

CLAIMS

1. A method for managing processing with a computing environment, said method comprising:

initiating, by a host processor processing in a first architectural mode, a first guest virtual machine, the first guest virtual machine to process in the first architectural mode, the first architectural mode having a first instruction set architecture and providing a first set of architectural functions;

initiating, by the host processor, a second guest virtual machine, the second guest virtual machine to process in a second architectural mode, wherein the second architectural mode has a second instruction set architecture and provides a second set of architectural functions, the second set of architectural functions being a reduced set of architectural functions provided in the first set of architectural functions, wherein a selected architectural function provided in the first set of architectural functions is absent from the second set of architectural functions, the second architectural mode being a function inhibit mode, and wherein the selected architectural function comprises dynamic address translation;

and performing processing by the second guest virtual machine in the second architectural mode, wherein the performing processing overrides one or more controls associated with the selected architectural function that are defined to control execution of the second guest virtual machine.

2. The method of any one of the preceding claims, wherein the method further comprises: obtaining by the second guest virtual machine a request to perform an operation, the operation to use or enable the selected architectural function;

based on obtaining the request, determining whether the second guest virtual machine is processing in the second architectural mode; and

based on determining that the second guest virtual machine is processing in the second architectural mode, providing an indication that the selected architectural function is not to be used or enabled.

3. The method of claim 2, wherein the providing the indication includes indicating an error.

4. The method of claim 3, wherein the error is an exception.

5. The method of any one of claims 2 to 4, wherein the operation comprises one of a load program status word instruction that attempts to turn on the selected architectural function, a load real address instruction, a set system mask instruction that attempts to turn on the selected architectural function, a store then OR system mask instruction that attempts to turn on the selected architectural function, or an interruption in which an interruption program status word attempts to turn on the selected architectural function.
6. The method of any one of the preceding claims, wherein the selected architectural function is absent from the second set of architectural functions based on an indicator of the computing environment indicating that the selected architectural function is not supported regardless of whether an enabling/disabling indicator for the selected architectural function indicates enabled.
7. The method of any one of the preceding claims, wherein the first architectural mode comprises 64-bit addressing and uses 64-bit general purpose registers, and the second architectural mode comprises 31-bit addressing and uses 32-bit general purpose registers.
8. A computer system for managing processing with a computing environment, said computer system comprising:
 - a memory; and
 - a processor in communications with the memory, wherein the computer system is configured to perform a method, said method comprising:
 - initiating, by a host processor processing in a first architectural mode, a first guest virtual machine, the first guest virtual machine to process in the first architectural mode, the first architectural mode having a first instruction set architecture and providing a first set of architectural functions;
 - initiating, by the host processor, a second guest virtual machine, the second guest virtual machine to process in a second architectural mode, wherein the second architectural mode has a second instruction set architecture and provides a second set of architectural functions, the second set of architectural functions being a reduced set of architectural functions provided in the first set of architectural functions, wherein a selected architectural function provided in the first set of architectural functions is absent from the second set of architectural functions, the second architectural mode being a function inhibit mode, and wherein the selected architectural function comprises dynamic address translation; and

performing processing by the second guest virtual machine in the second architectural mode, wherein the performing processing overrides one or more controls associated with the selected architectural function that are defined to control execution of the second guest virtual machine, the overriding enforcing absence of the selected architectural function from the second set of architectural functions.

9. The computer system of any of claim 8, wherein the method further comprises:
 - obtaining by the second guest virtual machine a request to perform an operation, the operation to use or enable the selected architectural function;
 - based on obtaining the request, determining whether the second guest virtual machine is processing in the second architectural mode; and
 - based on determining that the second guest virtual machine is processing in the second architectural mode, providing an indication that the selected architectural function is not to be used or enabled.
10. The computer system of claim 9, wherein the operation comprises one of a load program status word instruction that attempts to turn on the selected architectural function, a load real address instruction, a set system mask instruction that attempts to turn on the selected architectural function, a store then OR system mask instruction that attempts to turn on the selected architectural function, or an interruption in which an interruption program status word attempts to turn on the selected architectural function.
11. The computer system of any one of claims 8 to 10, wherein the selected architectural function is absent from the second set of architectural functions based on an indicator of the computing environment indicating that the selected architectural function is not supported regardless of whether an enabling/disabling indicator for the selected architectural function indicates enabled.
12. A computer program product for managing processing with a computing environment, the computer program product comprising:
 - a computer readable storage medium readable by a processing circuit and storing instructions for execution by the processing circuit for performing a method according to any of claims 1 to 7.

13. A computer program stored on a computer readable medium and loadable into the internal memory of a digital computer, comprising software code portions, when said program is run on a computer, for performing the method of any of claims 1 to 7.