

C-DAC Data Centre

C-DAC had started providing Internet Services in the year 2002 with Class 'C' ISP license and extended its services for hosting of websites. In the year 2005, C-DAC has operationalized its Data Centre at Noida Centre, providing commercial Data Centre Services to its clients.



CDAC's Data Centre Facility have been certified with **ISO/IEC 27001:2005** for information security in the year 2012 & again re-certified with **ISO 27001:2013** in the year 2016. The Data Centre is managed 24x7 by highly competent & motivated team to ensure the security as per the international industry standards.

1.1 Data Centre Services

The services being offered at CDAC, Noida Data Centre are:

- Cloud Hosting services
- IaaS
- PaaS
- DRaaS
- Managed Platform as a Service
- Collocation Services (Rack Space)
- Mail Services
- Database Services (MySQL, Postgres)
- Monitoring Services (Mail Alerts, SMS Alerts)
- Backup Services
- FTP Services
- Storage Space
- Consultancy
- 24 x 7 Support

1.2 Salient Features

A. Up-time Guaranteed:	99.982%
B. Connectivity:	Redundant and Assured Bandwidth
C. Advance Alert services:	By E-Mail/system generated messaging system
D. Power Supply:	Uninterrupted with redundant UPS
E. Support services:	24x7 (Online)
F. Reports:	Resource Utilization, Bandwidth Utilization
G. LAN:	10 Gig. (Redundant)
H. WAN:	Fiber Connectivity from Multiple ISP.

1.3 Data Centre Facility driven by Technologies

Physical Security:

The physical environment at C-DAC, Noida Data Centre includes but not limited to redundant power source and supply, redundant cooling environment, redundant network links, 4-Tier Physical Security (2-Tiers Managed by Professionally Managed Security Guards & 2-Tiers Managed by Electronic Access Control System), 24x7 IP based Video Surveillance System and well-defined & established Security Processes & Procedures.

Network & Network Security:

The information security over the network access have been secured by various initiatives. The public access network (Internet) links are taken from multiple Service Providers, each network link has been provided through redundant fibers in Ring / Mesh Topologies for guaranteed uptime of 99.8% individually. The BGP enabled network links from multiple Service Providers assures automatic migration of both incoming and outgoing Network Traffic from one operator to another operator seamlessly to achieve 100% network uptime. The 10 Gbps backbone network have been configured with redundancy at the cabling level and at equipment level starting from Router, Firewall, UTM, IPS, switches to avoid any downtime due to equipment failures. The multi-layer network security has been implemented with the perimeter Firewall, IPS and second level multiple Militarized (Secure) Zones and De-Militarized Zones (DMZ).

Cloud Services:

C-DAC's cloud environment is configured with multiple servers in cluster with common shared storage LUNs (Logical Unit Numbers) from multiple central SAN (Storage Area Network) Storage. The Connectivity from the servers to storage are zoned with multi-pathing and network connectivity from servers to the switches are configured with multi-pathing. Hence, the redundancy at the Server level and connectivity level are ensured with the above implementations.

Redundancy:

The Applications are deployed in multiple Application Servers and are Load Balanced through clustered Load Balancers in High Availability. The Databases are also clustered in High Availability to avoid Single Point of failure. The DNS (Domain Name System) Servers, DHCP (Dynamic Host Configuration Protocol) Servers and E-Mail Servers are all deployed with redundancy. Centralized Repository Servers and Update Servers are used to update the Servers with latest software and patches.

Monitoring:

Different types of Monitoring Tools are used to monitor the nodes, servers, resources, services and the performance. The tools generate various alerts based on the configured thresholds at different levels like Normal, Warning, Critical, etc. These alerts are then sent through E-Mail and SMS to the concerned members.

Backup & Business Continuity:

The data backup being the critical requirement of any Data Centre has been implemented with dedicated Tape Library for the purpose. The data backups are configured through the scripts and are automatically taken in the Tapes by the pre-scheduled jobs. The Tapes are stored in the fire safe cabinet to protect from major disasters. A copy of the critical application data is backed up at Disaster Recovery (DR) Site at Hyderabad Centre to provide the Business Continuity. The Disaster Recovery Services are also configured at the Hyderabad Centre depending on the client / project requirements.

Logging & Security:

The Authentication of the Servers are done from the central directory Servers and for the Network Devices are done from TACACS Servers. The Servers logs are collected in a central SYSLOG server and analyzed through a centralized Log Analyzer, while for the network devices it is collected in the TACACS Servers. The Firewall, IPS and UTM Logs are also collected in the Centralized Log Analyzer Devices / Servers dedicatedly and are analyzed on Real-Time basis. All the servers and network devices are time synchronized with the centralized NTP Server, which confirms to the coherent and comprehensive log analysis.

The Security being the most important pillar of any Data Centre is being established by the process of Risk Assessment, Vulnerability Assessment & Penetration Testing (VAPT) for the Network, Servers and Applications. The Vulnerability Assessment is carried out both manually and with Tools, then Penetration Testing is done for the identified vulnerabilities. The vulnerabilities are reported and patched accordingly.

Being a CERT-IN empanelled agency the complete audit of Web Applications is also carried out in compliance to the OWASP recommendations for the "Safe To Host" Certification and certificate is issued.

All the above-mentioned activities, processes, technology implementations and much more are being accomplished by the dedicated, highly skilled and motivated in-house team. The C-DAC Data Centre Team extends its technical support 24x7 and acts pro-actively to maintain the uptime of 99.982%. The resources are professionally managed to overcome the technology obsolescence and attrition with defined processes.

The Data Centre Services envisions the C-DAC Mission Statement of ***"Bring benefits of Electronics and Information Technology to society"*** and in achieving the C-DAC's Vision ***"To emerge as the premier R&D institution for the design, development and deployment of world class electronic and IT solutions for economic and human advancement"***.

1.4 Contact

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