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Internet Day Bahrain 2020

# Shaping the Internet and looking to the future

## Insights from Internet Measurement



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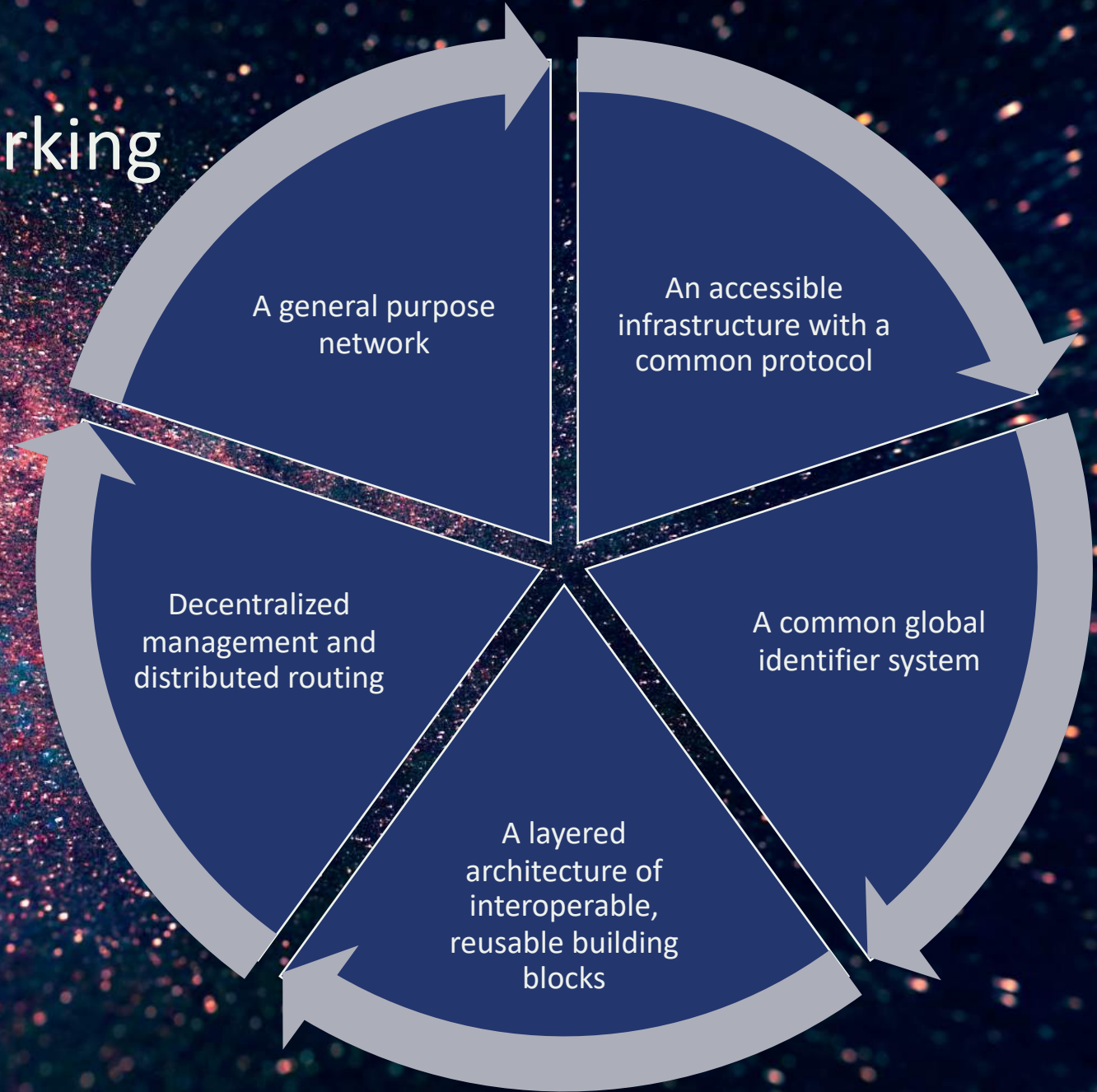
# Internet Society Goals



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# Internet Way of Networking

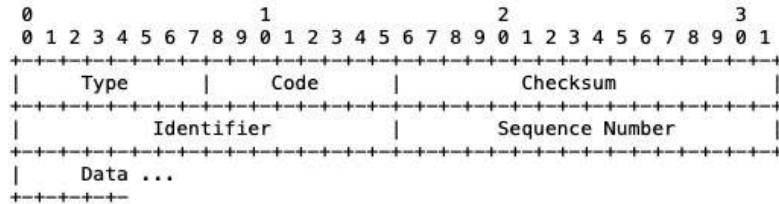


# Open networks are measurable

RFC 792

September 1981

## Echo or Echo Reply Message



### IP Fields:

#### Addresses

The address of the source in an echo message will be the destination of the echo reply message. To form an echo reply message, the source and destination addresses are simply reversed, the type code changed to 0, and the checksum recomputed.

### IP Fields:

#### Type

- 8 for echo message;
- 0 for echo reply message.

#### Code

0

#### Checksum

The checksum is the 16-bit ones's complement of the one's complement sum of the ICMP message starting with the ICMP Type. For computing the checksum, the checksum field should be zero. If the total length is odd, the received data is padded with one octet of zeros for computing the checksum. This checksum may be replaced in the future.

#### Identifier

If code = 0, an identifier to aid in matching echos and replies.

```
madofu — -zsh — 80x24
Last login: Mon Jul 6 08:48:11 on ttys009
You have mail.
madofu@ISOC-EARHV29 ~ %
```



# Internet infrastructure: macro view



69,000 networks and growing

Independent networks

No overall authority

If you can find a network to connect to,  
you're on the Internet



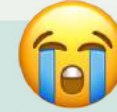


# Bahraini Internet infrastructure



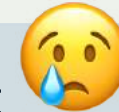
## IPv6

- Little to no detectable deployment



## DNSSEC

- .bh zone signed, but no DS in root



## ISP diversity and upstream provision

- Diverse ISP landscape and upstream connectivity

## International connectivity

- Connected to multiple submarine cable networks

## IXP

- Manama-IX established 2019 in partnership with AMS-IX

## Local content infrastructure

- Amazon datacenter now online



# Measuring the Internet – Why?

Bridge the gap between academic networking research and non-scientific audiences (journalists, public policymakers, researchers)

Be a trusted source of information about the Internet – make good, relevant data and interpretations easier to find, share, and reuse.

Help to inform and support other Internet Society projects & communities of interest.

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# Measuring the Internet – What?

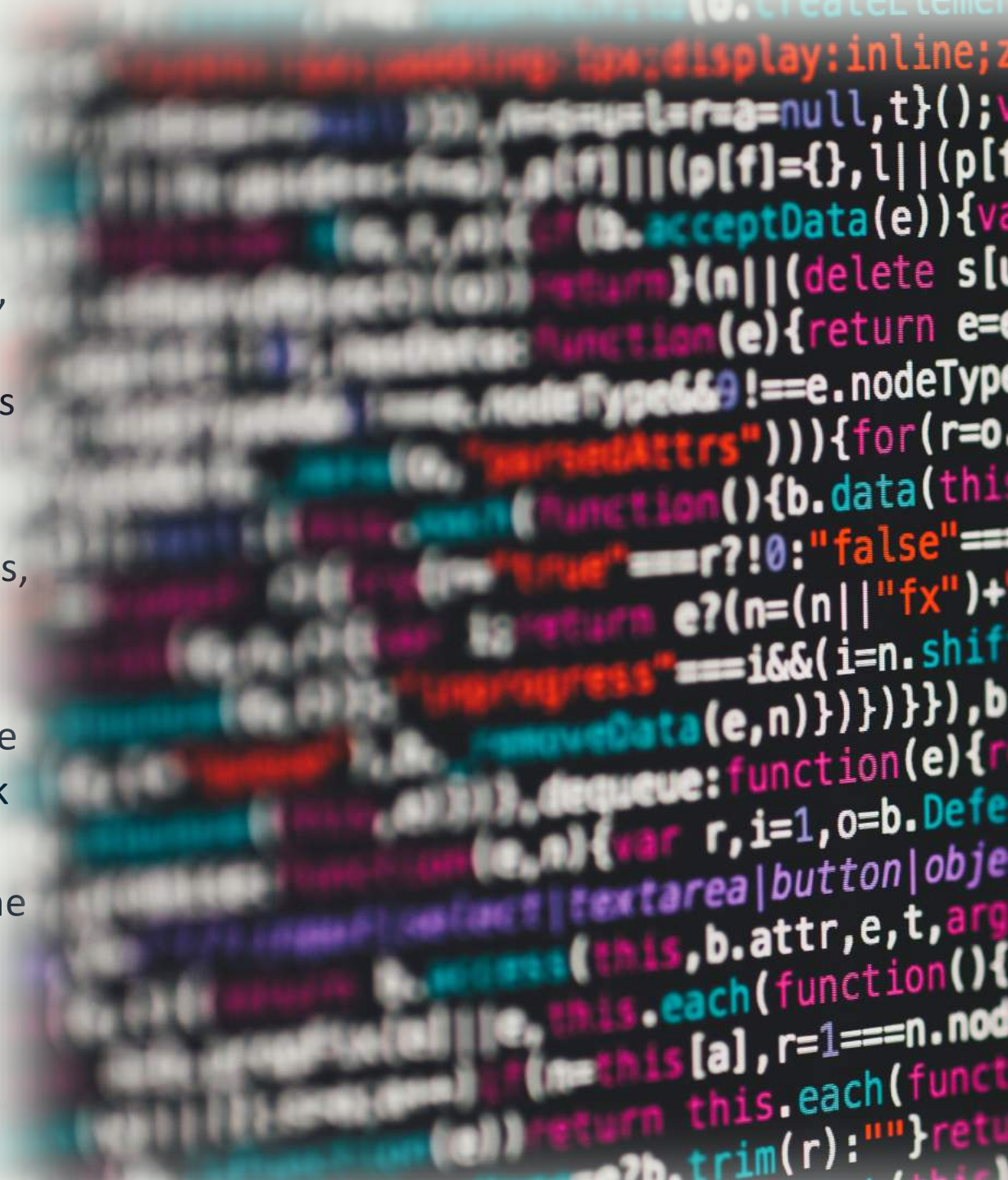
To help everyone gain deeper insight into the Internet, we're building a tool that consolidates trusted third-party Internet measurement data from various sources into a single platform.

We'll use this data to examine trends, generate reports, and tell data-driven stories.

The platform will be available to everyone, everywhere so that policymakers, researchers, journalists, network operators, civil society groups and others can better understand the health, availability, and evolution of the Internet.



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# Measuring the Internet – How?

Four Focus Areas:

Internet Shutdowns, Enabling Technologies, Internet Way of Networking (IWON), Internet Resilience (Africa)

Work with partners, e.g. CAIDA, RIRs, Oracle

Consume and process third-party data

Promote:

RightsCon 2020 2021 (Costa Rica)

Internet Research Task Force

ACM Internet Measurement Conference

Other events, as appropriate



# Thank you.

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