

SOUTHERN CALIFORNIA EARTHQUAKE DATA CENTER OPERATIONS

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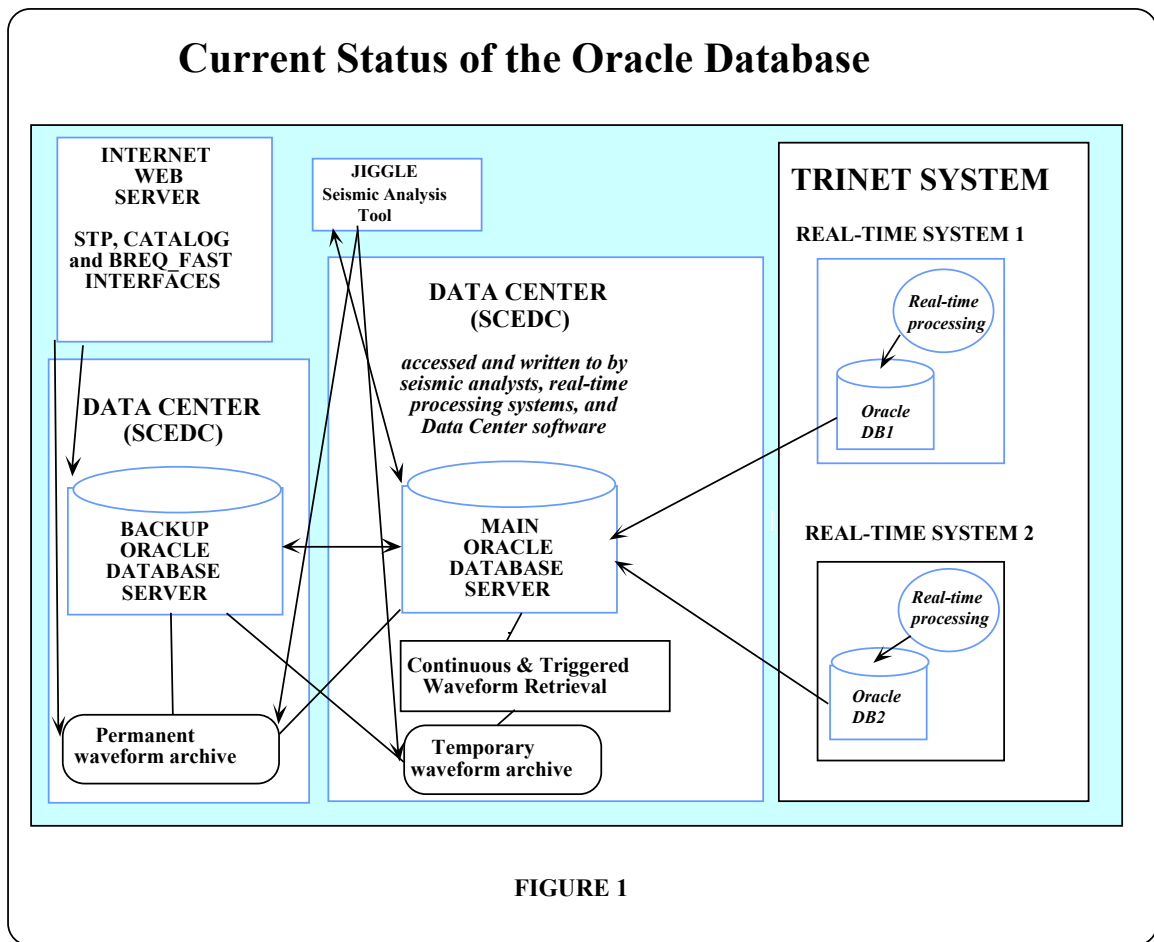
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During 2000, activities at the SCEC Data Center (SCEDC) were focused primarily on moving the Data Center towards a new phase in its role as the primary on-line, and near "real time" archive of seismological data for Southern California. These efforts involved working closely with the TriNet development group at Caltech/USGS in further developing a system of ORACLE databases which now archive all parametric earthquake data generated by the TriNet system. The SCEDC continued improving its ability to serve as an outreach facility to the SCEC community, the public, and educational and government agencies. A more detailed description of the Data Center's efforts this past year are outlined below:

1) UPGRADE OF ORACLE DATABASE SYSTEMS: The Data Center (DC) upgraded the existing DC databases to version 8.1.7 from (version 8.1.5) to archive the parametric seismic data generated by the TriNet seismic system. The database system is designed so that the data center database(s) receive data from the two real-time database systems in near "real-time" via one-way data replication. This allows for quick access to the earthquake data, as well as providing a means to continuously archive parametric earthquake data on the real-time systems should the data center be temporarily unavailable (Figure 1). A second database on the DC was added to protect the TriNet system from the load of user access during periods of high seismic activity, as well as provide a backup database should one fail. The ORACLE database on the SCEDC has been receiving and archiving parametric data from the real-time system since October 1, 1999, as well as archiving the pointers to both the triggered and continuous TriNet waveform archives. The parametric and waveform archival database schemas used at the SCEDC have been developed in conjunction with the NCEDC, and have been implemented at both Data Centers, facilitating the exchange of data in the future. Access to the ORACLE database is available to users of the SCEDC

via a number of WWW interfaces described below.

2) ARCHIVING AND RETRIEVAL OF TRIGGERED AND CONTINUOUS WAVEFORMS RETRIEVAL: In addition to the parametric data, the Data Center is now routinely archiving continuous (< 20 sps) waveforms for approximately 140 digital broadband stations (~1660 channels) from the TriNet system. These data archives begin in October 1999, and currently occupy ~0.5 Tbytes of space on the mass storage system. Triggered waveforms from approximately 30,000 events (78 Gbytes) have also been archived. Users of the SCEDC can retrieve these data via a new "seismic transfer program" (STP) developed this past year. Waveforms can be retrieved by time and/or by event, and are returned to the user in SAC or miniseed format. This program can be run standalone on a users local machine, if they prefer to retrieve the waveforms directly to their local user disk.



3) CONTINUED DEVELOPMENT OF A STATION DATABASE: In order to provide the best possible instrument response information, as well as up to date station information to the real-time systems, data analysts, and data center users, work has continued on populating a hardware tracking and instrument response station database within the ORACLE system. Hardware information, i.e. datalogger, sensor, and filter data, has been collected for all of the currently running broadband stations. This information is being used to generate dataless SEED volumes for the BREQ_FAST request system. The data center hosts the "authoritative" version of the station history database, and this database is being used by the TriNet real-time and event analysis systems for their processing as well.

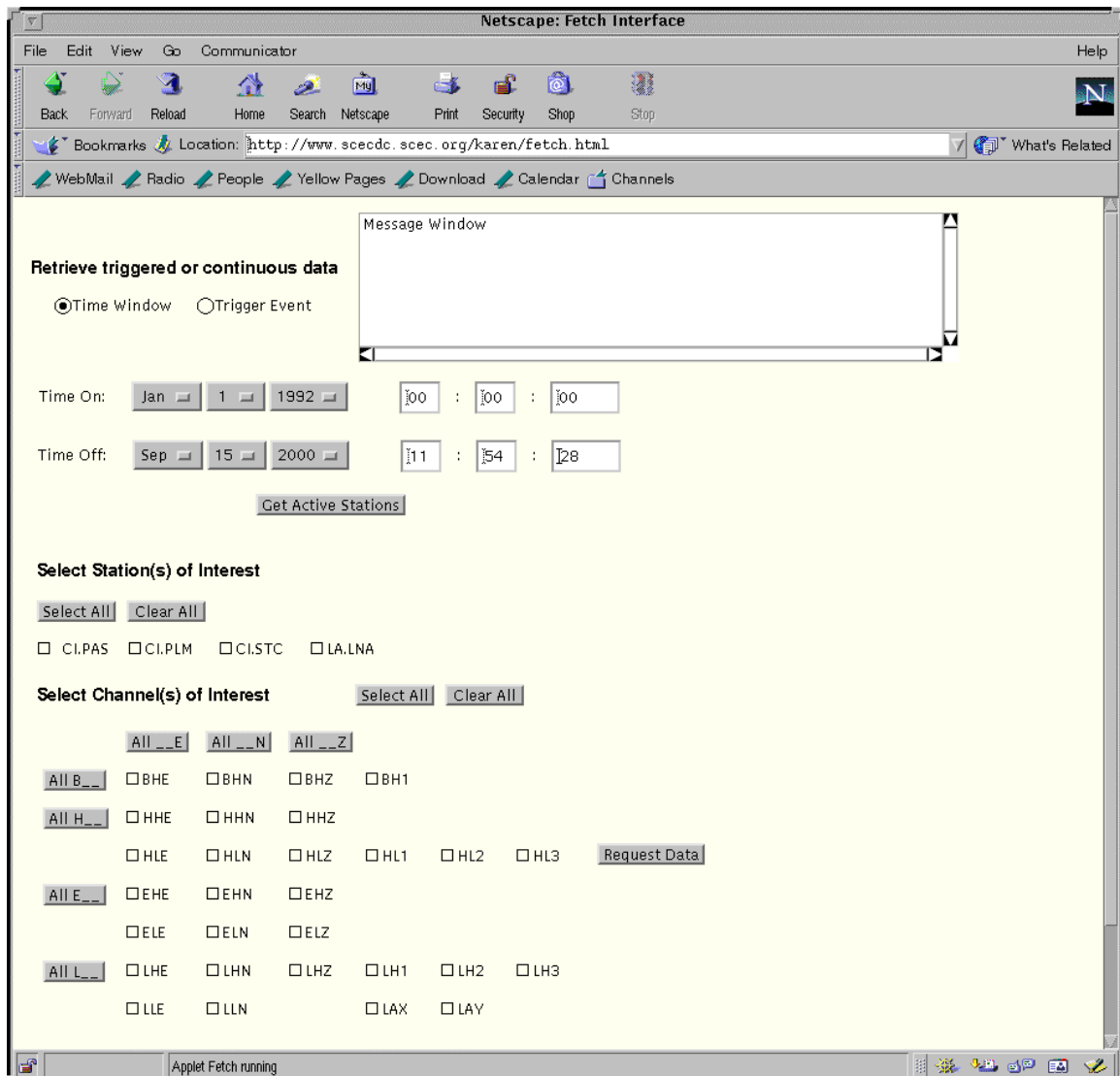


FIGURE 2 - Example of the Web Interface to STP program

4) WWW INTERFACES TO DATA AT THE SCEDC: The SCEDC developed and implemented a number of new interfaces to the TriNet seismic. A catalog-searching tool that allows users to retrieve parametric and phase data from the ORACLE database is available at www.scecdc.scec.org/catalog_search. A web interface to the "STP" waveform retrieval program was also developed, and is available to users at www.scecdc.scec.org/stp.html (Figure 2). Compiled datasets for the Hector Mine Mainshock and selected aftershocks is now available at www.scecdc.scec.org/eqquest.html (Figure 3) These interfaces were presented at the 2000 annual SCEC meeting, as well as the Fall AGU meeting in San Francisco.

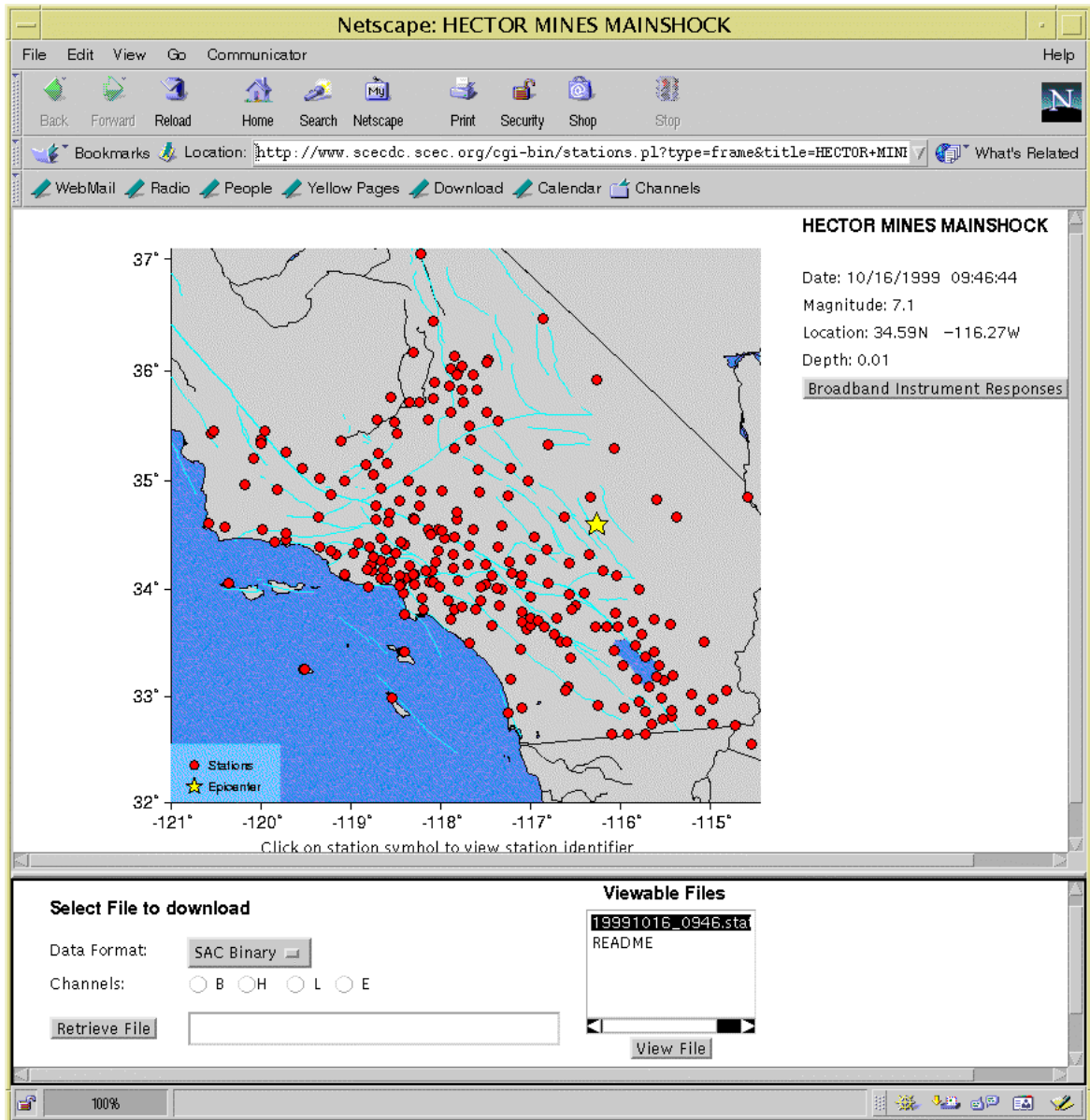


FIGURE 3 - Example of the EQQUEST Web Interface to the Hector Mines Mainshock Data

5) SYNTHETIC APERTURE RADAR (SAR) DATA: As part of the WInSAR consortium, we have archived over 600 SAR scenes on the mass-storage system for a total online data volume of 135 Gbytes. These data are available to authorized WInSAR users on a password-protected basis. We have developed a simple Web interface to show what data is available and to initiate FTP transfers of the data. The Web address is <http://www.winsar.scec.org>. This facility is being operated in cooperation with similar operations at UCSD and UCB.

PUBLICATIONS AND CONFERENCES PARTICIPATED IN

Hafner, K. and Clayton, R.W., 2000, New Data Retrieval Mechanisms at the SCEDC - Near Real-Time Archiving and Distributing of the Waveform Data From the 320-station TriNet Seismic System, (Abstract) Fall American Geophysical Union Meeting