

Date 2020

# Measuring Africa's Internet Resilience

Africa Internet Resilience Webinar series

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# Background

- For many in the African region, frequent Internet interruptions or at least service degradations occur making for a disjointed Internet experience
- Internet Measurement data on African countries is sparse and distributed
- Accurately determining the state of the Internet in Africa is therefore challenging



# Sustained Internet Measurements

- Sustained Internet measurements would help identify the problem areas, identify key infrastructures, working policies/regulations and areas for improvement
- AFRINIC & ISOC will be working on a project to Measure Internet Resilience in Africa
- Internet Resilience: ***the ability of a network to maintain an acceptable level of service of Internet connectivity at all times***



# Goal of the Measurement Project

- To determine the Internet Resilience in select countries (initially) in Africa
  - Identify metrics
  - Identify a scalable method to measure Internet
- To present the data in an easy to use manner for users at all levels
  - Policy makers
  - Tech engineers
  - Normal Internet Users



# Main Objectives of the Project

- Develop an Internet Resilience Measurement Framework that includes:
  - A definition of Internet Resilience
  - Metrics that can be used to determine Internet Resilience
- Deployment of measurement infrastructure in selected countries
- Measurement reports for select countries using the Internet Resilience Measurement Framework
  - Measurements for at least 10 African countries in 2020
  - Data shared via a Measurement dashboard (to be developed)



# Who are the Internet Resilience Measurements for?

- End users
- Governments and Policymakers
- Network (ISP/IXP/NOG) Community
- Measurement Community/researchers
- Application & Service Providers / ISP Subscribers



## Why carry out Internet Measurements in African countries?

- What are the different Internet experiences on the African continent?
- How do statistics measured using tools match user experience?
- How does Internet reliability in countries with multiple Internet providers compare to countries without such infrastructures?
- What impact do unreliable underlying infrastructures have on Internet Resilience?
  - Unstable power
  - Fiber cuts, shutdowns, sabotage etc
- What policies are beneficial or have positive impact in improving Internet Resilience ?



# Data Sources & Measurement Dashboard

- Rely on Open Data Sources like
  - RIPE
  - M-Lab
  - BGPMon
  - Others
- Combine stats with feedback via surveys/questionnaires
- Start with a small set of data and then increase metrics and data sources over time





# Benefits of carrying out sustained Internet Measurements

- Provide historical growth on improvements to Internet reliability
- Providing an easy to use platform for Internet users to determine Internet reliability
- Provide up to date information on the quality of Internet connectivity in different countries
- Provide insights into policies that contribute to stable Internet connectivity



# 2020 Timelines

- August 2020: Definition and framework document
- September 2020: Deployment of measurement infrastructure
- October 2020: Measurement campaign
- November 2020: Data gathering and analysis
- December 2020: Measurement & Visualization dashboard



# Some Metrics identified so far

- ISP stats: Uptime, Latency, throughput, routing
- Physical infrastructure: submarine cables, power, etc
- Critical infrastructures: IXPs, ccTLDs, DNS, NRENs etc
- Metrics to be presented via a dashboard



# More information

- More information & updates will be available via

<http://bit.ly/measurement-wg>

- You can also participate by filling this survey:

<https://bit.ly/survey-resilience>



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Thank you



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