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
  

• You can also participate by filling this survey:
  
Thank you

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