



Asia Pacific – 2021 Forecast Highlights

IP Traffic

- In Asia Pacific, IP traffic will grow 3-fold from 2016 to 2021, a compound annual growth rate of 26%.
- In Asia Pacific, IP traffic will reach 107.7 Exabytes per month in 2021, up from 33.5 Exabytes per month in 2016.
- Asia Pacific's IP networks will carry 3.5 Exabytes per day in 2021, up from 1.1 Exabytes per day in 2016.
- In Asia Pacific, IP traffic will reach an annual run rate of 1.3 Zettabytes in 2021, up from an annual run rate of 402.1 Exabytes in 2016.
- In Asia Pacific, IP traffic will reach 26 Gigabytes per capita in 2021, up from 8 Gigabytes per capita in 2016.
- In Asia Pacific, average IP traffic will reach 328 Tbps in 2021, and busy hour traffic will reach 1.8 Pbps.
- In 2021, the gigabyte equivalent of all movies ever made will cross Asia Pacific's IP networks every 3 minutes.

Internet Traffic

- In Asia Pacific, Internet traffic will grow 3.6-fold from 2016 to 2021, a compound annual growth rate of 29%.
- In Asia Pacific, busy hour Internet traffic will grow 5.1-fold from 2016 to 2021, a compound annual growth rate of 38%.
- In Asia Pacific, Internet traffic will reach 90.0 Exabytes per month in 2021, up from 25.3 Exabytes per month in 2016.
- Asia Pacific's Internet traffic will be 3.0 Exabytes per day in 2021, up from 830 Petabytes per day in 2016.
- Asia Pacific's Internet traffic in 2021 will be equivalent to 270 billion DVDs per year, 22 billion DVDs per month, or 31 million DVDs per hour.
- In 2021, the gigabyte equivalent of all movies ever made will cross the Internet every 4 minutes.

- Asia Pacific Internet traffic in 2021 will be equivalent to 152x the volume of the entire Asia Pacific Internet in 2005.
- In Asia Pacific, Internet traffic will reach 21 Gigabytes per capita in 2021, up from 6 Gigabytes per capita in 2016.
- In Asia Pacific, average Internet traffic will increase 3.6-fold by 2021 and will reach 274 Tbps.
- In Asia Pacific, busy hour Internet traffic will increase 5.1-fold by 2021 and will reach 1.5 Pbps.

Wired Wi-Fi and Mobile Growth

- Asia Pacific's Fixed/Wi-Fi was 39% of total IP traffic in 2016, and will be 45% of total IP traffic in 2021.
- Asia Pacific's Fixed/Wired was 52% of total IP traffic in 2016, and will be 34% of total IP traffic in 2021.
- Asia Pacific's Mobile was 9% of total IP traffic in 2016, and will be 21% of total IP traffic in 2021.
- Asia Pacific's Fixed/Wi-Fi was 49.4% of total Internet traffic in 2016, and will be 52.4% of total Internet traffic in 2021.
- Asia Pacific's Fixed/Wired was 38% of total Internet traffic in 2016, and will be 22% of total Internet traffic in 2021.
- Asia Pacific's Mobile was 12.4% of total Internet traffic in 2016, and will be 25.2% of total Internet traffic in 2021.
- In Asia Pacific, mobile data traffic will grow 7-fold from 2016 to 2021, a compound annual growth rate of 49%.
- In Asia Pacific, mobile data traffic will reach 22.7 Exabytes per month in 2021, up from 3.1 Exabytes per month in 2016.
- Asia Pacific mobile data traffic will grow 2 times faster than Asia Pacific fixed IP traffic from 2016 to 2021.
- Asia Pacific's Mobile was 9% of total IP traffic in 2016, and will be 21% of total IP traffic in 2021.
- In Asia Pacific, mobile data traffic in 2021 will be equivalent to 32x the volume of the entire Asia Pacific Internet in 2005.

IP Video

- In Asia Pacific, IP video traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 30%.
- In Asia Pacific, IP video traffic will reach 89.4 Exabytes per month in 2021, up from 24.1 Exabytes per month in 2016.
- In Asia Pacific, IP video will be 83% of all IP traffic in 2021, up from 72% in 2016.
- In Asia Pacific, Ultra HD will be 18.8% of IP Video traffic in 2021, up from 2.1% in 2016 (100.7% CAGR).
- In Asia Pacific, HD will be 59.3% of IP Video traffic in 2021, up from 43.1% in 2016 (38.6% CAGR).
- In Asia Pacific, SD will be 21.9% of IP Video traffic in 2021, compared to 54.8% in 2016 (8.2% CAGR).
- In Asia Pacific, consumer IP video traffic will be 86% of consumer IP traffic in 2021, up from 77% in 2016.
- In Asia Pacific, business IP video traffic will be 70% of business IP traffic in 2021, up from 50% in 2016.

Internet Video

- In Asia Pacific, Internet video traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 34%.
- In Asia Pacific, Internet video traffic will reach 72.4 Exabytes per month in 2021, up from 16.6 Exabytes per month in 2016.

- In Asia Pacific, total Internet video traffic (business and consumer, combined) will be 81% of all Internet traffic in 2021, up from 65% in 2016.
- In Asia Pacific, Ultra HD will be 17.7% of Internet video traffic in 2021, up from 2.6% in 2016 (97.7% CAGR).
- In Asia Pacific, HD will be 58.3% of Internet video traffic in 2021, up from 33.5% in 2016 (50.1% CAGR).
- In Asia Pacific, SD will be 24.0% of Internet video traffic in 2021, compared to 64.0% in 2016 (10.4% CAGR).
- In Asia Pacific, consumer Internet video traffic will be 82% of consumer Internet traffic in 2021, up from 69% in 2016.
- In Asia Pacific, business Internet video traffic will be 71% of business Internet traffic in 2021, up from 52% in 2016.
- In Asia Pacific, Internet-Video-to-TV traffic will be 22% of fixed consumer Internet video traffic in 2021, up from 22% in 2016.
- In Asia Pacific, Internet-Video-to-TV traffic will increase 4-fold between 2016 and 2021 (30.4% CAGR).
- In Asia Pacific, 1 trillion minutes (2 million years) of video content will cross the Internet each month in 2021. That's 415,383 minutes of video streamed or downloaded every second.
- In Asia Pacific, 70% of all Internet video traffic will cross content delivery networks in 2021, up from 56% in 2016.
- In Asia Pacific, 75.1% of all Internet video traffic will be long-form video (including live) in 2021, up from 79.7% in 2016.
- In Asia Pacific, 13.4% of all Internet video traffic will be Live video in 2021, up from 4.1% in 2016.
- In Asia Pacific, Live Internet video traffic will increase 14-fold between 2016 and 2021 (70.7% CAGR).

IP VOD

- In Asia Pacific, Ultra HD will be 25.3% of IP VOD traffic in 2021, up from 1.3% in 2016 (112.8% CAGR).
- In Asia Pacific, HD will be 68.6% of IP VOD traffic in 2021, up from 68.9% in 2016 (17.5% CAGR).
- In Asia Pacific, SD will be 6.2% of IP VOD traffic in 2021, compared to 29.8% in 2016 (-14.1% CAGR).

Gaming

- In Asia Pacific, gaming traffic will grow 7-fold from 2016 to 2021, a compound annual growth rate of 48%.
- In Asia Pacific, gaming traffic will reach 2.6 Exabytes per month in 2021, up from 366 Petabytes per month in 2016.
- In Asia Pacific, gaming traffic will be 4% of consumer Internet traffic in 2021, up from 2% in 2016.

Devices

- In Asia Pacific, there will be 12.2 billion networked devices in 2021, up from 7.9 billion in 2016.
- In Asia Pacific, there will be 2.9 networked devices per capita in 2021, up from 1.9 per capita in 2016.
- In Asia Pacific, 47% of all networked devices will be mobile-connected in 2021.
- In Asia Pacific, M2M modules will account for 47% (5.8 billion) of all networked devices in 2021, compared to 32% (2.5 billion) in 2016, (18.1% CAGR).
- In Asia Pacific, PCs will account for 4% (489.0 million) of all networked devices in 2021, compared to 7% (534.9 million) in 2016, (-1.8% CAGR).

- In Asia Pacific, Tablets will account for 2% (298.9 million) of all networked devices in 2021, compared to 3% (206.6 million) in 2016, (7.7% CAGR).
- In Asia Pacific, Smartphones will account for 26% (3.1 billion) of all networked devices in 2021, compared to 25% (2.0 billion) in 2016, (9.8% CAGR).
- In Asia Pacific, Connected TVs will account for 12% (1.5 billion) of all networked devices in 2021, compared to 11% (867.1 million) in 2016, (10.9% CAGR).
- In Asia Pacific, Non-Smartphones will account for 7.6% (931.6 million) of all networked devices in 2021, compared to 22% (1.7 billion) in 2016, (-11.4% CAGR).
- In Asia Pacific, Other Portables will account for 1% (129.8 million) of all networked devices in 2021, compared to 1% (71.5 million) in 2016, (12.7% CAGR).
- In Asia Pacific, 4K TVs will account for 56% (303.2 million) of all flat panel TVs in 2021, compared to 16.4% (43.1 million) in 2016, (47.7% CAGR).
- Asia Pacific's IP traffic from non-PC devices was 53% of total IP traffic in 2016, and will be 77% of total IP traffic in 2021.
- In Asia Pacific, PCs accounted for 47% of IP traffic in 2016, and will be 23% of IP traffic in 2021.
- In Asia Pacific, TVs accounted for 28% of IP traffic in 2016, and will be 24% of IP traffic in 2021.
- In Asia Pacific, Smartphones accounted for 17% of IP traffic in 2016, and will be 42% of IP traffic in 2021.
- In Asia Pacific, Tablets accounted for 5% of IP traffic in 2016, and will be 6% of IP traffic in 2021.
- In Asia Pacific, M2M modules accounted for 2.0% of IP traffic in 2016, and will be 4.8% of IP traffic in 2021.
- In Asia Pacific, PCs accounted for 53% of consumer Internet traffic in 2016, and will be 21% of consumer Internet traffic in 2021.
- In Asia Pacific, TVs accounted for 12% of consumer Internet traffic in 2016, and will be 14% of consumer Internet traffic in 2021.
- In Asia Pacific, TVs accounted for 10% of total Internet traffic in 2016, and will be 12% of total Internet traffic in 2021.

Speed Evolution

- In Asia Pacific, the average fixed broadband speed will grow 1.9-fold from 2016 to 2021, from 33.9 Mbps to 63.7 Mbps.
- In Asia Pacific, 99% of fixed broadband connections will be faster than 5 Mbps in 2021, up from 84% today.
- In Asia Pacific, 92% of fixed broadband connections will be faster than 10 Mbps in 2021, up from 69% today.
- In Asia Pacific, 69.0% of fixed broadband connections will be faster than 25 Mbps in 2021, up from 35.7% today.
- In Asia Pacific, 59.0% of fixed broadband connections will be faster than 50 Mbps in 2021, up from 24.9% today.
- In Asia Pacific, the average Wi-Fi speeds from mobile devices will grow 2.1-fold from 2016 to 2021, from 19.5 Mbps to 41 Mbps.
- In Asia Pacific, the average mobile connection speed will grow 2-fold from 2016 to 2021, reaching 20 Mbps in 2021.

Traffic per User and Household

- In Asia Pacific, the average Internet user will generate 39.1 Gigabytes of Internet traffic per month in 2021, up 141% from 16.2 Gigabytes per month in 2016, a CAGR of 19%.
- In Asia Pacific, the average Internet household will generate 111.6 Gigabytes of Internet traffic per month in 2021, up 149% from 44.8 Gigabytes per month in 2016, a CAGR of 20%.
- In Asia Pacific, the average FTTx Internet household will generate 144.3 Gigabytes of Internet traffic per month in 2021, 72.4% more than other broadband households.
- In Asia Pacific, the average FTTx Internet household generated 55.2 Gigabytes of Internet traffic per month in 2016, 63.1% more than other broadband households.
- In Asia Pacific, there will be 65 million Internet households (13.9% of all Internet households) generating more than 250 Gigabytes per month in 2021.
- In Asia Pacific, there will be 25 million households (5.3% of all Internet households) generating more than 500 Gigabytes per month in 2021.
- In Asia Pacific, there will be 7 million households (1.6% of all Internet households) generating more than a terabyte per month in 2021.
- In Asia Pacific, the average mobile connection will generate 4,934 Megabytes of mobile data traffic per month in 2021, up from 817 Megabytes in 2016.

Traffic Topology and Traffic Patterns

- In Asia Pacific, 29% of Internet traffic will be carried metro-to-metro in 2021, up from 15% in 2016.
- In Asia Pacific, 19% of Internet traffic will be carried on regional backbones (without touching cross-country backbones) in 2021, compared to 14% in 2016.
- In Asia Pacific, 52% of Internet traffic will traverse cross-country backbones in 2021, compared to 71% in 2016.
- In Asia Pacific, 62% of all Internet traffic will cross content delivery networks in 2021, up from 41% in 2016.
- In Asia Pacific, peak Internet traffic will grow at a compound annual growth rate of 38% from 2016 to 2021, compared to 29% for average Internet traffic.