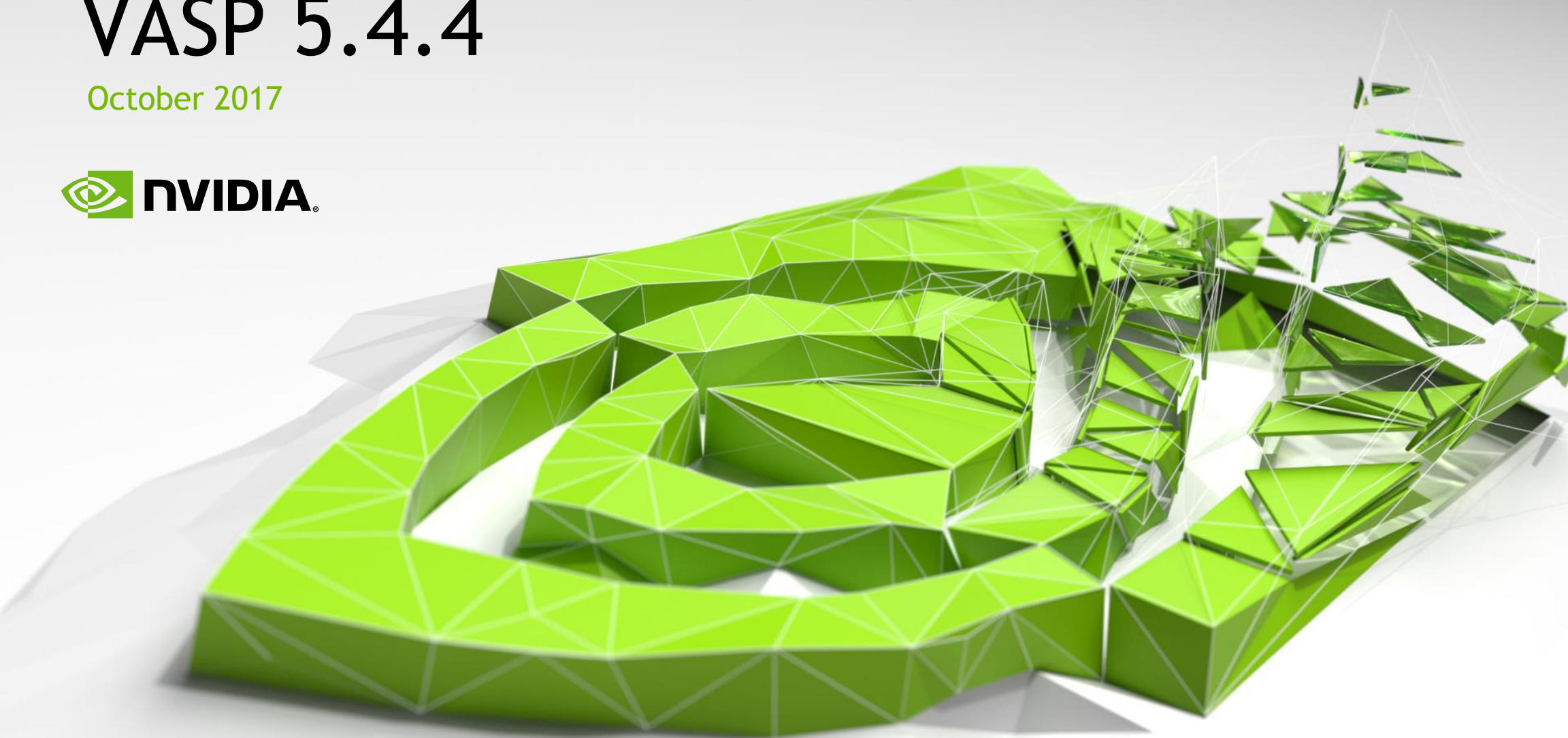
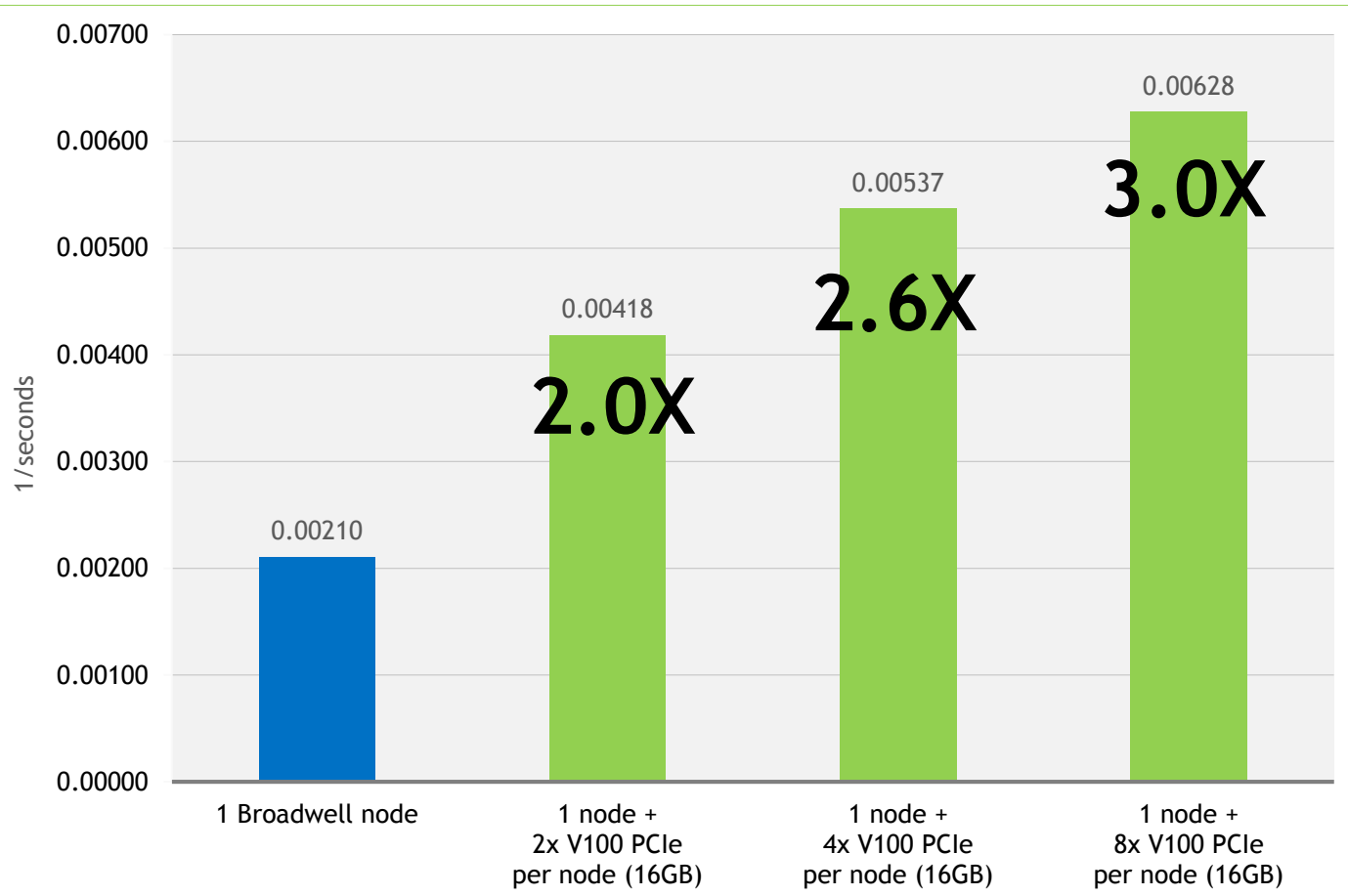


# VASP 5.4.4

October 2017



# Silica IFPEN on V100s PCIe



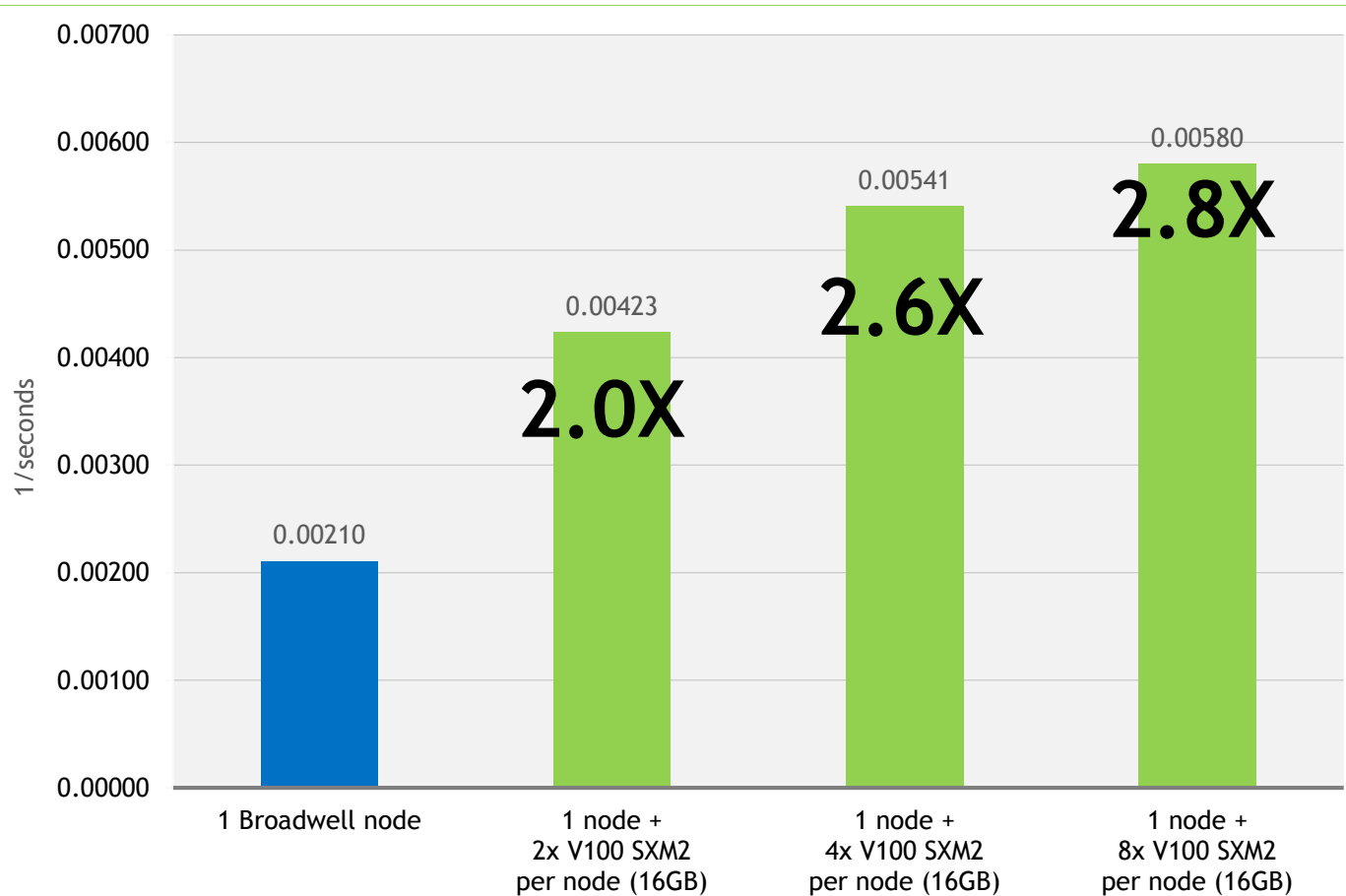
(Untuned on Volta)  
Running **VASP** version 5.4.4

The **blue node** contains Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs + Tesla V100 PCIe (16GB) GPUs

240 ions, *cristobalite (high) bulk*  
720 bands  
? plane waves  
ALGO = Very Fast (RMM-DIIS)

# Silica IFPEN on V100s SXM2



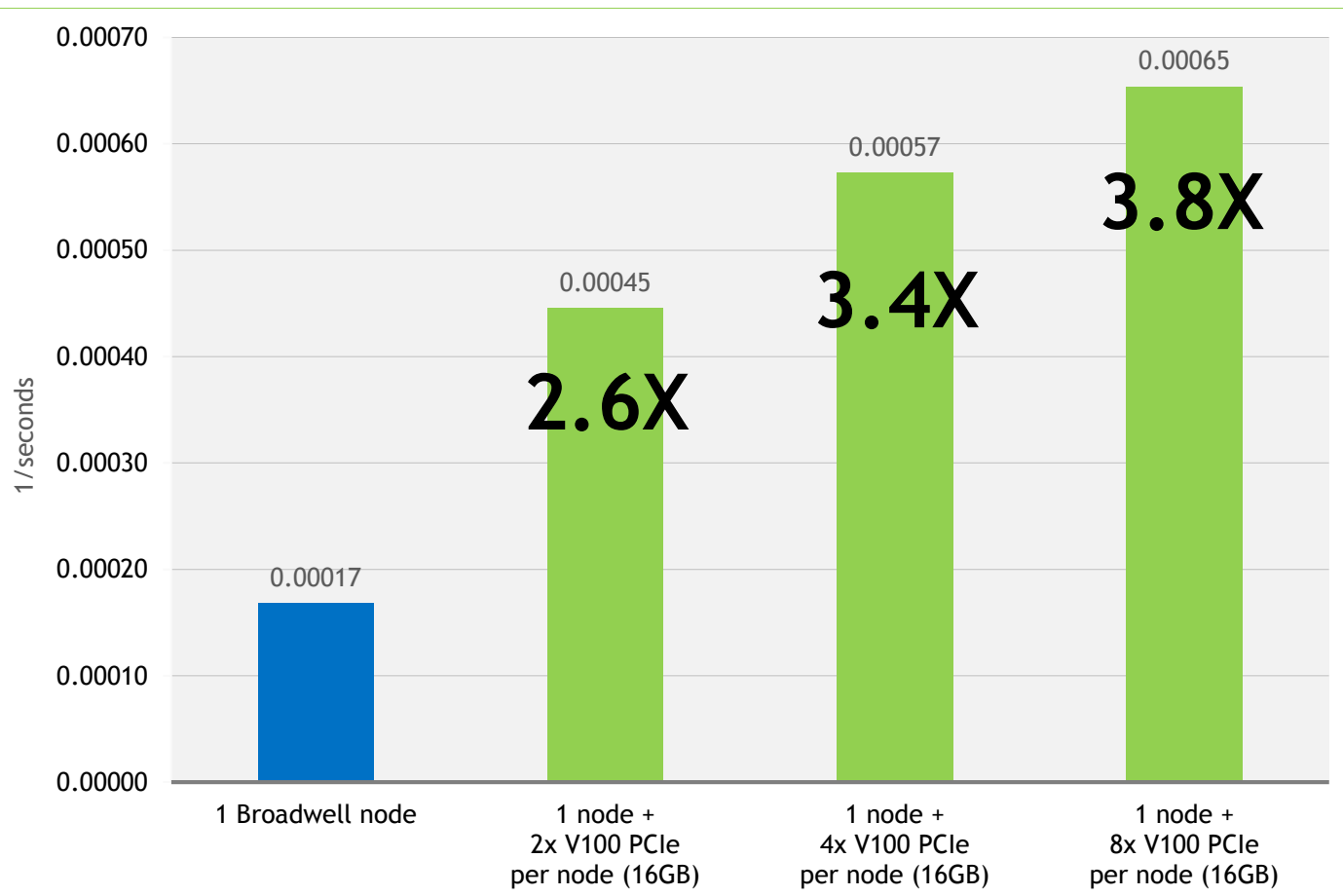
(Untuned on Volta)  
Running **VASP** version 5.4.4

The **blue node** contains Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs + Tesla V100 SXM2 (16GB) GPUs

240 ions, cristobalite (high) bulk  
720 bands  
? plane waves  
ALGO = Very Fast (RMM-DIIS)

# Si-Huge on V100s PCIe



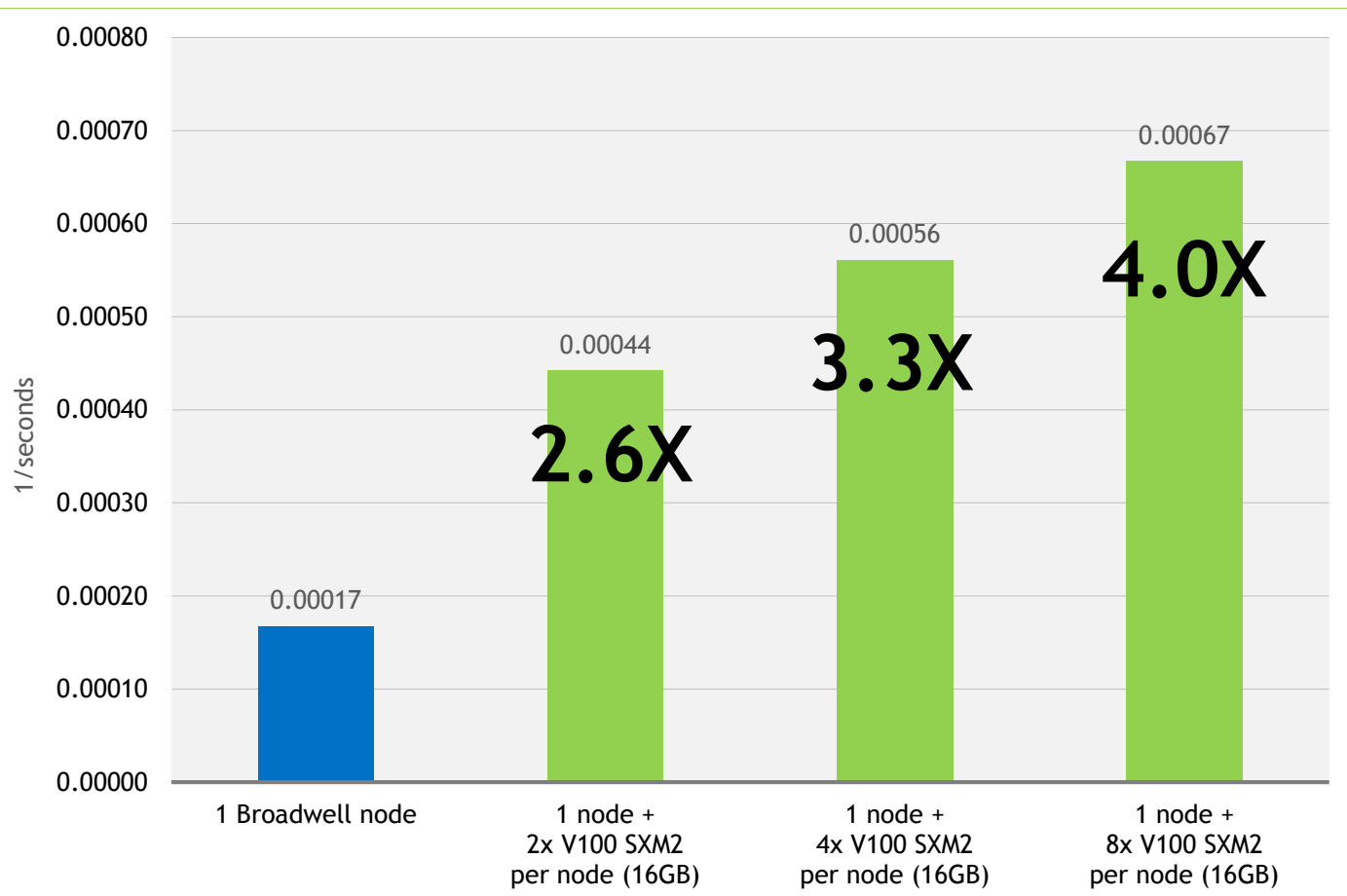
(Untuned on Volta)  
Running **VASP** version 5.4.4

The **blue node** contains Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs + Tesla V100 PCIe (16GB) GPUs

512 Si atoms  
1282 bands  
864000 Plane Waves  
Algo = Normal (blocked Davidson)

# Si-Huge on V100s SXM2



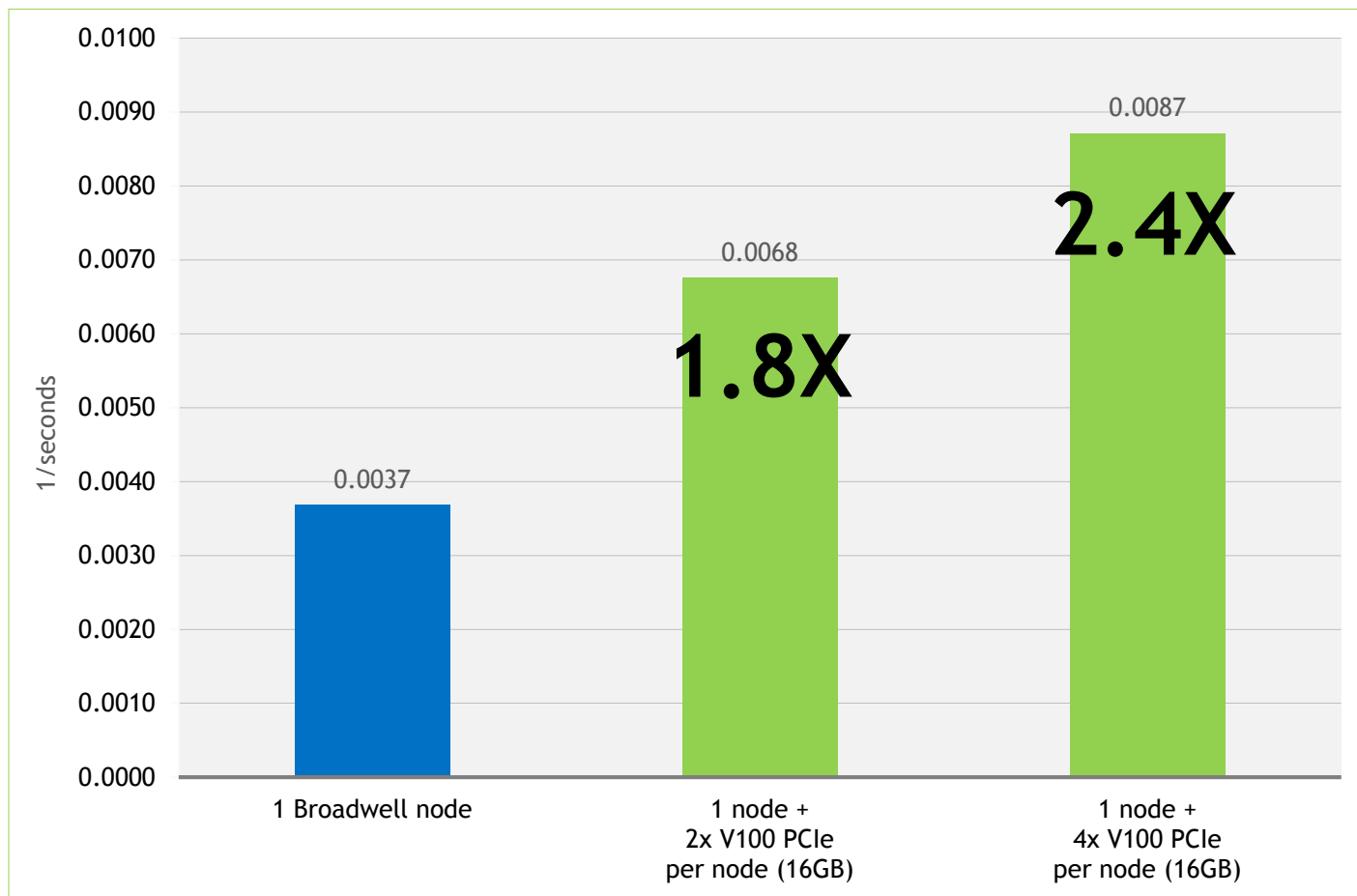
(Untuned on Volta)  
Running **VASP** version 5.4.4

The **blue node** contains Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs + Tesla V100 SXM2 (16GB) GPUs

512 Si atoms  
1282 bands  
864000 Plane Waves  
Algo = Normal (blocked Davidson)

# Supported Systems on V100s PCIe

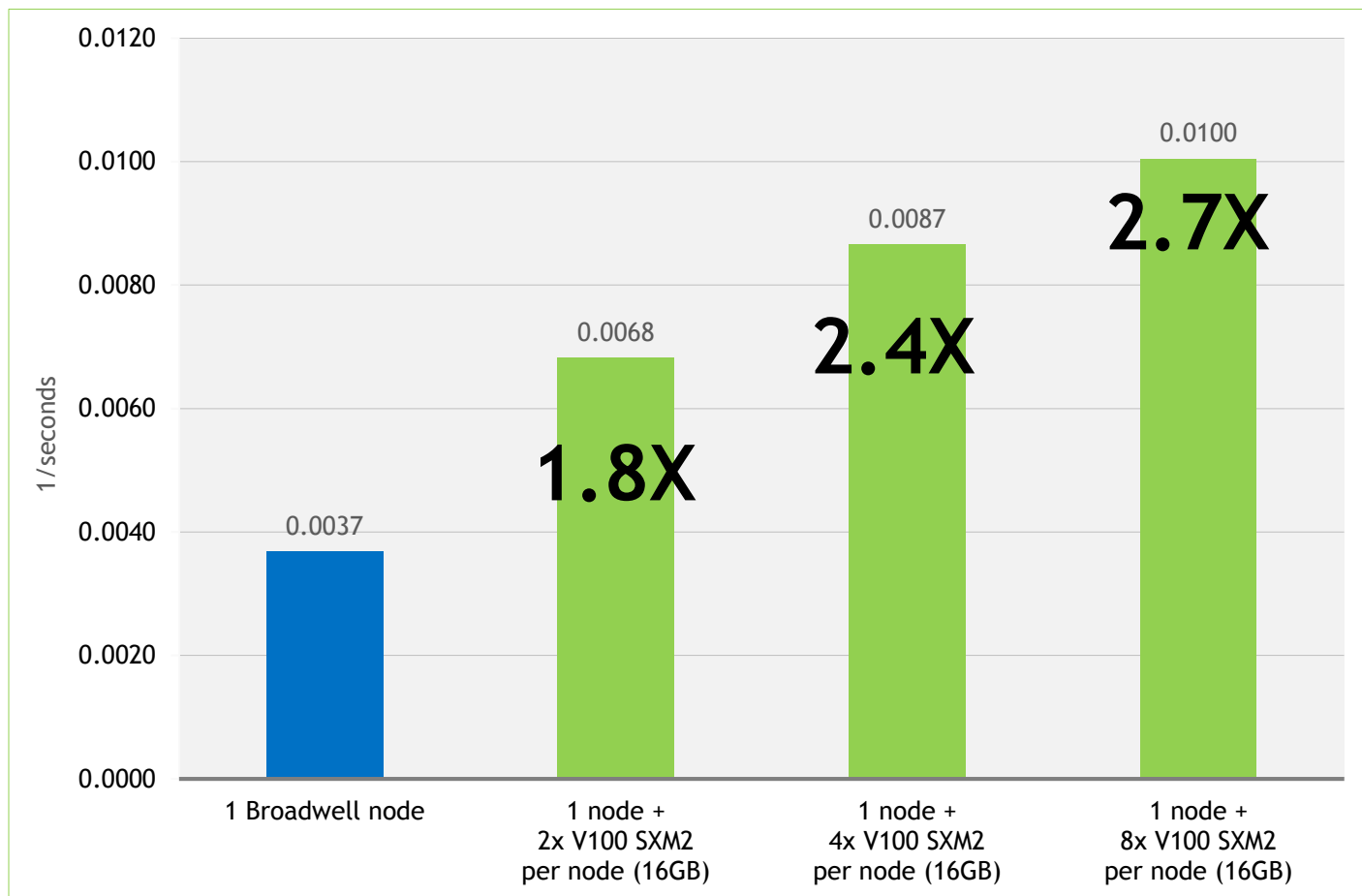


(Untuned on Volta)  
Running **VASP** version 5.4.4  
The **blue node** contains Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs + Tesla V100 PCIe (16GB) GPUs

*267 ions  
788 bands  
762048 plane waves  
ALGO = Fast (Davidson + RMM-DIIS)*

# Supported Systems on V100s SXM2

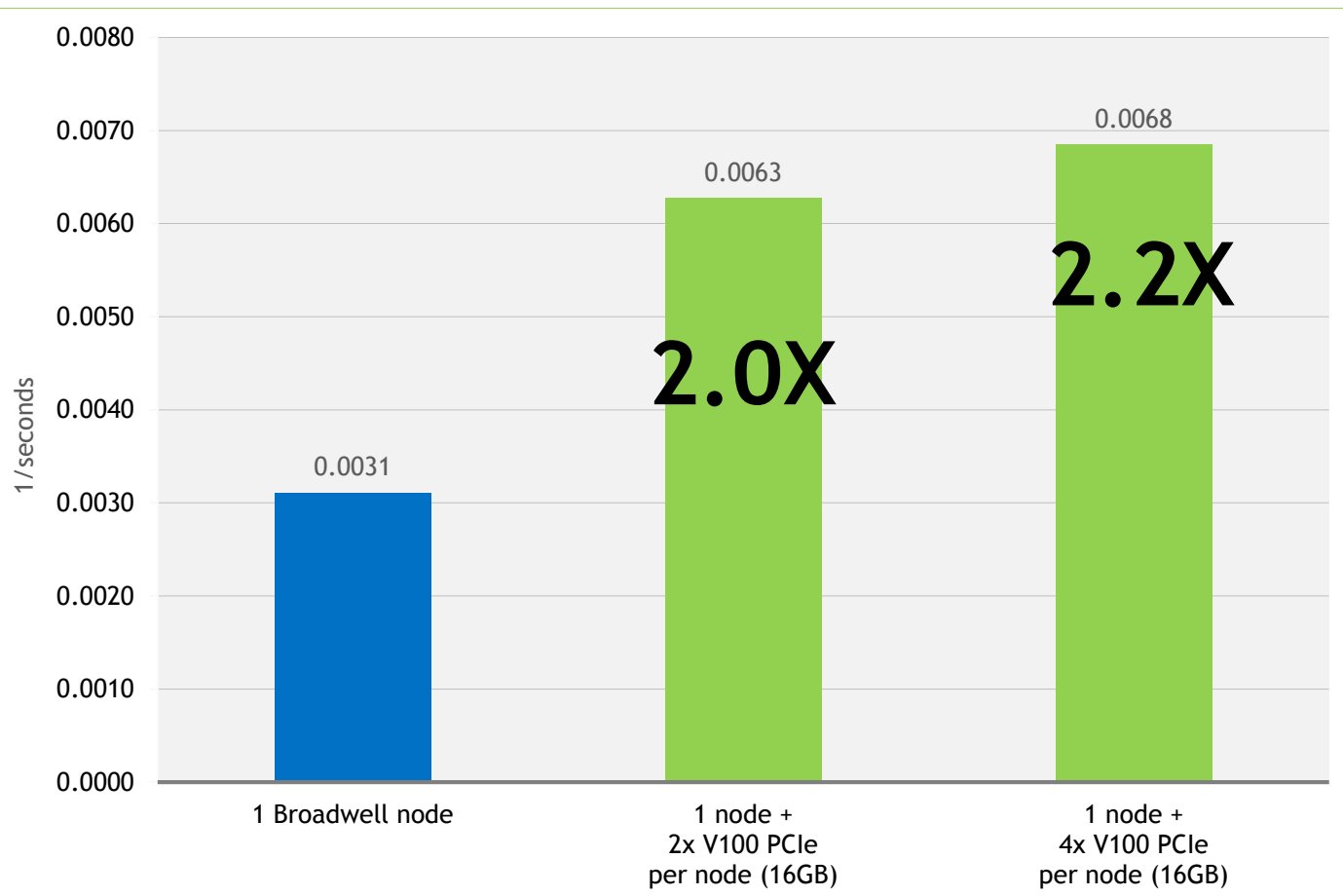


(Untuned on Volta)  
Running **VASP** version 5.4.4  
The **blue node** contains Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs + Tesla V100 SXM2 (16GB) GPUs

*267 ions*  
*788 bands*  
*762048 plane waves*  
*ALGO = Fast (Davidson + RMM-DIIS)*

# NiAl-MD on V100s PCIe



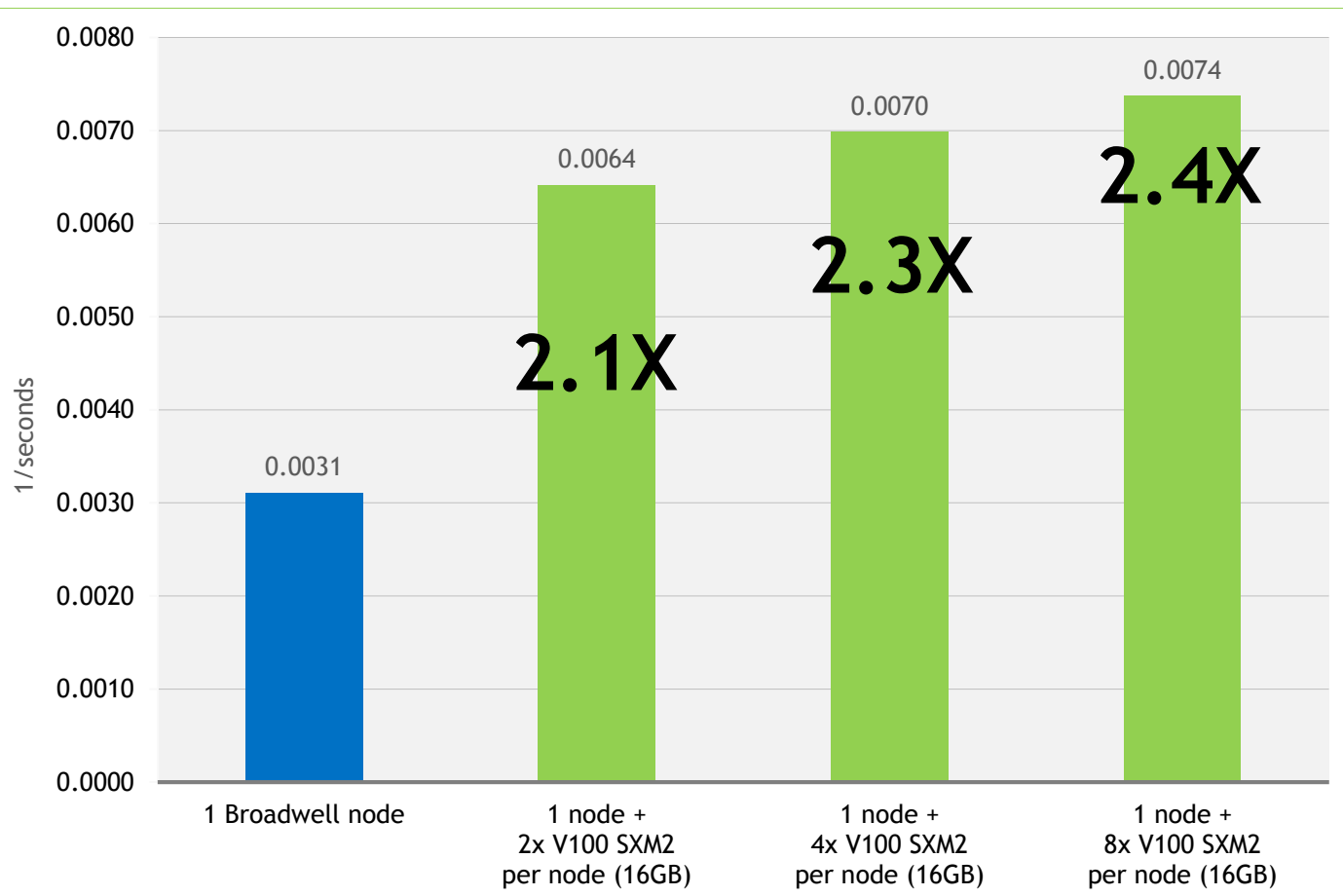
(Untuned on Volta)  
Running **VASP** version 5.4.4  
The **blue node** contains Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs + Tesla V100 PCIe (16GB) GPUs

500 ions  
3200 bands  
729000 plane waves  
ALGO = Fast (Davidson + RMM-DIIS)



# NiAl-MD on V100s SXM2

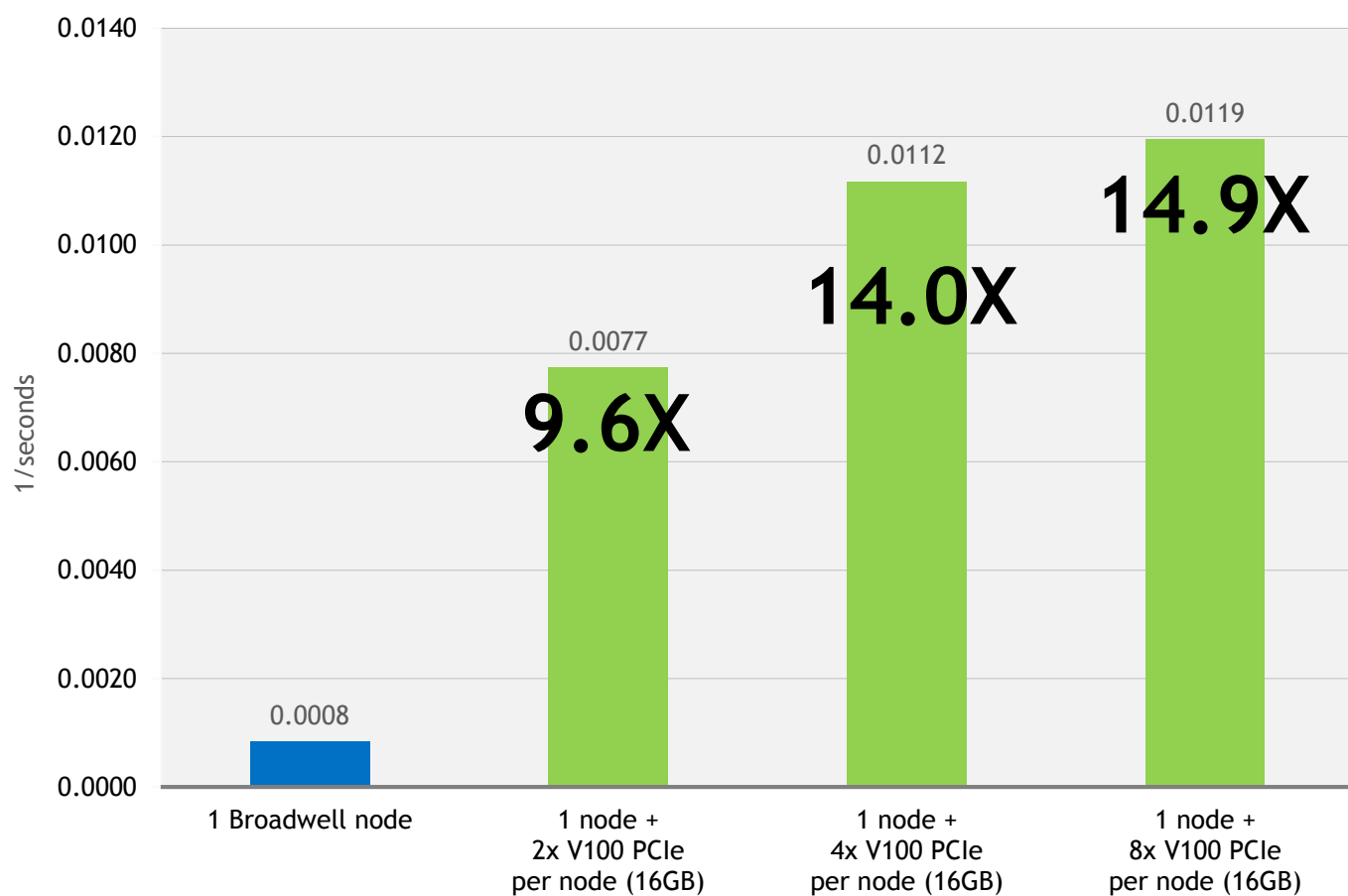


(Untuned on Volta)  
Running **VASP** version 5.4.4  
The **blue node** contains Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs + Tesla V100 SXM2 (16GB) GPUs

500 ions  
3200 bands  
729000 plane waves  
ALGO = Fast (Davidson + RMM-DIIS)

# B.hR105 on V100s PCIe



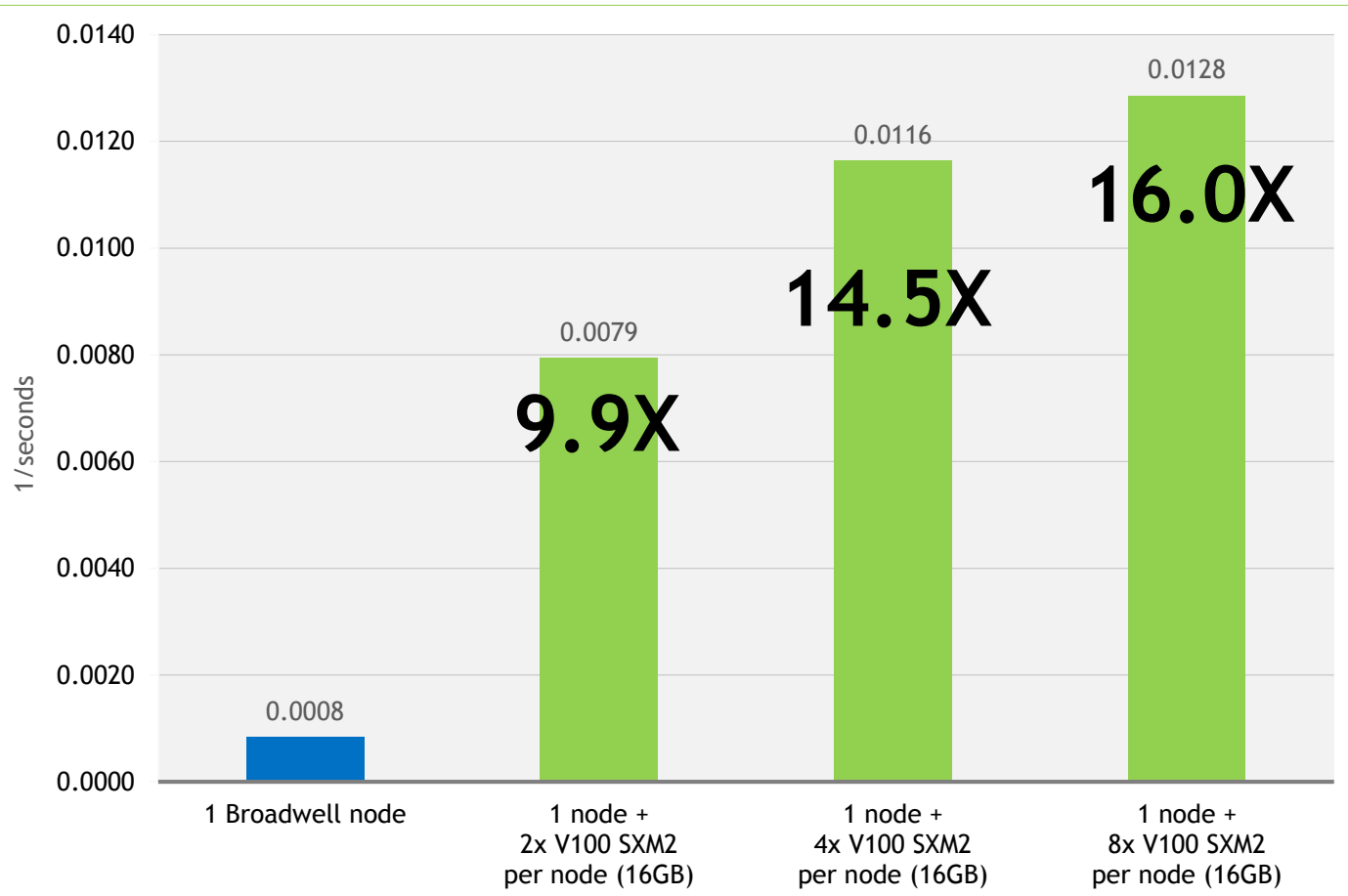
(Untuned on Volta)  
Running **VASP** version 5.4.4

The **blue node** contains Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs + Tesla V100 PCIe (16GB) GPUs

105 Boron atoms (*B*-rhombohedral structure)  
216 bands  
110592 plane waves  
Hybrid Functional with blocked Davicson (ALGO=Normal)  
LHFCALC=.True. (Exact Exchange)

# B.hR105 on V100s SXM2



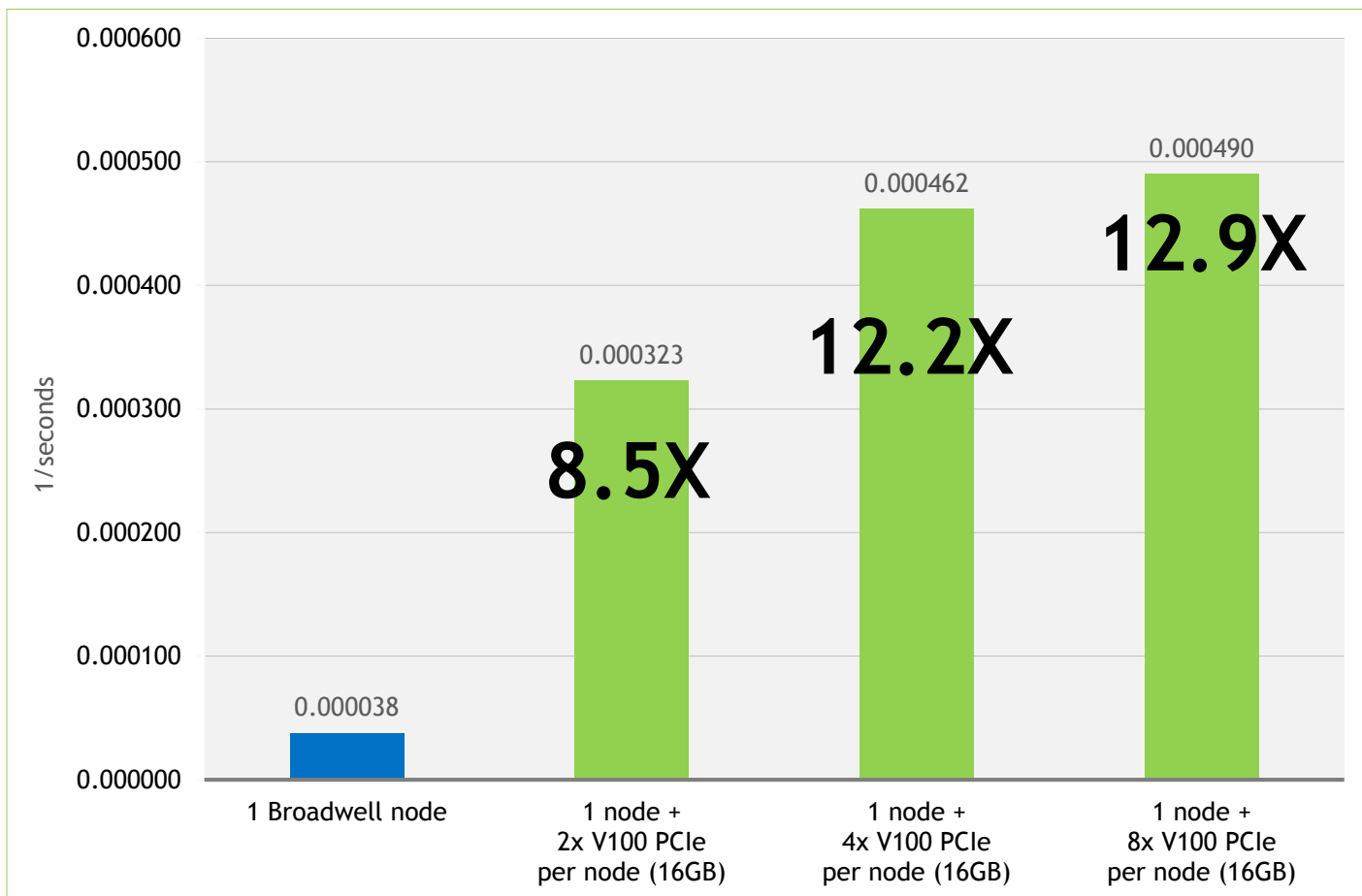
(Untuned on Volta)  
Running **VASP** version 5.4.4

The **blue node** contains Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs + Tesla V100 SXM2 (16GB) GPUs

105 Boron atoms ( *$\beta$ -rhombohedral structure*)  
216 bands  
110592 plane waves  
Hybrid Functional with blocked Davison (ALGO=Normal)  
LHFCALC=.True. (Exact Exchange)

# B.aP107 on V100s PCIe



(Untuned on Volta)  
Running **VASP** version 5.4.4

The **blue node** contains Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2690 v4@2.6GHz [3.5GHz Turbo] (Broadwell) CPUs + Tesla V100 PCIe (16GB) GPUs

*107 Boron atoms (symmetry broken 107-atom B' variant)*

*216 bands*

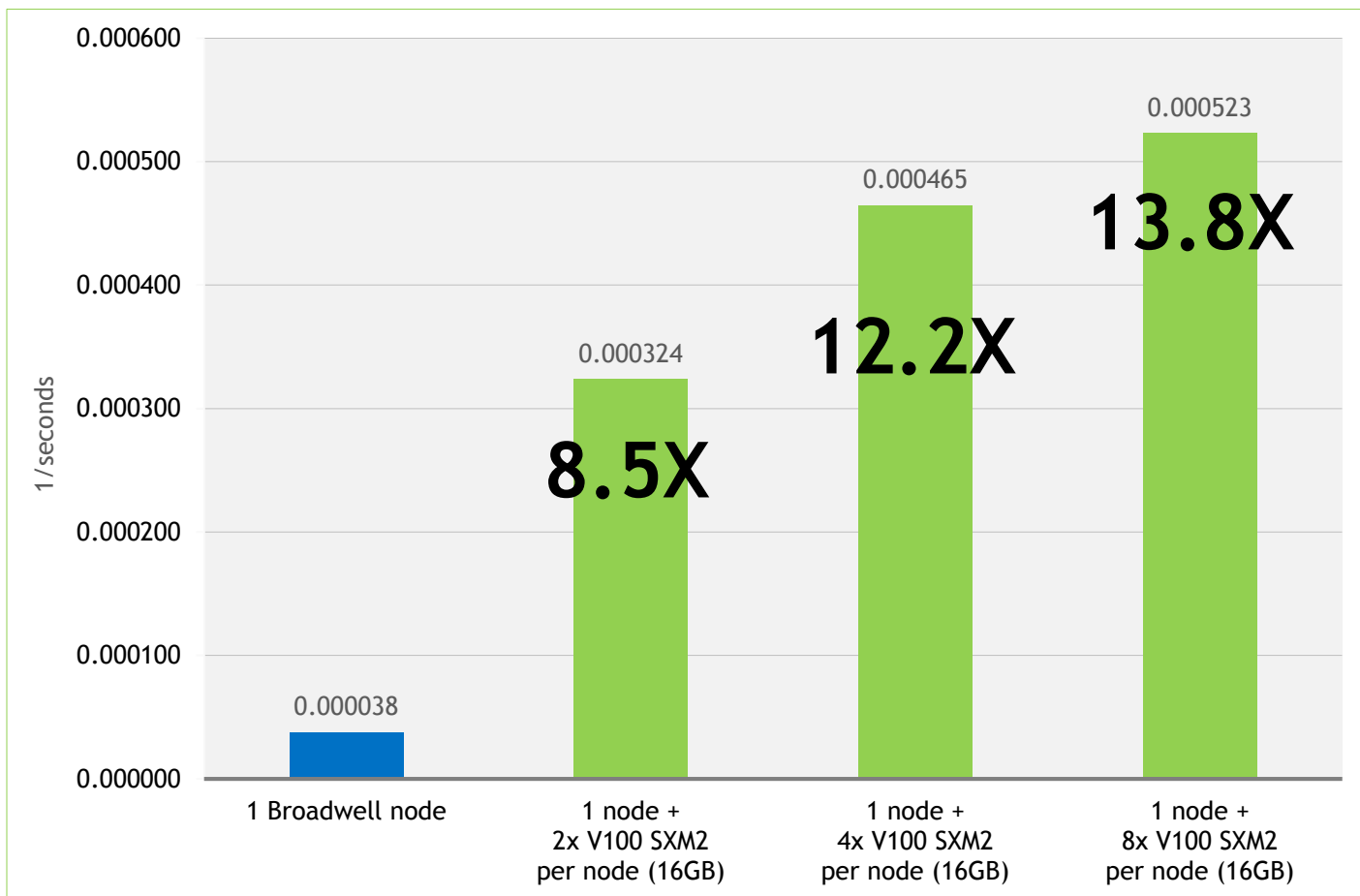
*110592 plane waves*

*Hybrid functional calculation (exact exchange) with blocked Davidson. No KPoint parallelization.*

*Hybrid Functional with blocked Davidson (ALGO=Normal)*

*LHFCALC=.True. (Exact Exchange)*

# B.aP107 on V100s SXM2



(Untuned on Volta)  
Running **VASP** version 5.4.4

The **blue node** contains Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs

The **green nodes** contain Dual Intel Xeon E5-2698 v4@2.2GHz [3.6GHz Turbo] (Broadwell) CPUs + Tesla V100 SXM2 (16GB) GPUs

*107 Boron atoms (symmetry broken 107-atom B' variant)  
216 bands  
110592 plane waves  
Hybrid functional calculation (exact exchange) with blocked Davidson. No KPoint parallelization.  
Hybrid Functional with blocked Davidson (ALGO=Normal)  
LHFCALC=.True. (Exact Exchange)*