# DC Infrastructure: Key TakeCtris aways from Ctris











## In the top 5 IDC facilities globally

## 4 of the world's 30 Tier IV DC's

Operational in Hyderabad, Mumbai, Delhi, Chennai and Bengaluru



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Hyderabad 2



Chennai



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Bengaluru

# FIRST

and only Datacenter in India

## **Certified Tier 4 Architecture**

99.995% Uptime Management

BS-25999 Certified for BCP

World's first LEED Platinum DC





CtrIS

## **CORPORATE FACTSHEET :**

## ABOUT US

Incorporated in 2007, CtrlS is India's leading IT Infrastructure and Managed hosting services provider with offerings comprising of Datacenter Infrastructure, Disaster Recovery, Storage and Backup, Application Hosting, Hardware, Cloud Computing, Platforms, Network and Security solutions.

With India's only Tier 4 Datacenter to its credit, CtrlS provides unmatched hosting capabilities through enhanced connectivity, multiple redundancies, and fault tolerant infrastructure with a guarantee of a 99.995% uptime and penalty backed Service Level Agreement (SLA).

CtrlS' state-of-the-art datacenters across Hyderabad, Mumbai and Delhi are spread over combined areas of 340,000 sq.ft. (appx.). It offers a comprehensive range of sophisticated and contemporary solutions that help customers gain deep insights and exceptional control over their complex IT environments. Our solutions enable customers to support changing business models at the right time, the right place, and using the best-in-class resources, and flexibly deliver IT services in a manner that best serves business needs. CtrlS has been awarded with industry-specific recognitions such as the CII awards for the Most Energy Efficient and the Most Innovative Energy Efficient Project, NASSCOM award for Top 50 emerging companies 2 years in a row and CIO choice award for the best Datacenter in the managed services Space. CtrlS is the only certified Tier 4 datacenter in India and Asia's largest datacenter network too. It is also ISO 20000-1 and ISO 27001 certified.



## **MISSION STATEMENT :**



Enhancing protection and efficiencies of the most valuable IT assets of the knowledge economy

## AWARDS & CERTIFICATIONS:

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Ctrls Mumbai DC has become World's 1<sup>st</sup> LEED Platinum Certified Data Center.



#### Data Center Energy Efficiency Standards in India

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Data centers are energy-intensive facilities that support a diverse set of services such as Web, e-mail, data storage, and processing. They are operated around the clock, and are energy intensive. It has been reported that global data center emissions will grow 7% year-on-year.

Over the last decade India has witnessed increased demand in data because of explosive growth in smartphones and widespread use of social media apps, banking and e-commerce transactions, and multimedia storage needs, providing an impetus to the large growth in data center markets in India.

With the cost of electricity now representing 25 percent to 40 percent of all operational expenditures in data centers, organizations are starting to pay serious attention to energy efficiency. Indeed, the cost to power a typical server over its useful life can now exceed the original capital expenditure, according to both the U.S. Department of Energy and Gartner.







Server power н. consumption

- Communications . equipment energy
- consumption Energy consumption of power supply system
- Energy consumption of refrigeration system
- Energy consumption of H. the storage device



## **Projection of Datacenter Electricity Use**







## 1. Designs Take away

- Design of Water cooled Chillers for better efficiency
- Selection of low IKW Chillers
- Design of VFDs for pumps
- Selection of energy efficient pumps
- LED Lights for the Data Center
- Fresh Air and exhaust systems
- •
- Automated cold Aisle Containment

## 1. Designs Take away



- Dual walls for Data Center to reduce heat gain or loss
- Designs of Free Cooling for Utility Areas
- High energy efficient K-13/K-20 Isolation transformers in PDU's for better harmonic cancellation.
- Maximum usage of day lights in office areas
- Solar panels for common areas lighting of 100 KW capacity
- Power Usage Effectiveness as low as possible. Lowest PUE designed for Bangalore DC at 1.38.

## 2. Operations Take away

- High set point of chillers
- Running of Chillers and PAHUs in Team Mode
- Usage of Blanking panels for better air flow management
- Automated Cold Aisle Containment
- Increase of Data Hall Temperatures as per Ashrae Standards upto 27 Degree Celsius
- Occupancy Sensors for the lighting



## 2. Operations Take away



- Automation of Chiller Plant (CPM)
- Measurement of losses, removal of unbalanced loads
- Energy incentives for Operations Team
- Intelligent energy monitoring software
- Reduce the weekly load test frequency to fortnightly thereby saving 15000 Liters HSD per anum



#### 3. Consolidate and Virtualize:

Poor server utilization is one of the biggest sources of waste in most data centers. Virtualizing the servers can increase overall utilization from around 10 percent (typical of dedicated servers) to between 20 and 30 percent and over 50 percent with more dynamic management systems. Successful consolidation and virtualization initiatives can also reclaim a considerable amount of rack space and stranded power.





**4.** Decommission comatose servers — 15% to 30% of the equipment running in your data center consumes electricity without doing any computing.

**5.** *Consolidate lightly used servers* — A typical server's utilization is about 5% to 15%, yet it draws full power. Invest in technologies that use energy more efficiently—An ENERGY STAR qualified server uses 30% less energy than a conventional server.

**6.** Organize and improve your stored data — Storage utilization averages only around 30%. It is common for organizations to have 20 or more copies of the same data—wasting storage space.

#### 7. Utilizing DCIM tools:

Further refinements to energy efficiency can be achieved through the use of <u>data center</u> <u>infrastructure management</u> (DCIM) software. DCIM software provides the necessary link between the operational needs of the physical IT equipment and the physical facilities (building and environment controls).

## 8. Migration: Physical Hosting to Cloud Computing:

Customers having physical data centers successfully moved on cloud thereby reduction in racks quantity and enormous reduction in power consumption by 60% of physical racks.







## 9. LEED Platinum Certification

- Ctrls Mumbai DC has become World's first LEED Platinum Certified DC under O& M category
- Saved 2% of overall energy cost.
- Increased brand value
- Shows commitment towards energy saving.
- Implemented all new suggestions of LEED under Operations Category



## **10. Cold Aisle Containment and Blanking panels**

- Cold aisle containment in the datacenter savings of 45 to 50% on fan power cost comparatively non-contained datacenter fan power cost.
- Saved 10% of overall cooling cost
- Optimization of air flow in the datacenters.
- Avoided air short cycling.





## 11. 3D traser with fully automated chemical treatment plant.



## **Cooling towers**







CtrlS

## Nalco 3D traser unit



## **3D** Tracer with fully automated chemical treatment plant.

- 3D Tracer for condenser water for chemical treatment purpose to maintain all water chemistry values with in the limits and improving fouling factor of all heat exchangers and pipes –15% of water savings and 8-10% on cooling power cost.
- Improved life all the heat exchangers, values, pipes and cooling tower fills
- Reduced blow down water ratio drastically





## **12.** Power Usage Effectiveness

• Mumbai DC PUE designed for 1.42 and actual PUE maintained at 1.49 Avg of 1.49 in last 1 year.





## **Future Plans**

- Plan for Group captive Energy (Renewable)
- Softener plant/RO Plant for recycling Cooling Tower blow down water

# Thank you

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**CtrIS**<sup>®</sup>

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