

# Efficiency gains and costs reduction with thermal and energy management

## Intel® Node Manager

With the combined use of Intel® Node Manager and Dell OMPC (Open Manager Power Center) solution, Mandic Cloud Solutions expended up to 40% of the occupation capacity in its servers racks.

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With over 20 years in the market, Mandic Cloud Solutions is now one of the leading Brazilian companies in cloud computing. The pioneering company attracted international partners, such as Riverwood Capital and Intel Capital. Today the company is specialized in cloud computing, providing IaaS (Infrastructure as a Service) and SaaS (Software as a Service) and stands out for the quality of the solutions and services offered to customers.

In order to maintain this quality and further enhance its efficiency, the company recently improved the energy efficiency data centers. One of the solutions adopted was the OMPC (Open Manager Power Center) software, which manages power consumption and temperature of servers, allowing Mandic to balance the use of equipment, reducing power consumption and increasing the capacity of its servers.

### Challenges

- Monitor the servers energy efficiency;
- Increase performance of equipments;
- Balance processing, avoiding the creation of hot spots and reducing cooling expenses.

### Solution

- Dell OMPC (OpenManage Power Center) solution implementation and Intel® Node Manager activation throughout the server fleet in the three data centers maintained by Mandic Cloud Solutions.

### Impact

- Expansion of up to 40% of the racks occupancy rate;
- Reduction of 30% in electricity consumption;
- Reduction of environmental impact of Mandic operation;
- Space optimization in data centers;
- Monitoring and controlling the temperature of the servers, increasing general availability and mitigating risks of unplanned stoppages.



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### Constant search

As one of the largest specialized provider of infrastructure and cloud solutions in the Brazilian market, Mandic Cloud Solutions has 100% of its business based on data centers and servers. The company’s Operations Manager, Diogo Morgado, explains that the business main focus is to offer high availability, quality and performance. “We have several strong competitors in the market and so we need such as good structure with a competitive price. We are in constant pursuit of efficiency, whether in people, processes or administration”, he says.

Morgado says that this research has been taking place in several fronts and that recently it reached a critical point of the operation: energy. The area of operations began the work doing a detailed study on all items involving power management of data centers and their equipment. “We started to ask ourselves how to become more efficient”, he says.

As Mandic always worked with Dell hardware, one of the raised points was the activation of Intel® Node Manager technology, present in equipped servers with Intel® Xeon® processors.

According to Morgado, enabling this feature combined with the implementation of Dell OMPC (OpenManage Power Center) solution could give the area information that could not be obtained manually.

In practice, the OMPC solution provides real-time ability to monitor the consumption of power and heat of different IT assets. As a result, it enables management of data center hot spots, assists in the planning and forecasting of energy use and minimizes investments, eliminating the need for use of intelligent power strips.

Morgado recalls that as the functionality already existed on the servers, it took only a logical software configuration on each data center machine. “We did the implementation together with Dell and Intel teams. As the hardware was ready, we only planned the logic software installation. So the installation was relatively quick”, he says.

### Processes and results

The implementation of the three data centers lasted two weeks. Once the solution gone live, Mandic Cloud Solutions operations area has dedicated the thirty following days to collect the first information that led to

technical analysis. From the results of this analysis, it was possible to establish the parameters for managing the entire infrastructure.

According to Morgado, today the operations area can monitor equipment in real time through dashboards. In addition, it was established that the statistics generated by the solution would be consolidated on a quarterly basis, being transformed in studies to improve the infrastructure.

Today, with the solution in operation, Mandic Cloud Solutions can make an efficient balance of its data center. "This is extremely important for us, since we can avoid hot spots formation and reduce the air conditioning consumption", said the executive, adding that this intelligence is only possible through the provision of information in real time. If the team receives the alert that a server is consuming too much, the load balancing is done on time, stabilizing the environment.

Morgado says that today he has 100% of his fleet monitored centrally. "Today I can identify which machines are consuming more energy and why", he celebrates. This makes it possible to move servers, obtaining more efficiency.

In addition, the area now has effective control of energy costs, knowing exactly how much is spent and whether the values are above or below expectations.

"The project brought visibility to something that was not noticeable to the bare eye. Energy also requires management and brings increased efficiency", he says.

Having greater visibility, the company is able to better target the purchase of data center assets. With the solution, a benchmark conducted by Intel shows that Mandic can expand up to 40% the occupancy of its racks, increasing their use and reducing the environmental impact caused by the operation. He also points out benefits such as:

- Increase of racks' density: Maximizes the number of servers per rack, with the control of energy expenditure and promotes increased use of datacenter.
- Energy optimization: Optimizes power profiles per server, rack and per location (i.e. Room) or workload and applications, helping to reduce energy costs.
- Detailed control of expenses: Today, electricity is one of the most expensive inputs for Data Center operation.

Morgado recalls that with only three months operating the solution, Mandic had reduced data center costs and worked with the expectation of reducing energy costs. The big difference here, according to the executive, is the possibility of increasing the efficiency, enabling more competitive offerings.

"Now we are undergoing a continuous improvement process. We will better target the acquisition of data center assets. We now have data in hand to make more efficient management. We do constant purchases of hardware, and in every new acquisition we are going to use this data to target new purchases", he concludes.

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## About Mandic Cloud Solutions

With over 20 years in the market focusing on innovation, MANDIC CLOUD SOLUTIONS has a strong presence as one of Brazil's leading cloud computing companies. In 2012, the company received an investment of BRL100 million from Riverwood Capital, a global investment group specialized in technology companies. In 2013, it was Intel Capital's turn to invest in the Brazilian company. Having a diverse portfolio of cloud services, MANDIC stands out for its superior quality and differentiated service

For more information on  
Mandic Cloud Solutions, visit  
[www.mandic.com.br](http://www.mandic.com.br)



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