Enhancements

We propose additional optimizations that can help to speed up :

compactenumerate

A s the majority of the pull time is caused by compression, we propose to cache hot layers as precompressed tar files in the staging area. According to our statistics, only 10% of all images were pulled from Docker Hub more than 360 times from the time the image was first pushed to Docker Hub until May 30, 2017. Moreover, we found that 90% of pulls went to only 0.25% of images based on image pull counts. This suggests the existence of both cold and hot images and layers.

A s deduplication provides significant storage savings, can use faster but less effective local compression methods than gzip lz4.

T he registries often experience fluctuation in load with peaks and troughs dockerworkload. Thus, file-level deduplication can be triggered when the load is low to prevent interference with client pull and push requests.