

2-4. ADRC's Network of Information on Natural Disasters and Disaster Management

2-4-1. Configuration and Hardware

One of the main activities of ADRC is “Information Sharing”. To accumulate and provide disaster management information in full measure, strengthening of information services is a priority area to be considered. ADRC has chosen an appropriate network environment suitable to the occasion and the purpose.

By taking advantages of the fiber optics connected to the building where ADRC is located, ADRC currently uses “B Flet’s” services which can provide higher communication speeds at a reduced cost. ADRC will seek other networking opportunities and will jump at the first viable network that offers faster speeds and cost advantages. A platform is being built to share a diverse amount of information including still images and videos, which will enable easy access from outside.

For the configuration and hardware of ADRC's network, please refer to Fig. 2-4-1-1.

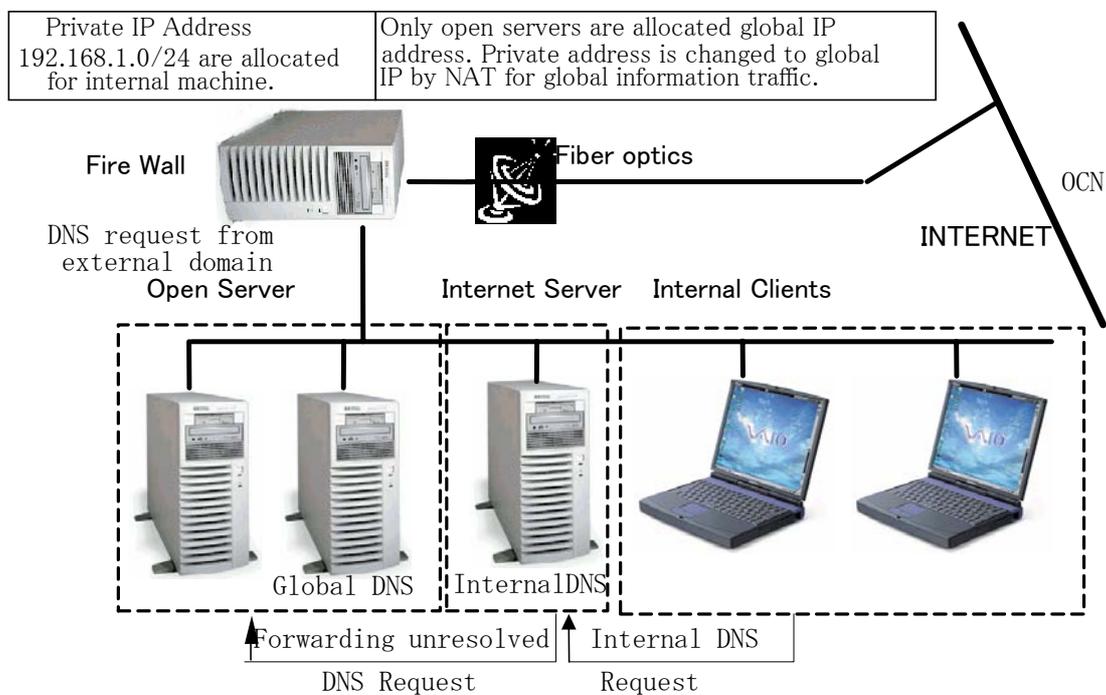


Fig. 2-4-1-1 The configuration and hardware of ADRC' s network

For security reasons, ADRC separates the internal and external networks, and has a firewall between the two. The firewall is monitored to check for any illegal and/or abnormal volume of access. The internal network is further separated into DMZ (Demilitarized Zone) and LAN networks. DMZ has web, email and DNS servers, whereas LAN consists of client machines for individual researchers and servers for internal use. A private IP address, which is valid only within the Center, is allocated to each machine connected to the DMZ and LAN. When attempting to access the DMZ server from outside, the firewall converts the global address to the private address of the server to enable the connection. The firewall not only converts global addresses to private addresses, but it also routes packet transfer in consideration of the protocol, source and destination of the packet. As a result, all the inbound and outbound traffic passes through the firewall, whereby restricting access to internal servers and monitoring any illegal access attempts.

In addition to the security against illegal access, host-controlled anti-virus software resides on the servers and client machines to prevent computer viruses and worms that are causing significant problems all around the world. Furthermore, to block computer viruses that are delivered via the Internet and may pass through the firewall, a server is located at the internet gateway to detect and remove the virus attached to email, thereby preventing access to infected sites or propagating the virus to non-infected computers.

2-4-2. ADRC's Website

As shown in Fig. 2-4-2-1, ADRC's website (URL <http://www.adrc.or.jp/>) consists of the following 12 databases plus access to VENTEN, ADRC's internet-based GIS: Recent Disaster Information, Disaster Information from Member Countries, Training Information Database, ADRC E-Net, Conference and Disaster Studies, Internet Exhibition, Glossary on Natural Disasters, The Great Hanshin-Awaji Earthquake Database, ADRC Highlights, Archives, Disaster Reports from Member Countries, and Center Information. In addition, GLIDE Search using GLIDE (GLObal unique disaster IDentifier number) and Suffered Area Image Information systems are now in the pilot rollout phase.

As shown by Fig. 2-4-2-2, information is made available through the diverse databases. When a request is made from the Internet, the information is retrieved from the corresponding database and sent to the user in a hypertext format based on instructions for determining display color and layout. Because information is stored in the database and layout is individually controlled by instructions, administrators are free of complicated layout settings and layouts can be changed easily in batch to keep pace with user needs and technological innovation. By managing databases in this way, users are given two ways to access information: by content or by country. Therefore, a directory can be provided to facilitate access.

As an example of information access, the following shows how to access ADRC's Recent Disaster Information database. This particular database gathers and releases information on ongoing natural disasters as rapidly as possible. It collects web reports from relevant organizations such as the UN and the media, summarizes the content and establishes a link to the original text. As shown in Fig. 2-4-2-3, the information is managed in both the disaster event table and report table. Information requested by the user (report requested) is extracted from these tables and a report is created in a textbook layout.

Remote updating is possible over the Internet as shown in Fig. 2-4-2-2. Currently, considering how frequently information needs to be updated, the Recent Disaster Information and the Conference and Disaster Studies databases are designed for remote updating. Furthermore, the Topics and Links pages accessed from the top page can also be updated remotely. With due consideration to security, ADRC plans to upgrade the system to enable remote updating with all databases to make the procedure easier and, as a result, provide even more accurate information.

MENU		
English		Japanese
Professional use	Academic use	General use
DB + WWW search		
The Latest Disaster Information		
Glossary on Natural Disasters		
Training Information Database		
ADRC E-Net		
Conference and Disaster Studies		
Internet Exhibition		
Disaster Information of Member Countries		
ADRC Highlights		
Country Report from Member Countries		
ADRRN (Asian Disaster Reduction & Response Network)		
Archives		
The Great Hanshin-Awaji Earthquake Database		
ADIC Accident and Disaster Database		
VENTEN-Internet based GIS		
Center Information		
Links		
ADRC Events & Publications		
Visitors		
SiteMap		
E-Mail to ADRC		

Fig. 2-4-2-1 Homepage menu

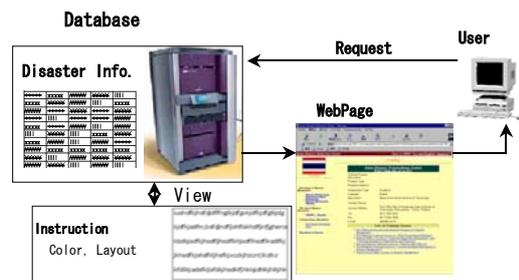


Fig. 2-4-2-2 Linked Database Website

Information on recent disasters is collected and recorded by ADRC staff in order to limit the lag time from when a disaster occurs until information is made available as short as possible. As shown in Fig. 2-4-2-4, information can be updated remotely via the Internet. When a heat wave occurred in India in 2002, there were more than 40,000 accesses to the ADRC website in one day.

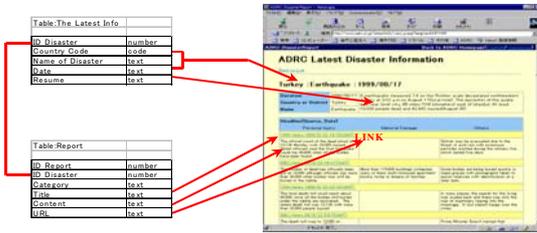


Fig. 2-4-2-3 Recent Disaster Information Database and Window layout

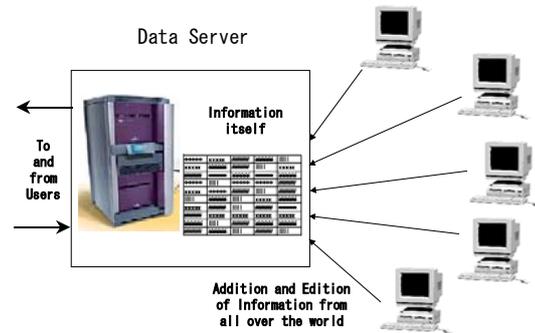


Fig. 2-4-2-4 Remote updating over the Internet

To make the ADRC website even more user-friendly, it was redesigned completely in 2002. The 4 main changes were:

- ① easy-to-use menus for the three categories of users (Professional, Academic and General),
- ② a dual structure of image-embedded pages and text-only pages which can be selected in accordance with the type of communication infrastructure the user connects with,

- ③ a dual structure of English and Japanese pages, and
- ④ a platform that lets the user select the aforementioned ①-③ conditions. To make these changes, an entry page prior to accessing the top page was added (Fig. 2-4-2-5).

The top page of the ADRC website uses a clickable image map to facilitate easy viewing of the latest disaster information. Due to the significant increase of data volume of the website, a powerful search engine is equipped to allow faster access to information on the ADRC website and other linked sites (see Fig. 2-4-2-6).

Welcome to the Asian Disaster Reduction Center(ADRC) web site
--- Entry Page ---

The screenshot shows the ADRC website entry page. It features a 'Selection of ADRC website display form' section with radio buttons for Language (English selected, Japanese), Display form (Graphics selected, Text (Under preparation)), and User classification (Professional use selected, Academic use, General use). Below this is an 'ENTER' button. A search section includes 'DB + WWW search', 'Select Language' (English selected, Japanese), a 'Keyword' input field, and a 'SEARCH' button. At the bottom, a 'Topics' section displays a news item: '02/04/12 An earthquake struck north of Afghanistan's capital.' with a 'NEW' icon.

Fig. 2-4-2-5 Entry page

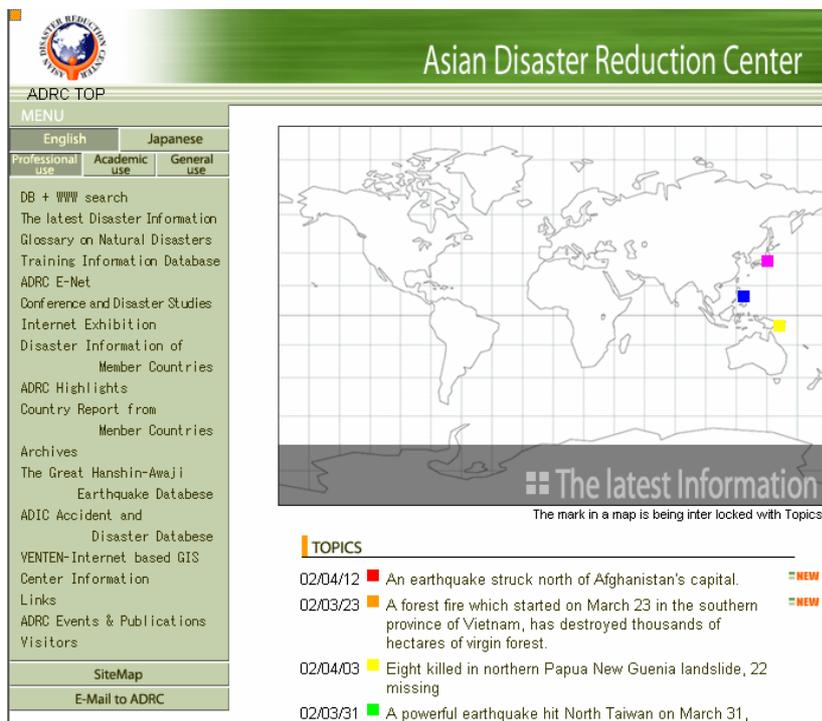


Fig. 2-4-2-6 ADRC top page

As shown in Fig. 2-4-2-7, both the total number of information requests and average number of hits per day have been increasing (although they vary from month to month). The average number of hits per day increased from 230 at the beginning of 2002 to 330 at the end of the year, which means that the number of daily hits increased by more than 100 in one year.

According to Google, an Internet search engine provider, the number of search requests by keyword “Asian Disaster Reduction Center” in the Japanese and English languages was about 1,600 and 31,400, respectively.

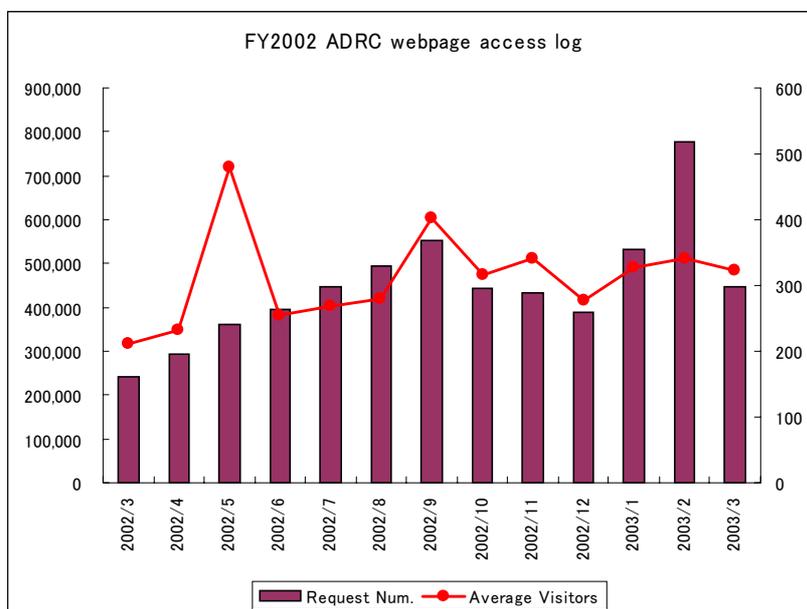


Fig. 2-4-2-7 Changes in number of access