NASA Science Internet (NSI)

User Support Services and Network Application Development

- An Overview -

J. Patrick Gary
Advanced Data Flow Technology Office
Code 930.4
Goddard Space Flight Center

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NSI User Support Services and Network Application Development

- An Overview -

Outline

- Background

- Elements of NSI with GSFC Responsibility

- GSFC Element Objectives

- Summary of Current Status and Plans

NSI User Support Services and Network Applications Development

Background

- At the Network Management Retreat meetings of June and July 1990, key network managers representing Headquarters Codes O and S and the Centers ARC, GSFC, and MSFC concurred on a vision of the future of NASA's science networking and developed major new agreements in regard to the Centers' roles and responsibilities in science networking, including:

ARC	GSFC
NSI Management	User Support Services
NSI Engineering	Network Applications Development
NSI Operations	

NSI User Support Services and Network Applications Development

Background

- On September 27, 1990 the first public announcement and open discussion on the new agreements was made at the NSI Science Steering Committee meeting (The White Paper further describing the agreements, on which prior discussion had waited by management request, is not yet available)

- On October 17, 1990 NSI's Project Manager F. Rounds concurred with the package of GSFC's NSI Work Breakdown Structure (WBS) responsibilities prepared by GSFC's P. Gary.

- On November 7, 1990 F. Rounds forwarded memo to P. Gary to implement NSI program at GSFC.

NSI User Support Services and Network Application Development

Elements of NSI with GSFC Responsibilities

- User Support Services (GSFC Lead)

    - Network User Help Desk

    - On-Line Services Baseline

    - User Conference Support

- Network Applications Development (GSFC Lead)

    - Requirements Definition and Analysis

    - New Core Developments

    - Exploratory Developments

- Additional Tasks Supporting Areas with ARC Lead Responsibility

    - User Requirements, Security, Network Engineering, Network Operations

NSI User Support Services

Network User Help Desk

- First stop for all user questions/problems

- Minimally 12 hours/day, 5 days/week coverage with off-shift support from NOC[1]

- Accessible via phone (301-286-7251, 1-800-NSI-HELP), fax (301-286-5152) and e-mail (NSIHELP@NSINIC)

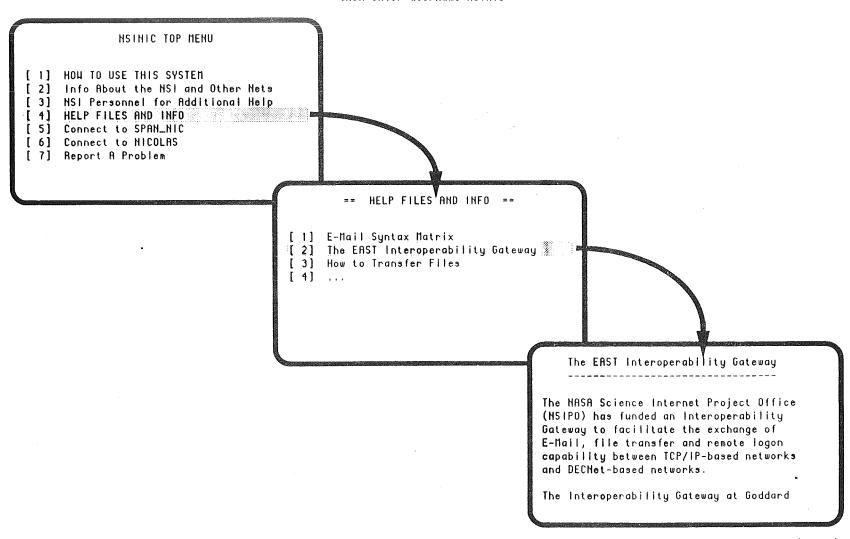- Provides assistance in effective use of both DECnet and IP protocol suites[2]

    - Network configuration guidelines for user host systems
    - User guides e.g. e-mail syntax matrix and interoperability gateway usage procedures

- Provides assistance in network user problem diagnosis with on-line access to real-time NSI network status data, NSR and NIC data bases, and trouble shooting tools

(1) Have planned to extend coverage to 24 hours/day, 7 days/week by FY93

(2) Support for the OSI suite has also been initiated, presently is very limited, but will increase as OSI becomes more used

NSI User Support Services

On-line Services Baseline

- Information Servers, e.g., interactive NIC's and Anonymous FTP

    - NSI User Guides addressing systems configuration guidelines and usage procedures for effective network use

    - NSI bulletin board and on-line newsletter

    - NSI circuit usage and performance statistics

    - Updated network applications software, e.g., latest release of X11 windows

    - White and Yellow Page directories

- USENet News Server: general community bulletin board/"conferencing" system

- Interoperability Gateways for e-mail, file transfer, and remote logon among DECnet TCP/IP, OSI, BITNET, X.25

- Remote Node Access Servers, such as NICOLAS and ALEX, to Master Directory, GSFCMail/NASAMail and various Internet/OSSA system resources

- Mail Servers for distributing notices to specific user groups

First TELNET DFTNIC.GSFC.NASA.GOV (128.183.10.3) or SET HOST DFTNIC (6148),
then enter username NSINIC

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         NSINIC TOP MENU


[ 1]  HOW TO USE THIS SYSTEM
[ 2]  Info About the NSI and Other Nets
[ 3]  NSI Personnel for Additional Help
[ 4]  HELP FILES AND INFO
[ 5]  Connect to SPAN_NIC
[ 6]  Connect to NICOLAS
[ 7]  Report A Problem
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        ==  HELP FILES AND INFO  ==


[ 1]  E-Mail Syntax Matrix
[ 2]  The EAST Interoperability Gateway
[ 3]  How to Transfer Files
[ 4]  ...
```

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        The EAST Interoperability Gateway
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The NASA Science Internet Project Office
(NSIPO) has funded an Interoperability
Gateway to facilitate the exchange of
E-Mail, file transfer and remote logon
capability between TCP/IP-based networks
and DECNet-based networks.

The Interoperability Gateway at Goddard
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NSI User Support Services

On-Line Services Baseline (Continued) - _Notes on Current Status_

(1) NSI Network Information Center (NSINIC) Version 1.0 in beta release
- Information about the NSI and other networks
- On-Line User Guides, e.g. E-mail Syntax Matrix and EAST Interoperability Gateway (EIG)
- Who to call for additional help
- Auto-Logons to SPAN-NIC (contains SPAN Yellow Pages) and NICOLAS
- Report problem/request help
  Anonymous FTP File Server already hosts over 200 Unix, VMS, and Macintosh programs

(2) X.500 based White Pages Server already enabling access to telephone books over 100 organizations

(3) USENet News Server already supporting 84 client systems' accesses to over 750 news groups

(4) EIG supports e-mail, file transfer, and remote logons between DECnet and TCP/IP; NICOLAS extends e-mail and file transfer interoperability to BITNET and X.25 sites and auto-logons to several Internet/OSSA system resources

(5) PMDF based Mail Server already supporting ROSAT and MU-SPIN Projects and GSFC LAN users

NSI User Support Services

User Conference Support

- Provide NSI access booths and assistance at user conferences/scientific meetings, e.g., AGU Conference December 3-7, 1990

- Present NSI capabilities through active participation in user symposia/ working groups

- Demonstrate interoperability solutions

- Present tutorials on effective networking applications

- Make selected site visits for user training

- Provide coordination and logistic support for NSI User Working Group meetings

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NSI Network Applications Development

Requirements Definition and Analysis

- Survey/conduct interviews on use/discipline needs

- Survey emerging vendor products

- Survey applicable R&D efforts in the Internet/OSI communities

- Host symposia, working group meetings, and electronic conferences

- Recommend/consult with:

    - Users/disciplines on state-of-the-art in network applications

    - Vendors/developers on prioritized requirements

NSI Network Application Development

New Core Developments

- Natural extensions to NSI's Baseline services

- Largely conducted by NSI "in-house" team

- Includes joint development with user disciplines

- Often complementary to NSI's Engineering testbed initiatives

- Typical developments:

    - New X window applications

    - OSI based user utilities such as X.500 based OSSA Resources Guide

    - Techniques enabling/enhancing distributed applications

NSI Network Applications Development

Exploratory Developments

- Significant involvement by wider networking research community

- Protocol extensions and modifications

- Examples of advanced applications:

    - Distributed Programmers Workbench

    - New distributed processing techniques

    - Group communications

    - Remote data visualization and manipulation

    - Interoperating data bases

    - Knowbots and expert systems

NSI Network Applications Development

New Core/Exploratory Development Plans for FY91

- **Mail Exploder System**

    - **Either patterned after SolarMail or based on PMDF**

    - **After development, system can be hosted on NSI or user facilities**

    - **Dr. Gunther Riegler/SZ targeted as initial user in mid-FY91**

- **Utility to Support Distributed Heterogeneous Processing**

    - **Simplify use of RPC mechanism to support distributed processing**

    - **Demonstrate use among VAX, CRAY, and MarPar hosts**

    - **Dr. Gene Feldman/GSFC targeted as initial user in GSFC DAAC V0**

- **Extended FTP Support for Off-line Data**

    - **Use familar standard user interface of Anonymous FTP but extend FTP utility to either wait or retry until requested data on off-line CD-ROM is mounted**

    - **Joint project with HEASARC's Dr. Michael Van Steenberg/GSFC**

NSI Network Applications Development

New Core/Exploratory Development Plans

- **FY91**
  - Develop Mail Server/Exploder such as requested Dr. Gunther Riegler/SZ

  - Develop utilities to simplify distributed heterogeneous processing; demonstrate use in GSFC DAAC V0 application of Dr. Gene Feldman/GSFC

  - Extend FTP support to off-line data in joint effort with HEASARC's Dr. Michael Van Steenberg/GSFC

- **FY92**
  - Provide X Window based version of NSINIC

  - Expand X.500 based White Pages support for disciplines/projects

  - Initiate X.500 based Yellow Pages support for an on-line OSSA Resources Guide

  - Develop selected applications identified via WBS 5.1 process

- **FY93**
  - Assess and apply FTAM, Virtual Terminal, and other OSI based applications in NSI's OSI testbeds and operational network

  - Develop additional selected applications identified via WBS 5.1 process

NSI User Support Services and Network Applications Development

Conclusions

- Refinement to the objectives and plans of the NSI elements under GSFC responsibility is on-going and will continue to be influenced by:

  - User input/feedback through meetings with NSIUWG and user discipline programs

  - NSI Science Steering Committee advisory process

  - Support and guidance from NSI Program Manager at NASA OSSA

  - GSFC's allocation of NSI's budget and GSFC staff expertise

- For further information or comments on GSFC's NSI efforts, contact:

J. Patrick Gary
Head, Advanced Data Flow Technology Office
Code 930.4
Goddard Space Flight Center
Greenbelt, MD 20771

301-286-9804; FTS-888-9804
PGARY@DFTNIC.GSFC.NASA.GOV

SDCDCL::PGARY
JGARY in GSFCMAIL
Fax: 301-286-5152