



Visualization of average surface temperature, snow water equivalent, and snow cover fraction over Central Asia. Scientists used the Noah 3.2 and CLM2 models within the Land Information System (LIS) framework to generate this visualized data.
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Containerizing the NASA Land Information System Framework

The NASA Land Information System (LIS) is a high-performance software framework for terrestrial hydrology modeling and data assimilation. LIS enables domain scientists to integrate satellite and ground-based observational products and advanced modeling algorithms to extract land surface states and fluxes. However, it can be challenging to install LIS due to its dependencies on specific versions of software and compilers. Using Docker to containerize LIS eliminates this complexity and makes it easier to deploy. Furthermore, adding Kubernetes as a container orchestration platform simplifies for the end user the process of deploying a cluster capable of running distributed LIS jobs, making it possible to easily build LIS clusters on local high-performance computing (HPC) gear or in the cloud.



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Kubernetes container orchestration software supplies an easy way to deploy arbitrary sized clusters of LIS containers to be used for distributed, MPI-based LIS workflows.

kubernetes