

**Objective**

To overcome the adverse cost, manageability, performance, and scalability issues threatening performance of ERP System

**Approach**

Leverage HPE expertise to plan and execute a database reorganisation and compression solution

**IT Matters**

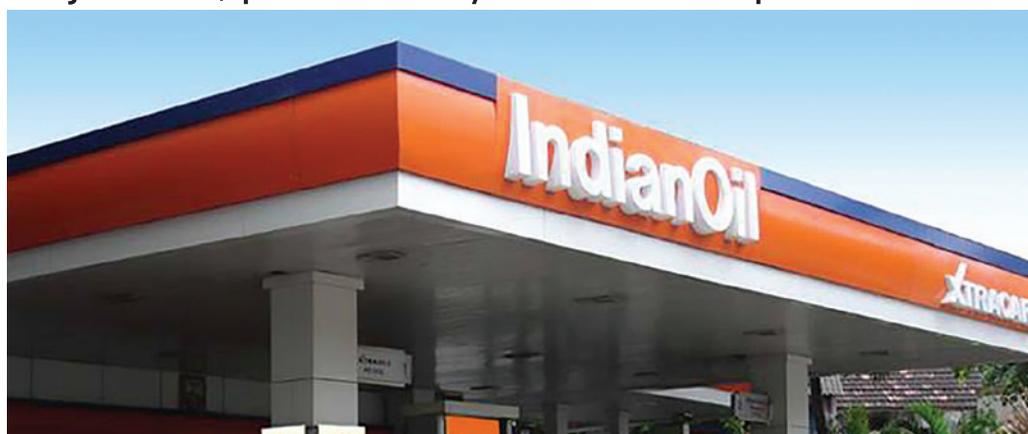
- Reduced the size of the database by 62 per cent, from 15TB to 5.6TB
- Cut SAP response time by one third from 900ms to 600ms
- Reduced peak front-end storage IOPs by 70 per cent from 40,000 to 12,000
- Lowered backup time by more than 60 per cent from eight hours to three hours

**Business Matters**

- Achieved a one-time savings benefit of Rs 28.8 million
- Achieved recurring monthly savings of Rs 72,000 at current growth rate of database of 150GB per month
- Delivered users a 35 per cent improvement in response times, from 460ms to 295ms

# IndianOil overcomes unstopable data growth business threat

HPE Datacenter Care helps solve IndianOil's major cost, productivity and user response



## IndianOil turns to HPE Datacenter Care to solve huge database growth issues

India's national flagship energy company found exponential growth in database size was putting enterprise IT infrastructure under severe pressure from cost, manageability, performance, and scalability perspectives. It embarked on an ambitious database reorganisation and compression (DRoC) project. It turned to HPE to plan and execute a successful outcome utilising HPE Datacenter Care.

## Challenge

### Fulfilling the “Energy of India” vision

Corporate visions can be the unifying blueprint for how major organisations design and model their business promise to serve their marketplace. The corporate vision expressed by the Indian Oil Corporation (IndianOil) is not only far-sighted but stunningly ambitious. The vision: to be the “Energy of India”.

IndianOil commands a significant energy market presence and it rates a top 100 standing in the prestigious Fortune “Global 500” listing of the world's largest corporate organisations. It is India's flagship national oil company and it dominates the entire hydrocarbon value-chain – from refining, pipeline transportation and marketing of petroleum products to exploration and production of crude oil and gas, marketing of natural gas and petrochemicals.

“This was a very complex job in view of limited storage resources. Due to the huge database size of 15TB, the space needed to be created by moving other databases and reconfiguring the storage as per SAP requirement without disturbing the complete landscape. HPE planned and carried out the complete job perfectly.”

– Rajiv Chawla, executive director, Corporate Information Systems, IndianOil

For more than half a century, IndianOil has been helping to meet the country's energy needs. Its 34,000-strong workforce today is responsible for delivering over 49 per cent of India's petroleum products market share, 31 per cent of national refining capacity, and 71 per cent of downstream sector pipelines through capacity.

IndianOil's critical business backbone – its corporate data centre – caters to almost 700 locations in every corner of India. Its SAP Enterprise Resource Planning (ERP) system had swelled one hundredfold from its initial 150GB size when it was commissioned in 2001 to 15TB by the beginning of 2014.

#### **Unstoppable exponential growth of data**

Besides ensuring sufficient storage space, the ERP system has to provide optimum response time to thousands of concurrent users and satellite systems so they can carry out the business activities in an efficient manner.

The exponential growth in database size was putting enterprise IT infrastructure under severe pressure from cost, manageability, performance, and scalability perspectives. As a result, the company found itself grappling with the issues of higher storage costs, deterioration in response times, and massive backup/restore time limitations.

The unstoppable increase in data volume meant that these elements were all combining to create multiple layers of complexity in managing the data centre that was running online business transactions on the SAP ERP system.

#### **Satisfying demand for applications and analytics**

Timing was critical because IndianOil found itself increasingly having to anticipate and satisfy the requirement to run an increasing number of applications and faster analytics. In mid-2014, IndianOil took a proactive position and with support partner, Hewlett Packard Enterprise (HPE), began planning the best approach to address this challenge.

IndianOil general manager IT, Deepak Agarwal, explains: “New business requirements such as analytics need high storage space, which was not available in the existing storage due to the big database size. The need to increase storage space every time for new requirements had to be continuously met by augmenting hardware as well as performance tuning of SAP/ Oracle software. Such a process had adverse impacts on operational response time and efficiency, plus serious cost implications.”

Agarwal notes that the database response time had also deteriorated to about 60 per cent of the total SAP ideal response time:



“Peak front-end storage IOPs of around 40,000 were being observed.” At this point, the company decided to initiate a Database Reorganisation and Compression (DRoC) project that would reduce the size of the SAP ERP database to manageable limits. SAP has been running on an HPE platform comprised of HPE servers, storage and software for many years.

IndianOil has always relied on HPE Technology Services Datacenter Care for mission-critical support. This service helps IndianOil deliver a stable IT environment while optimizing costs and IT resources. It also ensures that all systems are kept up to date with recommended patches and system updates, which helps to avoid unplanned downtime.

## Solution

Agarwal recalls the pivotal decision: “To opt for the trusted services of HPE to help our in-house team in carrying out the complete project. The onsite HPE engineers could see the day-to-day issues we were facing. As a result of feedback and regular monthly meetings we reviewed and discussed what actions would deliver us an end-to-end solution. The issues were fully explored, even beyond the mandate and scope we initially gave to HPE. The HPE team brought professional neutrality to the project and we respected that.”

### Clever mix to avoid huge additional storage space

“During a pilot programme we learned that we required huge additional storage space to the tune of an extra 48TB. HPE demonstrated how we could achieve the same effect through clever mixing of different storage and disk configurations at

different sites. HPE proposed enterprise disk array storage for mission-critical converged infrastructure where constant access to data is required, even in the event of a disaster.”

Three storage disk array systems – HPE XP P9500, HPE XP24-000 and HPE XP12000 – were allocated and configured by a dedicated HPE team as a prerequisite for the project, and one of each was installed in

the three data centres. Agarwal credits the HPE planning and coordination with IndianOil’s in-house team for ensuring the execution of the plan was completely successful.

He adds: “The online compression and reorganisation of the SAP database took less than two months and was carried out online without any downtime during the process. The utmost care was taken not to impact performance for the end-users who needed to carry out their usual transactions in SAP. The only downtime taken was for conversion of system files.”

## Benefits

The immediate benefits to IndianOil’s business operations range from significant cost savings, to increased productivity, improved user response time, and greater flexibility in leveraging new applications.

Agarwal’s verdict: “From the beginning of 2015, the successful allocating and reconfiguring of storage at three data centres means our end-users are getting better response times and we have the space and ability to take on board new applications and handle analytics requirements. We can now do so without increasing our IT costs.

## Case study

Indian Oil Corporation (IndianOil)

## Industry

Oil and gas

## Customer at a glance

### Hardware

- HPE XP P9500 Storage
- HPE XP24000 Storage
- HPE XP12000 Storage

### HPEE services

- HPE Datacenter Care

“During a pilot programme we learned that we required huge additional storage space to the tune of an extra 48TB. HPE demonstrated how we could achieve the same effect through clever mixing of different storage and disk configurations at different sites. A huge task that was impressively and successfully undertaken.”

– Deepak Agarwal, general manager IT, IndianOil

The total space saved in three data centres is 72TB, which IndianOil calculates will mean no need to pay for any more storage for at least five years. In terms of one-time savings, we have achieved a benefit of Rs 28.8 million. Also, considering the current growth rate of 150GB per month and provision of disk space for growth, we are achieving a recurring monthly savings of Rs 72,000.”

### Impressive IT infrastructure results

The positive IT infrastructure improvements are equally impressive. The database size has been reduced by 62 per cent from 15TB to 5.6TB. Users are enjoying a 35 per cent improvement in database response times, from 460ms to 295ms. Overall SAP ERP response time has been slashed by one third from 900ms to 600ms.

Meanwhile, peak front-end storage IOPs of around 40,000 have been drastically cut by 70 per cent to 12,000. IndianOil IT resources are also receiving a productivity boost with backup time falling by more than 60 per cent from eight hours to three hours.

Agarwal reflects: “This was a very complex job in view of limited storage resources. Due to the huge database size of 15TB, the space needed to be created by moving other databases and reconfiguring the storage as per SAP requirement without disturbing the complete landscape. HPE planned and carried out the complete job perfectly.

“We sat down with HPE to start the planning in June 2014. Several mock runs were carried out to test the strategy of a complete reorganisation and compression of the databases. It was a mission-critical task with the potential of an adverse downstream impact for our business users.

“The project was initiated on the production database in December 2014, and with the conversion of system files, was completed before the end of January 2015. A huge task that was impressively and successfully undertaken. With special thanks to the people involved Mr. Manish Srivastava, Lokesh, both managers of IOCL, Vikas Srivastava, senior manager of IOCL, and Paramvir from HPE Support.”

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