

EOS Science Networks Performance Report

This is a summary of EOS QA SCF performance testing for July 2002 -- comparing the performance against the requirements from BAH, including Terra, TRMM, and QuikScat, Aqua, ADEOS II, partial Aura and SAGE III, and ICESat requirements (still waiting for the rest of Aura). The requirements were increased in May 2001 by adding a 50% contingency factor to all QA and SIPS requirements, which were omitted with the change to the new BAH requirements in March 2001. In June 2001 the requirements were modified to incorporate an updated number of EOS funded users at each tested site, based on the latest SPSO database. The total number of users increased in this way from 434 to 1012 (US only).

Up to date graphical results can be found on the EOS network performance web site (now pretty stable): <http://corn.eos.nasa.gov/performance/networks> (Then click on a category next to "Active Testing")

Highlights:

- All testing from LaRC ECS DAAC stopped on 13 June for firewall installation -- restored 12 July.
- Apparent congestion for all NISN outflows from LaRC, performance is noisy, reduces daily worst measurement. Four sites downgraded from Good to Adequate due to this factor.
- Otherwise mostly stable performance.

Ratings:

Rating Categories:

Excellent : median of daily worst cases > 3 x requirement

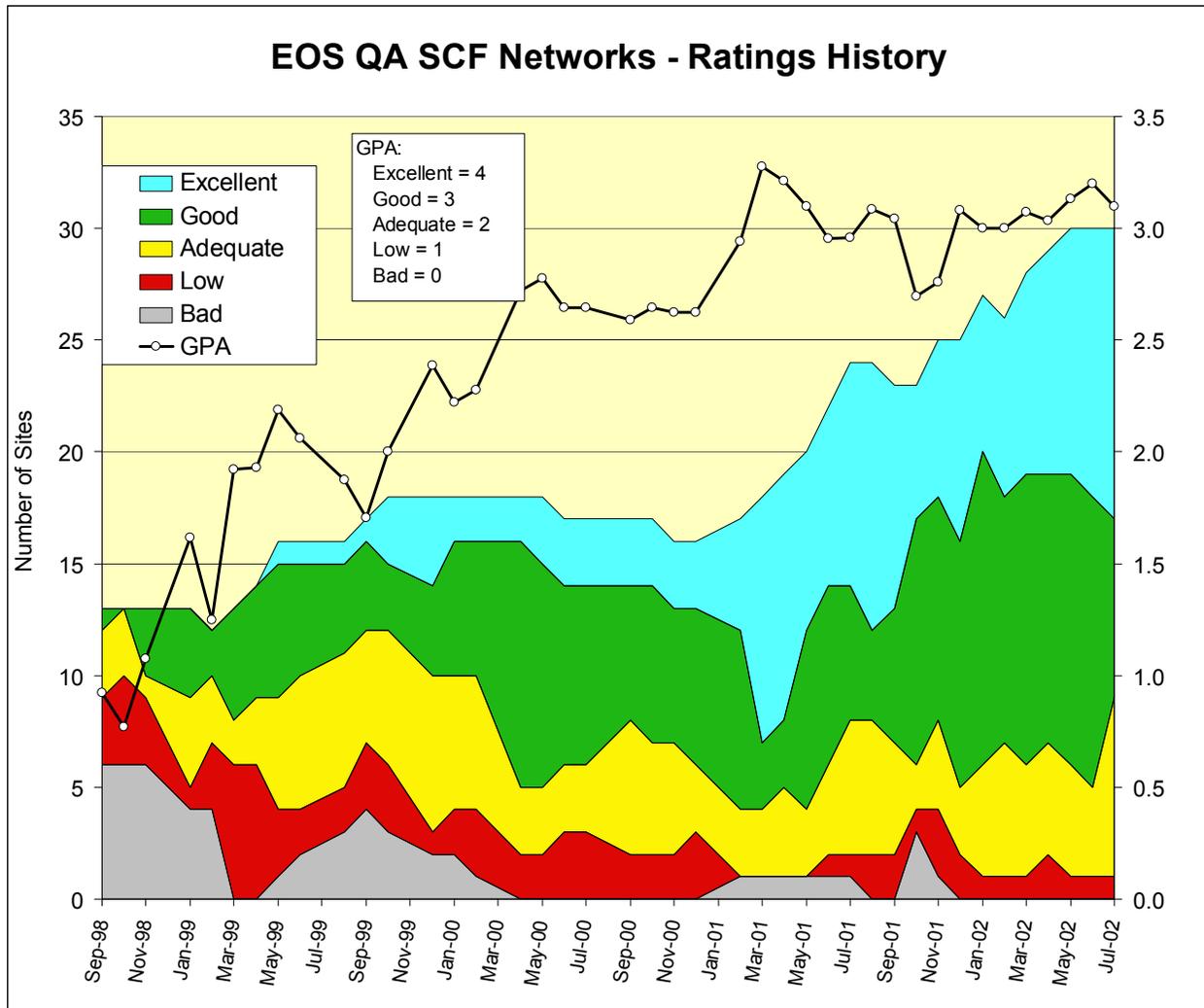
Good : median of daily worst cases > requirement

Adequate : median of daily worst cases < requirement
and
median of daily medians > requirement

Low : median of daily medians < requirement.

Bad : median of daily medians < 1/3 of the requirement.

The chart below shows the number of sites in each classification since the testing started in 1998. Note that these ratings do NOT relate to absolute performance -- they are relative to the EOS requirements.



Ratings Changes:

Upgrades: ↑

MIT: Good → **Excellent**

Downgrades: ↓

Colorado State: Good → **Adequate**

NCAR: Good → **Adequate**

Penn State: Good → **Adequate**

UK - UCLSCF: Good → **Adequate**

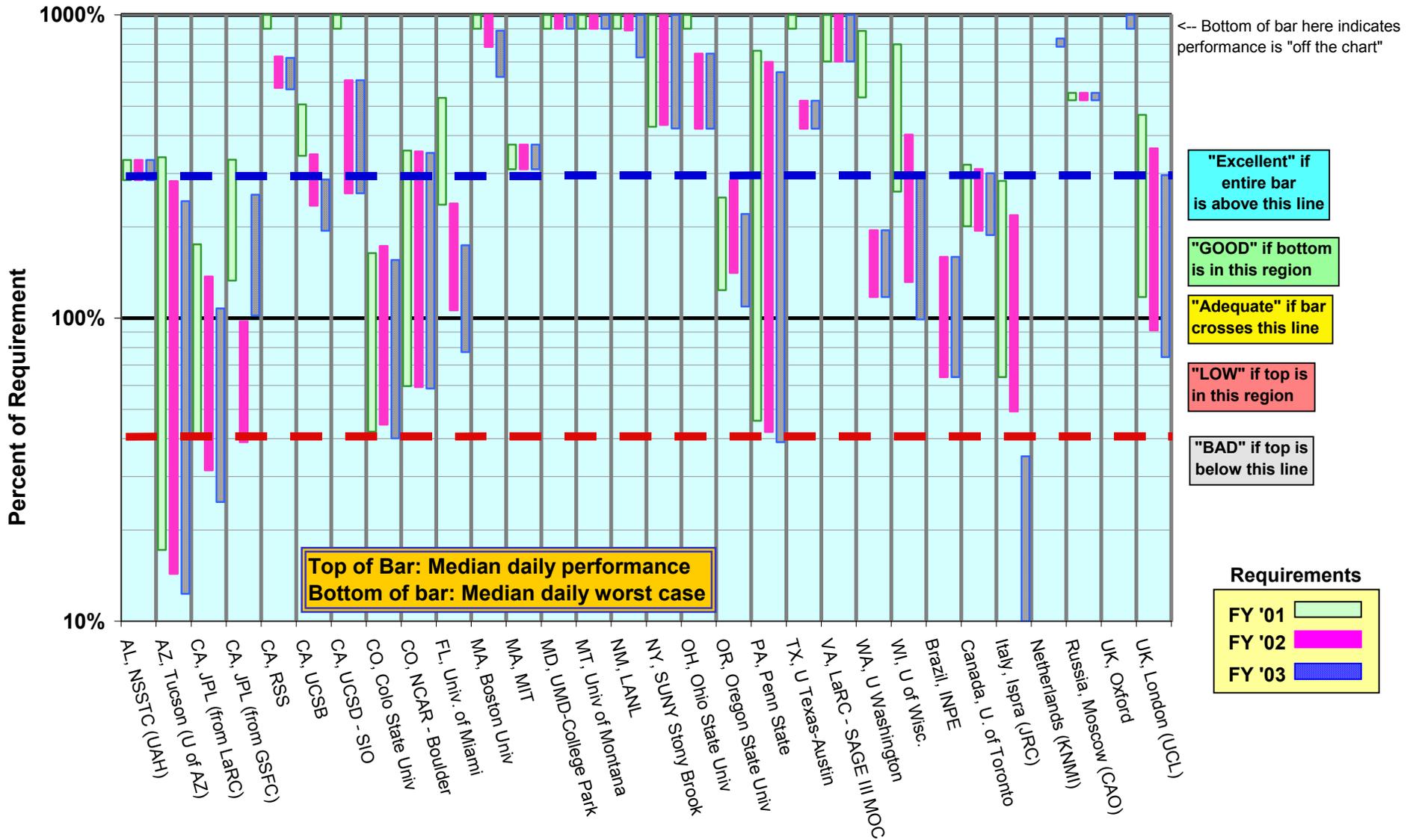
EOS QA SCF Sites: Network Requirements vs. Measured Performance

July 2002		Requirements (kbps) (including 50% QA contingency)			Testing							
Destination	Team (s)	Previous: FY '01	Current: FY '02	Future: FY '03	Source Node: Test Period	Median kbps	Median Daily Worst	Current Rating* (FY '02)	Last Month	Future Rating* (FY '03)	Route Tested	Upgrade
AL, NSSTC (UAH)	CERES, AMSR	1809	1809	1809	LaTIS: 26-Jul-02 - 31-Jul-02	6014	5155	GOOD	G	GOOD	NISN + FDDI	
AZ, Tucson (U of AZ)	MODIS, MISR	2981	3571	4161	LDAAC: 13-Jul-02 - 31-Jul-02	10114	512	Adequate	A	Adequate	Abilene via MAX	
CA, JPL (from LaRC)	MISR	8762	11192	14258	LDAAC-MISR-ATM: 12-Jul-02 - 31-Jul-02	15345	3524	Adequate	A	Adequate	NISN Private VC	Increase VC
CA, JPL (from GSFC)	AIRS, TES, others	5144	17556	6713	GSFC-AIRS: 02-Jul-02 - 31-Jul-02	17121	6843	LOW	L	GOOD	NISN SIP	Increase VC
CA, RSS	AMSR	200	376	380	JPL PODAAC: 26-Jan-02 - 31-Jul-02	2741	2157	Excellent	E	Excellent	2 * T1 - Consolidated	
CA, UCSB	MODIS	2453	3583	4336	GDAAC: 01-Jun-02 - 31-Jul-02	12430	8414	GOOD	G	GOOD	Abilene via NISN-MAX	
CA, UCSD - SIO	ICESAT, CERES	1200	6225	6225	GSFC: 01-Jun-02 - 31-Jul-02	37922	16076	GOOD	G	GOOD	Abilene via MAX	
CO, Colo State Univ	CERES	1758	1665	1851	LaTIS: 01-Jul-02 - 31-Jul-02	2879	742	Adequate	G	Adequate	NISN -> Abilene	
CO, NCAR - Boulder	MOPITT, HIRDLS	4681	4716	4768	LaRC DAAC: 14-Jul-02 - 31-Jul-02	16698	2792	Adequate	G	Adequate	NISN -> Abilene	
CO, NOAA / ERL, Boulder	CERES	1709	1708	1711								
FL, Univ. of Miami	MODIS, MISR	4612	10282	14121	GSFC: 01-May-02 - 31-Jul-02	24556	10902	GOOD	G	Adequate	Abilene via MAX	
IL, UIUC	MISR	1134	1134	1134								
MA, Boston Univ	MODIS, MISR	1207	1967	2474	EDC DAAC: 20-May-02 - 31-Jul-02	21947	15448	Excellent	E	Excellent	Abilene via vBNS+	
MA, MIT	ICESAT	1700	1700	1700	GSFC : 01-May-02 - 31-Jul-02	6343	5268	Excellent	G	Excellent	Abilene via MAX	
MD, UMD-College Park	MODIS	1928	1969	1997	GSFC-MAX: 01-Jan-02 - 31-Jul-02	151819	125978	Excellent	E	Excellent	Direct Fiber	
MT, Univ of Montana	MODIS	244	459	603	EDC DAAC: 29-May-02 - 31-Jul-02	87303	35573	Excellent	E	Excellent	Abilene via vBNS+	
NM, LANL	MISR	478	616	755	LaRC DAAC: 12-Jul-02 - 31-Jul-02	15590	5474	Excellent	E	Excellent	ESNet via ARC	
NY, SUNY Stony Brook	CERES	544	536	551	LaTIS: 05-Jul-02 - 31-Jul-02	11722	2327	Excellent	E	Excellent	NISN -> vBNS	
OH, Ohio State Univ	ICESAT	400	5425	5425	GSFC: 29-May-02 - 31-Jul-02	40446	22861	Excellent	E	Excellent	Abilene via MAX	
OR, Oregon State Univ	CERES, MODIS	5007	4390	5666	LaTIS: 29-May-02 - 31-Jul-02	12502	6190	GOOD	G	GOOD	NISN -> Abilene	LaRC Firewall
PA, Penn State	MISR	1947	2121	2295	LaRC DAAC: 18-Jul-02 - 31-Jul-02	14847	894	Adequate	G	Adequate	NISN -> Abilene	
TX, Texas A&M	AMSR	400	400	400								
TX, U Texas-Austin	ICESAT	700	8755	8755	GSFC: 01-Feb-02 - 31-Jul-02	45632	36905	Excellent	E	Excellent	Abilene via MAX	
VA, LaRC - SAGE III MOC	SAGE III	200	200	200	GSFC-CSAFS: 01-Apr-02 - 31-Jul-02	3827	1406	Excellent	E	Excellent	Abilene via NISN-MAX	
WA, NOAA PNNL	MISR	400	400	400								
WA, U Washington	ICESAT	2400	10920	10920	GSFC: 10-May-02 - 31-Jul-02	21275	12824	GOOD	G	GOOD	Abilene via MAX	
WI, U of Wisc.	MODIS, AIRS	4599	9135	12152	GSFC: 03-Jun-02 - 31-Jul-02	36793	12028	GOOD	G	Adequate	Abilene via MAX	
Brazil, INPE	HSB	0	622	622	GSFC: 27-Jun-02 - 31-Jul-02	990	397	Adequate	A	Adequate	Abilene -> AMpath-> ANSP	
Canada, U. of Toronto	MOPITT	441	456	471	LaRC DAAC: 14-Jul-02 - 31-Jul-02	1414	886	GOOD	G	GOOD	NISN T1	NISN-CA*net3
France, Palaiseau	CERES	204	203	204								
Italy, Ispra (JRC)	MISR	237	308	1923	LaRC DAAC: 13-Mar-02 - 31-Jul-02	673	152	Adequate	A	LOW	NISN-UUNET-Milan	
Netherlands (KNMI)	OMI	0	0	311	GSFC: 12-Jul-02 - 31-Jul-02	2601	2444	Excellent	E	Excellent	Abilene -> Chi -> Surfnet	
Russia, Moscow (CAO)	SAGE III	26	26	26	CAO-LaRC-N: 04-Jul-02 - 31-Jul-02	157	136	Excellent	E	Excellent	NISN -> Moscow	
UK, Oxford	HIRDLS	0	0	311	GSFC: 12-Mar-01 - 31-Jul-02	4753	3646	Excellent	E	Excellent	Abilene->JAnet (NY)	
UK, London (UCL)	MISR, MODIS	478	616	755	LDAAC-UCL-SCF: 17-Jul-02 - 31-Jul-02	2234	561	Adequate	G	Adequate	Abilene->JAnet (NY)	

*Rating Criteria:			
Rating	Current Score	Prev. Score	re FY '03 Score
Excellent	13	12	13
GOOD	8	13	7
Adequate	8	4	9
LOW	1	1	1
BAD	0	0	0
Total	30	30	30
GPA	3.10	3.20	3.07

Change History:	Date	Description
	8-Jun-98	Original
	10-Jul-98	Incorporated new MISR QA flows
	10-Sep-98	Added % of requirements columns and associated chart
	28-Oct-99	Added Previous Status Column
	1-Jul-00	Added "Excellent" Status, Ratings Summary Chart
	10-Apr-01	Updated requirements with BAH, added additional sites and missions
	7-Jun-01	Added ICESAT sites and requirements, added contingency to QA and SIPS
	13-Jul-01	Updated requirements for latest # of users

EOS QA SCF Sites Daily Median and Worst Performance as a percent of Requirements



Details on individual sites:

Each site listed below is the DESTINATION for all the results reported in that section. The first test listed is the one on which the rating is based -- it is from the source most relevant to the driving requirement. Other tests are also listed. The three values listed are derived from [nominally] 24 tests per day. For each day a daily best, worst, and median is obtained. The values shown below are the medians of those values over the test period.

1) AL, NSSTC (UAH) (aka GHCC)

Teams: CERES, AMSR

Rating: Continued **Good**

Domain: nsstc.uah.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC LaTIS	7.1	6.0	5.2	NISN SIP
GSFC	22.1	21.5	17.3	NISN SIP

Requirements:

Source Node	FY	mbps	Rating
LaRC LaTIS	'02, '03	1.8	Good

Comments: Test node went down July 12, replaced with another node July 26. The new node has higher performance (not limited by 10M Ethernet, as previously), both from LaTIS (Median was 4.1 mbps) and GSFC (median was 4.7 mbps).

Testing to NSSTC from EDC for AMSR, also via NISN SIP stopped on 10 Feb. Testing from EDC is blocked by NSSTC firewall, so will not resume unless requested by NSSTC.

2) AZ, Tucson (U of AZ):

Teams: MODIS, MISR

Rating: Continued **Adequate**

Domain: arizona.edu

Test Results: July 25-31

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	17.1	10.1	0.5	Abilene via NISN / Chicago
EDC	11.7	9.3	6.4	Abilene via vBNS+ / Chicago
GSFC	14.4	12.1	8.4	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'02	3.6	Adequate
EDC DAAC	'02	0.7	Excellent
LaRC DAAC	'03	4.2	Adequate
EDC DAAC	'03	0.8	Excellent

Comments: Performance from all sources dropped on 26 July – the ratings are based on the results after that. In May, the medians were 15 mbps from LaRC, 17 mbps from EDC, and 26 mbps from GSFC..

3) CA, JPL:

Teams: MISR, AIRS, TES, MLS, ASTER

Rating Continued **Low**

Domain: jpl.nasa.gov

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	16.4	15.3	3.5	NISN PVC
GSFC	20.8	17.1	6.8	NISN SIP
LaRC DAAC	22.0	16.7	3.1	NISN SIP

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'02	11.2	Adequate
LaRC DAAC	'03	14.3	Adequate
GSFC	'02	17.6	Low
GSFC	'03	6.7 (?)	Good

Comments: Performance from LaRC via NISN private ATM VC between LaRC and MISR was mostly stable – but dropped about 1 mbps from June, probably due to the firewall installation at LaRC. This is rated as “Adequate” against the split LaRC requirements. Performance between these same nodes, via SIP, improved at the same time, however. The proposal by JPL to eliminate the private PVC, and use NISN SIP, appears to have dropped off the radar screen. At this time, however, the performance via SIP is slightly better than the PVC, and would also be rated “Adequate”.

From GSFC to the AIRS SCF at JPL, the daily worst performance via SIP improved, and no longer exhibits high congestion, with the ratio of daily best to daily worst at about 3:1 (was 7:1). The daily median is just below the requirement, thus a FY'02 rating of “LOW”. For FY '03 the AIRS requirement is shown as stopping, with the rating back to “Good”, but this requirements drop seems unlikely to be accurate.

4) CA, RSS: (Santa Rosa):

Teams: AMSR

Rating: Continued **Excellent**

Domain: remss.com

Test Results:

Source Node	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
JPL PODAAC	2846	2741	2157	NISN SIP: 2 x T1

Requirements:

Source Node	FY	kbps	Rating
JPL PODAAC	'02	376	Excellent
JPL PODAAC	'03	380	Excellent

Comments: NISN upgraded the router software to allow the 2 T1s to be combined in Jan '02, and performance increased to a median of 2.7 mbps, as expected. The median daily worst is now well above 3 x the requirement, so rates as Excellent.

5) CA, UCSB :

Teams: MODIS

Rating: Continued **Good**

Domain: s2k.ucsb.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	17.7	12.4	8.4	Abilene via NISN / MAX
EDC	20.0	16.7	12.8	Abilene via vBNS+/Chicago

Requirements:

Source Node	FY	mbps	Rating
GSFC-MODIS	'02	3.6	Good
GSFC-MODIS	'03	4.3	Good

Comments: Performance testing resumed from GSFC-DAAC on 28 May, after GSFC firewall installation – now using multiple TCP streams to work around TCP window limitations. Testing resumed from EDC on 10 June, after firewall installation, also using multiple TCP streams – would be rated “Excellent”.

6) CA, UCSD (SIO) :

Teams: CERES, ICESAT

Rating: Continued **Good**

Domain: ucsd.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC	42.9	37.9	16.1	Abilene via MAX
LaTIS	23.3	21.5	12.5	Abilene via NISN / Chi

Requirements:

Source Node	FY	mbps	Rating
GSFC	'02, '03	6.2	Good
LaTIS	'02, '03	0.25	Excellent

Comments: Results from both sources improved a great deal around June 1 (prior to that, median was 16 mbps from GSFC and 5.2 from LaTIS). GSFC performance almost rates Excellent, but not quite.

From LaTIS, performance was limited by the LaRC firewall’s lack of support for extended windows. Started using multiple tcp streams on 29 May to mitigate this situation; thruput improved dramatically.

7) CO, Colo State Univ.:

Teams: CERES

Rating: ↓ Good → **Adequate**

Domain: colostate.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	3.6	2.9	0.7	Abilene via NISN / Chicago
GSFC	4.4	4.3	4.1	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaTIS	'02	1.67	Adequate
LaTIS	'03	1.85	Adequate

Comments: Performance from LaTIS dropped and got noisier around 1 July. The daily worst is now below the requirement for both '02 and '03, so is rated “Adequate”. Performance from GSFC is very steady, would rate as “Good” for both years. The thrupt limitation (about 4.5 mbps) is the CSU 10M Ethernet LAN.

8) CO, NCAR:

Teams:MOPITT

Rating: ↓ Good → **Adequate**

Domain: scd.ucar.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	24.5	16.7	2.8	Abilene via NISN / Chicago
GSFC	72.3	48.7	23.6	Abilene via MAX
EDC	50.5	49.7	37.5	Abilene viavBNS+ / Chicago

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'02	4.7	Adequate
LaRC DAAC	'03	4.8	Adequate

Comments: Performance from LaRC DAAC mostly stable since the NISN reconfiguration at LaRC on October 16 -- drop in daily worst appears due to increased congestion, reduces rating to “Adequate”. Performance from GSFC improved in June (median was 37 mbps), would be rated "Excellent".

Added testing from EDC to NCAR in June, performance excellent and very stable, limited by TCP window size of EDC firewall. Will use multiple TCP streams next month to mitigate this limitation.

9) FL, Univ. of Miami:

Teams: MODIS, MISR

Rating: Continued **Good**

Domain: rsmas.miami.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC	38.1	24.6	10.9	Abilene via MAX
GSFC-MODIS	34.5	19.6	9.6	Abilene via NISN / MAX
LaRC DAAC	11.2	6.9	1.0	Abilene via NISN / Chicago

Requirements:

Source Node	FY	mbps	Rating
GSFC	'02	9.7	Good
GSFC	'03	13.3	Adequate
LaRC DAAC	'02	0.6	Good
LaRC DAAC	'03	0.8	Good

Comments: Requirements split between LaRC (MISR) and GSFC (MODIS) in March. Performance from all sources continues short term variable, but long term stable. Performance from MODIS at GSFC is lower due to IONet and firewall; would score as Adequate for FY'02 and '03. Testing from LDAAC added in Feb '02, performance via NISN to Abilene is lower but well above the MISR requirements; drop this month in daily worst from LaRC reduces FY'02 rating.

10) MA, Boston Univ:

Teams: MODIS, MISR

Rating: N/A → **Excellent**

Domain: bu.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EDC DAAC	29.2	22.0	15.0	Abilene via vBNS+ / Chicago
GSFC	93.0	84.0	54.4	Abilene via MAX
LaRC DAAC	18.4	15.3	1.3	Abilene via NISN / Chicago

Requirements:

Source Node	FY	mbps	Rating
EDC DAAC	'02	2.0	Excellent
EDC DAAC	'03	2.5	Excellent
LaRC DAAC	'02, '03	TBD	N/A

Comments: Performance very stable from all sites via Abilene. Would also be rated excellent from GSFC. Daily worst performance from LDAAC dropped, apparently due to congestion. Performance from EDC apparently limited by firewall's window size -- will try multiple TCP streams next month to overcome.

11) MA, MIT:

Teams: ICESAT

Rating: ↑ Good → **Excellent**

Domain: mit.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC	6.6	6.3	5.3	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'02, '03	1.7	Excellent

Comments: Performance via Abilene has been very stable since testing began in January 2002 . The thrupt limit is a 10M Ethernet at MIT. Improvement in the daily worst value upgrades rating to "Excellent"

12) MD, Univ. of Maryland:

Teams: MODIS

Rating: Continued **Excellent**

Domain: umd.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-MAX	156.6	151.8	126.0	Direct Fiber OC-12 / MAX / SCF
GSFC-MODIS	15.1	10.5	2.4	NISN / MAX / UMIACS
EDC	46.3	43.0	27.7	VBNS+ / Chi / Abilene / MAX / SCF
NSIDC	41.0	21.4	6.8	Abilene / MAX / SCF

Requirements (QA only):

Source Node	FY	mbps	Rating
GSFC DAAC	'02	1.9	Excellent
GSFC DAAC	'03	2.5	Excellent

Comments: Steady performance from GSFC-MAX. Reconfiguration at UMD in November 2001 removed the OC-3 ATM interface, upgraded to GigE. Problems at UMD reduce performance to UMIACS test node. Performance from EDC now using upgraded vBNS+, median in May was only 29 mbps. Will use multiple TCP streams next month to get further improvement. Performance from NSIDC remained stable after improvement on Feb 28.

13) MT, Univ of Montana:

Teams: MODIS

Rating: Continued **Excellent**

Domain: ntsg.umt.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EDC DAAC	133.6	87.3	35.6	VBNS+ / Chi / Abilene
GSFC	37.9	34.9	29.6	MAX / Abilene
NSIDC	38.1	33.9	19.7	CU / FRG / Abilene

Requirements:

Source Node	FY	kbps	Rating
EDC DAAC	'02	459	Excellent
EDC DAAC	'03	603	Excellent

Comments: Testing from EDC improved greatly on 29 May 02, due to vBNS+ upgrade, and use of using multiple TCP streams (median was 15 mbps in May). Performance steady from GSFC and NSIDC.

14) NM, LANL:

Teams: MISR

Rating: Continued **Excellent**

Domain: lanl.gov

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	17.0	15.6	5.5	NISN SIP / MAE-W (Ames) / ESnet
GSFC	16.8	16.7	15.2	MAX / ESnet

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'02	616	Excellent
LaRC DAAC	'03	755	Excellent

Comments: Performance from LaRC generally stable after firewall installation at LaRC, but a bit noisier (peak and median improved, daily worst dropped), due to congestion on NISN. Performance from GSFC extremely stable.

15) NY, SUNY-SB:

Teams: CERES, MODIS

Rating: Continued **Excellent**

Domain: sunysb.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	14.0	11.7	2.3	NISN SIP / Chi / Abilene / NYSernet
GSFC	31.4	26.9	23.0	MAX / Abilene / NYSernet

Requirements:

Source Node	FY	kbps	Rating
LaTIS	'02	536	Excellent
LaTIS	'03	551	Excellent

Comments: Yet another route change from LaTIS, this time on 5 July (had switched previously on 3 May and again on 30 May). Performance from LaTIS for most of June had a median of 20 mbps, dropping back near previous levels on 5 July.

Performance from GSFC very steady since May.

16) OH, Ohio State Univ:

Teams: ICESAT

Rating: Continued **Excellent**

Domain: ohio-state.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC	47.5	40.4	22.9	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'02, '03	5.4	Excellent

Comments: Performance very steady after recovery on May 28.

17) OR, Oregon State Univ:

Teams: CERES, MODIS

Rating: Continued **Good**

Domain: oce.orst.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	15.3	12.5	6.2	Abilene via NISN / Chicago
JPL	27.2	24.7	18.8	CalREN / Abilene
GSFC	19.9	14.5	9.1	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaTIS	'02	4.4	Good
LaTIS	'03	5.7	Good
GDAAC	'02, '03	0.12	Excellent

Comments: Performance from LaTIS improved 29 May by using multiple TCP streams (the problem is the LaRC firewall, which does not support large TCP window size, so thruput from LaTIS is limited to about 3 mbps on a single stream). Performance from JPL and GSFC very steady.

18) PA: Penn State Univ

Teams: MISR

Rating: ↓ Good → **Adequate**

Domain: psu.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	18.0	14.8	0.9	Abilene via NISN / Chicago
GSFC	45.7	45.3	39.8	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'02	2.1	Adequate
LaRC DAAC	'03	2.3	Adequate

Comments: Performance from LDAAC dropped a bit due to NISN congestion leaving LaRC. Peaks and median dropped somewhat (were 21 and 20 mbps), but daily worst dropped dramatically (was 4.2 mbps), dropping rating to “Adequate”. Performance from GSFC dropped mid June, but has been very stable (not noisy).

19) TX: Univ. Texas - Austin

Teams: ICESAT

Rating: Continued **Excellent**

Domain: utexas.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC	48.7	45.6	36.9	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'02, '03	8.8	Excellent

Comments: Performance from GSFC via Abilene remains very stable

20) VA, LaRC - SAGE III MOC:

Teams: SAGE III

Rating: Continued **Excellent**

Domain: larc.nasa.gov

Test Results:

Source Node	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
GSFC-SAFS	4193	3827	1406	NISN SIP

Requirements:

Source Node	FY	kbps	Rating
GSFC SAFS	'02, '03	200	Excellent

Comments: LaRC firewall upgrade in March removed the former daily cycle.

21) WA, Univ Washington:

Teams: ICESAT

Rating: Continued **Good**

Domain: washington.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC	30.5	21.3	12.8	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'02, '03	10.9	Good

Comments: Performance dropped somewhat on May 10 (median was 30.8 mbps previously), but still rates as “Good”.

22) WI, Univ. of Wisconsin:

Teams: MODIS

Rating: Continued **Good**

Domain: ssec.wisc.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-MAX	56.4	36.8	12.0	MAX / Abilene / Chi / MREN
GSFC-MODIS	8.5	5.0	1.4	NISN / Chicago / MREN
GSFC-NISN	8.9	7.2	3.2	NISN / Chicago / MREN

Requirements:

Source Node	FY	mbps	Rating
GSFC	'02	9.1	Good
GSFC	'03	12.2	Adequate

Comments: Thruput dropped on 03 June from GSFC-MAX via Abilene (was 68 / 40 / 22 mbps last month). FY '03 rating dropped to “Adequate” from “Good”, FY '02 still “Good”. Performance via NISN dropped from both MTVS1 and GSFC-NISN on 25 May. Reconfiguration planned at GSFC will allow MODIS to use Abilene rather than NISN.

23) Brazil, INPE:

Team: HSB

Rating: Continued **Adequate**

Domain: inpe.br

Test Results:

Source Node	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
GSFC	1511	990	397	MAX / Abilene / AMPATH / ANSP
GSFC	982	471	153	NISN / GBLX / ANSP

Requirements: (2 ISTs only)

Source Node	FY	kbps	Rating
GSFC EOC	'02, '03	622	Adequate

Comments: Testing restarted 27 June (had stopped April 21, due to the installation of a firewall at INPE), now testing via two routes. Performance via AMPATH about the same as previously, rated “Adequate” Performance via commodity path would rate “Low”..

24) Canada, Univ of Toronto: Rating: Continued **Good**
 Team: MOPITT Domain: physics.utoronto.ca

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	1.42	1.41	0.89	NISN / GSFC / T1
LaRC DAAC	16.0	14.4	6.8	NISN / Chicago / CA*net3
GSFC	1.43	1.42	1.06	NISN / T1
GSFC	23.6	23.1	18.7	MAX / Abilene / Chicago / CA*net3

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'02, '03	160	Excellent
GSFC EOC	'02, '03	311	Excellent
Combined	'02, '03	471	Good

Comments: Performance from both LDAAC (Source of QA data) and GSFC (Source for IST) via NISN dedicated T1 is very steady, although performance from LaRC has become noisier like other LaRC tests. Since both flows are combined together on the T1, the performance compared to the combined requirement rates as "Good".

Performance from both LaRC and GSFC via Chicago / CA*net3 / ONet is MUCH better than the NISN dedicated circuit -- would be rated "Excellent".

25) IT, EC - JRC:

Teams: MISR

Rating: Continued **Adequate**
 Domain: ceo.sai.jrc.it

Test Results:

Source Node	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
LaRC DAAC	806	673	152	NISN / UUnet / Milan

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'02	308	Adequate
LaRC DAAC	'03	1923	Low

Comments: Performance has been stable, with the typical noisy performance from LaRC, and lower daily worst value.

Note: It is unlikely that the FY'03 requirement can be met without additional resources.

26) Netherlands, KNMI:

Teams: OMI

Rating: Continued **Excellent**

Domain: nadc.nl

Test Results:

Source → Dest	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC → OMI PDR Server	2.6	2.6	2.4	MAX / Abilene/ Chi / Surfnet
GSFC → KNMI Test Node	66.9	59.8	43.2	MAX / Abilene/ Chi / Surfnet

Requirements: (IST Only)

Source Node	FY	Mbps	Rating
GSFC	'03	0.311	Excellent

Comments: Added new test to OMI PDR server (via same route as test node). Since this is the actual PDR server node, these tests will be used to determine the rating. However, performance is much lower than the test node, due to TCP window size limitation on the OMI PDR server. The 8 KB windows limit the flow to about 500 kbps per tcp stream; 5 streams are used to get the performance above. With the low IST only requirement, this still rates as “Excellent”

Performance improved to KNMI Test node by using parallel TCP streams (Was 38 / 37 / 24 mbps last month). This is exceptionally good performance for US to Europe!

27) Russia, CAO (Moscow):

Teams: SAGE III

Rating: Continued **Excellent**

Domain: mipt.ru

Test Results:

Source → Dest	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
CAO → LaRC	159	157	136	MIPT / TCnet / NISN SIP
CAO → LaRC	1140	1050	520	Commodity Internet
LaRC → CAO	146	139	108	NISN SIP / TCnet / MIPT
LaRC → CAO	1354	1133	566	Commodity Internet

Requirements:

Source → Dest	FY	kbps	Rating
CAO → LaRC	'02	26	Excellent
LaRC → CAO	'02	26	Excellent

Comments: Performance testing running since 1 November, with dual routes. Performance on NISN dedicated circuit to Moscow, then TCnet (NASA Russian ISP) tunnel to CAO ISP (MIPT) is extremely steady in both directions (but with an occasional outage – about 1 day per month). The dual route configuration also allows testing via the commodity internet route; performance via that route is better but more variable, also would rate Excellent.

28) UK, London: (UCL SCF)

Teams: MODIS, MISR

Rating: ↓ Good → **Adequate**

Domain: ucl.ac.uk

Test Results:

Source Node	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
LaRC DAAC	2739	2234	561	NISN / MAX / Abilene / NY / JAnet
GSFC DAAC	6150	6040	4725	MAX / Abilene / NY / JAnet

Requirements

Source Node	FY	kbps	Rating
LaRC DAAC	'02	616	Adequate
LaRC DAAC	'03	755	Adequate

Comments: Performance from LDAAC has gotten noisier as with all tests from LDAAC. The daily best and median dropped a little, but the worst dropped to half, dropping the rating to “Adequate”. Performance from GSFC has been very stable; would rate as “Excellent”.

29) UK, Oxford:

Teams: HIRDLS

Rating: Continued **Excellent**

Domain: ox.ac.uk

Test Results:

Source Node	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
GSFC	5218	4753	3648	MAX / Abilene / NY / JAnet

Comments: Very steady performance continues..

Test Results to other EOS HIRDLS UK Sites (Requirements TBD):

Source → Dest	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC → RAL	14.3	8.2	1.9	MAX / Abilene / NY / JAnet

Comments: Thruput to RAL is noisy, and dropped a bit, but remains excellent.