



Spain - 2021 Forecast Highlights

IP Traffic

- In Spain, IP traffic will grow 3-fold from 2016 to 2021, a compound annual growth rate of 23%.
- In Spain, IP traffic will reach 3.1 Exabytes per month in 2021, up from 1.1 Exabytes per month in 2016.
- Spain's IP networks will carry 102 Petabytes per day in 2021, up from 36 Petabytes per day in 2016.
- In Spain, IP traffic will reach an annual run rate of 37.2 Exabytes in 2021, up from an annual run rate of 13.1 Exabytes in 2016.
- In Spain, IP traffic will reach 67 Gigabytes per capita in 2021, up from 24 Gigabytes per capita in 2016.
- In Spain, average IP traffic will reach 9 Tbps in 2021, and busy hour traffic will reach 62 Tbps.
- In 2021, the gigabyte equivalent of all movies ever made will cross Spain's IP networks every 2 hours.

Internet Traffic

- In Spain, Internet traffic will grow 3.0-fold from 2016 to 2021, a compound annual growth rate of 24%.
- In Spain, busy hour Internet traffic will grow 4.3-fold from 2016 to 2021, a compound annual growth rate of 34%.
- In Spain, Internet traffic will reach 2.8 Exabytes per month in 2021, up from 930 Petabytes per month in 2016.
- Spain's Internet traffic will be 91 Petabytes per day in 2021, up from 30 Petabytes per day in 2016.
- Spain's Internet traffic in 2021 will be equivalent to 8 billion DVDs per year, 690 million DVDs per month, or 945,632 DVDs per hour.
- In 2021, the gigabyte equivalent of all movies ever made will cross the Internet every 2 hours.

- Spanish Internet traffic in 2021 will be equivalent to (n/a)x the volume of the entire Spanish Internet in 2005.
- In Spain, Internet traffic will reach 60 Gigabytes per capita in 2021, up from 20 Gigabytes per capita in 2016.
- In Spain, average Internet traffic will increase 3.0-fold by 2021 and will reach 8 Tbps.
- In Spain, busy hour Internet traffic will increase 4.3-fold by 2021 and will reach 55 Tbps.

Wired Wi-Fi and Mobile Growth

- Spain's Fixed/Wi-Fi was 54% of total IP traffic in 2016, and will be 57% of total IP traffic in 2021.
- Spain's Fixed/Wired was 41% of total IP traffic in 2016, and will be 30% of total IP traffic in 2021.
- Spain's Mobile was 5% of total IP traffic in 2016, and will be 12% of total IP traffic in 2021.
- Spain's Fixed/Wi-Fi was 61.2% of total Internet traffic in 2016, and will be 63.4% of total Internet traffic in 2021.
- Spain's Fixed/Wired was 33% of total Internet traffic in 2016, and will be 23% of total Internet traffic in 2021.
- Spain's Mobile was 6.0% of total Internet traffic in 2016, and will be 13.7% of total Internet traffic in 2021.
- In Spain, mobile data traffic will grow 7-fold from 2016 to 2021, a compound annual growth rate of 47%.
- In Spain, mobile data traffic will reach 379 Petabytes per month in 2021, up from 56 Petabytes per month in 2016.
- Spanish mobile data traffic will grow 2 times faster than Spanish fixed IP traffic from 2016 to 2021.
- Spain's Mobile was 5% of total IP traffic in 2016, and will be 12% of total IP traffic in 2021.
- In Spain, mobile data traffic in 2021 will be equivalent to (n/a)x the volume of the entire Spanish Internet in 2005.

IP Video

- In Spain, IP video traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 29%.
- In Spain, IP video traffic will reach 2.4 Exabytes per month in 2021, up from 698 Petabytes per month in 2016.
- In Spain, IP video will be 79% of all IP traffic in 2021, up from 64% in 2016.
- In Spain, Ultra HD will be 20.8% of IP Video traffic in 2021, up from 1.3% in 2016 (123.1% CAGR).
- In Spain, HD will be 62.3% of IP Video traffic in 2021, up from 46.1% in 2016 (36.5% CAGR).
- In Spain, SD will be 16.9% of IP Video traffic in 2021, compared to 52.6% in 2016 (2.5% CAGR).
- In Spain, consumer IP video traffic will be 81% of consumer IP traffic in 2021, up from 69% in 2016.
- In Spain, business IP video traffic will be 70% of business IP traffic in 2021, up from 43% in 2016.

Internet Video

- In Spain, Internet video traffic will grow 4-fold from 2016 to 2021, a compound annual growth rate of 31%.
- In Spain, Internet video traffic will reach 2.1 Exabytes per month in 2021, up from 562 Petabytes per month in 2016.
- In Spain, total Internet video traffic (business and consumer, combined) will be 77% of all Internet traffic in 2021, up from 60% in 2016.

- In Spain, Ultra HD will be 22.1% of Internet video traffic in 2021, up from 1.6% in 2016 (120.3% CAGR).
- In Spain, HD will be 60.4% of Internet video traffic in 2021, up from 40.2% in 2016 (41.6% CAGR).
- In Spain, SD will be 17.5% of Internet video traffic in 2021, compared to 58.2% in 2016 (2.7% CAGR).
- In Spain, consumer Internet video traffic will be 79% of consumer Internet traffic in 2021, up from 64% in 2016.
- In Spain, business Internet video traffic will be 72% of business Internet traffic in 2021, up from 45% in 2016.
- In Spain, Internet-Video-to-TV traffic will be 22% of fixed consumer Internet video traffic in 2021, up from 25% in 2016.
- In Spain, Internet-Video-to-TV traffic will increase 3-fold between 2016 and 2021 (24.2% CAGR).
- In Spain, 46 billion minutes (87,018 years) of video content will cross the Internet each month in 2021. That's 17,404 minutes of video streamed or downloaded every second.
- In Spain, 73% of all Internet video traffic will cross content delivery networks in 2021, up from 58% in 2016.
- In Spain, 73.7% of all Internet video traffic will be long-form video (including live) in 2021, up from 55.9% in 2016.

IP VOD

- In Spain, Ultra HD will be 13.3% of IP VOD traffic in 2021, up from 0.1% in 2016 (216.1% CAGR).
- In Spain, HD will be 83.4% of IP VOD traffic in 2021, up from 79.1% in 2016 (19.7% CAGR).
- In Spain, SD will be 3.3% of IP VOD traffic in 2021, compared to 20.8% in 2016 (-18.1% CAGR).

Gaming

- In Spain, gaming traffic will grow 10-fold from 2016 to 2021, a compound annual growth rate of 59%.
- In Spain, gaming traffic will reach 170 Petabytes per month in 2021, up from 17 Petabytes per month in 2016.
- In Spain, gaming traffic will be 8% of consumer Internet traffic in 2021, up from 2% in 2016.

Devices

- In Spain, there will be 344.5 million networked devices in 2021, up from 195.5 million in 2016.
- In Spain, there will be 7.5 networked devices per capita in 2021, up from 4.2 per capita in 2016.
- In Spain, 29% of all networked devices will be mobile-connected in 2021.
- In Spain, M2M modules will account for 65% (222.8 million) of all networked devices in 2021, compared to 49% (95.0 million) in 2016, (18.6% CAGR).
- In Spain, PCs will account for 4% (13.8 million) of all networked devices in 2021, compared to 8% (15.6 million) in 2016, (-2.5% CAGR).
- In Spain, Tablets will account for 3% (9.6 million) of all networked devices in 2021, compared to 5% (9.5 million) in 2016, (0.1% CAGR).
- In Spain, Smartphones will account for 13% (45.8 million) of all networked devices in 2021, compared to 18% (35.2 million) in 2016, (5.4% CAGR).
- In Spain, Connected TVs will account for 11% (36.8 million) of all networked devices in 2021, compared to 12% (23.5 million) in 2016, (9.4% CAGR).

- In Spain, Non-Smartphones will account for 0.4% (1.3 million) of all networked devices in 2021, compared to 5% (10.7 million) in 2016, (-34.8% CAGR).
- In Spain, Other Portables will account for 4% (14.5 million) of all networked devices in 2021, compared to 3% (6.0 million) in 2016, (19.3% CAGR).
- In Spain, 4K TVs will account for 57% (8.8 million) of all flat panel TVs in 2021, compared to 11.9% (965,998) in 2016, (55.6% CAGR).
- Spain's IP traffic from non-PC devices was 41% of total IP traffic in 2016, and will be 71% of total IP traffic in 2021.
- In Spain, PCs accounted for 59% of IP traffic in 2016, and will be 29% of IP traffic in 2021.
- In Spain, TVs accounted for 21% of IP traffic in 2016, and will be 23% of IP traffic in 2021.
- In Spain, Smartphones accounted for 10% of IP traffic in 2016, and will be 29% of IP traffic in 2021.
- In Spain, Tablets accounted for 7% of IP traffic in 2016, and will be 12% of IP traffic in 2021.
- In Spain, M2M modules accounted for 2.4% of IP traffic in 2016, and will be 7.6% of IP traffic in 2021.
- In Spain, PCs accounted for 62% of consumer Internet traffic in 2016, and will be 28% of consumer Internet traffic in 2021.
- In Spain, TVs accounted for 15% of consumer Internet traffic in 2016, and will be 19% of consumer Internet traffic in 2021.
- In Spain, TVs accounted for 12% of total Internet traffic in 2016, and will be 16% of total Internet traffic in 2021.

Speed Evolution

- In Spain, the average fixed broadband speed will grow 1.7-fold from 2016 to 2021, from 37.6 Mbps to 64.9 Mbps.
- In Spain, 98% of fixed broadband connections will be faster than 5 Mbps in 2021, up from 82% today.
- In Spain, 86% of fixed broadband connections will be faster than 10 Mbps in 2021, up from 64% today.
- In Spain, 63.5% of fixed broadband connections will be faster than 25 Mbps in 2021, up from 37.4% today.
- In Spain, 45.7% of fixed broadband connections will be faster than 50 Mbps in 2021, up from 23.3% today.
- In Spain, the average Wi-Fi speeds from mobile devices will grow 1.8-fold from 2016 to 2021, from 18.7 Mbps to 34 Mbps.
- In Spain, the average mobile connection speed will grow 2-fold from 2016 to 2021, reaching 27 Mbps in 2021.

Traffic per User and Household

- In Spain, the average Internet user will generate 154.7 Gigabytes of Internet traffic per month in 2021, up 55% from 99.9 Gigabytes per month in 2016, a CAGR of 9%.
- In Spain, the average Internet household will generate 361.0 Gigabytes of Internet traffic per month in 2021, up 54% from 233.9 Gigabytes per month in 2016, a CAGR of 9%.
- In Spain, the average FTTx Internet household will generate 194.7 Gigabytes of Internet traffic per month in 2021, 89.4% more than other broadband households.
- In Spain, the average FTTx Internet household generated 96.1 Gigabytes of Internet traffic per month in 2016, 117.9% more than other broadband households.

- In Spain, there will be 3 million Internet households (52.6% of all Internet households) generating more than 250 Gigabytes per month in 2021.
- In Spain, there will be 883,794 households (16.7% of all Internet households) generating more than 500 Gigabytes per month in 2021.
- In Spain, there will be 252,513 households (4.8% of all Internet households) generating more than a terabyte per month in 2021.
- In Spain, the average mobile connection will generate 6,409 Megabytes of mobile data traffic per month in 2021, up from 1,079 Megabytes in 2016.

Traffic Topology and Traffic Patterns

- In Spain, 64% of all Internet traffic will cross content delivery networks in 2021, up from 41% in 2016.
- In Spain, peak Internet traffic will grow at a compound annual growth rate of 34% from 2016 to 2021, compared to 24% for average Internet traffic.