

Network Tuning for Rapid Transmission of Multispectral Images for Relief Efforts in Haiti

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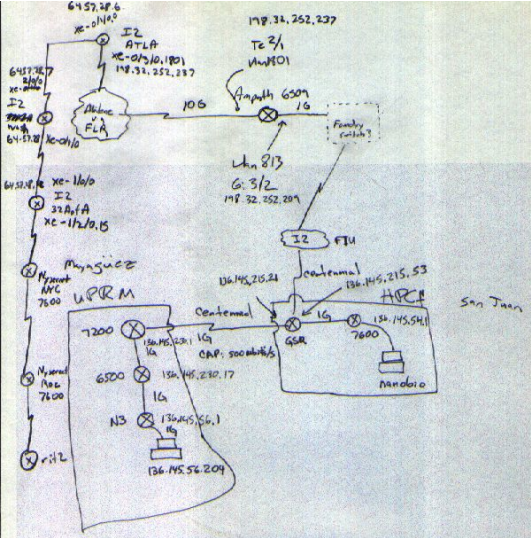
Acknowledgements

- ▶ The project was initiated by the World Bank, through a contract with IPLER partner ImageCat. The USGS also requested LiDAR coverage of the fault line to improve their earthquake risk predictions and to better understand the event.
- ▶ The HPCf is supported in part by INBRE grant P20RR016470 from the NIH NCRR; and the Institute for Functional Nanomaterials (IFN) award 0701525 from NSF EPSCoR.
- ▶ Support also provided by RCMI grant G12RR03051 to the UPR Medical Sciences Campus by the NIH NCRR.

Credits

- ▶ Collaboration with the members of the larsip-data mailing list.
- ▶ Puerto Rico participants: Pablo Rebollo Sosa, Ramon Sierra Perez, Jose Conde, Jose Marrero Diaz, Naji Khouri, Arun Venkataraman, Felix Ramos, Martin Melendez, Victor Asencio, Miguel Velez Reyes, Antonio Rovira, Raúl Sanchez.
- ▶ Florida: Julio Ibarra Florida, Ernesto M. Rubi, Phil Halstead, Joel L. Hartman, William Kearns, David Pokorney, Michael Pearce
- ▶ New York: Paul Mezzanini, Carl Salvaggio, Gurcharan Khanna, Andrew Elble, Bill Owens, May Casterline, Don Boyd, Bill Basener, Brett Matzke, Charles Gruener, Dennis Charlesworth, Jim Bodie, Jan van Aardt, Brent Bartlett, Don McKeown, Bob Krzaczek
- ▶ Other: Don McKeown, Cong. Massa, Cong. Lee, Col. Mathewson (AFSOUTH), Lt. Col. Waller (AFSOUTH), Chris Penningroth (AFSOUTH), Robert Cavin (AFSOUTH), Mike Aslaksen (NOAA), LCDR Schmidt (SOUTHCOM), Lt JG Williams (SOUTHCOM), Paul Boven (JIVE)

Network Diagram

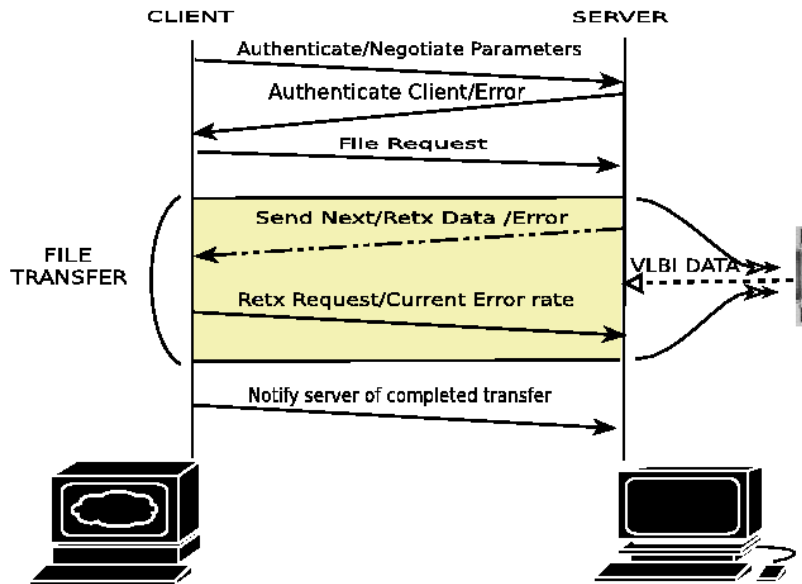


Pablo Rebollo-Sosa, Andrew Elble

Testing Timeline

- ▶ 2010-01-19 11:00 First contact
- ▶ 2010-01-19 23:19 First problem (4.8 Mbps)
- ▶ 2010-01-19 23:33 Humberto Ortiz suggests parallel TCP or UDP
- ▶ 2010-01-20 09:13 Ramon Sierra suggests TCP tuning
- ▶ 2010-01-20 10:51 Jose Conde suggests checking packet shaper
- ▶ 2010-01-20 12:04 Paul Boven suggests tsunami
- ▶ 2010-01-20 noon Pablo Rebollo corrects sflows problem on Foundry switch.
- ▶ 2010-01-20 13:00 Centennial raises UPR Bandwidth caps
- ▶ 2010-01-20 13:30 39.2 Mbps parallel TCP w/ iperf
- ▶ 2010-01-20 22:10 File truncation reported by Paul Mezzanini
- ▶ 2010-01-21 12:58 RIT bandwidth caps raised by NYSERNET

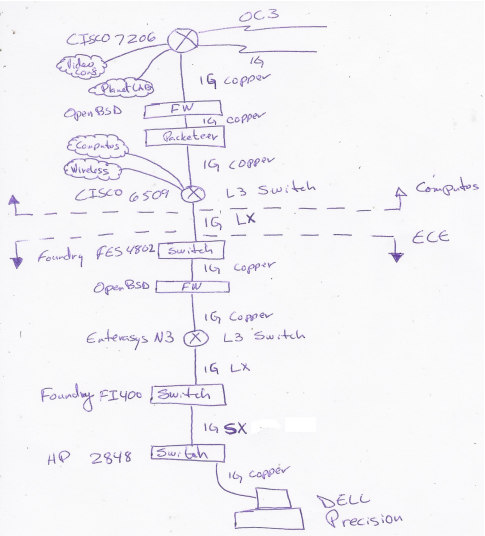
Tsunami-udp



Production Timeline

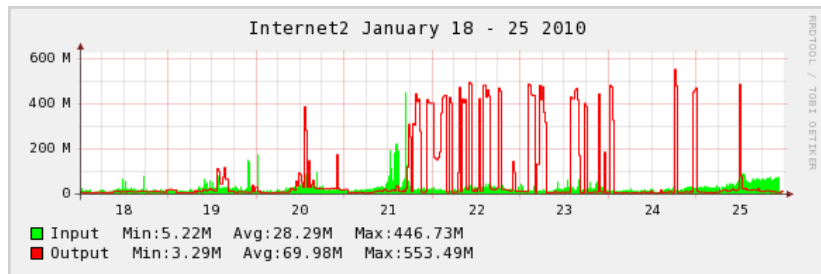
- ▶ 2010-01-19 11:00 First contact
- ▶ 2010-01-21 Overnight transfer with rsync
- ▶ 2010-01-22 18:05 Achieved 389 Mbps using tsunami (UDP)
- ▶ 2010-01-22 Overnight transfer with tsunami, file truncated
- ▶ 2010-01-23 21:54 Martin Melendez removes “Monitoring” packeteer from path
- ▶ 2010-01-24 00:40 Transferred 100 GB in 45 minutes; max rate 394 Mbps
- ▶ 2010-01-25 00:41 Transferred 112 GB in 40 minutes

Mayagüez network



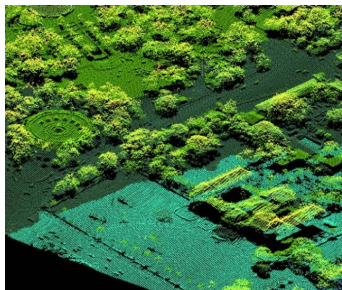
Pablo Rebollo

Traffic graphs



Ramon Sierra

Image products



<http://ipler.cis.rit.edu/projects/haiti> and RIT's Carlson Center for Imaging Science

Data were made available to Google, Yahoo!, Microsoft, USGS, ERDAS, Virtual Disaster Viewer (VDV) at University at Buffalo, and UN-SPIDER (hosted at RIT). The data are in the public domain.