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HOW CLOUD

IS FUELLING INNOVATION IN INDIA





महाराष्ट्र शासन



Maharashtra

The Pioneering state in eGovernance initiatives

Maharashtra was the 1st state to publish a dedicated e-Governance policy in 2011

Maharashtra is the leading state in implementation of the UID program with 8.2cr+ enrollments

Maharashtra is the largest implementer of e-Office in the country

Maharashtra initiated the first Data Center in the country to run government cloud setup and IPv6

Maharashtra has made the use of eTendering mandatory for all tenders above Rs 10 lakhs

Maharashtra has set up more than 35,000 Citizen Service Centers (CSCs) with more than 18cr transactions

Maharashtra has developed multiple mobile applications for areas like Govt Resolution, Mahanews, Audit - Inspection, Registering Forest Offence etc

Maharashtra utilised social media to reach millions of netizens for projects related to UID, Employment, Social Justice, School Education, Rural Development etc

f /eGov.Maharashtra

bsite: www.maharashtra.gov.in

Maharashtra Government shows power of cloud with savings of ₹50 crore

Ever since the government realized the transformational power of technology in delivering public services, government bodies have been increasingly exploring emerging technologies to streamline processes and increase efficiencies. Cloud is one such technology, which the government is focusing on as it scores over traditional IT because it is more efficient and flexible, and enables better collaboration among users, departments and organizations. **Srikanth RP** takes a detailed look at how Maharashtra Government is innovatively using cloud and is leading the way in showing other government departments how the cloud can be a real transformational force within the government

Virtual machines customized to your requirement for a measly ₹ 4,000 per month; ability to kickstart projects quickly and a massive ROI of ₹ 50 crore — this is just a glimpse of the potential of a technology like cloud computing for the government. Led by an aggressive Principal Secretary-IT, Rajesh Aggarwal, the Maharashtra Government is showing other departments what one can achieve if technology is leveraged to its optimum.

Called MahaGov Cloud — a private cloud setup by DIT, Government of Maharashtra, the initiative seeks to provide IaaS, PaaS and SaaS cloud services to various departments in the Government of Maharashtra. Led by Aggarwal, the initiative has quietly transformed the way IT services are provisioned by the government. Today, the MahaGov Cloud has been implemented in the State Data Centre and is extensively used by departments for website and application hosting.

The list of departments that use the cloud include departments like Public Health Dept, Mhada, DIT, Charity Commissioner, Textile, Law and Judiciary, Water Supply and Sanitation, IGRO, Food and Drugs, School Education, Social Justice, Relief & Rehabilitation, Forest Department, Rojgarwahini, Tribal, Bombay High Court, UID, Solapur University, Sales Tax department and CIDCO.



RAJESH AGGARWAL, Principal Secretary-IT,
State Government of Maharashtra

“Our objective was to reduce the cost of providing IT services, while increasing the capacity of our IT team to kickstart projects with maximum flexibility and scalability. The cloud has already delivered approximate savings of ₹ 50 crore on a conservative basis, and has given us the ability to accelerate projects of national importance,” says Maharashtra Principal Secretary-IT, Rajesh Aggarwal. The Maharashtra SDC happens to be the first State Data Center (SDC) in the country to have a fully operational government cloud. MH-SDC is the first State Data Center to enable IPv6. It is also the only SDC in India to be a member of APNIC, making it vendor independent for Internet bandwidth.

During implementation of MH-

SDC, the state had conceptualized on implementing virtualization for efficient utilization of the infrastructure in SDC. Accordingly, a PoC on virtualization using VMware and Microsoft Hyper V was started in November 2011 leading to implementation of fully operational cloud by May 2012. To avoid dependence on a particular technology, MahaGov Cloud works on Microsoft as well as VMware. The VMware cloud has been chosen for critical applications, for now. Around 350 VMs were deployed in just three months as part of the MahaGov Cloud on VMware.

Due to the template and clone features, the time to provision a server along with OS and database has been reduced tremendously. Using feature of thin provision of storage and memory, resources are efficiently utilized and allocated as per the requirement and performance. The department is also taking advantage of features like live migration, which has helped the SDC team to manage planned maintenance without requiring any downtime of the application. The entire management and monitoring of the cloud can be done using a dashboard with appropriate alerts and reports. To encourage adoption, the team is also conducting a series of awareness sessions on cloud for sharing knowledge.



CHARGEBACK MODEL – A FIRST IN THE GOVERNMENT

What's also noteworthy and unique about the MahGov Cloud initiative is the fact that the department has in a first created a comprehensive rate chart for availing cloud services. Departments can pick and choose IT components as per their requirement. Departments can also access a self-provisioning portal for the cloud. To encourage adoption, initially, cloud services are being offered for free to all departments.

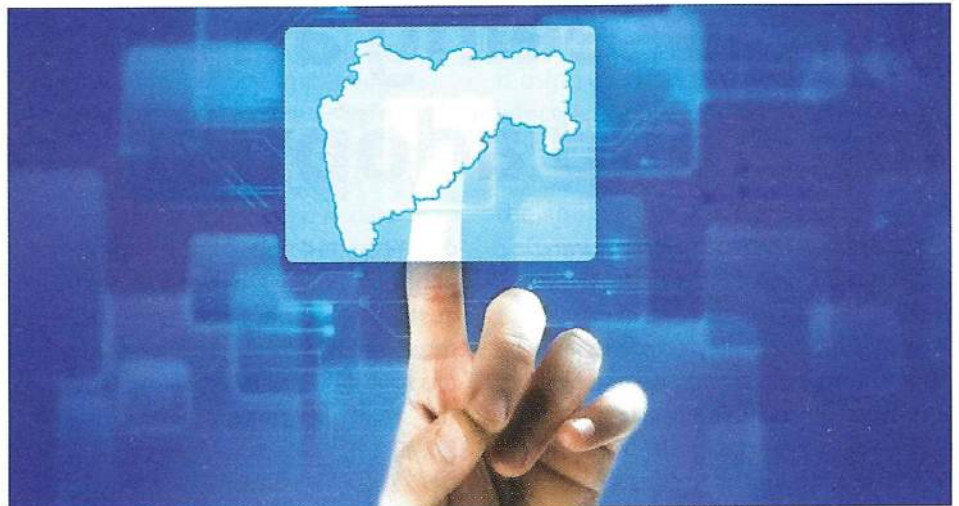
"We want to make the cloud self-sustainable. Based on initial capital and maintenance costs, we have devised a chargeback and metering mechanism. Some departments are being served dummy bills so that they know how much is actually provisioned and consumed by them in the SDC. We are encouraging departments to host their applications on our SDC. The rate card has acted as a counterforce for containing costs and has also contributed in stabilizing and putting an upper cap for prices of standard services," says Aggarwal.

EVERYTHING AS A SERVICE

Having established the cloud as a basic platform, Maharashtra's Principal Secretary-IT is now experimenting with all the possible options. Besides providing IaaS, PaaS and SaaS on a monthly basis, the department is offering Business Intelligence tools as a Service (BlaaS), GIS thematic map as a Service (GISaaS), API as a service, Survey as a Service and Authentication as a service.

"We want to provide every possible combination for government departments. Many senior government executives now carry iPads, and we want to encourage them to start experimenting with data by providing them with an interface to analyze using what-if-scenarios. We have a vision that all departments, commissionerates and organizations within Maharashtra should be able to use business intelligence reports and dashboards to perform analysis to get meaningful and actionable information," states Aggarwal.

For example, dashboards have



been created for tracking UID enrolment and comparison of enrolment data with census data. The dashboards enable key insights into demographic profile of enrolled residents and also into the process and performance of enrolment. The state government has also implemented a tablet-based application for conducting audit of UID enrolment centers and has made it available to other states over cloud. Dashboards have also been created for the transaction details of service delivery through Citizen Service Centers. Some interesting observations and information from the analysis of this data is currently being investigated to understand patterns of consumption of services across the state.

The GIS as a service has been rolled out to encourage and enable all departments to subscribe and avail the benefits of GIS. The future

roadmap for GIS includes mapping of electricity meters in each household of Maharashtra and UID integration of the household data. Once the basic household data is mapped, and UID based integration is achieved, GIS would become the common platform for delivery of services and benefits across several schemes and programs.

THE OPPORTUNITY TO ACCELERATE

Apart from the huge cost savings, the real benefit is the opportunity to accelerate. Aggarwal gives the example of a department, which had a project cost of ₹ 20 crore, and would have required a timeframe of 6-7 months to setup the infrastructure. "We showed the department that by hosting the applications on our cloud, the department could significantly reduce the cost and accelerate the project. We reduced the cost from ₹ 20 crore to ₹ 5 crore and enabled the department to go live quickly. In many cases, if a project is started quickly, the effect can be transformational," opines Aggarwal.

The Maharashtra government's approach and aggressive embracement of cloud technologies is a superb case to showcase how a technology like cloud can be fully leveraged to bring about large scale transformation. If other state governments start going on the cloud path, the journey towards transformation of India will be faster and much more efficient. **IW**

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HIGHLIGHTS

- Around 350 VMs were deployed in just 3 months as part of the MahaGov Cloud on Vmware
- By hosting its application on cloud, one of the government departments could reduce the cost from ₹ 20 crore to ₹ 5 crore and accelerate the project
- Due to template and clone features, the time to provision a server along with OS and database has been reduced tremendously