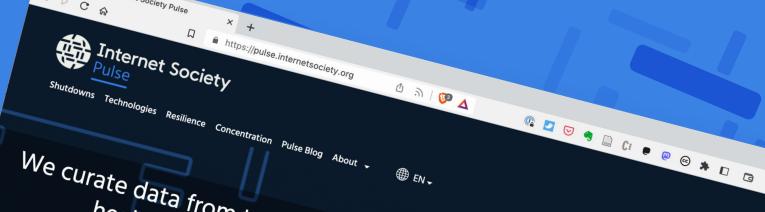




pulse.internetsociety.org

Your Internet Data Dashboard



We curate data from trusted sources to help everyone understand the health, availability and evolution of the global Internet.

Ongoing Internet Shutdowns

Internet Shutdowns in Last

Global HTTPS Adoption

Global IPv6 Adoption



Internet Shutdowns

Learn more about Internet shutdown events occurring around the world and find out more about the economic and human impact of



Enabling Technologies

Learn more about adoption rates for some of the key technologies that are essential for the continued growth and evolution of the



Pulse tracks



Shutdowns: Where do Internet shutdowns take place?



Netloss: Estimate the economic impacts of Internet shutdowns.



Technologies: Tracking the deployment of technologies critical for the evolution of the Internet.



Concentration: How much are services concentrated in the hands of a few?



Resilience: How robust is the Internet ecosystem?



Pulse tracks



Resilience: How robust is the Internet ecosystem?



A resilient Internet connection is one that maintains an acceptable level of service in the face of faults and challenges to normal operation.



The Internet Resiliency Index (IRI)

The **Index** combines ~30 public datasets that relate to **Four Pillars** of a resilient Internet

Infrastructure

The existence and availability of physical infrastructure that provides Internet connectivity.

Performance

The ability of the network to provide end-users with seamless and reliable access to Internet services.

Security

The ability of the network to resist intentional or unintentional disruptions through the adoption of security technologies and best practices.

Market Readiness

The ability of the market to self-regulate and provide affordable prices to end-users by maintaining a diverse and competitive market.





IRI Methodology



Internet Resilience Index Methodology

July 2023 v1.0

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Pillar 1: Infrastructure

Dimension	Indicator	Unit of measurement	Source
Cable ecosystem	Number of international gateways	Number	ITU
	10-km fibre reach	% of population	ITU
	Power-availability	% of population	World Bank
Mobile connectivity	Network coverage	Calculated %	GSMA
	Spectrum allocation	Calculated %	GSMA
Enabling infrastructure	Number of IXPs	IXPs per city	PCH/PeeringDB
	Number of datacentres	Datacenters per 10 million	Datacentermap



Pillar 2: Performance

Dimension	Indicator	Unit of measurement	Source
Fixed Networks	Median Upload Speed	Mbps	Ookla
	Median Download Speed	Mbps	Ookla
	Median Latency/Jitter	ms	Ookla
Mobile Networks	Median Upload Speed	Mbps	Ookla
	Median Download Speed	Mbps	Ookla
	Median Latency/Jitter	ms	Ookla



Pillar 3: Enabling Technologies and Security

Dimension	Indicator	Unit of measurement	Source
Enabling technologies	IPv6 adoption	Country %	APNIC
	HTTPS	% of websites	Mozilla
DNS Ecosystem	DNSSEC Validation at country-level	Calculated %	APNIC
	DNSSEC Adoption by ccTLDs	Calculated %	ICANN
Routing Hygiene	MANRS Scores includes: (1) Filtering, (2) Coordination, (3) Global Validation IRR, (4) Global Validation RPKI	Aggregated %	ISOC
	Upstream redundancy	Count	CAIDA
Security Threat	Secure Internet servers	Servers per 1 million	World Bank
	Global Cybersecurity Index	Index %	ITU
	DDOS Potential	TBit/sec	Cybergreen

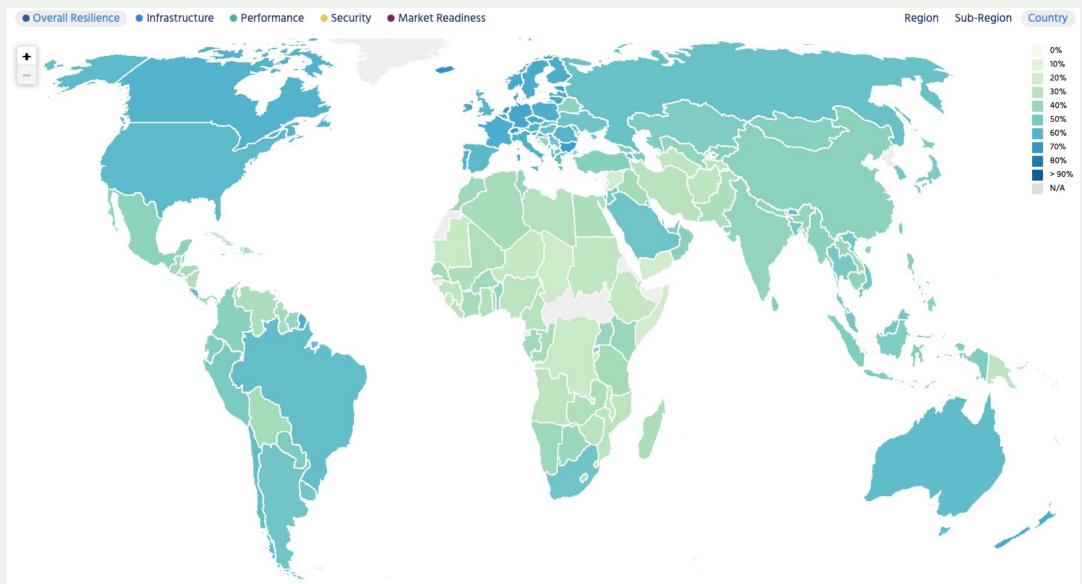


Pillar 4: Local Ecosystem and Market Readiness

Dimension	Indicator	Unit of measurement	Source
Market Structure	Affordability	Country %	ITU
	Market concentration	HHI (Herfindahl–Hirschman Index)	APNIC
	AS Hegemony	GINI coefficient (inequality)	IIJ
Traffic Localization	Peering efficiency	% of ASNs peering	PCH/Peering DB
	Domain count	Domains per 1 million	Zonefiles.io
	E-Government Development Index	Index %	UN



Global Resilience Outlook





Regional Comparisons with Chart View





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► Czechia							
Infrastructure		100	75%	Security			73%
Cable ecosystem	71%	Fibre 10km reach	71%	Enabling technologies	75%	Secure web traffic	96%
						IPv6 adoption	25%
Mobile connectivity	93%	Network coverage	98%	Domain name system security	95%	DNSSEC adoption	100%
		Spectrum allocation	83%			DNSSEC validation	91%
Enabling infrastructure	62%	Data centers	69%	Routing hygiene	60%	MANRS	78%
		Number of IXPs	56%			Upstream redundancy	41%
Performance			51%	Security threat	58%	DDoS protection	4%
						Global cybersecurity	74%
Fixed networks	43%	Fixed download	23%			Secure Internet servers	89%
		Fixed jitter	82%	Market readiness			57%
		Fixed latency	63%				
		Fixed upload	24%	Market structure	61%	Affordability	94%
						Upstream provider diversity	37%
Mobile networks	56%	Mobile download	41%			Market diversity	53%
		Mobile jitter	72%	Traffic localization	53%	Domain count	41%
		Mobile latency	50%		3370	EGDI	81%
		Mobile upload	64%			Peering efficiency	42%



Internet Resilience

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datasource: Internet Resilience Index



Caveats and Limitations



Data is drawn from external public sources, updated annually



Indicators are not included if more than 25% of countries lack data



Without in-country
measurements it's difficult
to validate the data



Data undergoes processing, normalization, and weighting, we use a methodology that is reproducible



Ultimately, the Index benchmarks countries with one another and helps decision makers recognize gaps and weaknesses to then conduct further study into validating these and working towards improvements in Internet resilience



API Access

Email <u>pulse@isoc.org</u> to request access to the data underpinning the Internet Resilience Index via our API.



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