



# 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.

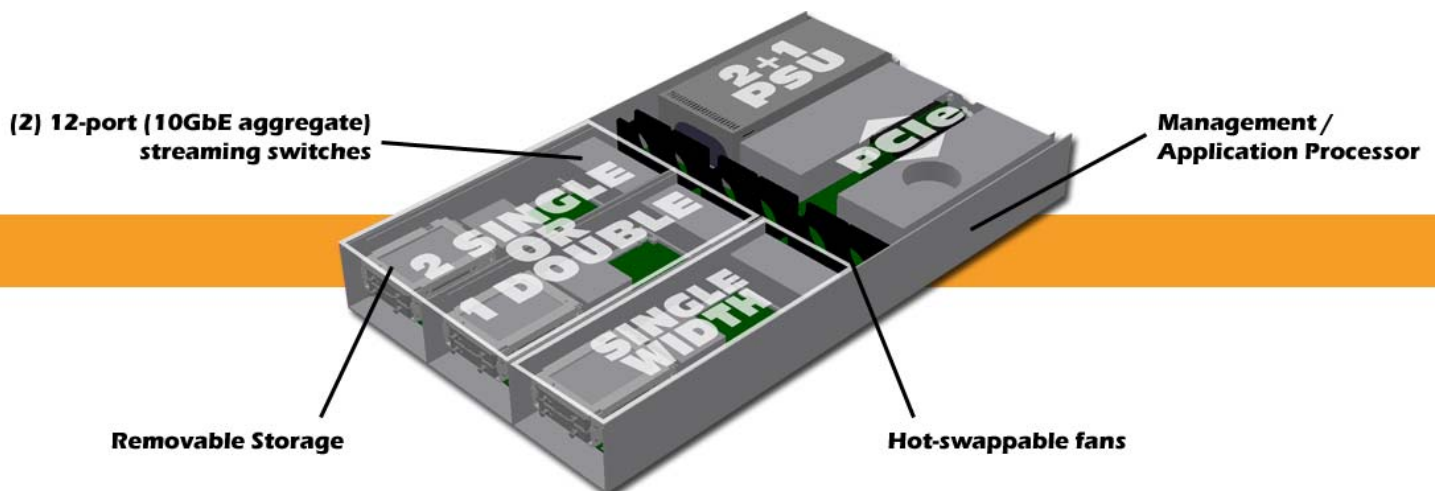
Utilizing NextComputing's innovative "FleXtreme" architecture, the NextStream maximizes available processing power per rack unit and performance per watt, while maintaining open standards flexibility.

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— Intel® Xeon® and AMD Opteron™
- Up to 32GB 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



## 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
- 26.5" 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 (4GbE 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

### AMD Opteron™ low-wattage:

- Socket F 1207 (supports PXE)
  - (1) or (2) **2216 HE** Dual-Core processors 2.4GHz
  - (1) or (2) **2376 HE** Quad-Core processors 2.3GHz

### Intel® Xeon® w/ LGA 771 socket:

- (1) or (2) **L5240** Dual-Core 3.0GHz, 6MB L2 cache, 1333MHz FSB
- (1) or (2) **L5420** Quad-Core 2.5GHz, 12MB L2 cache, 1333MHz FSB
- (1) or (2) **L5430** Quad-Core 2.66GHz, 12MB L2 cache, 1333MHz FSB

## Single-Width Blade Features

- (1) or (2) hot-swappable and bootable 2.5" drives:
  - SATA 7200RPM, 250 / 320 / 500 GB
  - SAS 10-15KRPM, 73 / 147 / 300 / 600 GB
  - SSD 60 / 120 / 250 GB
- Blades can be local boot or PXE boot

## Double-Width Blade Features

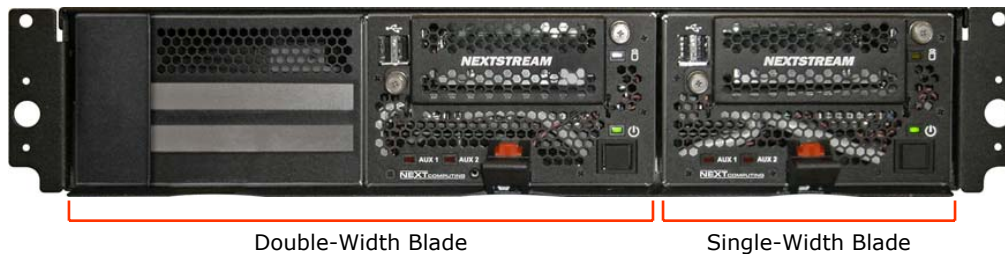
- (1) or (2) hot-swappable and bootable 2.5" drives:
  - SATA 7200RPM, 250 / 320 / 500 GB
  - SAS 10-15KRPM, 73 / 147 / 300 / 600 GB
  - SSD 60 / 120 / 250 GB
- (1) full-length PCI Express slot (up to double width), and (1) full-length PCI-X 64-bit slot
- Up to (10) internal SATA drives or (6) SAS (depending 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)

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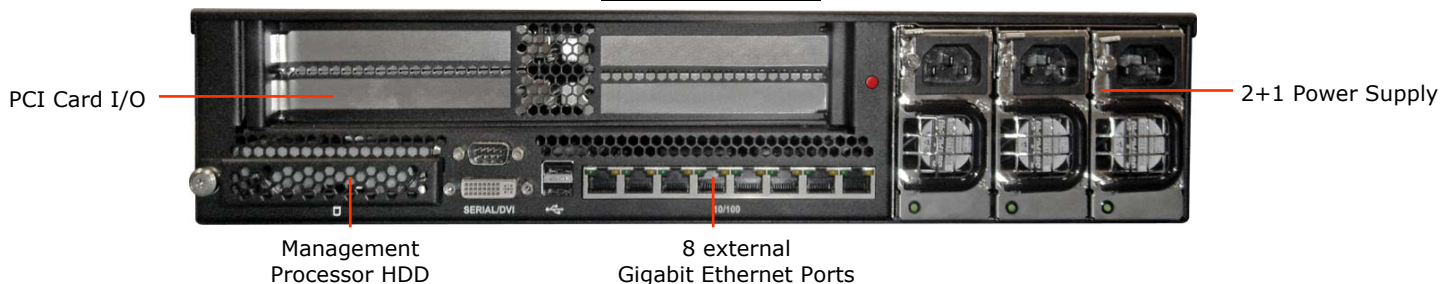
## Chassis Front View



Double-Width Blade

Single-Width Blade

## Chassis Rear View



PCI Card I/O

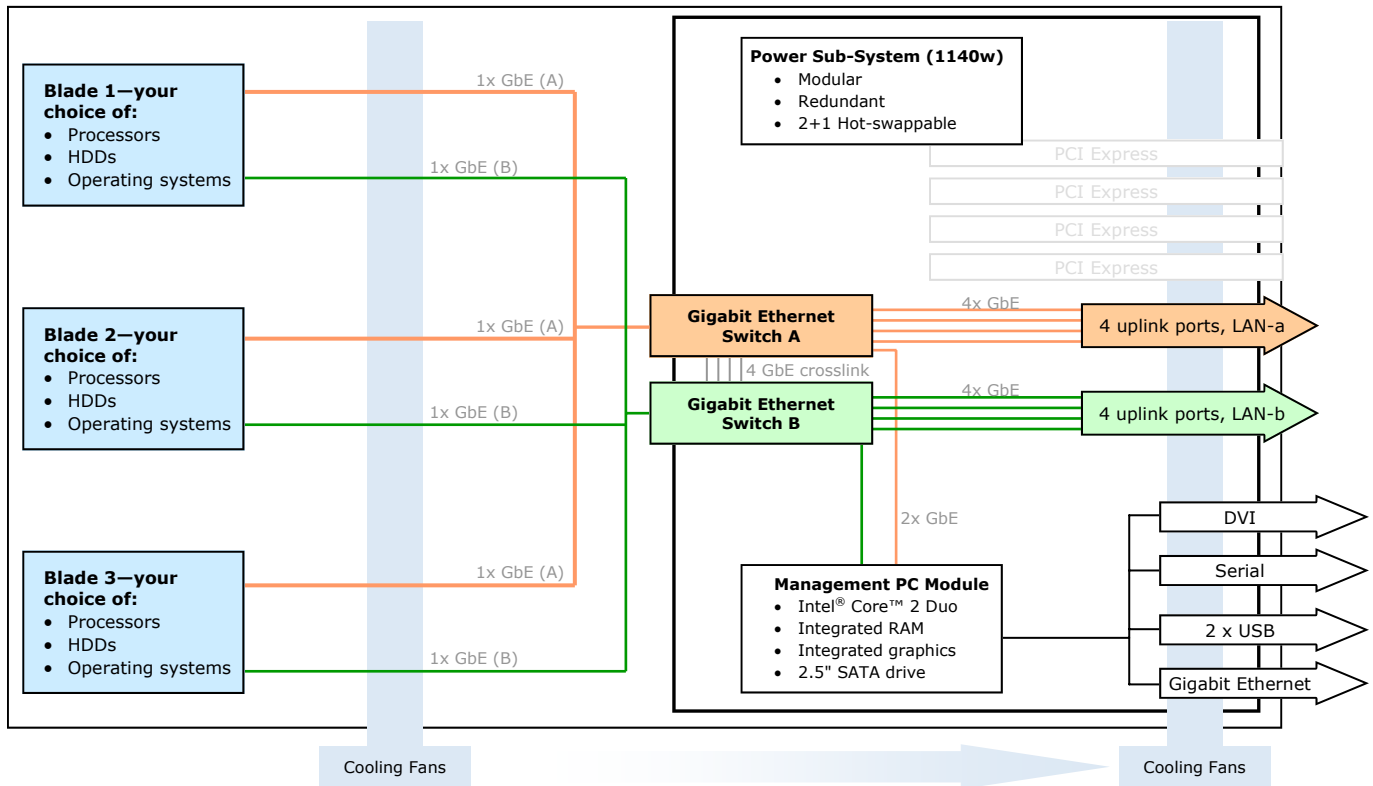
Management Processor HDD

8 external Gigabit Ethernet Ports

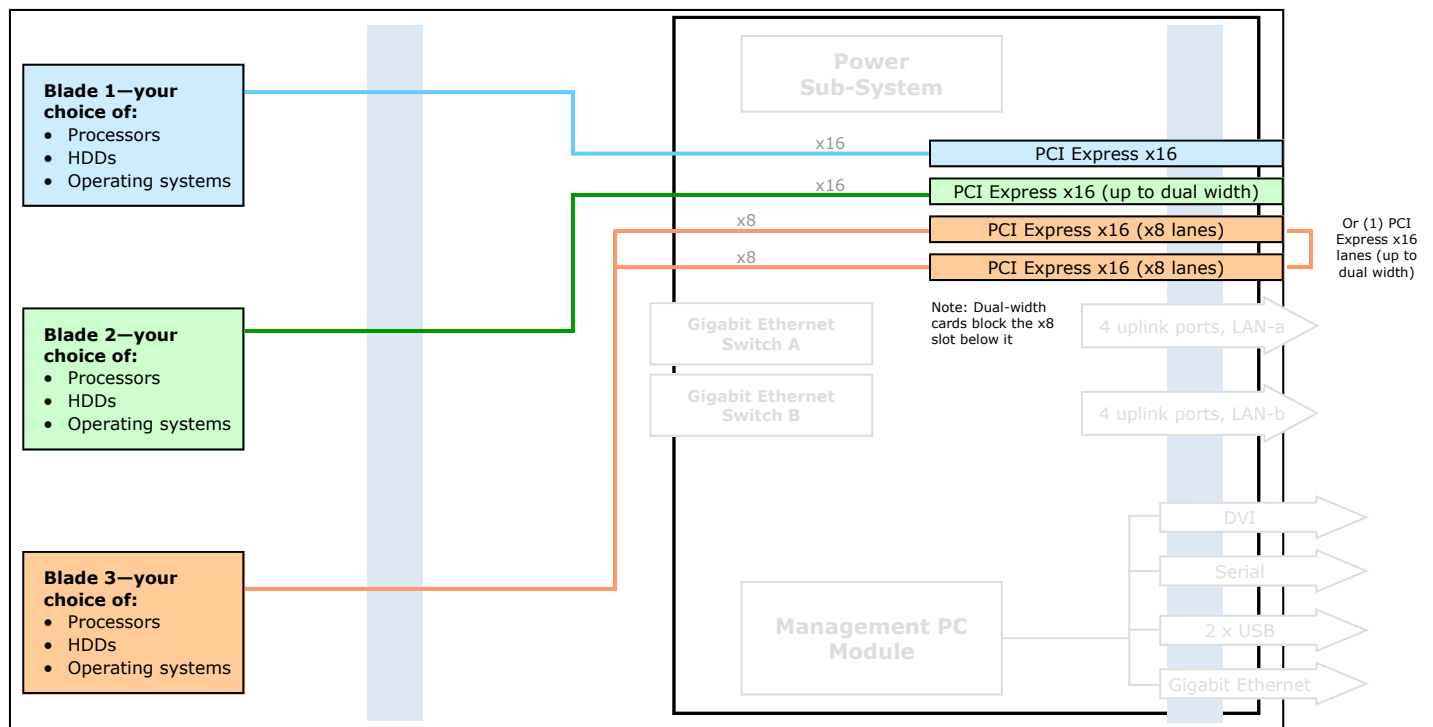
2+1 Power Supply

## Single-Width Blades

### Network Data Path

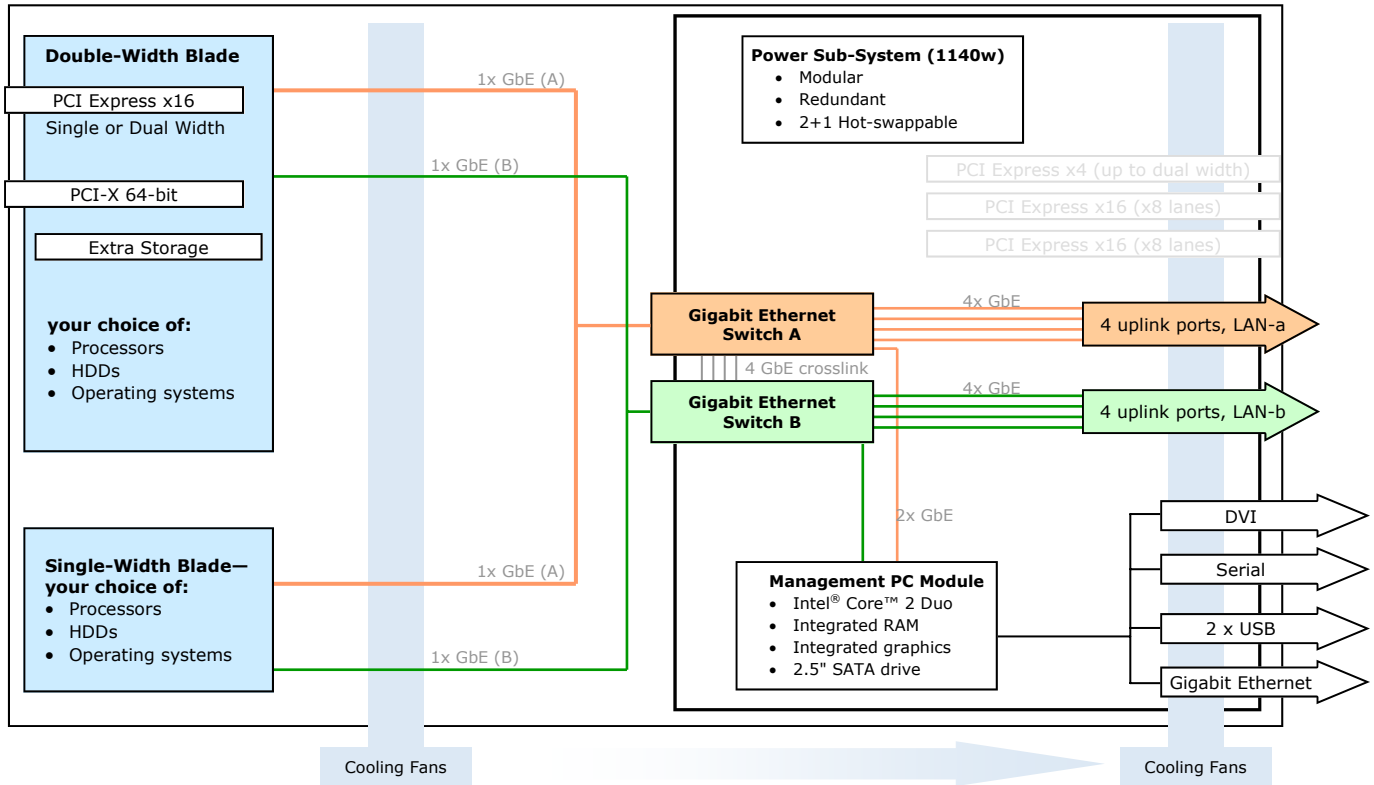


### PCI Express Data Path



## Single- and Double-Width Blades

### Network Data Path



### PCI Express Data Path

