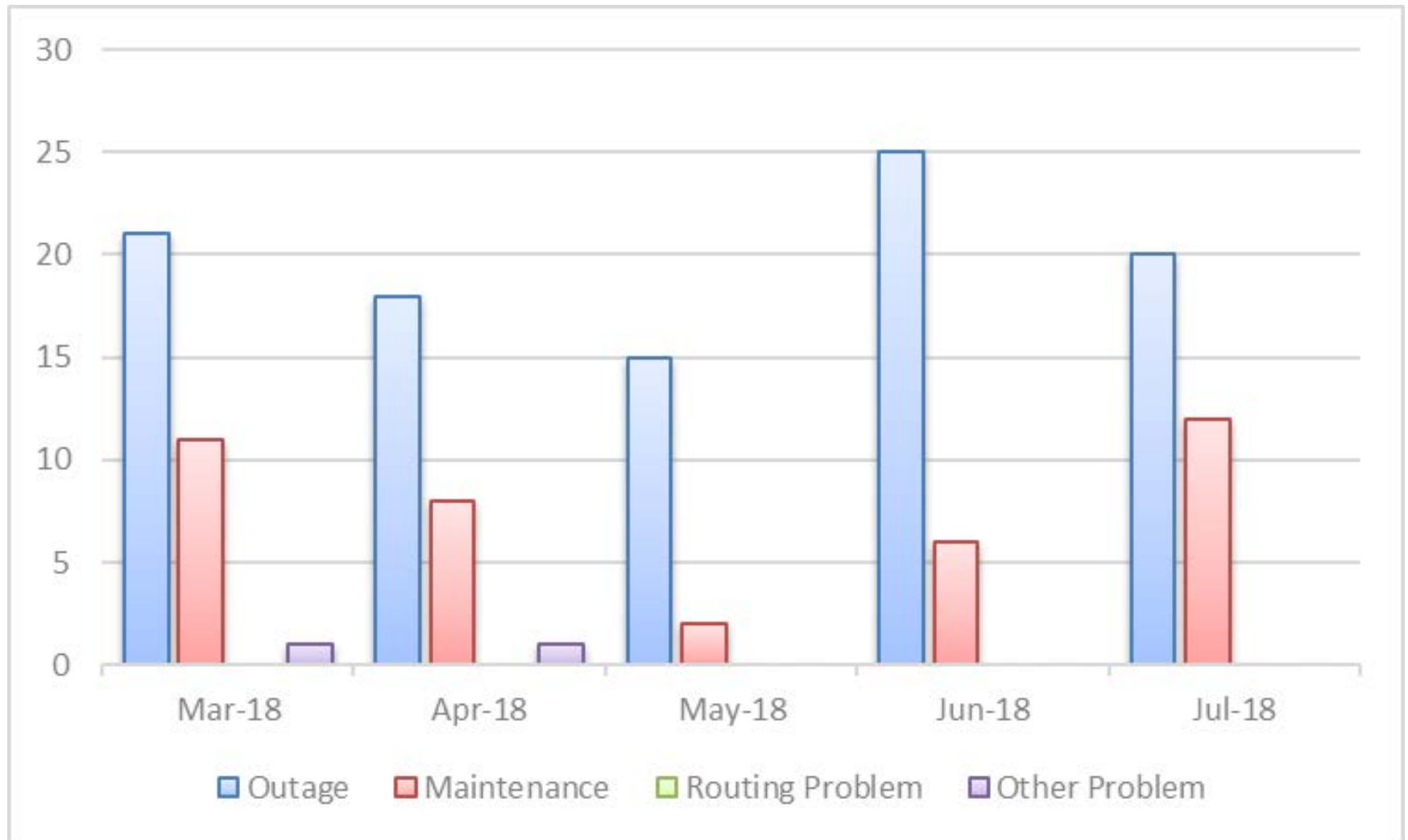
- Installed new Juniper MX480 router at HK PoP
 - 100GE x 4, 10GE x 20, GE x 40
 - Migrated most of circuits from HK M120 router to new HK MX480 router
- Installed new Juniper MX480 router at SG PoP
 - 100GE x 4, 10GE x 20, GE x 40
 - Migrated part of circuits from SG M120/MX240 router to new SG MX480 router
 - **SG-TH GE link is still down due to IHW issue after migration**
- Upgraded SG-KR link from GE to 10GE
- Upgraded SG-ID link from STM4 to GE
- Upgraded BJ-CN link from 2xGE to 10GE
- Activated backup path for TEIN-EU traffic via NKN



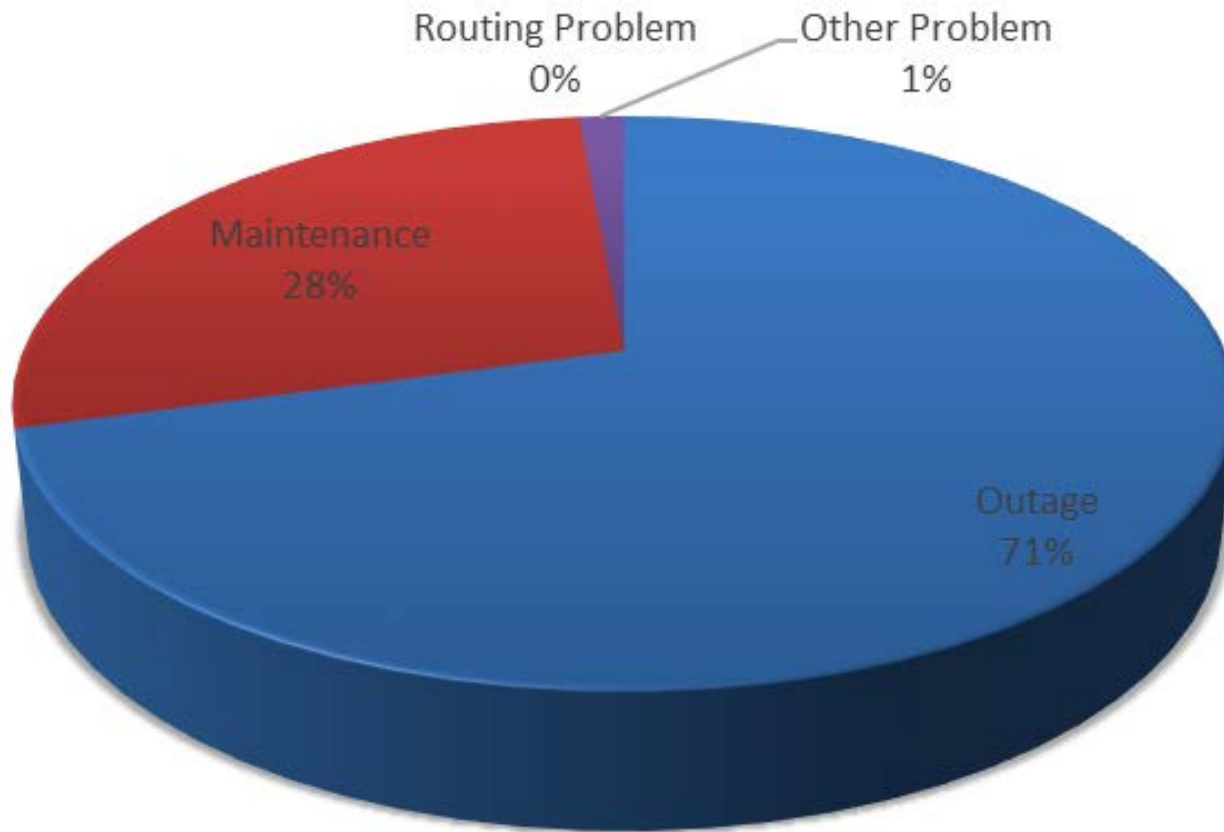
Backup path for TEIN-EU traffic via NKN



Trouble Ticket Statistics



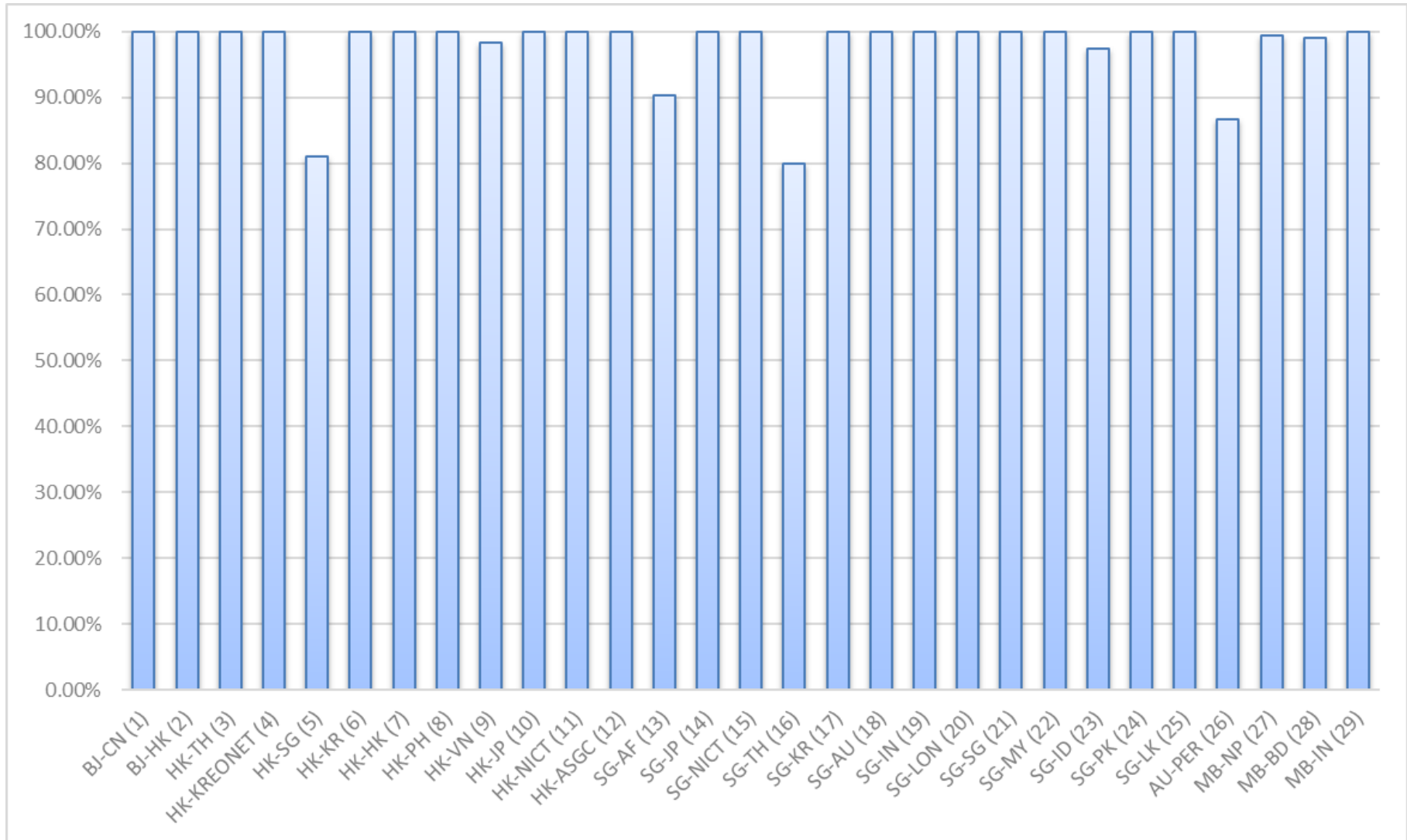
Trouble Ticket Statistics



■ Outage ■ Maintenance ■ Routing Problem ■ Other Problem

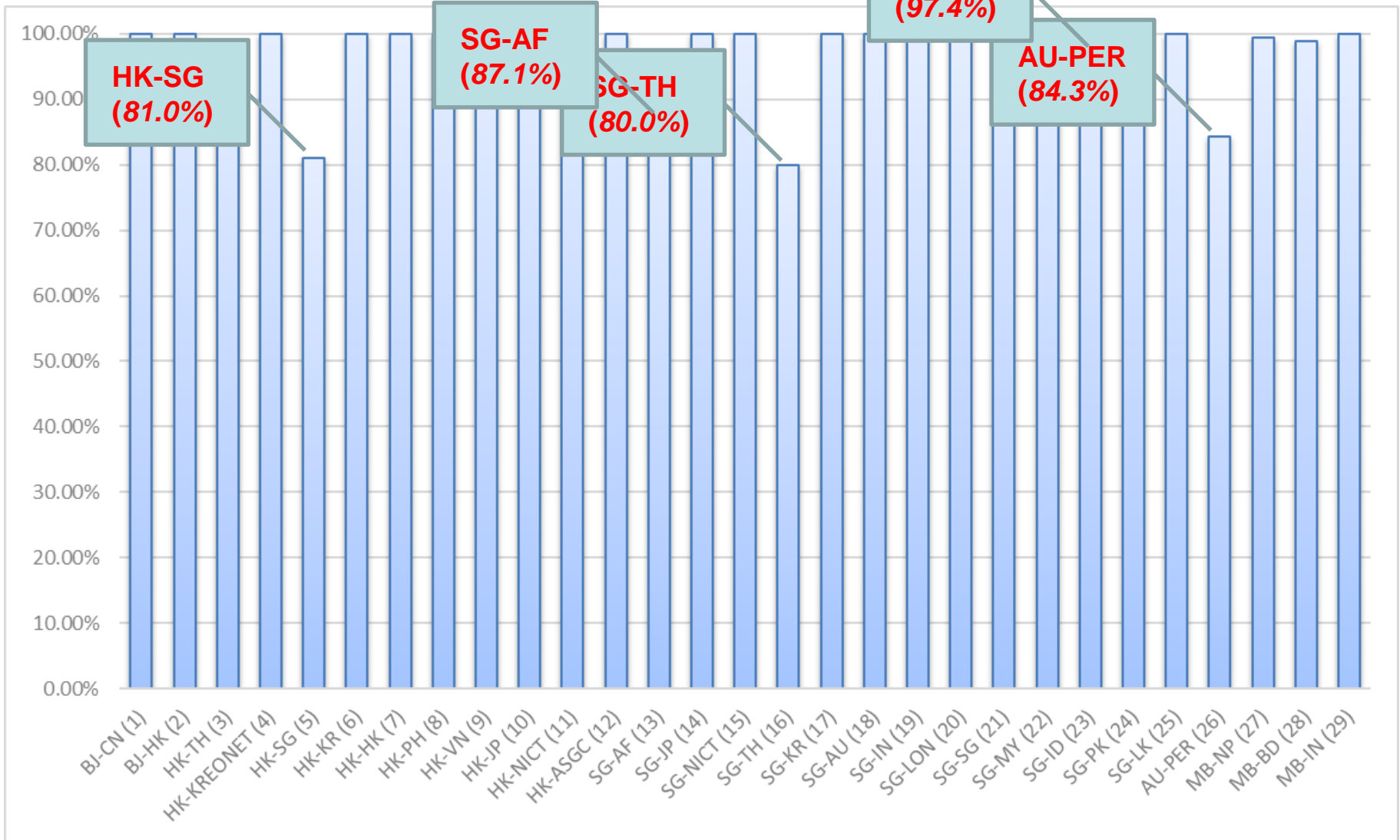
Link Availability

(w/o maintenance)

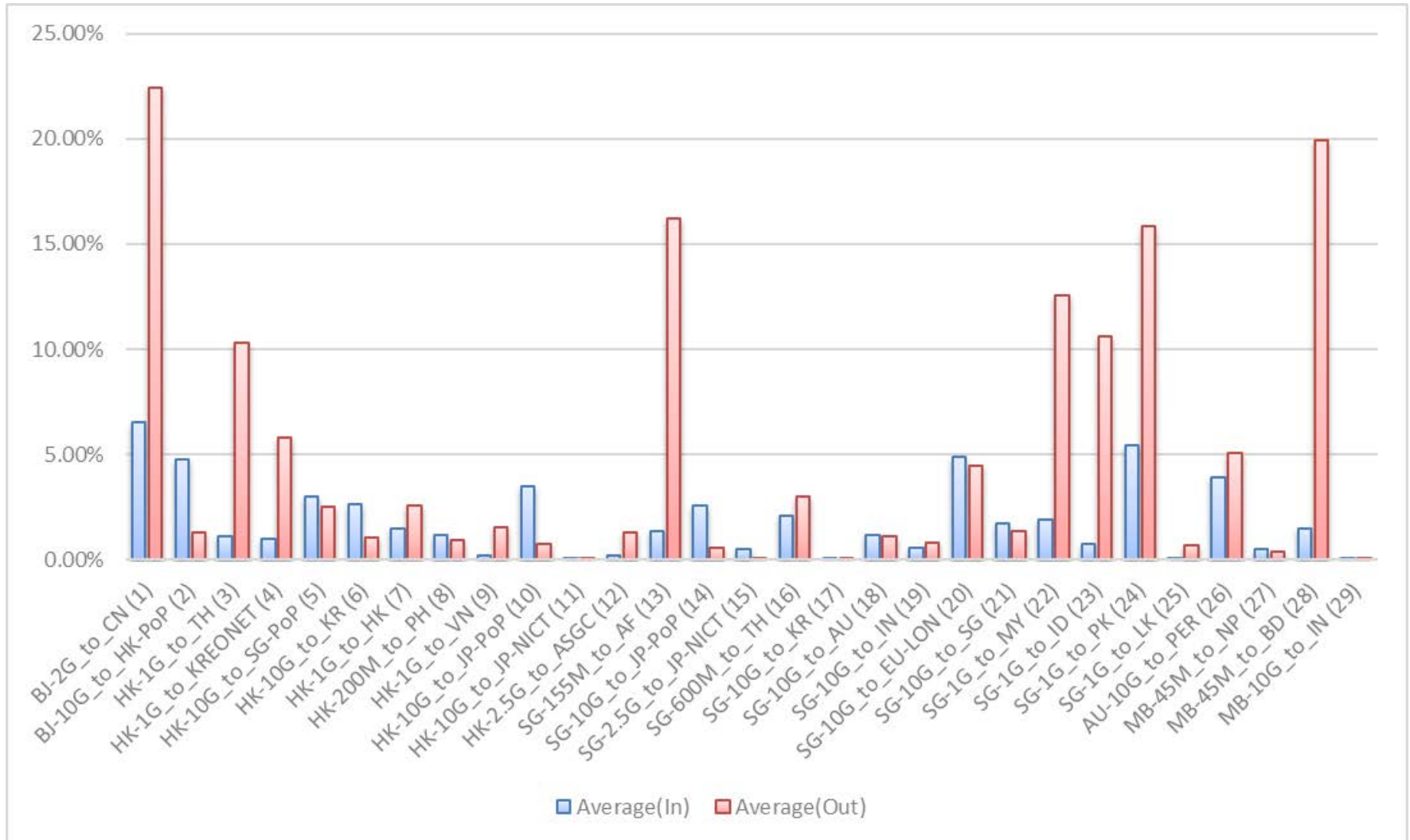


Link Availability

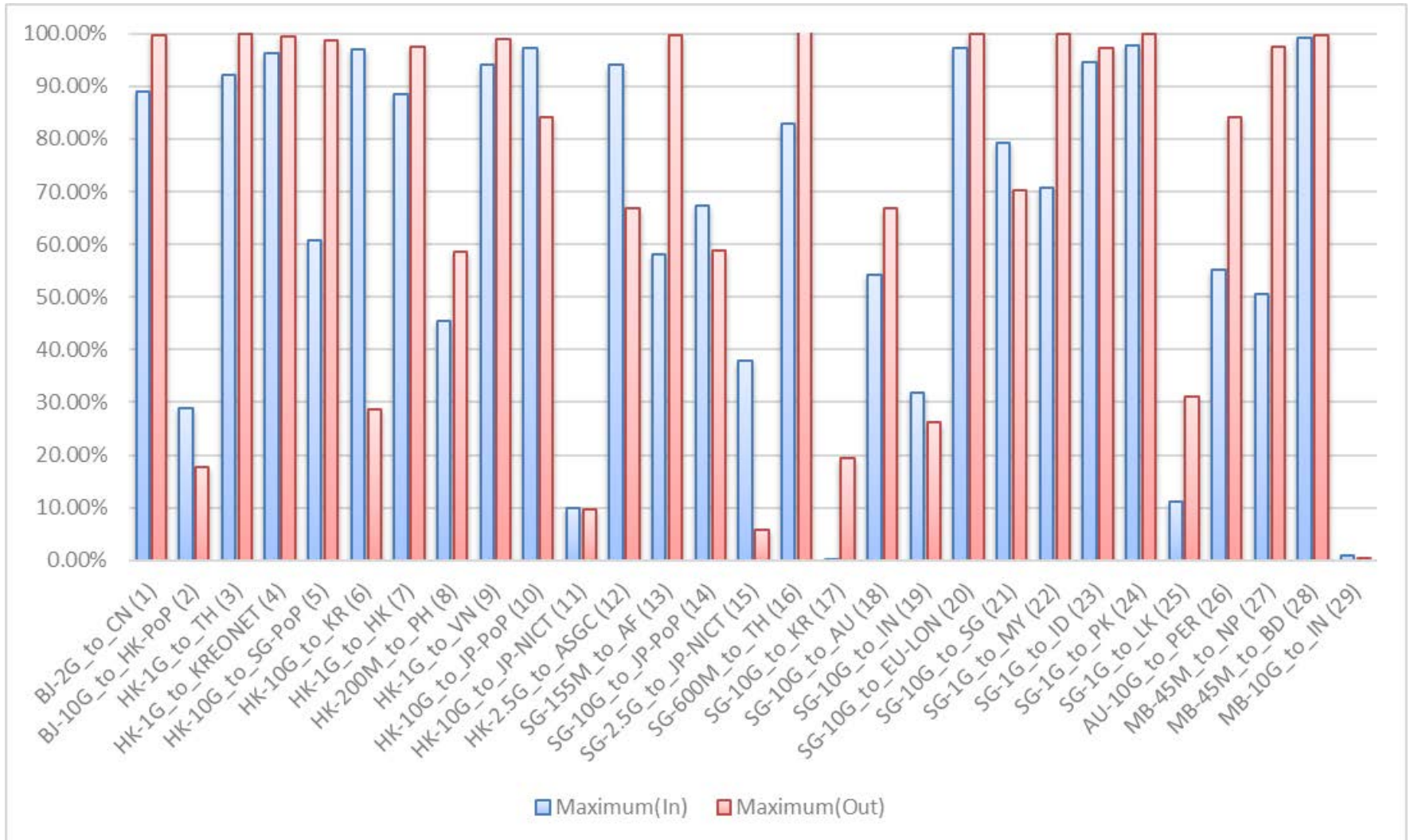
(with maintenance)



Link Utilization (average)



Link Utilization (maximum)



Peering Status

(~ 5 Aug 2018)

[illegible]

Outline

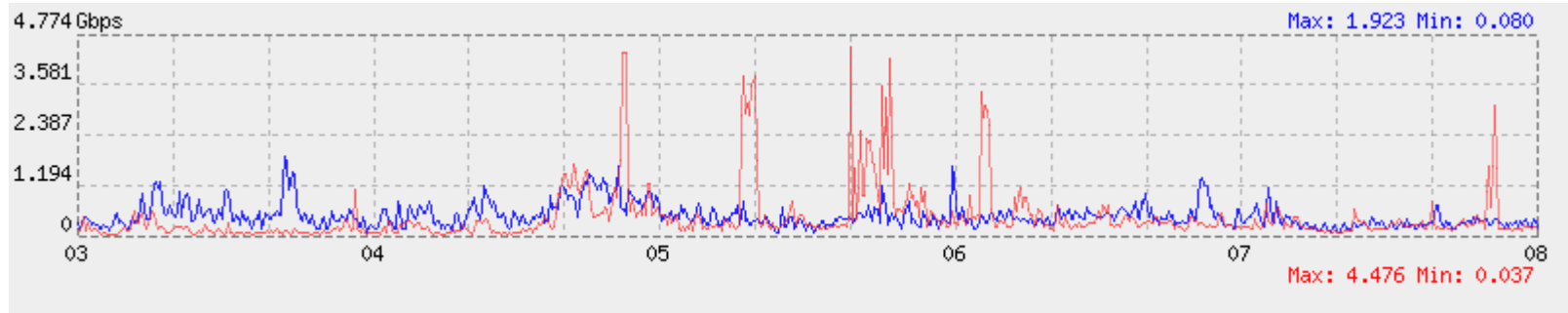
- TEIN General Operation Updates
- **TEIN Backbone Traffic Statistics**
- Total Traffic over TEIN Backbone

TEIN Backbone Traffic Statistics

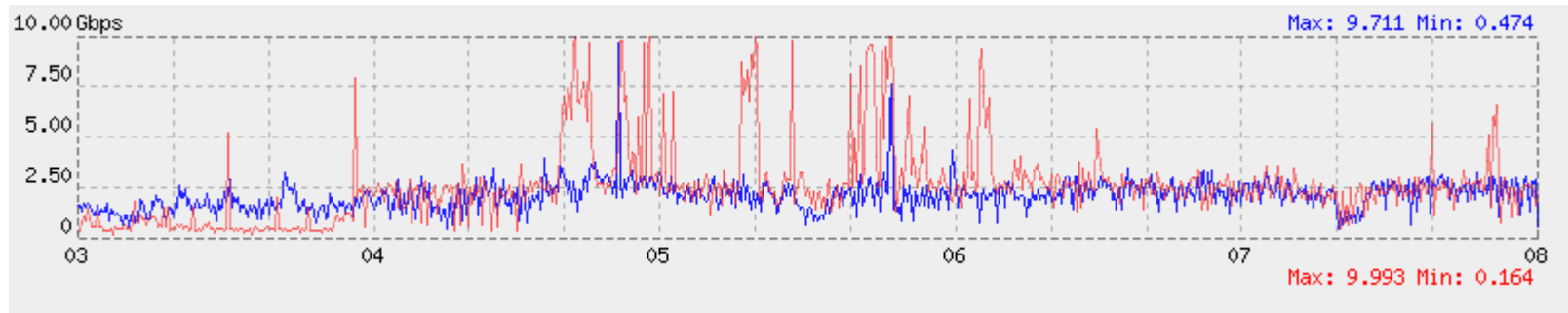
- One TEIN-EU link and all NREN access links (operated by TEIN NOC)
- Time scale
 - 1 Mar 2018 ~ 31 Jul 2018
- Statistics
 - Traffic graph (Average & Maximum)
 - AS Top10
 - IPv4 only (exclusive of L2VPN traffic)
 - Inbound only (more details in monthly report)

SG-LON 10G

Avg



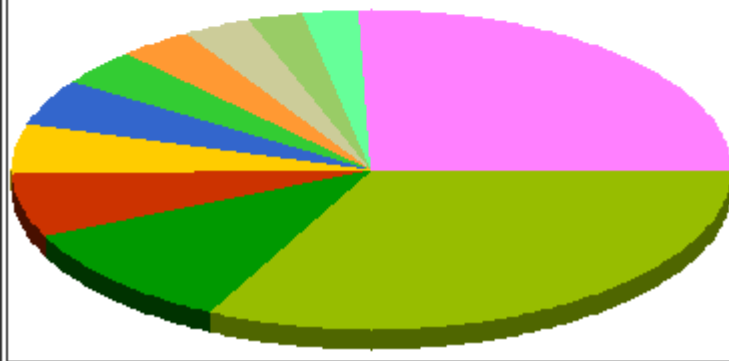
Max



SG-LON 10G

Src

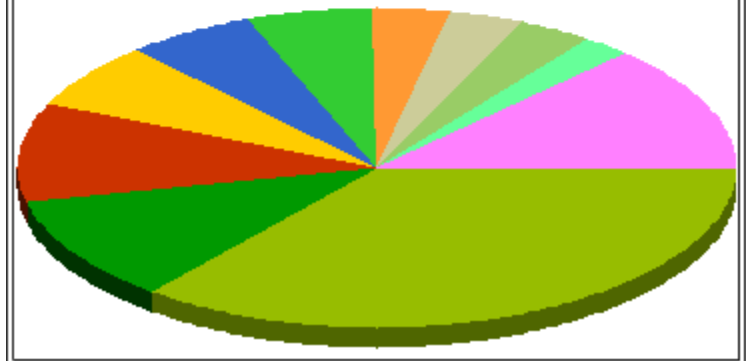
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
786	1.8G	0	2.5T	0
31705	644.1M	0	800.3G	0
513	346.5M	0	485.8G	0
680	316.6M	0	401.9G	0
137	314.0M	0	363.6G	0
13041	196.9M	0	281.2G	0
559	206.7M	0	243.9G	0
43115	154.4M	0	223.0G	0
23456	148.8M	434.3M	193.8G	463.7G
766	141.4M	0	189.1G	0
Other	1.6G	2.4G	1.9T	2.7T



AS786: JANET (UK)
 AS31705: EUMETSAT (Germany)
 AS513: CERN (Switzerland)

Dest

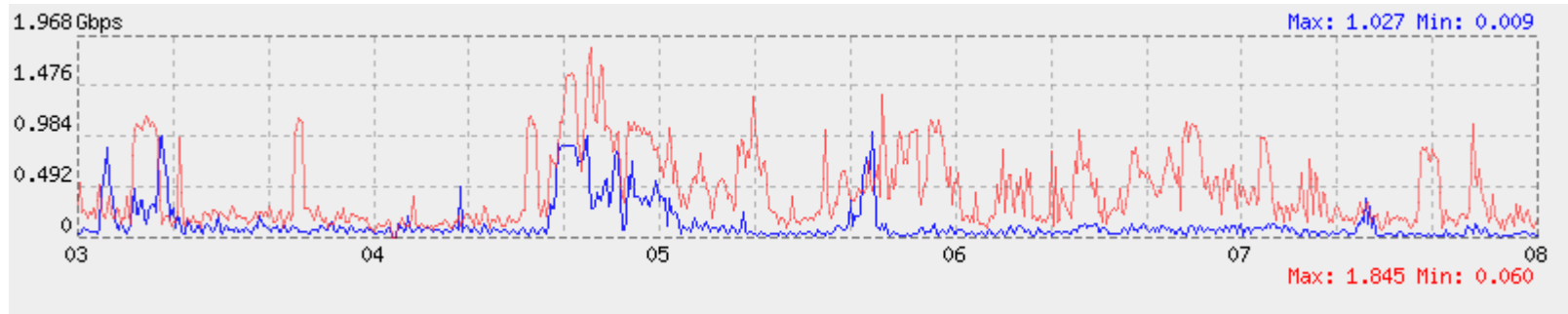
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
45773	0	2.0G	0	2.5T
24490	53.9M	653.5M	20.8G	748.8G
7472	13	652.8M	2.2K	732.2G
23456	148.8M	434.3M	193.8G	463.7G
9419	5	379.1M	419	417.4G
7497	27	329.5M	3.1K	385.2G
23767	0	200.9M	0	254.3G
4528	0	194.4M	0	240.5G
9686	0	168.3M	0	229.7G
3363	0	128.2M	0	164.0G
Other	84.4M	722.2M	99.2G	895.1G



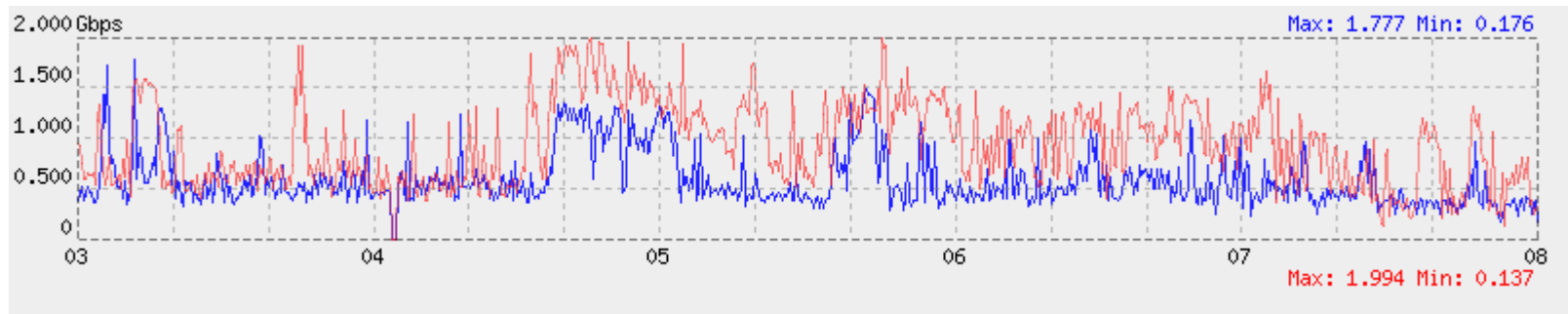
AS45773: PERN (Pakistan)
 AS24490: TEIN-SOUTH (TEIN)
 AS7472: National University of Singapore (Singapore)

CERNET 2x1G

Avg



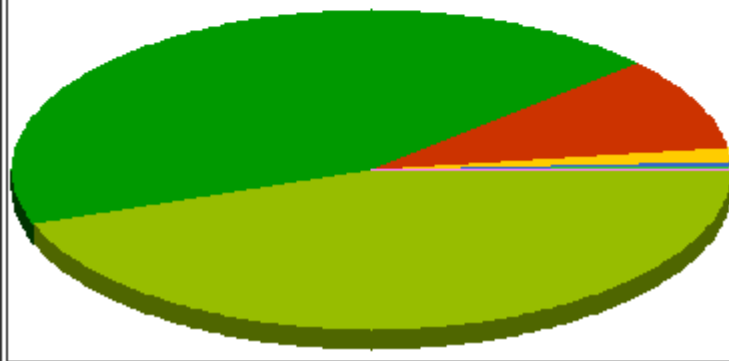
Max



CERNET 2x1G

Src

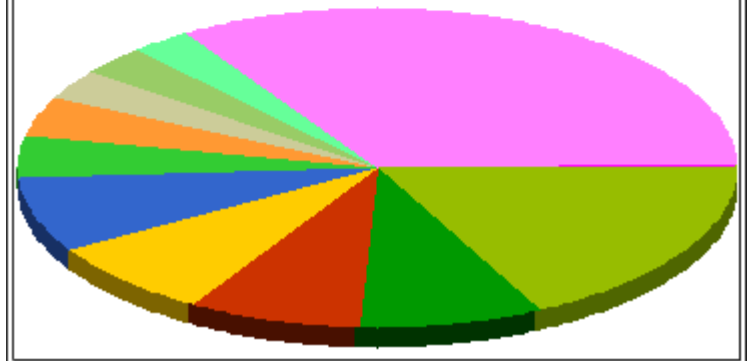
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
4538	838.6M	88	449.8G	72.4K
7497	511.3M	24.3K	445.0G	13.9M
23911	86.8M	0	94.4G	0
24489	118.0M	117.8M	15.4G	37.7G
18011	5.2M	0	3.5G	0
24134	5.5M	0	1.9G	0
23910	2.7M	2	911.7M	164
9401	587.6K	0	375.5M	0
1942	168.9K	154	253.1M	11.2K
786	200.3K	40.7K	242.2M	11.3M
Other	2.5M	1.2G	1.5G	684.2G



AS4538: CERNET (China)
 AS7497: CSTNET (China)
 AS23911: CNGI-6IX (China)

Dest

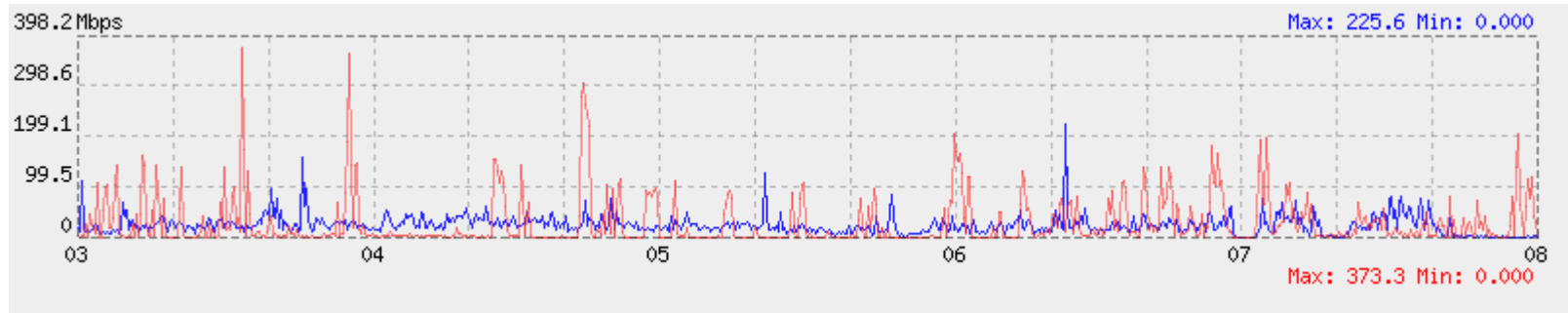
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
10052	0	136.1M	0	167.7G
1237	4.4K	98.7M	283.3K	77.5G
7575	273	238.1M	226.2K	74.1G
24490	60.2K	86.9M	7.0M	74.0G
513	93.5K	72.9M	118.5M	69.6G
7472	25	60.2M	5.9K	42.9G
24489	118.0M	117.8M	15.4G	37.7G
56132	4	44.9M	504	29.9G
55824	67	30.0M	17.3K	29.8G
9419	9	44.3M	1.2K	26.9G
Other	1.4G	641.5M	897.2G	313.5G



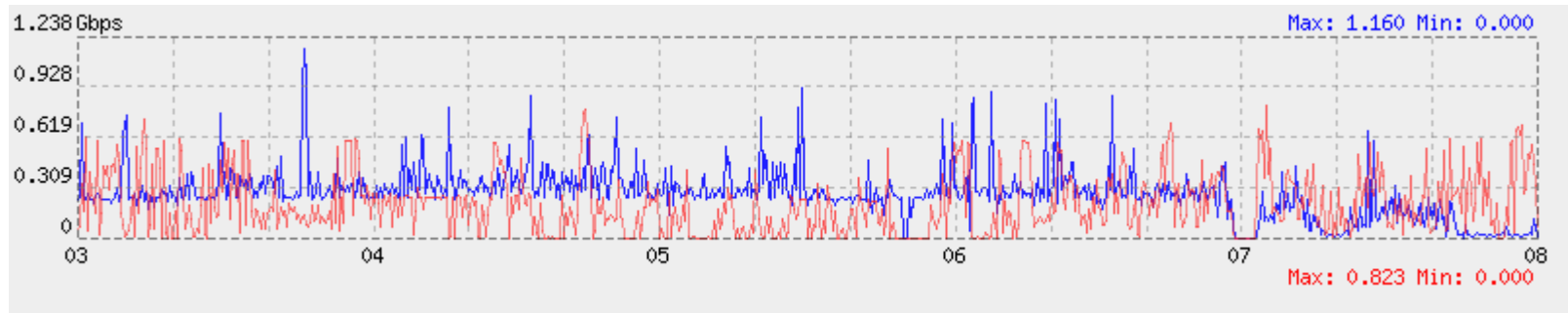
AS10052: Kyungpook National University
 (South Korea)
 AS1237: KREONET (South Korea)
 AS7575: AARNet (Australia)

ThaiREN 1G+600M

Avg



Max



ThaiREN 1G+600M

(Flow data from HK-TH GE link only)

Src

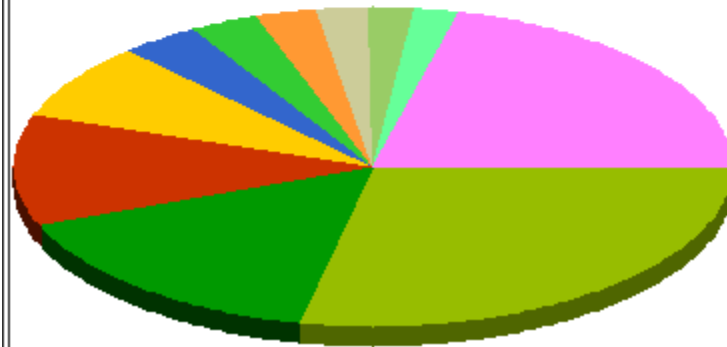
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
24489	156.5M	33.6K	102.4G	3.9M
3839	32.5M	0	31.3G	0
23456	128.6K	654.7K	66.3M	277.6M
2907	8.0K	25.8K	7.3M	14.1M
1103	4.3K	1.9M	4.0M	1002.2M
680	4.0K	7.2M	3.7M	1.8G
786	3.8K	7.7M	3.4M	3.7G
4538	3.1K	26.7M	2.9M	19.5G
1659	2.6K	1.2M	2.4M	848.7M
137	1.4K	3.7M	1.3M	862.8M
Other	72.6K	120.9M	60.4M	90.6G



AS24489: TEIN-NORTH (TEIN)
 AS3839: Chulalongkorn University
 (Thailand)
 AS23456: Aggregation of 4-byte AS

Dest

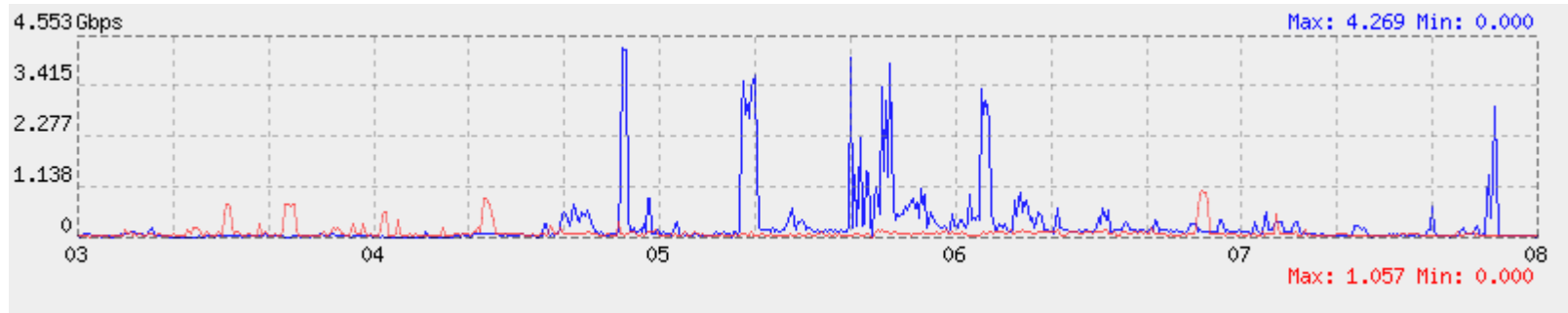
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
19679	13	49.7M	11.8K	35.5G
4538	3.1K	26.7M	2.9M	19.5G
7575	698	11.1M	635.4K	14.1G
513	228	7.6M	207.0K	9.6G
7539	49	7.4M	44.7K	4.6G
786	3.8K	7.7M	3.4M	3.7G
9821	0	10.1M	0	3.4G
789	28	2.3M	25.5K	2.8G
24134	40	4.1M	36.5K	2.6G
777	167	1.9M	152.6K	2.5G
Other	156.7M	60.5M	102.6G	26.4G



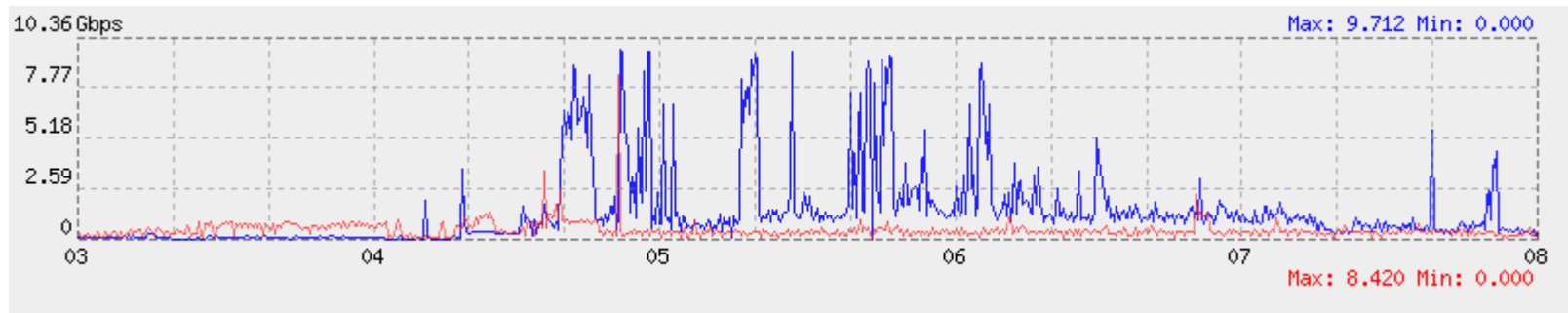
AS19679: DROPBOX (USA)
 AS4538: CERNET (China)
 AS7575: AARNet (Australia)

KOREN 10G+1G/10G

Avg



Max

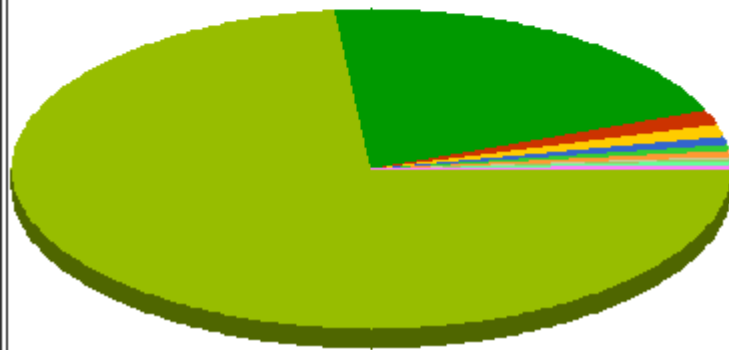


KOREN 10G+1G/10G

(Flow data from HK-KR 10GE link only)

Src

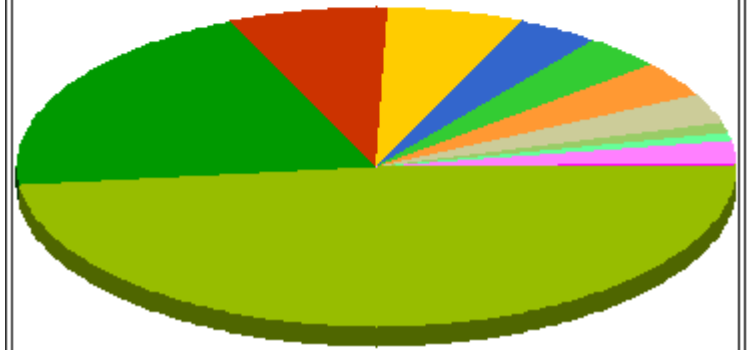
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
10052	554.7M	0	648.0G	0
9270	137.7M	0	182.7G	0
9488	20.9M	0	15.4G	0
17862	13.1M	0	10.1G	0
1781	13.6M	0	7.1G	0
10197	14.6M	0	6.0G	0
9686	41.8M	0	3.8G	0
10063	3.4M	0	3.2G	0
17870	4.1M	0	1.7G	0
9452	1.4M	0	1.3G	0
Other	16.1M	379.3M	4.0G	363.7G



AS10052: Kyungpook National University (South Korea)
 AS9270: KOREN (South Korea)
 AS9488: Seoul National University (South Korea)

Dest

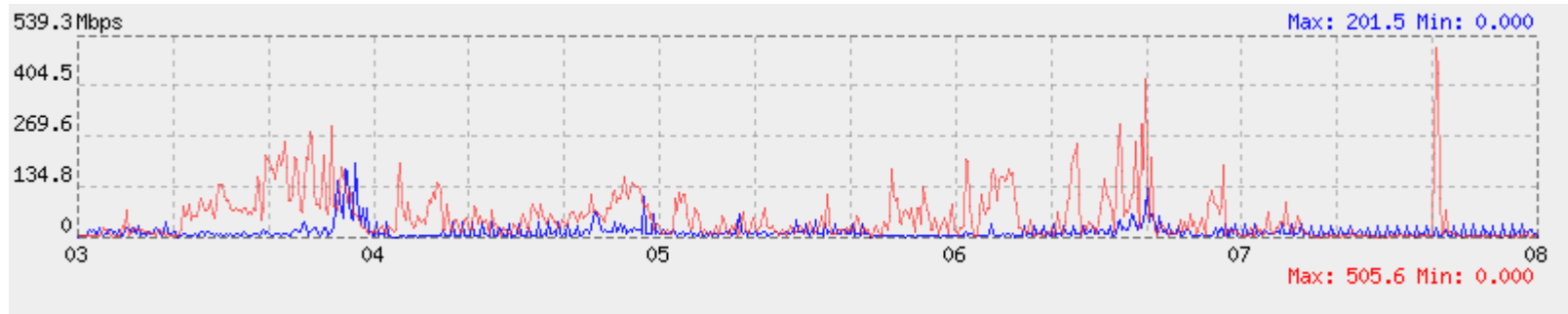
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
513	0	372.3M	0	397.2G
680	17	131.3M	3.4K	166.2G
786	96	89.1M	104.1K	60.5G
137	6	41.6M	1.9K	50.7G
789	106	38.5M	6.0K	30.8G
766	0	24.4M	0	29.4G
4538	5.4K	33.3M	705.3K	28.9G
43115	0	20.4M	0	26.0G
45773	14	5.7M	728	7.6G
1659	2	6.1M	628	6.3G
Other	112.5K	58.6M	18.3M	19.1G



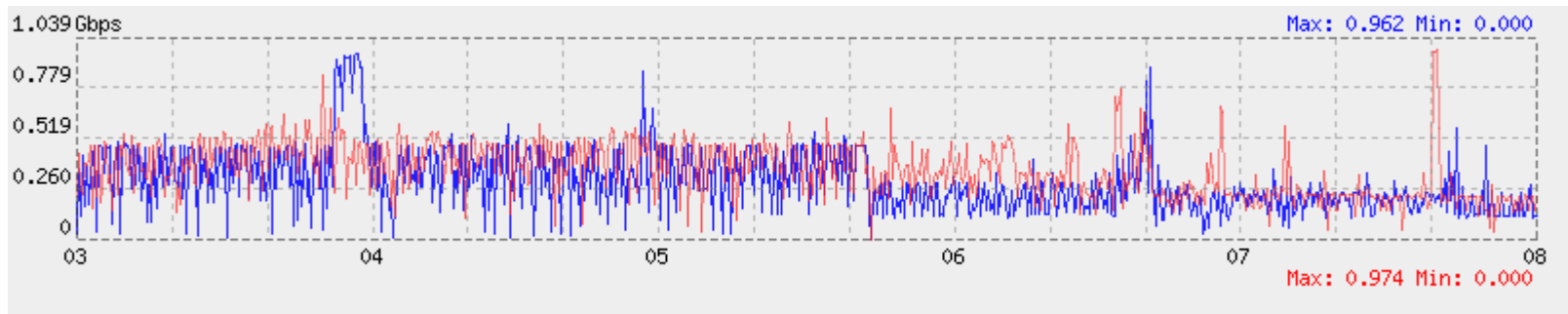
AS513: CERN (Switzerland)
 AS680: DFN (Germany)
 AS786: JANET (UK)

HARNET 1G

Avg



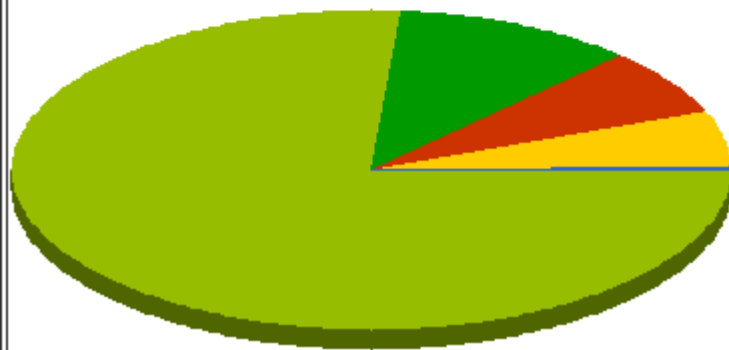
Max



HARNET 1G

Src

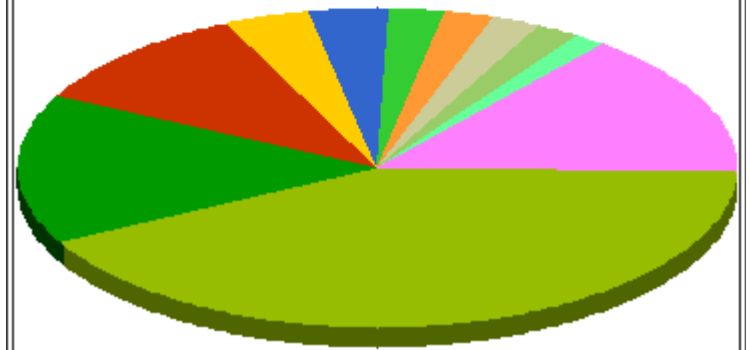
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
3661	133.6M	0	119.8G	0
3662	12.8M	0	17.1G	0
4158	14.1M	0	10.3G	0
3363	70.0M	0	8.5G	0
4605	1.4M	0	882.5M	0
7651	58.3K	0	68.0M	0
24489	450.6K	909.6K	20.4M	41.0M
4616	11.9K	0	9.5M	0
4528	66.8K	0	5.6M	0
7650	281	0	386.0K	0
Other	1.4K	22.6M	135.5K	22.3G



AS3661: Chinese University (Hong Kong)
 AS3662: JUCC (Hong Kong)
 AS4158: City University (Hong Kong)

Dest

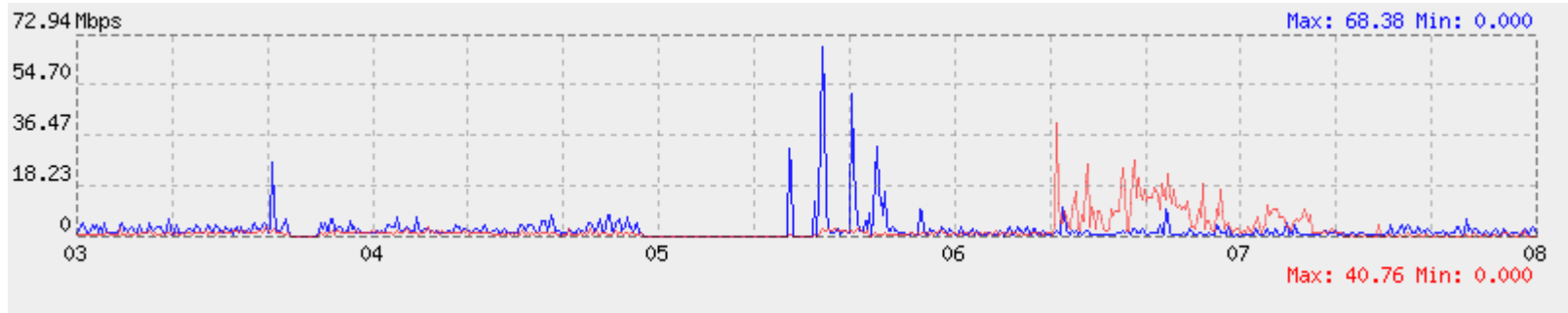
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
7497	0	49.7M	0	61.2G
4538	1.4K	22.6M	125.1K	22.3G
17934	0	12.1M	0	15.3G
786	0	11.5M	0	5.5G
24167	0	13.8M	0	5.2G
789	0	4.2M	0	3.8G
160	0	52.8M	0	3.3G
513	0	15.5M	0	3.3G
1754	0	2.0M	0	2.7G
766	0	1.5M	0	1.9G
Other	450.6K	46.9M	20.4M	21.5G



AS7497: CSTNET (China)
 AS4538: CERNET (China)
 AS17934: JPNIC (Japan)

ASTI 1G

Avg



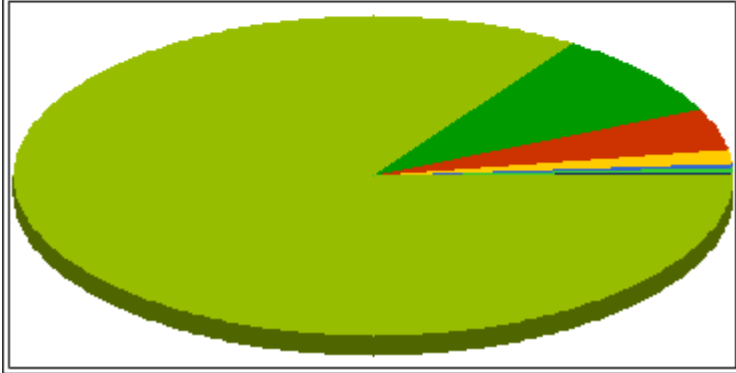
Max



ASTI 1G

Src

AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
9821	42.4M	0	13.9G	0
23862	3.9M	0	1.4G	0
24489	1.5M	1.4M	686.2M	80.6M
23456	1.1M	15.9M	217.0M	2.3G
45209	558.5K	0	97.4M	0
18188	86.2K	0	41.4M	0
45600	22.2K	0	16.2M	0
63848	138.2K	0	15.7M	0
18125	6.9K	0	662.6K	0
58706	6.0K	0	499.4K	0
Other	1.2K	12.9K	110.2K	9.2M



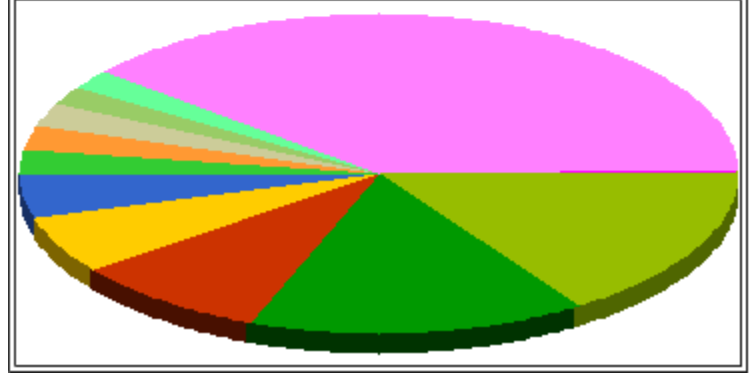
AS9821: ASTI (Philippines)

AS23862: University of Diliman (Philippines)

AS24489: TEIN-NORTH (TEIN)

Dest

AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
55824	0	3.7M	0	2.4G
23456	1.1M	15.9M	217.0M	2.3G
24514	0	2.5M	0	1.4G
786	0	2.4M	0	933.0M
4538	0	1.5M	0	696.0M
7497	0	478.3K	0	405.1M
680	0	4.7M	0	374.7M
2611	0	665.5K	0	333.3M
2018	0	575.2K	0	323.2M
8094	0	341.4K	0	320.0M
Other	1.5M	17.1M	686.2M	5.9G



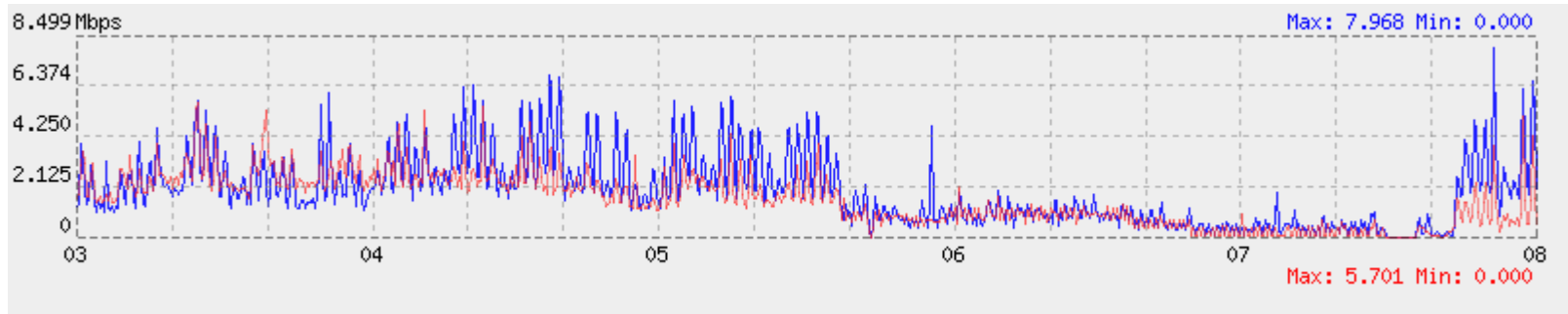
AS55824: NKN (India)

AS23456: Aggregation of 4-byte AS

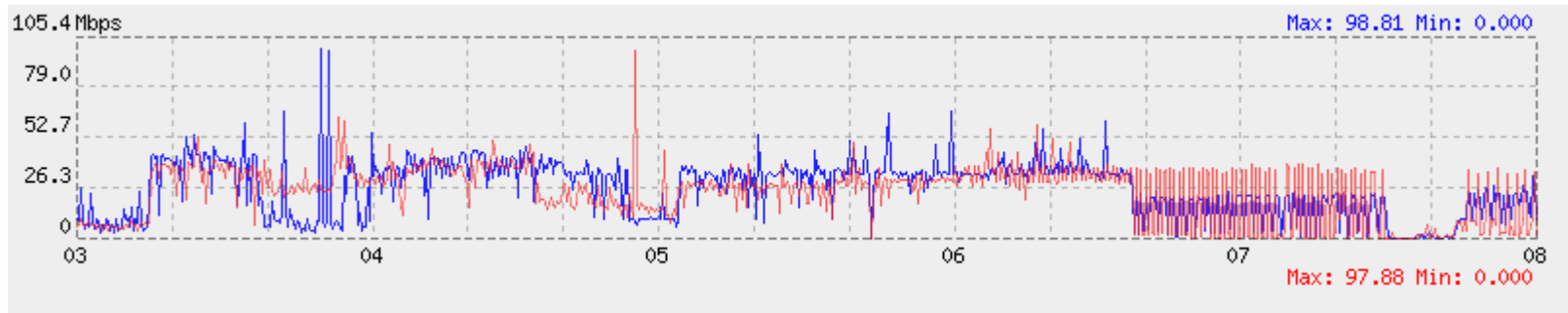
AS24514: MYREN (Malaysia)

VinaREN 1G

Avg

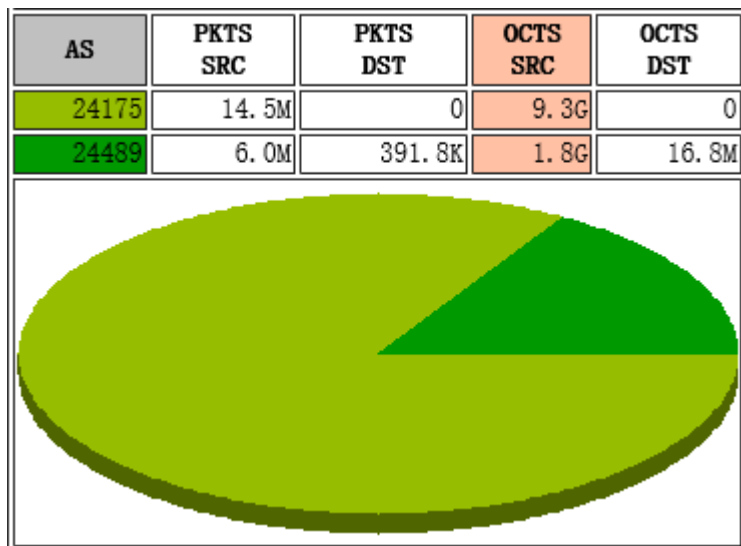


Max



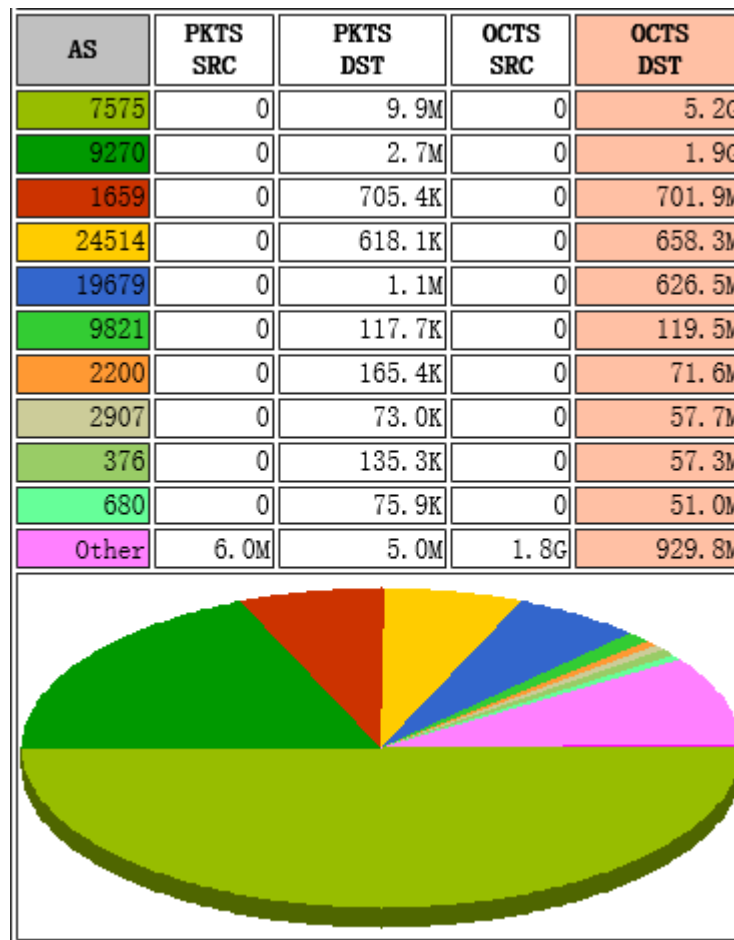
VinaREN 1G

Src



AS24715: VinaREN (Vietnam)
AS24489: TEIN-NORTH (TEIN)

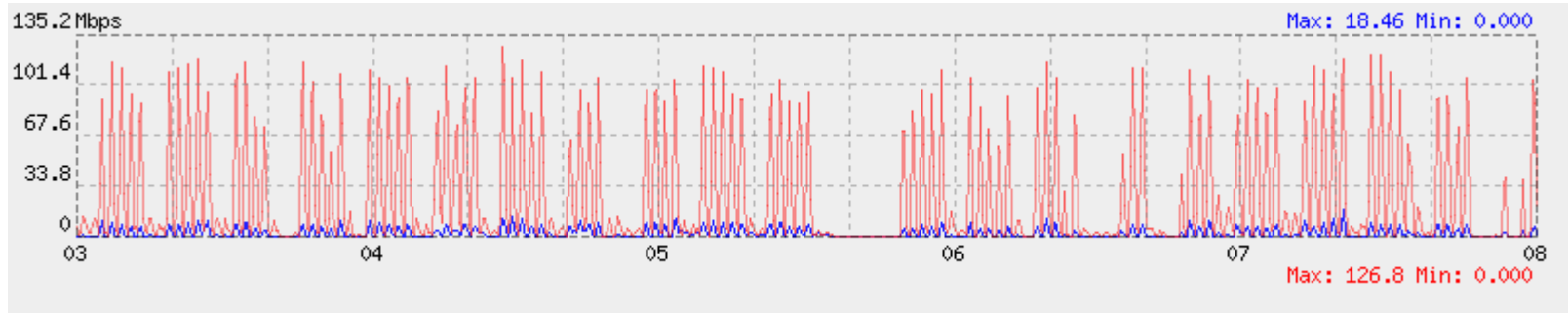
Dest



AS7575: AARNet (Australia)
AS9270: KOREN (South Korea)
AS1659: TANET (Taiwan)

AfgREN 155M

Avg

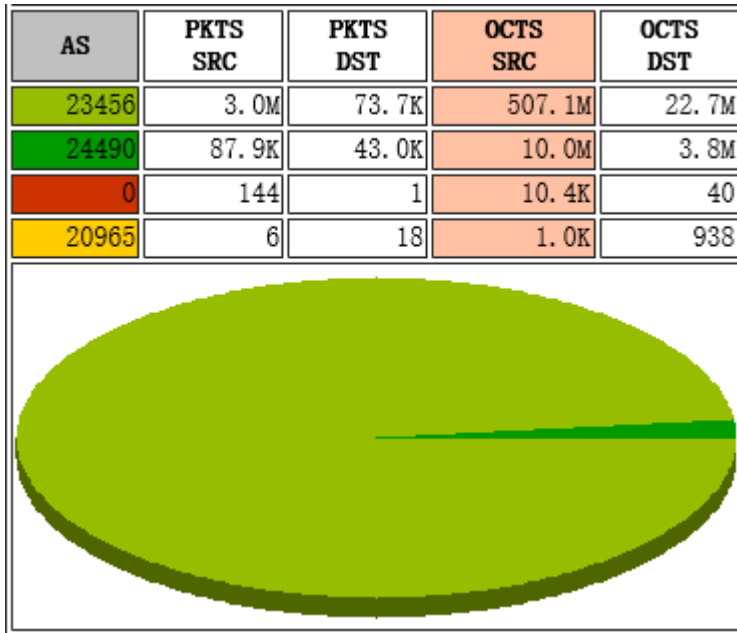


Max



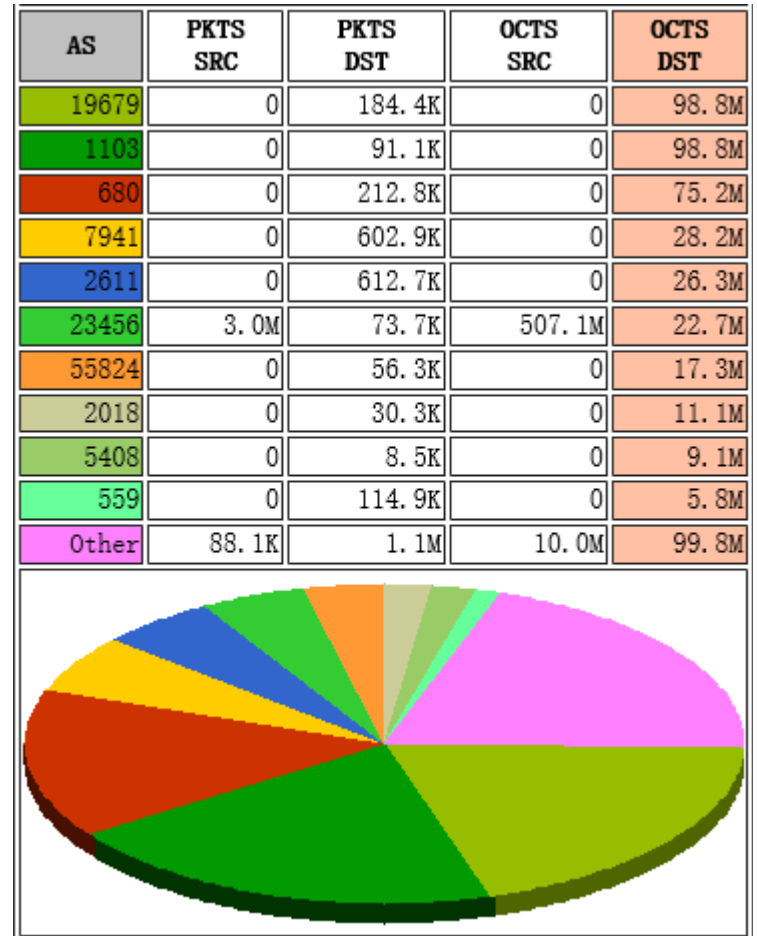
AfgREN 155M

Src



AS23456: Aggregation of 4-byte AS
AS24490: TEIN-SOUTH (TEIN)

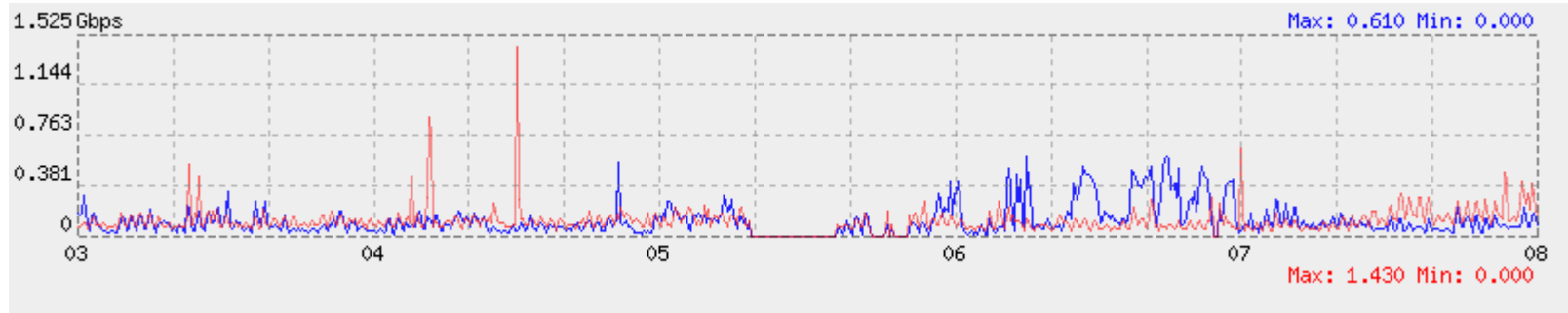
Dest



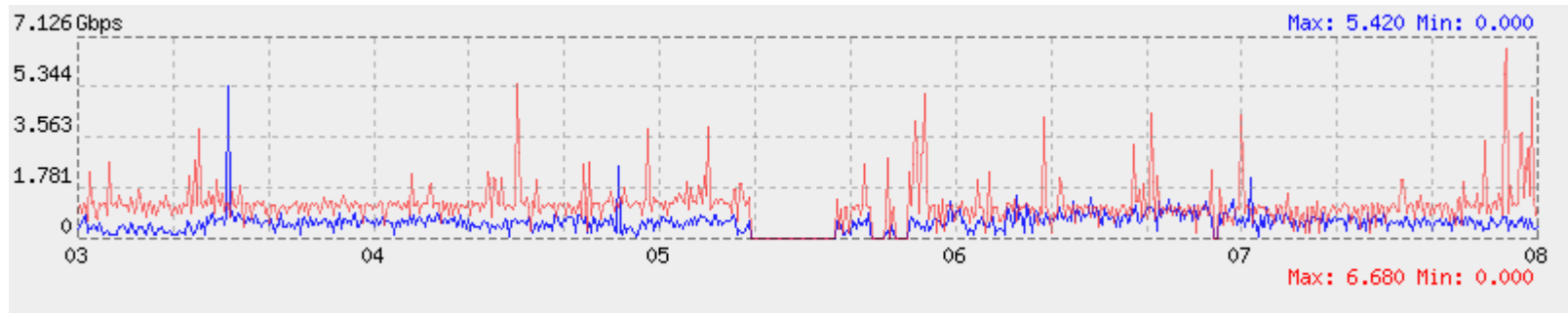
AS19679: DROPBOX (USA)
AS1103: SURFnet (Netherlands)
AS680: DFN (Germany)

AARNet 10G

Avg



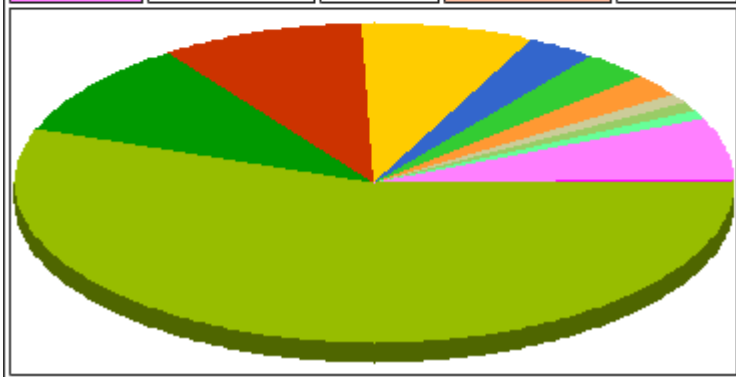
Max



AARNet 10G

Src

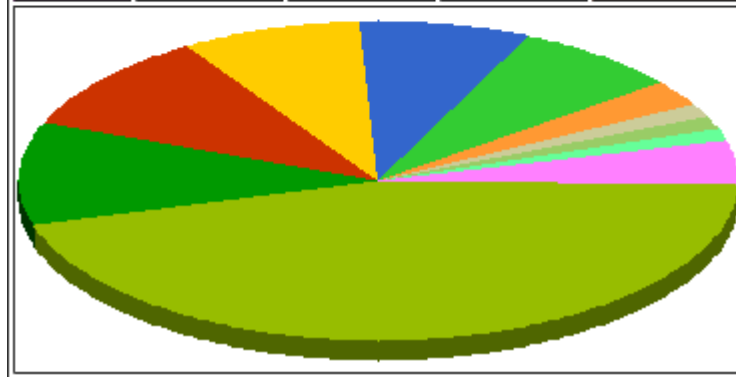
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
7575	1.3G	0	1.6T	0
23456	214.2M	9.2M	280.9G	5.1G
10148	269.2M	0	263.5G	0
56132	204.7M	0	220.9G	0
160	60.8M	0	87.5G	0
7941	61.1M	0	87.5G	0
56219	48.1M	0	66.6G	0
24437	50.1M	0	32.3G	0
32361	19.7M	0	27.2G	0
24436	26.1M	0	25.2G	0
Other	241.0M	2.0G	177.3G	2.1T



AS7575: AARNet (Australia)
 AS23456: Aggregation of 4-byte AS
 AS10148: University of Melbourne (Australia)

Dest

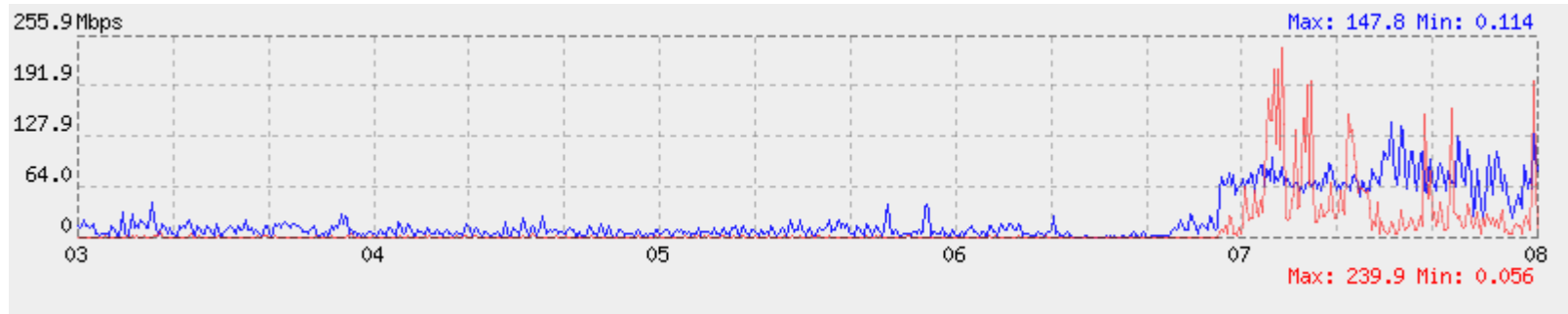
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
4538	3	1.1G	1.1K	1.2T
513	379	318.8M	257.0K	279.4G
45773	0	217.9M	0	265.9G
38280	0	185.9M	0	212.2G
55824	81	153.5M	9.0K	207.4G
4796	5	172.3M	368	201.1G
7497	77.5K	50.3M	110.2M	64.1G
24514	4	35.3M	212	38.1G
680	5	36.9M	400	34.5G
786	34	41.4M	4.3K	29.6G
Other	257.8M	192.3M	332.5G	127.8G



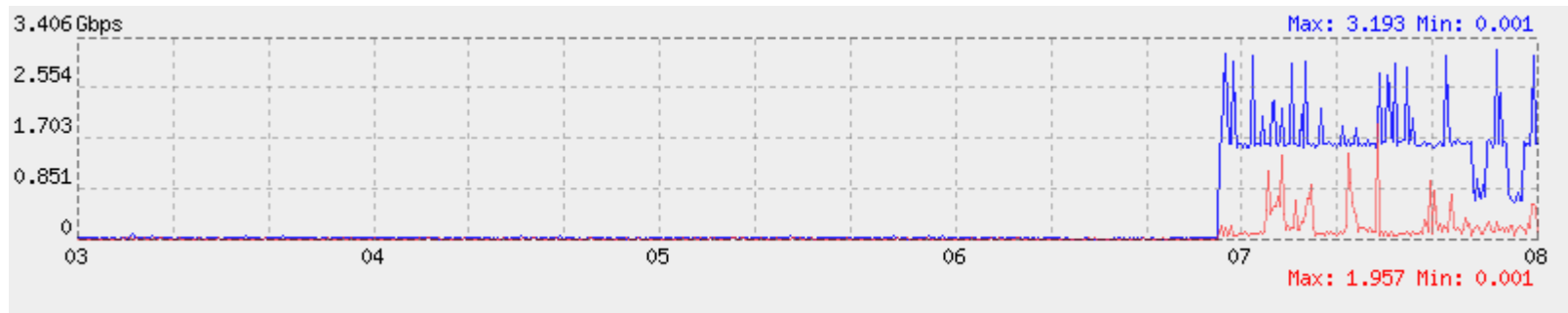
AS4538: CERNET (China)
 AS513: CERN (Switzerland)
 AS45773: PERN (Pakistan)

NKN 10G+10G

Avg



Max



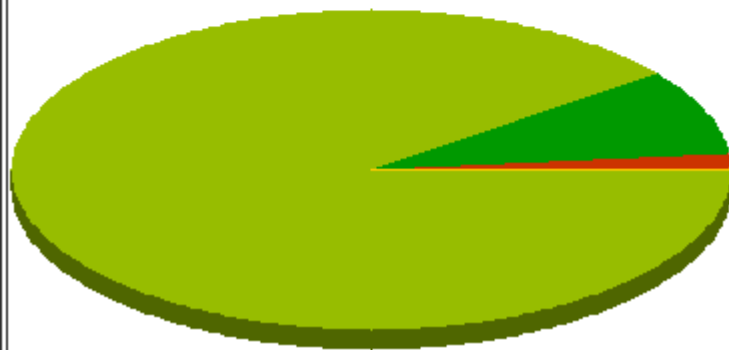
The traffic data of SG-IN link before new SG router deployment was irretrievable due to the role change of 10GE port previously connected with SG-IN link

NKN 10G+10G

(Flow data from the SG-IN only)

Src

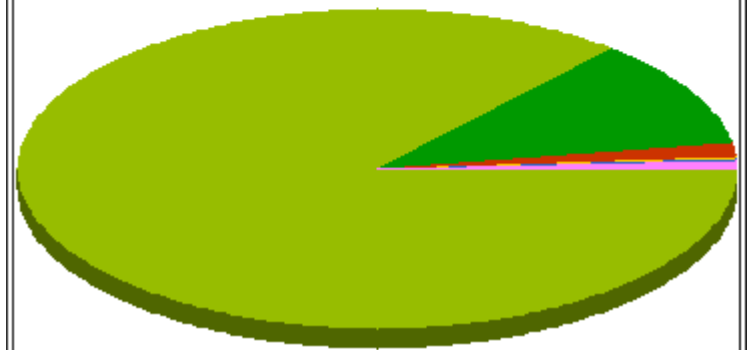
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
55824	63.0M	0	360.6G	0
2697	25.9M	0	34.6G	0
23456	4.7M	901.2K	5.4G	465.8M
55847	1.6M	0	1.1G	0
24490	613.7K	44.9M	149.1M	323.5G
38185	83.0K	0	103.7M	0
55479	169.2K	0	66.6M	0
56166	175.6K	0	48.3M	0
24489	101.6K	5.7M	15.6M	5.0G
59189	38.5K	0	7.9M	0
Other	160.6K	628.4K	22.0M	240.7M



AS55824: NKN (India)
 AS2697: ERNET (India)
 AS23456: Aggregation of 4-byte AS

Dest

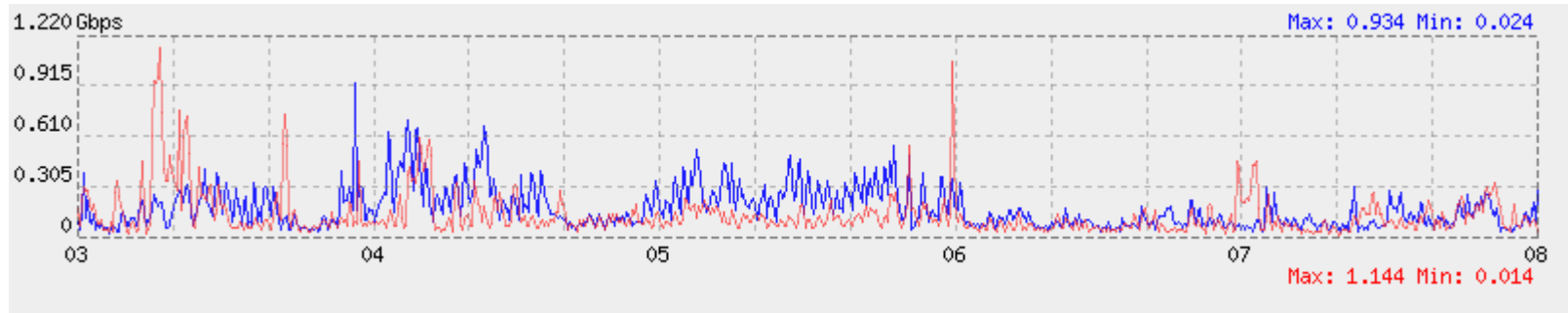
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
24490	613.7K	44.9M	149.1M	323.5G
45773	0	32.7M	0	40.4G
24489	101.6K	5.7M	15.6M	5.0G
2018	0	656.4K	0	657.6M
786	0	645.0K	0	538.6M
23456	4.7M	901.2K	5.4G	465.8M
36040	0	3.3M	0	425.2M
36914	0	333.2K	0	320.4M
137	0	426.1K	0	290.0M
680	0	400.5K	0	277.4M
Other	46.6K	6.6M	3.6M	2.7G



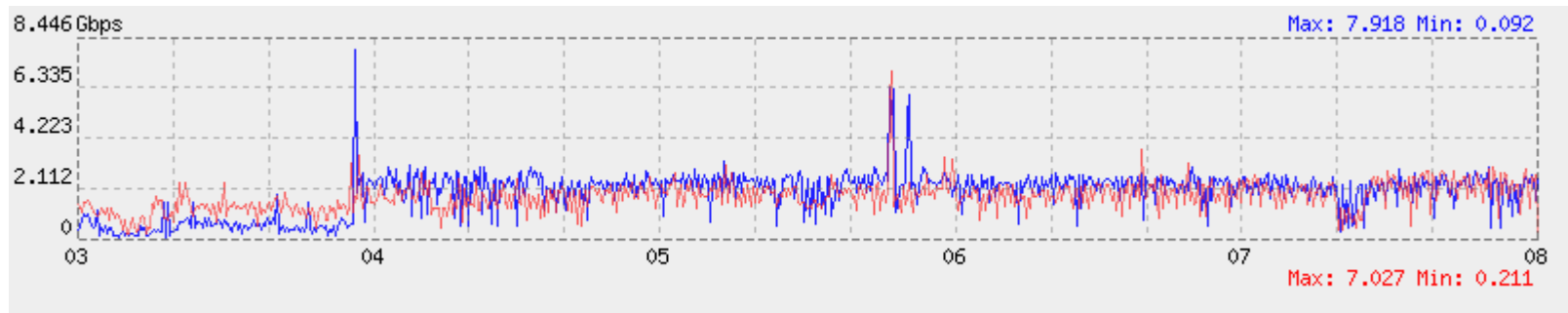
AS24490: TEIN-SOUTH (TEIN)
 AS45773: PERN (Pakistan)
 AS24489: TEIN-NORTH (TEIN)

SingAREN 10G

Avg



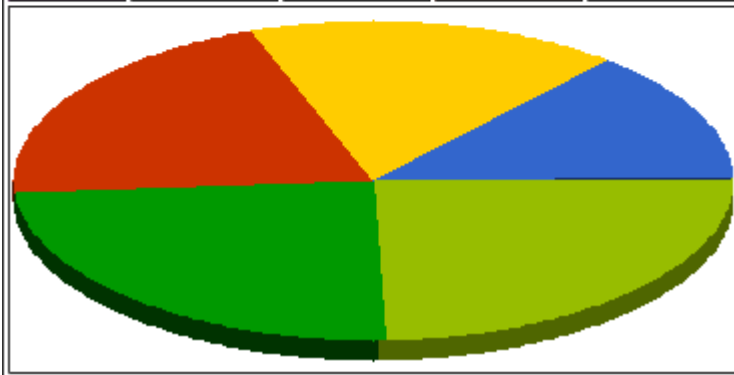
Max



SingAREN 10G

Src

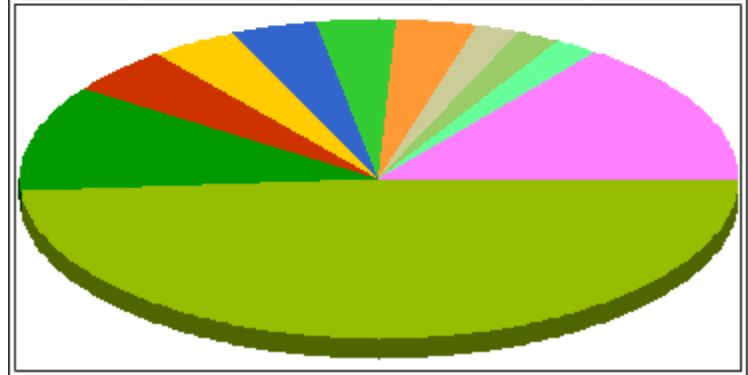
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
23767	259.3M	0	316.3G	0
9419	339.6M	0	306.7G	0
23456	252.4M	7.8M	266.7G	5.8G
7472	393.5M	0	214.1G	0
23855	51.7M	0	167.1G	0
24490	1.2M	6.9M	888.3M	8.3G
45133	1.7M	0	235.6M	0
7610	884.1K	0	184.4M	0
4796	11.3K	40	872.3K	17.9K
46019	646	21.0K	711.5K	24.8M
Other	17.4K	737.8M	2.1M	681.8G



AS23767: A-STAR (Singapore)
 AS9419: Nanyang Technological University (Singapore)
 AS23456: Aggregation of 4-byte AS

Dest

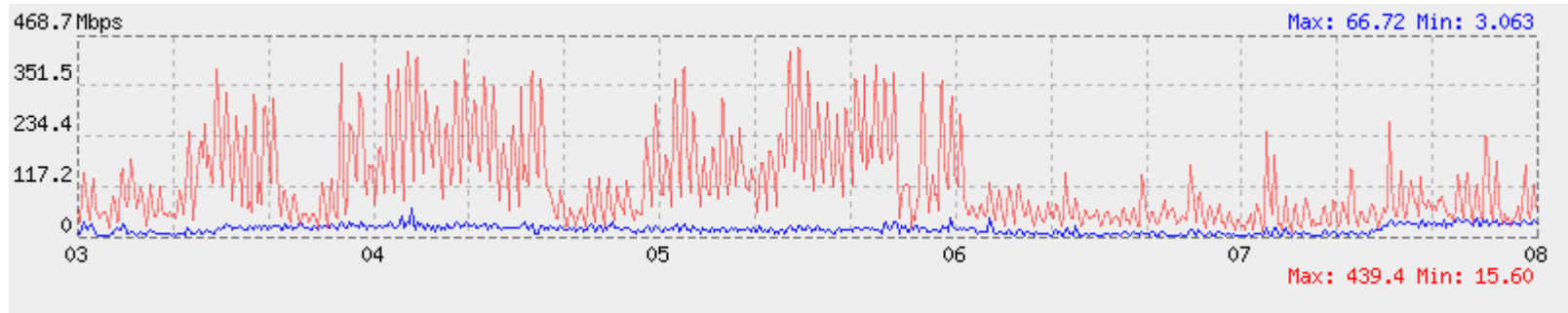
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
786	2	616.7M	1.5K	575.8G
2200	0	134.7M	0	133.0G
20965	0	11.5M	0	57.3G
137	0	37.9M	0	47.5G
559	0	77.8M	0	44.6G
680	0	56.5M	0	42.6G
4538	153	56.4M	8.3K	41.2G
378	0	19.9M	0	23.7G
1124	0	16.6M	0	22.6G
3221	0	41.4M	0	21.7G
Other	253.6M	230.7M	267.5G	174.8G



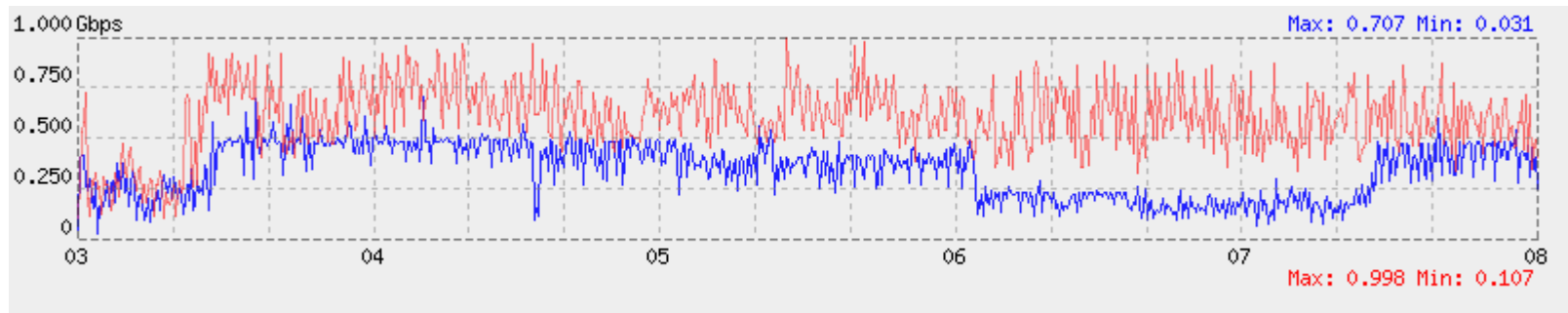
AS786: JANET (UK)
 AS2200: Renater (France)
 AS20965: GEANT (Europe)

MYREN 1G

Avg



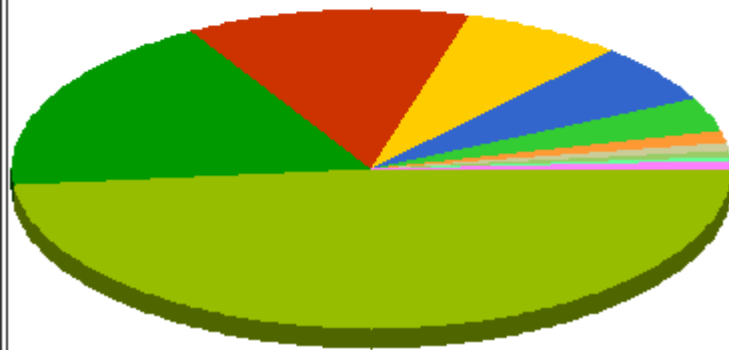
Max



MYREN 1G

Src

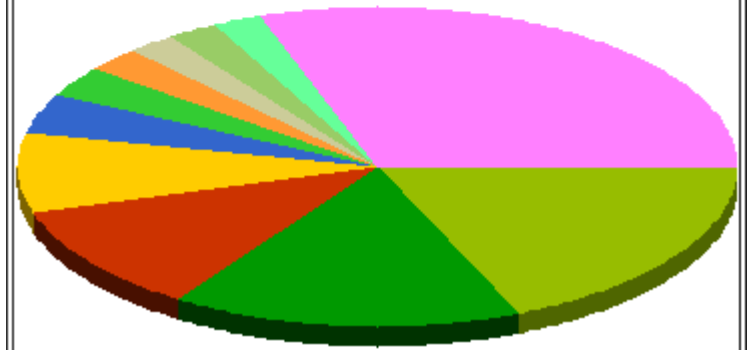
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
24514	107.8M	0	83.3G	0
38280	88.9M	0	31.6G	0
23456	74.3M	7.9M	22.0G	3.1G
38868	26.3M	0	12.3G	0
24090	40.2M	0	10.4G	0
51946	10.9M	1	5.7G	211
45344	10.5M	0	2.1G	0
24314	2.3M	0	1.6G	0
55856	3.7M	0	771.4M	0
24490	4.6M	6.6M	723.9M	6.4G
Other	8.4M	300.0M	1.5G	116.4G



AS24514: MYREN (Malaysia)
 AS38280: Monash University (Malaysia)
 AS23456: Aggregation of 4-byte AS

Dest

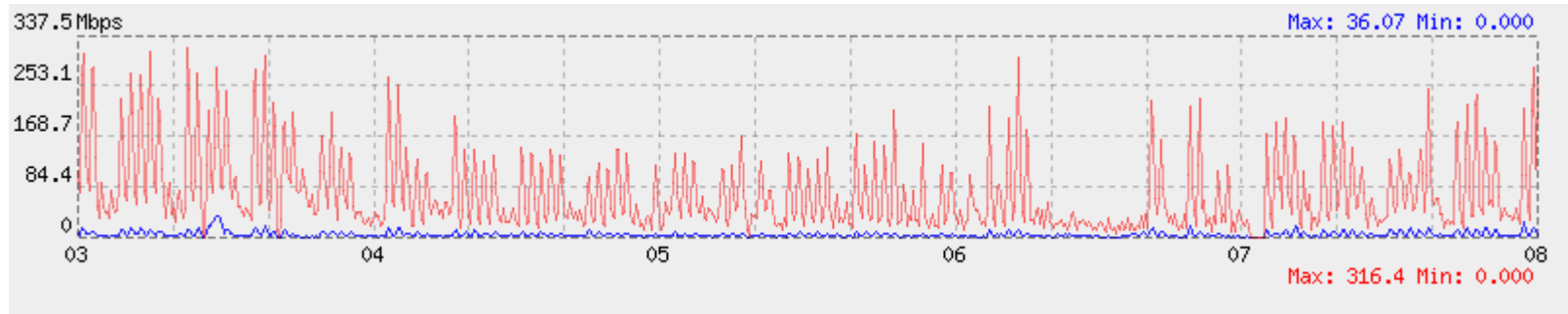
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
786	360	98.3M	310.1K	30.0G
56132	9	54.0M	8.2K	25.1G
55824	0	18.5M	0	17.5G
7575	65	15.8M	59.4K	13.4G
24490	4.6M	6.6M	723.9M	6.4G
4538	361	14.3M	329.3K	4.7G
24489	0	4.2M	0	3.9G
553	100	3.5M	91.3K	3.6G
1237	8	3.6M	7.3K	3.6G
1103	456	5.3M	415.9K	3.5G
Other	85.2M	153.8M	27.7G	48.5G



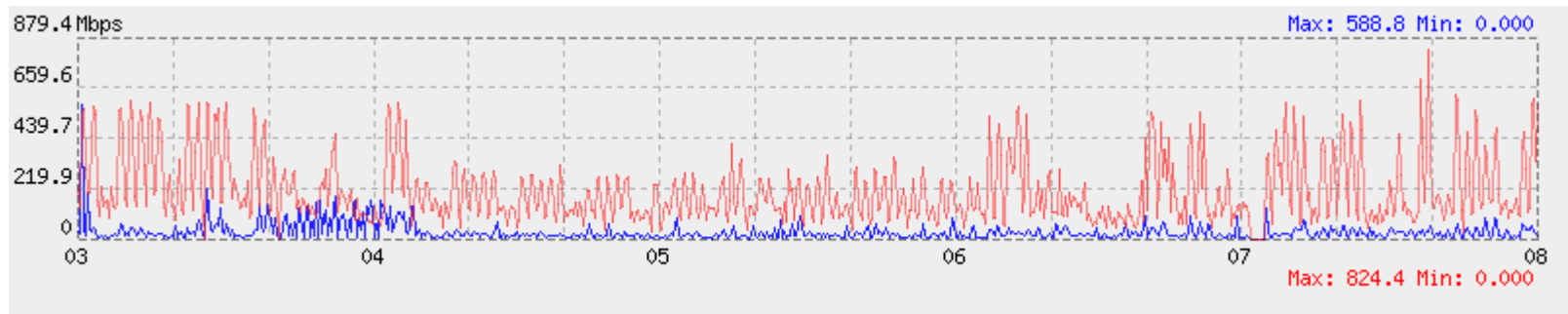
AS786: JANET (UK)
 AS56132: Monash University (Australia)
 AS55824: NKN (India)

ITB 622M/1G

Avg



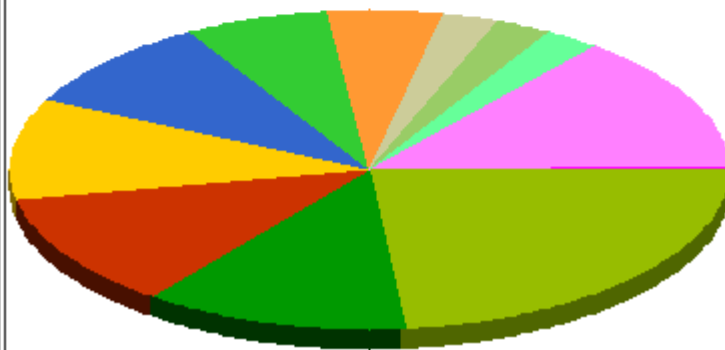
Max



ITB 622M/1G

Src

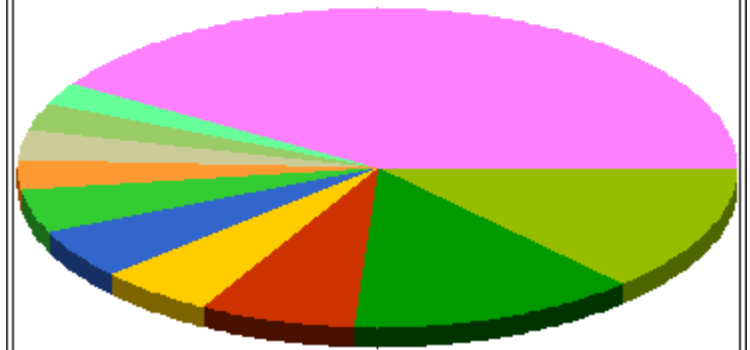
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
4796	136.8M	269	17.6G	113.2K
23456	26.3M	11.9M	8.9G	3.4G
17553	19.9M	1.1K	8.6G	288.3K
45705	44.8M	433	7.6G	85.8K
3382	10.8M	898	7.1G	103.1K
46019	9.6M	747	4.8G	150.4K
38142	12.5M	1.7K	4.0G	180.5K
55684	8.3M	303	1.9G	23.4K
63510	12.2M	296	1.9G	59.5K
38331	12.3M	611	1.8G	236.7K
Other	46.3M	261.3M	10.1G	55.9G



AS4796: ITB (Indonesia)
 AS23456: Aggregation of 4-byte AS
 AS17553: Bogor Agricultural University
 (Indonesia)

Dest

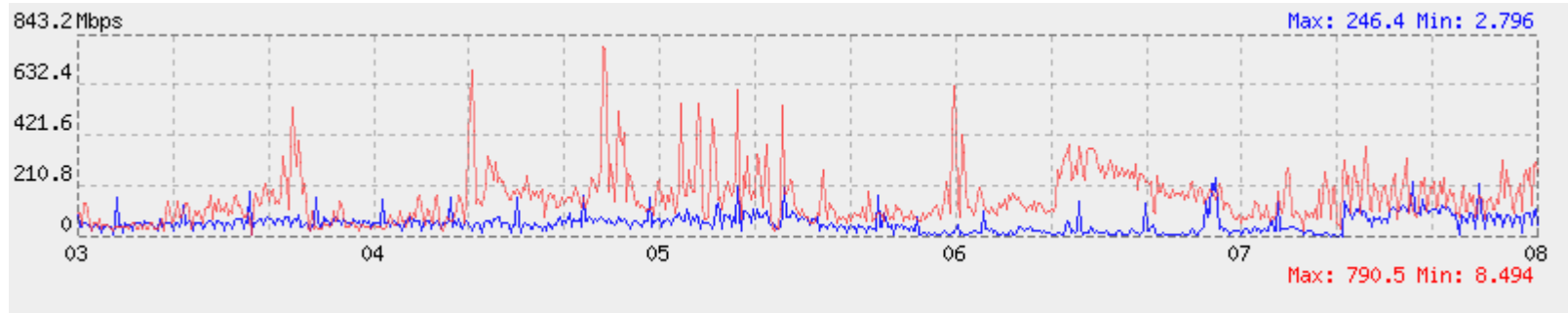
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
7575	54	69.6M	64.0K	9.0G
786	1.5K	24.2M	512.6K	9.0G
19679	229	10.3M	9.2K	4.9G
55824	132	4.0M	68.0K	3.6G
23456	26.3M	11.9M	8.9G	3.4G
680	321	16.2M	38.3K	3.0G
1213	0	41.8M	0	2.2G
4538	493	7.9M	32.0K	2.1G
1103	151	10.4M	13.3K	1.9G
2907	133	10.6M	23.4K	1.6G
Other	313.5M	132.9M	65.4G	28.5G



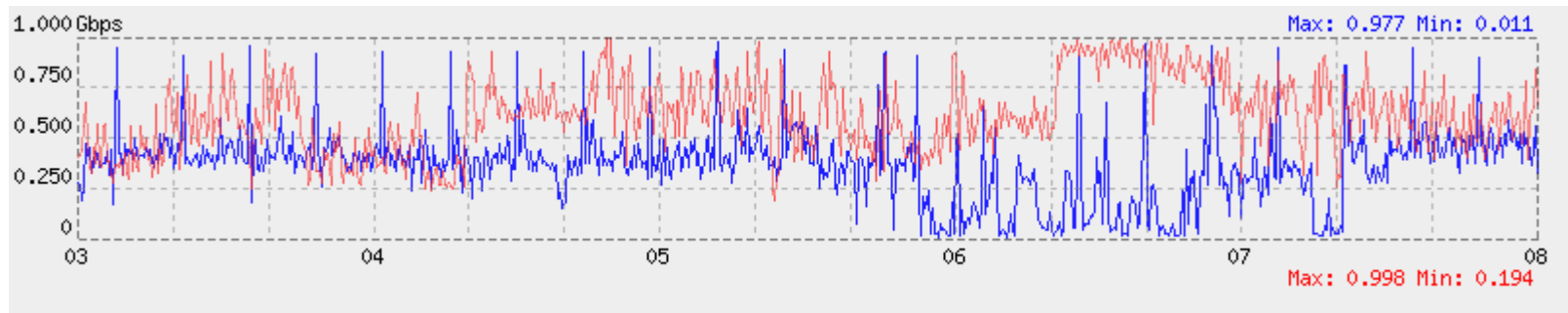
AS7575: AARNet (Australia)
 AS786: JANET (UK)
 AS19679: DROPBOX (USA)

PERN 1G

Avg



Max

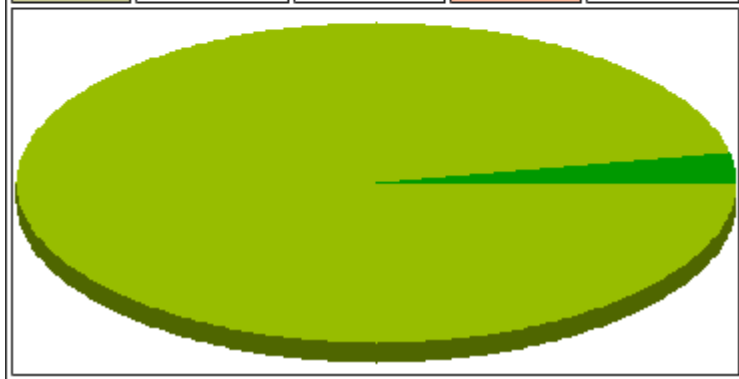


PERN 1G

(Flow data from the secondary VLAN only)

Src

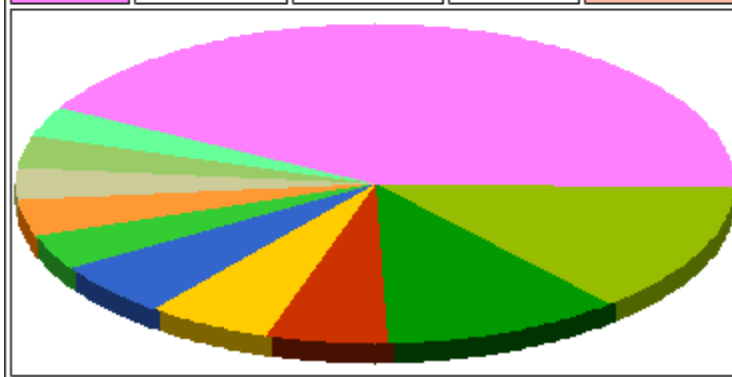
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
45773	1.3G	0	1.0T	0
24490	124.3M	30.2M	33.4G	32.1G
1659	17.3K	3.9M	1.4M	471.3M
3445	100	609	8.2K	222.3K
104	12	131.2K	912	12.2M
10052	4	9.8M	312	9.0G
4538	3	6.5M	288	1.4G
680	1	5.2M	73	1.1G



AS45773: PERN (Pakistan)
 AS24490: TEIN-SOUTH (TEIN)
 AS1659: TANET (Taiwan)

Dest

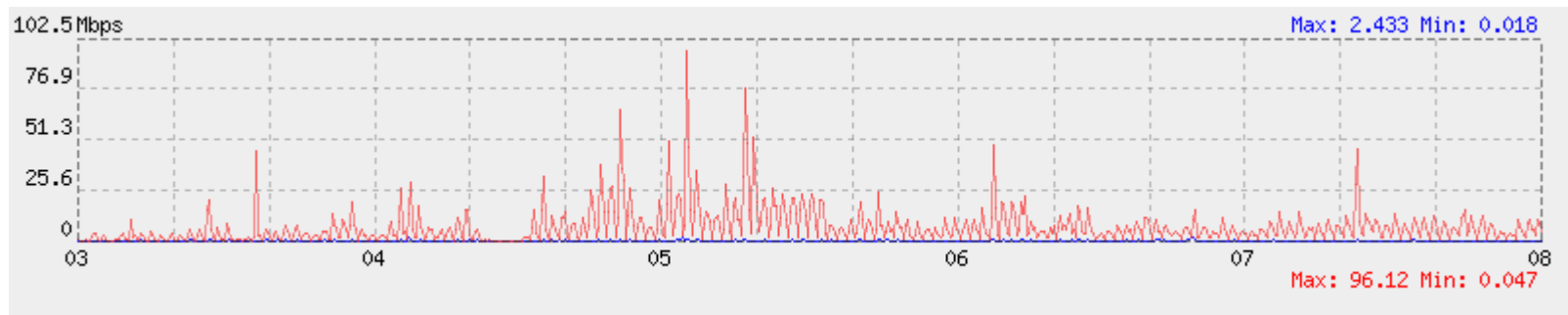
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
786	0	167.0M	0	132.3G
137	0	108.9M	0	107.7G
513	0	93.0M	0	56.5G
789	0	76.9M	0	56.5G
59	0	44.1M	0	55.1G
3	0	34.1M	0	36.4G
58069	0	45.6M	0	36.2G
766	0	69.1M	0	32.7G
24490	124.3M	30.2M	33.4G	32.1G
6356	0	25.2M	0	30.4G
Other	17.4K	741.9M	1.4M	423.5G



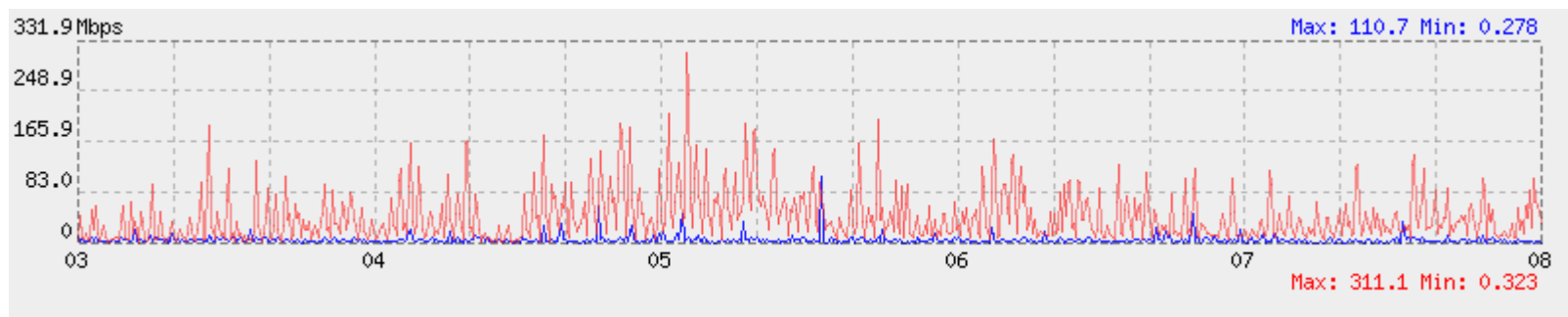
AS786: JANET (UK)
 AS137: GARR (Italy)
 AS513: CERN (Switzerland)

LEARN 1G

Avg




Max



LEARN 1G

Src


AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
38229	23.8M	0	6.7G	0
24490	81.4K	59.6K	8.1M	5.4M
23855	443	0	47.2K	0



AS38229: LEARN (Sri Lanka)
AS24490: TEIN-SOUTH (TEIN)

Dest

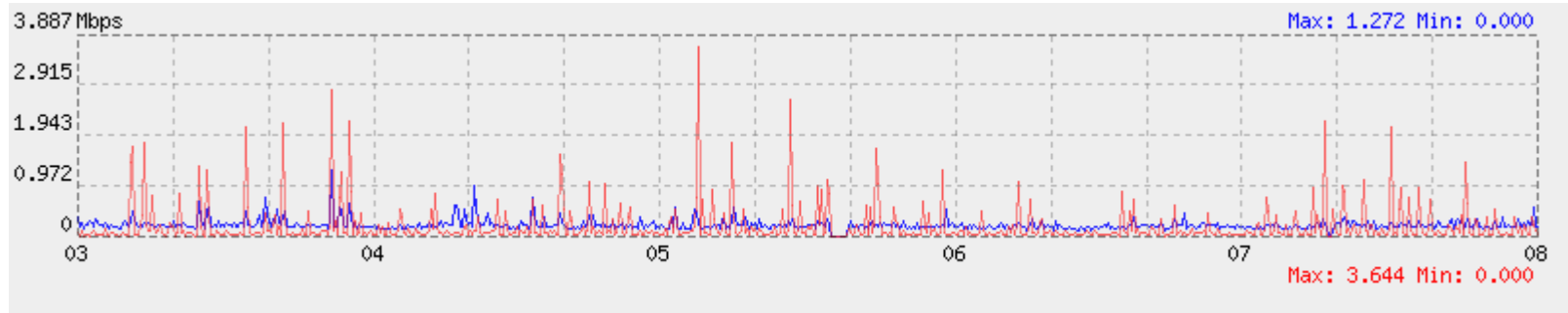
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
786	0	2.6M	0	1.0G
23456	0	2.8M	0	422.3M
680	0	2.2M	0	405.5M
4538	0	1.1M	0	264.3M
7575	0	489.6K	0	239.0M
2852	0	398.5K	0	234.5M
1103	0	615.0K	0	218.4M
13041	0	518.1K	0	196.0M
2018	0	210.0K	0	137.0M
137	0	426.1K	0	125.5M
Other	81.4K	12.6M	8.1M	3.0G



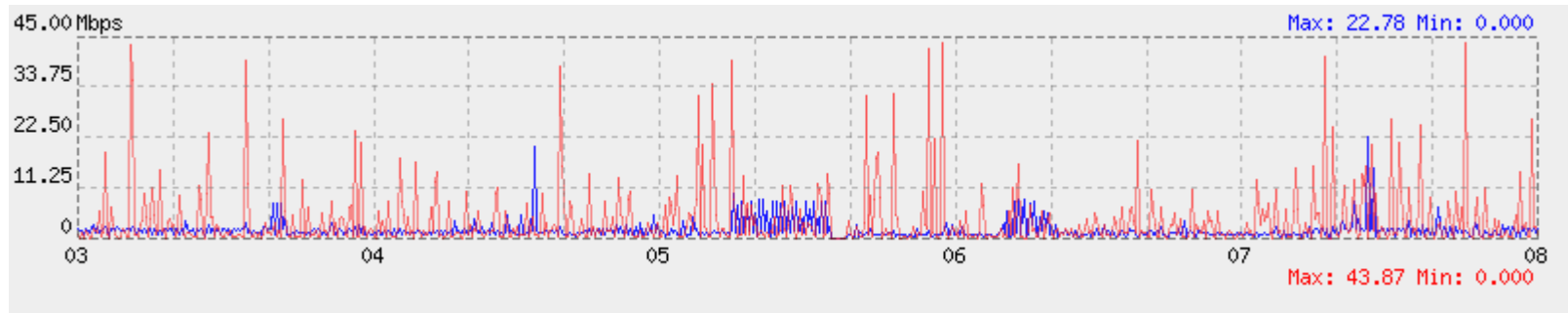
AS786: JANET (UK)
AS23456: Aggregation of 4-byte AS
AS680: DFN (Germany)

NREN 45M

Avg

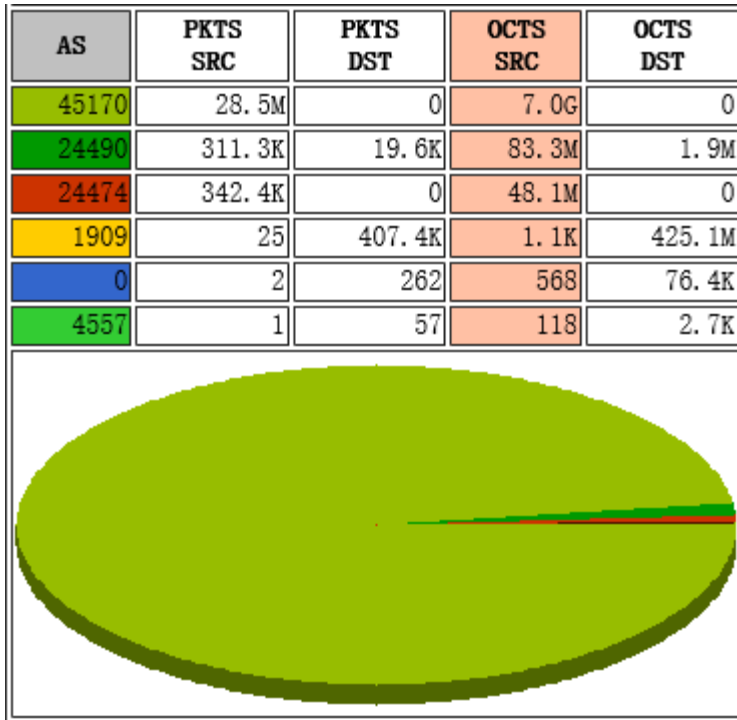


Max



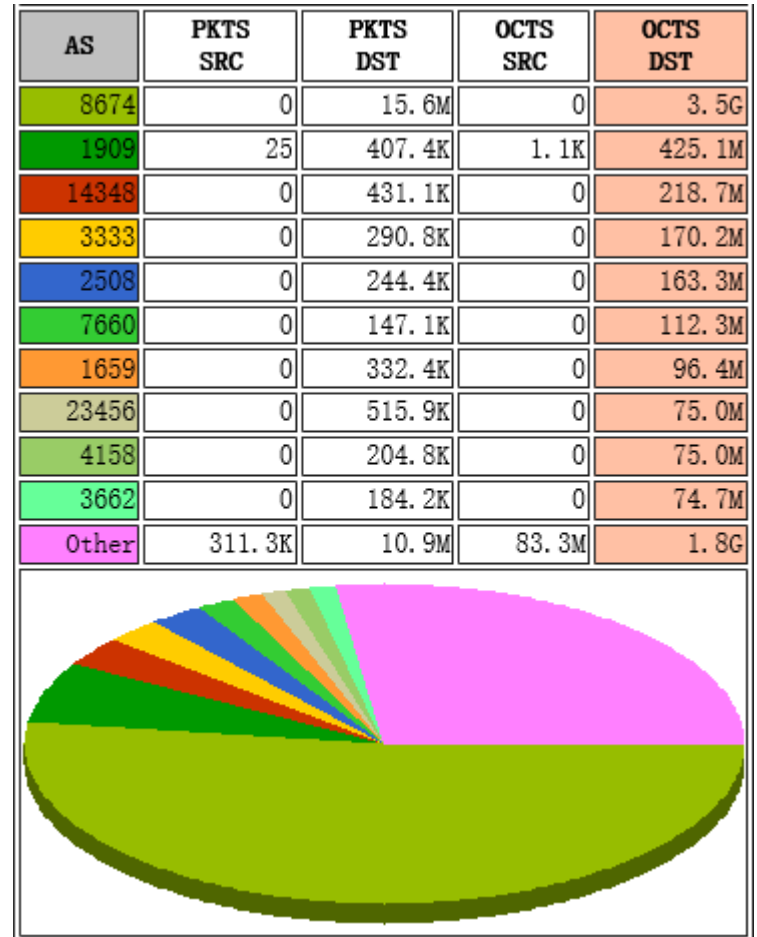
NREN 45M

Src



AS45170: NREN (Nepal)
 AS24490: TEIN-SOUTH (TEIN)
 AS24474: NPANYCAST (Nepal)

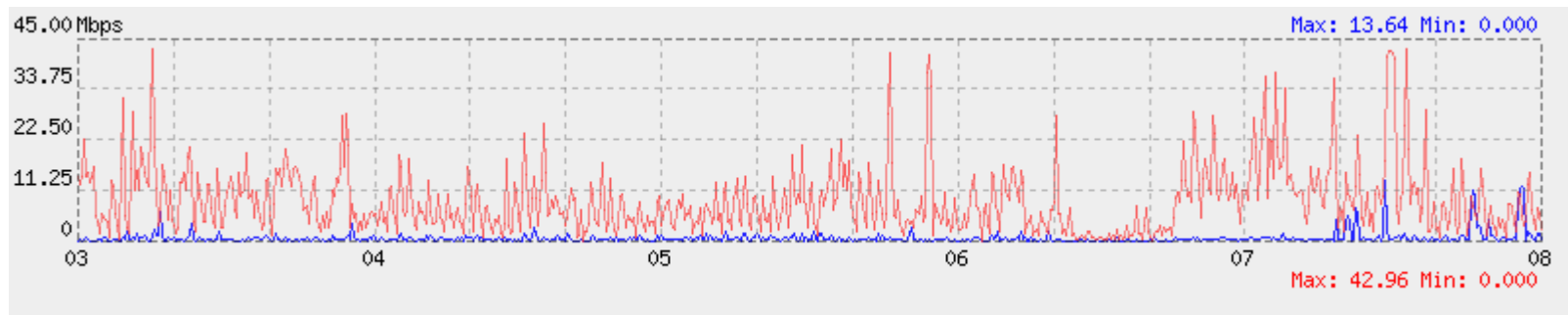
Dest



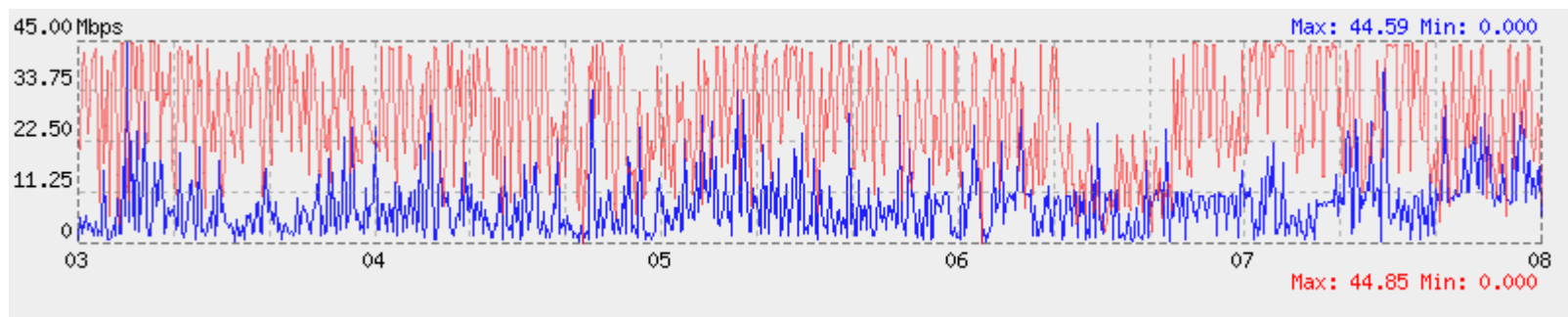
AS8674: NETNOD-IX (Sweden)
 AS1909: San Diego Supercomputer Center (USA)
 AS14348: University of Rhode Island (USA)

BdREN 45M

Avg



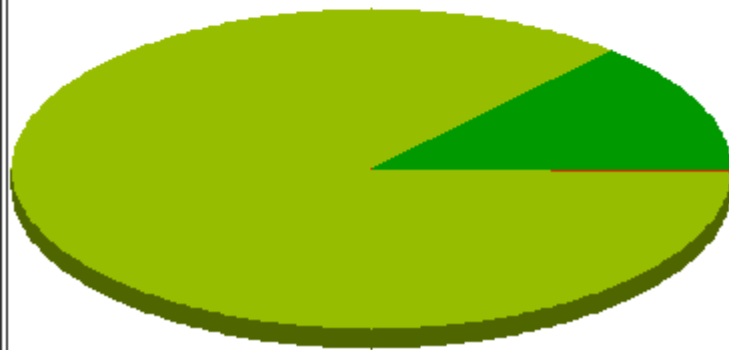
Max



BdREN 45M

Src

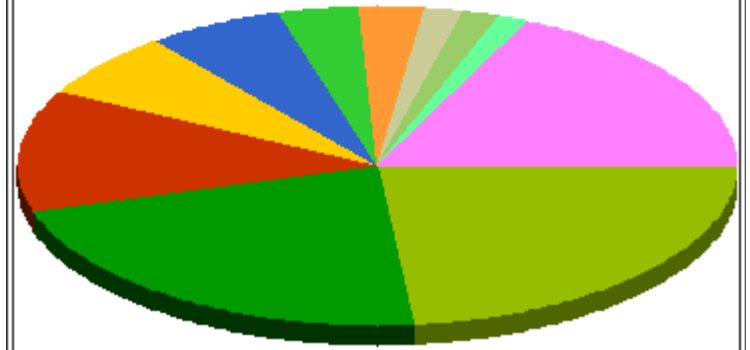
AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
23456	49.5M	5.2M	19.5G	2.6G
63961	10.4M	0	3.1G	0
24490	207.6K	425.9K	35.7M	249.8M
7377	6	214.5K	5.5K	19.5M
786	5	7.1K	4.6K	1.3M
2907	4	11.2K	3.6K	3.6M
4538	13	5.0M	3.6K	1.4G
81	3	28.5K	2.7K	5.3M
1103	2	13.5K	1.8K	7.6M
680	2	90.8K	1.8K	49.5M
Other	52	8.1M	47.5K	1.6G



AS23456: Aggregation of 4-byte AS
 AS63961: BdREN (Bangladesh)
 AS24490: TEIN-SOUTH (TEIN)

Dest

AS	PKTS SRC	PKTS DST	OCTS SRC	OCTS DST
55824	0	8.2M	0	4.9G
683	0	3.5M	0	4.6G
23456	49.5M	5.2M	19.5G	2.6G
4538	13	5.0M	3.6K	1.4G
16462	0	1.3M	0	1.3G
137	2	2.8M	1.8K	789.2M
46757	0	10.6M	0	634.9M
1659	2	3.3M	1.8K	349.3M
7660	0	288.0K	0	342.5M
9111	0	3.4M	0	295.8M
Other	207.6K	16.6M	35.7M	3.8G

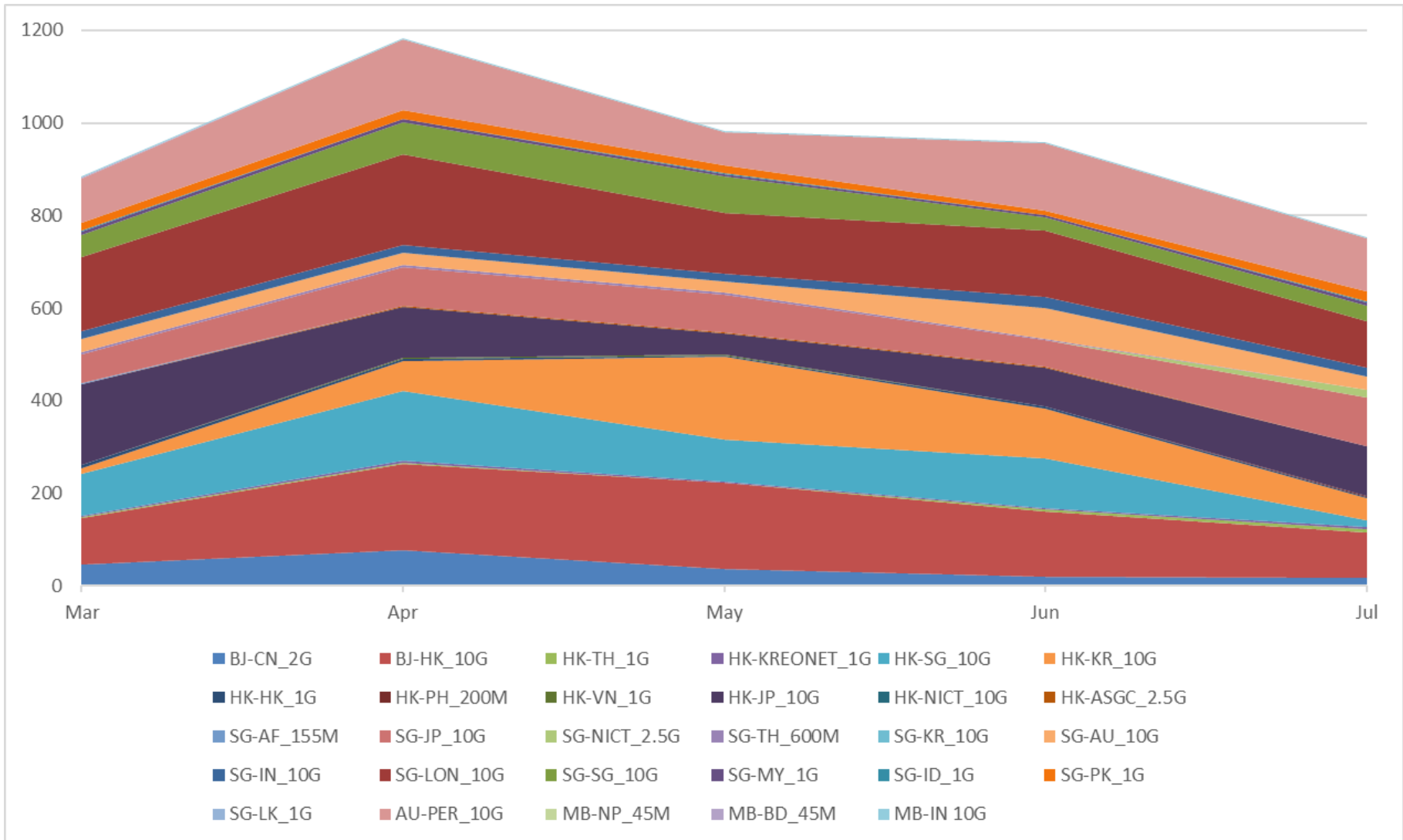


AS55824: NKN (India)
 AS683: Argonne National Lab (USA)
 AS23456: Aggregation of 4-byte AS

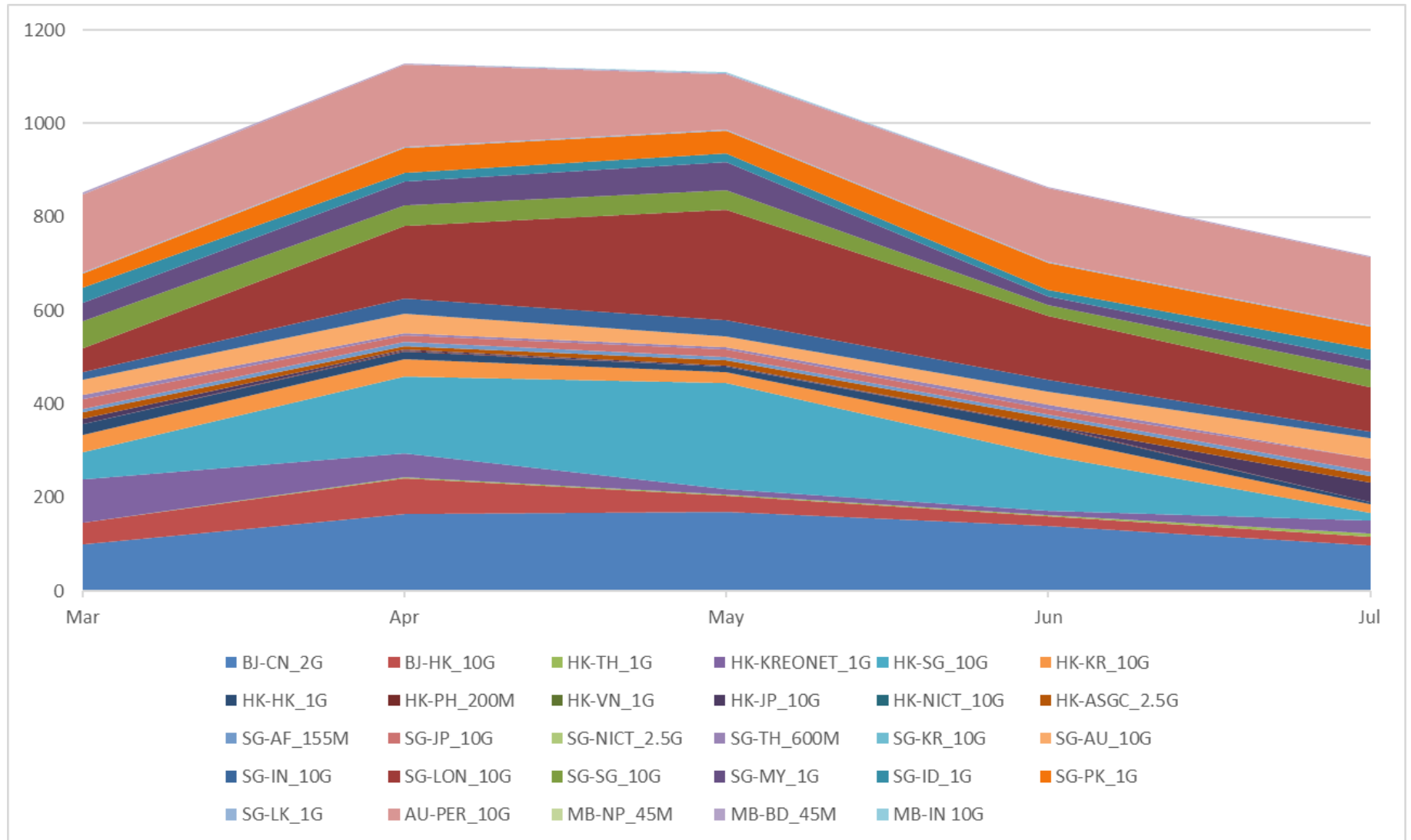
Outline

- TEIN General Operation Updates
- TEIN Backbone Traffic Statistics
- **Total Traffic over TEIN Backbone**

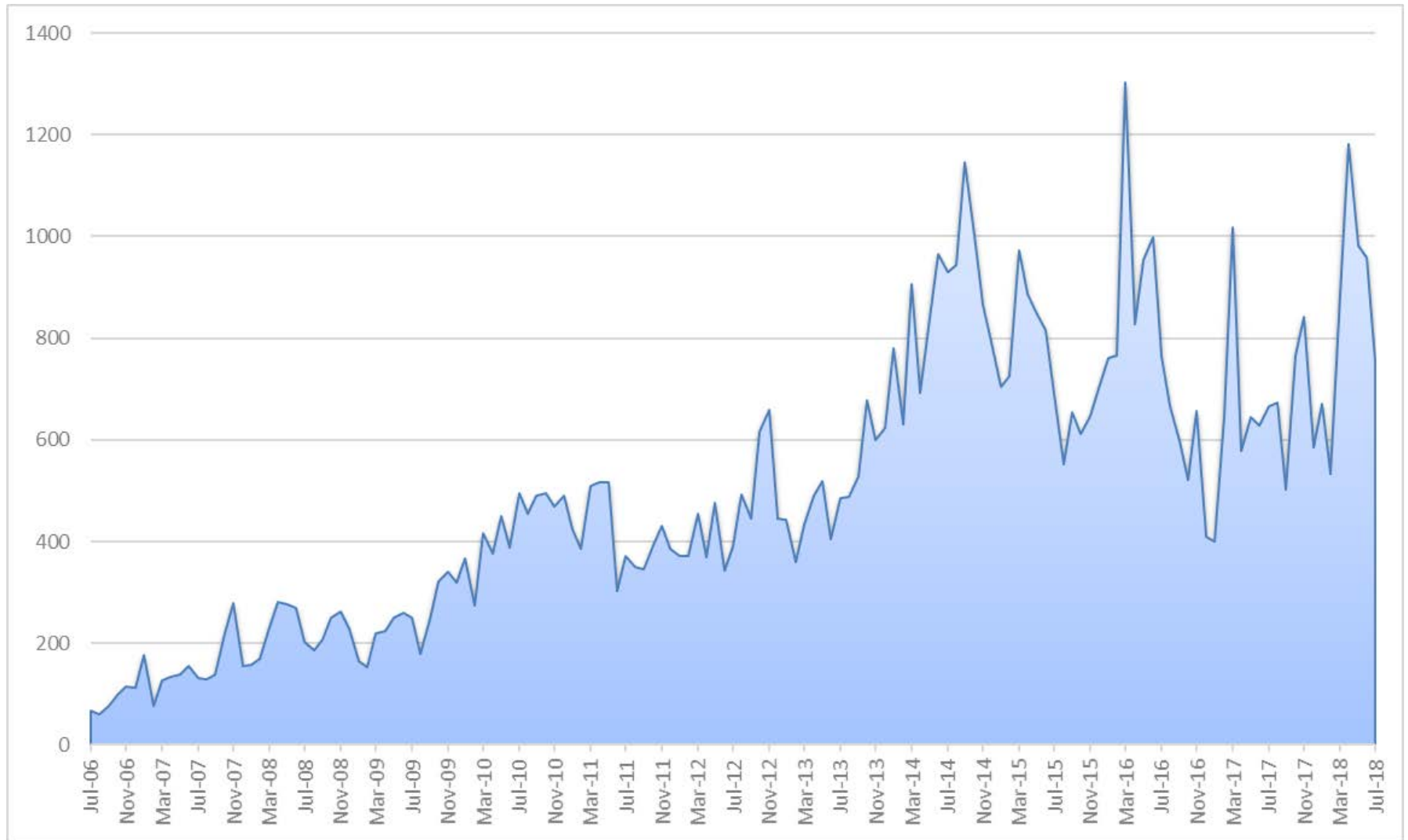
Total Traffic over TEIN Backbone (inbound, TByte, Mar-Jul 2018)



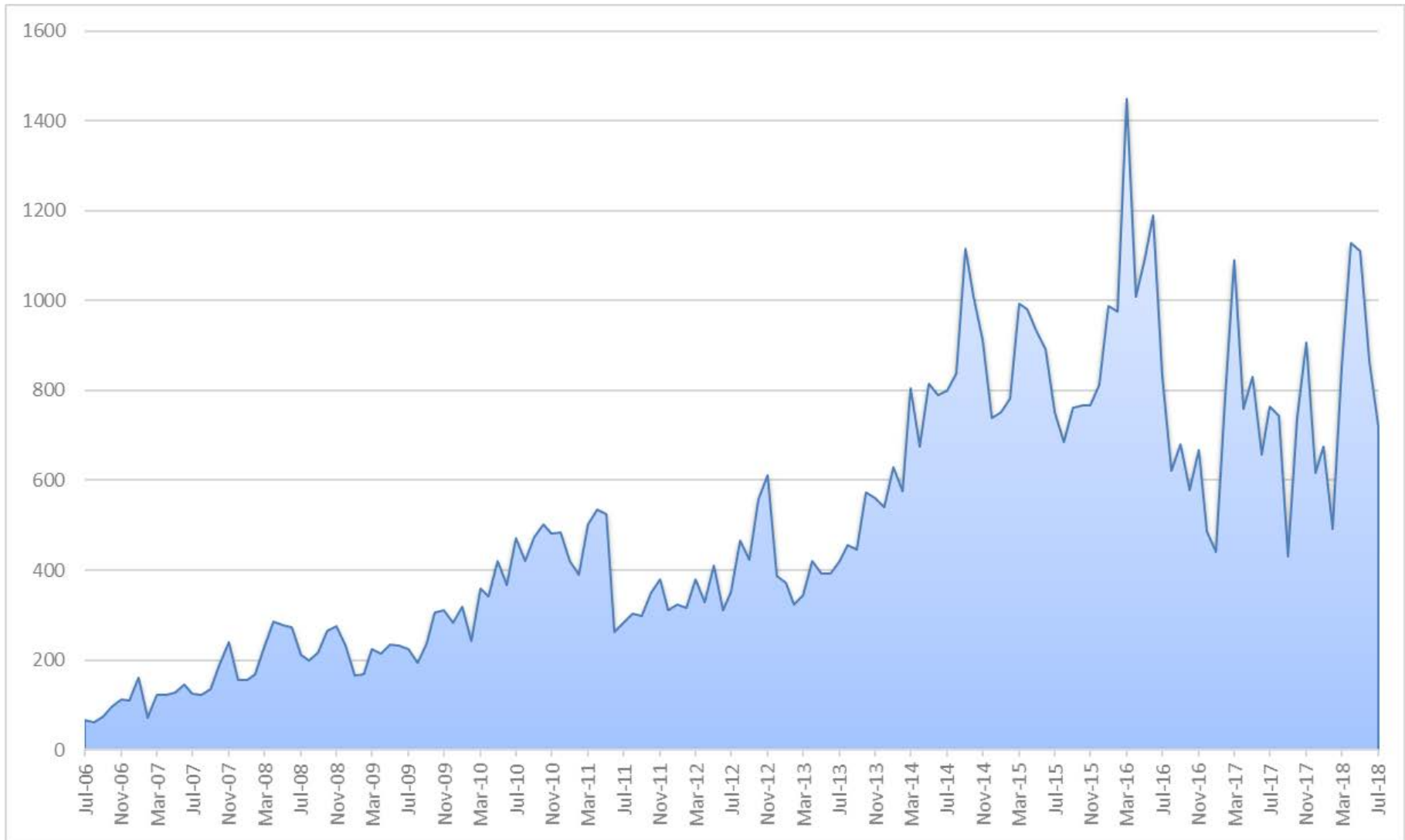
Total Traffic over TEIN Backbone (outbound, TByte, Mar-Jul 2018)



Total Traffic over TEIN Backbone (inbound, TByte, since Jul 2006)



Total Traffic over TEIN Backbone (outbound, TByte, since Jul 2006)



Thanks!