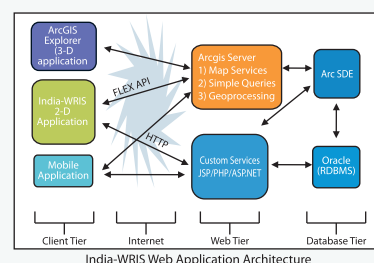
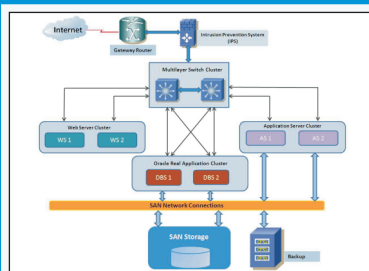


Three tier software architecture

- **Client Tier:** It provides rich user friendly interface to access the information.
- **Web Tier:** It is the intermediate layer, which communicate between client and the database through GIS & custom services.
- **Database Tier:** It disseminates the spatial and non-spatial data to the web tier based on client request.



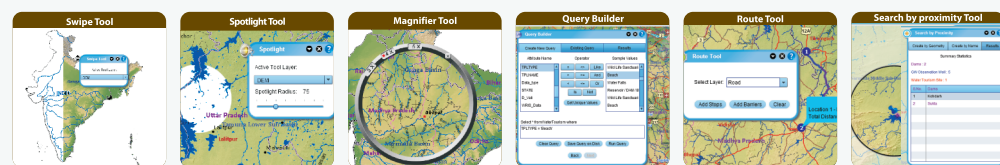
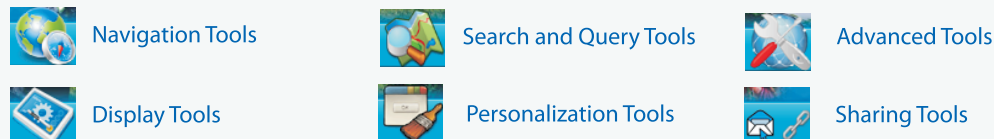
Web hosting architecture



- **NRSC, Hyderabad:** Hosting of India-WRIS WebGIS portal
- **RRSC (West), Jodhpur:** Generation of database and software development
- **CWC, New Delhi:** Access to entire database on the intranet for CWC users

The architecture is secured, reliable and operational on 24x7 mode.

India-WRIS tools and snapshots



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India-WRIS WebGIS

Generation of Database and Implementation of Web Enabled Water Resources Information System in the Country

India-WRIS WebGIS is a joint project of the Central Water Commission (CWC), Ministry of Water Resources, Govt. of India and Indian Space Research Organisation (ISRO), Department of Space, Govt. of India, as per the Memorandum of Understanding (MoU) signed on December 3, 2008 between the two departments for a period of four years - January 2009 to December 2012. The current version 2.0 has spatial layers and attributes as per data collected till November 2011. Further updation of attribute data and new spatial layers are being generated by the India-WRIS project team.

India-WRIS WebGIS aims as a 'Single Window' solution for comprehensive, authoritative and consistent data & information of India's water resources along with allied natural resources in a standardized national GIS framework (WGS-84 datum and LCC projection) with tools to search, access, visualize, understand and analyze the data for assessment, monitoring, planning, development and finally for Integrated Water Resources Management (IWRM).

The project has the following objectives:

- To collect available data from varied sources, generate database of country's water resources, organize in standardized GIS format and provide a thin client and scalable web enabled information system
- To provide easier, faster access, sharing of nationally consistent and authenticated water resources data through a centralized database and application server to all water resources departments / organisations as decided by CWC
- To provide tools to create value added maps by the way of multi-layer stacking of GIS database so as to provide integrated view of the water resources scenarios
- To provide foundation for advanced modeling and Spatial Decision Support Systems (SDSS) including automated data collection system



A joint project of
Central Water Commission
&

Indian Space Research Organisation



WATER RESOURCES INFORMATION SYSTEM OF INDIA

India-WRIS WebGIS Portal

The India-WRIS WebGIS Portal Version 2.0 has been designed and developed keeping in view multi-users from all sections of society, varied and multi-source data input, current map policy, existing guidelines, requirement of regular updates, near real time data accessibility, data security domains and scale of information. Further there are three user categories for access of GIS data and value added products as per map policy and data dissemination guidelines, and are as follows:

- All General Users (public domain fast track system):** Users can visit the web portal and get the different snapshots of the data sets on reduced scale of selected database and tools.
- Premium Users:** Users can access to the India-WRIS web application data sets (in detail) and tools by registration and password.
- CWC Intranet Users:** These privileged users can get full access to the India-WRIS web application and database. All the facilities developed under the portal are accessible by these users.

India-WRIS WebGIS User Interface

The version 2.0 has been designed looking at the variety of users and their requirements. All the data can be explored and interpreted using the various available tools organised in *Main Menu Toolbar, Universal Toolbar and General Toolbar*. It has six major sections on the left panel such as *WRIS Info Discovery & Data Catalog, WRIS Explorer, WRIS Connect, Input Data Builder, Share Success Story and Create Your WRIS*.



Home Page & Front GUI of India-WRIS WebGIS

1.1 WRIS Info Discovery & Data Catalog

It provides the user in discovering information contained in India-WRIS of a particular geographic area. The user can select an area of interest based on the Administrative units, Hydrological units or Constituency wise and is presented with a condensed list of all the information available in India-WRIS for the selected area.

1.2 WRIS Explorer

This is the core module of India-WRIS WebGIS where all the data can be explored and viewed using the various tools available for the purpose. It has three sub-modules namely, Geo-Visualization, Sub-Information Systems and Temporal Analyst.

1.3 WRIS Connect

This module has been created with the purpose to keep the user up-to-date with the information on meteorological parameters, flood forecasts and other water resources projects for day to day requirements. It has three sub-modules namely Query Interface, Report Generation and Data Download.

1.4 Input Data Builder

This module aims at keeping the data content of the various layers of India-WRIS up-to-date by providing facilities to the data providing sources to ingest the current attribute data directly into the relevant layers. The authorized users can enter the respective spatial and non-spatial data in the specified format into the information system through this facility. The three sub-modules of Input Data Builder are Spatial, Non-spatial and Metadata.

1.5 Share Success Story

The purpose of this module is to connect people for water resources planning and management by providing platform to upload the success stories so that others can view, interact and practice.

1.6 Create your WRIS

This module provides facilities to the user to have further analysis of the downloaded data, adding new datasets using available general hydrology tools and generate report of the area.

Info Systems for India-WRIS Dataset

India-WRIS dataset have been collected from concerned State Govt. departments, CWC offices and Govt. of India departments.

Based on the data type and availability, the portal contains 12 major info systems, 35 sub info systems having 108 spatial layers along with large attribute data of the water resources assets and temporal data of 5-100 years. The public domain version has been developed, which complies with both the National Map Policy (2005) and CWC data dissemination guidelines.

S.No.	Major Info System Sub Info System
1.	BASE DATA INFO SYSTEMS
1.	Administrative Info System
2.	Regions Info System
3.	Infrastructure Info System
4.	Terrain Info System
2.	SURFACE WATER INFO SYSTEMS
5.	Water Resource Division Info System
6.	Basin Info System
7.	Watershed Info System
8.	River Info System
9.	Surface Water Body Info System
10.	Water Resources Projects Info System
11.	Command Area Info System
12.	Minor Irrigation Info System
13.	Canal Info System
3.	GROUND WATER INFO SYSTEMS
14.	Aquifer / Lithology Info System
15.	Ground Water Level Info System
16.	Ground Water Potential Info System
4.	HYDRO-MET INFO SYSTEMS
17.	Meteorological Info System
18.	Climate Info System
19.	Hydro-Observation Info System
20.	Flood Forecasting Info System
5.	WATER QUALITY INFO SYSTEMS
21.	Surface Water Quality Info System
22.	Ground Water Quality Info System
6.	SNOW COVER / GLACIER INFO SYSTEMS
23.	Snow Cover/ Glacier Info System
7.	INLAND NAVIGATION WATERWAYS INFO SYSTEMS
24.	Inland Navigation Waterways Info System
8.	INTER-BASIN TRANSFER LINKS INFO SYSTEMS
25.	Inter-Basin Transfer Links Info System
9.	HYDRO-MET EXTREMES INFO SYSTEMS
26.	Flood Info System
27.	Drought Info System
28.	Extremes Events Info System
10.	LAND RESOURCES INFO SYSTEMS
29.	Land Use / Land Cover Info System
30.	Land Degradation Info System
31.	Wasteland Info System
32.	Soil Info System
11.	WATER TOURISM INFO SYSTEMS
33.	Water Tourism Info System
12.	SOCIO - ECONOMIC INFO SYSTEMS
34.	Rural Info System
35.	Urban Info System

12

Major Info Systems

35

Sub Info Systems

108

Spatial Layers