Unified Platform Operations from Edge to Core to Cloud

Applications today exist across an increasingly distributed estate which includes public clouds, datacenters, and edge locations like retail stores, distribution hubs, or manufacturing centers. IT and Platform teams need to simplify development and deployment across these distributed options.

MORPHEUS

"Digital business requires an agile and real-time front office at the 'edge,' where customers, employees, assets and equipment interact with each other and the enterprise. Nearly every enterprise will incorporate edge computing [with their cloud landscape] by 2025." - Gartner

New apps are developed centrally and then deployed at the edge for production use

More and more workloads are deployed outside of core datacenters in remote and branch offices or warehouse locations. Often, that's where data is gathered and processed for Finance, Manufacturing, Public Sector, and other industries.

While a lot of focus has been spent on orchestrating private and public cloud workloads, these edge clouds bring a unique set of needs and challenges including resource and skill limitations, need for centralized management, and ability to remotely access and manage apps to name a few.

What's required to manage the end-to-end app lifecycle across distributed clouds?

Cloud computing is defined by the ability to provision and manage applications using self-service, without requiring manual steps and traditional IT overhead.

- **Issue: Gap between Dev and Ops**
  Developing apps that power transformation at the edge starts with improving the agility and efficiency of core IT and platform teams. Enabling developers to quickly provision new VM and Container based workloads while still staying within security and finance guardrails – IaaS, PaaS, DBaaS, etc.
- **Issue: Distributed automation at scale**
  Once apps are ready for edge production, IT needs simple and repeatable processeses for patching, data transfer, app updates, and other remotely executed tasks. Organizations may have dozens to thousands of edge sites each with apps that need to be managed at scale – PoS, Inventory, Analytics, etc.

A unified platform to develop, deploy, and manage apps from cloud to core to edge.

Solution: Enable effecient app modernization:
Morpheus was born to enable consistent and well-governed developer self-service for application provisioning and lifecycle management. IT Ops can quickly enable on-prem private clouds and centralize public cloud access to improve IT efficiency, Security and Finance teams get to set guardrails to keep everybody in their lane, and Developers gain access a customizable catalog of app services that they can integrate into their projects and CI/CD pipelines.

- Agnostic integration with VMware, Nutanix, KVM, Kubernetes, AWS, Azure, GCP, and other clouds, as well as dozens of surrounding technologies.
- Self-service provisioning access via customizable GUI, full API and CLI, CI/CD pipeline integration, Terraform Provider, or ITSM like ServiceNow.
- Flexible catalog builder with items ranging from a basic VM/OS, PaaS application instances, or full multi-tier and multi-platform app stacks.
- Lifecycle management to trigger automation tasks and workflows every time machines are started, stopped, reconfigured, torn down, etc.
- Consolidated reporting on usage and cost for chargeback and showback plus a built-in optimization engine to reduce cloud costs.

Solution: Deploy and manage apps at the edge

Extend your cloud estate to the distributed edge by connecting Morpheus to small hypervisors and container clusters running edge applications at remote sites. Enable lifecycle management of edge applications, remote execution of automation tasks, and monitoring of machines out at the edge.

- Distributed architecture to simplify network connectivity for hub and spoke environments without requiring VPN connectivity.
- Dynamic automation to trigger Ansible, Chef, Python, PowerShell, and other tasks against hundreds or thousands of remote machines.
- Remote console access so central IT can access machines at remote sites, run scripts, and troubleshoot from afar with limited local IT.

Morpheus + Edge in the real world

Morpheus has large retailers, manufacturing entities, financial services customers, and service providers who have improved IT agility and effeciency by extending their hybrid cloud control plane to the distributed edge.

- Sporting goods retailer replaced VMware vRA in their core private cloud plus used Morpheus to deploy back office (BKO) services and point of sale (POS) apps for in-store locations, lowering license costs and reducing FTE resource load.
- A global communications provider leveraged Morpheus to automate network segment provisioning and near-edge cluster deployments for Kubernetes as part of supporting a global live stream for millions of viewers.
- Large home goods retailer is powering 2000+ remote sites as edge clouds with each store having a 3-node HCI cluster. Morpheus provides centralized deployment and patching plus monitoring for their managed services partner.
- Manufacturing company historically mailed physical USB keys to each site and deployed IT locally to manually update VMs. With Morpheus automation, they eliminate travel expense, accellerate rollout, and improve security.

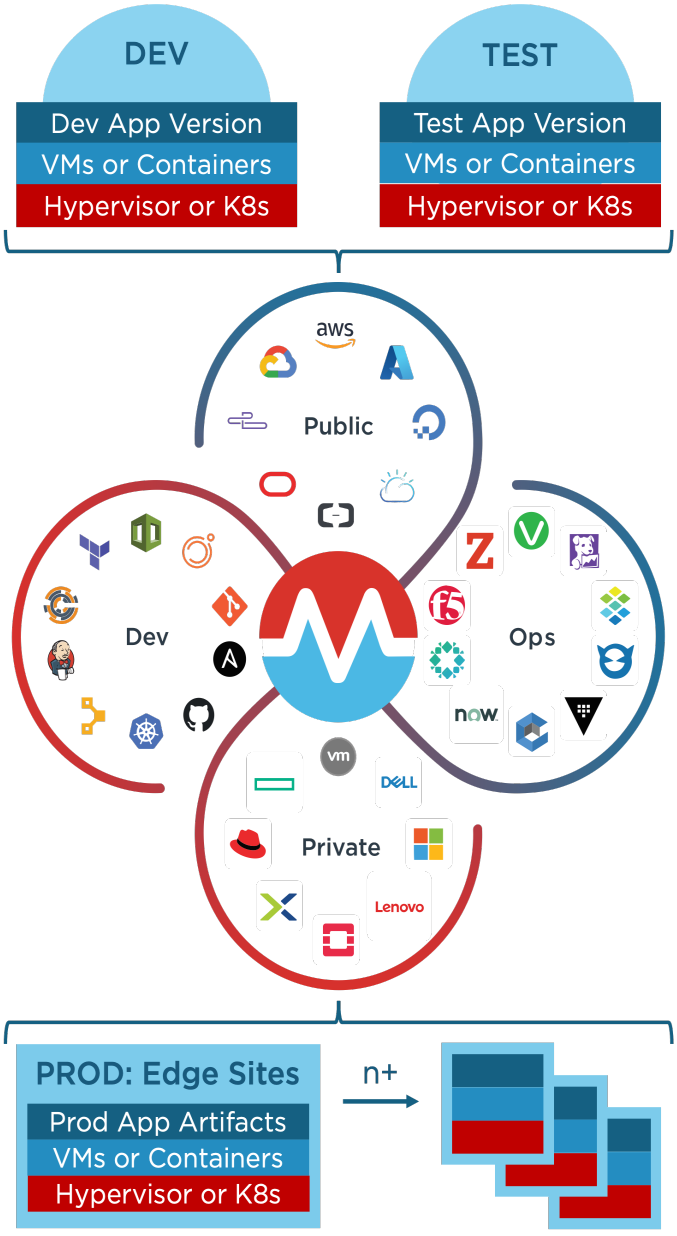

Figure 1: Conceptual representation of the Morpheus platform and integrations to provision workloads from Dev to Test centrally and then extend to Prod at edge sites.

Quickly integrate your existing tools

Dozens of ready to use codeless integrations plus an extensible plugin framework enable endless possibilities for service orchestration.

- **Hypervisors:** VMware, Nutanix, KVM, MSFT, ++
- **Clouds:** AWS, Azure, GCP, IBM, Oracle, ++
- **Identity:** Active Directory, SAML, Okta, ++
- **Network:** NSX, ACI, Infoblox, Bluecat, ++
- **Load balancers:** F5, A10, Citrix, ALB, ++
- **Backup:** Veeam, Commvault, Zerto, ++
- **ITSM:** ServiceNow, Cherwell, BMC, ++

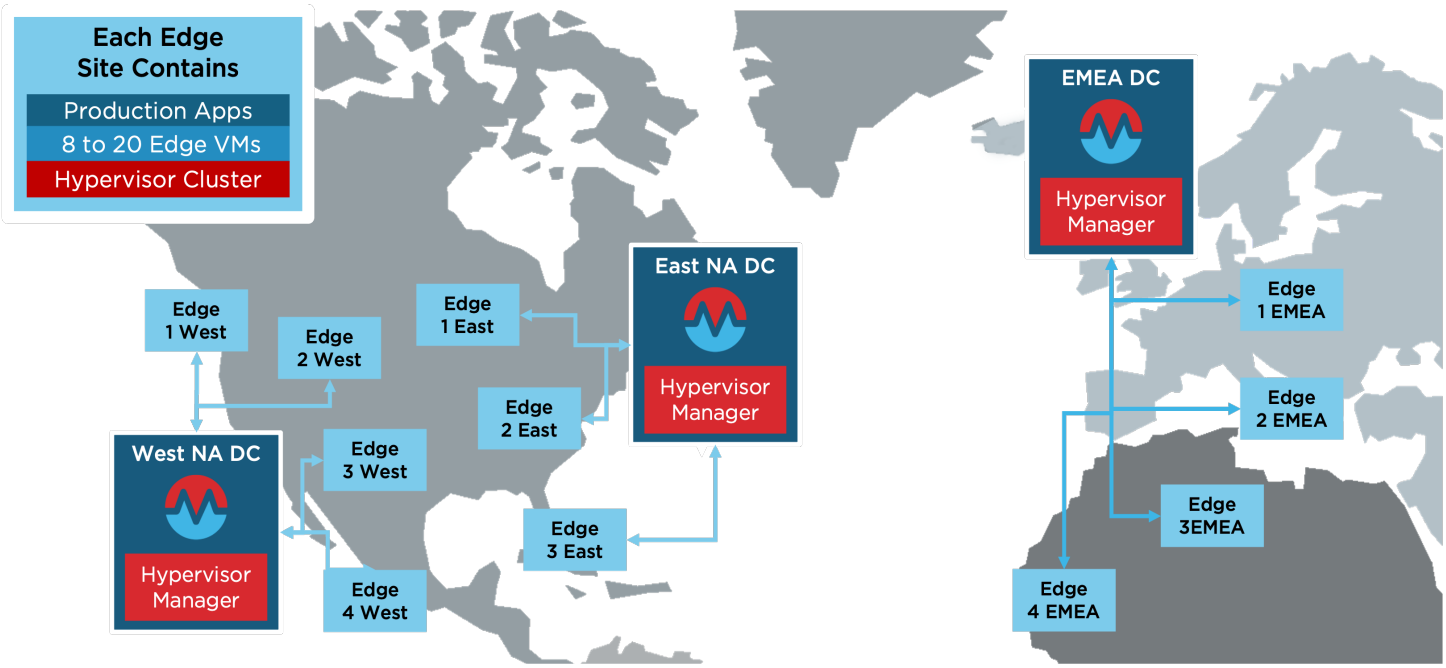

Figure 2: Example distributed edge cloud setup with 3 regional DC's each managing multiple VM-based edge clouds

"By 2027, 20% of large enterprises will have deployed an edge management and orchestration (EMO) solution, compared with fewer than 1% in 2023." - Gartner

Excerpt from Gartner Predicts 2024: Edge Computing Technologies

Managing and orchestrating a large number of distributed edge computing nodes with zero touch is a critical edge requirement.

As edge computing expands, platforms that enable edge extensibility beyond a specific use case will be necessary.

To enable edge agility, enterprises require the ability to deploy new applications and capabilities rapidly.

Ultimately, enterprises will evolve to use platforms that have capabilities such as.

- Fleet monitoring, management and automated operations
- Edge app. deployment and updates
- Edge orchestration
- Edge software platforms and platform as a service (PaaS)
- Edge security technologies

Gartner Recommendations:

- Work with business units to understand future edge computing workloads, and choose an EMO solution that supports that kind of extensibility.
- Ensure that the EMO solution is effective at the volume and footprint scale you envision, in the geographies you require and with differences in connectivity.
- Evaluate the long-term viability of the EMO solution, understand the state of the partner ecosystem and ensure that the EMO solution integrates well with your chosen hyperscaler provider.
- Check references for real-world deployments that are similar to yours, with equivalent vertical industry requirements.

Learn more and get a demo at **www.morpheusdata.com**