

ARTICLE19

Iran's Mahsa Amini Revolution

Protest Crisis and the Role of Technology

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IRANIAN INTERNET INFRASTRUCTURE MAP 2019

Domestic Peers / ISPs

The majority of the connections we see on this map are the "domestic peers" or domestic Internet Service Providers (ISPs) that are connecting homes, mobile networks, and institutions to domestic and international networks.

This is the first layer of Internet Service Providers (ISPs) that are connected directly to the international gateways. A second layer smaller ISPs connect through these "first layer" which are major providers, illustrated in this map.

TIC International Gateways

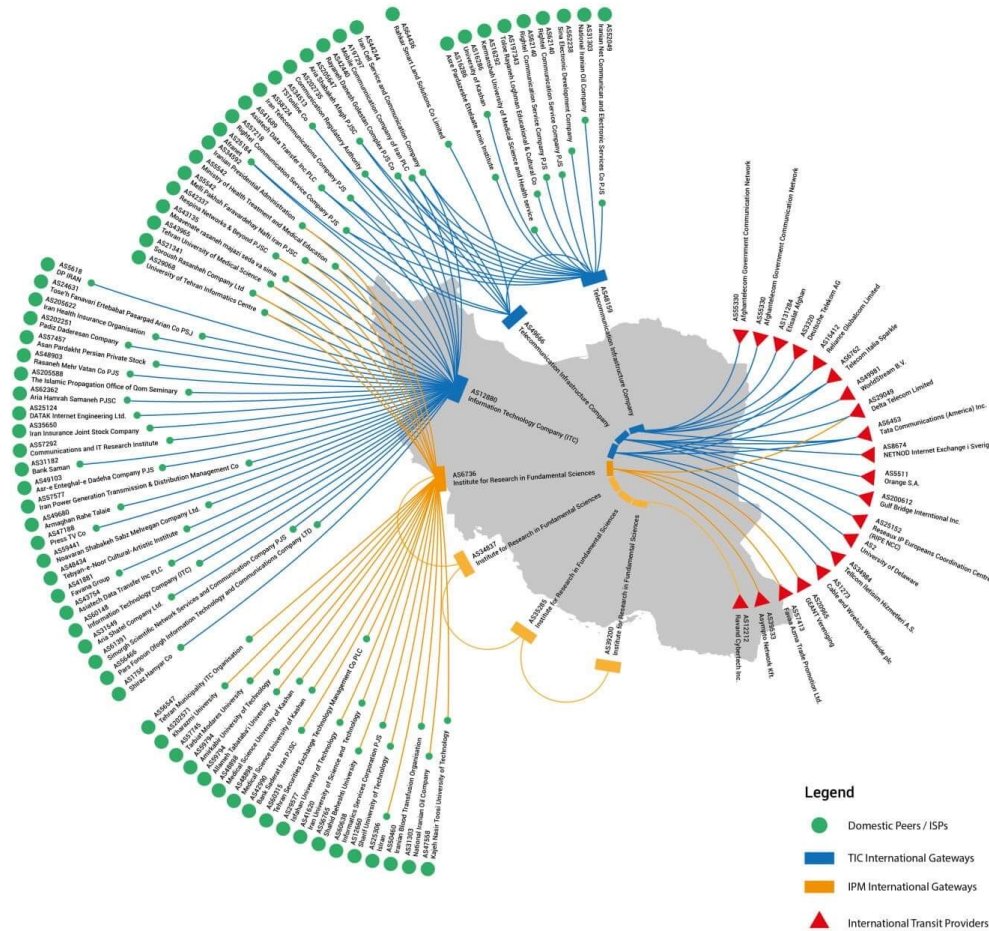
The Telecommunication Infrastructure Company (TIC) is the sole provider of IP communication infrastructure to all private and public operators in the Iran. TIC is also the sole party for all international gateways and IP capacity and connectivity services in the country. It sits under the Ministry of Information, Communication and Technology (ICT), which oversees all IP communication infrastructure across the country.

IPM International Gateways

Although not as large as the TIC Gateway, this older international gateway from the Institute for research in fundamental sciences (IPM), is the only other international gateway in Iran and serves the Internet to research and educational institutes.

International Transit Providers

International transit providers are companies providing international connectivity to the Iranian network, via the two gateways mentioned above.

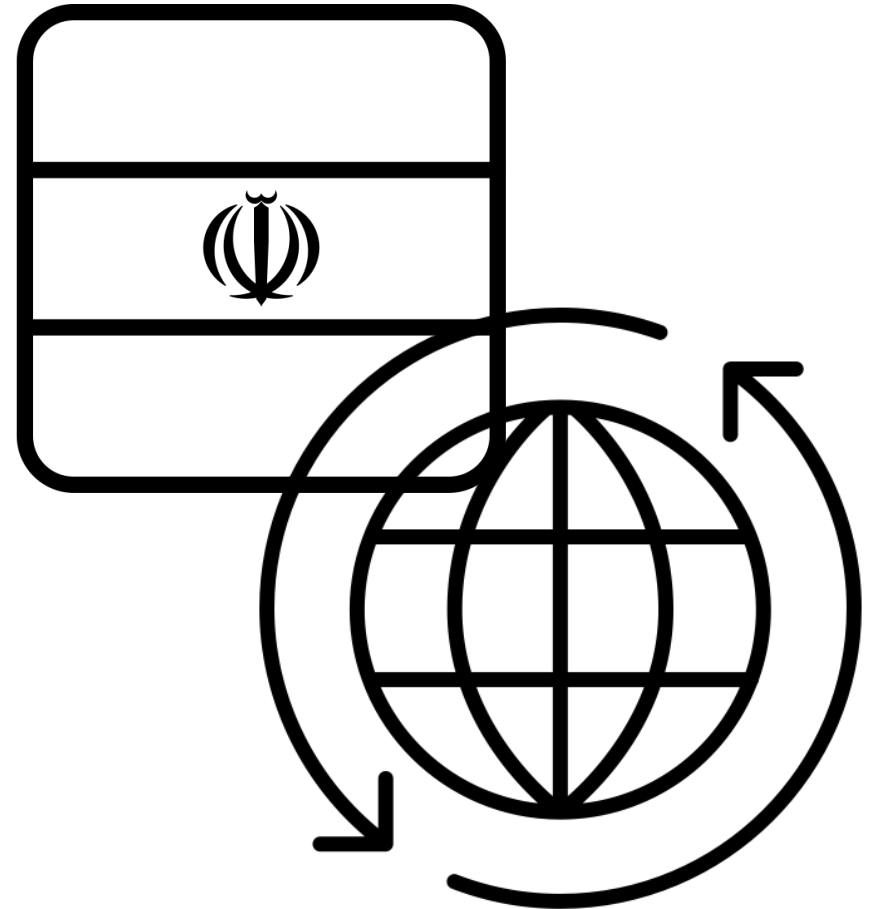


2019 Protest Shutdowns

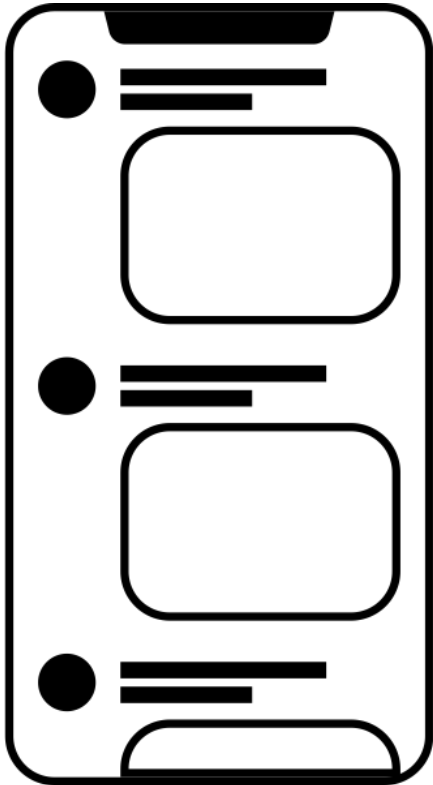
- See ARTICLE19's 2020 Tightening the Net report on the anatomy of the 2019 shutdowns

Lessons and Moves since 2019

- What has been defining this protest: User Protection Bill, or “Tarhe Sianat”
- *“Possibly, with the aim of implementing the Internet ‘Protection Bill’, and to detect ‘usual and unusual’ traffic, the country’s Internet [flow] is being intensely analysed. ‘Unusual traffic’ is traffic tunnelled through VPNs. The machines used for detecting the type of traffic cannot process this amount of data [simultaneously], and subsequently slow down the traffic, although bandwidth is available in abundance.”*



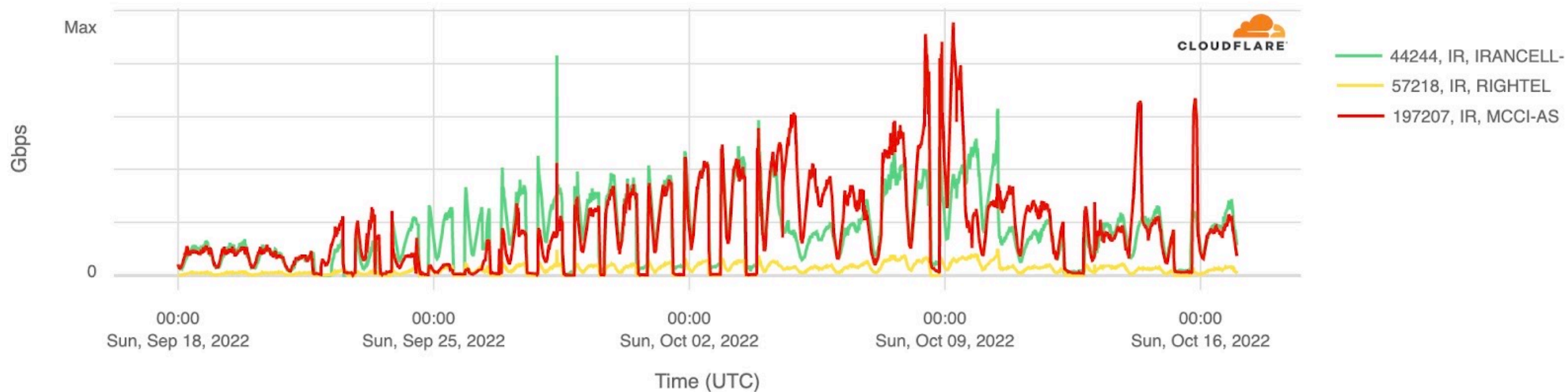
2022: What's New with digital protest repression?



- Mobile curfews
- Censorship of majority of foreign internet services
- VPN Disabling
- Regional disruptions in Sistan and Baluchistan, Kurdistan, and Khuzestan provinces

2022: Mobile Curfew

Netflows Gbps by ASN



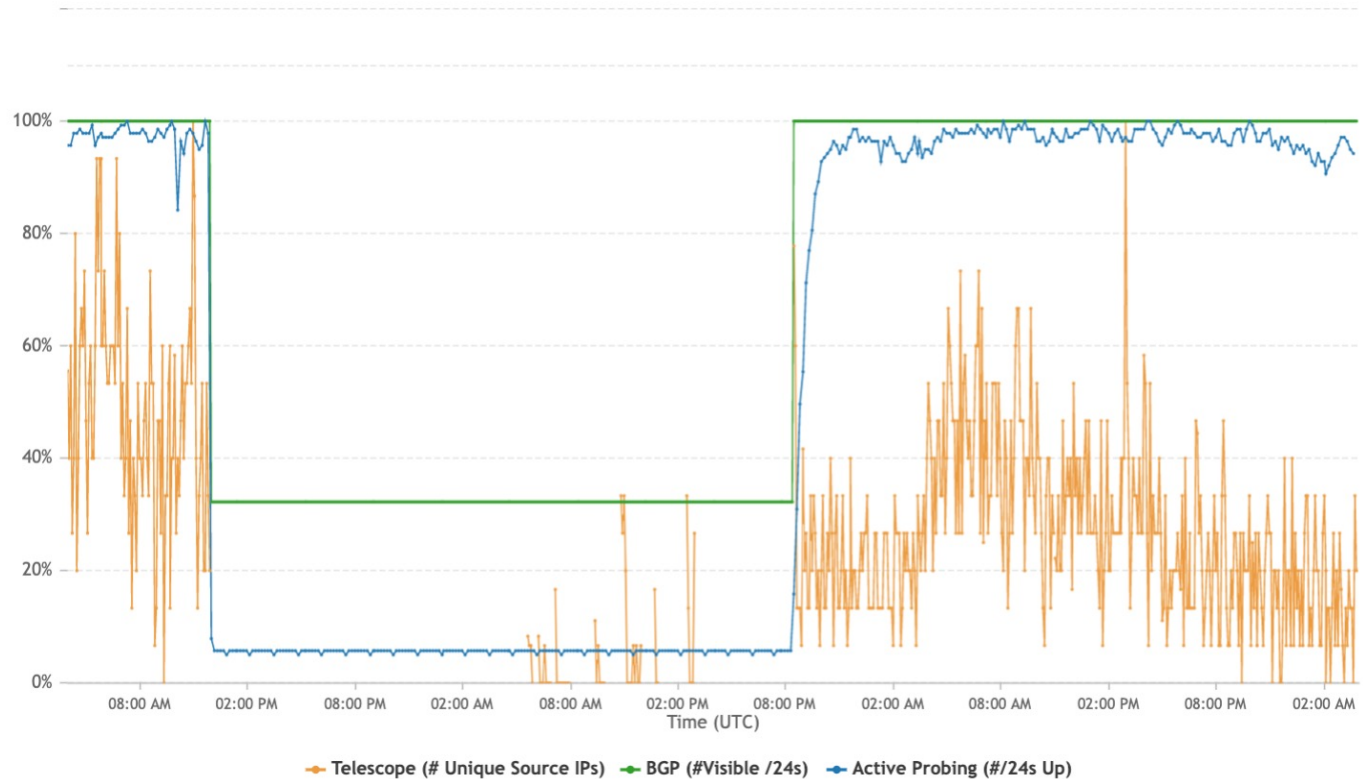
2022: Regional Shutdowns

- IODA Data from October 8 11:55 to 9th October 20:50 UTC in provinde of Kurdistan

Internet Connectivity for Kordestan ?

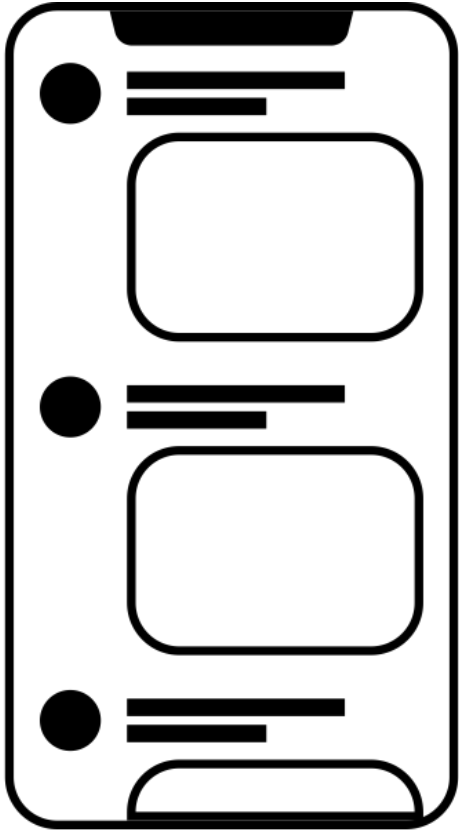
Alert Bands OFF

Normalized Values ON



October 8, 2022 04:00am – October 11, 2022 03:59am

2022: Disabling Circumvention Tech?



- Sophisticated DPI
- Increased blocking of encrypted DNS
- Blocking of HTTP/3 and QUIC Traffic

2022: What can be done?



Satellite internet?

- Has security for uplink connections been considered?

Circumvention technology?

- How to develop tools to address what Iran is doing? New circumvention strategies?
- Distribution methods for VPNs: can new removals of tech sanctions help (i.e. Google can legally unblock Google Cloud Platforms in Iran)
- Return to domain fronting at Amazon, Google and Microsoft?