



# NVIDIA IndeX

## System requirements

20 February 2024  
Version 2.3



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## **NVIDIA IndeX – System requirements**

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Document build number rev375192

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# 1 Scalability

Scalability is a core feature of NVIDIA IndeX. The system is designed to run on:

- Laptop computers with CUDA-enabled graphics
- Single workstations with consumer level hardware
- High-end clusters with multiple machines having multiple GPUs

For additional information about a specific hardware and software installation, please describe the configuration in e-mail to [arc-office@nvidia.com](mailto:arc-office@nvidia.com), with subject: "Request for NVIDIA Index configuration information."

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## 2 Reference cluster

### 2.1 Hardware

One of the many cluster configurations deployed by NVIDIA IndeX is described in the following section. Many scalability characteristics and benchmarking scenarios are verified with this cluster setup. The configuration consists of 16 machines with the following hardware and software specifications.

#### CPU type

2x [Intel Xeon CPU E5-2670<sup>1</sup>](#) at 2.60GHz with 8 cores per CPU and HyperThreading enabled.

#### GPU type

4x [NVIDIA Tesla Kepler K10<sup>2</sup>](#) graphics board each with 8GB of GPU memory.

#### Main memory

128GB of main memory.

#### Disk storage

2x 500GB SSD disks with 6Gbps SATA.

#### Networking

10 Gigabit Ethernet.

### 2.2 Software

#### Operating system

[Red Hat Enterprise Linux<sup>3</sup>](#), release 6.3

#### Compiler

[GNU gcc<sup>4</sup> 4.4.6](#); or [Intel compiler, version 13<sup>5</sup>](#)

#### NVIDIA driver<sup>6</sup> version

340.32

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1. [https://ark.intel.com/products/81709/Intel-Xeon-Processor-E5-2670-v3-30M-Cache-2\\_30-GHz](https://ark.intel.com/products/81709/Intel-Xeon-Processor-E5-2670-v3-30M-Cache-2_30-GHz)

2. <https://www.nvidia.com/object/tesla-servers.html>

3. <https://www.redhat.com/en/technologies/linux-platforms/enterprise-linux>

4. <https://gcc.gnu.org>

5. <https://software.intel.com/en-us/c-compilers>

6. <https://www.nvidia.com/Download/index.aspx>

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## 3 Minimum configuration

The following is the minimum hardware and software configuration for an NVIDIA IndeX installation.

### 3.1 Hardware

#### CPU type

Consumer level Intel CPU's with a minimum of 4 cores.

#### GPU type

GPUs with minimum compute capability of 2.0. (See the description of the [NVIDIA Cuda-enabled products](#).)<sup>1</sup>

#### Main memory

At least 32GB of main memory.

#### Disk storage

Hard disks with reasonable amount of space to accommodate target dataset sizes.

#### Networking

1 Gigabit Ethernet. NVIDIA IndeX also supports 10 Gigabit and [InfiniBand](#)<sup>2</sup>.

### 3.2 Software

#### Operating system

[CentOS](#)<sup>3</sup>, release 5 or higher; [Red Hat Enterprise Linux](#)<sup>4</sup>, release 6.3; [Microsoft Windows 7 and above](#)<sup>5</sup>

#### Compiler

[GNU gcc](#)<sup>6</sup> 4.4.6 or higher; or [Intel compiler, version 13](#)<sup>7</sup>

#### NVIDIA driver<sup>8</sup> version

340.32 or higher

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1. <https://developer.nvidia.com/cuda-gpus>

2. <https://www.infinibandta.org>

3. <https://www.centos.org>

4. <https://www.redhat.com/en/technologies/linux-platforms/enterprise-linux>

5. [https://en.wikipedia.org/wiki/List\\_of\\_Microsoft\\_Windows\\_versions](https://en.wikipedia.org/wiki/List_of_Microsoft_Windows_versions)

6. <https://gcc.gnu.org>

7. <https://software.intel.com/en-us/c-compilers>

8. <https://www.nvidia.com/Download/index.aspx>