

Case Studies for Wide Area Network Problems

This directory contains a set of pages describing various problems, relevant information, how they were tackled and possibly resolved. The date is roughly when the page for this problem was created.

Date	Link	Summary	Status
December 30, 2011	Wget does not work in getdata.pl	wget in getdata.pl fails to ping pern.edu.pk with a URL that works if from a browser	
December 29, 2011	Hosts pingable from some regions, but not others	Can't ping pingerisl-fjwu.pern.edu.pk or pinger.pern.edu.pk from anywhere but Pakistan and Jordan	Probably a remote host or remote network/firewall configuration
August 17, 2010	LCLS Data Transfers from SLAC to DESY performing poorly		<i>Appears it is a host related problem at DESY - UNDERSTOOD</i>
August 23, 2007	IEPM-BW host at NIIT not reachable	Getting two different IP addresses when trying to <i>resolve host name</i> .	<i>NIIT DNS servers were out of sync and both were down - UNDERSTOOD</i>
July 8, 2007	Reporting COMSATS Pakistan not reachable	Routing loop blocked access, unable to report problem.	<i>Loss of power at COMSats - UNDERSTOOD</i>
July 1, 2007	SLAC Internal Connection	Long delays loading SLAC home page on Visitor network using wireless	<i>SKYPE (or other P2P application) was using the host as a supermode - UNDERSTOOD</i>
June 26, 2007	SLAC External Connections	Offsite connections to some sites was very poor	<i>STILL DIAGNOSING</i>
December 1, 2006	Inadequate throughput between SLAC and U Victoria, Dec 2006	User wants to increase throughput between SLAC and UVic	<i>Partially UNDERSTOOD</i>
August 22, 2006	Problems From BNL August '06'	BNL unreachable from some places -	<i>NOT RESOLVED</i>
August 4, 2006	Problems accessing S. African host 04 August '06'	Denial of Service attack, followed by loss of power	<i>UNDERSTOOD.</i>
July 25, 2006	Problems with BINP-SLAC link July '06	Power problems in Akademgorodok region causes many services to be unavailable from SLAC to BINP	<i>-UNDERSTOOD.</i>
May 18, 2006	Poor throughput for GLAST data transfers between SLAC and NRL Washinton	Too small TCP windows set at default, firewall limiting throughput, application needs to apply ssh throughput patches, mandated application cannot use multiple streams or big windows, alternate path had port blocking.	<i>-UNDERSTOOD.</i>
May 14, 2006	Throughput between SLAC and Taiwan	TCP windows and number of parallel streams needed optimizing	<i>UNDERSTOOD.</i>
May 9, 2006	Large increase in RTT from South Africa to CERN April 2006	Change in routing traffic from S. Africa to CERN from using GEANT to going via Abilene and the U.S. after Abilene started exchanging traffic with S. African TENET	<i>UNDERSTOOD.</i>
February 1, 2006	Problems with Oracle between SLAC and ORNL, Jan 2006	Appears to be an application problem	<i>UNDERSTOOD.</i>
January 22, 2006	Effect of ESnet routing change between SLAC and SDSC	San Diego Sunnyvale connectivity was interrupted by Level(3) maintenance. An alternate path was used. This study looks at the impact on the various IEPM metrics of the route change	<i>UNDERSTOOD</i>
December 28, 2005	Problems with link to and from BNL	Multiple paths seen from and to BNL showed step downs in pathchirp performance Believed to be related to the host at BNL	<i>NOT RESOLVED</i>
September 10, 2005	Problems with Stanford's Connectivity	Fan failure in Cisco 15454 causes route to CENIC/Sunnyvale to fail, and switch over to using ESnet	<i>UNDERSTOOD</i>
August 16, 2005	Problems with link to and from BNL	Fiber cut causes OC48 outage and fail over to a T3 link	<i>UNDERSTOOD</i>
July 1, 2004	Fiber outage to Pakistan June 27th to July 8, 2005	Fiber cut off coast of Karachi causes 12 day outage to Pakistan	<i>UNDERSTOOD</i>
May 31, 2005	New Route from SLAC to BINP Novosibirsk via GLORIAD	See the effect of the new route in improving RTT and throughput	<i>UNDERSTOOD.</i>
April 18, 2005	Loss of Connectivity between SLAC and BINP Novosibirsk	Some change caused the connectivity between SLAC and BINP to be blocked by firewalls in Novosibirsk.	
September 2, 2004	Loss of Connectivity from SLAC for about 10 hours	Due to CENIC maintenance SLAC lost connectivity to many sites from around midnight until 10:30am, This is nicely illustrated in traceroutes taken each 10 minute interval to multiple sites from SLAC and in particular can be nicely visualized by means of a topology map.	<i>-UNDERSTOOD</i>
February 25, 2004	Network performance to Pakistan	Shows Internet performance from SLAC to a few Pakistani sites, including: differences in performance depending on providers; identifying bottlenecks; effects of upgrade for NIIT; routing between Pakistani sites going via London	<i>-UNDERSTOOD</i>
January 8, 2004	Effect of routing on RTTs and losses to 2 sites in Hangzhou, China	Site with better Internet connectivity had much larger RTTs, but lower losses -	<i>UNDERSTOOD</i>

October 3, 2003	Throughput from SLAC to Caltech reduced by a factor of 5	CENIC's routing to Caltech was incorrect	RESOLVED
July 23, 2003	Route to Sox (Southern Crossroads) has been changed, the bandwidth increased in factor 2	Abilene routing, traceroute analysis	RESOLVED
June 12, 2003	Effect of change from Internet2 to ESnet for the routes from SLAC to Europe	2 problems, routing for IN2P3, incorrect iperf configuration for CESnet	RESOLVED.
June 10, 2003	Daresbury lab (UK)	One of our important partner Daresbury lab (UK) upgraded line to Internet to 1Gbitper second Routing	RESOLVED.
June 6, 2003	Routing changes hit many sites in US	Routing	RESOLVED
May 22, 2003	SLAC to CERN RTT Anomalies	Routing	RESOLVED
May 20, 2003	Loss of connectivity between SLAC and Novosibirsk	Misconfigured router	RESOLVED
May 7, 2003	The unusual bandwidth drop to European sites (connected via Abilene)		
May 1, 2003	The influence of strong LAN traffic on target hosts in monitoring results (NERSC,ANL)	Effect of local NFS traffic	RESOLVED
November 6, 2002	Change of Routing to NCSA and others	Change of routing	RESOLVED
September 20, 2002	Change of Routing Network connectivity problems	reports from BWESLAC-UK, and SLAC-ANL	RESOLVED
July 26, 2002	Network connectivity between SLAC and BINP, Novosibirsk	following upgradeResults of effectiveness of network upgrade	RESOLVED
May 30, 2002	Change of Routing between UK and US	Routing Change	RESOLVED
Mar 21, 2002	Poor throughput from SLAC to INFN,Rome	Poor packet loss	RESOLVED
Jan 4, 2002	A sudden change in bandwidth utilization	Throughput from monitoring host suddenly dropped from several hundreds of Mbits per second to about 100Mbits per second due to turning on debugging flags	RESOLVED
Jan 8, 2002	Problems with performance between SLAC and IN2P3, Jan '02	Only ~ 20Mbits/s throughput achievable on 30Mbps ATM VP bottleneck	RESOLVED
Dec 13, 2001	Problems with performance between SLAC and CERN	Large router buffers adversely affect interactive use	RESOLVED
Sep 27, 2001	Network connectivity between SLAC and RL, UK	Poor performance from SLAC to Rutherford Lab, UK caused by firewall and small windows	RESOLVED
Sep 19, 2001	Problems with links from SLAC to IHEP.SU	High packet loss prevents ssh access, due to host problems	RESOLVED
Sep 11, 2001	Impact of World Trade Center & Pentagon attacks on Internet performance	How did the WTC collapse affect Internet connectivity for SLAC	RESOLVED.
May 3, 2001	Qbone Scavenger Service at SLAC	Need to find hosts/sites to try with QBone Scavenger services	RESOLVED
Mar 28, 2001	International Internet connectivity from SLAC	Request for information on quality of International links	RESOLVED
Mar 19, 2001	Comparing ihep.ac.cn with cas.ac.cn - March 2001	Request to understand the proposed effect of changing an ISP	RESOLVED
Mar 1, 2001	Packet loss on Stanford-Pac Bell DSL links - Mar 01		
Feb 25, 2001	Packet loss on Stanford-Pac Bell DSL links	Feb 01Problems with users DSL service due to bad pairs to home	RESOLVED
Jan 27, 2001	Throughput between Tersk03 and Kangadata	Problems in host to host throughput on LAN due to windows being to small	RESOLVED
Jan 22, 2001	Network connectivity between SLAC and IN2P3, Jan 2001	Problems with throughput between SLAC and IN2P3 due to misconfigured ATM/PVC	RESOLVED
Jan 12, 2001	Network connectivity between SLAC and Platform Computing	Problems between SLAC and a commercial site due to poor routing	RESOLVED
Dec 18, 2000	Network connectivity between SLAC and UT Dallas	Multiple problems with throughput between SLAC and UTDallas due to small windows and packet loss	RESOLVED WINDOW PROBLEM
Dec 07, 2000	Network connectivity between SLAC and IN2P3, Lyon, France	User question on suitability of network connections to BaBar tier A regional computing site	RESOLVED
Dec 06, 2000	Network connectivity between SLAC and BINP, Novosibirsk	Investigation of poor throughput from SLAC to Novosibirsk, resulting in successful recommendation for link upgrade	RESOLVED
Sep 11, 2000	Caltech to SLAC thruPoor throughput from Caltech to SLAC while SLAC to Caltech was OK	partially RESOLVED by moving from ESnet to Internet 2	PARTIALLY RESOLVED

Sep 03, 2000	SLAC to ILAN (Israel) thruput	Poor performance between SLAC and Israel caused by ESnet upgrade to router using incorrect BGP configuration	<i>RESOLVED</i>
May 16, 2000	Stanford to SLAC file transfer problems	Poor throughput between SLAc and Stanford campus, required resetting an ATM interface	<i>RESOLVED</i>
May 09, 2000	UK to US QoS Testing	QoS did not appear to be working, the direction it was applied in was not congested	<i>RESOLVED</i>
May 02, 2000	Throughput Performance between SLAC and CERN	Big asymmetry in the throughputs from SLAC to IN2P2 and vice versa, partially due to Cisco web cache	NOT <i>RESOLVED</i>
Apr 15, 2000	Troubleshooting VPN Disconnects	Mainly some hints on tracking Microsoft VPN problems.	
May 23, 1999	Ping Measurement Pathology Examples	Pings from Linux to WNT on a LAN with normal RTT < 10 msec, manifest an unusual regularity in the sequence number separation of the pings with > 10msec. Probably an OS effect.	<i>RESOLVED</i>