



Japan - 2021 Forecast Highlights

IP Traffic

- In Japan, IP traffic will grow 3-fold from 2016 to 2021, a compound annual growth rate of 26%.
- In Japan, IP traffic will reach 14.0 Exabytes per month in 2021, up from 4.4 Exabytes per month in 2016.
- Japan's IP networks will carry 461 Petabytes per day in 2021, up from 145 Petabytes per day in 2016.
- In Japan, IP traffic will reach an annual run rate of 168.3 Exabytes in 2021, up from an annual run rate of 52.8 Exabytes in 2016.
- In Japan, IP traffic will reach 113 Gigabytes per capita in 2021, up from 35 Gigabytes per capita in 2016.
- In Japan, average IP traffic will reach 43 Tbps in 2021, and busy hour traffic will reach 247 Tbps.
- In 2021, the gigabyte equivalent of all movies ever made will cross Japan's IP networks every 25 minutes.

Internet Traffic

- In Japan, Internet traffic will grow 3.6-fold from 2016 to 2021, a compound annual growth rate of 29%.
- In Japan, busy hour Internet traffic will grow 5.1-fold from 2016 to 2021, a compound annual growth rate of 39%.
- In Japan, Internet traffic will reach 12.7 Exabytes per month in 2021, up from 3.5 Exabytes per month in 2016.
- Japan's Internet traffic will be 417 Petabytes per day in 2021, up from 110 Petabytes per day in 2016.
- Japan's Internet traffic in 2021 will be equivalent to 38 billion DVDs per year, 3 billion DVDs per month, or 4 million DVDs per hour.
- In 2021, the gigabyte equivalent of all movies ever made will cross the Internet every 28 minutes.

- Japanese Internet traffic in 2021 will be equivalent to 95x the volume of the entire Japanese Internet in 2005.
- In Japan, Internet traffic will reach 102 Gigabytes per capita in 2021, up from 28 Gigabytes per capita in 2016.
- In Japan, average Internet traffic will increase 3.6-fold by 2021 and will reach 39 Tbps.
- In Japan, busy hour Internet traffic will increase 5.1-fold by 2021 and will reach 223 Tbps.

Wired Wi-Fi and Mobile Growth

- Japan's Fixed/Wi-Fi was 50% of total IP traffic in 2016, and will be 56% of total IP traffic in 2021.
- Japan's Fixed/Wired was 38% of total IP traffic in 2016, and will be 30% of total IP traffic in 2021.
- Japan's Mobile was 12% of total IP traffic in 2016, and will be 14% of total IP traffic in 2021.
- Japan's Fixed/Wi-Fi was 60.2% of total Internet traffic in 2016, and will be 61.3% of total Internet traffic in 2021.
- Japan's Fixed/Wired was 24% of total Internet traffic in 2016, and will be 23% of total Internet traffic in 2021.
- Japan's Mobile was 15.4% of total Internet traffic in 2016, and will be 15.2% of total Internet traffic in 2021.
- In Japan, mobile data traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 29%.
- In Japan, mobile data traffic will reach 1.9 Exabytes per month in 2021, up from 538 Petabytes per month in 2016.
- Japanese mobile data traffic will grow 1 times faster than Japanese fixed IP traffic from 2016 to 2021.
- Japan's Mobile was 12% of total IP traffic in 2016, and will be 14% of total IP traffic in 2021.
- In Japan, mobile data traffic in 2021 will be equivalent to 13x the volume of the entire Japanese Internet in 2005.

IP Video

- In Japan, IP video traffic will grow 3-fold from 2016 to 2021, a compound annual growth rate of 28%.
- In Japan, IP video traffic will reach 11.0 Exabytes per month in 2021, up from 3.2 Exabytes per month in 2016.
- In Japan, IP video will be 79% of all IP traffic in 2021, up from 72% in 2016.
- In Japan, Ultra HD will be 19.0% of IP Video traffic in 2021, up from 2.6% in 2016 (91.2% CAGR).
- In Japan, HD will be 59.7% of IP Video traffic in 2021, up from 45.9% in 2016 (35.2% CAGR).
- In Japan, SD will be 21.4% of IP Video traffic in 2021, compared to 51.5% in 2016 (7.6% CAGR).
- In Japan, consumer IP video traffic will be 81% of consumer IP traffic in 2021, up from 79% in 2016.
- In Japan, business IP video traffic will be 71% of business IP traffic in 2021, up from 50% in 2016.

Internet Video

- In Japan, Internet video traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 33%.
- In Japan, Internet video traffic will reach 9.8 Exabytes per month in 2021, up from 2.4 Exabytes per month in 2016.
- In Japan, total Internet video traffic (business and consumer, combined) will be 77% of all Internet traffic in 2021, up from 67% in 2016.

- In Japan, Ultra HD will be 18.2% of Internet video traffic in 2021, up from 3.4% in 2016 (85.6% CAGR).
- In Japan, HD will be 58.9% of Internet video traffic in 2021, up from 37.4% in 2016 (45.6% CAGR).
- In Japan, SD will be 22.8% of Internet video traffic in 2021, compared to 59.2% in 2016 (9.9% CAGR).
- In Japan, consumer Internet video traffic will be 78% of consumer Internet traffic in 2021, up from 73% in 2016.
- In Japan, business Internet video traffic will be 72% of business Internet traffic in 2021, up from 52% in 2016.
- In Japan, Internet-Video-to-TV traffic will be 27% of fixed consumer Internet video traffic in 2021, up from 30% in 2016.
- In Japan, Internet-Video-to-TV traffic will increase 4-fold between 2016 and 2021 (30.1% CAGR).
- In Japan, 385 billion minutes (733,031 years) of video content will cross the Internet each month in 2021. That's 146,606 minutes of video streamed or downloaded every second.
- In Japan, 98% of all Internet video traffic will cross content delivery networks in 2021, up from 82% in 2016.
- In Japan, 84.6% of all Internet video traffic will be long-form video (including live) in 2021, up from 81.2% in 2016.

IP VOD

- In Japan, Ultra HD will be 26.6% of IP VOD traffic in 2021, up from 0.1% in 2016 (214.1% CAGR).
- In Japan, HD will be 70.5% of IP VOD traffic in 2021, up from 74.8% in 2016 (7.5% CAGR).
- In Japan, SD will be 2.9% of IP VOD traffic in 2021, compared to 25.1% in 2016 (-29.4% CAGR).

Gaming

- In Japan, gaming traffic will grow 20-fold from 2016 to 2021, a compound annual growth rate of 83%.
- In Japan, gaming traffic will reach 957 Petabytes per month in 2021, up from 47 Petabytes per month in 2016.
- In Japan, gaming traffic will be 9% of consumer Internet traffic in 2021, up from 2% in 2016.

Devices

- In Japan, there will be 1.4 billion networked devices in 2021, up from 801.8 million in 2016.
- In Japan, there will be 11.4 networked devices per capita in 2021, up from 6.3 per capita in 2016.
- In Japan, 26% of all networked devices will be mobile-connected in 2021.
- In Japan, M2M modules will account for 73% (1.0 billion) of all networked devices in 2021, compared to 54% (431.6 million) in 2016, (18.9% CAGR).
- In Japan, PCs will account for 4% (60.6 million) of all networked devices in 2021, compared to 9% (72.3 million) in 2016, (-3.5% CAGR).
- In Japan, Tablets will account for 2% (21.3 million) of all networked devices in 2021, compared to 2% (19.1 million) in 2016, (2.1% CAGR).
- In Japan, Smartphones will account for 10% (142.9 million) of all networked devices in 2021, compared to 13% (108.1 million) in 2016, (5.7% CAGR).

- In Japan, Connected TVs will account for 8% (114.0 million) of all networked devices in 2021, compared to 13% (102.6 million) in 2016, (2.1% CAGR).
- In Japan, Non-Smartphones will account for 0.3% (4.3 million) of all networked devices in 2021, compared to 5% (36.3 million) in 2016, (-34.8% CAGR).
- In Japan, Other Portables will account for 3% (46.0 million) of all networked devices in 2021, compared to 4% (31.8 million) in 2016, (7.6% CAGR).
- In Japan, 4K TVs will account for 58% (21.6 million) of all flat panel TVs in 2021, compared to 6.1% (1.9 million) in 2016, (62.3% CAGR).
- Japan's IP traffic from non-PC devices was 69% of total IP traffic in 2016, and will be 82% of total IP traffic in 2021.
- In Japan, PCs accounted for 31% of IP traffic in 2016, and will be 18% of IP traffic in 2021.
- In Japan, TVs accounted for 29% of IP traffic in 2016, and will be 27% of IP traffic in 2021.
- In Japan, Smartphones accounted for 29% of IP traffic in 2016, and will be 37% of IP traffic in 2021.
- In Japan, Tablets accounted for 9% of IP traffic in 2016, and will be 12% of IP traffic in 2021.
- In Japan, M2M modules accounted for 3.0% of IP traffic in 2016, and will be 6.9% of IP traffic in 2021.
- In Japan, PCs accounted for 29% of consumer Internet traffic in 2016, and will be 16% of consumer Internet traffic in 2021.
- In Japan, TVs accounted for 18% of consumer Internet traffic in 2016, and will be 25% of consumer Internet traffic in 2021.
- In Japan, TVs accounted for 14% of total Internet traffic in 2016, and will be 20% of total Internet traffic in 2021.

Speed Evolution

- In Japan, the average fixed broadband speed will grow 1.5-fold from 2016 to 2021, from 67.4 Mbps to 103.8 Mbps.
- In Japan, 99% of fixed broadband connections will be faster than 5 Mbps in 2021, up from 89% today.
- In Japan, 95% of fixed broadband connections will be faster than 10 Mbps in 2021, up from 77% today.
- In Japan, 80.9% of fixed broadband connections will be faster than 25 Mbps in 2021, up from 58.5% today.
- In Japan, 70.4% of fixed broadband connections will be faster than 50 Mbps in 2021, up from 41.5% today.
- In Japan, the average Wi-Fi speeds from mobile devices will grow 2.1-fold from 2016 to 2021, from 27.9 Mbps to 58 Mbps.
- In Japan, the average mobile connection speed will grow 2-fold from 2016 to 2021, reaching 36 Mbps in 2021.

Traffic per User and Household

- In Japan, the average Internet user will generate 90.9 Gigabytes of Internet traffic per month in 2021, up 284% from 23.7 Gigabytes per month in 2016, a CAGR of 31%.
- In Japan, the average Internet household will generate 211.3 Gigabytes of Internet traffic per month in 2021, up 286% from 54.8 Gigabytes per month in 2016, a CAGR of 31%.

- In Japan, the average FTTx Internet household will generate 239.8 Gigabytes of Internet traffic per month in 2021, 82.1% more than other broadband households.
- In Japan, the average FTTx Internet household generated 64.2 Gigabytes of Internet traffic per month in 2016, 89.6% more than other broadband households.
- In Japan, there will be 9 million Internet households (22.0% of all Internet households) generating more than 250 Gigabytes per month in 2021.
- In Japan, there will be 6 million households (15.0% of all Internet households) generating more than 500 Gigabytes per month in 2021.
- In Japan, there will be 2 million households (4.0% of all Internet households) generating more than a terabyte per month in 2021.
- In Japan, the average mobile connection will generate 9,874 Megabytes of mobile data traffic per month in 2021, up from 3,382 Megabytes in 2016.

Traffic Topology and Traffic Patterns

- In Japan, 82% of all Internet traffic will cross content delivery networks in 2021, up from 60% in 2016.
- In Japan, peak Internet traffic will grow at a compound annual growth rate of 39% from 2016 to 2021, compared to 29% for average Internet traffic.