

Cisco Global Cloud Index Supplement: Cloud Readiness Regional Details



What You Will Learn

The Cisco® Global Cloud Index is an ongoing effort to forecast the growth of global data center and cloud-based IP traffic. The study also includes a “Cloud Readiness” analysis that investigates the ability of each global region (Asia Pacific, Central and Eastern Europe, Latin America, Middle East and Africa, North America, and Western Europe) to support a sample set of basic, intermediate, and advanced business and consumer cloud applications. Each region’s cloud readiness is assessed in relationship to the sample services based on download and upload fixed and mobile network speeds as well as associated network latencies (segmented by business and consumer connections). This supplement provides additional country-level details that collectively represent the basis for each region’s network performance averages (speeds and latencies). Please see the [Cisco Global Cloud Index: Forecast and Methodology, 2012–2017](#) for complete research findings and projections.

Country-Level Details of Regional Cloud Readiness

The Cloud Readiness portion of the Cisco Global Cloud Index includes over 90 million records from Ookla¹, the [Cisco GIST](#) application, Ovum, Informa, Telecoms and Media, Point Topic, International Telecommunication Union (ITU) and the United Nations (UN). The network performance data gathered represents nearly 150 countries around the world, covering a span of two years. The regional averages presented in the [Cisco Global Cloud Index: Forecast and Methodology, 2012–2017](#) are based on the detailed analysis of these speed tests.

¹ Measured by [Speedtest.net](#), small binary files are downloaded and uploaded between the web server and the client to estimate the connection speed in kbps.

Individual countries may have slightly or significantly higher or lower averages compared to their regional averages for download speed, upload speed, and network latency. In some cases, individual countries did not have enough test results to warrant inclusion in a particular network metric category (e.g., fixed or mobile download or upload speed). The same applies to segmentation categories, as well. If a country has a statistically significant number of results with consumer speeds but an inadequate sample size for the business speeds, the consumer speeds are the only segment results shared in the study. Hence, some countries are included in some categories but excluded from others. For normalization and to prevent skewing of the data, we have applied the fifth to ninety-fifth percentile methodology to our study (the top 5 percent and bottom 5 percent of results in fixed and mobile performance categories by country are excluded).

For the purposes of this study, participating countries are classified into two general categories: Cloud Prepared and Cloud Emerging. These categorizations are based on a combination of the country's network download (DL), upload (UL), and latency characteristics. Download speeds in kilobits per second (kbps), upload speeds in kilobits per second (kbps), and latency in milliseconds (ms) were given equal weights in calibrating each country's network performance. The study has traditionally focused on average or mean download (Avg DL), upload (Avg UL), and latency (Avg Latency) characteristics. However, to better understand the distribution of speeds within a country, the median download speed in kbps (Median DL), median upload speed in kbps (Median UL), and the median latency in milliseconds (Median Latency) are being introduced to the study. In most countries, median speeds are lower than mean and average speeds. This is due to the higher occurrence of lower speeds in the lower fiftieth percentile, compared to the longer tail of distribution of the higher speeds. The median of a set of numbers is the midpoint, where half the numbers are lower and half the numbers are higher. The average of a set of numbers is the total of those numbers divided by the number of items in that set. Please see the download speed distribution curves for six countries within six regions in Appendix A. Countries that are classified as Cloud Prepared have network performance characteristics that are superior to countries that are classified as Cloud Emerging.

The following sections in the supplement present country-level cloud readiness results within each region and category. Countries are listed in alphabetical order. For a discussion about the relationship of application requirements to network capabilities, please refer to the Global Cloud Readiness section of the [Cisco Global Cloud Index: Forecast and Methodology, 2012–2017](#).

Cloud Prepared: Fixed

Tables 1 through 3 provide details on individual countries that are Cloud Prepared. Table 1 lists countries that are cloud prepared based on their overall (consumer and business) fixed network characteristics, Table 2 lists countries that are cloud prepared based on their consumer fixed network characteristics, and Table 3 lists countries based on their business fixed network characteristics.

Table 1. Cloud-Prepared Countries: Overall (Consumer and Business) Fixed Networks

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	China	7,062	4,678	4,045	1,003	53	31
	Hong Kong	33,340	18,914	24,009	11,472	38	12
	Japan	26,494	16,048	14,731	5,499	64	41
	Korea	28,840	21,462	24,347	12,641	52	12
	Singapore	27,765	17,410	16,565	7,198	38	14
	Taiwan	19,803	12,047	5,007	3,851	39	20
Central and Eastern Europe	Bulgaria	21,050	16,424	13,070	7,634	34	18
	Czech Republic	13,295	9,541	6,248	2,279	36	23
	Estonia	12,238	5,667	4,919	1,605	54	37
	Georgia	8,954	4,865	8,613	2,507	52	26
	Hungary	13,963	10,173	3,862	1,323	42	25
	Latvia	19,625	8,945	13,603	4,673	49	25
	Lithuania	27,377	16,008	21,355	12,553	46	15
	Moldova	20,904	9,478	10,035	3,192	51	27
	Romania	24,335	16,617	14,320	5,827	42	25
	Russian Federation	13,327	7,061	12,197	4,954	59	32
	Slovakia	11,295	6,040	4,287	1,310	47	27
	Slovenia	8,273	5,885	3,841	937	49	27
	Ukraine	12,125	5,144	8,845	2,363	70	41
Latin America	Aruba	7,868	7,606	1,122	493	45	32
Middle East and Africa	Kazakhstan	8,899	5,351	7,218	859	76	45
	United Arab Emirates	11,483	7,648	5,227	972	50	16
North America	Canada	12,717	9,489	2,239	932	53	25
	United States	13,154	10,840	3,617	1,866	60	33
Western Europe	Austria	10,123	6,342	2,385	1,425	58	41
	Belgium	18,514	15,546	2,471	1,872	37	24
	Denmark	20,097	14,455	10,168	2,983	36	20
	Finland	14,823	8,062	4,869	1,596	59	44
	France	12,041	6,635	2,443	830	63	45
	Germany	16,218	11,462	2,594	1,182	51	36
	Iceland	23,348	12,966	15,838	11,309	34	18
	Luxembourg	24,256	13,598	11,480	4,793	47	25
	Malta	14,618	12,284	1,631	999	38	22
	Netherlands	25,333	18,462	8,000	3,844	33	20
	Norway	17,113	11,100	9,350	4,302	47	25
	Portugal	19,096	11,221	4,068	1,552	40	25
	Sweden	22,423	11,278	10,176	3,846	54	33
	Switzerland	29,160	20,746	4,607	2,732	33	22
	United Kingdom	16,513	9,927	3,395	1,125	52	34

Table 2. Cloud-Prepared Countries: Consumer Fixed Network

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Hong Kong	33,316	18,914	24,000	11,472	38	12
	Japan	26,422	16,048	14,697	5,499	65	41
	Korea	28,833	21,462	24,352	12,641	52	12
	Singapore	27,749	17,410	16,569	7,198	38	14
	Taiwan	19,798	12,047	5,008	3,851	39	20
Central and Eastern Europe	Bulgaria	21,041	16,424	13,064	7,634	34	18
	Czech Republic	13,283	9,541	6,245	2,279	36	23
	Estonia	12,239	5,667	4,921	1,605	54	37
	Georgia	8,955	4,865	8,614	2,507	52	26
	Hungary	13,953	10,173	3,861	1,323	42	25
	Latvia	19,625	8,945	13,604	4,673	49	25
	Lithuania	27,377	16,008	21,355	12,553	46	15
	Moldova	20,904	9,478	10,035	3,192	51	27
	Romania	24,343	16,617	14,327	5,827	42	25
	Russian Federation	13,324	7,061	12,196	4,954	59	32
	Slovakia	11,245	6,040	4,266	1,310	47	27
	Slovenia	8,273	5,885	3,841	937	49	27
	Ukraine	12,131	5,144	8,844	2,363	69	41
	Aruba	7,868	7,606	1,122	493	45	32
Latin America	Aruba	7,868	7,606	1,122	493	45	32
Middle East and Africa	Kazakhstan	8,898	5,351	7,217	859	76	45
	United Arab Emirates	11,482	7,648	5,227	972	50	16
North America	Canada	12,707	9,489	2,239	932	53	25
	United States	12,975	10,840	3,742	1,866	62	33
Western Europe	Austria	10,128	6,342	2,387	1,425	58	41
	Belgium	18,510	15,546	2,477	1,872	37	24
	Denmark	20,091	14,455	10,169	2,983	36	20
	Finland	14,815	8,062	4,868	1,596	59	44
	France	12,042	6,635	2,449	830	63	45
	Germany	16,481	11,462	2,902	1,182	52	36
	Iceland	23,348	12,966	15,838	11,309	34	18
	Luxembourg	24,113	13,598	11,411	4,793	48	25
	Malta	14,618	12,284	1,631	999	38	22
	Netherlands	25,274	18,462	7,985	3,844	33	20
	Norway	17,097	11,100	9,341	4,302	47	25
	Portugal	19,095	11,221	4,068	1,552	40	25
	Sweden	22,406	11,278	10,175	3,846	54	33
	Switzerland	26,276	20,746	5,630	2,732	37	22
	United Kingdom	16,506	9,927	3,399	1,125	52	34

Table 3. Cloud-Prepared Countries: Business Fixed Network

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Korea	29,533	23,627	24,263	19,410	85	68
	New Zealand	11,256	9,005	4,167	3,334	78	62
	Thailand	12,112	9,690	3,763	3,010	87	69
	Vietnam	18,355	14,684	9,710	7,768	20	16
Central and Eastern Europe	Bulgaria	24,375	19,500	13,958	11,167	44	35
	Estonia	16,276	13,020	6,047	4,838	63	50
	Georgia	11,593	9,275	9,936	7,949	66	53
	Hungary	17,409	13,927	5,127	4,101	51	41
	Romania	26,891	21,513	15,381	12,305	55	44
	Slovakia	14,798	11,839	5,729	4,583	55	44
	Slovenia	12,216	9,773	5,598	4,479	58	46
	Latvia	24,408	19,526	15,741	12,593	59	47
	Macedonia	9,089	7,271	4,282	3,426	62	49
	Moldova	22,615	18,092	10,544	8,435	66	52
	Ukraine	15,620	12,496	10,537	8,429	83	66
	Aruba	10,140	8,112	1,722	1,377	53	43
Middle East and Africa	Kazakhstan	10,934	8,747	8,377	6,701	92	73
North America	Canada	19,033	15,226	12,754	10,203	60	48
	United States	13,205	8,961	8,691	6,952	122	98
Western Europe	Belgium	21,232	16,985	3,220	2,576	47	38
	Germany	31,173	24,939	19,881	15,905	67	54
	Iceland	25,341	20,273	16,668	13,334	52	41
	Portugal	22,667	18,133	4,403	3,523	49	39
	Luxembourg	28,128	22,502	13,640	10,912	64	51
	Malta	16,917	13,533	2,028	1,623	48	39
	United Kingdom	14,314	11,451	10,193	8,154	90	72

Cloud Emerging: Fixed

Tables 4 through 6 provide details on individual countries that are considered to be emerging, from a cloud preparedness perspective. Countries are listed within each region alphabetically. Table 4 lists countries that are cloud emerging based on their overall (consumer and business) fixed network characteristics, Table 5 is based on consumer fixed network characteristics, and Table 6 is based on business fixed network characteristics.

Table 4. Cloud-Emerging Countries: Overall (Consumer and Business) Fixed Networks

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Australia	8,830	5,783	1,483	734	57	33
	Bangladesh	982	924	1,402	304	141	89
	Brunei Darussalam	2,057	1,143	1,144	486	99	37
	Cambodia	2,581	1,946	3,740	1,733	66	35
	Fiji	2,685	1,952	778	603	93	70
	Guam	5,357	5,079	875	841	58	21
	India	1,877	1,214	1,270	511	111	69
	Indonesia	1,428	1,033	643	327	129	82
	Philippines	1,516	1,075	523	419	118	71
	Sri Lanka	2,628	1,930	786	482	149	90
	Malaysia	3,507	2,751	2,674	502	94	52
	Mongolia	6,729	1,715	5,904	1,011	76	41
	Myanmar	1,299	720	1,035	467	209	104
	Nepal	1,342	763	2,160	390	96	46
	New Zealand	8,415	7,506	2,222	819	61	39
	Thailand	7,986	7,396	1,414	525	64	37
	Vietnam	7,321	3,592	5,696	532	68	41
Central and Eastern Europe	Albania	3,296	2,072	1,302	667	98	70
	Armenia	4,218	2,643	3,485	1,021	72	46
	Azerbaijan	2,990	2,790	923	717	86	57
	Belarus	2,846	1,883	2,000	536	76	57
	Bosnia and Herzegovina	3,402	2,598	690	374	68	47
	Croatia	4,218	4,065	758	512	62	39
	Poland	8,950	5,831	2,455	910	60	41
	Macedonia	6,766	5,354	2,732	703	55	34
	Montenegro	3,633	2,428	782	367	98	79
	Turkey	5,469	4,356	1,508	663	52	25
	Uzbekistan	712	581	719	451	174	134
Latin America	Antigua and Barbuda	1,656	1,312	708	436	148	122
	Argentina	3,237	2,472	823	500	90	45
	Bahamas	3,018	2,647	994	491	79	31
	Barbados	3,672	2,701	698	549	58	35
	Belize	1,614	1,056	866	596	91	51
	Bolivia	823	556	356	256	247	176
	Brazil	5,503	3,825	1,126	687	66	41
	Cayman Islands	4,235	2,954	2,064	605	95	59
	Chile	6,949	4,579	1,634	603	75	41
	Colombia	3,295	2,788	1,258	791	84	50

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
	Costa Rica	1,969	1,737	764	564	133	90
	Dominican Republic	2,152	1,493	932	466	92	59
	Ecuador	2,605	1,718	2,704	697	86	49
	El Salvador	2,296	1,707	1,340	665	125	89
	Guatemala	2,144	1,513	1,004	653	132	89
	Guyana	940	986	568	562	198	151
	Haiti	1,517	1,114	993	632	154	115
	Honduras	2,542	1,944	1,538	863	89	46
	Jamaica	3,251	2,316	859	625	122	77
	Nicaragua	1,667	1,538	1,323	816	105	45
	Panama	2,984	2,487	1,184	825	161	135
	Paraguay	2,232	1,093	1,493	551	97	50
	Peru	2,273	1,853	505	370	82	49
	Puerto Rico	3,616	2,872	1,011	424	67	45
	Suriname	1,421	1,181	459	354	67	25
	Mexico	5,661	3,788	1,708	671	75	45
	Trinidad and Tobago	5,699	4,057	1,184	942	116	92
	Uruguay	7,873	3,107	2,017	647	59	35
	Venezuela	1,397	961	449	356	166	127
Middle East and Africa	Afghanistan	921	724	687	444	249	126
	Algeria	834	843	354	307	122	92
	Angola	2,294	1,456	1,292	602	187	76
	Bahrain	2,632	1,693	887	496	109	70
	Cameroon	841	573	396	197	189	57
	Cote D'Ivoire	1,632	1,122	857	467	113	70
	Egypt	1,023	825	341	219	118	69
	Ghana	3,477	2,117	1,303	647	112	55
	Iran	1,415	1,042	734	449	98	67
	Iraq	1,936	1,028	2,371	913	99	44
	Israel	9,582	8,450	1,264	919	61	29
	Jordan	2,090	1,540	652	390	138	89
	Kenya	2,805	1,454	2,070	738	129	62
	Nigeria	1,555	991	1,209	482	247	166
	Oman	3,104	2,057	779	497	108	58
	Pakistan	1,453	1,049	592	403	112	80
	Qatar	4,198	2,090	1,684	516	88	48
	Saudi Arabia	4,914	3,148	1,209	540	95	65
	South Africa	2,620	2,703	881	414	73	35
	Syrian Arab Republic	774	481	240	181	232	145
	Tanzania	1,551	1,004	1,284	672	136	59

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
	Kuwait	5,555	3,346	2,869	867	91	47
	Lebanon	1,793	926	478	237	190	165
	Madagascar	4,885	4,645	924	626	108	77
	Mauritius	1,269	922	309	268	79	45
	Morocco	3,520	3,342	426	236	111	72
	Mozambique	1,601	1,162	848	504	157	58
	Namibia	5,355	1,821	3,140	670	99	59
	Tunisia	2,587	1,866	796	601	131	110
	Uganda	2,246	1,018	1,730	740	152	82
	Yemen	1,184	848	469	324	236	170
	Zimbabwe	1,848	917	1,813	469	123	63
Western Europe	Cyprus	5,790	4,873	982	745	62	41
	Greece	6,174	5,457	733	711	63	41
	Ireland	7,653	4,139	1,899	780	75	51
	Italy	4,791	4,343	819	437	79	58
	Spain	10,559	6,459	2,033	734	70	52

Table 5. Cloud-Emerging Countries: Consumer Fixed Network

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Australia	8,839	5,783	1,499	734	57	33
	Bangladesh	992	924	1,465	304	141	89
	Brunei Darussalam	2,057	1,143	1,144	486	99	37
	Cambodia	2,555	1,946	3,685	1,733	66	35
	China	7,059	4,678	4,044	1,003	54	31
	Fiji	2,685	1,952	778	603	93	70
	Guam	5,360	5,079	875	841	58	21
	India	1,880	1,214	1,274	511	110	69
	Indonesia	1,430	1,033	646	327	129	82
	Philippines	1,518	1,075	524	419	118	71
	Sri Lanka	2,602	1,930	785	482	150	90
	Malaysia	3,508	2,751	2,677	502	94	52
	Mongolia	6,056	1,715	5,411	1,011	74	41
	Myanmar	1,299	720	1,035	467	209	104
	Nepal	1,342	763	2,160	390	96	46
	New Zealand	8,450	7,506	2,268	819	60	39
	Thailand	7,991	7,396	1,421	525	64	37
	Vietnam	7,334	3,592	5,708	532	68	41

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Central and Eastern Europe	Albania	3,287	2,072	1,299	667	98	70
	Armenia	4,218	2,643	3,485	1,021	72	46
	Azerbaijan	2,990	2,790	923	717	86	57
	Belarus	2,846	1,883	2,000	536	76	57
	Bosnia and Herzegovina	3,402	2,598	690	374	68	47
	Croatia	4,218	4,065	758	512	62	39
	Poland	8,953	5,831	2,459	910	60	41
	Serbia	4,800	3,955	1,004	745	52	26
	Macedonia	6,766	5,354	2,732	703	55	34
	Montenegro	3,633	2,428	782	367	98	79
	Turkey	5,469	4,356	1,509	663	52	25
	Uzbekistan	712	581	719	451	174	134
Latin America	Antigua and Barbuda	1,656	1,312	708	436	148	122
	Argentina	3,237	2,472	823	500	90	45
	Bahamas	3,023	2,647	994	491	79	31
	Barbados	3,672	2,701	698	549	58	35
	Belize	1,638	1,056	876	596	91	51
	Bolivia	824	556	356	256	247	176
	Brazil	5,501	3,825	1,127	687	66	41
	Cayman Islands	4,235	2,954	2,064	605	95	59
	Chile	6,949	4,579	1,634	603	75	41
	Colombia	3,291	2,788	1,257	791	84	50
	Costa Rica	1,969	1,737	766	564	133	90
	Dominican Republic	2,173	1,493	948	466	92	59
	Ecuador	2,604	1,718	2,705	697	86	49
	El Salvador	2,296	1,707	1,340	665	125	89
	Guatemala	2,149	1,513	1,007	653	132	89
	Guyana	951	986	571	562	198	151
	Haiti	1,520	1,114	994	632	154	115
	Honduras	2,551	1,944	1,548	863	89	46
	Jamaica	3,195	2,316	862	625	123	77
	Nicaragua	1,667	1,538	1,323	816	105	45
	Panama	2,984	2,487	1,184	825	161	135
	Paraguay	2,232	1,093	1,493	551	97	50
	Peru	2,272	1,853	506	370	82	49
	Puerto Rico	3,655	2,872	1,044	424	67	45
	Suriname	1,421	1,181	459	354	67	25
	Mexico	5,662	3,788	1,710	671	75	45
	Trinidad and Tobago	5,699	4,057	1,184	942	116	92

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Middle East and Africa	Uruguay	7,873	3,107	2,017	647	59	35
	Venezuela	1,397	961	449	356	166	127
	Afghanistan	916	724	686	444	251	126
	Algeria	834	843	354	307	122	92
	Angola	2,485	1,456	1,369	602	187	76
	Bahrain	2,632	1,693	887	496	109	70
	Cameroon	841	573	396	197	189	57
	Cote D'Ivoire	1,632	1,122	857	467	113	70
	Egypt	1,023	825	342	219	118	69
	Ghana	3,444	2,117	1,295	647	118	55
	Iran	1,415	1,042	735	449	98	67
	Iraq	1,936	1,028	2,371	913	99	44
	Israel	9,580	8,450	1,268	919	61	29
	Jordan	2,090	1,540	652	390	138	89
	Kenya	2,756	1,454	2,031	738	130	62
	Nigeria	1,571	991	1,214	482	251	166
	Oman	3,104	2,057	779	497	108	58
	Pakistan	1,459	1,049	624	403	112	80
	Qatar	4,198	2,090	1,684	516	88	48
	Saudi Arabia	4,913	3,148	1,209	540	95	65
	South Africa	2,514	2,703	827	414	74	35
	Syrian Arab Republic	774	481	240	181	232	145
	Tanzania	1,547	1,004	1,280	672	136	59
	Kuwait	5,555	3,346	2,869	867	91	47
	Lebanon	1,760	926	471	237	199	165
	Madagascar	4,882	4,645	924	626	108	77
	Mauritius	1,269	922	309	268	79	45
	Morocco	3,520	3,342	426	236	111	72
	Mozambique	1,601	1,162	848	504	157	58
	Namibia	5,352	1,821	3,138	670	99	59
	Tunisia	2,587	1,866	796	601	131	110
	Uganda	2,246	1,018	1,729	740	152	82
	Yemen	1,184	848	469	324	236	170
	Zimbabwe	1,841	917	1,803	469	123	63
Western Europe	Cyprus	5,790	4,873	982	745	62	41
	Greece	6,173	5,457	733	711	63	41
	Ireland	7,636	4,139	1,901	780	75	51
	Italy	4,791	4,343	820	437	79	58
	Spain	10,532	6,459	2,030	734	70	52

Table 6. Cloud-Emerging Countries: Business Fixed Network

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Bangladesh	1,470	1,176	1,816	1,453	173	138
	Brunei Darussalam	3,857	3,085	2,140	1,712	129	103
	Cambodia	3,516	2,813	3,944	3,156	89	71
	Fiji	3,238	2,591	1,063	851	122	97
	Guam	6,067	4,853	1,673	1,339	98	78
	India	5,917	4,733	4,944	3,955	139	111
	Indonesia	2,509	2,007	1,220	976	145	116
	Sri Lanka	2,970	2,376	872	698	161	129
	Maldives	3,989	3,191	2,016	1,613	132	106
	Mongolia	8,642	6,914	6,551	5,241	109	87
	Myanmar	2,737	2,190	2,012	1,609	244	195
	Nepal	1,792	1,434	2,491	1,993	124	99
	New Caledonia	5,770	4,616	917	734	90	72
Central and Eastern Europe	Albania	4,512	3,610	1,911	1,529	105	84
	Armenia	6,270	5,016	4,526	3,621	89	71
	Azerbaijan	3,628	2,902	1,398	1,118	98	78
	Bosnia and Herzegovina	4,216	3,373	1,023	819	78	62
	Russian Federation	5,445	4,356	4,833	3,866	59	47
	Serbia	6,001	4,801	1,435	1,148	61	49
	Montenegro	4,955	3,964	1,035	828	105	84
	Turkey	8,074	6,459	2,936	2,349	65	52
	Uzbekistan	960	768	888	710	200	160
Latin America	Antigua and Barbuda	2,382	1,905	1,155	924	162	129
	Argentina	3,943	3,154	1,038	830	104	83
	Belize	2,683	2,146	1,476	1,181	99	79
	Bermuda	5,782	4,625	2,296	1,837	63	50
	Bolivia	1,294	1,035	574	459	275	220
	Cayman Islands	5,530	4,424	3,320	2,656	108	86
	Costa Rica	2,769	2,215	1,042	834	141	113
	Dominican Republic	3,220	2,576	1,514	1,211	105	84
	Ecuador	3,764	3,011	3,229	2,583	108	86
	El Salvador	2,938	2,350	1,608	1,286	150	120
	Guyana	2,197	1,758	1,243	994	191	153
	Haiti	1,817	1,454	1,206	965	169	135
	Nicaragua	2,553	2,042	2,183	1,747	126	101
	Panama	3,891	3,113	1,596	1,277	168	134
	Paraguay	3,439	2,752	2,179	1,743	117	94

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
	Peru	2,830	2,264	698	558	104	83
	Suriname	1,748	1,399	654	523	85	68
	Trinidad and Tobago	7,266	5,813	1,456	1,165	124	99
	U.S. Virgin Islands	3,837	3,070	1,949	1,559	117	94
	Uruguay	9,361	7,489	2,244	1,795	86	69
Middle East and Africa	Afghanistan	1,350	1,080	870	696	261	209
	Algeria	1,649	1,320	636	509	149	120
	Angola	3,217	2,574	1,794	1,435	227	182
	Bahrain	3,450	2,760	1,343	1,074	125	100
	Cameroon	1,478	1,183	527	421	265	212
	Cote D'Ivoire	2,079	1,663	1,222	977	134	107
	Egypt	2,557	2,046	1,015	812	112	89
	Ethiopia	4,172	3,338	4,099	3,279	176	141
	Ghana	5,282	4,225	2,774	2,219	140	112
	Iran	1,911	1,529	1,067	854	126	101
	Iraq	2,876	2,301	2,930	2,344	110	88
	Israel	11,973	9,579	1,450	1,160	74	59
	Jordan	2,738	2,190	964	771	154	124
	Kenya	4,183	3,346	2,971	2,377	154	123
	Nigeria	2,403	1,922	1,693	1,354	274	220
	Oman	4,363	3,491	1,486	1,189	128	102
	Qatar	7,310	5,848	2,497	1,998	109	87
	Rwanda	6,534	5,227	4,246	3,397	151	121
	Saudi Arabia	1,239	991	892	714	515	412
	Sudan	1,785	1,428	732	586	309	247
	Syrian Arab Republic	1,411	1,129	587	469	251	201
	Tanzania	2,318	1,854	1,696	1,357	179	143
	Kuwait	7,303	5,842	3,628	2,902	117	94
	Libyan Arab Jamahiriya	1,683	1,346	1,185	948	215	172
	Madagascar	5,016	4,013	1,796	1,437	225	180
	Mauritius	1,518	1,214	434	347	137	110
	Morocco	3,942	3,154	485	388	124	100
	Mozambique	2,246	1,797	1,126	901	169	135
	Namibia	6,829	5,463	3,627	2,902	140	112
	Tunisia	3,030	2,424	1,058	847	138	111
	Uganda	3,733	2,986	2,660	2,128	186	149
	Yemen	1,184	947	469	375	236	189
	Zambia	2,292	1,834	2,006	1,605	272	218
	Zimbabwe	3,778	3,022	3,293	2,635	171	137
Western Europe	Cyprus	7,204	5,763	1,337	1,070	71	57
	Greece	7,299	5,839	1,145	916	73	58
	Sweden	8,986	7,189	3,990	3,192	85	68

Cloud Prepared: Mobile

Tables 7 through 9 provide details on individual countries that are Cloud Prepared, from a mobile network perspective.

Table 7. Cloud-Prepared Countries: Overall (Consumer and Business) Mobile Networks

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Hong Kong	12,947	8,107	10,987	4,702	90	32
	Japan	10,019	6,202	8,027	2,149	139	100
	Korea	10,764	8,081	10,477	6,260	206	151
	New Zealand	11,763	7,259	4,997	986	86	45
	Singapore	14,556	11,678	10,662	3,263	91	31
	Solomon Islands	10,830	6,220	4,500	1,093	89	45
Central and Eastern Europe	Bulgaria	12,251	9,604	9,707	4,382	70	26
	Georgia	10,698	6,010	9,652	4,396	79	22
	Hungary	11,482	8,317	4,940	1,604	65	36
	Latvia	11,230	6,669	9,145	2,557	80	31
	Lithuania	12,190	8,216	11,384	6,026	76	24
	Moldova	12,277	8,410	8,404	3,994	71	30
	Romania	13,099	9,190	9,541	3,864	74	35
	Ukraine	9,887	5,212	8,953	2,570	131	41
Middle East and Africa	United Arab Emirates	12,385	8,168	5,844	1,264	95	33
North America	Canada	11,849	8,948	3,974	1,558	102	49
Western Europe	Belgium	13,888	11,382	3,156	2,043	72	35
	Denmark	16,681	10,493	7,953	2,571	64	38
	Iceland	13,692	9,924	11,179	6,171	70	25
	Luxembourg	12,845	8,270	7,004	1,187	68	40
	Malta	11,171	8,951	1,717	1,028	61	30
	Netherlands	16,412	13,774	6,307	3,909	56	28
	Norway	12,514	8,731	8,198	3,557	94	44
	Portugal	12,931	9,431	5,522	2,249	72	35
	Sweden	11,665	7,803	7,164	2,343	95	53
	Switzerland	13,863	10,469	4,151	2,239	75	41

Table 8. Cloud-Prepared Countries: Consumer Mobile Networks

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Hong Kong	11,626	8,107	10,491	4,702	73	32
	Japan	10,091	6,202	8,033	2,149	146	100
	Korea	10,080	8,081	11,270	6,260	189	151
	Mongolia	7,012	3,041	6,641	1,997	59	19
	Singapore	13,440	11,678	10,299	3,263	75	31
Central and Eastern Europe	Bulgaria	11,300	9,604	9,247	4,382	57	26
	Georgia	9,425	6,010	9,069	4,396	56	22
	Hungary	10,388	8,317	4,463	1,604	55	36
	Latvia	9,918	6,669	8,586	2,557	63	31
	Lithuania	11,496	8,216	11,592	6,026	56	24
	Moldova	11,307	8,410	7,975	3,994	57	30
	Romania	11,662	9,190	8,943	3,864	62	35
Middle East and Africa	United Arab Emirates	11,371	8,168	5,452	1,264	67	33
Western Europe	Belgium	12,850	11,382	2,883	2,043	59	35
	Denmark	11,852	10,493	6,471	2,571	70	38
	Iceland	12,671	9,924	10,822	6,171	50	25
	Luxembourg	11,538	8,270	6,337	1,187	57	40
	Malta	10,319	8,951	1,546	1,028	51	30
	Netherlands	15,576	13,774	6,103	3,909	45	28
	Norway	11,284	8,731	7,787	3,557	79	44
	Portugal	11,865	9,431	5,163	2,249	62	35
	Sweden	10,199	7,803	6,584	2,343	87	53
	Switzerland	12,510	10,469	3,951	2,239	62	41

Table 9. Cloud-Prepared Countries: Business Mobile Networks

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Central and Eastern Europe	Bulgaria	12,251	9,717	9,707	4,467	70	26
	Georgia	10,698	5,881	9,652	4,349	79	23
	Latvia	11,230	6,663	9,145	2,616	80	31
	Lithuania	12,190	7,718	11,384	4,143	76	27
	Moldova	12,277	8,381	8,404	4,042	71	29
Middle East and Africa	Saudi Arabia	10,666	8,207	5,079	2,179	66	39
Western Europe	Denmark	16,698	17,915	9,758	8,640	35	27
	Iceland	13,692	9,660	11,179	5,979	70	28

Cloud Emerging: Mobile

Tables 10 through 12 provide details on individual countries that are Cloud Emerging, from a mobile network perspective.

Table 10. Cloud-Emerging Countries: Overall (Consumer and Business) Mobile Networks

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Australia	9,513	5,474	2,959	832	103	48
	Bangladesh	812	488	1,041	178	337	222
	Brunei Darussalam	2,321	998	1,389	487	173	67
	Cambodia	2,438	1,561	2,502	886	376	89
	China	4,548	2,589	2,368	691	179	77
	Fiji	3,076	1,693	876	620	217	120
	Guam	4,310	2,633	1,985	878	158	57
	India	1,731	587	1,191	356	270	129
	Indonesia	1,677	881	1,038	338	252	125
	Malaysia	3,063	1,511	2,352	511	179	91
	Maldives	1,884	986	1,147	440	331	127
	Mongolia	6,992	3,041	6,169	1,997	117	19
	Myanmar	663	240	743	241	306	115
	Nepal	1,441	381	1,178	280	188	58
	Philippines	2,388	988	1,288	412	279	152
	Sri Lanka	2,339	1,380	829	441	292	172
	Taiwan	9,664	6,241	3,675	975	91	48
	Thailand	5,477	3,539	1,614	522	117	57
	Vietnam	2,382	634	1,503	276	209	113
	Australia	9,513	5,474	2,959	832	103	48
	Bangladesh	812	488	1,041	178	337	222
Central and Eastern Europe	Albania	3,796	1,966	1,505	751	153	91
	Armenia	6,347	2,949	4,363	1,249	131	64
	Azerbaijan	3,673	2,738	1,891	829	151	79
	Belarus	3,674	1,906	2,804	698	161	101
	Bosnia and Herzegovina	4,233	2,950	995	495	107	63
	Croatia	5,626	4,018	1,911	632	116	55
	Czech Republic	9,069	6,349	5,340	2,203	76	34
	Estonia	6,718	3,550	3,588	1,042	103	58
	Macedonia	5,916	3,922	3,387	799	112	56
	Montenegro	4,347	2,198	1,193	448	148	110
	Poland	7,150	4,239	2,435	997	107	58
	Russian Federation	8,761	4,561	8,474	2,295	135	51
	Serbia	4,830	3,375	1,500	851	101	42

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
	Slovakia	8,270	4,815	3,813	1,174	92	48
	Slovenia	8,169	4,933	5,211	1,252	92	43
	Tajikistan	3,611	2,175	1,964	632	133	79
	Turkey	5,817	3,964	2,265	813	107	47
	Uzbekistan	1,059	540	940	398	302	190
Latin America	Antigua and Barbuda	2,096	1,197	1,178	467	232	190
	Argentina	3,014	1,488	949	488	231	96
	Aruba	4,020	3,033	948	389	104	62
	Bahamas	3,108	1,801	1,660	661	150	52
	Barbados	3,310	2,350	1,149	672	122	41
	Belize	2,057	1,070	814	637	113	59
	Bermuda	4,379	2,906	2,494	1,724	164	121
	Bolivia	885	501	486	187	482	392
	Brazil	4,348	1,883	1,248	576	188	77
	Cayman Islands	4,173	2,617	1,796	635	196	96
	Chile	4,876	1,979	1,643	491	240	101
	Colombia	2,861	1,950	1,316	636	173	78
	Costa Rica	1,323	858	700	422	237	151
	Dominican Republic	2,363	1,298	1,054	520	212	110
	Ecuador	2,780	1,689	2,183	572	197	85
	El Salvador	2,338	1,290	1,087	517	291	193
	Guatemala	1,908	1,052	1,044	419	306	229
	Haiti	2,025	1,149	1,097	404	240	146
	Honduras	2,094	1,048	1,341	527	171	99
	Jamaica	5,584	2,636	1,924	666	210	138
	Mexico	5,613	3,148	4,510	704	124	67
	Nicaragua	1,676	1,057	1,422	839	225	107
	Panama	2,503	1,728	1,155	558	290	206
	Paraguay	2,995	1,446	1,496	604	177	87
	Peru	2,660	1,802	1,003	413	176	59
	Puerto Rico	4,447	2,767	1,940	873	142	106
	Suriname	1,346	975	715	414	113	30
	Trinidad and Tobago	4,225	2,342	1,304	922	198	179
	U.S. Virgin Islands	2,169	1,006	1,199	575	263	157
	Uruguay	6,295	2,525	2,055	653	132	45
	Venezuela	1,742	931	824	412	273	183
Middle East and Africa	Afghanistan	980	440	967	285	412	161
	Algeria	769	510	521	219	268	120
	Angola	2,661	1,010	1,865	435	231	80
	Bahrain	3,073	1,564	1,072	493	154	77

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
	Congo	656	416	450	311	684	790
	Cote D'Ivoire	2,247	1,254	767	488	187	79
	Egypt	1,328	784	627	272	186	87
	Ghana	3,031	1,607	934	473	213	78
	Iran	1,012	614	765	345	251	98
	Iraq	2,771	912	2,369	674	144	42
	Israel	5,673	3,052	1,338	831	119	82
	Jordan	2,246	1,388	743	404	188	95
	Kazakhstan	8,200	4,526	6,757	1,248	136	52
	Kenya	3,009	1,111	1,737	500	299	161
	Kuwait	9,065	5,009	3,272	1,822	103	38
	Lebanon	1,467	688	540	273	161	61
	Libyan Arab Jamahiriya	1,125	841	2,089	885	397	907
	Madagascar	2,865	1,937	876	617	400	124
	Mauritius	1,484	995	516	301	227	64
	Morocco	2,859	1,808	520	286	172	91
	Namibia	4,003	1,513	3,144	612	282	136
	Nigeria	1,638	940	1,152	336	413	263
	Oman	2,889	1,550	1,163	491	218	81
	Pakistan	1,459	939	855	462	278	128
	Qatar	6,656	2,111	2,847	879	165	67
	Saudi Arabia	5,496	2,722	2,027	624	170	86
	South Africa	3,671	1,819	1,621	521	145	56
	Sudan	1,086	491	580	351	514	358
	Syrian Arab Republic	899	451	410	242	281	123
	Tanzania	1,510	679	1,113	360	417	317
	Tunisia	2,553	1,700	1,050	734	219	151
	Yemen	928	1,242	922	316	352	166
	Zimbabwe	1,940	640	1,521	318	354	122
North America	United States	9,952	8,272	4,245	2,077	115	58
Western Europe	Austria	8,302	5,161	2,539	1,592	100	59
	Cyprus	6,345	4,103	2,155	783	124	64
	Finland	9,619	6,554	4,786	1,793	131	68
	France	6,953	4,155	2,120	861	133	72
	Germany	9,992	6,769	2,860	1,275	103	56
	Greece	6,972	5,033	1,670	764	94	48
	Ireland	8,098	4,060	2,433	963	125	64
	Isle of Man	7,691	6,039	1,811	689	95	67
	Italy	6,698	3,898	1,682	678	120	76
	Spain	7,842	4,710	2,511	817	124	72
	United Kingdom	11,341	6,815	3,662	1,297	87	48

Table 11. Cloud-Emerging Countries: Consumer Mobile Network

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Australia	8,049	5,474	2,307	832	80	48
	Bangladesh	589	488	857	178	312	222
	Brunei Darussalam	1,633	998	856	487	141	67
	Cambodia	2,060	1,561	2,295	886	178	89
	China	3,846	2,589	2,166	691	148	77
	Fiji	2,724	1,693	769	620	203	120
	Guam	3,760	2,633	1,592	878	115	57
	India	1,257	587	802	356	235	129
	Indonesia	1,285	881	771	338	218	125
	Malaysia	2,520	1,511	1,900	511	161	91
	Maldives	1,430	986	705	440	318	127
	Myanmar	496	240	607	241	266	115
	Nepal	802	381	679	280	148	58
	New Zealand	9,618	7,259	3,831	986	74	45
	Philippines	1,643	988	803	412	263	152
	Solomon Islands	9,407	6,220	3,936	1,093	82	45
	Sri Lanka	1,978	1,380	738	441	279	172
	Taiwan	9,364	6,241	3,748	975	72	48
	Thailand	4,515	3,539	1,122	522	103	57
	Vietnam	1,529	634	600	276	172	113
Central and Eastern Europe	Albania	3,144	1,966	1,226	751	133	91
	Armenia	5,564	2,949	3,938	1,249	111	64
	Azerbaijan	3,020	2,738	1,297	829	131	79
	Belarus	2,666	1,906	1,601	698	143	101
	Bosnia and Herzegovina	3,596	2,950	855	495	96	63
	Croatia	4,523	4,018	1,219	632	99	55
	Czech Republic	7,917	6,349	4,791	2,203	65	34
	Estonia	5,609	3,550	3,118	1,042	85	58
	Macedonia	5,056	3,922	2,412	799	100	56
	Montenegro	3,257	2,198	1,032	448	143	110
	Poland	6,028	4,239	2,107	997	92	58
	Russian Federation	7,805	4,561	8,016	2,295	114	51
	Serbia	4,258	3,375	1,291	851	87	42
	Slovakia	6,988	4,815	3,400	1,174	80	48
	Slovenia	6,944	4,933	4,330	1,252	74	43
	Tajikistan	3,030	2,175	1,483	632	107	79
	Turkey	4,939	3,964	1,820	813	96	47
	Ukraine	8,516	5,212	8,042	2,570	108	41
	Uzbekistan	833	540	760	398	285	190

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Latin America	Antigua and Barbuda	1,507	1,197	770	467	217	190
	Argentina	2,337	1,488	807	488	211	96
	Aruba	3,600	3,033	660	389	98	62
	Bahamas	2,468	1,801	1,149	661	133	52
	Barbados	3,127	2,350	896	672	92	41
	Belize	1,760	1,070	707	637	99	59
	Bermuda	4,379	2,906	2,494	1,724	164	121
	Bolivia	686	501	332	187	454	392
	Brazil	3,678	1,883	993	576	159	77
	Cayman Islands	3,617	2,617	1,548	635	166	96
	Chile	3,939	1,979	1,252	491	207	101
	Colombia	2,425	1,950	988	636	146	78
	Costa Rica	1,082	858	568	422	225	151
	Dominican Republic	1,918	1,298	876	520	193	110
	Ecuador	2,214	1,689	1,950	572	167	85
	El Salvador	1,686	1,290	902	517	266	193
	Guatemala	1,560	1,052	849	419	286	229
	Haiti	1,732	1,149	887	404	224	146
	Honduras	1,714	1,048	902	527	152	99
	Jamaica	3,473	2,636	1,195	666	209	138
	Mexico	4,662	3,148	1,744	704	110	67
	Nicaragua	1,288	1,057	1,097	839	202	107
	Panama	1,951	1,728	900	558	282	206
	Paraguay	2,311	1,446	1,125	604	162	87
	Peru	2,267	1,802	767	413	137	59
	Puerto Rico	3,622	2,767	1,717	873	135	106
	Suriname	1,173	975	588	414	81	30
	Trinidad and Tobago	3,586	2,342	1,173	922	186	179
	U.S. Virgin Islands	1,739	1,006	868	575	237	157
	Uruguay	5,333	2,525	1,878	653	105	45
	Venezuela	1,221	931	760	412	256	183
Middle East and Africa	Afghanistan	749	440	786	285	330	161
	Algeria	570	510	351	219	203	120
	Angola	1,930	1,010	1,246	435	193	80
	Bahrain	2,106	1,564	757	493	129	77
	Egypt	1,029	784	449	272	174	87
	Ghana	2,639	1,607	820	473	177	78
	Iran	889	614	579	345	208	98
	Iraq	1,887	912	2,064	674	129	42
	Israel	4,150	3,052	1,144	831	115	82

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
	Jordan	1,863	1,388	638	404	163	95
	Kazakhstan	7,187	4,526	5,927	1,248	117	52
	Kenya	2,386	1,111	1,347	500	277	161
	Kuwait	8,129	5,009	3,185	1,822	78	38
	Lebanon	1,066	688	486	273	146	61
	Mauritius	1,319	995	451	301	152	64
	Morocco	2,496	1,808	500	286	149	91
	Namibia	3,083	1,513	2,424	612	229	136
	Nigeria	1,299	940	853	336	378	263
	Oman	2,220	1,550	790	491	185	81
	Pakistan	1,251	939	700	462	228	128
	Qatar	5,214	2,111	2,351	879	128	67
	Saudi Arabia	4,147	2,722	1,438	624	156	86
	South Africa	2,921	1,819	1,275	521	123	56
	Sudan	879	491	584	351	484	358
	Syrian Arab Republic	676	451	355	242	259	123
	Tanzania	1,003	679	816	360	388	317
	Tunisia	2,209	1,700	980	734	209	151
North America	Canada	10,777	8,948	3,500	1,558	91	49
	United States	9,942	8,272	4,250	2,077	97	58
Western Europe	Austria	6,925	5,161	2,239	1,592	88	59
	Cyprus	5,379	4,103	1,575	783	109	64
	Finland	9,630	6,554	4,917	1,793	94	68
	France	5,584	4,155	1,585	861	123	72
	Germany	8,848	6,769	2,663	1,275	85	56
	Greece	5,896	5,033	1,135	764	81	48
	Ireland	6,858	4,060	2,190	963	106	64
	Italy	4,643	3,898	1,265	678	108	76
	Spain	6,469	4,710	1,976	817	112	72
	United Kingdom	10,228	6,815	3,358	1,297	75	48

Table 12. Cloud-Emerging Countries: Business Mobile Network

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
Asia Pacific	Brunei Darussalam	2,321	994	1,389	489	173	70
	Cambodia	2,438	1,474	2,502	878	376	93
	Fiji	3,076	1,684	876	652	217	123
	Japan	6,005	4,915	3,482	2,027	118	80
	Nepal	1,441	375	1,178	288	188	61
	Sri Lanka	2,339	1,380	829	448	292	183
	Taiwan	4,110	3,781	640	601	110	75
Central and Eastern Europe	Albania	3,796	1,967	1,505	730	153	90
	Armenia	6,347	2,952	4,363	1,297	131	65
	Bosnia and Herzegovina	4,233	2,948	995	502	107	63
	Estonia	6,718	3,566	3,588	1,052	103	57
	Macedonia	5,916	3,922	3,387	800	112	57
	Montenegro	4,347	2,197	1,193	454	148	109
	Serbia	4,830	3,378	1,500	847	101	42
	Tajikistan	3,611	2,034	1,964	653	133	82
Latin America	Uzbekistan	1,059	563	940	424	302	187
	Antigua and Barbuda	2,096	1,269	1,178	474	232	190
	Aruba	4,020	2,973	948	391	104	63
	Bahamas	3,108	1,811	1,660	668	150	56
	Bermuda	4,379	2,906	2,494	1,724	164	121
	Bolivia	885	499	486	208	482	395
	El Salvador	2,338	1,292	1,087	517	291	192
	Haiti	2,025	1,187	1,097	430	240	144
	Jamaica	5,584	3,050	1,924	815	210	110
	Nicaragua	1,676	1,092	1,422	838	225	113
	Panama	2,503	1,742	1,155	578	290	200
	Paraguay	2,995	1,434	1,496	608	177	88
	Peru	2,660	1,742	1,003	415	176	63
	Trinidad and Tobago	4,225	2,335	1,304	939	198	175
	U.S. Virgin Islands	2,169	1,008	1,199	585	263	170
	Uruguay	6,295	2,513	2,055	659	132	46
Middle East and Africa	Venezuela	1,121	842	267	256	386	348
	Afghanistan	980	429	967	294	412	194
	Algeria	769	499	521	220	268	137
	Angola	2,661	969	1,865	447	231	80
	Congo	656	404	450	308	684	790
	Cote D'Ivoire	2,247	1,260	767	488	187	85

Region	Country	Avg. DL (kbps)	Median DL (kbps)	Avg. UL (kbps)	Median UL (kbps)	Avg. Latency (ms)	Median Latency (ms)
	Ghana	3,031	1,550	934	444	213	98
	Iran	405	306	247	188	399	269
	Kazakhstan	8,200	4,352	6,757	1,285	136	58
	Kenya	3,009	1,049	1,737	513	299	187
	Kuwait	1,959	1,716	563	439	175	77
	Madagascar	2,865	1,113	876	478	400	145
	Mauritius	1,484	955	516	305	227	72
	Namibia	4,003	1,492	3,144	619	282	139
	Nigeria	1,638	922	1,152	345	413	265
	Syrian Arab Republic	899	459	410	253	281	120
	Tanzania	1,510	679	1,113	375	417	326
	Zimbabwe	1,940	609	1,521	318	354	137
North America	United States	4,538	2,844	2,494	1,074	228	161
Western Europe	Finland	8,246	5,563	2,714	1,691	121	95
	Germany	4,549	4,773	1,518	1,351	129	88
	Isle of Man	7,691	6,030	1,811	689	95	67
	Sweden	5,029	4,258	963	1,066	123	89
	United Kingdom	2,381	1,576	1,313	622	324	209

Top Performers

Tables 13 and 14 highlight the countries with the top fixed and mobile network performance in 2013. Seven out of ten countries are in both the fixed and mobile network top-performer categories.

Table 13. Countries with Leading Fixed Network Performance (Top 10) in 2013 (Listed in Alphabetical Order)

Country	Download (kbps)	Upload (kbps)	Latency (ms)
Bulgaria	21,050	13,070	34
Hong Kong	33,340	24,009	38
Iceland	23,348	15,838	34
Japan	26,494	14,731	64
Korea	28,840	24,347	52
Lithuania	27,377	21,355	46
Netherlands	25,333	8,000	33
Romania	24,335	14,320	42
Singapore	27,765	16,565	38
Switzerland	29,160	4,607	33

Table 14. Countries with Leading Mobile Network Performance (Top 10) in 2013 (Listed in Alphabetical Order)

Country	Download (kbps)	Upload (kbps)	Latency (ms)
Bulgaria	12,251	9,707	70
Denmark	16,681	7,953	64
Hong Kong	12,947	10,987	90
Iceland	13,692	11,179	70
Lithuania	12,190	11,384	76
Luxembourg	12,845	7,004	68
Moldova	12,277	8,404	71
Netherlands	16,412	6,307	56
Romania	13,099	9,541	74
Singapore	14,556	10,662	91

Most Improved

Tables 15 and 16 provide details about the countries with the most improved fixed and mobile network performance from 2012 to 2013.

Table 15. Countries with the Most Improved Fixed Network Performance from 2012 to 2013

Country	Improvement (Y/Y)
Bangladesh	58%
Brunei Darussalam	50%
Cambodia	48%
China	69%
Denmark	45%
Georgia	123%
Iran	63%
Iraq	56%
Kazakhstan	123%
Kuwait	121%
Lebanon	96%
Luxembourg	51%
Mexico	48%
Mongolia	107%
Morocco	53%
Nepal	92%
Paraguay	117%
Switzerland	64%
Tunisia	54%
Uruguay	143%

Table 16. Countries with the Most Improved Mobile Network Performance from 2012 to 2013

Country	Improvement Y/Y
Brazil	290%
China	233%
Denmark	401%
Hong Kong	479%
Japan	495%
Korea	458%
Kuwait	253%
Mexico	280%
Netherlands	582%
Norway	419%
Portugal	262%
Romania	342%
Russian Federation	528%
Singapore	496%
Switzerland	387%
Taiwan	523%
Ukraine	618%
United Arab Emirates	248%
United Kingdom	288%
United States	252%

Conclusion

In general, fixed networks offer better upload and download speeds and latencies than mobile networks. However, the gap in performance between fixed and mobile networks is rapidly narrowing. Given the growing global adoption of advanced mobile technologies, such as third- and fourth-generation (3G and 4G) Long Term Evolution (LTE), and the worldwide demand for wireless support of next-generation devices such as tablets, e-readers, and smartphones, we expect the performance gap between fixed and mobile networks to continue to narrow over the next few years.

From an individual country perspective, several countries have average network performance characteristics that are significantly higher than that of their region. Although an increasing number of countries are currently able to support advanced cloud services, these countries will promote significantly greater cloud traffic growth rates due to the high-bandwidth services than can be offered over their networks (for example, high-definition video streaming).

From a business cloud services perspective, many networks are currently capable of supporting intermediate business applications (such as enterprise resource planning, customer resource management, and basic videoconferencing) and some are currently capable of supporting advanced business applications (such as high-definition video and audio conferencing). With the necessary infrastructure in place, businesses and enterprises of all sizes can effectively implement these productivity-enhancing applications and communications services.

For More Information

For more information, please see www.cisco.com/go/cloudindex.

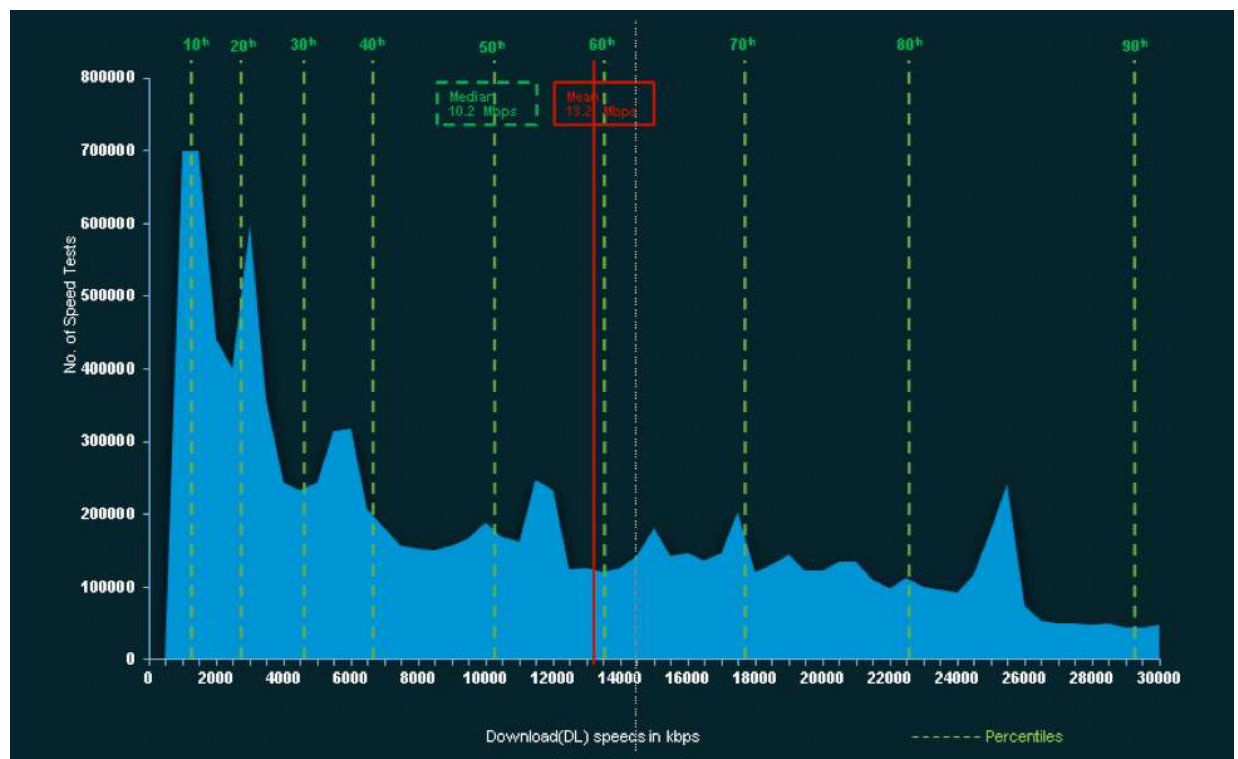
Appendix A: Individual Country Speed Test Analysis

Six countries from six regions were used to display the variation of download speeds within a country. No specific criteria were used in the selection of a country. Selection was random. More frequent occurrences of lower speeds experienced by the end user result in issues with being able to use the basket of applications available to them. Alternatively, users may choose to use a basic or smaller set of applications. The mean speeds represent the overall average of the speed tests within each country. The median represents the midpoint of the speed tests. Large variations between the mean and the median represent a skew in the distribution of speeds. Some countries also display various peaks in download speeds.

North America Speed Test Distribution Country Spotlight: United States

Figure 1 depicts the distribution of download speed tests around the mean/average or median. There are more frequent occurrences of lower download speeds of 1.3 Mbps to 4.3 Mbps, which are between the tenth through thirtieth percentile. This is offset by a wider distribution of faster download speeds beyond the mean with the ninetieth percentile representing 29 Mbps. The difference between the mean (the average) and the median speeds is 3 Mbps.

Figure 1. Download Speed Distribution Curve: United States

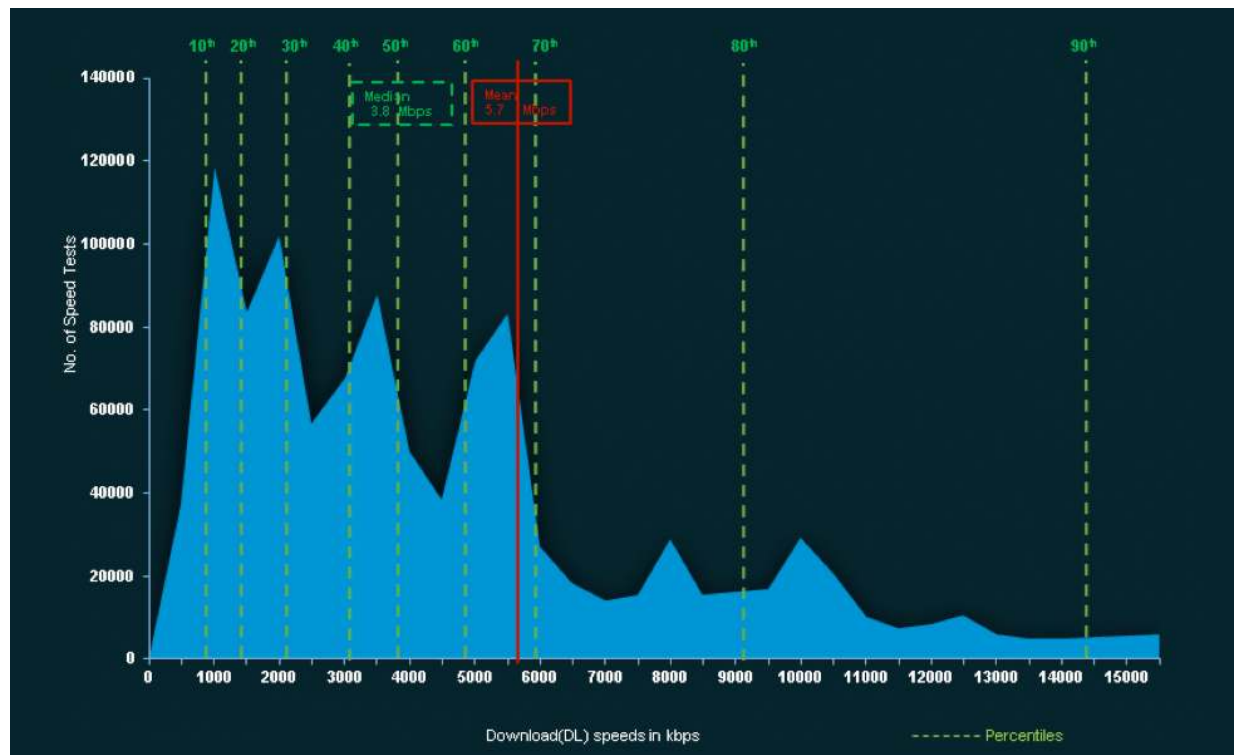


Source: Cisco Global Cloud Index, 2013

Latin America Speed Test Distribution Country Spotlight: Mexico

Figure 2 depicts the distribution of download speed tests around the mean/average and the median in Mexico. The majority of the speeds are between 868 kbps to 2.1 Mbps (tenth and thirtieth percentile), and there are fewer speed test records around the eightieth to ninetieth percentile range, which is 9.2 Mbps and 14.3 Mbps. There is a wider distribution of higher speeds beyond the sixtieth percentile. The difference between the mean (average) and the median speeds is 2 Mbps.

Figure 2. Download Speed Distribution Curve: Mexico

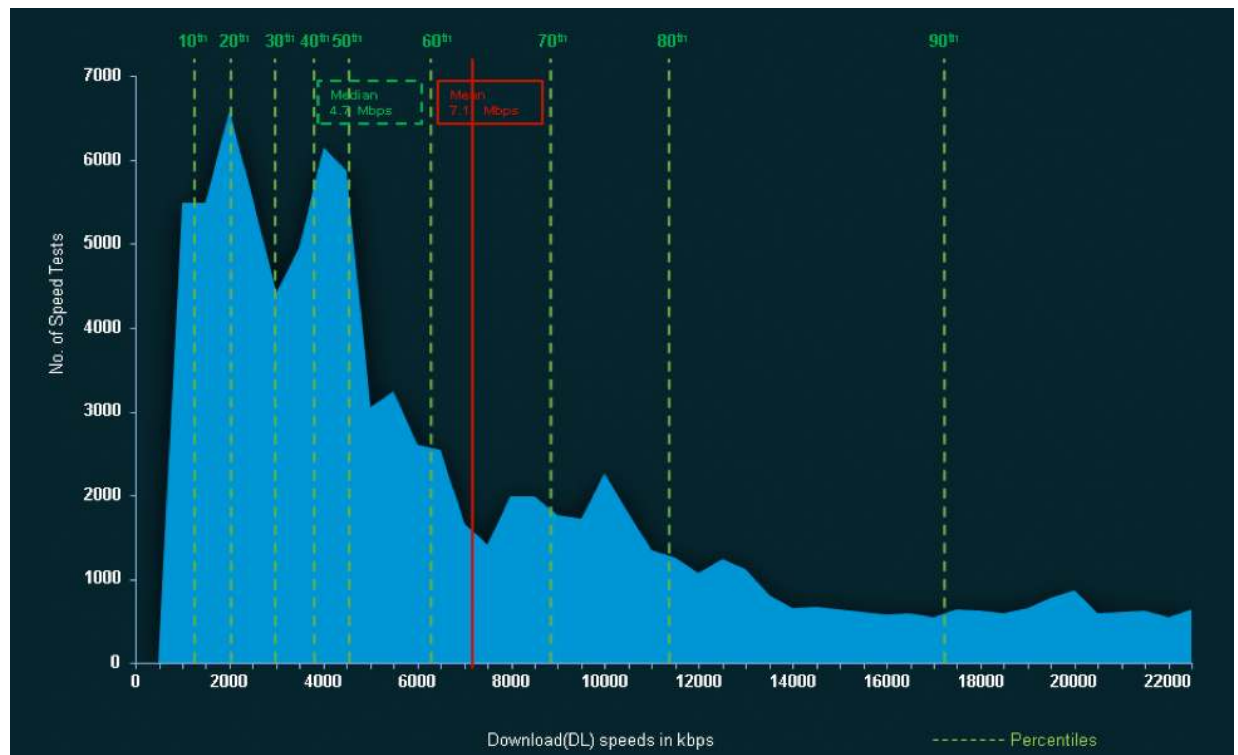


Source: Cisco Global Cloud Index, 2013

Asia-Pacific Speed Test Distribution Country Spotlight: China

Figure 3 depicts the distribution of download speeds around the mean/average and median in China. The most frequent occurrences of speeds are between 1.3 Mbps and 2.9 Mbps (tenth through the thirtieth percentile), and there are fewer speed test records around the eightieth to ninetieth percentile range (11.4 Mbps to 17.3 Mbps). The distribution has a long tail of high speeds beyond the sixtieth percentile. The difference between the mean (average) and the median speeds is nearly 2.5 Mbps.

Figure 3. Download Speed Distribution Curve: China

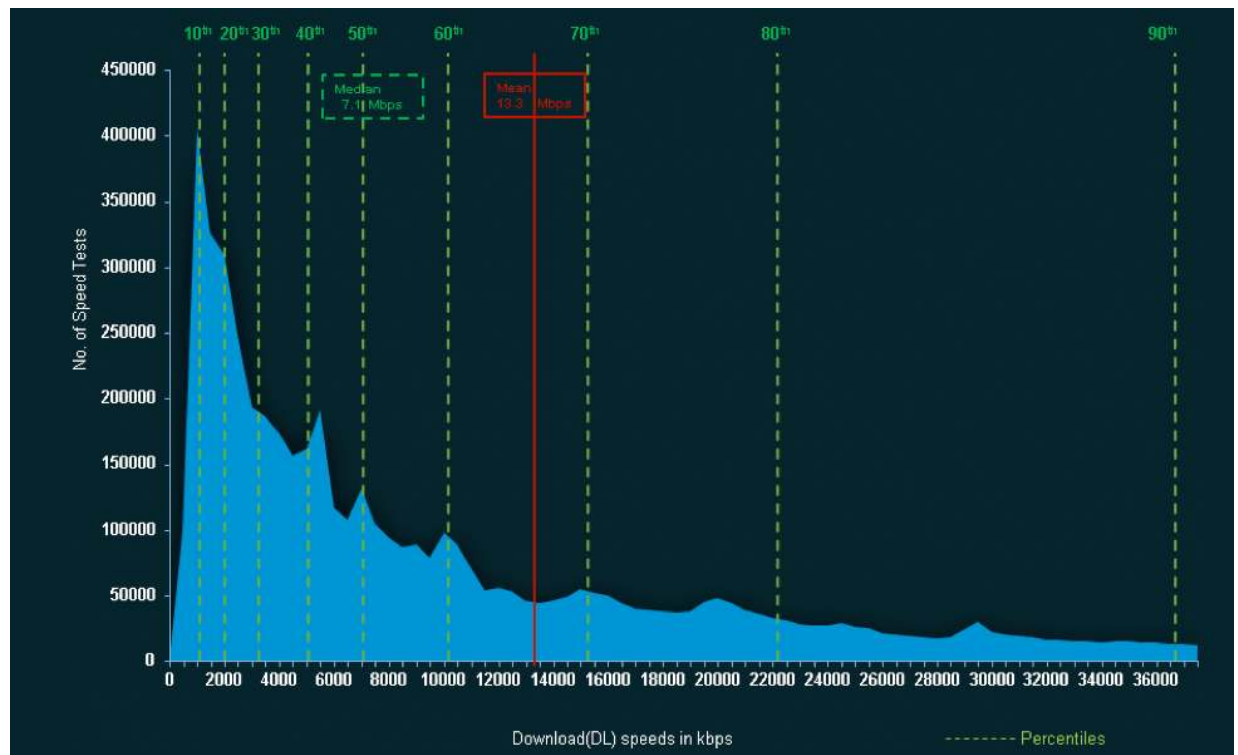


Source: Cisco Global Cloud Index, 2013

Central and Eastern Europe Speed Test Distribution Country Spotlight: Russia

Figure 4 depicts the distribution of download speeds around the mean/average and median in Russia. The largest occurrences of speeds are between 1.1 Mbps and 3.3 Mbps which are the tenth to thirtieth percentiles, and there are fewer speed test records around the 22.4 and 36.6 Mbps (eightieth to ninetieth percentile) range. The distribution has long tail of higher speeds beyond the sixtieth percentile. The difference between the mean (average) and the median speeds is nearly 6.5 Mbps.

Figure 4. Download Speed Distribution Curve: Russia

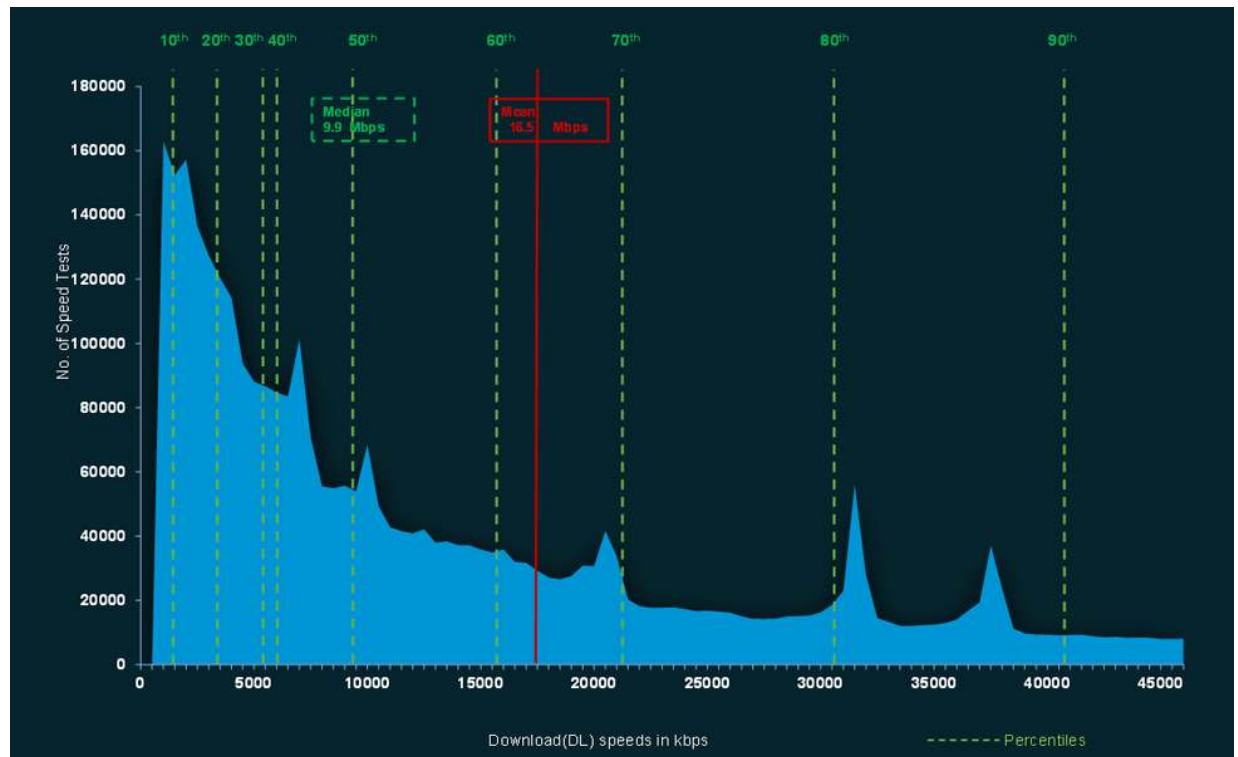


Source: Cisco Global Cloud Index, 2013

Western Europe Speed Test Distribution Country Spotlight: United Kingdom

Figure 5 depicts the distribution of download speed tests around the mean/average and median in the United Kingdom. The largest occurrences of speeds are between 1.7 Mbps and 4.8 Mbps (tenth to thirtieth percentiles), and there are fewer speed test records between 30.7 Mbps to 41.8 Mbps (eightieth to ninetieth percentile). There is a longer distribution of higher speeds beyond the sixtieth percentile. The difference between the mean or average speeds and the median is nearly 7 Mbps, the largest difference in the samples represented in Appendix A.

Figure 5. Download Speed Distribution Curve: United Kingdom

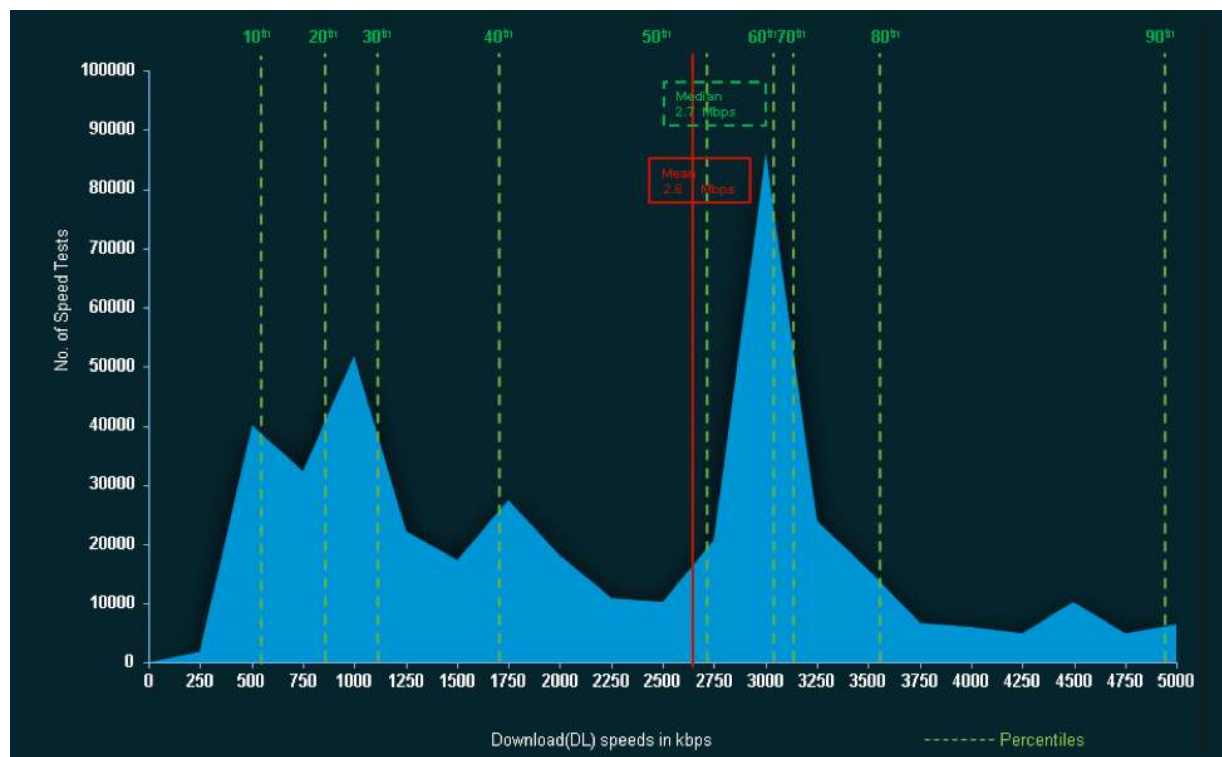


Source: Cisco Global Cloud Index, 2013

Middle East and Africa Speed Test Distribution Country Spotlight: South Africa

Figure 6 depicts the distribution of download speed tests around the mean/average and median in South Africa. Unlike the prior graphs, where the largest occurrences of speeds were between the tenth to thirtieth percentiles, the majority of the download speeds occur here between 2.3 Mbps to 4.5 Mbps (fiftieth to the eightieth percentiles). The mean (average) download speed is almost at par with the median.

Figure 6. Download Speed Distribution Curve: South Africa



Source: Cisco Global Cloud Index, 2013



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