

**Nutanix Cloud Clusters (NC2) on AWS**  
<https://stanislas.io>  
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**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
- In 2021, the company transitioned from making hardware appliances to focusing on subscription software
  - More than 24000 customers

**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

**What is it ?**

- 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
- 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
    - Plan DR on-prem or on a second cluster
    - > Nutanix recommendation

**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 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
      - 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**

**Pricing**

- 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
    - Billed by AWS
      - Can use the AWS Enterprise Discount Program (EDP)
    - Additional AWS services
      - S3
      - EBS
      - Storage
      - Network
        - NAT Gateway
- Free Trial
  - For Nutanix software usage
  - 30 days
  - Connectivity with on premises
  - If needed, the NC2 team can work with you during this period 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**