

Nutanix Cloud Clusters (NC2) on AWS https://stanislas.io update : 02/02/2024

Nutanix

- Founded on September 23, 2009
 - IPO in September 2016 (NASDAQ:NTNX)
 - 6,450 employees (2022)
- Nutanix marketed its products as "hyperconverged infrastructure"
 - Leader in Gartner Magic Quadrant
 - More than 24000 customers
- As of December 2020 Nutanix founder Dheeraj Pandey handed over the CEO position to Rajiv Ramaswami after an investment from Bain Capital.

Nutanix Mission

- Make hybrid multicloud infinitely simple, open and cost effective
 - with
 - One platform to run apps with rich dataservices anywhere
 - Your Apps
 - Your Infrastructure
 - Your Cloud
- Allowing to manage applications and infrastructure in a private cloud and AWS

What is NC2 ?

- A hybrid cloud solution that operates as a single cloud Nutanix Cloud Platform (NCP)
 - Unified management experience - cluster management
 - Uses cases & supported scenarios
 - Disaster recovery
 - On-demand elasticity / bursting
 - Lift and shift
- Same Nutanix software and licenses across your on-premises cluster and AWS
 - Example : Citrix
 - The fast way :)
- In AWS using NC2, you can operate the cluster in the same manner as you operate your on-premises Nutanix cluster
 - Provisioning and cluster lifecycle are driven by the NC2 portal (aka Multi-Cloud Manager)
 - Cluster management is done through Prism Central and Prism Element
- NC2 nodes runs
 - Nutanix Acropolis Operating System (AOS)
 - Nutanix Acropolis Hypervisor (AHV)
 - Based on Open source KVM

AWS EC2 Metal Instance

- on
 - i4i.metal
 - m6id.metal
 - m5d.metal
 - i3.metal
 - z1d.metal
 - g4dn.metal
- NC2 on AWS supports combining heterogenous node types in a cluster
 - You can deploy a cluster of one node type and then expand later
 - Supported Instance Type Combinations
 - For production, you must always maintain at least three nodes of the original type

Cluster size (number of nodes)

- Minimum : 3 bare metal nodes per cluster for production
 - 1 node cluster is possible but NOT for production
- Maximum of 28 bare metal nodes per cluster
- Placement Policy
 - Up to 7 partition / placement groups
 - One Nutanix cluster can't span different Availability Zones in the same Region
 - All NC2 cluster deployments are single AZ deployments
 - You can have multiple Nutanix clusters replicating between each other in different zones or Regions -> Nutanix recommendation
 - Plan DR on-prem or on a second cluster

Storage

- Core / Active
 - Cluster Protect
 - Integrate backup
 - AOS snapshot -> AWS S3
 - AWS VPC Endpoints for S3
- Hibernate & Resume Cluster
 - Allows to persist the data while spinning down the EC2 compute instances
 - When a cluster is hibernated, the data will be backed up from the cluster to S3
 - Approximately 1.5 hours per 10 TB of data to hydrate the cluster once the nodes are available

Network Architecture

- contains
 - Nutanix Nodes (EC2 Instance)
 - Nutanix AHV
 - Controller Virtual Machine (CVM)
 - User VM
 - AWS Elastic Network Interface
 - 14 max ENI / node
 - 50 IP addresses
 - 49 for User VM
- AWS VPC
 - Subnets
 - One Private Management Subnet
 - For internal cluster management (communication between AHV and CVM...)
 - In the same AZ as UVM subnet(s)
 - One Public Subnet
 - Internet Gateway
 - NAT Gateway
 - Provides external connectivity to the NC2 portal
 - One or more private subnets for User VM traffic (depends on your needs)
 - WAN Connection
 - VPN Site to Site
 - Direct Connect

Cost Analysis

NCM Cost Governance

- Software/Licenses
 - Pay as you Go
 - Customer use existing Nutanix Licences to cover its NC2 usage first (BYOL)
 - Nutanix Direct Subscription for NC2 on AWS
 - Billed by Nutanix every month
 - Commitment
 - Multi-year license contract
 - Cloud Marketplace subscription for NC2 on AWS
 - May be part of Customer AWS Enterprise Discount Program (EDP)
 - Seller Private Offer (SPO)
 - Discounted private offer Channel Partner Private Offer (CPPO)
- AWS Resources
 - Windows Licences (If Windows VMs are present)
 - EC2 Metal Instances
 - S3
 - EBS
 - Additional AWS services

Pricing

- Billed by AWS
 - Can use the AWS Enterprise Discount Program (EDP)
 - EC2 Metal Instances
 - Storage
 - Network
 - Additional AWS services
- Additional AWS services
 - S3
 - EBS
 - Network
 - NAT Gateway
- Free Trial
 - 30 days
 - For Nutanix software usage
 - Connectivity with on premises to offer you an extension on your expired trial
- Support
 - Nutanix (for software-related issues)
 - AWS (for infrastructure-related issues)
- Limitations
 - Known issues
- Documentation

Management interfaces

- Provisioning
 - Nutanix Clusters Portal (NC2/MCM)
- Nutanix Management
 - Nutanix Prism Element console
 - Nutanix Prism Central (PC) console
- AWS Management
 - AWS Console
- API

Deployment Workflow

- Requirements
 - AWS Account Requirements
 - My Nutanix Account
 - Cluster Protect Requirements
 - Networking Requirements
- AWS Components Installed

Supported regions