

Introduce and Demo of Pod Secondary Network Status Annotation

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Agenda

- Motivation
- Introduction
- SRIOV SecondaryNetwork CI Introduction
- Demo
- Q&A

Motivation

- Promote Secondary Network from Alph to Beta
 - Make Pod SecondaryNetwork IP visible

Introduction

- Pod Network Status Annotation

annotations:

```
k8s.v1.cni.cncf.io/networks: '[{"name": "sriov-net1", "namespace": "default", "interface": "eth1"}]'
```

apiVersion: v1

kind: Pod

metadata:

annotations:

```
k8s.v1.cni.cncf.io/network-status: |-
```

```
{ "name": "sriov-net1", "interface": "eth1", "ips": [ "172.31.16.199" ], "mac": "02:1d:78:31:6f:c7", "dns": {} }
```

<https://github.com/k8snetworkplumbingwg/multus-cni/blob/master/docs/quickstart.md?plain=1#L197>

Introduction

test/e2e-secondary-network/secondary_network_test.go

```
go test -v -timeout=10m antrea.io/antrea/test/e2e-secondary-network -run=TestSRIOVNetwork -provider=remote
-remote.sshconfig=/home/jenkins/workspace/cloud-antrea-test-aws-sriov-secondary-network/ci/k8s_nodes_config
-remote.kubeconfig=/home/jenkins/workspace/cloud-antrea-test-aws-sriov-secondary-network/ci/remote.kube -deploy-antrea=false
2025/04/08 01:19:07 Test logs (if any) will be exported under the '/tmp/antrea-test-2274261422' directory
2025/04/08 01:19:07 Creating K8s ClientSet
2025/04/08 01:19:07 Collecting information about K8s cluster
2025/04/08 01:19:09 Pod IPv4 network: '10.244.0.0/16'
2025/04/08 01:19:09 Service IPv4 network: '10.96.0.0/12'
2025/04/08 01:19:09 Num nodes: 2
2025/04/08 01:19:09 Waiting for all Antrea DaemonSet Pods
2025/04/08 01:19:10 Checking CoreDNS deployment
=== RUN   TestSRIOVNetwork
2025/04/08 01:19:10 Waiting for all Antrea DaemonSet Pods
2025/04/08 01:19:11 Checking CoreDNS deployment
    fixtures.go:286: Creating 'testsriovnetwork-jxuxl504' K8s Namespace
time="2025-04-08T01:19:13Z" level=info msg="assigned private IP address 172.31.16.193 to interface eni-07631a5fa8c6373bb"
time="2025-04-08T01:19:15Z" level=info msg="assigned private IP address 172.31.16.194 to interface eni-0b1d7b33fb255ff8f"
time="2025-04-08T01:19:21Z" level=info msg="ping 'sriov-pod1' -> 'sriov-pod2'( Interface: eth1, IP Address: 172.31.16.194): OK"
time="2025-04-08T01:19:25Z" level=info msg="ping 'sriov-pod2' -> 'sriov-pod1'( Interface: eth1, IP Address: 172.31.16.193): OK"
--- PASS: TestSRIOVNetwork (14.86s)
PASS
2025/04/08 01:19:25 Logs exported under '/tmp/antrea-test-2274261422', it is your responsibility to delete the directory when you no longer need it
ok      antrea.io/antrea/test/e2e-secondary-network 17.754s
```

SRIOV SecondaryNetwork CI Introduction

Path:

`ci/test-sriov-secondary-network-aws.sh`

Comment trigger:

`/test-sriov-secondary-network-e2e`

Steps:

- 1.Create ec2 instances
- 2.Attach additional network interfaces
- 3.Install Kubernetes
- 4.Deploy SR-IOV ConfigMap
- 5.Deploy SR-IOV DaemonSet
- 6.Deploy NetworkAttachmentDefinition CRD
- 7.Create Subnet CIDR reservation
- 8.Create IPPool
- 9.Create NetworkAttachmentDefinition
- 10.Create Pod

Demo

```
apiVersion: v1
kind: Pod
metadata:
  name: sample-pod-1
  labels:
    app: sample-pod-1
  annotations:
    k8s.v1.cni.cncf.io/networks: [{"name": "sriov-net1", "namespace": "default", "interface": "eth1"}]
spec:
  containers:
  - name: toolbox
    image: antrea/toolbox:latest
    resources:
      requests:
        intel.com/intel_sriov_netdevice: '1'
      limits:
        intel.com/intel_sriov_netdevice: '1'
```

Demo

```
Name:          sriov-pod1
Namespace:     testsriovnetwork-jxuxl504
Priority:       0
Service Account: default
Node:          ip-172-31-16-34/172.31.16.34
Start Time:    Tue, 08 Apr 2025 01:19:11 +0000
Labels:        App=secondaryTest
               antrea-e2e=sriov-pod1
               app=toolbox
Annotations:   k8s.v1.cn1.cncf.io/network-status:
               [{
                 "name": "sriov-net1",
                 "interface": "eth1",
                 "ips": [
                   "172.31.16.193"
                 ],
                 "mac": "02:96:c8:ac:e7:1b",
                 "dns": {}
               }]
               k8s.v1.cn1.cncf.io/networks: [{"name": "sriov-net1", "namespace": "default", "interface": "eth1"}]
Status:        Running
IP:            10.244.0.3
IPs:           IP: 10.244.0.3
Containers:    toolbox:
  Container ID: containerd://f04f898a1028cca541ba0170999d59c0382578714bac199d1030f372b2324162
  Image:         antrea/toolbox:1.5-1
  Image ID:      docker.io/antrea/toolbox@sha256:f75f9572f3913591af9f9a955a764436258d8b8b25561aac0d623332499bfe0
  Port:          <none>
  Host Port:     <none>
  State:         Running
    Started:     Tue, 08 Apr 2025 01:19:12 +0000
  Ready:         True
  Restart Count: 0
  Limits:
    intel.com/intel_sriov_netdevice: 1
  Requests:
    intel.com/intel_sriov_netdevice: 1
  Environment:
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-nbr98 (ro)
Conditions:
  Type                               Status
  PodReadyToStartContainers          True
  Initialized                         True
  Ready                              True
  ContainersReady                    True
  PodScheduled                       True
Volumes:
  kube-api-access-nbr98:
    Type:          Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds: 3607
    ConfigMapName:    kube-root-ca.crt
    ConfigMapOptional: <nil>
    DownwardAPI:      true
QoS Class:           BestEffort
Node-Selectors:      kubernetes.io/hostname=ip-172-31-16-34
Tolerations:         node-role.kubernetes.io/control-plane:NoSchedule op=Exists
                     node-role.kubernetes.io/master:NoSchedule op=Exists
                     node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
                     node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Type     Reason      Age   From          Message
  ----     -
  Normal   Scheduled   42s   default-scheduler   Successfully assigned testsriovnetwork-jxuxl504/sriov-pod1 to ip-172-31-16-34
```

Q & A



References

Issues:

Make Pod SecondaryNetwork IP visible

<https://github.com/antrea-io/antrea/issues/7048>

Antrea Secondary Network Support

<https://github.com/antrea-io/antrea/blob/main/docs/secondary-network.md>

PRs:

<https://github.com/antrea-io/antrea/pull/7069>

<https://github.com/antrea-io/antrea/pull/6922>

Thanks