

## I claim : CLAIMS

1. A method for supporting virtualization, comprising:  
prior to receiving, by a physical processor, a request originated from a guest partition for a processor feature ID value;  
receiving, by the physical processor, a processor feature ID value from the supervisory partition; and  
storing, by the physical processor, the processor feature ID value in a hardware register accessible by the physical processor;  
receiving, by the physical processor, the request originated from the guest partition for the processor feature ID value; and  
in response the request, providing, by the physical processor without intervention of the supervisory partition, the requested processor feature ID value to the guest partition from the hardware register accessible by from information that was provided a priori to the physical processor by a hypervisor.

2. The method of claim 1, wherein the processor feature ID value is received from the supervisory partition in conjunction with a setup operation for at least one of the guest partition, guest virtual processor, or guest virtual represents support of a first feature that is not natively supported by the physical processor virtual trust level; and storing, by the or a lack of support of a second feature that is natively supported by the physical processor, the received processor feature ID value .

3— The method of claim 2, wherein the setup operation of the at least one of the guest partition, guest virtual processor, or guest virtual processor virtual trust level includes at least one of a generation, instantiation, or startup of the at least one of the guest partition, guest virtual processor, or guest virtual processor virtual trust level.

4. The method of claim 1, wherein the processor feature ID value represents support of a first feature that is not natively supported by the physical processor, or a lack of support of a second feature that is natively supported by the physical processor.

5.3— The method of claim 1, wherein the processor feature ID value differs from a value assigned by a manufacturer of the physical processor, and wherein the processor feature ID value is based on the information that was provided a priori to the physical processor to the hypervisor.

6.4. The method of claim 1, wherein the processor feature ID value is specified for a Virtual Machine Control Structure (VMCS) or Virtual Machine Control Block (VMCB) virtual processor or virtual processor's virtual trust level context, and wherein a different

processor feature ID value is specified for a different VMCS or VMCB. ~~virtual processor or virtual processor's virtual trust level context.~~

7. The method of claim 1, wherein the processor feature ID value is specified for a virtual processor or virtual processor's virtual trust level context, and wherein a different processor feature ID value is specified for a different virtual processor or virtual processor's virtual trust level context.

~~8.5.~~ A computing device comprising:  
a memory and a processor that are respectively configured to store and execute instructions, including instructions for causing the computing device to perform operations, the operations comprising:  
prior to a request from software executing in a guest partition for processor feature ID information, determining by a supervisory partition ~~hypervisor~~,  
the processor  
feature ID information that is to be returned by the processor in response to the request from the software executing in the guest partition for the processor feature ID information; and  
providing, by the supervisory partition ~~hypervisor~~, the determined processor feature ID  
ID  
information to the processor for storage ~~later use~~ by the processor in a hardware register and for later use by the processor in  
responding to requests from the software for the processor feature ID information from the hardware register without intervention of the  
supervisory partition.

9.6. The computing device of claim 85, wherein the operations further comprise:  
storing, by the processor, the provided processor feature ID information for later use by the processor in responding to requests from the software

for the processor feature ID information.

10.7. The computing device of claim 85, wherein the provided processor feature ID information is stored in at least one of a processor feature ID register of the processor. ~~or a processor-accessible memory location.~~

11.8. The computing device of claim 85, wherein the operations further comprise:  
receiving, by the processor, the request from the software for the processor feature ID information; and  
in response the request, providing, by the processor, the requested processor feature ID information based on the processor feature ID information provided by the supervisory partition ~~hypervisor~~.

12. The computing device of claim 8, wherein the processor feature ID information includes a CPU ID value.

13.9. The computing device of claim 85, wherein the processor feature ID information includes an indication of support for at least one feature that is not natively supported by the processor or an indication of a lack of support of at least one other feature that is natively supported by the processor.

14.10. A method for operating a virtual machine on a computing device, comprising:  
determining, by the virtual machine executing on the computing device, that a processor feature ID value is to be obtained for use by the virtual machine;  
sending, by the virtual machine, a request for a processor feature ID to a processor of the computing device; and  
in response to the request, receiving the requested processor feature ID from the processor, wherein the received processor feature ID was provided by the processor, without intervention of a supervisory partition, from ~~based on~~ information stored in a hardware register accessible that was provided a priori to the processor, and wherein the information stored in the hardware register accessible to the processor was provided a priori to the processor  
by the ~~a~~-supervisory partition.

15.11. The method of claim 1410, wherein the requested processor feature ID is received from the processor without a virtual machine exit.

16.12. The method of claim 1410, wherein the processor feature ID represents support of a first processor feature that is not natively supported by the processor ~~or~~ represents a lack of support of a second processor feature that is natively supported by the processor.

17.13. The method of claim 1410, wherein the processor feature ID is specific to at least one of the virtual machine, virtual processor, or virtual processor's trust level, and wherein a different processor feature ID is specific to another virtual machine, virtual processor, or virtual processor's trust level on the computing device.

18.14. The method of claim 1410, wherein the processor feature ID differs from a value assigned by a manufacturer of the processor.

19. The method of claim 14, wherein the processor feature ID includes a CPU ID value.

20.15. The method of claim 1410, wherein the processor feature ID was received from the supervisory partition in conjunction with a setup operation for at least one of the virtual machine, virtual processor, or virtual processor's trust level, and wherein the

setup operation for the at least one of the virtual machine, virtual processor, or virtual processor's trust level includes at least one of a generation, instantiation, or startup of the virtual machine, virtual processor, or virtual processor's trust level.