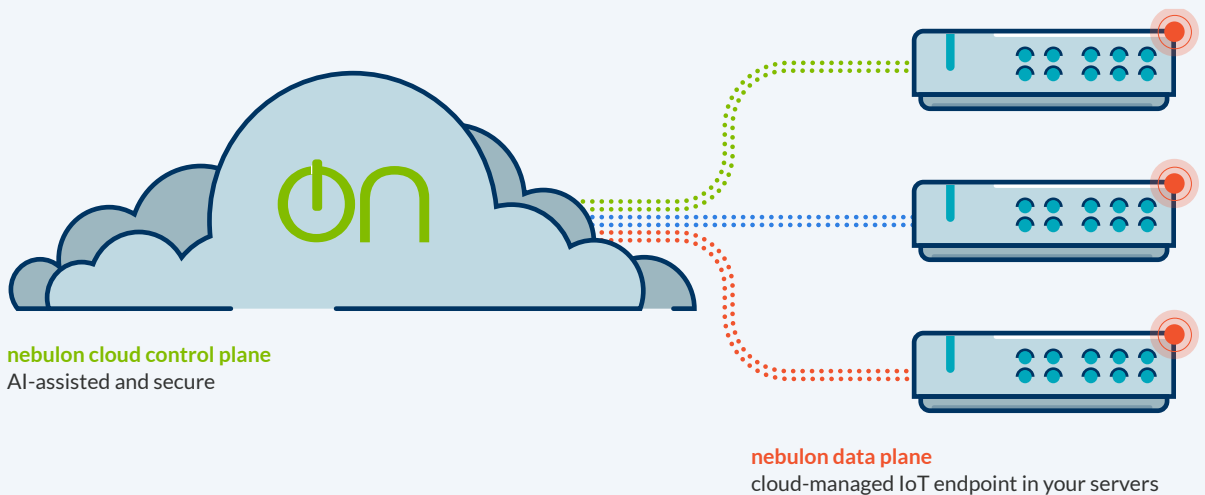


DATASHEET

# smartInfrastructure 101

# nebulon **smart**Infrastructure

nebulon smartInfrastructure is server-embedded, infrastructure software delivered as-a-service, which brings the public cloud experience on-prem from core to edge for any application—containerized, virtualized or bare metal—and enables self-service infrastructure provisioning, infrastructure management-as-a-service and enterprise-class shared and local data services.



nebulon smartInfrastructure is made up of two components

## **nebulon ON**

cloud-based control plane

## **embedded infrastructure**

IoT endpoints (nebulon SPU's) embedded server-based on-prem data plane



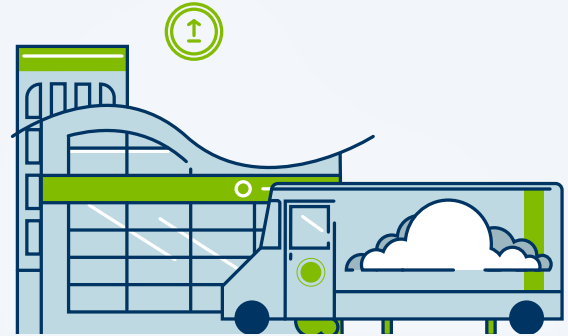
# nebulon ON

move the control plane to the cloud and enjoy simple, secure, hyperscale cloud-based administration

## infrastructure management as-a-service

### WITH CLOUD-DELIVERED SOFTWARE

Lengthy and complex software update procedures are an artifact of the past. Make use of new features and enhancements instantly through cloud-delivered software updates “as-a-service” – an experience that has yet to become mainstream in on-prem enterprise applications. Also, with AIOps, enjoy predictive maintenance and simplified troubleshooting. Plus get centralized server, storage, and application visibility that enables the necessary tooling of real-time detection of latent issues across your stack and the facilities for corrective measures.



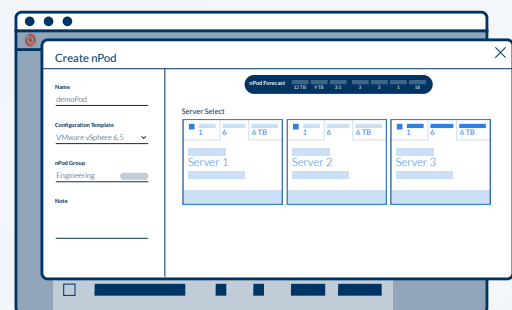
## API-driven automation

### AND UNIVERSAL INSIGHTS AT YOUR FINGERTIPS

Fully automate your entire IT infrastructure at scale with a single API endpoint, direct access to AIOps functions and a consistent API version across all services. Plus with global insights, unlock unprecedented opportunities for DevOps teams to control and query their servers, storage, and applications.

## SELF-SERVICE INFRASTRUCTURE PROVISIONING from a catalog that provides curated services for your application clusters

Lengthy and complex software update procedures are an artifact of the past. Make use of new features and enhancements instantly through cloud-delivered software updates “as-a-service” – an experience that has yet to become mainstream in on-prem enterprise applications. Also, with AIOps, enjoy predictive maintenance and simplified troubleshooting. Plus get centralized server, storage, and application visibility that enables the necessary tooling of real-time detection of latent issues across your stack and the facilities for corrective measures.



# nebulon ON product features

## self-service infrastructure provisioning



### template-based provisioning

Application templates, tailored to the needs of different applications leveraging AI and industry best-practices allows rapid, repeatable and reliable self-service infrastructure provisioning for application owners without the need for infrastructure expertise.

### application integrated

VAAI and VMware® vCenter® integration, Kubernetes CSI Driver and other integrations are provided for seamless integration and operation from the application.

## one secure management endpoint in the cloud



### fully programmable

An API with just a single-endpoint for the entire infrastructure allows deep application integration and automation opportunities for self-service infrastructure management, without worrying about API versions, feature compatibility, or infrastructure scale.

### cloud scalability

The cloud control plane scales autonomously with your infrastructure so data reporting and orchestration across geographies, servers, and applications with thousand nodes is as fast and simple as managing a single node.

### always up-to-date

Control plane as-a-service provides new capabilities autonomously without users running patches for the cloud, and the lightweight data plane makes updates to SPUs quick and non-disruptive.

### always secure

Management isolation, auditing, role-based access control (RBAC), and detailed reporting makes cloud-management comparable as an on-prem management solution, but with the benefits of the cloud.

## not just artificial intelligence for IT operations



### visibility & control

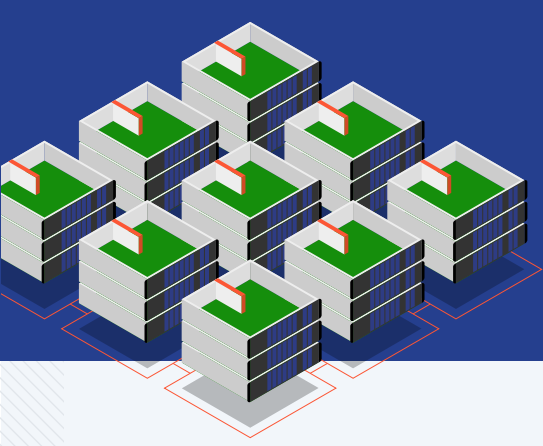
Advanced analytics, alerts, reports are available in the same, cloud-based service that allows infrastructure administration so users can take immediate action on predicted issues.

### actionable insights

Continuous monitoring and analytics provides actionable infrastructure recommendations to optimize performance and utilization of infrastructure.

### machine learning

Collective, anonymous cross-stack telemetry assists in anticipating issues and allows users to prevent outages or service disruption.

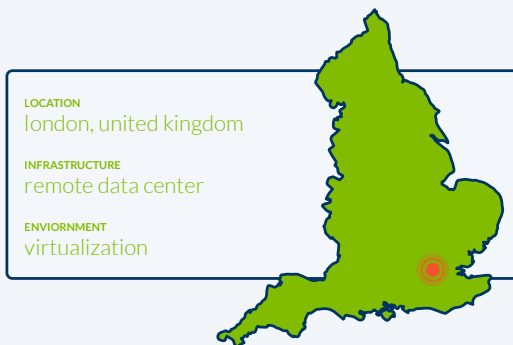


# embedded infrastructure

A new class of server-based infrastructure: a data plane made up of cloud-managed, embedded IoT endpoints in your application server

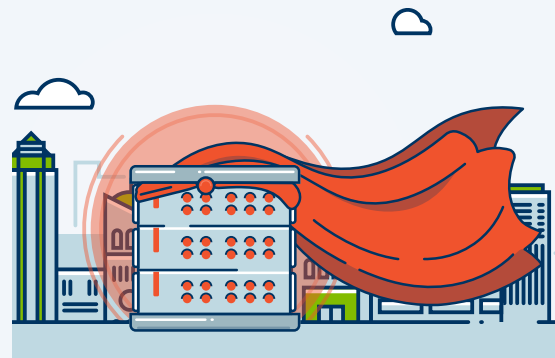
## BENEFIT FROM COMPLETE DATA SERVICES OFFLOAD anywhere from core to edge

Implemented on a dedicated card that functions as an IoT endpoint, the nebula SPU is embedded in your favorite vendors' application server. This embedded infrastructure solution has none of the drawbacks of Hyper-converged infrastructure—no server CPU, memory or networking resource overhead and supports any application type, containerized, virtualized or bare-metal. By fully offloading all shared and local enterprise data services onto the SPU, server-embedded infrastructure software improves application and server density cost-effectively, whether your data is hosted, resides at the core, or at the edge.



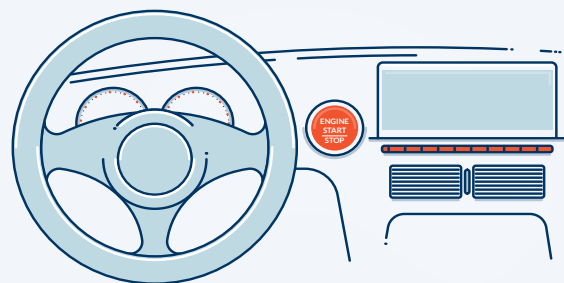
## ENJOY BETTER INFRASTRUCTURE CONTROL with improved node management and resilience

Full control over the boot device lets you deploy application clusters and data volumes in minutes. And because the OS and storage services sit on separate fault domains, customers can remotely update clusters without disrupting or degrading access to data. Tolerate application server CPU, memory and OS failures without disrupting data services to the entire application cluster.



## FUTURE-PROOF YOUR DEPLOYMENT with an any-application support model

Application developers now have the freedom of choice. Hypervisor and OS agnostic, the nebula server-based embedded infrastructure solution supports all application types including containers, virtualization and bare-metal. Furthermore, the nebula SPU in the server-based solution delivers a full suite of enterprise data services consistently across these deployment types and doesn't require any specialized driver on the application server.

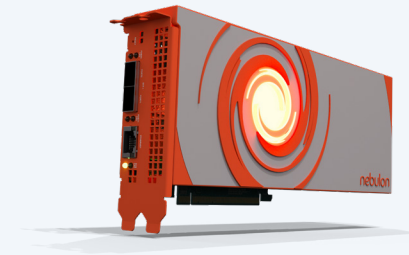


# build workload-aware app clusters

Network-connect multiple SPUs across your on-prem application servers and compose them into nPods that provide enterprise shared or local data services for your clustered applications. Consistently & rapidly instantiate SPU-enabled clusters with operating systems and enterprise data services, by applying workload-tailored application templates using the cloud control plane, nebula ON.

# services processing unit (SPU)

Nebula revolutionized the storage architecture with the nebula Services Processing Unit (SPU). Unlike PCIe accelerators that offload individual functions, the nebula SPUs run the full suite of enterprise data services of external storage arrays. They enable the use of server storage media without consuming host resources or the need for software on the application server. This makes them an ideal fit for any enterprise application in any operating environment, including container, hypervisor and bare-metal.



**10/25GB ETHERNET**  
data network



**1GB ETHERNET**  
management network



**STANDARD PCI EXPRESS X16**

## product specs

### PHYSICAL

**Form Factor**

PCIe 3.0, Full-Length, Full-Height, Double-Wide

**Dimensions**

266.7mm (L), 98.40mm (H) 41.91mm (W)

**PCIe Interface**

x16 (8-lanes) PCIe Gen3

**Indicators**

Port activity and link, SPU status and health

### ENVIRONMENTAL

**Power consumption**

85W

**Operating Temperature**

10°C to 35°C (ambient data center temperature)

**Altitude (max.)**

3050 m (10,000 ft)

**Humidity**

8% to 90% Relative Humidity

**Safety Compliance**

UL/EN/IEC 62368

**Environmental Compliance**

RoHS/WEEE

**EMC Compliance**

FCC Class A, EN 55032 Class A, EN 55035

### CONNECTIVITY

**Port configurations**

2x 10Gb/25Gb Ethernet, SFP28+ DAC

**Management port**

1x 1Gb Ethernet, RJ45

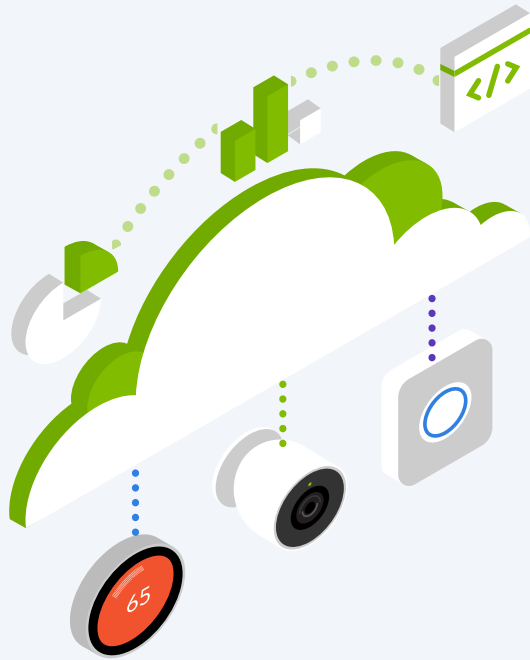
**Internal ports/connectors**

two x8 Slimline SATA (6G)\*

# why go smart?

lessons from consumer smart devices bring the cloud experience on-premises

## CONSUMER



cloud-controlled, IoT endpoints in consumer devices

supports any application: thermostat, camera, smoke detector anywhere: home, office, vacation home

## ENTERPRISE



cloud-controlled, IoT endpoints in infrastructure

supports any application: containers, virtualization, bare-metal anywhere: core, hosted edge



EASY TO DEPLOY



IMMEDIATE VALUE



ANY APPLICATION



ANYWHERE



SIMPLE TO AUTOMATE



AUTOMATIC UPDATES



CLOUD INTELLIGENCE



REMOTE CONTROL

# why smartInfrastructure?



## EASY TO DEPLOY

"rack to full stack in minutes" for any application, anywhere



## CLOUD-LIKE OPERATIONS

"zero-touch" remote management reduces operational overhead by up to 75%



## COST-EFFICIENT

significant efficiency and cost improvement versus HCI and external storage



## FUTURE-PROOFED

standard OS driver support for any application today and tomorrow



## NO NEW VENDOR

have a favorite server vendor? you're covered

it's time to think about the **cloud as an operating model**, not just the destination

[nebulon.com](https://nebulon.com)

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