

Choice Case Study

Datacenter Design and Implementation for WNS Global Services Pvt. Ltd., Pune

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Project Preface

WNS Global Services is a leading BPO with Headquarters in Mumbai. WNS approached Choice Solutions Ltd. to help them consolidate their server rooms and plan and build a state-of-the-art datacenter to cater to their global customers. The scope of Choice Solutions Ltd. engagement with WNS was for an overall project management during the implementation and rollout of their datacenter and IT Infrastructure.

Project Background

The premises that were planned for the Datacenters by WNS are one in Gurgaon and two datacenters in Mumbai (at the Godrej and Boyce campus at Vikroli) and a fourth datacenter in Pune. WNS had plans to take up a facility for their datacenter as well as office space for the BPO at each of their three locations.

Choice Solutions Ltd. was awarded the contract to assess the physical site in terms of Civil, Mechanical, and Electrical Infrastructure support and availability. The goal was to set up a datacenter to support their core computing power with a robust network design. They wanted a Tier III datacenter with all the best practices adhering to Tier III standards as per The Uptime Institute specifications. Choice Solutions Ltd. assessed the sites and certified its suitability based on the selected criteria.

Project Challenge

As WNS wants to build Datacenters for their in-house servers and for their global customers as well; the Datacenters must include active equipment area, passive cabling as a dedicated network area and MUC area. All the Network and Electrical cabling needs to be from the top as the raised flooring should not have any interruption. The challenge was to route long lengths of power and network cabling on each row of racks.

The power infrastructure and distribution needed complete redundancy up till each servers as well as redundancy for single corded equipment.

The other challenges for IT – Network Critical Infrastructure System were in the areas of access control, electrical panels, passive cabling, fire detection and prevention and site surveillance.

The Datacenter must include active equipment area, passive cabling as a dedicated network area and MUC area.

Choice Role and Solution

As the datacenter has to be highly agile, available, and manageable, the design and solution required for the world class datacenter; the overall solutions provided are as —

Choice Solutions Ltd. created the complete rack layout and orientations, power sizing and spacing and redundancy with 2N + 1 availability.

Power

The IT equipment in server room needed high uptime and hence was designed with dual active redundant power path by large UPS system, that were backed by standby UPS to support the load. This helped achieve 2N+1 redundancy up to the load points. For each location Choice Solutions Ltd. had to create a design to host all the core applications with high-end computing using blade servers and high-end switching. The challenge was to design the infrastructure to meet the existing needs and also to be robust and flexible enough to meet the future expansion plans. Choice Solutions Ltd. created the complete rack layout and orientations, power sizing and spacing and redundancy with 2N + 1 availability. The dual active power supply to the individual server's concept was put to good use with state-of-the-art and innovative Power Distribution system from APC. They also helped reduce the cluster of cables underneath the raised floor. The power distribution included advanced and manageable rack PDUs to compliment the ease of deployment and maintenance of the power for each rack.

Cooling

The basic design was with hot and cold aisles to eliminate hotspots and optimum airflow and temperature at each rack inlet. The cooling methodology designed was with PACs with bottom-throw of cold air with optimum pressure in order to reach the top levels of each rack. It was necessary to balance the cooling requirements with the PAC tonnage capacity to reduce wastage of precious datacenter footprint and reduce expenses. Hence a solution was designed with N+1 redundancy with leading PAC manufacturers and Direct Expansion concept. The entire design was meant to cool the servers with almost no hot spots and not to cool other non used areas of the datacenter. Temperature and humidity monitoring devices were placed in different locations in row and racks for total remote monitoring and alarming.

The rack should also comply with NFPA /DIN standards for safety in enclosures.

Racking

Due to uncertainty on make and models of servers that will be racked, the design had to be scalable enough to allow for a high degree of static and dynamic load. The rack should also comply with NFPA/DIN standards for safety in enclosures. The other challenge was to design the rack layout to host servers for the first day as well as have enough space for future expansion. The height, width and depth of the rack were carefully examined while placing them on the floor. The racks had provision for power and data cable routing without sacrificing precious server space in the racks.

ISP

As per requirement multiple ISP's was appointed for redundancy. Dedicated MUXs were placed in Datacenter to support the connectivity.

Passive Cabling

As per high-speed connectivity requirement the passive cable structure for datacenter has been designed and entire cabling in datacenter has been laid on cable ladders hanging on ceiling. Bunches of cables were travelling over the top of server racks with the APC's unique design of data cable over rack.

The best breed of technology and products were designed for continuous monitoring of the physical movement of personnel and material.

Access Control

WNS being a global BPO company catering to diverse clients; security was of utmost importance. Hence the best breed of technology and products were designed for continuous monitoring of the physical movement of personnel and material. The best combination of Biometric and Swipe card based access control was deployed at the DC entrance, with cameras and video pods for effective monitoring was designed. Today WNS manages everything remotely either from the same complex or over the web from their offices around the world.

Fire

The need was to protect the expensive equipment at all circumstances and also not leave out anything that affects human safety. The design should have a fire alarm system that triggers not when the fire breaks but proactively to sense the spark or smoke. And the design also should have a proper fire extinguishing system which should be automated and instant and without causing hazards to people. Hence FM200 based fire alarm and gas flooding systems were designed for prevention, dictation and suppression was selected which could be triggered off at smoke and at the same time floods the DC. With such pressure the FM200 system, the fire is effectively suppressed. Smoke sensing devices were placed in different locations in row and racks for total remote monitoring and alarming.

Build

Choice Solutions Ltd. oversaw the implementation of the proposed design and coordinated activities with vendors, service providers and system integrators. The entire implementation and datacenter deployment time period was a little over 3 months.

Client Benefit

After completing the desired task for first data center, the WNS IT team has involved Choice Solutions for architecting and implementing other data centers adjoining network rooms.

About Choice Solutions

Established in 1991 Choice Solutions Ltd. is a leading IT and Facilities solutions provider. Choice Solutions Ltd. business comprises of Six different practices, namely

IMS

- Desktop, Server, Network, Storage, Support, OS, Assets, Apps, Non IT
- Hardware - A-Add, M-Modify, I-Install, C-Change, R-Repair
- Assets, Security, Software Distribution, Upgrades

Networking

- Packaged Services Monitoring & Management
- Products, Security, Design, Deploy, Maintain
- Auditing & Compliance, SOC

Datacenter

- DC Audit, Monitor & Manage, Training
- Assess, Design, Built, Deploy, Disaster Recovery

Consulting

- Business Consulting, CIO & Technology Services, Physical Security, Power Devices, IT Consulting
- DC Consulting, ERP, CRM & Custom Apps

Cloud Computing

- Cold Site – Backup, Disaster Recovery
- Hot Site – HaaS, Software, Manage
- Public Cloud, Private Cloud, Hybrid Cloud
- CaaS, License Software, IaaS
- Disaster Recovery

Power

- Power Audit, Equipment Management
- Physical Security, Power Devices
- Power Saving Devices
- Design & Audit
- Renewable Energy Products