



Germany - 2020 Forecast Highlights

IP Traffic

- In Germany, IP traffic will grow 2-fold from 2015 to 2020, a compound annual growth rate of 20%.
- In Germany, IP traffic will reach 4.4 Exabytes per month in 2020, up from 1.8 Exabytes per month in 2015.
- Germany's IP networks will carry 144 Petabytes per day in 2020, up from 58 Petabytes per day in 2015.
- In Germany, IP traffic will reach an annual run rate of 52.7 Exabytes in 2020, up from an annual run rate of 21.3 Exabytes in 2015.
- In Germany, IP traffic will reach 55 Gigabytes per capita in 2020, up from 22 Gigabytes per capita in 2015.
- In Germany, average IP traffic will reach 13 Tbps in 2020, and busy hour traffic will reach 81 Tbps.
- In 2020, the gigabyte equivalent of all movies ever made will cross Germany's IP networks every 1 hours.

Internet Traffic

- In Germany, Internet traffic will grow 2.7-fold from 2015 to 2020, a compound annual growth rate of 22%.
- In Germany, busy hour Internet traffic will grow 4.2-fold from 2015 to 2020, a compound annual growth rate of 33%.
- In Germany, Internet traffic will reach 3.6 Exabytes per month in 2020, up from 1.4 Exabytes per month in 2015.
- Germany's Internet traffic will be 120 Petabytes per day in 2020, up from 50 Petabytes per day in 2015.
- Germany's Internet traffic in 2020 will be equivalent to 11 billion DVDs per year, 911 million DVDs per month, or 1 million DVDs per hour.
- In 2020, the gigabyte equivalent of all movies ever made will cross the Internet every 2 hours.

- German Internet traffic in 2020 will be equivalent to 38x the volume of the entire German Internet in 2005.
- In Germany, Internet traffic will reach 45 Gigabytes per capita in 2020, up from 17 Gigabytes per capita in 2015.
- In Germany, average Internet traffic will increase 2.7-fold by 2020 and will reach 11 Tbps.
- In Germany, busy hour Internet traffic will increase 4.2-fold by 2020 and will reach 67 Tbps.

Wired Wi-Fi and Mobile Growth

- Germany's Fixed/Wi-Fi was 41% of total IP traffic in 2015, and will be 51% of total IP traffic in 2020.
- Germany's Fixed/Wired was 56% of total IP traffic in 2015, and will be 41% of total IP traffic in 2020.
- Germany's Mobile was 3% of total IP traffic in 2015, and will be 8% of total IP traffic in 2020.
- Germany's Fixed/Wi-Fi was 50.2% of total Internet traffic in 2015, and will be 59.5% of total Internet traffic in 2020.
- Germany's Fixed/Wired was 46% of total Internet traffic in 2015, and will be 31% of total Internet traffic in 2020.
- Germany's Mobile was 3.8% of total Internet traffic in 2015, and will be 9.5% of total Internet traffic in 2020.

IP Video

- In Germany, IP video traffic will grow 3-fold from 2015 to 2020, a compound annual growth rate of 25%.
- In Germany, IP video traffic will reach 3.6 Exabytes per month in 2020, up from 1.2 Exabytes per month in 2015.
- In Germany, IP video will be 83% of all IP traffic in 2020, up from 68% in 2015.
- In Germany, Ultra HD will be 17.3% of IP Video traffic in 2020, up from 1.6% in 2015 (100.0% CAGR).
- In Germany, HD will be 70.6% of IP Video traffic in 2020, up from 58.7% in 2015 (29.6% CAGR).
- In Germany, SD will be 12.1% of IP Video traffic in 2020, compared to 39.6% in 2015 (-1.4% CAGR).
- In Germany, consumer IP video traffic will be 87% of consumer IP traffic in 2020, up from 76% in 2015.
- In Germany, business IP video traffic will be 65% of business IP traffic in 2020, up from 39% in 2015.

Internet Video

- In Germany, Internet video traffic will grow 3-fold from 2015 to 2020, a compound annual growth rate of 28%.
- In Germany, Internet video traffic will reach 3.0 Exabytes per month in 2020, up from 862 Petabytes per month in 2015.
- In Germany, total Internet video traffic (business and consumer, combined) will be 81% of all Internet traffic in 2020, up from 63% in 2015.
- In Germany, Ultra HD will be 17.5% of Internet video traffic in 2020, up from 1.9% in 2015 (100.3% CAGR).
- In Germany, HD will be 73.6% of Internet video traffic in 2020, up from 58.2% in 2015 (34.1% CAGR).

- In Germany, SD will be 9.0% of Internet video traffic in 2020, compared to 39.9% in 2015 (-5.1% CAGR).
- In Germany, consumer Internet video traffic will be 84% of consumer Internet traffic in 2020, up from 69% in 2015.
- In Germany, business Internet video traffic will be 67% of business Internet traffic in 2020, up from 42% in 2015.
- In Germany, Internet-Video-to-TV traffic will be 37% of fixed consumer Internet video traffic in 2020, up from 34% in 2015.
- In Germany, Internet-Video-to-TV traffic will increase 4-fold between 2015 and 2020 (29.2% CAGR).
- In Germany, 107 billion minutes (202,796 years) of video content will cross the Internet each month in 2020. That's 40,559 minutes of video streamed or downloaded every second.
- In Germany, 99% of all Internet video traffic will cross content delivery networks in 2020, up from 86% in 2015.
- In Germany, 89% of all Internet traffic will cross content delivery networks in 2020, up from 63% in 2015.

IP VOD

- In Germany, Ultra HD will be 18.2% of IP VOD traffic in 2020, up from 1.2% in 2015 (98.9% CAGR).
- In Germany, HD will be 64.0% of IP VOD traffic in 2020, up from 65.9% in 2015 (14.5% CAGR).
- In Germany, SD will be 17.8% of IP VOD traffic in 2020, compared to 32.9% in 2015 (1.9% CAGR).

Gaming

- In Germany, Internet gaming traffic will grow 8-fold from 2015 to 2020, a compound annual growth rate of 52%.
- In Germany, Internet gaming traffic will reach 3.0 Exabytes per month in 2020, up from 862 Petabytes per month in 2015.
- In Germany, Internet gaming traffic will be 6% of consumer Internet traffic in 2020, up from 2% in 2015.

Mobile

- In Germany, mobile data traffic will grow 7-fold from 2015 to 2020, a compound annual growth rate of 46%.
- In Germany, mobile data traffic will reach 345 Petabytes per month in 2020, up from 53 Petabytes per month in 2015.
- German mobile data traffic will grow 2 times faster than German fixed IP traffic from 2015 to 2020.
- Germany's Mobile was 3% of total IP traffic in 2015, and will be 8% of total IP traffic in 2020.
- In Germany, mobile data traffic in 2020 will be equivalent to 3x the volume of the entire German Internet in 2005.

Devices

- In Germany, there will be 767.5 million networked devices in 2020, up from 436.0 million in 2015.
- In Germany, there will be 9.5 networked devices per capita in 2020, up from 5.4 per capita in 2015.
- In Germany, 29% of all networked devices will be mobile-connected in 2020.
- In Germany, M2M modules will account for 56% (433.3 million) of all networked devices in 2020, compared to 39% (170.5 million) in 2015, (20.5% CAGR).

- In Germany, PCs will account for 7% (53.2 million) of all networked devices in 2020, compared to 11% (49.9 million) in 2015, (1.3% CAGR).
- In Germany, Tablets will account for 4% (27.0 million) of all networked devices in 2020, compared to 5% (20.2 million) in 2015, (6% CAGR).
- In Germany, Smartphones will account for 12% (95.3 million) of all networked devices in 2020, compared to 15% (63.7 million) in 2015, (8.4% CAGR).
- In Germany, Connected TVs will account for 15% (114.4 million) of all networked devices in 2020, compared to 16% (68.5 million) in 2015, (10.8% CAGR).
- In Germany, Non-Smartphones will account for 0.5% (3.8 million) of all networked devices in 2020, compared to 8% (34.4 million) in 2015, (-35.5% CAGR).
- In Germany, Other Portables will account for 5% (40.4 million) of all networked devices in 2020, compared to 7% (28.9 million) in 2015, (6.9% CAGR).
- In Germany, 4K TVs will account for 33% (19.9 million) of all flat panel TVs in 2020, compared to 4.3% (1.2 million) in 2015, (75.9% CAGR).
- Germany's IP traffic from non-PC devices was 41% of total IP traffic in 2015, and will be 64% of total IP traffic in 2020.
- In Germany, PCs accounted for 59% of IP traffic in 2015, and will be 36% of IP traffic in 2020.
- In Germany, TVs accounted for 29% of IP traffic in 2015, and will be 32% of IP traffic in 2020.
- In Germany, Smartphones accounted for 5% of IP traffic in 2015, and will be 13% of IP traffic in 2020.
- In Germany, Tablets accounted for 4% of IP traffic in 2015, and will be 13% of IP traffic in 2020.
- In Germany, M2M modules accounted for 2.6% of IP traffic in 2015, and will be 5.6% of IP traffic in 2020.
- In Germany, PCs accounted for 64% of consumer Internet traffic in 2015, and will be 36% of consumer Internet traffic in 2020.
- In Germany, TVs accounted for 20% of consumer Internet traffic in 2015, and will be 25% of consumer Internet traffic in 2020.
- In Germany, TVs accounted for 16% of total Internet traffic in 2015, and will be 21% of total Internet traffic in 2020.

Speed Evolution

- In Germany, the average fixed broadband speed will grow 2.1-fold from 2015 to 2020, from 27.0 Mbps to 55.7 Mbps.
- In Germany, 97% of fixed broadband connections will be faster than 5 Mbps in 2020, up from 81% today.
- In Germany, 85% of fixed broadband connections will be faster than 10 Mbps in 2020, up from 66% today.
- In Germany, 46.6% of fixed broadband connections will be faster than 25 Mbps in 2020, up from 40.1% today.
- In Germany, 35.7% of fixed broadband connections will be faster than 50 Mbps in 2020, up from 20.0% today.
- In Germany, the average Wi-Fi speeds from mobile devices will grow 2.1-fold from 2015 to 2020, from 15.4 Mbps to 33 Mbps.
- In Germany, the average mobile connection speed will grow 3-fold from 2015 to 2020, reaching 15 Mbps in 2020.

Traffic per User and Household

- In Germany, the average Internet user will generate 42.8 gigabytes of Internet traffic per month in 2020, up 131% from 18.5 gigabytes per month in 2015, a CAGR of 18%.
- In Germany, the average Internet household will generate 77.6 gigabytes of Internet traffic per month in 2020, up 129% from 33.9 gigabytes per month in 2015, a CAGR of 18%.
- In Germany, the average FTTx Internet household will generate 147.2 gigabytes of Internet traffic per month in 2020, 125.6% more than other broadband households.
- In Germany, the average FTTx Internet household generated 75.2 gigabytes of Internet traffic per month in 2015, 135.1% more than other broadband households.
- In Germany, there will be 3 million Internet households (8.0% of all Internet households) generating more than 250 gigabytes per month in 2020.
- In Germany, there will be 683,370 households (2.0% of all Internet households) generating more than 500 gigabytes per month in 2020.
- In Germany, there will be 341,685 households (1.0% of all Internet households) generating more than a terabyte per month in 2020.
- In Germany, the average mobile connection will generate 2,445 megabytes of mobile data traffic per month in 2020, up from 468 megabytes in 2015.