Bright *Computing*

Bright for Deep Learning

Solution Brief

Bright is making deep learning more accessible by providing software that makes it easy to deploy and manage the tools and supporting infrastructure (hardware and software) required to get the job done. We give our customers a complete platform to scale deep learning across their organizations with confidence.

For several years now enterprises have been collecting large amounts of data and analyzing it to obtain a competitive advantage. Some are using machine learning techniques to create predictive applications for fraud detection, demand forecasting, click prediction, and other data-intensive analyses. Recent advancements in machine learning make it possible to go even further, bringing deep learning within reach of developers everywhere. Now, computer vision, speech recognition, natural language processing, and audio recognition applications are being developed to give enterprises a competitive advantage.

Processing large amounts of data for deep learning requires large amounts of computational power. As new tools designed specifically for deep learning become available, developers are using them to build their applications on advanced clusters that take advantage of accelerators such as NVIDIA GPUs.

When organizational advantage is tied to the insights achieved via deep learning, the underlying IT infrastructure needs to be deployed and managed as enterprise-grade, not as a lab experiment. However, building and managing an advanced cluster, installing the software that satisfies all of the library dependencies, and making it all work together can be an enormous challenge.

That's where Bright comes in. We make it easy to set up everything required to build the underlying IT infrastructure, and to develop and run deep learning applications.

Key Customer Challenges

Building a framework for deep learning

New tools and frameworks are emerging to make deep learning easier and organizations must select the right combination of software, hardware, network, tools, and libraries to develop and run applications efficiently.

Achieving simplified deployment and management

Organizations need to streamline the deployment, management, operation, and scaling of their deep learning environments.

Enabling analysts and developers

Deep learning tools don't work in isolation. To be effective, organizations need to make the right collection of tools and supporting hardware and software frameworks available to their developers and analysts without turning them into IT administrators.

Achieving flexibility to adopt new tools

Although artificial intelligence and machine learning have been with us for decades, deep learning is still new, and constantly changing. Organizations need the flexibility to adopt new tools and practices as they emerge in order to respond to market needs in an agile manner.
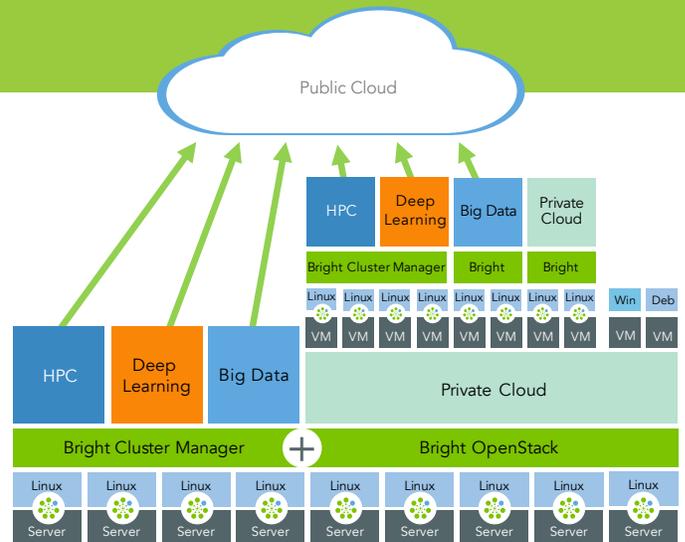
The Bright for Deep Learning Solution

Bright's vision is to make it faster and easier for organizations to gain actionable insights from rich, complex data. To achieve this, Bright offers a comprehensive deep learning solution that includes:

A modern deep learning environment

Bright provides everything needed to spin up an effective deep learning environment, and manage it effectively.

Choice of machine learning frameworks

Bright Cluster Manager provides a choice of machine learning frameworks, including Caffe, Torch, Tensorflow, and Theano, to simplify your deep learning projects.

Choice of machine learning libraries

Bright includes a selection of the most popular Machine Learning libraries to help you access datasets. These include MLPython, NVIDIA CUDA Deep Neural Network library (cuDNN), Deep Learning GPU Training System (DIGITS), and CaffeOnSpark (a Spark package for deep learning).

Supporting Infrastructure Elements

With Bright, you don't have to worry about finding, configuring, and deploying all of the dependent pieces needed to run those deep learning libraries and frameworks. We include over 400MB of Python modules that support the machine learning packages, plus the NVIDIA hardware drivers, CUDA (parallel computing platform API) drivers, CUB (CUDA building blocks), and NCCL (library of standard collective communication routines).

Our list keeps growing

The list of modules we support with Bright for Deep Learning grows constantly. For a complete and current list please visit brightcomputing.com/solutions/deep-learning

Key Benefits

Simple deployment of deep learning infrastructure

Bright Cluster Manager lets you deploy your deep learning environments in minutes. Spend your time developing not deploying.

Developer friendly environment

Bright provides and installs environment modules that make it easy to dynamically modify the user environment with ease. Developers have the right combination of tools available when they need them.

Scalability

Bright lets you scale your deep learning application beyond a single machine, spreading processing across an entire cluster.

Extended capabilities

Need more capacity? Extend your GPU-enabled instances into the cloud using Bright's cloud bursting capability. Bright also makes it easy to containerize your deep learning applications, or run them in your own private OpenStack cloud. You can even take advantage of the performance that modern clusters using RDMA-enabled interconnects provide.

Additional Information

brightcomputing.com/bright-cluster-manager
brightcomputing.com/solutions/deep-learning

Get Started with Bright Deep Learning

brightcomputing.com/request-a-demo