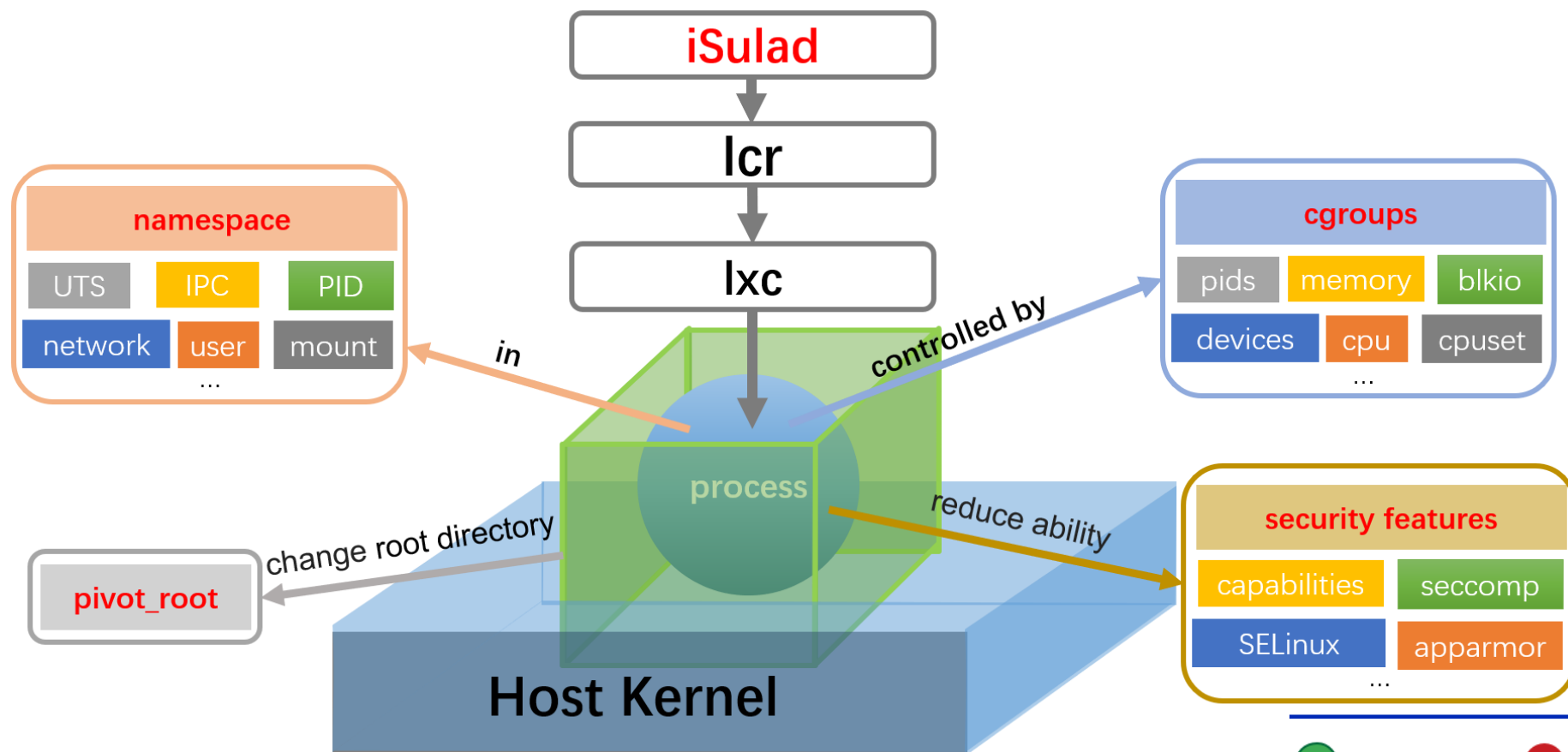


赛题 56

为 iSulad 的查询(inspect)命令增加size 以及 type 子命令

直播导师：张晓雨

iSula 是一种云原生轻量级容器解决方案，可通过统一、灵活的架构满足 ICT 领域端、边、云场景的多种需求。iSula 通用容器引擎（iSulad）提供统一的架构设计来满足 CT 和 IT 领域的不同需求。相比 Golang 编写的 Docker，轻量级容器具有轻、灵、巧、快的特点，不受硬件规格和架构的限制，底噪开销更小，可应用领域更为广泛。



iSulad 查询(inspect)命令增强(type, size)

isula客户端inspect命令，可以通过指定ID or Name，查询到对应容器/镜像的相关信息

isula inspect <container>

```
> isula inspect 2ccad1
{
  "Id": "2ccad12c0d3c2b43068363e65fdd12aab11442fd07d9c6c0ba7b02f58423d54",
  "Created": "2020-11-20T22:10:20.043093504+08:00",
  "Path": "sh",
  "Args": [],
  "State": {
    "Status": "running",
    "Running": true,
    "Paused": false,
    "Restarting": false,
    "Pid": 53980,
    "ExitCode": 0,
    "Error": "",
    "StartedAt": "2020-11-20T22:10:20.944274455+08:00",
    "FinishedAt": "0001-01-01T00:00:00Z",
    "Health": {
      "Status": "",
      "FailingStreak": 0,
      "Log": []
    }
  },
  "Image": "sha256:6858089bf669cc5da7cb6af83dfeae838264d12e1be0182f92f6bd96559873e3",
  "ResolvConfPath": "/var/lib/isulad/engines/lcr/2ccad12c0d3c2b43068363e65fdd12aab11442fd07d9c6c0ba7b02f58423d54/resolv.conf",
  "HostnamePath": "",
  "HostsPath": "/var/lib/isulad/engines/lcr/2ccad12c0d3c2b43068363e65fdd12aab11442fd07d9c6c0ba7b02f58423d54/hosts",
  "LogPath": "/var/lib/isulad/engines/lcr/2ccad12c0d3c2b43068363e65fdd12aab11442fd07d9c6c0ba7b02f58423d54/console.log",
  "Name": "2ccad12c0d3c2b43068363e65fdd12aab11442fd07d9c6c0ba7b02f58423d54",
  "RestartCount": 0,
  "MountLabel": "",
  "ProcessLabel": "",
  "SecompProfile": "",
  "NoNewPrivileges": false,
  "HostConfig": {
    "VolumesFrom": [],
    "Binds": [],
    "Mounts": []
  }
}
```

isula inspect <image>

```
> isula inspect 9140108
{
  "image": {
    "id": "9140108b62dc87d9b278bb0d4fd6a3e44c2959646eb966b86531306faa01b09b",
    "repo_tags": [
      "ubuntu:latest"
    ],
    "repo_digests": [
      "ubuntu@sha256:2e70e9c81838224b5311970dbf7ed16802fbfe19e7a70b3cbfa3d7522aa285b4"
    ],
    "top_layer": "cbca8e9eddab4a2a6f403394c59c0be317a50c5ee826c24cfc7f7519686148b",
    "size": 72877148,
    "created": "2020-09-26T06:34:30.295807036+08:00",
    "loaded": "2020-10-08T11:54:49.923284461+08:00",
    "Spec": {
      "created": "2020-09-25T22:34:30.295807036Z",
      "architecture": "amd64",
      "os": "linux",
      "config": {
        "User": "",
        "Env": [
          "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin"
        ],
        "Cmd": [
          "/bin/bash"
        ],
        "WorkingDir": ""
      },
      "rootfs": {
        "diff_ids": [
          "sha256:d42a4fdf4b2ae8662ff2ca1b695eae571c652a62973c1beb81a296a4f4263d92",
          "sha256:90ac32a0d9ab11e7745283f3051e990054616d631812ac63e324c1a36d2677f5",
          "sha256:782f5f011dda2a0bf038cc2ccab634095d6e35c8034302d788423f486bb177"
        ],
        "type": "layers"
      },
      "history": [
        {
          "created": "2020-09-25T22:34:27.65236466Z",
          "created_by": "/bin/sh -c #(nop) ADD file:da80f59399481ffc32f84353830dcf598f31a97785222e75d643bf8a9aa14e7 in /"
        },
        {
          "created": "2020-09-25T22:34:28.547374062Z",
          "created_by": "/bin/sh -c set -xe && echo '#!/bin/sh' > /usr/sbin/policy-rc.d && echo 'exit 101' >> /usr/sbin/policy-rc.d && it.*&/exit 0/' /sbin/init && echo 'force-unsafe-io' > /etc/dpkg/dpkg.cfg.d/docker-apt-speedup && echo 'DPkg:Post-Invoke { \rm -f /var/cache/apt/Invoke { \rm -f /var/cache/apt/archives/*.deb /var/cache/apt/archives/partial/*.deb /var/cache/apt/*.bin || true }; } >> /etc/apt/apt.conf.d/docker-clean && echo 'Acquire::Languages \t&& echo 'Acquire::GzipIndexes \true'; Acquire::CompressionTypes::Order:: \gz';' > /etc/apt/apt.conf.d/docker-gz"
        }
      ]
    }
  }
}
```

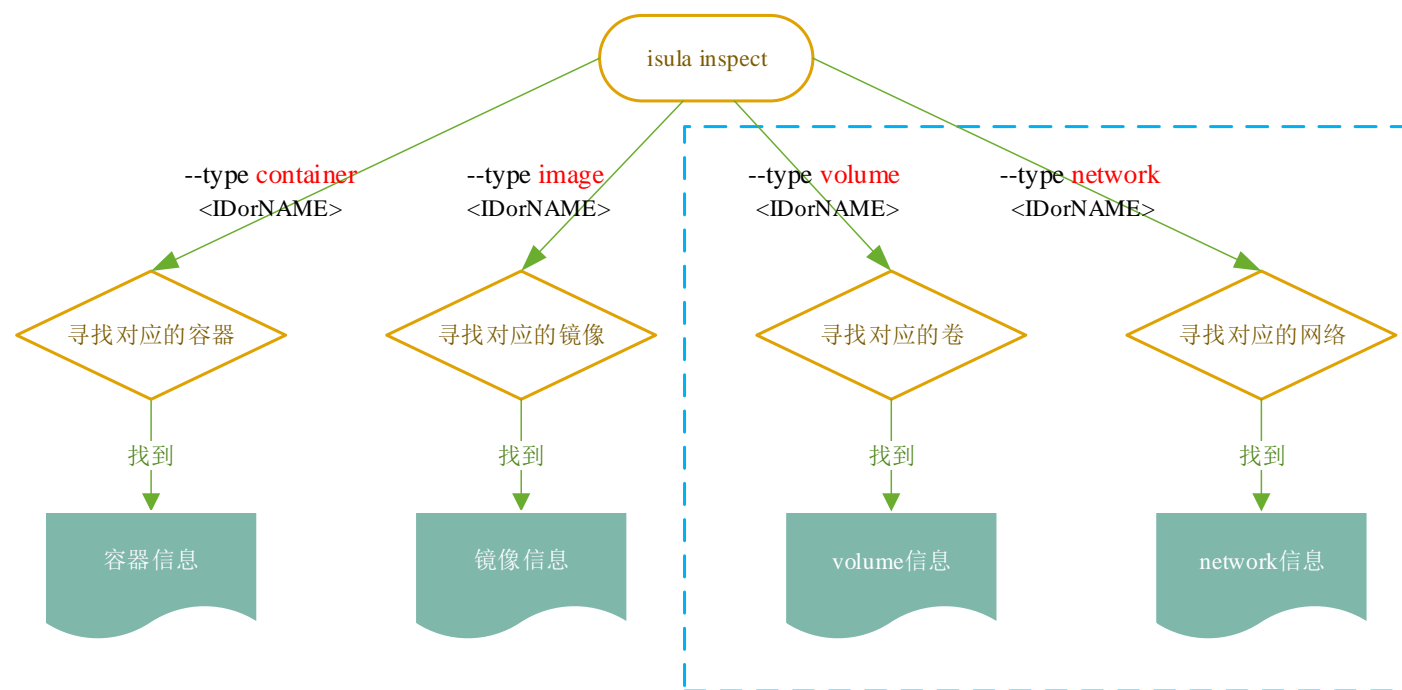
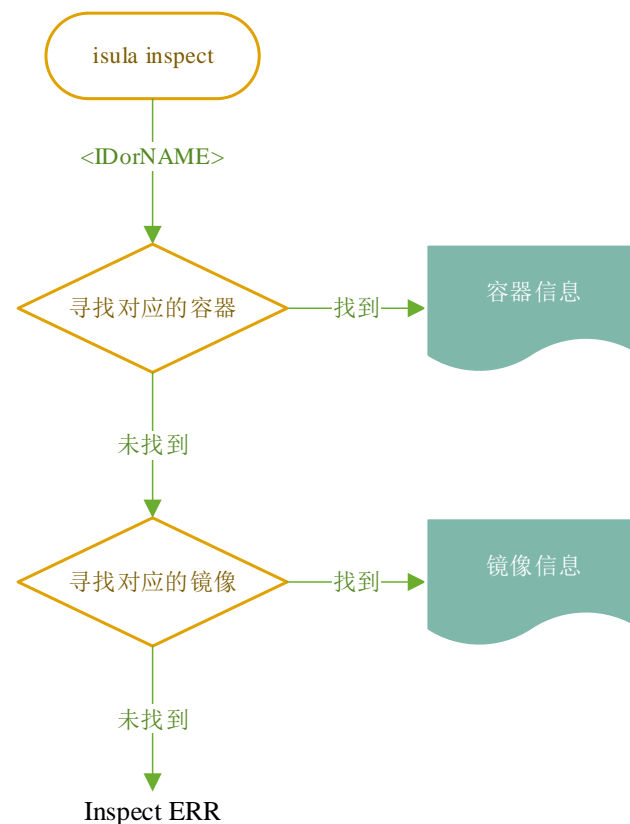
iSulad 查询(inspect)命令增强(type, size)

当前的inspect命令，用户无法指定查询对象的类型。本赛题希望能够为inspect添加--type接口，使得用户可以按照指定的类型进行查询

(isula inspect) --type string

Return JSON for specified type

iSulad 查询(inspect)命令增强(type, size)



iSulad 查询(inspect)命令增强(type, size)

目前查询容器的信息时，没有对容器的size进行统计。本赛题希望能够为inspect添加--size接口，使得用户能够查询到容器的大小

(isula inspect) --size

Display total file sizes if the type is container

SizeRootFs

is the total size of all the files in the container, in bytes. If you were to export the filesystem of the container as a tarball, it would be about that size

SizeRw

is the size of the files which have been created or changed, if you compare the container to its base image. Just after creation, this should be zero; as you modify (or create) files, this will increase.

产出标准

- 完成isula inspect --type的功能，要求支持container、image两种类型。拓展，支持volume与network
- 完成isula inspect --size的功能
- 相应的测试用例，可参考iSulad项目CI/
- 设计文档等

参考资料

<https://docs.docker.com/engine/reference/commandline/inspect/>