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Container Practices at IHEP

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Based on our experiments demands, especially for BES and LHAASO, Institute of High Energy Physics, Chinese Academy of Sciences (IHEP) has researched and deployed container technology based on singularity and docker. This presentation will introduce the current status of practices at IHEP
We developed a container program that provides users with uniform access to the container, the location of the containers is transparent to the user, which is more than advantageous for the deployment and update of the container and is convenient for the user to use. Additionally, we developed and optimized different container image and storage mounting strategies for different experimental needs,. For example, the experimental SL55 container offered instead of the physical machine for BES experiments. BES Users can compile and submit jobs in the container just like physical machines. In LHAASO experimental cluster, which is located in Daocheng, Sichuan province (at the altitude of 4410 m), in order to provide a more stable and highly available login environment, we built a SL7-based login node docker container image, and through Kubernetes implements dynamic expansion and load balancing of the login node. And we started to support using containers with batch systems, the user's job can be dispatched to the container ,so that jobs can have exactly the same environment no matter what site they're running on. Finally some site services, such as distributed site monitor, are using docker to deploy and run more stable.

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