

Maharashtra State Data Centre (MH-SDC) *MahaGov Cloud*



**Directorate of Information Technology,
Government of Maharashtra
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Agenda

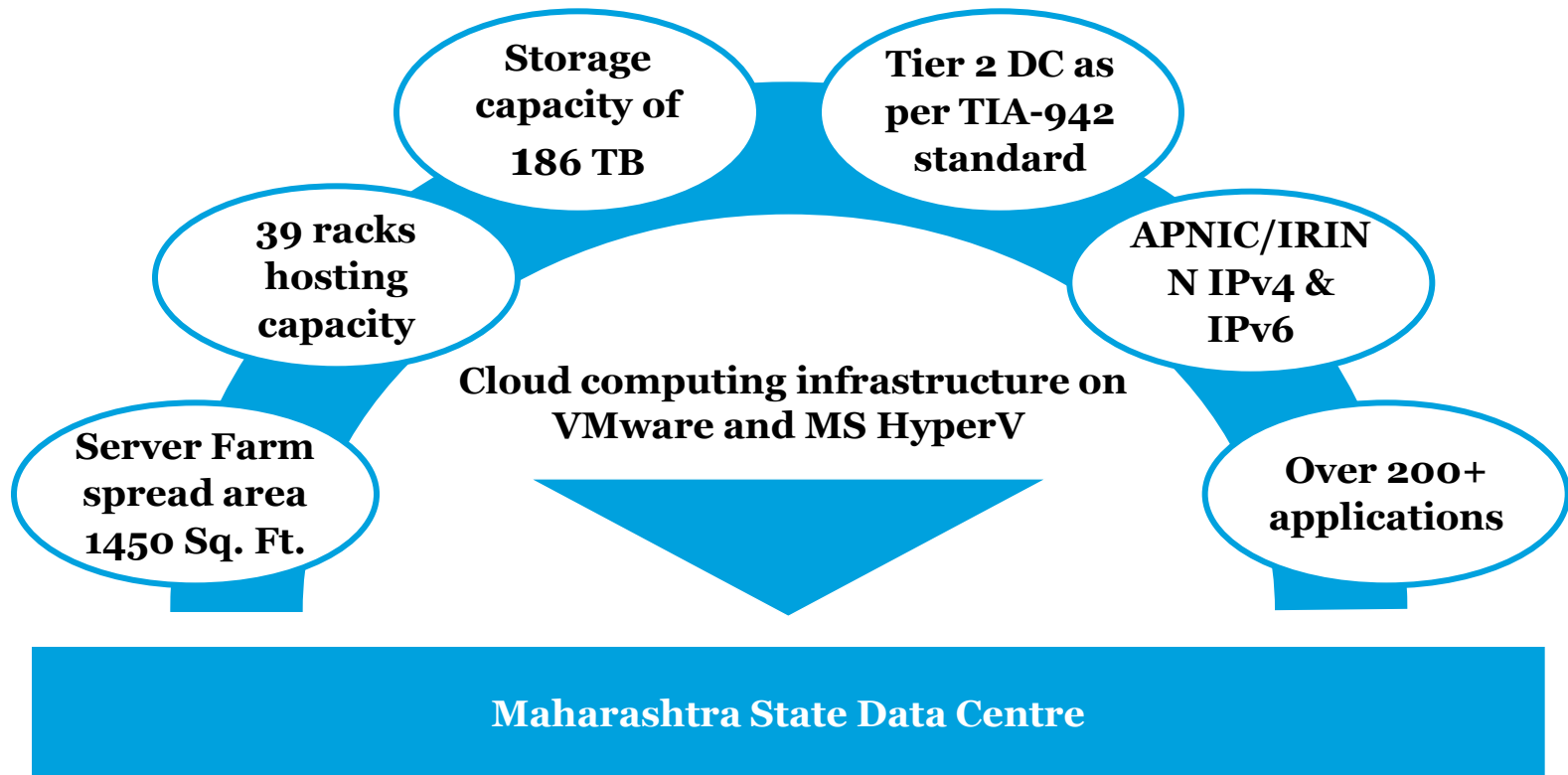


- **Salient Features**
- **Services offered to Departments**
- **Cloud Infrastructure at MH-SDC**
- **Benefits**
- **Challenges & Lessons Learned**
- **Chargeback and self-sustenance**
- **Way Ahead**

Salient Features



MH-SDC is located on the 4th Floor of New Administrative Building



Services offered to Departments



Cloud Service

Department brings only application/ website

Virtual Instance is provided in Cloud Setup

Encourage

Managed Hosting

Department brings only application/ website

Dedicated Servers are provided by MH-SDC

Try to avoid

Colocation Service

Department brings application /website & hardware
Rack space, power, cooling, firewall and other managed services provided by MH-SDC

Discourage

Cloud Infrastructure at MH-SDC



Background

- **Conceptualized on SDC implementation**
- **Proof of Concept – November 2011**
- **Fully operational Cloud – May 2012**

Uniqueness about MahaGov Cloud

- **Only Government Cloud Setup in India**
- **High volume of servers and applications**
- **Own block of 4 B ASN no. and IPv4 & IPv6**
- **Membership in APNIC/IRINN, making it vendor independent.**
- **Cloud Services offered for Government and by Government**
- **High Availability & Load Balancing at ISP level**

Cloud Infrastructure at MH-SDC



Uniqueness about MahaGov Cloud (Contd...)

- The rate chart serves as a benchmark for the User Departments
- First state in India to enable IPv6
- First State in India to enable hybrid cloud

Item wise Monthly rates for Infrastructure as a Service (IaaS)	
Item	Rate
1 vCPU 4 GB RAM, 50 GB SAN Storage with RHEL or other Linux (OS +PostgreSQL/MySQL) or Windows OS	4000
Additional 1 vCPU	1000
Additional RAM 4 GB	1000
Additional Storage 50 GB	1000
Dedicated Server (Intel Xeon 12 Core @ 2.63 GHz, 96 GB RAM, 146 GB X 2 HDD with Windows OS or RHEL /other Linux OS + MySQL/PostgreSQL	50000

Cloud Infrastructure at MH-SDC



Microsoft Private Cloud Architecture of MH-SDC

- **Physical Servers** — **13**
- **Virtual Machines** — **44**
- **Total Applications in production** — **37**

VMware Private Cloud Architecture of MH-SDC

- **Physical Servers** — **39**
- **Virtual Machines** — **400**
- **Total Applications in production** — **200**

Benefits for Maharashtra Government



- **Lower Costs**
 - **Lower Physical Resources**
 - **Operational Cost**

- **Agility**
 - **Eliminate procurement process**
 - **Less Time to provision**
 - **Efficient Utilization**
 - **No Downtime**

- **Continuous update**
 - **Ownership of updates with SDC**
 - **Latest updates**

Benefits for Maharashtra Government



- **Universal resource access**
 - **Common platform**
 - **Easy Accessibility**
 - **Better Management and monitoring**
 - **Quick Backup/Restoration**

- **Collaboration**
 - **Accessibility – Anytime Anywhere**
 - **Dept. can focus in their core sector**
 - **Dept. need not be IT Experts**

Challenges & Lessons Learned



- **Start with – IaaS and PaaS**
- **Capacity planning**
- **CPU and RAM – should be in ratio**
- **Rule based auto scaling of resources**
- **Public and Management Traffic – Min. 4 NIC**
- **Licensing Policy – Operating System and Databases**
- **Backup and Replication – for entire Virtual Instance**
- **Awareness sessions – departments and developers**

Chargeback & Self-sustenance



- **Started with free offering to all departments**
- **Chargeback and metering mechanism is devised**
- **Charge will be levied for Corporations, Boards, etc.**
- **Cloud Service Charges for GoI funding scheme**
- **Incentive to Departments for SDC Usage**

Way Ahead



- **Continual Improvement and Innovate**
- **BCP / DR**
- **Cloud Burst**

Awards & Recognitions



- **Skoch 2012**
- **Skoch 2013**
- **eIndia Award**
- **Cloud Advantage Award**
- **DataQuest 2013 e-Readiness**
- **PCQuest Case Studies**
- **Transformers Awards 2013 given by EMC**

Awards & Recognitions contd...



- **IT excellence award from VMWare**
- **Articles in Media:**
 - **"MahaGov Cloud" has been featured "Information Week" in April 2013.**

http://www.informationweek.in/cloud_computing/13-04-29/maharashtra_government_shows_power_of_cloud_with_savings_of_rs_50_crore.aspx

Awards & Recognitions contd...



- **"MahaGov Cloud" has been featured eGov elets online in January 2013.**
 - **<http://egov.eletsonline.com/2013/01/mahagov-cloud-leading-the-way-to-government-cloud/>**

The Journey Continues....

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