# Background

In order to utilise and harness the benefits of Cloud Computing, Government of India has embarked upon a very ambitious and important initiative **– "GI Cloud" which has been coined as 'MeghRaj'.** The focus of this initiative is to evolve a Strategy and implement various components including governance mechanism to ensure proliferation of Cloud in government. Formulation of the Cloud Policy is one of the primary steps that will facilitate large scale adoption of cloud by government. In order to drive this initiative a Task Force was constituted by Department of Electronics and Information Technology (DeiTY) under the Chairmanship of Additional Secretary (eGov) with a focus to bring out the strategic direction and implementation roadmap of GI Cloud leveraging the existing or new infrastructure.

# Objectives

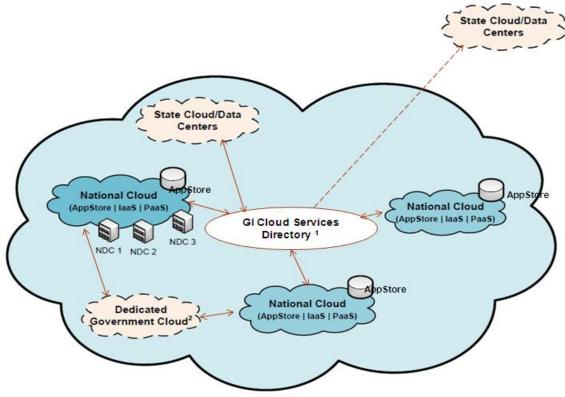The objectives of GI Cloud are as follows:

- Optimum utilisation of infrastructure
- Speeding up the development and deployment of eGov applications
- Easy replication of successful applications across States to avoid duplication of effort and cost in development of similar applications
- Availability of certified applications following common standards at one place

# Architectural vision of GI Cloud

The architectural vision of GI Cloud focuses on a set of discrete cloud computing environments spread across multiple locations, built on existing or new (augmented) infrastructure, following a set of common protocols, guidelines and standards issued by the Government of India. The GI Cloud services will be published through a single GI Cloud Services Directory.

The GI Cloud is envisaged to consist of multiple National and State Clouds. The agencies responsible for operating and managing the National and State Clouds may engage Managed Service Providers (MSPs) for managing the respective cloud computing environments.

These cloud computing environments will utilise the existing network infrastructure such as the SWANs, NKN, NOFN integration hubs as well as the internet.

¹ Single Portal for Service Delivery
² Built by private cloud providers

The figure above depicts an overview of the GI Cloud consisting of cloud computing environments at the national and state levels termed as 'National Clouds' and 'State Clouds' respectively. While one of the National Clouds will be built utilising the infrastructure available under the National Data Centre(s), other National Clouds may also be established. These may be new or established by augmentation of the existing data centres available at state level. Based on demand assessment and taking into account security related considerations, government may also engage the services of private cloud providers. The willing state clouds built on state data centres can also associate themselves with the GI Cloud and publish their services in the GI Cloud Services Directory.

Services provided by National Clouds would include infrastructure (compute, storage and network), platform, backup and recovery, infrastructure scaling of the State Clouds, application development, migration and hosting etc. Over a period of time, other clouds at the national level could also provide remote infrastructure management for the State Clouds.

The vision is also focussed on national and state level shared, reusable applications and services that will allow any government department or agency to accelerate its e-Governance progress by using applications which other agencies or departments have already developed and made available in the government cloud environment. The National Cloud and each of the other clouds at the national level are envisaged to host an 'eGov AppStore' that will act as a common platform to host and run applications at National Clouds which are easily customisable and configurable for

reuse by various government agencies/departments at Centre and States without investing effort in development of such applications.

## GI Cloud Reports

Based on various discussions and inputs provided by the Task Force and subsequent industry consultations, the following two reports have been prepared by DeitY. These reports have been approved by the Hon'ble Minister of Communications and Information Technology and are available for download http://deity.gov.in/content/gi-cloud-initiative-meghraj.

1. GI Cloud Strategic Direction Paper (Download)
2. GI Cloud Adoption and Implementation Roadmap(Download)

## Activities/Projects to be implemented under GI Cloud:-

The various projects to be implemented in a phased manner as a part of this initiative are as follows:

- **Setting up of National & State Clouds -** Cloud computing platforms at National and State levels
- **AppStore (e-RAAS, R**eusable **A**pplication **A**vailability **S**tore**)**- Common platform to host and run applications. The overall objective of the National eGov AppStore is to create a market place of customizable and configurable applications that can be re-used by various government agencies /departments at Centre and States without investing time and effort in development of such applications. There would be minimum 20 applications to be hosted annually on the AppStore. NIC has been identified as the implementing agency for eGov AppStore.
- **GI Cloud Services Directory** - Single window or portal for GI Cloud service delivery
- **Common set of protocols, guidelines and standards** for GI Cloud
- **Institutional mechanism** - To operate and manage the GI Cloud environment.
- **Centre of Excellence** - For awareness building, best practices creation, providing advisory services to the departments on cloud adoption, showcasing the cloud technologies, international collaboration and research and development.
- **Architecture Management Unit** To bring out Common set of protocols, guidelines and standards for GI Cloud

A separate Working Group at DeitY headed by Shri. Kris Gopalakrishnan is also working on enabling cloud services in India covering aspects like jurisdiction, cross-border data flow, data security, data location etc.

## Status of GI Cloud:-

| S.No. | Initiatives | Status |
|---|---|---|
| 1. | Cloud computing platforms at National and State levels | Various states are under bid process management to implement cloud<br><br>National Cloud phase-I implementation completed by NIC at Shastri Park Data Centre which is ready for Launch. |
| 2. | Common platform to host and run applications - eGov AppStore | [Pilot of eGovAppstore inaugurated by Hon'ble Minister of Communications and Information Technology on 31st May'2013 available at http://apps.gov.in/](http://apps.gov.in/) |
| 3. | GI Cloud Services Directory that will act as the single window or portal for GI Cloud service delivery | To be initiated |
| 4. | Common set of protocols, guidelines and standards for GI Cloud | Establishment of Architecture Management Unit (AMU) is to be initiated |
| 5. | Centre of Excellence for cloud computing | Establishment of Centre of Excellence (CoE) is under process |