

Image cache in CI

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Problem

Image pulls are slow because

- registry is slow
- network is unreliable
- high traffic cost

```
2287 some-registry/sre-demo1-model:15560cb50fbbf9205e5
2318 some-registry/sre-staging-model:c715ed4ff0bc7879b
2340 some-registry/cpp-builder:2.03
2450 some-registry/packer:af0035cef0be2e5cce98c42c2164
2485 some-registry/go-builder:0.33
2488 some-registry/go-builder:0.33
2514 some-registry/sre-demo1-model:903f4d142dac8cade4b
2668 some-registry/sre-demo1-model:d6abc34bfcc88261e2e
2686 some-registry/sre-demo1-model:24886c8fe5da38c5f3c
2690 some-registry/sre-staging-model:26618fc08592ceaaa
2703 some-registry/sre-staging-model:93019632cd92f83d3
2826 some-registry/tmp/envoy-builder:3ca8acc35fdb57ab2
2870 some-registry/kube-apiserver:1.17.8
2990 some-registry/sre-demo1-model:03c09903d783bac4077
3024 some-registry/sre-crt-model:8cf7cc55e253d2b44aa05
3166 some-registry/sre-staging-model:fa206780246d6c85c
3218 some-registry/sre-staging-model:802655a12c4bc0f15
3448 some-registry/sre-demo1-model:4e4624e1031592e640b
3527 some-registry/sre-staging-model:4adac11ce34b284af
3530 some-registry/tmp/envoy-builder:11efa5680d987fff3
3617 some-registry/sre-demo1-model:496f9d0c90da683d33c
3728 some-registry/sre-demo1-model:5ef81d61ee094445fc5
3880 some-registry/sre-crt-model:aaa9e3ca30027cfaef696
3968 some-registry/sre-demo1-model:5b6e0f93a81d331b22a
4017 some-registry/sre-demo1-model:ec1aed7a9c7ab3b5e76
4463 some-registry/infrastructure/infraeng/docker-imag
4558 some-registry/tmp/envoy-builder:11efa5680d987fff3
4894 some-registry/sre-demo1-model:87ccd33669e2986cbe6
4927 some-registry/sre-demo1-model:3f9e12662f7e9ccf54d
5298 some-registry/sre-demo1-model:9f56b25b1469016a070
6000 some-registry/sre-demo1-model:d59ee7db647d96a211a
7852 some-registry/sre-demo1-model:9f56b25b1469016a070
8976 some-registry/sre-demo1-model:9f56b25b1469016a070
```

Usage

Included in SKU
500 GiB

Used
15.96 TiB

Additional storage
15.47 TiB

Solution

Deploy local registry cache

-
-

Configuration

```
[  
- name: REGISTRY_PROXY_REMOTEURL  
  value: "https://registry-1.docker.io"  
- name: REGISTRY_HTTP_ADDR  
  value: "0.0.0.0:5002"  
- name: REGISTRY_HTTP_DEBUG_ADDR  
  value: "0.0.0.0:6002"  
- name: REGISTRY_HTTP_DEBUG_PROMETHEUS_ENABLED  
  value: "true"  
- name: REGISTRY_STORAGE_DELETE_ENABLED  
  value: "true"  
- name: STORAGE_MAINTENANCE_UPLOADPURGING_AGE  
  value: 100h  
]
```

Podman configuration

```
/etc/containers/registries.conf.d/001-registry-proxy.conf
```

```
prefix = "docker.io"  
insecure =  
location = "docker.io"  
  
location = "registry.c0.k8s.6shore.net"  
insecure =
```

Containerd configuration

```
# Kubernetes doesn't use containerd restart manager.
disabled_plugins = ["restart"]
oom_score = -999

[debug]
    level = "info"

[grpc]
    gid = 412

[plugins.cri]
    stream_server_address = "127.0.0.1"
    max_container_log_line_size = 262144

    bin_dir = "/home/kubernetes/bin"
    conf_dir = "/etc/cni/net.d"
    conf_template = ""

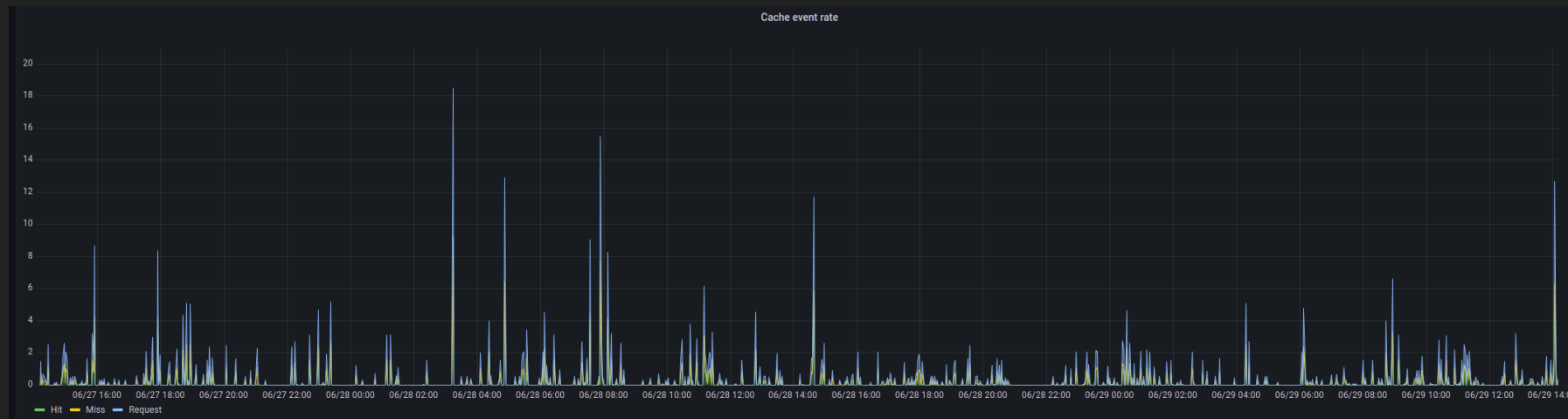
    endpoint =
```

Docker configuration

/etc/docker/daemon.json

```
{
  "log-driver": "json-file",
  "log-opts": {
    "max-size": "30m"
  },
  "registry-mirrors": ["http://registry.c0.k8s.6shore.net"],
  "insecure-registries" : ["registry.c0.k8s.6shore.net"]
}
```


Metrics



```
sum by (type) (rate(registry_storage_cache_total[$__rate_interval]))
kubelet_volume_stats_used_bytes{persistentvolumeclaim="registry-data"}
```

Pros and cons

QA