Cisco installs Integrated Water Management Command Center for AP state

Andhra Pradesh Water Resources Department (Andhra Pradesh State Government)

Industry
Government

Location
India

City, State/Province
Andhra Pradesh

"Water is a resource that is always in demand, and in India, every state government will say that managing this precious resource is one of the major responsibilities. With the IoT enabled Integrated Water Management Solution, we have real time visibility into all the water assets across the state, making the job of monitoring water levels and management so much easier."

Mr Adityanath Das
Principal Secretary, Irrigation Department

Challenge: Maximize scarce water resources

In India, water scarcity caused by delayed monsoons, insufficient rains, irrigation needs, oversight and intense competition between various neighboring states over shared aqua resources is nothing new. In Andhra Pradesh, a southern Indian state with a population of about 50 million and a land area that spans over 160,000 square kilometers, the same water-related anxieties can be found. But with soaring temperatures—in the summer months in particular—the water scarcity problems in the southern state were getting worse.

To solve this complex problem, state officials realized that they had to implement a water management solution in order to maximize available water resources. Data from various sources like groundwater, rainwater, basins, reservoirs, canal flows and discharges had to monitored. Having such extensive data

on water availability gives local authorities an unprecedented ability to make informed decisions regarding the storage and allocation of water available to the state.

The aim was to harness new technologies–both in terms of hardware (like sensors) and software (integrated monitoring solution)–that would afford state officials, including the office of the Chief Minister of Andhra Pradesh, a bird's eye view of water levels and needs statewide. Such granular level monitoring would also aid in the preparation of a Water Balance Sheet for the state.

Real time visibility of water assets

The Andhra Pradesh Water Resources Department (APWRD), responsible for the irrigation needs of the entire region, is the key stakeholder in this project, with the Chief Minister's office also playing an important role. Cisco provided the **Integrated Water Management Solution (IWM)**, which offers near real-time visibility across the state's water assets through IoT water sensors that transmit information on water levels and flows.

The captured data made available to the Water Resources Department team helps them in the decision making process regarding:

- Reservoir Water level
- Canal Flow/Discharge
- Rain water level
- Ground water level

The water levels in reservoirs, as well as canal flow and discharge will be measured by Non-invasive Ultrasonic sensors placed on top of gauge wells constructed parallel to the canal or reservoir in question. The sensors, equipped with a solar panel, a battery, an RTU and a GSMunit, will send the collected data into the Cloud via the GSM cellular network.

For rain and groundwater level information, the AP government have existing sensors in place that will be used. At present, these sensors are deployed on a pilot basis across 42 key locations at the Godavari, Krishna and Tungabhadra rivers within the state. All information collected by the sensors will first be displayed on the mimic viewed by the Water Resources Department, before being routed to the various stakeholders, including the Chief Minister of Andhra Pradesh.


Enabling better and faster decision making through collaboration


Helping manage water storage across the state

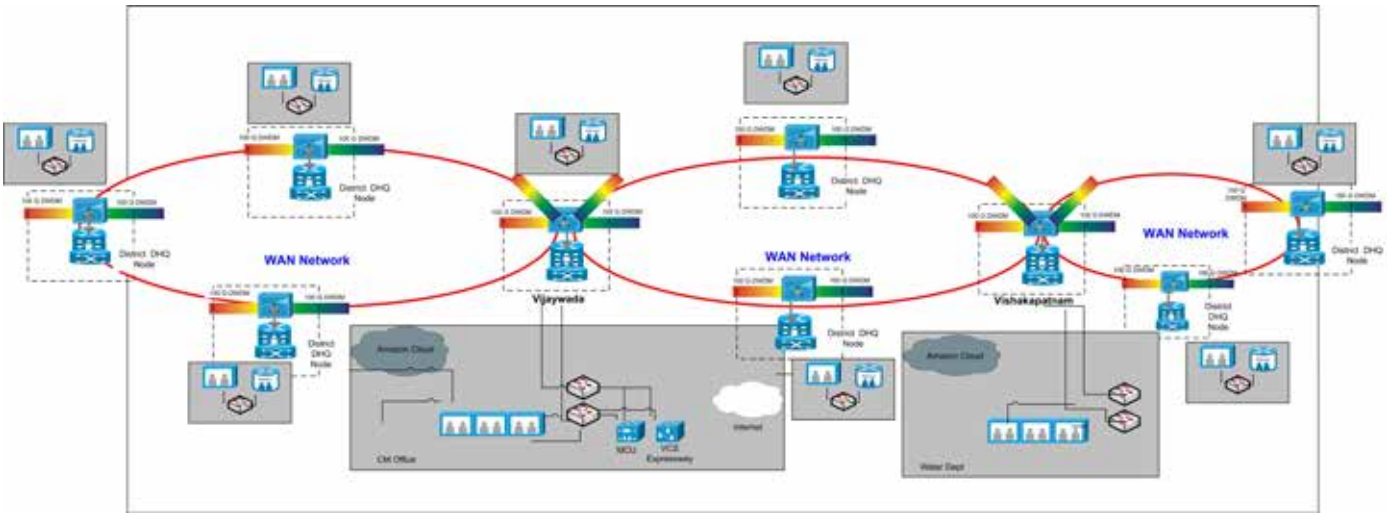

Ensuring optimal water allocation to citizens and industries

Bird's eye view of water assets

Being able to collect and share data quickly and efficiently solves only half the problem that the APWRD had. They also needed a way to collaborate and quickly make decisions that would affect the entire state. To address that need, Cisco implemented an immersive telepresence solution that when used in conjunction with the Integrated Water Management Command Center, gives the Chief Minister's office and the APWRD a way to collaborate on water related issues effectively. Teams are able to share real-time data, information, and visuals on the state's water assets that can be brought up onto the screens of participants.

The immersive telepresence system allows for navigation between the following screens:

- Consolidated view of water assets across the state
- Current state of all surface water assets across the state
- Specific river basin view for all relevant reservoirs and canal networks
- Current ground water status across the state
- Variation of groundwater compared to prior year or pre-monsoon
- Current rainfall and aggregated rainfall for the season
- Rainfall variation compared to expected rainfall levels
- Any specific water asset being discussed



The telepresence system also has an integrated location specific dashboard that offers the local team actionable information, and can be deployed and displayed when there is no teleconference in progress.

The next step of the project will be the integration of the state's Water SCADA with Cisco's Immersive Telepresence—a TPaaS offering. The consolidation of Cisco's collaboration solution with the real-time monitoring software allows decision makers in two key locations (Vijayawada and Guntur districts' headquarters) to collaborate with government officials from 13 other district offices. With Cisco's installed solutions in place, officials are able to share data, discuss and resolve issues more effectively through better coordination and faster decision making.

Products and Services

Integrated Water Management (IWM) Solution

Immersive TelePresence (TPaaS) Solution

For More Information Contact

Cisco Systems, 2nd floor
Brigade South Parade 10, M.G.
Road Bangalore - 560 001 Karnataka, India
P: +91 80 4159 3000 F: +91 80 2532 7282

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