Secure Computing for Defence R&D Establishment: Accops + Nutanix for Graphics VDI and Internet Isolation

CASE STUDY

About the Client

The organisation, a government defence R&D establishment, operates from Hyderabad. This unit supports internal research and testing activities for high-performance defence-grade technologies. The user base comprises scientists, R&D personnel, and senior technical officials who require secure, high-performance computing environments with access to graphics-heavy applications and controlled internet zones.

INDUSTRY	**DEFENCE R&D**
PRODUCTS/ SOLUTION DEPLOYED	**ACCOPS ZTNA ACCESS GATEWAY, ACCOPS VDI, ACCOPS INTERNET ISOLATION LAYER, & NUTANIX HCI**

Existing Setup

Before engaging with Accops and Nutanix, the defence R&D establishment was running its infrastructure on a Dell + VMware stack. Although stable, the setup lacked the flexibility and cost-efficiency needed for future growth. The pricing model for expanding the VMware-based setup was unfavourable and did not align with the organisation's long-term procurement and budget structures.

The organisation planned to transition away from a traditional three-tier architecture to a hyperconverged model. Alongside infrastructure changes, it sought a platform that could support two specific workloads:

1. **Graphics Virtual Desktops** for simulation and modelling tools like Ansys and MATLAB
2. **Secure Internet Zones** for controlled access to external research material by internal users

Transition to Accops + Nutanix

The team at the establishment, in consultation with Accops and Nutanix, designed a solution architecture that addressed both core use cases while aligning with the Ministry of Electronics and Information Technology's (MeitY) preferences for domestic and made-in-India solutions.

Deployment Overview

- **Accops HyWorks (VDI)** was deployed to provide high-performance virtual desktops for scientists working on graphics applications. The intent was to deliver GPU-powered desktop sessions for modelling and simulations.
- **Accops HySecure (ZTNA Gateway)** was configured to enable secure network segmentation and role-based access for different user groups.
- **Internet Isolation Zone** was implemented using Accops' client-side containerisation and redirection policies. This allowed officials to access the Internet without exposing the core R&D environment to external threats.
- **Linux Compatibility Workstreams** were initiated to support internal endpoint devices in line with the organisation's standardisation around open-source platforms.
- **Nutanix HCI** was selected to replace the existing three-tier system, simplifying infrastructure management while offering cost stability.

The solution was implemented across 200 users—split evenly between graphics workloads and controlled internet access.

Use Case Summary

- **Graphics VDI for R&D:**
  Scientists engaged in simulations, component-level design, and stress testing rely on resource-intensive software such as MATLAB and Ansys. These tools require GPU acceleration and dedicated memory resources. Instead of physical workstations, the organisation opted for a virtual desktop model to improve maintenance and standardisation.
- **Internet Isolation for Research:**
  Many R&D personnel and senior officials require limited access to academic journals, technical documentation, and global publications hosted on the open internet. Traditional firewall-based methods were insufficient to enforce isolation. The Accops platform was used to build a browser-based access layer that restricts download, screen capture, peripheral usage, and cross-network bridging.

Benefits:

Benefit	Details
Procurement Alignment	The combined Accops + Nutanix solution aligned well with MII (Make in India) and MeitY procurement directives, aiding project approvals.
Unified Platform	Both internet isolation and graphics workloads are managed via a single infrastructure and policy framework, reducing fragmentation.
Improved Security Controls	Internet usage for research purposes now takes place within a monitored, containerised zone without putting core systems at risk.
Simplified Infrastructure	Transition to Nutanix HCI removed the dependency on multi-tier legacy setups and helped centralise resource allocation.
Vendor Independence	Moving away from a VMware-centric model helped the organisation lower annual recurring charges tied to global OEM licensing structures.

Summary

The deployment of the Accops and Nutanix stack by the establishment is a strong example of how to implement secure, policy-based computing in a government R&D setting. The core platform now supports both GPU-based workloads and controlled internet access on a single, manageable platform. The environment has stabilised for core access, successfully meeting the establishment's needs for data segregation and policy compliance.

The environment is already delivering operational control, reduced cost overhead, and compliance readiness.