



Brazil - 2021 Forecast Highlights

IP Traffic

- In Brazil, IP traffic will grow 2-fold from 2016 to 2021, a compound annual growth rate of 18%.
- In Brazil, IP traffic will reach 5.5 Exabytes per month in 2021, up from 2.4 Exabytes per month in 2016.
- Brazil's IP networks will carry 179 Petabytes per day in 2021, up from 78 Petabytes per day in 2016.
- In Brazil, IP traffic will reach an annual run rate of 65.5 Exabytes in 2021, up from an annual run rate of 28.6 Exabytes in 2016.
- In Brazil, IP traffic will reach 25 Gigabytes per capita in 2021, up from 11 Gigabytes per capita in 2016.
- In Brazil, average IP traffic will reach 17 Tbps in 2021, and busy hour traffic will reach 95 Tbps.
- In 2021, the gigabyte equivalent of all movies ever made will cross Brazil's IP networks every 1 hours.

Internet Traffic

- In Brazil, Internet traffic will grow 2.3-fold from 2016 to 2021, a compound annual growth rate of 18%.
- In Brazil, busy hour Internet traffic will grow 3.6-fold from 2016 to 2021, a compound annual growth rate of 29%.
- In Brazil, Internet traffic will reach 4.8 Exabytes per month in 2021, up from 2.1 Exabytes per month in 2016.
- Brazil's Internet traffic will be 156 Petabytes per day in 2021, up from 70 Petabytes per day in 2016.
- Brazil's Internet traffic in 2021 will be equivalent to 14 billion DVDs per year, 1 billion DVDs per month, or 2 million DVDs per hour.
- In 2021, the gigabyte equivalent of all movies ever made will cross the Internet every 1 hours.

- Brazilian Internet traffic in 2021 will be equivalent to 493x the volume of the entire Brazilian Internet in 2005.
- In Brazil, Internet traffic will reach 22 Gigabytes per capita in 2021, up from 10 Gigabytes per capita in 2016.
- In Brazil, average Internet traffic will increase 2.3-fold by 2021 and will reach 14 Tbps.
- In Brazil, busy hour Internet traffic will increase 3.6-fold by 2021 and will reach 83 Tbps.

Wired Wi-Fi and Mobile Growth

- Brazil's Fixed/Wi-Fi was 57% of total IP traffic in 2016, and will be 53% of total IP traffic in 2021.
- Brazil's Fixed/Wired was 36% of total IP traffic in 2016, and will be 31% of total IP traffic in 2021.
- Brazil's Mobile was 7% of total IP traffic in 2016, and will be 16% of total IP traffic in 2021.
- Brazil's Fixed/Wi-Fi was 63.3% of total Internet traffic in 2016, and will be 60.4% of total Internet traffic in 2021.
- Brazil's Fixed/Wired was 29% of total Internet traffic in 2016, and will be 21% of total Internet traffic in 2021.
- Brazil's Mobile was 7.6% of total Internet traffic in 2016, and will be 18.6% of total Internet traffic in 2021.
- In Brazil, mobile data traffic will grow 6-fold from 2016 to 2021, a compound annual growth rate of 41%.
- In Brazil, mobile data traffic will reach 884 Petabytes per month in 2021, up from 159 Petabytes per month in 2016.
- Brazilian mobile data traffic will grow 3 times faster than Brazilian fixed IP traffic from 2016 to 2021.
- Brazil's Mobile was 7% of total IP traffic in 2016, and will be 16% of total IP traffic in 2021.
- In Brazil, mobile data traffic in 2021 will be equivalent to 80x the volume of the entire Brazilian Internet in 2005.

IP Video

- In Brazil, IP video traffic will grow 3-fold from 2016 to 2021, a compound annual growth rate of 23%.
- In Brazil, IP video traffic will reach 4.7 Exabytes per month in 2021, up from 1.7 Exabytes per month in 2016.
- In Brazil, IP video will be 86% of all IP traffic in 2021, up from 70% in 2016.
- In Brazil, Ultra HD will be 8.6% of IP Video traffic in 2021, up from 0.3% in 2016 (145.2% CAGR).
- In Brazil, HD will be 54.9% of IP Video traffic in 2021, up from 26.2% in 2016 (42.4% CAGR).
- In Brazil, SD will be 36.5% of IP Video traffic in 2021, compared to 73.5% in 2016 (6.8% CAGR).
- In Brazil, consumer IP video traffic will be 88% of consumer IP traffic in 2021, up from 75% in 2016.
- In Brazil, business IP video traffic will be 72% of business IP traffic in 2021, up from 51% in 2016.

Internet Video

- In Brazil, Internet video traffic will grow 3-fold from 2016 to 2021, a compound annual growth rate of 23%.
- In Brazil, Internet video traffic will reach 4.0 Exabytes per month in 2021, up from 1.4 Exabytes per month in 2016.
- In Brazil, total Internet video traffic (business and consumer, combined) will be 84% of all Internet traffic in 2021, up from 68% in 2016.
- In Brazil, Ultra HD will be 8.0% of Internet video traffic in 2021, up from 0.3% in 2016 (136.0% CAGR).

- In Brazil, HD will be 52.3% of Internet video traffic in 2021, up from 21.7% in 2016 (46.5% CAGR).
- In Brazil, SD will be 39.7% of Internet video traffic in 2021, compared to 78.0% in 2016 (7.3% CAGR).
- In Brazil, consumer Internet video traffic will be 86% of consumer Internet traffic in 2021, up from 72% in 2016.
- In Brazil, business Internet video traffic will be 73% of business Internet traffic in 2021, up from 53% in 2016.
- In Brazil, Internet-Video-to-TV traffic will be 23% of fixed consumer Internet video traffic in 2021, up from 11% in 2016.
- In Brazil, Internet-Video-to-TV traffic will increase 5-fold between 2016 and 2021 (38.5% CAGR).
- In Brazil, 126 billion minutes (239,752 years) of video content will cross the Internet each month in 2021. That's 47,950 minutes of video streamed or downloaded every second.
- In Brazil, 47% of all Internet video traffic will cross content delivery networks in 2021, up from 30% in 2016.
- In Brazil, 70.1% of all Internet video traffic will be long-form video (including live) in 2021, up from 51.3% in 2016.

IP VOD

- In Brazil, Ultra HD will be 13.3% of IP VOD traffic in 2021, up from 0.1% in 2016 (240.6% CAGR).
- In Brazil, HD will be 75.6% of IP VOD traffic in 2021, up from 59.9% in 2016 (29.9% CAGR).
- In Brazil, SD will be 11.1% of IP VOD traffic in 2021, compared to 40.0% in 2016 (-4.0% CAGR).

Gaming

- In Brazil, gaming traffic will grow 3-fold from 2016 to 2021, a compound annual growth rate of 27%.
- In Brazil, gaming traffic will reach 121 Petabytes per month in 2021, up from 36 Petabytes per month in 2016.
- In Brazil, gaming traffic will be 3% of consumer Internet traffic in 2021, up from 2% in 2016.

Devices

- In Brazil, there will be 734.3 million networked devices in 2021, up from 503.4 million in 2016.
- In Brazil, there will be 3.4 networked devices per capita in 2021, up from 2.4 per capita in 2016.
- In Brazil, 47% of all networked devices will be mobile-connected in 2021.
- In Brazil, M2M modules will account for 44% (321.0 million) of all networked devices in 2021, compared to 28% (141.8 million) in 2016, (17.7% CAGR).
- In Brazil, PCs will account for 5% (37.6 million) of all networked devices in 2021, compared to 13% (65.3 million) in 2016, (-10.5% CAGR).
- In Brazil, Tablets will account for 2% (11.6 million) of all networked devices in 2021, compared to 2% (9.0 million) in 2016, (5.2% CAGR).
- In Brazil, Smartphones will account for 27% (197.2 million) of all networked devices in 2021, compared to 26% (133.0 million) in 2016, (8.2% CAGR).
- In Brazil, Connected TVs will account for 14% (102.8 million) of all networked devices in 2021, compared to 10% (50.9 million) in 2016, (15.1% CAGR).

- In Brazil, Non-Smartphones will account for 6.8% (50.1 million) of all networked devices in 2021, compared to 19% (97.2 million) in 2016, (-12.4% CAGR).
- In Brazil, Other Portables will account for 2% (14.1 million) of all networked devices in 2021, compared to 1% (6.2 million) in 2016, (18% CAGR).
- In Brazil, 4K TVs will account for 35% (17.2 million) of all flat panel TVs in 2021, compared to 6.1% (1.1 million) in 2016, (72.5% CAGR).
- Brazil's IP traffic from non-PC devices was 34% of total IP traffic in 2016, and will be 72% of total IP traffic in 2021.
- In Brazil, PCs accounted for 66% of IP traffic in 2016, and will be 28% of IP traffic in 2021.
- In Brazil, TVs accounted for 14% of IP traffic in 2016, and will be 24% of IP traffic in 2021.
- In Brazil, Smartphones accounted for 14% of IP traffic in 2016, and will be 39% of IP traffic in 2021.
- In Brazil, Tablets accounted for 5% of IP traffic in 2016, and will be 6% of IP traffic in 2021.
- In Brazil, M2M modules accounted for 1.3% of IP traffic in 2016, and will be 4.3% of IP traffic in 2021.
- In Brazil, PCs accounted for 68% of consumer Internet traffic in 2016, and will be 26% of consumer Internet traffic in 2021.
- In Brazil, TVs accounted for 7% of consumer Internet traffic in 2016, and will be 16% of consumer Internet traffic in 2021.
- In Brazil, TVs accounted for 6% of total Internet traffic in 2016, and will be 14% of total Internet traffic in 2021.

Speed Evolution

- In Brazil, the average fixed broadband speed will grow 1.9-fold from 2016 to 2021, from 11.2 Mbps to 21.3 Mbps.
- In Brazil, 74% of fixed broadband connections will be faster than 5 Mbps in 2021, up from 56% today.
- In Brazil, 51% of fixed broadband connections will be faster than 10 Mbps in 2021, up from 36% today.
- In Brazil, 20.0% of fixed broadband connections will be faster than 25 Mbps in 2021, up from 10.9% today.
- In Brazil, 9.8% of fixed broadband connections will be faster than 50 Mbps in 2021, up from 5.3% today.
- In Brazil, the average Wi-Fi speeds from mobile devices will grow 1.8-fold from 2016 to 2021, from 8.0 Mbps to 15 Mbps.
- In Brazil, the average mobile connection speed will grow 3-fold from 2016 to 2021, reaching 14 Mbps in 2021.

Traffic per User and Household

- Average Traffic per User and Household
- In Brazil, the average Internet user will generate 44.3 Gigabytes of Internet traffic per month in 2021, up 88% from 23.6 Gigabytes per month in 2016, a CAGR of 13%.
- In Brazil, the average Internet household will generate 118.9 Gigabytes of Internet traffic per month in 2021, up 91% from 62.2 Gigabytes per month in 2016, a CAGR of 14%.
- In Brazil, the average FTTx Internet household will generate 239.0 Gigabytes of Internet traffic per month in 2021, 125.7% more than other broadband households.

- In Brazil, the average FTTx Internet household generated 154.0 Gigabytes of Internet traffic per month in 2016, 154.1% more than other broadband households.
- In Brazil, there will be 5 million Internet households (19.0% of all Internet households) generating more than 250 Gigabytes per month in 2021.
- In Brazil, there will be 1 million households (5.0% of all Internet households) generating more than 500 Gigabytes per month in 2021.
- In Brazil, there will be 259,695 households (1.0% of all Internet households) generating more than a terabyte per month in 2021.
- In Brazil, the average mobile connection will generate 2,658 Megabytes of mobile data traffic per month in 2021, up from 549 Megabytes in 2016.

Traffic Topology and Traffic Patterns

- In Brazil, 44% of all Internet traffic will cross content delivery networks in 2021, up from 23% in 2016.
- In Brazil, peak Internet traffic will grow at a compound annual growth rate of 29% from 2016 to 2021, compared to 18% for average Internet traffic.