What is a Data Portal?

- Presents information from diverse sources in a unified way
- Enables instant, reliable and secure exchange of information over the Web
- The "portal" concept is to offer a single web page that aggregates content from several systems or servers.
Types of Data Portals

- **Commercial** – contains basic information for a general audience, including current events information
- **Academic** – typically includes scientific data (ex. research articles, etc.)
- Also **Community** and **Enterprise** Portals
Examples of Data Portals

- California Climate Change Portal (community)
- UN Climate Change Portal (community)
- EPA Climate Change Portal (enterprise)
- Tiempo Climate Change Portal (academic)
- SPREP Climate Change Portal (academic)
- Climate Ark Portal (community)
Climate Change, Climate Variability and Sea Level Rise

The Intergovernmental Panel on Climate Change (IPCC) continues to report that expected climatic changes over the region will stimulate an increase in extreme weather events that include: higher maximum temperatures, increased number of hot days, more intense rainfall over some areas and an increased frequency and severity of tropical cyclones.

The international community has initiated steps under the United Nations Framework Convention on Climate Change (UNFCCC) to stabilize greenhouse gases in the atmosphere and promote carbon trading to assist with this overall objective under its Kyoto Protocol. However progress has been slow. While the global commitment needed to stabilize greenhouse gases has not been evident in the climate change convention negotiations, good progress has been made to reduce ozone-depleting substances.

In 2003, mainstreaming climate change into development plans assumed much importance. It was highlighted at the World Summit on Sustainable Development (WSSD), the Delhi Declaration of the 6th Conference of the Parties to the UNFCCC and in the latest Global environment Facility (GEF) Council Guidance especially in relation to adaptation. Multilateral and bilateral donors also require mainstreaming to be shown as a precondition to assistance. While funding for Adaptation under...
Climate Ark Portal

Climate Ark
Climate Change and Global Warming Portal
Featuring Customized Search and News Feed of Reviewed, Authoritative Content

Climate Change News Feed
Archive Updated Continuously

31/1 - One slip does not change the big picture, Times of India [search]
30/1 - California: Cleantech: Silicon Valley's next great wave of innovation, San Jose Mercury News [search]
30/1 - Pentagon review to address climate change for the first time, The Hill [search]
30/1 - Bulgaria’s ‘green’ energy boom sparks fears, Independent (UK) [search]
30/1 - As carmakers plug ‘green’,

Climate Change Blog
Biocentric Commentary Emphasizing Abrupt Climate Change, Ending Terrestrial Ecosystem Loss, and Other Sufficient Ecological Responses

ALERT! Protest Madagascar’s Legalization of Rosewood Log Export from Protected National Parks

TAKEN ACTION: Delmas shipping, a subsidiary of French shipping giant CMA-CGM, is being pressured by the transitional Madagascar government to ship hundreds of containers of illegally logged ancient rainforest logs from Madagascar to China anytime soon. Post-coup illegal log and wildlife trade continues to fasimake Madagascar’s biodiversity

My.EcoEarth.Info
Climate Change Social Network
Email: ____________
Password: ____________
Log In Register

Climate Alerts
Protest Madagascar’s legalzation of Rosewood Log Export from National Parks

Write for FI
Write climate essays and guest blogs for Earth’s team

Climate Overview
Graphs and charts presenting

Done
Reliability Issues

Why?

- Portal needs to be operational.
- Portal needs to be resilient to changes.
- Data must be authentic.
- New applications are integrated into the portal.

Note. Reliability vs. Availability
How to Achieve Reliability?

Data Portal Components

- A data base
- Communication links
- A computing cluster
- Web-based application software
Redundancy at main failure points

Typically, these failure points are:

- Network Switching Devices
- Application Web Servers
- Database
- Executable Code Repository
Network Switching Device

- First entry point to the portal architecture
- Hardware Switches
  - Active/Standby Capability
Application/Web Servers

- The core processing of the portal
- Can be configured in a cluster
- Servers configured identically and run application software
Database

- Use a standby database
  - All the transactions that occur on the master database are run on the standby in real-time.
Codes can be run on servers that are physically separated.

Caveat. A “common mode” software bug can bring the system down.
Hardware Vs. Software

Redundancy

- **Hardware Redundancy**
  - TMR (Triple Modular Redundancy)
    - System is operational as long as at least two outputs match.
TMR H/W

Input ➔ CPU ➔ V ➔ CPU ➔ V ➔ CPU ➔ V
TMR H/W (after one failure)
A TMR System
Does it really Work?
Software Reliability

- Fallacy 1- The outcome of a computer program is a deterministic rather than a probabilistic event.

- Fallacy 2. Instructions do not wear out; software cannot fail.
Information Redundancy

- Data Integrity
  - Use known Error Detection/Correction Codes
References


