MEGHDOOT-PRIVATECLOUD

▶ Meghdoot – Bank's private cloud provides x86 based Virtual server instances for Application owners to host their application.

▶ The entire private cloud solution is based on VMware Cloud Foundation (VCF) stack and is being managed by IT-Cloud solutions department at GITC with the support of vendor resources for day to day operations.

▶ The current cloud deployment model is Infrastructure as a Service (IaaS) with few services available as Platform as a service (PaaS).

▶ Application Owners willing to procure Virtual Machines will need to follow well defined process mentioned in document SBI Cloud Procedures and Guidelines available at SBI Times.
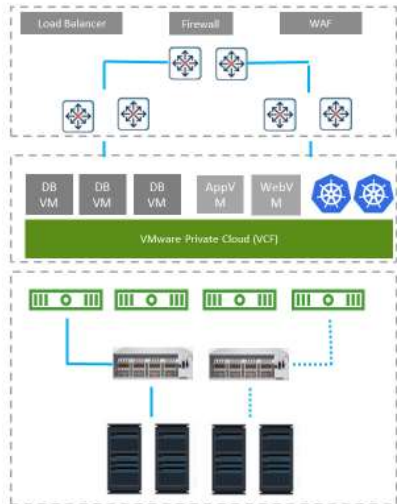
Meghdoot Overview

Technical Overview about Meghdoot Capabilities

Data Centres & Cloud

SBI Meghdoot Logical Architecture

Network and Security :
Perimeter Firewall – Multiple OEM Physical Firewall
Distributed Firewall – Micro-Segmentation through NSX
WAF – Physical WAF
Load Balancer – VMware NSX Advanced Advance LB
Core Network - Spine and Leaf Architecture

VMware Private Cloud (VCF) :

Applications ~ Financial and Non-Financial (low to extremely high TPS applications)
VM count ~ 16000
Enterprise Platform for VM and Kubernetes workload (Tanzu)

Physical Infrastructure :

SERVERS : 1000+ x86 Commodity Intel Servers across 2 Datacenters Config (48 Cores, 1 TB RAM)

SAN FABRIC : Enterprise SAN Fabric

STORAGE : All Flash Storage for Prod – 12 PB across 2 Datacenters

BACKUP : Enterprise Backup to HDD Disk Storage – 12 across 2 DC

VMware Solution Components in Meghdoot

VMware Tanzu	VMware Application Catalog	Trusted, pre-packaged application components that are continuously maintained and verifiably tested for use in production environments
	Tanzu Data Services	Enterprise Gemfire - In Memory caching RabbitMQ - Messaging and Streaming Service PostgreSQL and MySQL – VMware Supported OpenSource DB platform
	Tanzu Build Service	Automates container creation, management, and governance at enterprise scale.
	Harbor	Private Container Registry for SBI hosted on Tanzu Kubernetes Cluster at Meghdoot.
	Tanzu Kubernetes Grid	Enterprise Kubernetes runtime platform

Load Balancer	NSX Advanced Load Balancer (AVI)	Advanced Load Balancer for Application VMs and Container Ingress networking
VMware Cloud Foundation (VCF)	vSphere	Virtualization platform for VMs and k8s nodes
	vRealize Operations (vROPS)	Monitoring platform for Virtual and container platform
	vRealize Automation (vRA)	Automation and Orchestration platform for Virtual and container platform
	vRealize Log Insight (vRLI)	Logging platform for Virtual and k8s
	NSX	Network & Security for Virtual and Container platform
	SDDC Manager	Automated Patching and Upgrade

Redhat Open Shift Solution Components in Meghdoot

Red Hat OpenShift Platform Plus with Runtimes	OpenShift Container Platform, Service Mesh, Serverless, Tekton, Advanced Cluster Management, Advanced Cluster Security, Quay, Microservices Runtimes Catalog, OpenJDK, Data Grid, SSO.
Red Hat Integration	Microservices Integration & Orchestration, Messaging, Kafka, Interconnect, API Security
Red Hat Ansible Automation Platform	Automation Hub & Automation Mesh

Meghdoot Capabilities deployed at SBI
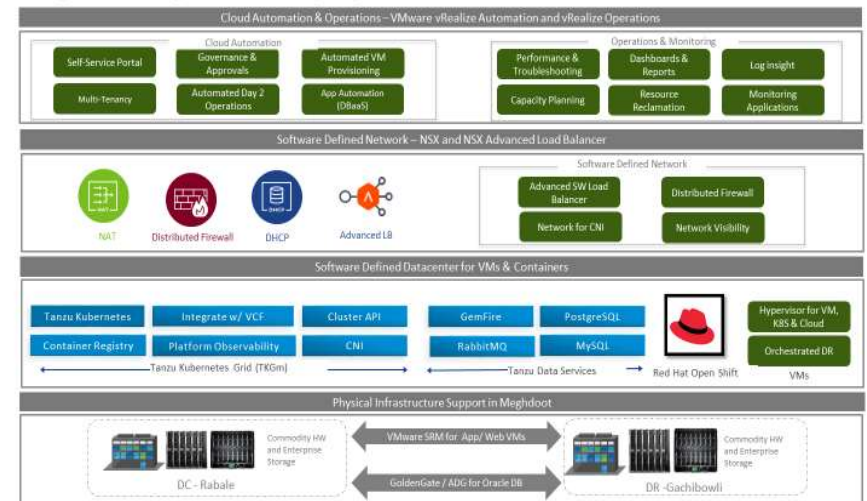
Standard VM(Virtual Machines) Sizes being provided in Meghdoot

Type	Core (vCPUs)	Memory (GB)	Storage (GB)
Nano VM Configuration	1	2	50
Micro VM Configuration	2	4	100
Small VM Configuration	4	8	100
Medium VM Configuration	8	16	150
Large VM Configuration	16	32	200
Very Large VM Configuration	32	64	300

ETA recommendation for standard configuration – Database Servers

Type	Core (vCPUs)	Memory (GB)	Storage (GB)
Micro VM Configuration	4	8	100
Small VM Configuration	8	16	200
Medium VM Configuration	12	24	300
Large VM Configuration	16	32	400
Very Large VM Configuration	32	64	500
Extra Large VMs	46	128	As per use