



Central and Eastern Europe - 2020 Forecast Highlights

IP Traffic

- In Central and Eastern Europe, IP traffic will grow 3-fold from 2015 to 2020, a compound annual growth rate of 27%.
- In Central and Eastern Europe, IP traffic will reach 17.0 Exabytes per month in 2020, up from 5.2 Exabytes per month in 2015.
- Central and Eastern Europe's IP networks will carry 560 Petabytes per day in 2020, up from 171 Petabytes per day in 2015.
- In Central and Eastern Europe, IP traffic will reach an annual run rate of 204.2 Exabytes in 2020, up from an annual run rate of 62.5 Exabytes in 2015.
- In Central and Eastern Europe, IP traffic will reach 35 Gigabytes per capita in 2020, up from 11 Gigabytes per capita in 2015.
- In Central and Eastern Europe, average IP traffic will reach 52 Tbps in 2020, and busy hour traffic will reach 233 Tbps.
- In 2020, the gigabyte equivalent of all movies ever made will cross Central and Eastern Europe's IP networks every 21 minutes.

Internet Traffic

- In Central and Eastern Europe, Internet traffic will grow 3.4-fold from 2015 to 2020, a compound annual growth rate of 28%.
- In Central and Eastern Europe, busy hour Internet traffic will grow 5.5-fold from 2015 to 2020, a compound annual growth rate of 41%.
- In Central and Eastern Europe, Internet traffic will reach 15.9 Exabytes per month in 2020, up from 4.6 Exabytes

per month in 2015.

- Central and Eastern Europe's Internet traffic will be 524 Petabytes per day in 2020, up from 150 Petabytes per day in 2015.
- Central and Eastern Europe's Internet traffic in 2020 will be equivalent to 48 billion DVDs per year, 4 billion DVDs per month, or 5 million DVDs per hour.
- In 2020, the gigabyte equivalent of all movies ever made will cross the Internet every 22 minutes.
- Central and Eastern European Internet traffic in 2020 will be equivalent to 241x the volume of the entire Central and Eastern European Internet in 2005.
- In Central and Eastern Europe, Internet traffic will reach 32 Gigabytes per capita in 2020, up from 10 Gigabytes per capita in 2015.
- In Central and Eastern Europe, average Internet traffic will increase 3.4-fold by 2020 and will reach 49 Tbps.
- In Central and Eastern Europe, busy hour Internet traffic will increase 5.5-fold by 2020 and will reach 218 Tbps.

Wired Wi-Fi and Mobile Growth

- Central and Eastern Europe's Fixed/Wi-Fi was 60% of total IP traffic in 2015, and will be 60% of total IP traffic in 2020.
- Central and Eastern Europe's Fixed/Wired was 30% of total IP traffic in 2015, and will be 13% of total IP traffic in 2020.
- Central and Eastern Europe's Mobile was 10% of total IP traffic in 2015, and will be 26% of total IP traffic in 2020.
- Central and Eastern Europe's Fixed/Wi-Fi was 64.1% of total Internet traffic in 2015, and will be 63.7% of total Internet traffic in 2020.
- Central and Eastern Europe's Fixed/Wired was 24% of total Internet traffic in 2015, and will be 8% of total Internet traffic in 2020.
- Central and Eastern Europe's Mobile was 11.8% of total Internet traffic in 2015, and will be 27.9% of total Internet traffic in 2020.

IP Video

- In Central and Eastern Europe, IP video traffic will grow 5-fold from 2015 to 2020, a compound annual growth rate of 36%.
- In Central and Eastern Europe, IP video traffic will reach 12.8 Exabytes per month in 2020, up from 2.8 Exabytes per month in 2015.
- In Central and Eastern Europe, IP video will be 75% of all IP traffic in 2020, up from 54% in 2015.
- In Central and Eastern Europe, Ultra HD will be 10.0% of IP Video traffic in 2020, up from 0.6% in 2015 (135.1% CAGR).
- In Central and Eastern Europe, HD will be 72.0% of IP Video traffic in 2020, up from 49.8% in 2015 (45.9%

CAGR).

- In Central and Eastern Europe, SD will be 18.0% of IP Video traffic in 2020, compared to 49.6% in 2015 (10.7% CAGR).
- In Central and Eastern Europe, consumer IP video traffic will be 78% of consumer IP traffic in 2020, up from 60% in 2015.
- In Central and Eastern Europe, business IP video traffic will be 60% of business IP traffic in 2020, up from 36% in 2015.

Internet Video

- In Central and Eastern Europe, Internet video traffic will grow 5-fold from 2015 to 2020, a compound annual growth rate of 37%.
- In Central and Eastern Europe, Internet video traffic will reach 11.8 Exabytes per month in 2020, up from 2.4 Exabytes per month in 2015.
- In Central and Eastern Europe, total Internet video traffic (business and consumer, combined) will be 74% of all Internet traffic in 2020, up from 52% in 2015.
- In Central and Eastern Europe, Ultra HD will be 9.9% of Internet video traffic in 2020, up from 0.7% in 2015 (133.0% CAGR).
- In Central and Eastern Europe, HD will be 73.5% of Internet video traffic in 2020, up from 51.9% in 2015 (47.1% CAGR).
- In Central and Eastern Europe, SD will be 16.6% of Internet video traffic in 2020, compared to 47.4% in 2015 (11.2% CAGR).
- In Central and Eastern Europe, consumer Internet video traffic will be 77% of consumer Internet traffic in 2020, up from 57% in 2015.
- In Central and Eastern Europe, business Internet video traffic will be 61% of business Internet traffic in 2020, up from 38% in 2015.
- In Central and Eastern Europe, Internet-Video-to-TV traffic will be 8% of fixed consumer Internet video traffic in 2020, up from 7% in 2015.
- In Central and Eastern Europe, Internet-Video-to-TV traffic will increase 5-fold between 2015 and 2020 (36.2% CAGR).
- In Central and Eastern Europe, 215 billion minutes (409,372 years) of video content will cross the Internet each month in 2020. That's 81,874 minutes of video streamed or downloaded every second.
- In Central and Eastern Europe, 58% of all Internet video traffic will cross content delivery networks in 2020, up from 39% in 2015.
- In Central and Eastern Europe, 48% of all Internet traffic will cross content delivery networks in 2020, up from 23% in 2015.

IP VOD

- In Central and Eastern Europe, Ultra HD will be 13.0% of IP VOD traffic in 2020, up from 0.3% in 2015 (169.1% CAGR).
- In Central and Eastern Europe, HD will be 61.5% of IP VOD traffic in 2020, up from 47.3% in 2015 (31.7% CAGR).

- In Central and Eastern Europe, SD will be 25.5% of IP VOD traffic in 2020, compared to 52.4% in 2015 (8.2% CAGR).

Gaming

- In Central and Eastern Europe, Internet gaming traffic will grow 5-fold from 2015 to 2020, a compound annual growth rate of 35%.
- In Central and Eastern Europe, Internet gaming traffic will reach 11.8 Exabytes per month in 2020, up from 2.4 Exabytes per month in 2015.
- In Central and Eastern Europe, Internet gaming traffic will be 2% of consumer Internet traffic in 2020, up from 2% in 2015.

Mobile

- In Central and Eastern Europe, mobile data traffic will grow 8-fold from 2015 to 2020, a compound annual growth rate of 52%.
- In Central and Eastern Europe, mobile data traffic will reach 4.4 Exabytes per month in 2020, up from 546 Petabytes per month in 2015.
- Central and Eastern European mobile data traffic will grow 2 times faster than Central and Eastern European fixed IP traffic from 2015 to 2020.
- Central and Eastern Europe's Mobile was 10% of total IP traffic in 2015, and will be 26% of total IP traffic in 2020.
- In Central and Eastern Europe, mobile data traffic in 2020 will be equivalent to 63x the volume of the entire Central and Eastern European Internet in 2005.

Devices

- In Central and Eastern Europe, there will be 1.9 billion networked devices in 2020, up from 1.2 billion in 2015.
- In Central and Eastern Europe, there will be 4.0 networked devices per capita in 2020, up from 2.5 per capita in 2015.
- In Central and Eastern Europe, 47% of all networked devices will be mobile-connected in 2020.
- In Central and Eastern Europe, M2M modules will account for 47% (909.4 million) of all networked devices in 2020, compared to 29% (348.4 million) in 2015, (21.2% CAGR).
- In Central and Eastern Europe, PCs will account for 5% (97.6 million) of all networked devices in 2020, compared to 10% (125.6 million) in 2015, (-4.9% CAGR).
- In Central and Eastern Europe, Tablets will account for 5% (88.8 million) of all networked devices in 2020, compared to 4% (50.1 million) in 2015, (12.1% CAGR).
- In Central and Eastern Europe, Smartphones will account for 23% (449.3 million) of all networked devices in 2020, compared to 22% (265.5 million) in 2015, (11.1% CAGR).
- In Central and Eastern Europe, Connected TVs will account for 11% (211.0 million) of all networked devices in 2020, compared to 7% (86.9 million) in 2015, (19.4% CAGR).
- In Central and Eastern Europe, Non-Smartphones will account for 4.7% (92.0 million) of all networked devices in 2020, compared to 22% (268.5 million) in 2015, (-19.3% CAGR).
- In Central and Eastern Europe, Other Portables will account for 5% (99.2 million) of all networked devices in 2020, compared to 5% (64.8 million) in 2015, (8.9% CAGR).

- In Central and Eastern Europe, 4K TVs will account for 34% (41.9 million) of all flat panel TVs in 2020, compared to 4.9% (1.7 million) in 2015, (89.6% CAGR).
- Central and Eastern Europe's IP traffic from non-PC devices was 35% of total IP traffic in 2015, and will be 79% of total IP traffic in 2020.
- In Central and Eastern Europe, PCs accounted for 65% of IP traffic in 2015, and will be 21% of IP traffic in 2020.
- In Central and Eastern Europe, TVs accounted for 7% of IP traffic in 2015, and will be 7% of IP traffic in 2020.
- In Central and Eastern Europe, Smartphones accounted for 16% of IP traffic in 2015, and will be 53% of IP traffic in 2020.
- In Central and Eastern Europe, Tablets accounted for 10% of IP traffic in 2015, and will be 16% of IP traffic in 2020.
- In Central and Eastern Europe, M2M modules accounted for 1.3% of IP traffic in 2015, and will be 2.8% of IP traffic in 2020.
- In Central and Eastern Europe, PCs accounted for 62% of consumer Internet traffic in 2015, and will be 18% of consumer Internet traffic in 2020.
- In Central and Eastern Europe, TVs accounted for 3% of consumer Internet traffic in 2015, and will be 3% of consumer Internet traffic in 2020.
- In Central and Eastern Europe, TVs accounted for 2% of total Internet traffic in 2015, and will be 3% of total Internet traffic in 2020.

Speed Evolution

- In Central and Eastern Europe, the average fixed broadband speed will grow 1.8-fold from 2015 to 2020, from 25.3 Mbps to 46.3 Mbps.
- In Central and Eastern Europe, 92% of fixed broadband connections will be faster than 5 Mbps in 2020, up from 74% today.
- In Central and Eastern Europe, 83% of fixed broadband connections will be faster than 10 Mbps in 2020, up from 58% today.
- In Central and Eastern Europe, 40.9% of fixed broadband connections will be faster than 25 Mbps in 2020, up from 32.7% today.
- In Central and Eastern Europe, 35.8% of fixed broadband connections will be faster than 50 Mbps in 2020, up from 22.6% today.
- In Central and Eastern Europe, the average Wi-Fi speeds from mobile devices will grow 1.9-fold from 2015 to 2020, from 13.4 Mbps to 25 Mbps.
- In Central and Eastern Europe, the average mobile connection speed will grow 5-fold from 2015 to 2020, reaching 11 Mbps in 2020.

Traffic per User and Household

- In Central and Eastern Europe, the average Internet user will generate 37.6 gigabytes of Internet traffic per month in 2020, up 162% from 14.4 gigabytes per month in 2015, a CAGR of 21%.
- In Central and Eastern Europe, the average Internet household will generate 99.7 gigabytes of Internet traffic per month in 2020, up 164% from 37.7 gigabytes per month in 2015, a CAGR of 21%.
- In Central and Eastern Europe, the average FTTx Internet household will generate 109.2 gigabytes of Internet traffic per month in 2020, 80.6% more than other broadband households.

- In Central and Eastern Europe, the average FTTx Internet household generated 48.9 gigabytes of Internet traffic per month in 2015, 92.7% more than other broadband households.
- In Central and Eastern Europe, there will be 11 million Internet households (12.4% of all Internet households) generating more than 250 gigabytes per month in 2020.
- In Central and Eastern Europe, there will be 3 million households (3.3% of all Internet households) generating more than 500 gigabytes per month in 2020.
- In Central and Eastern Europe, there will be 982,612 households (1.1% of all Internet households) generating more than a terabyte per month in 2020.
- In Central and Eastern Europe, the average mobile connection will generate 6,758 megabytes of mobile data traffic per month in 2020, up from 921 megabytes in 2015.