Adaptive COMPUTING
On-Demand Data Center™

How to Save Time and Costs by Using ODDC Cloud Bursting

OVERVIEW

Adaptive Computing's On-Demand Data Center (ODDC) provides an easy avenue for cloud adoption and the creation of independent computing environments within any or all of the major cloud providers. Cloud systems can be intelligently managed and automated, delivering rapid scalability and additional resources on-demand.

This study will show how the cloud bursting functionality within the ODDC provides significant economic advantages and helps to accelerate time to results.

CLOUD BURSTING

Cloud Bursting gives organizations the ability to swiftly spin up and spin down additional compute in the cloud when on-premise infrastructure resources are not sufficient to run workloads in a timely manner. The ODDC can be triggered to 'burst' to the Cloud on-demand or by the size of the job backlog.

When 'bursting' workload backlog to the Cloud, all required resources are automatically deployed on an 'as needed' basis. After the jobs have completed, the cloud resources will be automatically deprovisioned from the cloud provider, ensuring you only pay for what is being used when applications are running.

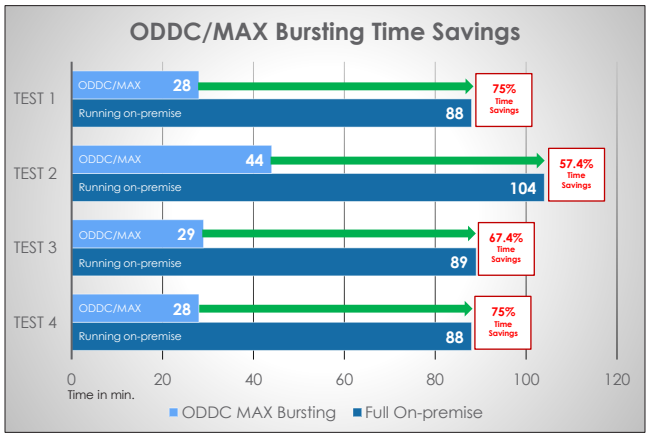
SAVE TIME USING MAX BURSTING

The ODDC Bursting Service can be turned on or off and set to different thresholds, depending on the desired result.

When the MAX Bursting functionality is enabled, the ODDC will deploy the exact amount of compute nodes required to complete the entire queued workload immediately and run every job in the queue simultaneously. Therefore, you will complete your workload in the shortest possible time. This eliminates long wait times in job queues and gets faster results for your end users.

In the following internal benchmark example, as illustrated in the graph below, specific jobs are run on-premise at full capacity and the same jobs are run in the ODDC with MAX bursting enabled. When the jobs are submitted to the on-premise job queue, they will stay in the queue and run when the on-premise resources become available causing potentially excessive wait times and delays in getting results.

When the jobs are run with the ODDC and the MAX Bursting functionality is enabled, the ODDC will deploy the exact number of nodes required to complete every in the job queue immediately. Running every job in the queue simultaneously will complete your workload in the shortest possible time. This will add up to a substantial time savings as shown in the graph below.



CONTROL CLOUD COSTS

Using the On-Demand Data Center ensures that you pay as little as possible for cloud usage by shutting down cloud resources automatically when not in use. Spin up temporary or persistent data center infrastructure resources quickly, inexpensively, and on-demand. This study will show that, on average, the ODDC reduces public cloud usage hours by over 75%.

IDLE PURGE VS. PERSISTENT

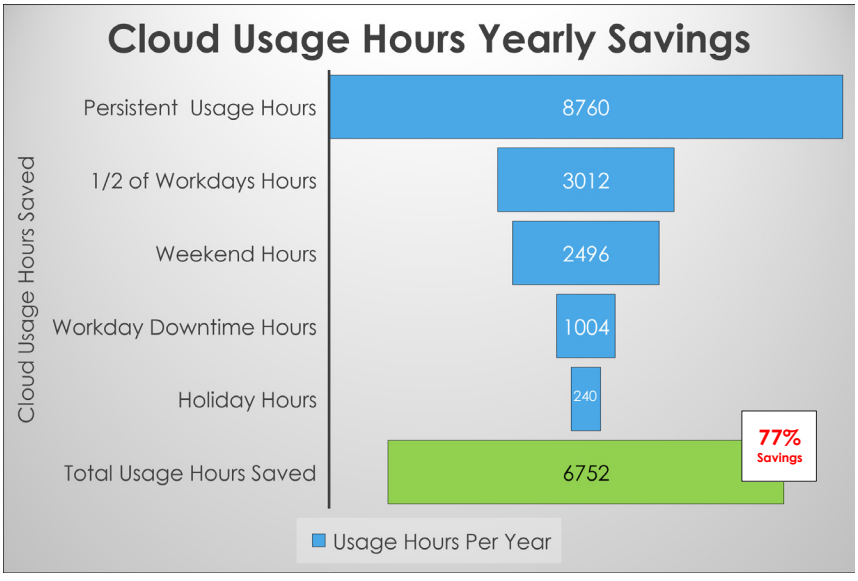
When building and deploying clusters in the cloud with the ODDC, you can choose to spin up all or a portion of the instances in a cluster that remains persistent, or constant, as an on-premise data center would be. The ODDC can be set to automate the active state of the cloud instances (compute nodes) with a feature called Idle Purge. This feature will turn off all active cloud nodes when not in use after a set time.

There are several ways to cut down the operational time of active compute nodes and control your cloud costs. When initially setting up persistent data center resources in the cloud, your compute nodes will be running 24 hours a day and you will be charged for cloud usage the entire 24 hours while the nodes are deployed.

The ODDC Idle Purge and Pause features can then be set to shut down the cloud nodes when not in use after remaining idle for a certain time period.

CLOUD COMPUTE NODES IN THE DOWN STATE

When active cloud compute nodes are turned off due to the completion of a workload or inactivity, it can add up to extraordinary savings on cloud costs. In the persistent data center scenario, with the cloud resources on 24 hours per day, your cloud provider will charge you for 8760 hours per year. When using the ODDC with Idle Purge, the 8760 annual hours of cloud usage can be reduced by 6752 hours a year for a 77% overall reduction of cloud usage hours. As shown in the chart below, deductions can be taken from the persistent data center total hours based on the time periods where the ODDC is used to shut down cloud resources when not in use.



About Adaptive Computing

Adaptive Computing is a trusted leader in High-Performance Computing and Enterprise Software, providing advanced applications and tools to some of the world's largest computing installations. Our experience is earned from more than a decade of solving IT management challenges in the most scale-intensive and complex environments in the world and as pioneers in the high-performance computing (HPC) and cloud computing revolutions. Our mission is to help organizations to enhance performance, improve efficiency and reduce costs.

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