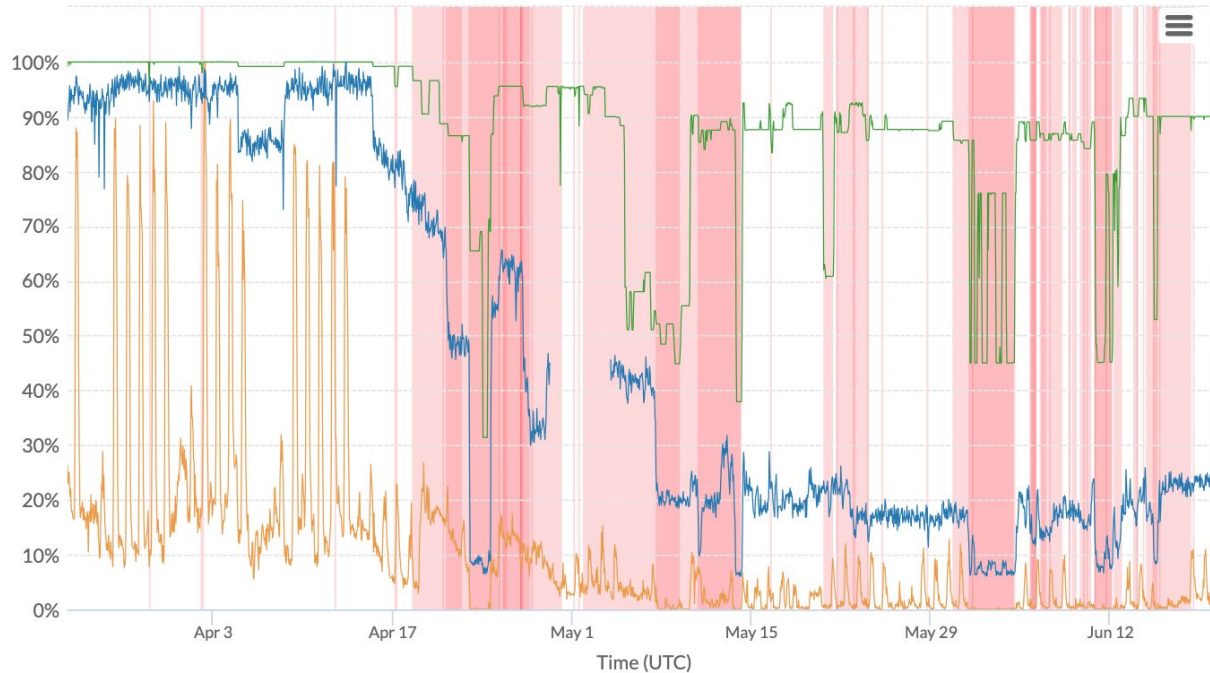# Technical multi-stakeholder report on Internet connectivity:
The case of Sudan Conflict 2023

Contributors:
IODA, Cloudflare, Kentik

Agenda

- Sudan Internet Infrastructure Connectivity (IODA)
- Sudan Network Traffic (Cloudflare)
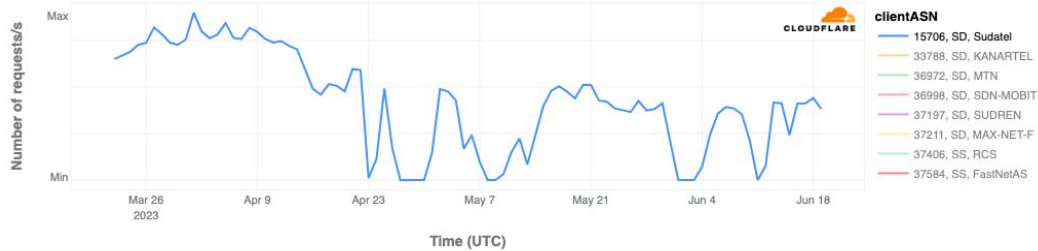- Transit Analysis + Impact on Chad (Kentik)

Internet Connectivity for Sudan ⓘ

Alert Bands: ON
Normalized Values: ON

Sudan Internet Infrastructure Connectivity dropped by ~70% compared to pre- conflict levels.

HTTP requests by ASN - requests/s - TOP 10 ASNs - Including bots

clientASN
— 15706, SD, Sudatel
— 33788, SD, KANARTEL
— 36972, SD, MTN
— 36998, SD, SDN-MOBIT
— 37197, SD, SUDREN
— 37211, SD, MAX-NET-F
— 37406, SS, RCS
— 37584, SS, FastNetAS

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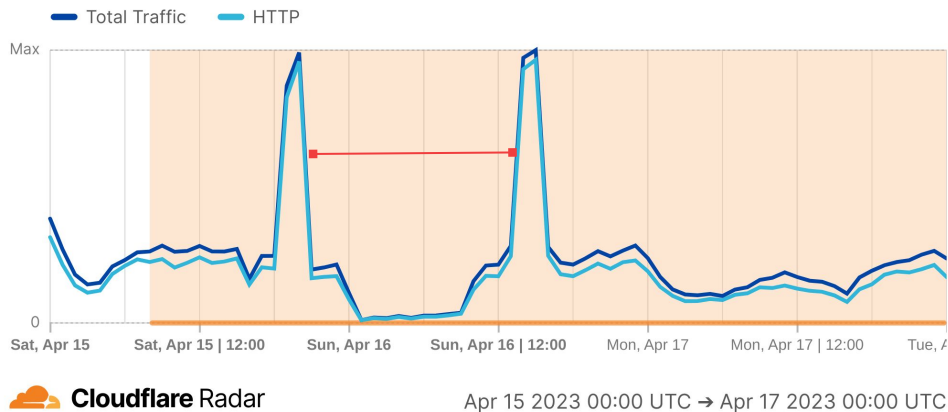— 37211, SD, MAX-NET-F
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Cloudflare Radar is a hub that showcases global Internet traffic, attacks, and technology trends and insights. Cloudflare Radar is powered by data from Cloudflare's global network, as well as aggregated and anonymized data from Cloudflare's 1.1.1.1 public DNS resolver.

Traffic drops without recovery for top Internet providers: Sudatel and MTN

Internet traffic trends for AS36972 (MTNSD)

Traffic volume over the selected time period

— Total Traffic — HTTP

Max

0

Sat, Apr 15 | Sat, Apr 15 | 12:00 | Sun, Apr 16 | Sun, Apr 16 | 12:00 | Mon, Apr 17 | Mon, Apr 17 | 12:00 | Tue, A

Cloudflare Radar

Apr 15 2023 00:00 UTC ➜ Apr 17 2023 00:00 UTC

UPDATE 1-Sudanese telecoms provider MTN restores internet service - MTN official

By Reuters Staff

1 MIN READ

(Adds decision to restore internet)

KHARTOUM, April 16 (Reuters) - Sudan's MTN telecommunications company was told by the authorities to restore internet services in the country and has done so, a few hours after being given a directive to block it, a company official told Reuters.

Two company officials told Reuters earlier in the day that MTN had cut internet services on the orders of the government's telecommunications regulator.

Users in Sudan confirmed that their internet service had been restored. (Reporting

MTN network traffic confirms reports of government-ordered shutdown on April 16th

Providers in Chad get transit from either the west via Cameroon (Camtel) or east via Sudan (Sudatel)

- **SudaTchad** gets transit from Camtel and Sudatel
- **Millicom Chad** gets transit from SudaTchad and O3b (LEO satellite service).
- **SotelTchad** gets transit from Camtel.
- **Prestabist** mostly gets transit from Sudatel, but sometimes gets some from Camtel.

Disruptions in Chad due to outages in Sudan
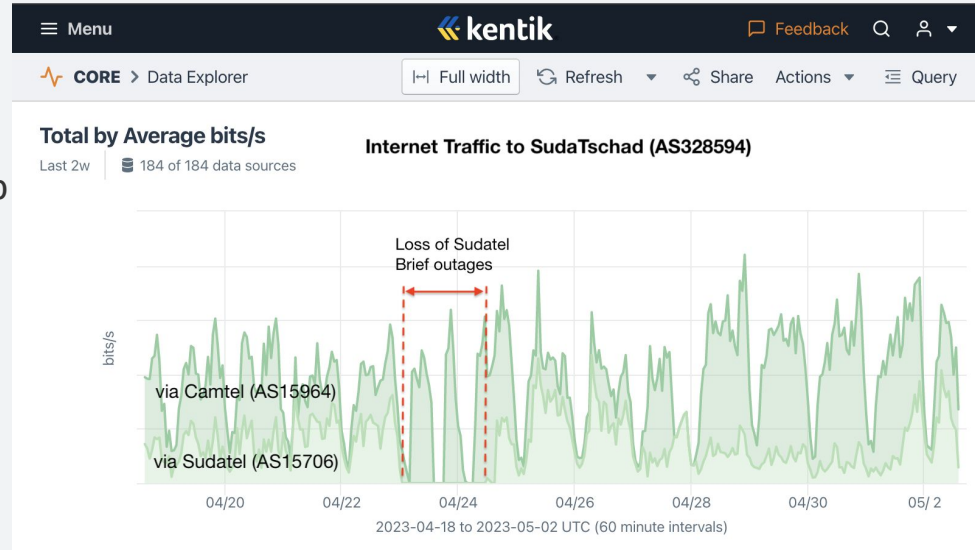
- prefixes originated by AS328594 go through Sudatel
- prefixes transited by AS328594 go through Camtel and Sudatel

Transit analysis / Chad Impact
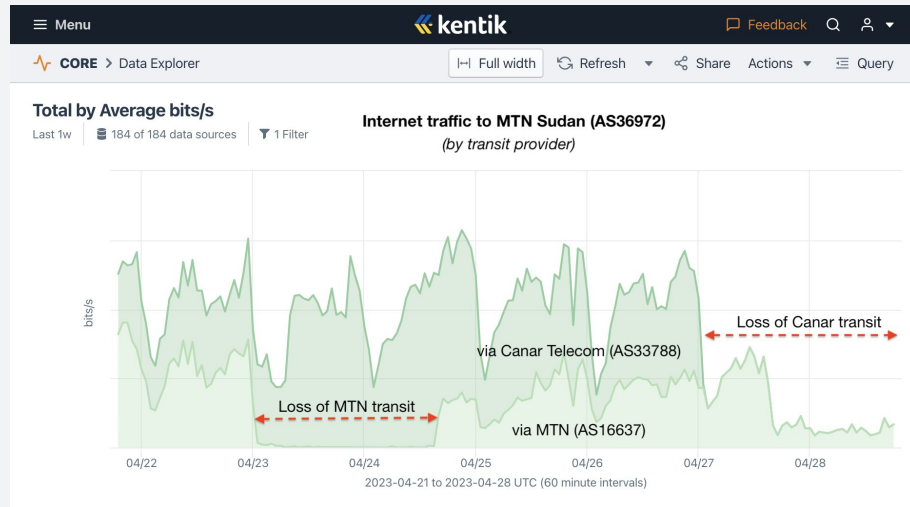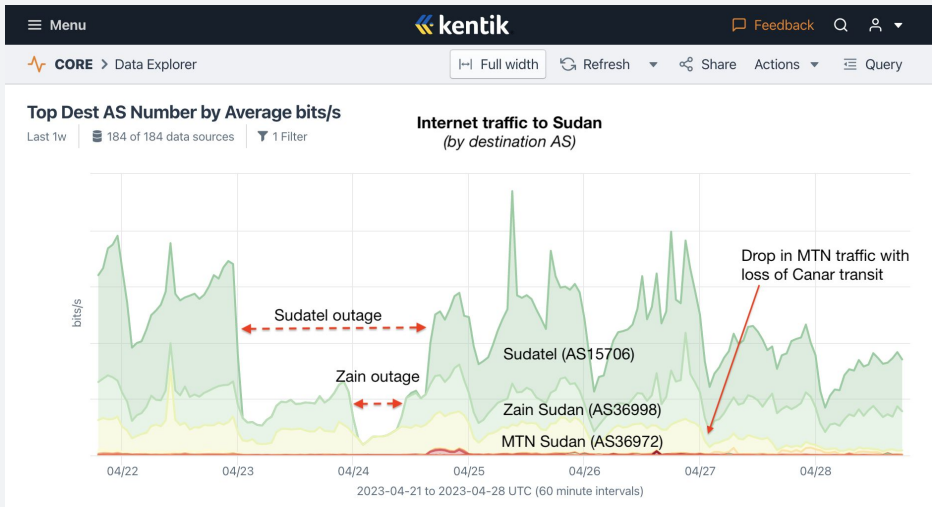
- Multiple service outages at different times
- Portions of customer base dependent on a single transit provider

Transit analysis / Chad Impact

Sudan Conflict has caused:

- Sustained impact on Internet connectivity begins April 15th, 2023 with ~70% reduction in Internet Infrastructure connectivity from early May to end of June 2023.

- April 16th government-ordered shutdown was reported by Reuters, affecting MTN, the shutdown was reported to be lifted hours after the order.

- Portions of customer base in both Sudan and Chad dependent on a single transit provider experienced multiple outages

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