• VPManger is an open source virtual computing cluster middleware software developed by computing center IHEP to schedule virtual machines dynamically in according with the workload of job management system.

• VPManger lies between resource management system (such as Torque and HTCondor) and openstack.

• VPManger is composed by three modules: virtual job manager, VM quota and VM node manager.

• Virtual Computing Cluster middleware software has been developed and deployed, and initial test results proved the feasibility and stability of this approach. The dynamic resource scheduling policies make the resource utilization rate greatly improved.

• VPManger Github: https://github.com/hep-gnu/VCondor.git