



CASE STUDY

SBA Info Built, Own & Operate a Datacenter with DR using SMART RACK System for a Leading PSU into Power Equipment Manufacturing

The Client

Our customer PSU is one of India's largest engineering and manufacturing enterprises in the energy and infrastructure sectors and a leading power equipment manufacturer globally. They serve the core sectors of the economy and provides a comprehensive portfolio of products, systems, and services to customers in the power, transmission, transportation, renewables, water, defense & aerospace, oil & gas, and industry. With a widespread network of 16 manufacturing facilities, 2 repair units, 4 regional offices, etc. have 150+ project sites across India and abroad with a wide range of high quality & reliable products adhering to national & international standards.

Business Challenges

Our customer had their datacenter on-prem with home-grown ERP solutions, VDI & file services for their internal users. They wanted to rejuvenate their existing processes like technically updating the HP-UX hardware used for ERP services, migrate ERP from the UNIX platform to x86 architecture,

and wished to reduce the manual efforts to an extent. The infrastructure has reached end of support and the client was looking to migrate to new infrastructure that can provide stability similar to Unix platforms. Also, they wanted to build site resiliency such that in case of primary site failure, a secondary site would be able to take over the services.

It was also identified that the existing DC Infrastructure including Cooling solutions and Power solutions have aged and needs complete refresh.

Our customer wanted to build a proper data center infrastructure on a OPEX model with near DR, high-performance storage for databases & monitor it holistically.

The Solution

After studying and understanding the customer's software/services requirements.

The migration to x86 Infrastructure could have met the availability requirements with Virtualization, however the client to ensure they were not forced to upgrade the Oracle DB licenses

due to x86 Virtualization. SBA recommended an option to migrate the infrastructure on x86 bare metal server to be in compliance with Oracle licensing, but on RHEL that can provide similar reliability to that HP-UX. SBA also recommended to build a RHEL cluster-based solution that will extend across 2 sites to provide complete redundancy.

For the DC refresh, SBA proposed to Vertiv's Smart Rack solutions along with Dell hardware for compute, storage, networking, and VMware virtualization.

SBA Info's DC failover Solution

Our customer has allocated a separate site around 500m from the primary data center for near DR. The following solutions were implemented to meet the customer's technical needs.

- OFC cables have been laid between the data centers in two separate routes to maintain path redundancy
- Implemented Red Hat cluster for Oracle database with one

- node at each of the datacenters to provide service redundancy in case of primary host failure
- VMWare HA cluster have been implemented with nodes spanning across the sites thereby achieving resiliency against host or site failure.
- Fileservices was configured on Microsoft Windows Services, with clustering between 2 nodes across the sites, to provide availability of service
- Network Switches had been stacked to eliminate network communication issues during switch failures. The power to the network switch is through an Automatic Power Switch with two power inputs which protects against single power domain issue
- A hybrid storage model with SSD LUNs being used for databases & SAS HDD LUNs used for other workloads including the file services. Two similar storages one at each site which is configured for sync replication for DB LUNs & async replication for file services and other workloads . The main highlight of this storage architecture is that all WRITES happen in a RAID10 SSD disk which later is auto migrated to the SAS HDD pool, to maximize the performance. This way we were able to achieve the customer requirement of over 100000 IOPS with 70% read and 30% write while able to meet the cost efficiency
- Backup is architected in a way that the master server is on the VMware infra enabling the failover between VM nodes and two media servers (one for each site) connected with the respective tape library is designed for failover
- Implemented opensource network monitoring solution to track the availability and to measure the SLA requirements
- VMware and Red Hat certified resources has been provided onsite to deliver complete managed services of the provided infrastructure on 24x7 basis.

In all the above implementation, redundancy is planned for power, cooling, hosts, storage, site levels thus enabling the customer to operate their services with the highest availability.

Vertiv Smart Rack Solution

- Two sets of Automatic Regulatory Apparatus for IT Systems, SR635RC (one at each site) is an all-in-one solution that has a self-contained fire suppression, cooling, CCTV, biometric, etc. which increases the ease of maintenance and efficiency
- One set of 2x30kVA UPS with 100AHx60 batteries with Rack and Links @DC
- Electrical requirements for the commissioning of the aforementioned components
- Redundancy planned at cooling, UPS, input raw power levels

Products Used

- Red Hat Linux and HA
- VMware vSphere Enterprise Plus
- Microsoft Windows DataCenter Edition
- Smart Rack System – Vertiv SR635RC
- UPS: Vertiv 30Kva
- Compute: Dell PE R730 servers
- Storage: Dell SC7020
- SAN switch: Brocade 6510
- Tape library: Dell PV TL4000
- Network switches: Dell N1524
- Backup: Veritas Netbackup
- Miscellaneous: LIU, OFC, Ceiling railing trays, etc.

Results

Our customer was able to reap the benefits of the new DC build, as & when their application & services get migrated seamlessly to new infrastructure. SBA could also show case that the clients infra could meet their performance requirements in terms of Storage IOPS and availability requirements in terms of RPO and RTO, while switching to a DR site.

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About SBA Info Solutions

SBA Info Solutions is an ISO 27001:2013, 9001:2015 & 20000-1:2011 certified firm serving as a trusted technology partner focused on innovative, next-generation services and solutions in the areas of Data Center, Cloud, and Information Security services. With our 30+ years of experience and time-tested consultative sales approach, we empower BFSI, Manufacturing, Infrastructure, IT & ITES, and Institutional organizations to improve IT security and maximize the efficiency of their Data Center or Cloud environment by enabling the adoption of the latest technologies, business agility and accelerate responding to immediate business needs and security threats. Our headquarters is located in Chennai, India and our key customers include BHEL Ltd, City Union Bank, Hyundai, IIT Madras, Kasturi & Sons, Karur Vysya Bank, The Hindu Group, L&T Ltd, Royal Sundaram, Sriram Group, Star Health, TNPL, Access Healthcare, Cholamandalam Investments, FIS Global. Visit www.sbainfo.in for more information.