CLAIMS

1. A computer-implemented method for increasing processing capacity of virtual machines for an abnormal event, the method comprising, using a processor:

providing, within a data processing system (DPS), a first set of computing resources comprising a set of processor units, the set of processor units comprising one or more first cores in an active state, and one or more second cores that are initially in an inactive state, wherein the one or more second cores, while in the inactive state, represents latent CPU capacity (LCC) pre-existing within the set of processor units;

allocating, for a partition that is hosted on the DPS, the first set of computing resources comprising the set of processor units with the one or more first cores in the active state;

operating the partition using the one or more first cores before the one or more second cores have been activated;

determining, by a resource manager, to increase processing capacity for the partition utilizing the LCC based on an occurrence of the abnormal event;

detecting the abnormal event by an operating system or application within the partition, and wherein:

the determination of the increase is based on an increase request that is requested by the operating system or the application of the partition that detects the abnormal event; and

wherein the abnormal event occurs within the partition that detected it;

in response to the determining of the increase, activating the one or more second cores from the inactive state to the active state;

operating the partition using both the one or more first cores and the one or more second cores after the one or more second cores has been activated;

in response to a predefined criterion, deactivating the one or more second cores from the active state to the inactive state; and

determining, by the resource manager, a number of the one or more second cores to activate for the partition based on historical data associated with the partition.

2. The method of claim 1, wherein the one or more second cores are a part of the DPS that is hosting the partition.

3. The method of claim 1, wherein the determining of the increase is based on an increase request received by the resource manager.

4. The method of claim 1, wherein the abnormal event is an initial program load of an operating system instance executing in the partition.

5. The method of claim 1, wherein the predefined criterion is a completion of the abnormal event.

6. The method of claim 1, wherein the predefined criterion is at least one of a predefined duration since activating the one or more second cores and a use of a predefined amount of processor power.

7. The method of claim 1, further comprising determining a number of additional inactive cores to activate for the partition based on at least one of a predefined or detected load requirement of the abnormal event.

8. The method of claim 1, wherein the resource manager includes a hypervisor that oversees creation, termination, and operation of the partition.

9. The method of claim 1, further comprising determining by a hypervisor when an activation of the one or more second cores are beneficial to addressing the abnormal event.

10. The method of claim 1, further comprising:

determining, by the resource manager, to increase processing capacity for a second partition utilizing the LCC based on an occurrence of a second abnormal event that overlaps in time with an addition of computing resources to the partition;

in response to the determining of the increase for the second partition, providing further resources to the second partition selected from the group consisting of: a) increasing resources provided by the one or more second cores that are activated, or b) allocating one or more third cores to the second partition;

operating the second partition using the one or more third cores in the second partition temporally overlapping with at least one of the one or more first cores or the one or more second cores in the partition after the one or more third cores have been activated; and

in response to a second predefined criterion, removing the further resources previously provided to the second partition selected from the group consisting of: a) decreasing resources provided by the one or more second cores that are activated, or b) deallocating the one or more third cores from the second partition.

11. The method of claim 10, wherein: the allocating of the one or more third cores comprises activating the one or more third cores from the inactive state to the active state; and the deallocating of the one or more third cores comprises deactivating the one or more third cores from the active state to the inactive state.

12. The method of claim 10, wherein: the allocating of the one or more third cores comprises partially or completely reassigning one or more of the second cores from the partition to the second partition; and the deallocating of the one or more third cores comprises unassigning the one or more third cores from the second partition.

13. A computer-implemented method for increasing processing capacity of virtual machines for an abnormal event, the method comprising, using a processor:

providing, within a data processing system (DPS), a first set of computing resources comprising a set of processor units, the set of processor units comprising one or more first cores in an active state, and one or more second cores that are initially in an inactive state, wherein the one or more second cores, while in the inactive state, represents latent CPU capacity (LCC) pre-existing within the set of processor units;

allocating, for a partition that is hosted on the DPS, the first set of computing resources comprising the set of processor units with the one or more first cores in the active state;

operating the partition using the one or more first cores before the one or more second cores have been activated;

determining, by a resource manager, to increase processing capacity for the partition utilizing the LCC based on an occurrence of the abnormal event;

in response to the determining of the increase, activating the one or more second cores from the inactive state to the active state;

operating the partition using both the one or more first cores and the one or more second cores after the one or more second cores has been activated;

in response to a predefined criteria, deactivating the one or more second cores from the active state to the inactive state;

performing at least one of logging, tracking, or auditing information related to activation and deactivation of the one or more second cores; and

determining, by the resource manager, a number of the one or more second cores to activate for the partition based on historical data associated with the partition.

14. A computer system for increasing processing capacity of virtual machines for an abnormal event, the computer system comprising a processor configured to execute instructions that, when executed on the processor, cause the processor to:

provide, within a data processing system (DPS), a first set of computing resources comprising a set of processor units, the set of processor units comprising one or more first cores in an active state, and one or more second cores that are initially in an inactive state, wherein the one or more second cores, while in the inactive state, represents latent CPU capacity (LCC) pre-existing within the set of processor units;

allocate, for a partition that is hosted on the DPS, the first set of computing resources comprising the set of processor units with the one or more first cores in the active state;

operate the partition using the one or more first cores before the one or more second cores have been activated;

determine, by a resource manager, to increase processing capacity for the partition utilizing the LCC based on an occurrence of the abnormal event;

in response to the determination of the increase, activate the one or more second cores from the inactive state to the active state;

operate the partition using both the one or more first cores and the one or more second cores after the one or more second cores has been activated;

in response to a predefined criterion, deactivate the one or more second cores from the active state to the inactive state;

perform logging related to activation and deactivation of the second core; and

determining, by the resource manager, a number of the one or more second cores to activate for the partition based on historical data associated with the partition.

15. The system of claim 14, wherein: the abnormal event is an initial program load of an operating system instance executing in the partition; the predefined criterion is at least one of a completion of the abnormal event, a predefined duration since activating the second core, and a use of a predefined amount of processor power; the resource manager includes a hypervisor that oversees creation, termination, and operation of the partition; and the instructions further cause the processor to determine by the hypervisor when an activation of the second core is beneficial to addressing the abnormal event.

16. A computer program product comprising a computer-readable storage medium having computer-readable program code embodied therewith, to, when executed on a processor:

allocate, for a partition that is hosted on a data processing system (DPS), a first set of computing resources comprising a set of processor units, the set of processor units comprising a first core in an active state, and a second core that is initially in an inactive state, wherein the second core, while in the inactive state, represents latent CPU capacity (LCC) pre-existing within the set of processor units;

operate the partition using the first core before the second core has been activated;

receive, by a resource manager, an increase indication to increase processing capacity for the partition utilizing the LCC based on an occurrence of an abnormal event;

detect the abnormal event by a hypervisor that oversees creation, termination, and operation of the partition, and wherein the increase indication is responsive to the hypervisor detecting the abnormal event;

in response to the increase indication, activate the second core from the inactive state to the active state;

operate the partition using both the first and second core after the second core has been activated;

in response to a predefined criteria, deactivate the second core from the active state to the inactive state; and

determining, by the resource manager, a number of the one or more second cores to activate for the partition based on historical data associated with the partition.

17. The computer program product of claim 16, wherein the program code embodied therewith is further configured to determine by the hypervisor when an activation of the second core is beneficial to addressing the abnormal event.

18. The computer program product of claim 16, wherein the program code embodied therewith is further configured to:

receive, by the resource manager, the increase indication to increase the processing capacity for the partition utilizing the LCC based on the occurrence of the abnormal event;

in response to the increase indication, activate the second core from the inactive state to the active state;

receive, by the resource manager, a second increase indication to increase processing capacity for a second partition utilizing the LCC based on an occurrence of a second abnormal event that overlaps in time with the abnormal event in the partition;

in response to the second increase indication, activate a third core from the inactive state to the active state;

operate the second partition using the third core in the second partition temporally overlapping with the second core in the partition after the third core has been activated; and

in response to a second predefined criteria, deactivate the third core from the active state to the inactive state.

19. The computer program product of claim 18, wherein: the abnormal event is an initial program load of an operating system instance executing in the partition; the predefined criteria is at least one of a completion of the abnormal event, a predefined duration since activating the second core, and a use of a predefined amount of processor power; the resource manager includes the hypervisor that oversees creation, termination, and operation of the partition; and the method further comprises determining by the hypervisor when an activation of the second core is beneficial to addressing the abnormal event.