

Quantifying WACREN performance gains with perfSONAR

AIS 2017 — Nairobi

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WACREN — CTO

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Plan

- perfSONAR
- Existing deployments in Africa
 - KENET
 - SANREN and the SKA project
 - Small Nodes with GÉANT in the WACREN region
- Measuring the WACREN network
 - In the core
 - On the access links
 - Performance improvement

perfSONAR

- perfSONAR is a tool to
 - Sets network performance expectations
 - Find network problems, focus on soft failures
- Multi-domains, R&E community
 - 2000 measurement points around the world on many different networks

perfSONAR

- perfSONAR is made of
 - Measurement tools (latency, throughput, paths, ...)
 - A scheduler (repeat, non conflicting tests, ...)
 - Web interface to configure tests
 - Measurements archiving
 - Results plotting, dashboard, alerting

Existing deployments in Africa

- KENET (Kenya)
 - Monitoring performance of their own network
 - And uplink
 - About 10 nodes in their network

Existing deployments in Africa

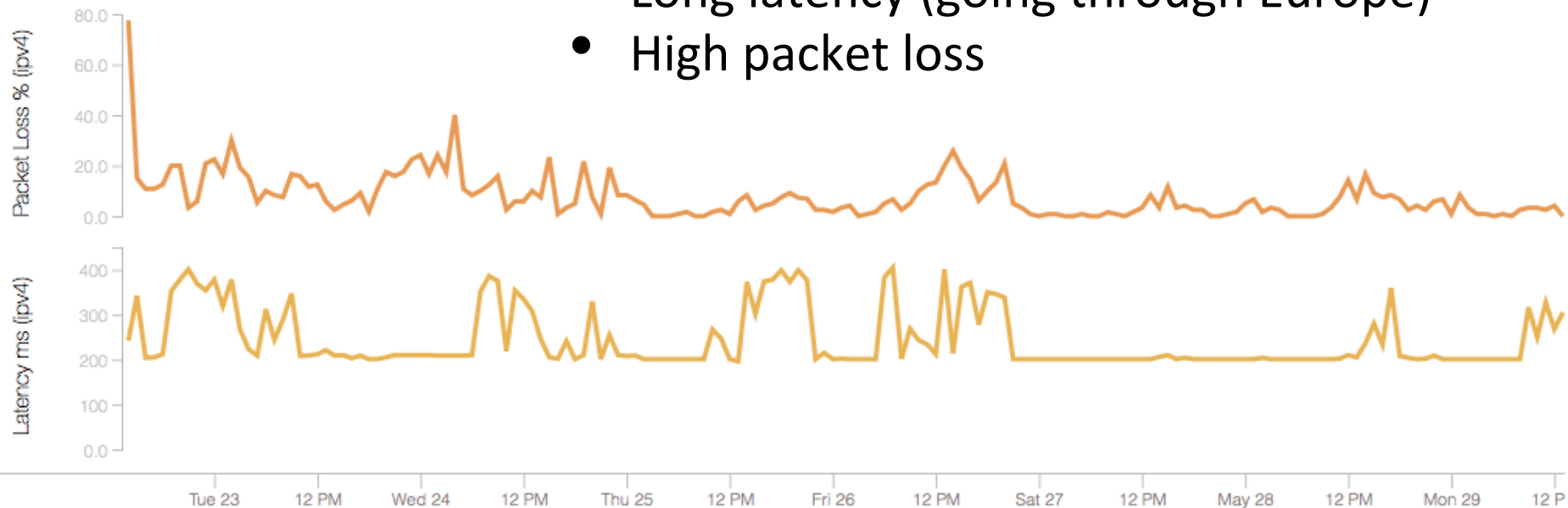
- SANREN (South Africa)
 - Monitoring performance of their network and uplink
 - About 10 nodes
 - Public dashboard
- the SKA project
 - Long fat network, intercontinental (Europe-Australia)

Existing deployments in Africa

- GÉANT Small Nodes project
 - Demo perfSONAR on low cost devices (~ 200 €)
 - 3 nodes in West Africa (Ghana, Nigeria, Senegal)
 - Mainly measure performance to Europe (GÉANT)
 - But also between these 3 countries (when nodes online)

Senegal – Ghana

- Long latency (going through Europe)
- High packet loss

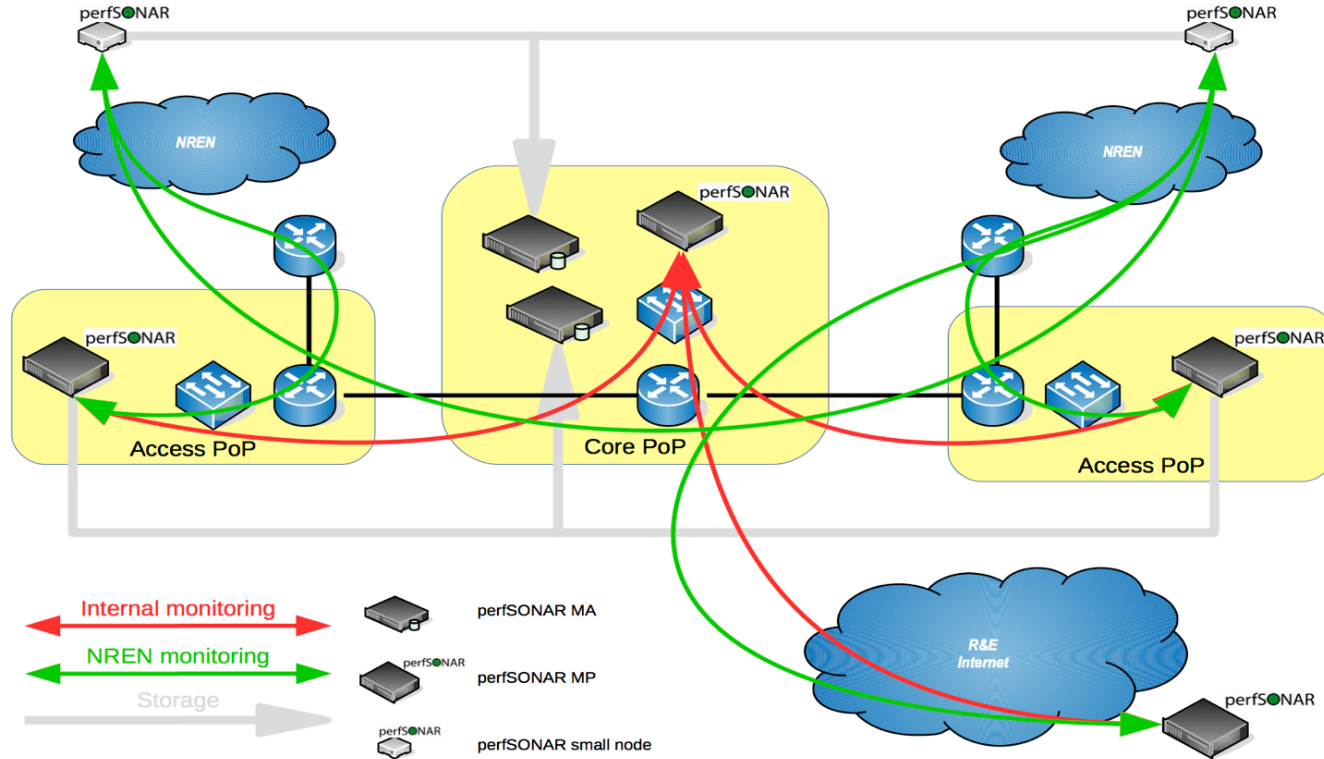


Inter-NREN measurements

- What does this tell us about West-African connectivity?
 - All going through uplink (Europe)
 - Real need for a Regional REN

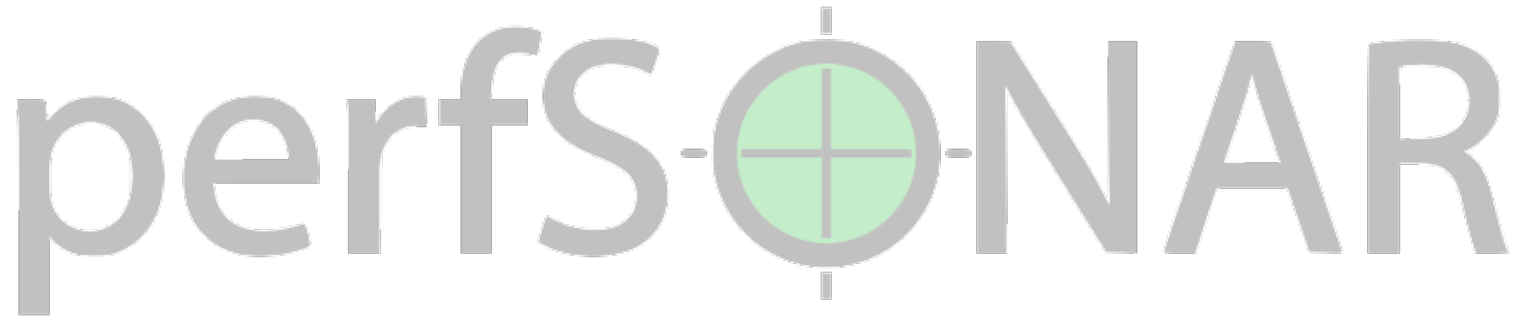
Measuring the WACREN network

- Core nodes
 - Powerful measurement points (10 gbps NIC)
 - Central storage and dashboard
- NREN access networks
 - MP in access PoP
 - Low cost devices in NREN



Measuring the WACREN network

- Comparing commercial uplink and Regional R&E Network performance
 - Between African NRENs
 - In the REN community
 - With the world at large



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