

> fvctl

Command-line tool for
Flowvisor administration



> fvctl Overview

- fvctl is the cli interface to Flowvisor
- Allows you to read, modify, and set flowvisor configurations
- > man fvctl

Usage

- `fvctl --passwd-file=/etc/flowvisor/fvpasswd
command [args...]`
- `fvctl command [args...]`

Flowvisor Constructs

- Slices
 - software controller
 - ip-address
 - port
 - ex: NOX, Beacon, Floodlight
- FlowSpace
 - Flow-based slice policy rules/actions

> fvctl createSlice

- Specifies a controller/slice
 - fvctl createSlice <slicename> <controller_url>
<email>
 - fvctl createSlice FinanceDept tcp:155.55.5.5:6633
bob@finance.example.edu

> fvctl getSliceInfo

- Dumps information about the slice
 - controller_port=6633
 - controller_hostname=140.221.223.153
 - creator=fvadmin
 - contact_email=bob@example.edu

> fvctl changeSlice

- Edit a slice attributes:
 - controller_port=6633
 - controller_hostname=140.221.223.153
 - creator=fvadmin
 - contact_email=you@example.edu
- Examples:
 - fvctl changeSlice <slicename> <key> <value>
 - fvctl changeSlice iCAIR controller_port 6644

> fvctl listSlices

- lists the slices that have been created
 - Slice 0: iCAIR
 - Slice 1: CPQD
 - Slice 2: Clemson
 - Slice 3: I2-NOX
 - Slice 4: IU-LB_of-noc
 - Slice 5: IU-100G
 - Slice 6: SARA
 - Slice 7: ESNet
 - Slice 8: fvadmin

> fvctl deleteSlice

- Delete a slice, and the slice's corresponding flowspace
 - fvctl deleteSlice ESNet

> flowSpace

- Flow packet match fields
 - **in_port**=port_no
 - **dl_vlan**=vlan
 - **dl_src/dl_dst**=mac
 - **nw_src/nw_dst**=ip[/netmask]
 - **nw_proto**=proto
 - **nw_tos**=tos/dscp
 - **tp_src/tp_dst**=port

> dpid

- Unique DPID
 - 00:00:00:23:10:35:ce:a5
 - HP VLAN:MAC-ADDRESS
 - VLAN 10 - 00:0a:2c:27:d7:76:ea:80
 - VLAN 20 - 00:14:2c:27:d7:76:ea:80
 - VLAN 30 - 00:1e:2c:27:d7:76:ea:80
 - VLAN 40 - 00:28:2c:27:d7:76:ea:80
- Wildcard DPID
 - ff:ff:ff:ff:ff:ff:ff or “any” or “all”

> slice actions

- Comma-separated list of slices with control permissions over matching flowspace
- Permissions
 - Delegate=1
 - Read=2
 - Write=4
- Slice:IU-LB=4,Monitor=2

> fvctl addFlowSpace

- Insert a flowspace rule
 - fvctl addFlowSpace <dpid> <priority> <match>
<actions>
 - fvctl addFlowSpace 00:c8:08:17:f4:4b:82:00 100
in_port=22 Slice:ESNet=4

> fvctl listFlowSpace

- Dumps a list of the FlowSpace rules, matching:
 - listFlowsSpace
 - rule #: <dpid>,<ruleMatch>,<actionList>,<id>,<priority>
 - dpid=[00:00:00:00:00:00:00:13]
 - ruleMatch=[OFMatch[in_port=53,dl_src=8c:7c:ff:0d:e7:02]]
 - actionsList=[Slice:IU-100G=4]
 - id=[62973]
 - priority=[50]

> complete list of fvctl commands

- listSlices
- createSlice <slicename>
<controller_url> <email>
- changeSlice <slicename> <key>
<value>
- deleteSlice <slicename>
- changePasswd <slicename>
- getSliceInfo <slicename>
- getSliceStats <slicename>
- getSwitchStats <dpid>
- getSwitchFlowDB <dpid>
- getSliceRewriteDB <slicename>
<dpid>
- listFlowSpace
- removeFlowSpace <id>
- addFlowSpace <dpid> <priority>
<match> <actions>
- changeFlowSpace <id> <dpid>
<priority> <match> <actions>
- listDevices
- getDeviceInfo <dpid>
- getLinks
- ping <msg>
- getConfig <configEntry>
- setConfig <configEntry> <value>
- registerCallback <URL>
<methodName> <cookie>
- registerTopologyEventCallback
<URL> <methodName> <eventType>
- deregisterTopologyEventCallback
<method> <eventType>
- unregisterCallback