

# Bright for Edge Computing

## Solution Brief

Edge computing allows a business to place infrastructure in locations where developers can deliver new applications that take advantage of local, ephemeral data to improve operations, services, experiences and product.

A common use case for edge computing arises from Internet of Things (IoT) applications. In these situations, sensors produce large amounts of data at remote locations that need to be processed in real time and acted on. Typically, these applications can't tolerate the network latency involved in sending data back to the cloud or other location for processing.

Another use case for edge computing occurs in applications for High Performance Computing (HPC), where computing clusters have resources located in distributed geographical regions near data sources that may span a city, a country, or the globe. For example, in a situation where an oil company needs to process large volumes of site data in real-time to guide immediate exploration decisions for an expensive drilling team, network latency and bandwidth could make it impractical to ship that data to a central data center for processing

Deploying compute and storage at distributed, remote locations can provide the necessary infrastructure to address these challenges and advance your business, yet at the same time, introduce new challenges. Remote resources need to be managed and maintained, which might otherwise mean hiring highly trained IT personnel in each location.

## Key Customer Challenges

With tens or even thousands of potential edge node sites, the practical care and feeding of edge servers quickly becomes burdensome, slow, and expensive, especially in environments with low bandwidth connections.

The many pain points associated with managing distributed resources include:

- The expense and time of IT staff provisioning new servers at edge sites
- The expense and time of IT staff doing routine maintenance of remote servers

- The challenges and inefficiencies of managing resources in different geographic locations
- Spotty connectivity that interrupts processing and prevents merging data into larger operations.

Given these challenges, the most effective way to efficiently put the computing power you need at the edge is to use software that manages the process of provisioning, managing and monitoring all of these edge servers holistically from a single interface.

## The Bright Solution for Edge Computing

Bright edge is a new feature of Bright Cluster Manager that allows nodes of a single, centrally managed cluster to span geographic locations. Organizations can deploy one cluster that spans all the locations where compute is needed, while monitoring and managing it all from one place.

Using Bright simplifies the deployment and management of edge compute, reduces the time spent on administration, and promotes standardization across the entire infrastructure.

### Easy to Deploy and Cost Effective

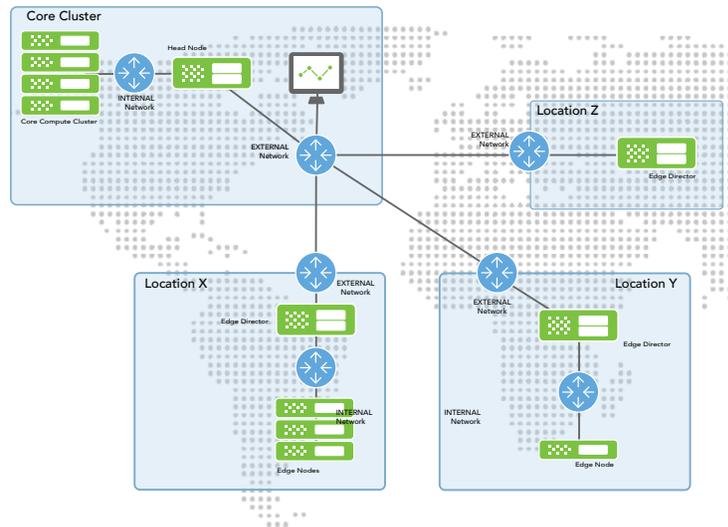
Bright Cluster Manager's edge computing feature enables secure deployment of servers at the edge, over a network or from local media. No onsite personnel are needed for network deployments. For local media deployments, most of the process is automated, so highly-skilled on site personnel are not needed. Local media deployments also allow Bright Edge to be deployed over low bandwidth networks to remote sites, efficiently and effectively.

### Choice of machine learning libraries

Bright includes a selection of the most popular Machine Learning libraries to fully exploit data at the edge. These include MLPython, NVIDIA CUDA Deep Neural Network library (cuDNN), Deep Learning GPU Training System (DIGITS), and CaffeOnSpark.

### Secure

Bright Cluster Manager uses SSL authentication, and ensures that all of the management and provisioning traffic is encrypted as it crosses the network. It even supports the use of secure, virtual private networks (VPN) between locations, enabling an extra layer of assurance.



### Key Benefits

Bright's solution for managing edge computing brings a host of benefits:

- Bright's simple deployment mechanism eliminates the requirement for high-skilled IT staff at edge locations
- Eliminates cost of managing many individual clusters
- Increases standardization across locations
- Works in low bandwidth locations
- Edge nodes can run any HPC scheduler or Kubernetes
- Secure by design

With Bright Edge you can have AI, data processing, and automation control where you need it.

## Additional Information

[brightcomputing.com/bright-cluster-manager](http://brightcomputing.com/bright-cluster-manager)  
[brightcomputing.com/solutions/edge](http://brightcomputing.com/solutions/edge)

## Get Started with Bright Edge

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