NEWS RELEASE

Cisco: Global Mobile Networks Will Support More Than 12 Billion Mobile Devices and IoT Connections by 2022; Mobile Traffic Approaching The Zettabyte Milestone

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SAN JOSE, Calif., Feb. 19, 2019 /PRNewswire/ -- At the inception of Cisco's Mobile Visual Networking Index (VNI) Forecast more than a decade ago, mobile (or cellular) traffic represented less than five percent of total IP traffic crossing global networks. Today, the role and reliance placed on mobile networking has dramatically increased.

There has been worldwide rise in mobile access for consumers and business users. The expanded reach and quality of mobile broadband has fostered a seemingly insatiable demand for mobile communications, media and a wide range of mobile IoT applications.

According to this year's forecast update (2017 – 2022), mobile traffic will be on the verge of reaching an annual run rate of a zettabyte by the end of the forecast period. By 2022, mobile traffic will represent nearly 20 percent of global IP traffic and will reach 930 exabytes annually. That's nearly 113 times more than all global mobile traffic generated just ten years prior, in 2012.

Mobile technologies continue to connect more people and things than ever before. In 2017, there were five billion mobile users worldwide, but over the next five years, that number will increase by half a billion to 5.5 billion users, which represents about 71 percent of the global population. By 2022, there will be more than 12 billion mobile-ready devices and IoT connections (up from about nine billion mobile-ready devices and IoT connections in 2017). By 2022, mobile networks will support more than eight billion personal mobile devices and four billion IoT connections.

The forecast update also anticipates ongoing efforts by mobile carriers around the world to enhance mobile network performance. The average global mobile network speeds will increase more than three-fold from 8.7 Mbps in 2017 to 28.5 Mbps by 2022. Average mobile speeds vary significantly by

geographic locations as 5G adoption begins to ramp up in some regions.

Key Predictions

2G, 3G, 4G, 5G and LPWA Connection Share:

- In 2017, Low-Power, Wide-area (LPWA) networks supported 1.5 percent of mobile devices/M2M connections, 2G supported 34 percent of global mobile devices/M2M connections; 3G supported 30 percent of global mobile devices/M2M connections; and 4G supported 35 percent of global mobile devices/M2M connections.
- By 2022, LPWA networks will support 14 percent of mobile devices/M2M connections, 2G will support eight percent of global mobile devices/M2M connections; 3G will support 20 percent of global mobile devices/M2M connections; 4G will support 54 percent of global mobile devices/M2M connections; 5G will support three percent of global mobile devices/M2M connections (about 422m 5G connections globally).

5G:

- By 2022, 5G connections will represent over three percent of total mobile connections (more than 422 million global 5G devices and M2M connections) and will account for nearly 12 percent of global mobile data traffic.
- By 2022, the average 5G connection (22 GB/month) will generate about 3X more traffic than the average 4G connection (8 GB/month).

WiFi: Traffic Offload from Mobile Networks (Cellular) to Fixed Networks (WiFi)

- In 2017, monthly offload traffic (13 EB) exceeded monthly mobile/cellular traffic (12 EB).
- In 2017, 54 percent of total mobile data traffic was offloaded; by 2022, 59 percent of total mobile data traffic will be offloaded.
- 2017 Total IP Traffic (fixed & mobile): 48 percent Wired, 43 percent WiFi, nine percent Mobile.
- 2022 Total IP Traffic (fixed & mobile): 29 percent Wired, 51 percent WiFi, 20 percent Mobile.
- Globally, total WiFi hotspots (including home spots) will grow 4X from 2017 (124 million) to 2022 (549 million).

"Cisco is committed to helping network operators meet the growing bandwidth needs of mobile consumers, business users and the diverse collection of IoT applications," said **Jonathan Davidson, senior vice president and general manager, Service Provider Business, Cisco .** "As global mobile traffic approaches the zettabyte era, we believe that 5G and WiFi will coexist as necessary and complementary access technologies, offering key benefits to our enterprise and service provider customers to extend their architectures. We look forward to ongoing discussions with customers next week at Mobile World Congress Barcelona on preparing for this growth and mapping out their network architecture transitions."

Cisco Mobile VNI Forecast

The Cisco Mobile VNI™ Forecast includes global, regional, and country-level projections and trends associated with mobile (2G, 3G, 4G, and 5G) radio networks. The full report includes additional information and analysis on mobile traffic growth, mobile devices/connections, mobile IoT by various industry verticals, mobile IPv6 adoption, mobile network performance, Wi-Fi offload from cellular devices/connections, and mobile tiered pricing (unlimited and shared plans).

Cisco Mobile VNI Methodology

The Cisco VNI™ Complete Forecast for 2017 to 2022 relies upon independent analyst forecasts and

real-world network usage data. Upon this foundation are layered Cisco's own estimates for global IP traffic and service adoption. A detailed methodology description is included in the complete report.

Over its 13-year history, Cisco® VNI research has become a highly regarded measure of the internet's growth. National governments, network regulators, academic researchers, telecommunications companies, technology experts and industry/business press and analysts rely on the annual study to help plan for the digital future.

Supporting Resources

- Cisco Mobile VNI Forecast (2017 – 2022) White Paper
- Cisco Mobile VNI Forecast Q&A
- Cisco Mobile VNI Forecast Highlights Tool
- Cisco Mobile VNI Infographic
- Mobile VNI Blog: 5G Gets Top Billing, But Don't Forget Wi-Fi
- Follow Cisco's VNI news and activities on Twitter: **#VNI** and @CiscoVNI
- For more information about Cisco's service provider news and activities, visit the SP360 Blog

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