



NextStream™

Maximum Speed, Minimum Hardware

High-Density Open Standards Stream Computing Server

The NextStream is a high-performance open-standards stream computing platform in a compact 2U rack-mount chassis. For mission-critical applications requiring high-throughput data streaming and/or a mix of traditional CPU processing and GPU parallel processing, the NextStream provides the most flexible server platform available.

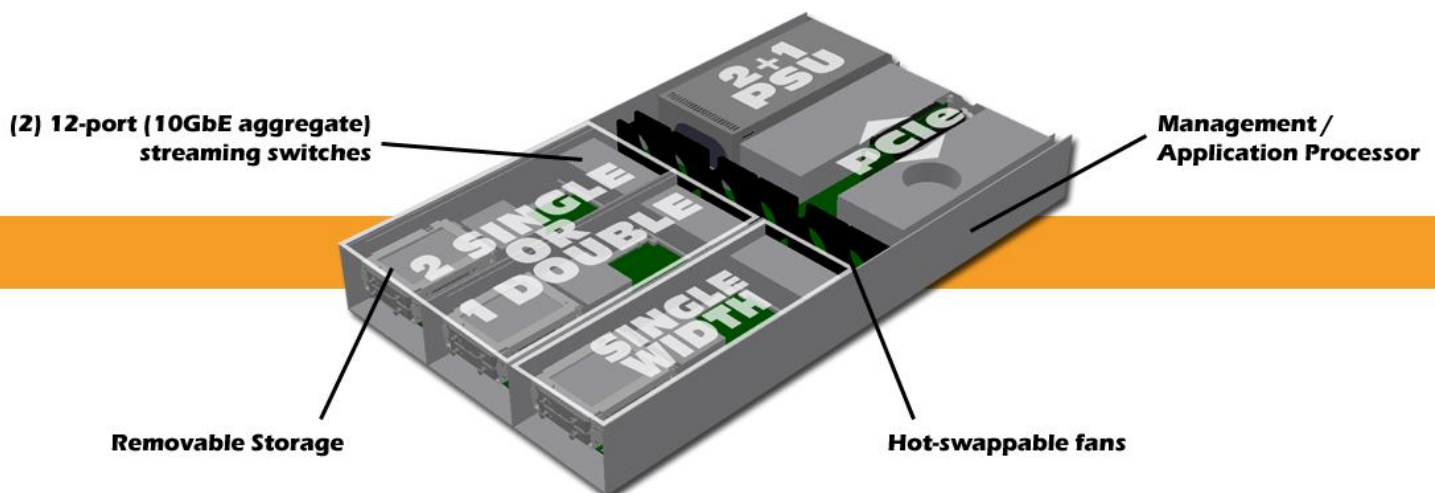
Utilizing NextComputing's innovative "FleXtreme" architecture, the NextStream maximizes available processing power per rack unit and performance per watt, while maintaining open standards flexibility.

Customers can configure the NextStream in several ways to achieve maximum performance using a combination of CPU, GPU, and I/O, and easily scale upward by networking multiple systems together using its on-board network switching capabilities.

Example applications include:

- Geospatial image processing
- 3D rendering farms
- Video and audio encoding
- High-volume financial transaction processing
- Military simulation and training

- 2U rack-mount form factor
- 3 single-width blades or 1 single- and 1 dual-width blade
- 2 processors per blade—Quad-, or Six-Core Intel® Xeon®
- Up to 96GB RAM per blade
- 2 removable 2.5" SATA 7200RPM, or SAS 10k/15k RPM hard drives per blade
- 4 full-height, 3/4 length PCI Express 2.0 expansion slots
- Integrated management PC with embedded CPU, RAM, graphics, storage, and I/O
- Modular, redundant 2+1 hot-swappable 1140W power supply
- 2 Gigabit Ethernet ports per blade
- Dual integrated 4-port Gigabit Ethernet switches



Rev 2.1b - 03/12

Chassis Features

- 2U height x 19" width rack-mount chassis
- PCI expansion for I/O and GPU co-processing:
 - (3) single-width blades **or**
 - (1) double-width blade and
 - (1) single-width blade
- Blades attach via robust blind mate connection
- Up to (4) rear-access PCI Express slots—3/4-length full-height (PCIe Gen 1.0 or Gen 2.0 depending on processor module), or (2) double-wide cards (dependent on blade configuration)
- Redundant, swappable cooling fans
- Internal network switch to aggregate network signals from the blades and for cable simplification and reduction
- Redundant (2+1) hot-swappable 1140W power supply unit with AC input
- 29.5" deep, ~65+ lbs.

Management PC Module

- Intel® Core™ 2 Duo processor with dual channel Ethernet switch interface
- 2.5" SATA HDD
- External I/O includes:
 - Gigabit Ethernet port
 - (2) USB ports
 - DVI port
 - Serial port

	# of Blades	Max CPU Count	Max Double-Wide GPU Count
Config A	3	6	2
Config B	2	4	3

Gigabit Ethernet

Integrated Gigabit Ethernet switching: LAN-a, LAN-b

- (2) GbE ports per blade to internal switch
- Up to (8) external GbE ports from internal switch (4) GbE ports per switch: LAN-a, LAN-b)
- (3) GbE ports on management/processing module (1 external, 2 internal)

Health Monitoring

- Thermal monitoring
- Fan RPM sensors

Modular Processing Options Per Blade

(1) or (2) Intel® Xeon® Processors

- L5410 Quad-Core 2.33GHz
- L5630 Quad-Core 2.13GHz
- L5640 Six-Core 2.26GHz

Single-Width Blade Features

(1) or (2) removable 2.5" drives:

- 6G SATA drives up to 1TB/7200 RPM (hot-swappable)
 - 6G SAS drives (not hot-swappable) up to:
 - 600GB/10K RPM, 300GB/15K RPM or 1TB/7200RPM
 - Solid state drives: 6G 256GB or 3G 600GB
- Blades can be local boot or PxE boot

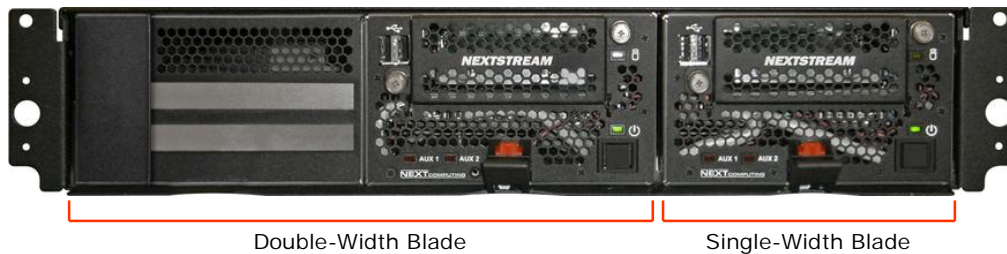
Double-Width Blade Features

- (1) or (2) removable 2.5" drives: same capacities as above
- (1) full-length PCI Express slot (up to double width), and (1) full-length PCI-X 64-bit slot
- Up to (10) internal solid state drives or (6) SATA or SAS drives (depending on PCI card configuration)
- Blades can be local boot or PxE boot

Environmental

- *Storage temperatures:* -20°C to 80°C [-4°F to 176°F], 35,000ft
- *Operating temperature:* 0°C to 40°C
- *Relative humidity:* 10% to 90% (Non-condensing)

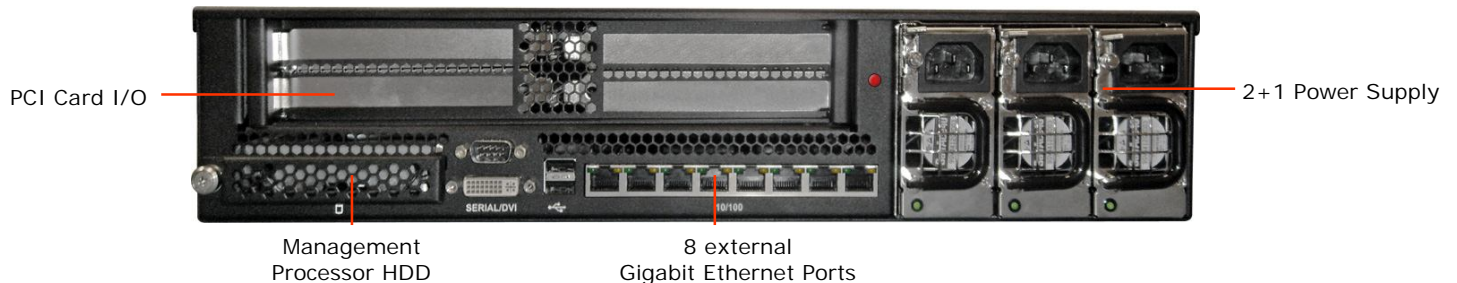
Chassis Front View



Double-Width Blade

Single-Width Blade

Chassis Rear View



PCI Card I/O

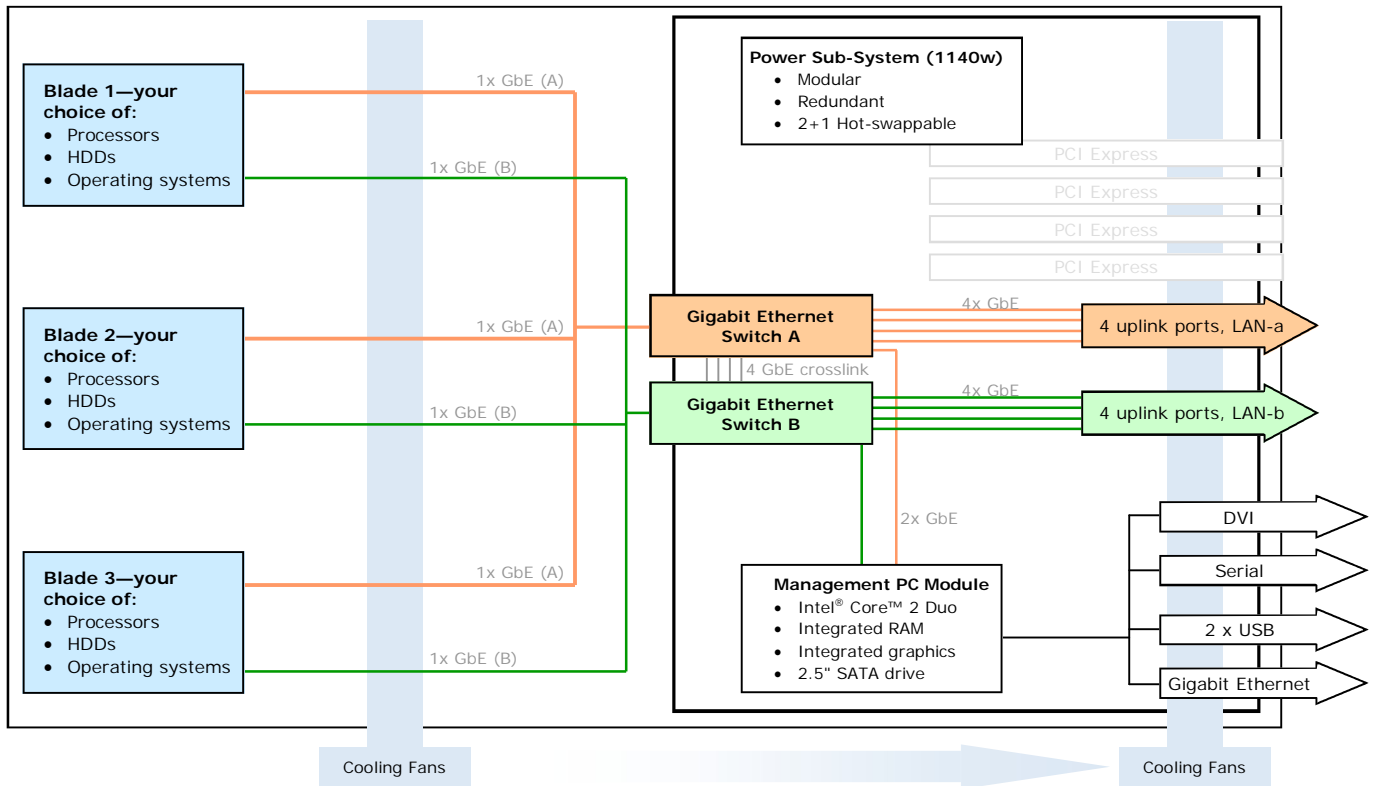
Management Processor HDD

8 external Gigabit Ethernet Ports

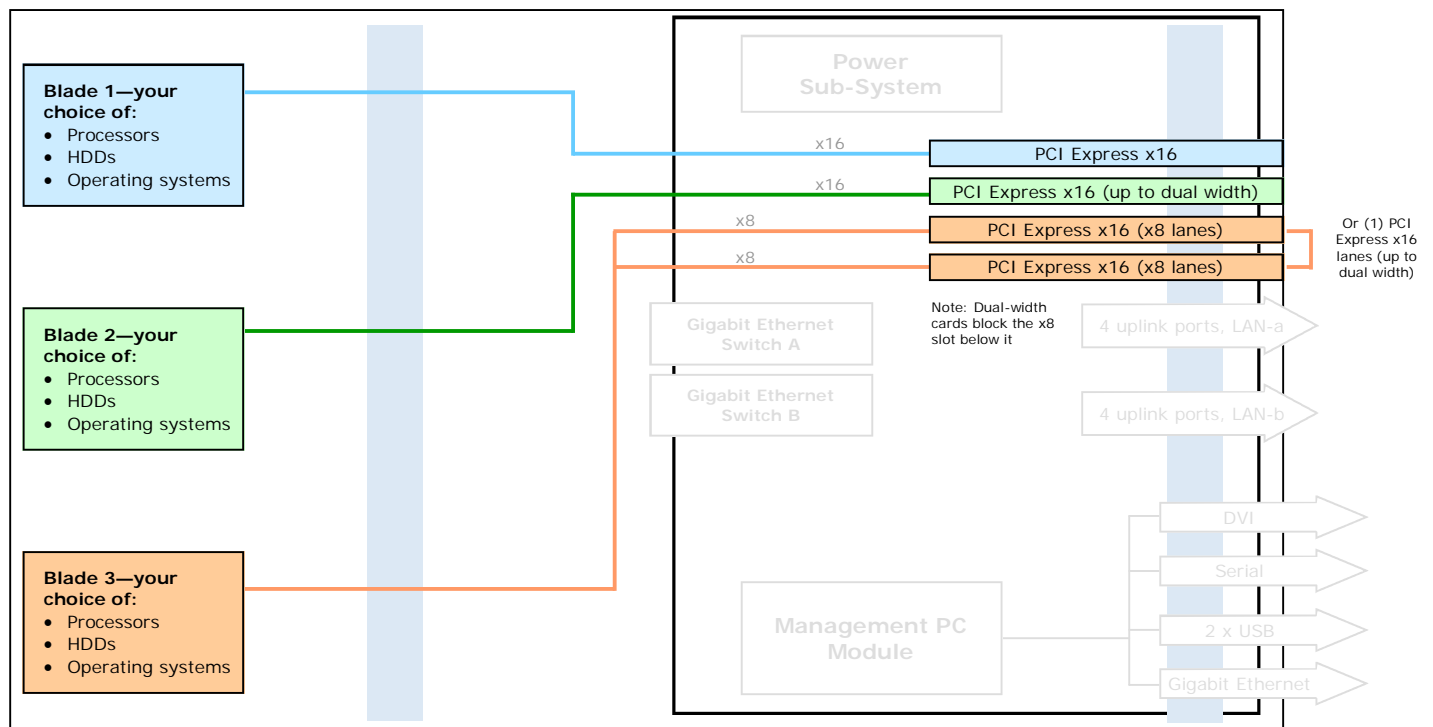
2+1 Power Supply

Single-Width Blades

Network Data Path

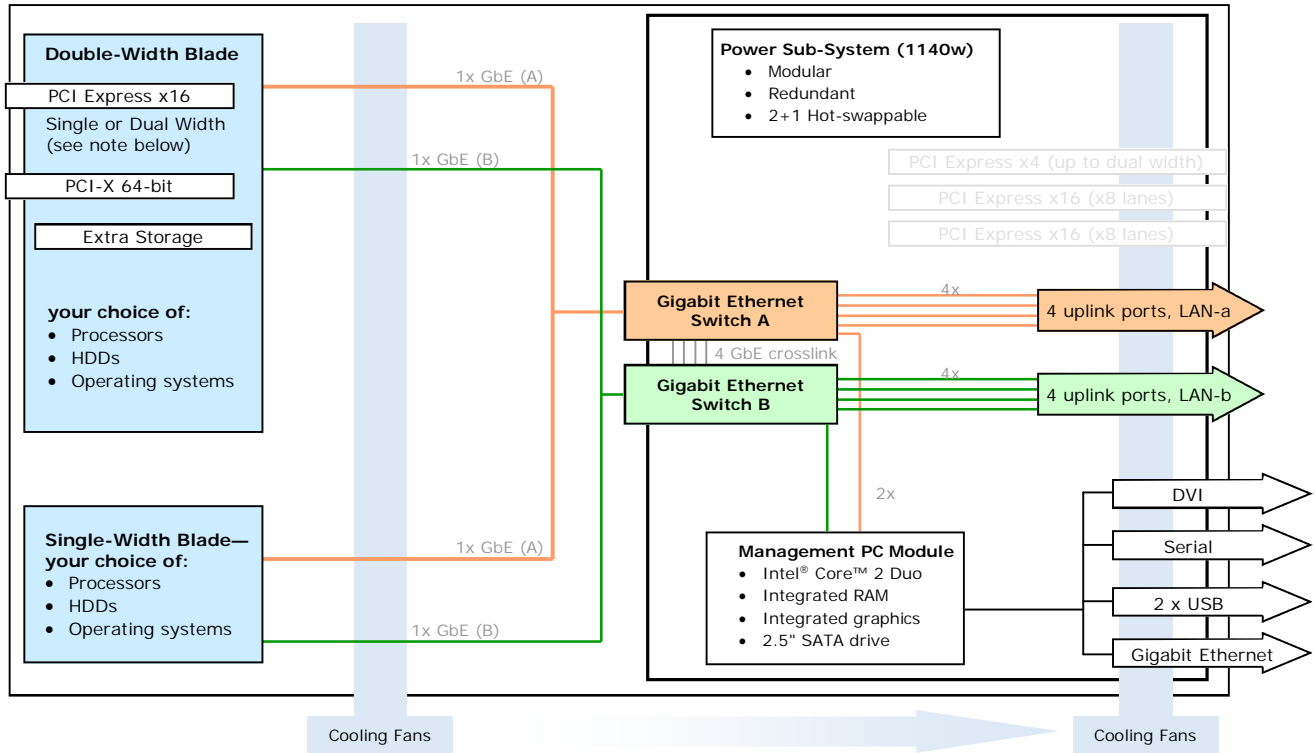


PCI Express Data Path

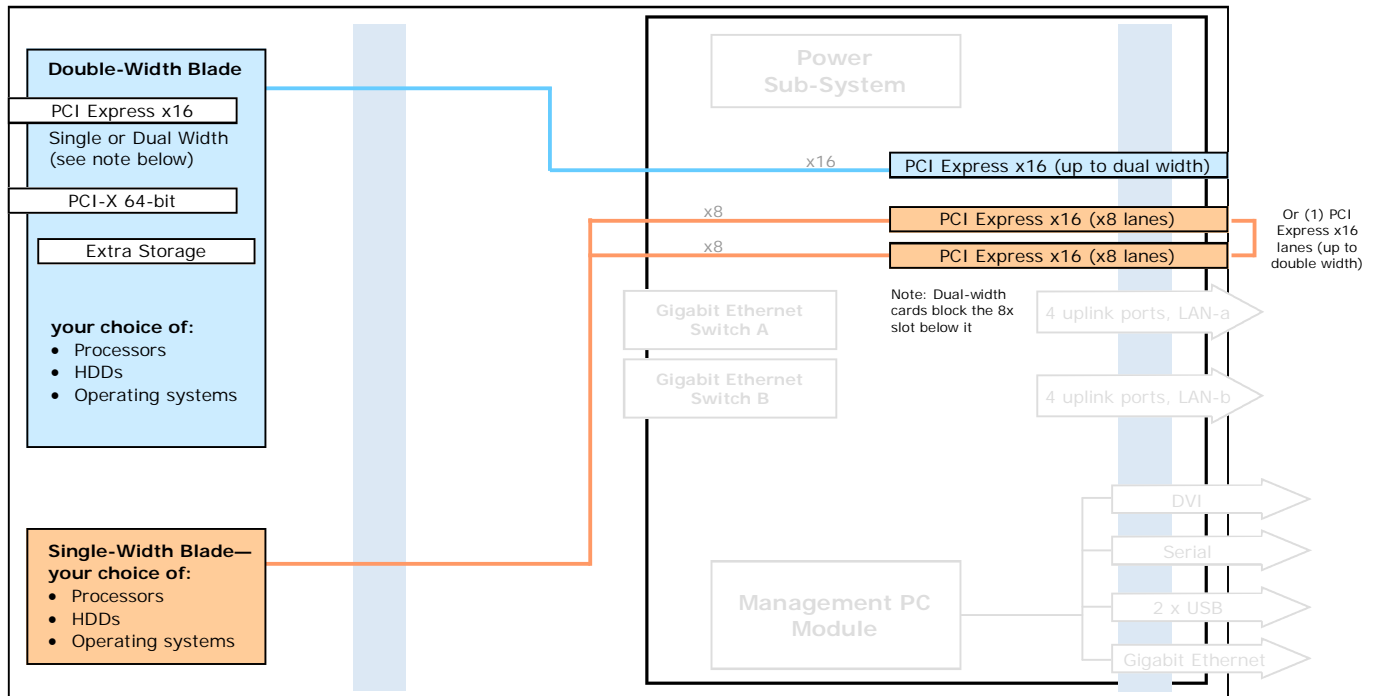


Single- and Double-Width Blades

Network Data Path



PCI Express Data Path



Note: PCIe slot on double-width blade is x16 when using Intel Nehalem/Westmere processor. When using Intel Harpertown processor, slot is x4 (when on-board LSI Logic SAS/SATA controller is enabled) or x8 (when SAS/SATA controller is disabled)