

HPA Policies and Mappings

Refer wiki page: <https://wiki.onap.org/display/DW/Policy+Specification+and+Retrieval+for+OOF>

Policy	Attributes	hpa-feature	Tosca Mapping	Openstack Mapping	AAI representation (Eg:)								
HPA CPU Topology Policy Example	numCpuSockets numCpuCores numCpuThreads	cpuTopology		hw:cpu.Sockets, hw:cpu.Cores, hw:cpu.Threads,	<pre>hpa-capability-id="a369fd3d-0b15-44e1-81b2-6210efc6dff8", hpa-feature="cpuTopology", architecture="generic", hpa-version="v1",</pre> <table border="1"> <tr> <th>hpa-attribute-key</th><th>hpa-attribute-value</th></tr> <tr> <td>numCpuSockets</td><td>{value:4}</td></tr> <tr> <td>numCpuCores</td><td>{value:4}</td></tr> <tr> <td>numCpuThreads</td><td>{value:8}</td></tr> </table>	hpa-attribute-key	hpa-attribute-value	numCpuSockets	{value:4}	numCpuCores	{value:4}	numCpuThreads	{value:8}
hpa-attribute-key	hpa-attribute-value												
numCpuSockets	{value:4}												
numCpuCores	{value:4}												
numCpuThreads	{value:8}												
HPA Basic Capabilities Policy Example	numVirtualCpu virtualMemSize	basicCapabilities	virtual_cpu#num_virtual_cpu virtual_memory#virtual_mem_size	vcpus, ram	<pre>hpa-capability-id="b369fd3d-0b15-44e1-81b2-6210efc6dff9", hpa-feature="basicCapabilities", architecture="generic", hpa-version="v1",</pre> <table border="1"> <tr> <th>hpa-attribute-key</th><th>hpa-attribute-value</th></tr> <tr> <td>numVirtualCpu</td><td>{value:4}</td></tr> <tr> <td>virtualMemSize</td><td>{value:4, unit:"MB"}</td></tr> </table>	hpa-attribute-key	hpa-attribute-value	numVirtualCpu	{value:4}	virtualMemSize	{value:4, unit:"MB"}		
hpa-attribute-key	hpa-attribute-value												
numVirtualCpu	{value:4}												
virtualMemSize	{value:4, unit:"MB"}												
HPA OVS DPDK Policy Example	dataProcessingAccelerationLibrary	ovsDpdk			<pre>hpa-capability-id="b369fd3d-0b15-44e1-81b2-6210efc6dff9", hpa-feature="ovsDpdk", architecture="Intel64", hpa-version="v1",</pre> <table border="1"> <tr> <th>hpa-attribute-key</th><th>hpa-attribute-value</th></tr> <tr> <td>dataProcessingAccelerationLibrary</td><td>{value:"v12.1"}</td></tr> </table>	hpa-attribute-key	hpa-attribute-value	dataProcessingAccelerationLibrary	{value:"v12.1"}				
hpa-attribute-key	hpa-attribute-value												
dataProcessingAccelerationLibrary	{value:"v12.1"}												
"HPA CPU Pinning Policy Example	logicalCpuThreadPinningPolicy logicalCpuPinningPolicy	cpuPinning		hw:cpu_thread_policy hw:cpu_policy	<pre>hpa-capability-id="c369fd3d-0b15-44e1-81b2-6210efc6dff9", hpa-feature="cpuPinning", architecture="generic", hpa-version="v1",</pre> <table border="1"> <tr> <th>hpa-attribute-key</th><th>hpa-attribute-value</th></tr> <tr> <td>logicalCpuThreadPinningPolicy</td><td>{value:"prefer"}</td></tr> <tr> <td>logicalCpuPinningPolicy</td><td>{value:"dedicated"}</td></tr> </table>	hpa-attribute-key	hpa-attribute-value	logicalCpuThreadPinningPolicy	{value:"prefer"}	logicalCpuPinningPolicy	{value:"dedicated"}		
hpa-attribute-key	hpa-attribute-value												
logicalCpuThreadPinningPolicy	{value:"prefer"}												
logicalCpuPinningPolicy	{value:"dedicated"}												

HPA NUMA Policy Example	numaNodes numaCpu-N numaMem-N	numa		hw: numa_nodes hw: numa_cpus:N hw: numa_mem:N	hpa-capability-id="c369fd3d-0b15-44e1-81b2-6210efc6dff9", hpa-feature="numa", architecture="generic", hpa-version="v1", <table border="1"><thead><tr><th>hpa-attribute-key</th><th>hpa-attribute-value</th></tr></thead><tbody><tr><td>numaNodes</td><td>{value:2}</td></tr><tr><td>numaCpu-0</td><td>{value:[0,1]}</td></tr><tr><td>numaCpu-1</td><td>{value:[2,3,4,5]}</td></tr><tr><td>numaMem-0</td><td>{value:2, unit:"MB"}</td></tr><tr><td>numaMem-1</td><td>{value:4, unit:"MB"}</td></tr></tbody></table>	hpa-attribute-key	hpa-attribute-value	numaNodes	{value:2}	numaCpu-0	{value:[0,1]}	numaCpu-1	{value:[2,3,4,5]}	numaMem-0	{value:2, unit:"MB"}	numaMem-1	{value:4, unit:"MB"}
hpa-attribute-key	hpa-attribute-value																
numaNodes	{value:2}																
numaCpu-0	{value:[0,1]}																
numaCpu-1	{value:[2,3,4,5]}																
numaMem-0	{value:2, unit:"MB"}																
numaMem-1	{value:4, unit:"MB"}																
HPA SriosvNICNetwork Policy Example	pciCount pciVendorId pciDeviceId	SriovNICNetwor	virtual_network_interface_requirements#network_interface_requirements#interfaceType virtual_network_interface_requirements#nic_io_requirements#pciVendorId virtual_network_interface_requirements#nic_io_requirements#pciDeviceId virtual_network_interface_requirements#nic_io_requirements#pciNumDevices virtual_network_interface_requirements#nic_io_requirements#physicalNetwork?	sriov_nic=sriov-nic-<vendor>-<Vendor ID>-<Device ID>-physicalNetwork:COUNT It is expected that Openstack administrator creates alias that starts with sriov and put the vendor ID, device ID. Example: Assume that there are two SRIOV-NIC cards supported by a region, Intel and Mellanox. Examples: sriov-nic-intel-1234-5678-physnet1:1 sriov-nic-mellanox-2345-6543-physnet1:1	hpa-capability-id="ty53fd3d-0b15-11w4-81b2-6210efc6dff9", hpa-feature="sriovNICNetwork", architecture="intel64", hpa-version="v1", <table border="1"><thead><tr><th>hpa-attribute-key</th><th>hpa-attribute-value</th></tr></thead><tbody><tr><td>pciCount</td><td>{value: 1}</td></tr><tr><td>pciVendorId</td><td>{value: "1234"}</td></tr><tr><td>pciDeviceId</td><td>{value: "5678"}</td></tr><tr><td>physicalNet work</td><td>{value: "physnet1"}</td></tr></tbody></table>	hpa-attribute-key	hpa-attribute-value	pciCount	{value: 1}	pciVendorId	{value: "1234"}	pciDeviceId	{value: "5678"}	physicalNet work	{value: "physnet1"}		
hpa-attribute-key	hpa-attribute-value																
pciCount	{value: 1}																
pciVendorId	{value: "1234"}																
pciDeviceId	{value: "5678"}																
physicalNet work	{value: "physnet1"}																
HPA PCIe Passthrough Policy Example	pciCount pciVendorId pciDeviceId	pciePassthrough	virtual_network_interface_requirements#network_interface_requirements#interfaceType virtual_network_interface_requirements#nic_io_requirements#pciVendorId virtual_network_interface_requirements#nic_io_requirements#pciDeviceId virtual_network_interface_requirements#nic_io_requirements#pciNumDevices	pci_passthrough:alias=ALIAS:COUNT Openstack administrator is expected to create ALIAS as <aliasName>-<deviceType>-<architecture>-<PCIe vendor ID in Hex>-<PCIe device ID> QuickAssist example: "mycrypto-qat-intel-8086-0443"	hpa-capability-id="f453fd3d-0b15-11w4-81b2-6210efc6dff9", hpa-feature="pciePassthrough", architecture="intel64", hpa-version="v1", <table border="1"><thead><tr><th>hpa-attribute-key</th><th>hpa-attribute-value</th></tr></thead><tbody><tr><td>pciCount</td><td>{value: 1}</td></tr><tr><td>pciVendorId</td><td>{value: "8086"}</td></tr><tr><td>pciDeviceId</td><td>{value: "0443"}</td></tr></tbody></table>	hpa-attribute-key	hpa-attribute-value	pciCount	{value: 1}	pciVendorId	{value: "8086"}	pciDeviceId	{value: "0443"}				
hpa-attribute-key	hpa-attribute-value																
pciCount	{value: 1}																
pciVendorId	{value: "8086"}																
pciDeviceId	{value: "0443"}																

HPA Local Storage Policy Example	diskSize ephemeralDiskSize swapMemSize	localStorage		disk swap	hpa-capability-id="u456fd3d-0b15-90r4-81b2-6210efc6dff9", hpa-feature="localStorage", architecture="generic", hpa-version="v1",	hpa-attribute-key	hpa-attribute-value
						diskSize	{value:4096, unit:"GB"}
						ephemeralDiskSize	{value:160, unit:"GB"}
						swapMemSize	{value:8192, unit:"MB"}
HPA CPU Instruction Set Extensions Policy Example	instructionSetExtensions	instructionSetExtensions		hw:capabilities:cpu_info:features	hpa-capability-id="c369fd3d-0b15-44e1-81b2-6210efc6dff9", hpa-feature="instructionSetExtensions", architecture="Intel64", hpa-version="v1",	hpa-attribute-key	hpa-attribute-value
HPA Huge Pages Policy Example	memoryPageSize	hugePages	virtual_memory#vdu_memory_requirements#memoryPageSize	hw:mem_page_size values can be ANY, 4KB, 2MB, 1GB How to handle large, small, any from openstack? if the hw:mem_page_size is an integer it is assumed the unit is in KB The default value for small page is 4k, for large page is 2M or 1G(recommended value 2M), for any page, libvirt will firstly try to find large pages, if failed then will fall back to small pages. so it's suggest do not support any page in current release version	hpa-capability-id="e769fd3d-0b15-77b3-81b2-6210efc6dff9", hpa-feature="hugePages", architecture="generic", hpa-version="v1",	hpa-attribute-key	hpa-attribute-value
						memoryPageSize	{value:2, unit:"MB"}