



The new submarine cables: SEACOM, TEAMS, EASSy, Main One, Glo-1, WACS and ACE allow most African countries to access the internet without the limitation of satellite links.

ISP and carriers are facing a new world of opportunities and threats



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ISP life cycle









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A lot of options but how to start in the right way? The easier way is to place a router somewhere and start asking everybody to peer.

You'll end up with:

- Many refusals, after having spent a lot of time and efforts
- Several good peering relationships
- Many not useful interconnections with low traffic

A very complex configuration with many interconnections to manage

We need a strategy and tools to drive our efforts





- Place your equipment (HW or virtual) efficently
- Ask peering only to networks that will probably accept to peer with you
- Ask peering only to networks that have traffic volumes of interest
- Complement peering with some upstream provider that fulfill your needs

There are some public and free tool that will help your job





CAIDA a very useful tool



CAIDA AS cone (ref http://as-rank.caida.org/?mode0=as-intro#customer-cone)



CAIDA reads BGP announcements and build the AS-customer cone: attributes to any AS the number of routes from its cascade customers

Comparing customer cones you can understand how helpful the peering will be



If A benefits are comparable with B ones the peering will be successful



Source: CAIDA



Type <u>http://as-rank.caida.org</u> and you'll get into ranking page



AS6762 Search							
able shows 10 • of 45658 ASes, sorted by number of ASes							
AS rank	AS number	AS name	Org name				
1	<u>3356</u>	LEVEL3	Level 3 Communications, Inc.				
2	<u>174</u>	COGENT-174	Cogent Communications				
3	<u>3257</u>	TINET-BACK	Tinet SpA				
4	<u>1299</u>	TELIANET	TeliaSonera International Carrier				
5	<u>2914</u>	NTT-COMMUN	NTT America, Inc.				
6	<u>3549</u>	LVLT-3549	Level 3 Communications, Inc.				
7	<u>6453</u>	<u>AS6453</u>	Tata Communications				
8	<u>6762</u>	SEABONE-NET	TELECOM ITALIA SPARKLE S.p.A.				
9	<u>6939</u>	HURRICANE	Hurricane Electric, Inc.				
10	<u>1273</u>	CW	Cable&Wireless Worldwide				

Search for your AS#

SPARKLE

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Type http://as-rank.caida.org and you'll get into ranking page









CAIDA who to address with peering request

This number shows how's your cone size compared with the potential peer.

- If it's much higher (>500%) this network is way bigger than you and won't peer.
- If it's way smaller (less than 10%) you have small/no interest in peering with them
- If the number is close to 100% you both have interest in peering

neighbor					type	projected pee	ring: cone size	projected peering:	AS transit
AS rank	AS	AS name	AS type(s)	Org name		of neighbor AS	of AS 6762	cone size ratio	degree
1	<u>3356</u>	LEVEL3	Tr Co	Level 3 Communications, Inc.	↔ peer	255%	100%	39.12	3,971
2	<u>174</u>	COGENT-174	<mark>00</mark> 11	Cogent Communications	↔ peer	176%	100%	56.65	4,212
3	<u>3257</u>	TINET-BACK	T	Tinet SpA	↔ peer	157%	100%	63.39	975
4	<u>1299</u>	TELIANET	T	TeliaSonera International Carrier	↔ peer	153%	100%	65.25	812
5	<u>2914</u>	NTT-COMMUN	Tr Ac Co	NTT America, Inc.	↔ peer	150%	100%	66.58	1,047
6	<u>3549</u>	LVLT-3549	CO TT	Level 3 Communications, Inc.	↔ peer	106%	100%	93.56	3,575
7	<u>6453</u>	<u>AS6453</u>	Tr Co	Tata Communications	↔ peer	103%	100%	96.82	616
9	<u>6939</u>	HURRICANE	<mark>00</mark> 11	Hurricane Electric, Inc.	↔ peer	63%	100%	63.00	3,305
10	<u>1273</u>	CW	Tr	Cable&Wireless Worldwide	↔ peer	60%	100%	60.03	332
11	<u>2828</u>	<u>XO-AS15</u>	T	XO Communications	↔ peer	55%	100%	55.09	1,082
12	<u>7018</u>	ATT-INTERNET4	Tr Ac Co	AT&T Services, Inc.	↔ peer	54%	100%	54.27	2,337
13	<u>701</u>	UUNET	Tr Ac	MCI Communications Services, Inc. d/b/a Verizon Business	↔ peer	41%	100%	41.61	1,544
14	<u>209</u>	ASN-QWEST	Tr/Ac	Qwest Communications Company, LLC	↔ peer	39%	100%	39.48	1,531
15	<u>3320</u>	DTAG	Tr/Ac	Deutsche Telekom AG	↔ peer	37%	100%	37.16	518
16	<u>3491</u>	BTN-ASN	Tr/Ac	Beyond The Network America, Inc.	↔ peer	36%	100%	36.95	533
17	<u>1239</u>	SPRINTLINK	Tr/Ac	Sprint	↔ peer	35%	100%	35.64	734
19	<u>6461</u>	ABOVENET	Tr/Ac	Abovenet Communications, Inc	↔ peer	27%	100%	27.61	1,236
23	<u>7473</u>	SINGTEL-AS-AP	Tr/Ac	Singapore Telecommunications Ltd	↔ peer	20%	100%	20.68	297
24	<u>3561</u>	SAVVIS	Tr/Ac	Sawis	↔ peer	17%	100%	17.20	296

Source: CAIDA





You need an upstream provider to complement peering 💿 🕕 📀 📀

Start with the Ranking

AS	AS	AS name	Org name	AS	customer cone					
rank	number			Type(s)	Number of		Percentages of all			
					ASes	IPv4 Prefixes	IPv4 Addresses	ASes	IPv4 Prefixes	IPv4 Addresses
1	<u>3356</u>	LEVEL3	Level 3 Communications, Inc.	Tr Co	25,318	322,403	1,562,430,335	55%	64%	72%
2	Calaad		to ovelove detail	Co	17,484	208,063	744,220,957	38%	41%	34%
3	Seleci	a network	to explore details	5 1	15,623	222,392	846,663,937	34%	44%	39%
4	<u>1299</u>	TELIANET	<u>TeliaSonera International</u> <u>Carrier</u>	1T	15,178	228,540	785,632,128	33%	45%	36%
5	<u>2914</u>	NTT-COMMUN	NTT America, Inc.	Tr Ac Co	14,876	224,278	929,277,565	32%	45%	43%
6	<u>3549</u>	LVLT 3549	Level 3 Communications, Inc.	Tr Co	10,586	172,217	560,436,792	23%	34%	26%
7	<u>0453</u>	<u>AS6453</u>	Tata Communications	Tr Co	10,229	167,716	610,754,120	22%	33%	28%
8	<u>6762</u>	SEABONE-NET	TELECOM ITALIA SPARKLE S.p.A.	Tr Ac	9,904	129,816	405,609,356	21%	26%	18%
9	<u>6939</u>	HURRICANE	Hurricane Electric, Inc.	Tr Co	6,240	73,271	288,745,110	13%	14%	13%
10	<u>1273</u>	<u>CW</u>	Cable&Wireless Worldwide	T	5,945	69,712	250,224,888	13%	13%	11%
Y	You will want:									
' ·	Ne tropolit potregula direct concert to content									
1	- NO transit network direct access to content									
-	- High ranked many customers are happy with them									
1 -	- With many customers in your region you'll find content useful for you									
- With local infrastructure lower RTT and interest in your region										
	2404		Devend The Metwork		2 6 6 0	00.252	245 191 514	0.09/	109/	18%
0	3491		America, Inc.	Tr/Ac	3,000	90,000	345,101,514	0.070	1370	1070
17	<u>1239</u>	SPRINTLINK	Sprint	Tr/Ac	3,530	98,853	684,485,755	7.7%	19%	31%
18	<u>20485</u>	TRANSTELECOM	<u>TransTelecom</u>	Tr/Ac	2,969	21,946	37,689,280	6.5%	4.4%	1.8%
19	6461 Source: CAI	ABOVENET DA	Abovenet Communications, Inc	Tr/Ac	2,734	35,976	122,488,810	6.0%	7.2%	5.7%



More details regarding a potential provider

Geogle	AS number: 6762 AS name: SEABONE-NET Org name: TELECOM ITALIA SPARKLE S.p.A. AS rank: 8 County: IT Customer cone size: 9,904 AS transit degree: 9,904 AS transit degree: 9,904 Type: Transit, Ac Access								
Position in	Position in Ranking AS Relationship Table (AS Relationship (Geo) Graph (S Relationship Graph Corrections Select this for the next								
The relation	ship table	e below displays the n	eighbors of AS	6762, and each neighbor's inferred relationship type with AS 67	762.		step		
Table show	/s 100 ▼	of 307 neighbor ASe	es, sorted by r	elationship type and AS rank, with simple - details. upda	ate view	1910			
A C rank	AC	A£ nome	A C type(a)	neighbor		tyne			
	3356	AS name	AS type(s)	Level 3 Communications Inc		↔ peer	Look if they're transit		
2	174	COGENT-174	Tr Co	Cogent Communications		↔ peer			
3	3257	TINET-BACK	Tr	Tinet SpA		↔ peer	free		
4	1299	TELIANET	17	TeliaSonera International Carrier		↔ peer			
5	<u>2914</u>	NTT-COMMUN	Tr Ac Co	NTT America, Inc.		↔ peer			
6	<u>3549</u>	LVLT-3549	00 T	Level 3 Communications, Inc.		↔ peer			
7	<u>6453</u>	<u>AS6453</u>	Tr Co	Tata Communications		↔ peer			
9	<u>6939</u>	HURRICANE	Tr Co	Hurricane Electric, Inc.		↔ peer			
10	<u>1273</u>	CW	1T	Cable&Wireless Worldwide		↔ peer			
11	<u>2828</u>	<u>XO-AS15</u>	1	XO Communications		↔ peer			
12	<u>7018</u>	ATT-INTERNET4	Tr Ac Co	AT&T Services, Inc.		↔ peer			
13	<u>701</u>	UUNET	Tr Ac Co	MCI Communications Services, Inc. d/b/a Verizon Business		↔ peer			
14	<u>209</u>	ASN-QWEST	Tr/Ac	Qwest Communications Company, LLC		↔ peer			
15	<u>3320</u>	DTAG	Tr/Ac	Deutsche Telekom AG		↔ peer			
16	<u>3491</u>	BTN-ASN	Tr/Ac	Beyond The Network America, Inc.		↔ peer			
17	<u>1239</u>	SPRINTLINK	Tr/Ac	Sprint		↔ peer			
19	<u>6461</u>	ABOVENET	Tr/Ac	Abovenet Communications, Inc		↔ peer			
23	<u>7473</u>	SINGTEL-AS-AP	Tr/Ac	Singapore Telecommunications Ltd		↔ peer	1		
24	24 <u>3561</u> <u>SAVVIS</u> <u>Tr/Ac</u> <u>Sawis</u>					↔ peer			
1.00	Source: (CAIDA		Conserve Cable Communications Inc					





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More details regarding a potential provider

Display format: SVG - Display only: Display only siblings: update **•** AS 6762 num.ASes num.links type CUSTOMER 219 219 PEER 64 64 sia North America Source: CAIDA

Many customers in Africa shows that the provider has improved it's architecture to be efficient and well performing there

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