

Leveraging Azure IaaS to provide automated on-demand performance for Advanced Computing

The Customer:

A leading provider of advanced, high-performance process control metrology and inspection systems used primarily in the fabrication of semiconductors and other solid-state devices, such as data storage components and discrettes including high-brightness LEDs and power management components.

The Challenge:

The client was looking for Cloud based options that would provide on-demand performance for advanced floating point computations. The client wanted the solution required to be automated, scalable, cost Effective and user friendly.

The Solution:

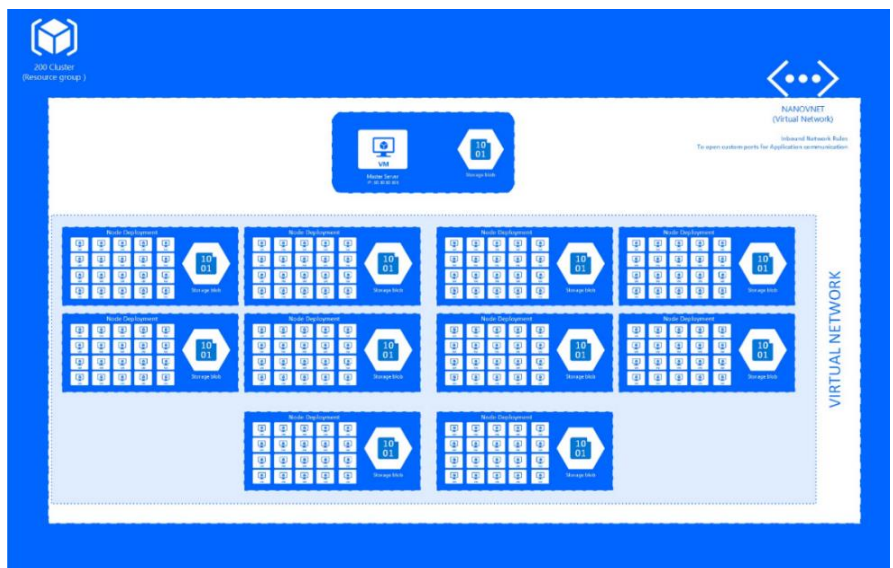
WinWire used **Azure Resource Manager Templates & Azure PowerShell** and automated the provisioning & de-provisioning of servers based on multiple parameters such as the type of tests being run and requirement of compute power.

By enabling **Azure diagnostics**, the customer can seamlessly monitor each server's performance, which helps them to proactively fine tune the server resources for optimal performance. Subsequently, they achieved better results due to increased efficiency and reduced implementation cost.

The implemented scripts & templates are scalable from as low as **20 servers to 200 servers** without any additional configuration changes, and have cut down the overall implementation time from "few days to few hours" using **Azure Resource Manager templates**.

- Generalized Azure VMs to generate images that would be used for mass deployment
- Used ARM based templates for deployment of 100+ preconfigured HPC Virtual machines
- Implemented Azure Runbook to Power ON/Down 100+ Virtual machines instantaneously or based on schedule defined by business
- Implemented scripts to push custom application settings remotely into 200 Node machines, saving upto 10 minutes per server
- Enabled Azure Diagnostics to capture critical performance data to measure application & server utilization

Technologies Used: Azure Resource Manager, Azure PowerShell Workflows, ARM Templates



The Benefits:

- Automation of mundane tasks have helped in achieving Increased efficiency and reduced implementation cost.
- Reduced server provisioning time from days to hours, thus enabling higher availability of compute to run high compute Batch jobs.
- Enabled the customer to scale from 20 to 200 machines in an hour's time to run complex high compute Batch Jobs
- Enabled customer's development team to perform testing of their software on 200 node cluster with diagnostics, which captured critical performance data using azure diagnostics that would be helpful in fine tuning application performance.
- Reduced overall Job compute time to 50% thus saving time and cost, which they can pass on in turn to their customers