```
k4.debug.dpi [local-ip | local-subnet]
        This command can be used to investigate the recent DPI hits (last 5 minutes)
        The output can be restricted to the local IP or subnet specified in the command line

k4.debug.tunepre help
k4.debug.tunepre dump
k4.debug.tunepre <parameter> <value>
        This command can be used to tune the PRE parameters.
        <parameter> = rtt_timeout, rtt_window, rate_window, rate_threshold, sample_interval,
                      reweight_time, mini_bounded_rate, weight_lower_boundary or
mini_bounded_rate_vtp
        Run the 'help' sub-command to see details of the parameters
        The 'dump' subcommand will show the current values of these parameters

k4.monitor.iftop [-i interface] [-t target] [-- iftop-options]
        This command can be used to run the Linux 'iftop' command

        'iftop'  listens to network traffic on a named interface, or on the first interface it
        can find which looks like an external interface if none is specified, and displays a
        table of current bandwidth usage by pairs of hosts.

        When used with the '-i' option, it will show the named native WAN interface.
        When used with the '-t' option, it will show traffic for the named native target host.
        The 'iftop-options' are the same as in the usual Linux 'iftop' command.
        Run 'man iftop' for details of the Linux 'iftop' command

k4.monitor.mypublicip  [-v] [-i interface]
        Show the Internet facing IP, for the WAN interface specified by the 'interface'.
        If '-v' is specified, show the VTP/MPVPN public IP

k4.monitor.ping [-i interface] [-- ping-options] target
k4.monitor.ping [-v interface] [-- ping-options] target
k4.monitor.ping [-l vlan] [-- ping-options] target
k4.monitor.ping [-- ping-options] target
        This command can be used to 'ping' a target IP or FQDN.

        'ping' uses the ICMP protocol's mandatory ECHO_REQUEST datagram to elicit an ICMP
        ECHO_RESPONSE from a host or gateway. ECHO_REQUEST datagrams ("pings") have an
        IP and ICMP header, followed by a struct timeval and then an arbitrary number of
        "pad" bytes used to fill out the packet.
```

```
        When used with the '-i' option, it will ping through the named native WAN interface.
        When used with the '-v' option, it will ping through the VTP tunnel over the named WAN
interface.
        When used with the '-l' option, the ping will be as if coming from the named VLAN.
        The 'ping-options' are the same as in the usual Linux 'ping' command.
        Run 'man ping' for details of the Linux 'ping' command

k4.monitor.speedtest [-s server] [-i interface] [-- speedtest-options]
k4.monitor.speedtest [-s server] [-v interface] [-- speedtest-options]
k4.monitor.speedtest [-s server] [-l vlan] [-- speedtest-options]
        This command will run a speed test using the Linux 'speedtest' utility.

        'speedtest' is  an application that measures the latency, jitter, packet loss, download
bandwidth,
        and upload bandwidth of the network connection between the client and a nearby Speedtest
Server.

        When used with the '-i' option, the speed test will be run through the named native WAN
interface.
        When used with the '-v' option, the speed test will be run through the VTP tunnel over the
named WAN interface.
        When used with the '-l' option, the speed test will be as if coming from the named VLAN.
        The '-s' option selects a specific server
        The 'speedtest-options' are the same as in the usual Linux 'speedtest' command.
        Run 'man speedtest' for details of the Linux 'speedtest' command

k4.monitor.traceroute parameters
        This command w1ill run the Linux 'traceroute' utility.

        'traceroute'  tracks the route packets taken from an IP network on their way to a given
host.
        It utilizes the IP protocol's time to live (TTL) field and attempts to elicit an ICMP
TIME_EXCEEDED
        response from each gateway along the path to the host.

        The parameters are the same as those taken by the Linux 'traceroute' command.
        Run 'man traceroute' for details of the Linux 'traceroute' command

k4.monitor.tshark [-i interface] [-- tshark-parameters]
        This command will run the Linux 'tshark' utility.
```

```
        'tshark' is a network protocol analyzer. It lets you capture packet data from a live
network,
        or read packets from a previously saved capture file, either printing a decoded form of
those
        packets to the standard output or writing the packets to a file.

        When used with the '-i' option, the capture will be done on the named native WAN interface.
        The other parameters are the same as those taken by the Linux 'tshark' command.
        Run 'man tshark' for details of the Linux 'tshark' command

k4.monitor.iptraf [parameters]
        This command will run the Linux 'iptraf-ng' utility.

        'iptraf-ng' is a full-screen IP LAN monitor that generates various network statistics
including
        TCP info, UDP counts, ICMP and OSPF information, Ethernet load info, node stats, IP checksum
errors, and others.

        The parameters are the same as those taken by the Linux 'iptraf-ng' command.
        Run 'man iptraf-ng' for details of the Linux 'iptraf-ng' command

k4.monitor.wget parameters
        This command will run the Linux 'wget' utility.

        'wget' is a utility for non-interactive download of files from the Web.
        It supports HTTP, HTTPS, and FTP protocols, as well as retrieval through HTTP proxies.

        The parameters are the same as those taken by the Linux 'wget' command.
        Run 'man wget' for details of the Linux 'wget' command

k4.op.reboot
        This command Will reboot the system, after asking for confirmation.

k4.op.ssh    [-p port] [username@]target
        This command will run the Linux 'ssh' utility.

        'ssh' is a program for logging into a remote machine and for executing commands on a remote
machine.
        It is intended to provide secure encrypted communications between two untrusted hosts over
an insecure network.
```

```
k4.ops.arp-flush interface [ip-to-delete]
        This command flushes the ARP cache for the interface named. If an IP is specified, only that
entry will be deleted.

k4.ops.dhcp-lease-time [new-lease-time]
        This command shows or sets the DHCP lease time

k4.ops.ipsec.log    on|off|view
        This command will turn ipsec logging on or off, or to view the log

k4.ops.mpk.mode    [<interface> standard|low_latency|speed]
        Shows or modifies PEP mode

k4.ops.mpk.server    [ip country]
        Shows or modifies server

k4.ops.voip start|restart|stop|status|enable|disable
k4.ops.voip extension add <extension> <password>
k4.ops.voip extension del <extension>
k4.ops.voip trunk <login> <password> <gateway>
k4.ops.voip incoming add <did-number> <extension> [ <extension> ... ]
k4.ops.voip incoming del <did-number>
k4.ops.voip outgoing <cli-number> [ <display-name> ]
k4.ops.voip country <long-distance-prefix> <international-prefix> <country-code>
k4.ops.voip no trunk|outgoing|country
k4.ops.voip cdr
k4.ops.voip log-on|log-off|log-view
        This command can be used to convigure VoIP, view CDR records, and control SIP logging

k4.show.arp
        This command will show the ARP cache.
        It will run the 'ip -n neigh show' Linux command

k4.show.dhcp  [vlan<vid> | <subnet>]
        This command will show the current leases assigned by the Kea DHCP server. If an access VLAN
or subnet
        is specified only the leases pertaining to those will be displayed.

k4.show.firewall
        This command will list the current firewall rules
```

```
k4.show.frr <items-to-show>
        This command is passed to 'vtysh show' command shell for FRR

.show.interfaces
        This command will list all the non-virtual interfaces, showing their status, any address
assigned,
        and any TC configurations. It will also show the speed and duplexity of Ethernet interfaces.

k4.show.log  voip|ipsec
        This command shows runs a 'tail -f' on the IPSEC or Asterisk log

k4.show.routes
        This command shows the system routes

k4.show.system
        This command will print a summary of the CPU, Memory and Disk status

k4.show.multicast  interface
        This command will show count of received multicast packets on the specified interface.
        If no interface is specified, will show the count for each VLAN interface.

k4.del.dhcp  <ip>
        This command will delete the existing lease for the specified IP from the Kea DHCP server
```