Data Center Capacity Planning Using GFS Crane DCIM

Introduction

The demand for data center resources is growing rapidly. To support a fast-growing business, today's data centers are required to provide additional capacities like CPU cycles, power, space and network, timely and efficiently, but at the same time stay within an approved organizational budget and comply with 'Green' standards.

This makes 'Capacity Planning' one of the most challenging tasks for a data center manager. Capacity Planning literally means planning for future capacity requirements – one has to forecast future requirements accurately and then work towards providing those requirements as and when required, but also ensure that the critical capacities are neither over-provisioned nor under-provisioned. While over-provisioning results in stranded capital, under-provisioning often leads to unplanned outages which call for another costly upgrade within months.

Capacity Planning Best Practices

Good capacity planning is only possible when the following processes are adopted and executed in this order
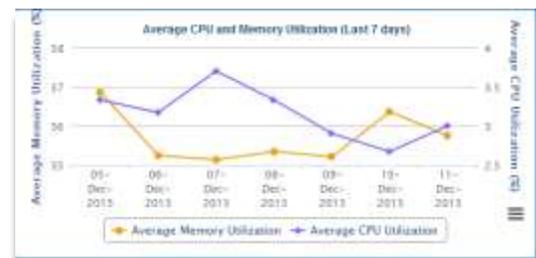
1. **Baseline the current capacity of the data center:** What is the total capacity? How much has been utilized already and how much is left to be used?
2. **Try to free up stranded capacities:** Most of the time there are hidden capacities in the data center that go unnoticed such as unutilized power and space in the racks or under-performing servers.
3. **Project future capacity requirement:** Understand the organizational goals and business growth prospects accurately, then estimate whether the same growth can be accommodated within the remaining capacities in the data center after releasing the stranded capacities. If not, then how much extra needs to be provisioned.
4. **Validate the future capacity projection:** Scenario based 'what-if' analysis and simulation modeling will help in validating future projection and help in understanding the impact of all planned IMAC activities on data center availability, energy efficiency, cost and SOPs. It will help prevent over/under-provisioning

GFS Crane DCIM: *How it helps in Data Center Capacity Planning*

1. **Base-lining :** GFS Crane, through real-time monitoring of critical data center parameters like CPU, memory utilization of servers and power, space utilization in racks, finds out how data center resources are currently being utilized by the business and how much capacity remains to be used.
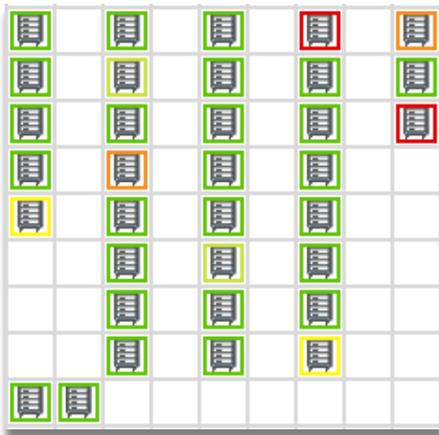

Base-lining IT resource usage

Base-lining space utilization

Identifying retirement & repurpose candidates

Base-lining power usage by racks

2. **Free-up stranded capacity:** GFS Crane identifies 'orphaned' servers that can be retired thereby freeing up stranded power and space capacities. It identifies under-performing servers that can be repurposed or replaced by more efficient devices thereby creating extra capacity within the existing facility. The software provides visibility of racks which has sufficient power and space capacities to accommodate new IT devices.
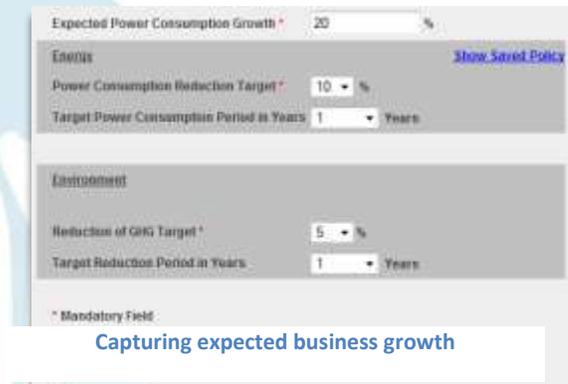
3. **Project future capacity requirement:** GFS Crane enables the user to capture the estimated rise in energy consumption due to business growth and checks whether the estimated growth can be accommodated within the current available capacities of the data center or the extra capacity that needs to be provisioned to accommodate the growth.

Capturing expected business growth

Racks with power & space capacity

4. **Validate projected capacity requirements:** GFS Crane comes with advanced 'what-if' analysis and simulation techniques that use the in-built GFS Manufacturer Repository, (a multi-vendor database of different equipment categories), to simulate new device addition in the data center and validate the impact on power and space usage. The 'auto-provisioning' feature

of the software helps in identifying the best rack or the best row in the data center for provisioning devices under planned procurement.

'What-if' analysis using GFS Crane MR

'What-if' analysis using GFS Crane MR

The powerful Capacity Planning features of GFS Crane DCIM improves the operational efficiency of the data center manager by enabling her to forecast future capacity requirements accurately based on real-time data, historical trends as well as benchmarked data from the Manufacturer Repository. This greatly reduces chances of outages or wasted capacity due to wrong provisioning.

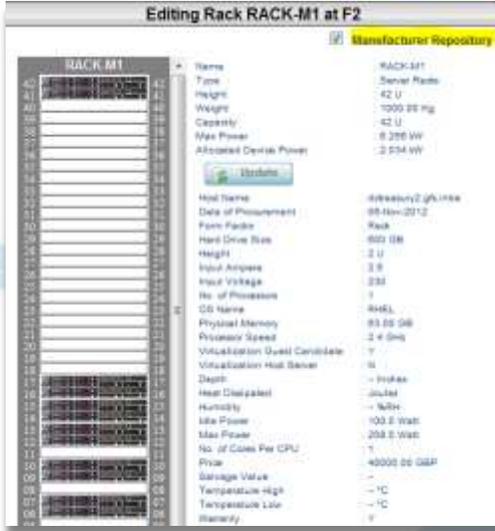For a live demonstration of GFS Crane, write to:

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GreenField Software's Mission is to help Data Centers control capital expenditures, reduce operating expenses and mitigate the risks of Data Center failures.

Besides DCIM Software, GFS offers Data Center Advisory Services in the areas of best practices, capacity planning, energy efficiency and business continuity of data centers.