

TotalCAE

Private and Public Cloud for CAE Simulation: Benefits and Challenges



Antonio Guglielmetti
antonio@totalcae.com

<http://www.totalcae.com/learn/>

About TotalCAE – The IT Department for Engineers



- Dedicated to managing CAE HPC environments.
- On-premise and in the cloud.
- Over 20 years of HPC experience.
- Support and manage Linux and all FEA/CFD engineering applications.
- One-stop for all engineering HPC needs.
- Provide on-premise hardware and cloud solutions to reduce simulation turnaround time.

TotalCAE Full Managed Private/Public Cloud and Simulation Applications



Case Studies



Case study

Customer Challenges



- Current on-premise solution was failing too often.
- Was not considered a reliable tool.
- Desire to standardize HPC environment.
- Required CFD/FEA application support across multiple on-premise sites and cloud.
- Additional resources required for unexpected new project.
- A solution to reduce the turnaround time on simulation jobs.







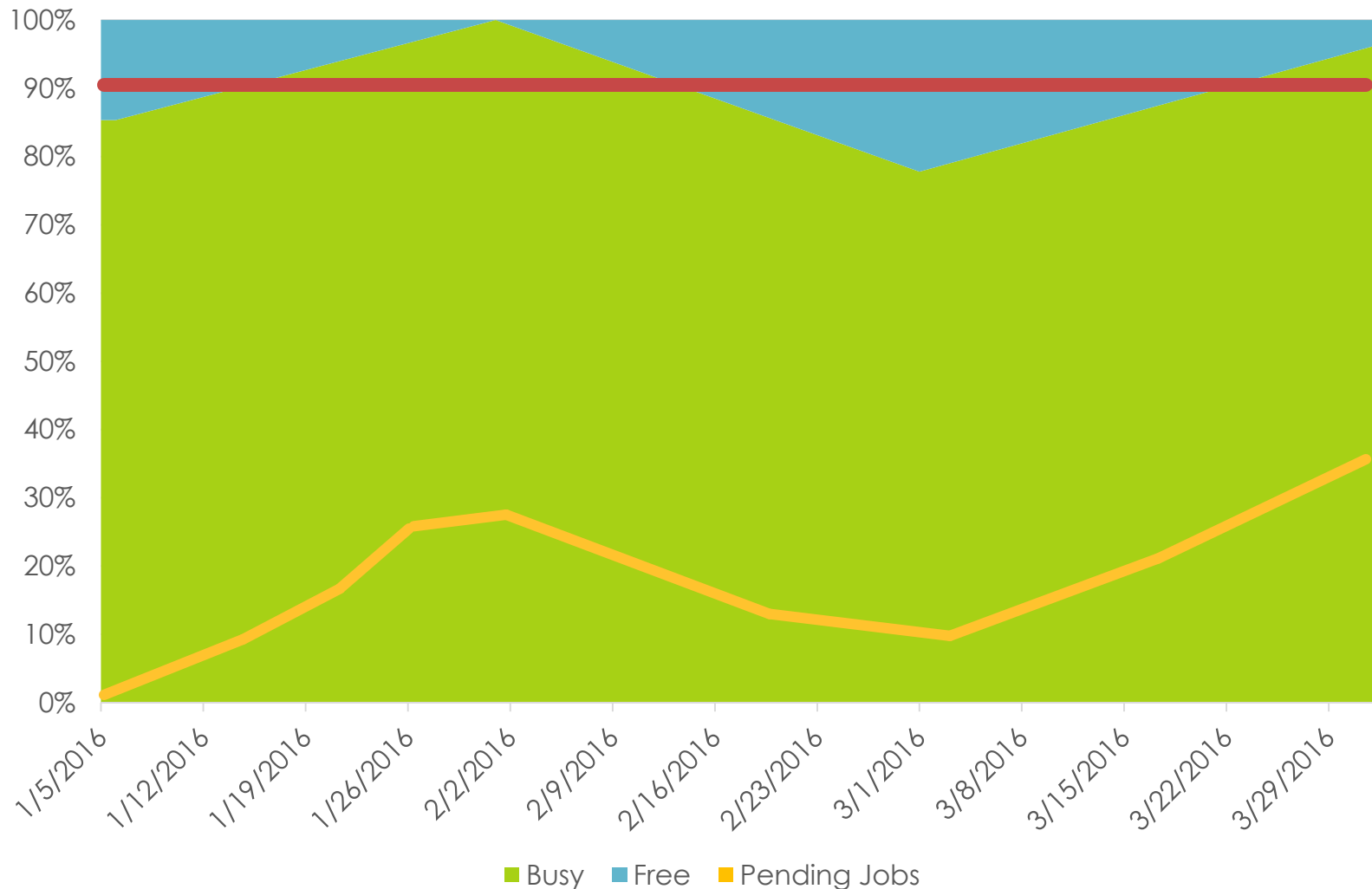
Optimizing Existing CAE Cluster



Utilization is a Major Factor in Choosing On-Premise or Cloud HPC



HPC System Utilization



Solution: TotalCAE Public Cloud



- Immediate Capacity.
 - Cloud cluster turned on in minutes.
- User had identical workflow.
 - Utilized TotalCAE cloud web portal, nothing new to learn.
- Customer won the multi-year contract
 - Expanded on-premise cluster.

“Per core hour” sounds cheap



**Five Nodes (40 cores) at 6 Cents per Core
Hour = \$300,000 in Three Years**

Saved \$250,000 in compute time

HPC Strategy: Hybrid Scenario



- On-premise is for your base/constant utilization, don't need to buy for peak.
- Utilize cloud for medium term peak usage, variable project, special short term project.

Client Solution and Results



- Optimized CFD/FEA HPC Cluster to enable 99.99% availability of critical resource.
- Increased client agility, secured additional public cloud resources on-demand.
- Engineer didn't need to learn anything new to use the public cloud.
- TotalCAE reduced turnaround time versus workstations.
- Faster time to market for new products.

Learn More



- **Are your simulation runtimes taking too long?**
- **Are you receiving the engineering IT support needed?**
- **Do you want a single throat to choke for your engineering HPC needs?**
- **<http://www.totalcae.com/learn/>**