



## A revolutionary enterprise-ready platform for containers and virtual machines across on-premises, cloud and edge environments — with pay-as-you-grow convenience

It's finally a reality: A solution that enables enterprises of all sizes to adopt a fully managed, resilient cloud-native platform across cloud, on-premises and edge environments with an automation-first approach and a flexible pay-as-you-grow model.

### A challenging time for enterprises

Recent innovations are creating both opportunities and challenges for enterprises — and both are being driven by technology. In the past, enterprise applications were largely located in on-premises data centers and implemented via virtual machines. Today's applications go well beyond that, adding the complexity of containers and functions across private, public and edge locations. These technological breakthroughs have produced unprecedented opportunities, but they've also created some steep challenges, particularly in the following areas:

- **Resiliency:** Eliminating unplanned outages is a challenge that demands a reliable solution. Ever-increasing operational complexities, lack of interoperability and shortages of skilled employees exacerbate the difficulties of maintaining resiliency.
- **Security:** Security and compliance are higher priorities than ever. With new technologies introducing a wider attack surface, along with the proliferation of APIs and containers, future-proofing the enterprise's technological platform can be difficult.
- **Optimizing IT costs:** Cost optimization is one of the core challenges faced by CIOs. IT spending can quickly increase, and it's a continuing challenge for CIOs to strike a balance between those costs and the value derived.

### Solving modern technology challenges: TCS Cognix™ Container Platform Services

The partnership between Tata Consultancy Services (TCS) and Dell Technologies solves current technological challenges with the most cutting-edge of technological innovations. TCS Cognix™ Container Platform Services addresses all three areas described above by accommodating six key container solution themes that are being embraced worldwide by enterprises in their efforts to meet modern-day challenges:

- **Hypervisor exit:** With uncertainty prevailing around traditional virtualization, enterprises have started analyzing alternatives to avoid price hikes and vendor lock-in. As one of the alternatives, cloud-native virtualization is seen as a future-proof technology that allows containerized applications and selected virtual machine workloads to coexist in the same Kubernetes platform, enabling enterprises to move away from traditional virtualization and providing improved agility, faster time to market and cost optimization.
- **Container platform-as-a-service:** A secure full-stack cloud-native platform, the solution consists of powerful infrastructure, consistent Kubernetes orchestration and automation-driven operations, all available in a flexible OpEx-based pay-as-you-grow model, with Dell APEX providing a cloud-like experience on-premises.



**95%** of enterprises will run containerized applications in production by 2028.<sup>1</sup>



Worldwide spend on generative AI solutions is expected to reach **\$151.1 billion** by 2027.<sup>2</sup>



Around **4 million** Kubernetes clusters are estimated to be running worldwide.<sup>3</sup>

<sup>1</sup> Jess Lulka, "A CTO's Guide to Navigating the Cloud Native Ecosystem," The New Stack, June 13, 2023.

<sup>2</sup> "IDC Forecasts Spending on GenAI Solutions Will Double in 2024 and Grow to \$151.1 Billion in 2027," IDC, December 21, 2023.

<sup>3</sup> Sathya Sankaran, "How Many Kubernetes Clusters Exist Today?" Cloud Native Now, February 24, 2023.

- **Hybrid and multicloud container platform:** The solution accelerates cloud adoption, multiple clouds and on-premises-centric workloads for a cloud-agnostic, highly reliable and consistent user experience. It enables faster setup, from build to production in days rather than months, as well as providing increased efficiency, availability and resiliency.
- **Edge platform modernization:** Enterprises can gain consistency and reliability across geographically diverse or remote locations by switching to a modern cloud-native platform. Edge platform modernization also supports workloads that need to stay on-premises, enabling faster time-to-market with improved availability and reduction in infrastructure costs.
- **Generative AI:** The solution leverages the incredible potential of generative AI by providing an AI-enabled infrastructure that supports a flexible, open AI/machine learning platform abstracted from the underlying infrastructure across hybrid cloud and edge environments without cloud lock-in and high cost. Additionally, it uses generative AI to improve developer and operator productivity and experience.
- **Sustainability:** Approaching sustainability in the cloud-native way, the solution includes digital accelerators that monitor energy and power consumption at the container level. These accelerators reduce the infrastructure footprint by scheduling containerized workloads to hibernate when not in use, especially in lower environments during non-business hours, and then waking them up when they are needed. This approach contributes to reduced data center carbon emission footprints.

### Dell PowerFlex overview

Dell PowerFlex is a software-defined infrastructure that enables broad consolidation across the data center, encompassing almost any type of workload and architecture. The software-defined architecture offers automation and programmability of the complete infrastructure and provides scalability, performance and resiliency to enable effortless adherence to stringent workload service-level agreements (SLAs). The PowerFlex family provides a foundation that combines compute and high-performance storage resources in a managed unified fabric. PowerFlex comes in flexible deployment options (rack, appliance, or custom nodes and in the public cloud) that enables independent (two-layer), HCI (single-layer) or mixed architectures. PowerFlex is ideal for high-performance applications and databases, building an agile private/hybrid cloud, or consolidating resources in heterogeneous environments.

### Dell ACP for Red Hat OpenShift overview

The Dell APEX Cloud Platform for Red Hat OpenShift is jointly engineered with Red Hat to transform Red Hat OpenShift deployments on-premises. This new application delivery platform delivers a fully integrated OpenShift operational experience on bare-metal infrastructure. IT teams will enjoy the simplicity of integrated management in the OpenShift console while apps get performance, predictability and linear scalability.

# tcs Cognix™ Container Platform Services



Full-Stack Platform



Pay-as-you-grow



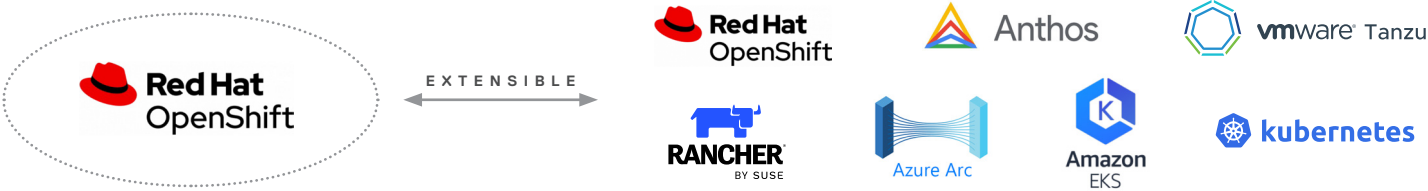
Secure & Resilient



Quick Setup



- Value Builders
- Reference Architectures
- Industry-specific Solutions
- Assessment Frameworks
- Contextual Knowledge



- Dell ACP for Red Hat OpenShift  
ACP Compute + PowerFlex  
SDS Appliance · Rack · SW Storage Nodes
- Dell PowerFlex Software-defined Infrastructure  
Compute + Storage Nodes



# The PowerFlex family



**PowerFlex software**  
Software-defined block and file storage services that enable scale-out storage infrastructure using x86 nodes and TCP/IP networking

**PowerFlex rack**  
• Fully engineered system with integrated networking  
• Accelerate time-to-value

**PowerFlex custom nodes**  
• DIY networking and management  
• Flexibility with the same performance and scale potential

**PowerFlex Manager**  
• Full-stack Lifecycle Management of hardware, software and networking  
• Unified UI for administration of all storage operations

**PowerFlex appliance**  
• High-performance infrastructure with flexible networking options  
• Small starting point with massive scale potential

**APEX Block Storage for Public Cloud**  
Block storage for high performance, scalability and resilience in the cloud



## An infrastructure modernization solution uniquely designed to meet modern-day challenges

Enterprises today know they need to improve developer and worker productivity and enhance the efficiency of their IT operations. They know they need to improve both the agility and resilience of their enterprise-wide platform. But overhauling their entire enterprise platform is not a small ask, and the cost and complexity involved has seemed overwhelming — until now.

A true pay-as-you-go solution, TCS Cognix™ Container Platform Services offers comprehensive modernization for your enterprise needs without skyrocketing costs and complexity. Powered by TCS Cognix™ value builders, the solution accelerates cloud-native platform adoption and enables deployment across all operating environments, from on-premises to the edge. The result is an affordable, easily managed solution that provides:

- Consistency and near-perfect availability
- Flexibility along with full control over the stack
- An OpEx consumption model optimized to your enterprise's needs
- A cloud-like experience with on-premises operations
- A single platform supporting both virtual machines and containers
- A future-proof cloud-native platform

### TCS Cognix™ assets

TCS Cognix™ is an AI-driven, human-machine collaboration suite for accelerated enterprise digital transformation. It includes:

- **Value builders:** A collection of prebuilt, configurable, reusable digital solutions that bring together multiple digital levers to address specific business goals

- **Assessment framework:** A comprehensive benchmarking and maturity assessment framework that measures business performance and provides recommendations to arrive at best-in-class results
- **Industry-specific solutions:** A suite of assets, categorized by technology, business function and industry

Some of these accelerators include:

- **Generative AI-powered Intelligent Container Platform Management:** A digital AI toolkit to scan, analyze, triage, remediate and document container platform management; improves operator productivity by 50%
- **Generative AI-powered AI KubeAssist:** Modern chatbot-as-a-desktop-assistant to carry out container, DevOps and automation operations; reduces mean time to recovery by 30%
- **Container Platform Sizing Estimator:** A digital toolkit to right-size the cloud-native platform per industry best practices and standard benchmarks; reduces design time by 40%
- **Automated Container Storage Provisioner:** An automation blueprint to install and configure dynamic software-defined storage provisioning of Dell PowerFlex CSI plugins for container workloads; reduces setup time by 70%
- **Centralized Observability:** A prebuilt observability package across cloud, on-premises and edge environments to provide self-healing capabilities and the ability to centrally visualize and perform preventive maintenance of the cloud-native platform; provides 40% improved observability





## Modernize workloads and optimize costs with a platform from two tech leaders

TCS Cognix™ Container Platform Services is designed to help organizations deploy a modern cloud-native platform where they need it — across on-premises, cloud and edge environments — with the convenience and cost-effectiveness of OpEx flexibility.

TCS and Dell work together to accelerate your cloud-native journey by modernizing traditional virtual machines sourced from VMware to Red Hat OpenShift virtualization. The solution improves the speed of delivery utilizing modern methodologies such as GitOps and DevSecOps, and it provides a consistent developer and operator experience across hybrid and multicloud environments.

Benefits include:

- Improved agility, with the platform set up in days rather than months
- Faster time-to-market
- Increased speed of software delivery
- Business value up to \$5M USD over a five-year period<sup>4</sup>
- Flexibility and full control over the platform

### **TCS and Dell Technologies: Providing enterprise customers with the combined strengths of two industry titans**

For nearly two decades, the ongoing partnership between TCS and Dell has benefitted enterprises around the globe. Together, TCS and Dell drive digital transformation for clients along with providing essential technologies and customer-centric strategies — all while fostering an unwavering commitment to supporting enterprise sustainability and governance.

Dell sustains a long tradition of industry leadership, ranking first in worldwide storage and server revenue<sup>5</sup> and recognized as a leader

in Gartner's Magic Quadrant for Primary Storage. And as a Dell Titanium Partner, TCS is skilled at aligning Dell offerings with TCS's decades of vertical consulting experience and industry expertise. By driving digital transformation for shared clients, TCS and Dell combine best-of-breed infrastructure capabilities with extensive IT services, consulting and business solutions.

For more information, visit [TCS Cognix](https://www.tcs.com/cognix) or contact us at [cbo.marketing@tcs.com](mailto:cbo.marketing@tcs.com) or [TCS Cognitive Business Operations](https://www.tcs.com/cognitive-business-operations).

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#### **About Dell Technologies**

[Dell Technologies](https://www.dell.com) (NYSE:DELL) helps organizations and individuals build their digital future and transform how they work, live and play. The company provides customers with the industry's broadest and most innovative technology and services portfolio for the data era.

#### **About Tata Consultancy Services (TCS)**

[Tata Consultancy Services](https://www.tcs.com) is an IT services, consulting and business solutions organization that has been partnering with many of the world's largest businesses in their transformation journeys for over 55 years. Its consulting-led, cognitive powered, portfolio of business, technology and engineering services and solutions is delivered through its unique Location Independent Agile™ delivery model, recognized as a benchmark of excellence in software development. A part of the Tata group, India's largest multinational business group, TCS has over 608,000 of the world's best-trained consultants in 55 countries. The company generated consolidated revenues of US \$27.9 billion in the fiscal year ended March 31, 2023, and is listed on the BSE and the NSE in India. TCS' proactive stance on climate change and award-winning work with communities across the world have earned it a place in leading sustainability indices such as the MSCI Global Sustainability Index and the FTSE4Good Emerging Index. For more information, visit [www.tcs.com](https://www.tcs.com)

<sup>4</sup> Based on Dell and TCS internal estimation with assumptions considered

<sup>5</sup> IDC WW Quarterly Enterprise Storage Systems Tracker CY20Q4 and IDC WW Quarterly Server Tracker CY20Q4.