RVM Plumming

1. Command Line Arguments

1.1. Overview

Short Form	Long Form	Description
-c	--cfg	Configuration File Path
-m	--mode	Run mode
-h	--help	Help

1.2. Detail

1.2.1. Configuration File Path (-c, --cfg)

Example -c=configdir/configfile.cfg

Default [Empty]

Suggested -c=ini/config.cfg

Cardinality 0 to 1

Usage Command line value

This setting allows RVM to load the configuration as key value pairs from a configuration file. See the section System Configuration Design for an explanation of how the RVM configuration is managed.

1.2.2. Run Mode (-m, --mode)

Example -m=dump-config

Default [Empty]

Suggested Omitting the mode will make RVM run with service processing

Cardinality 0 to 1

Usage Command line value

Run Mode determines the behaviour of the application.

Command	Description
dump-cmd-settings	Dump settings from arguments to terminal

dump-final-settings	Dump all merged seetings to terminal
dump-config	Dump config settings to terminal
show-help	Show help, same as -h or --help command line argument
[Empty]	Runs RVM as a service

1.2.3. Help (-h, --help)/setting

Example -h

Alternate -m=show-help

Cardinality 0 to 1

Usage Command line flag

Prints help to the terminal of the allowed command line arguments.

1.2.4. Configuration Override

Example -o=setting.one.value=Abc

Default [No Defaults]

Cardinality 0 to *

Usage Command line value

Command line configuration override(s) allows overriding both default configuration and that loaded from the configuration file. Note its awkward format in having at least two equals signs where the first is a separator for the parameter type and the second the split between the configuration key and the configuration value.

2. Indexed Settings

Every indexed default starts with "default." e.g.:

```
default.radar.udp.verbose.trigger=false
# Specific for radar 192.168.11.12:55555 is
radar.[192.168.11.12:55555].udp.verbose.trigger=false
# Assuming
# 1. radar is the entity Name
# 2. [192.168.11.12:55555] is the entity Index
# 3. udp.verbose.trigger is the entity Key
```

Above example as command line argument is: `-o=radar.[192.168.11.12:55555].udp.verbose.trigger=true`

Name	Index	Key	Type	Description	Default
radar	[radarip]	udp.verbose.trigger	Bool	Verbose trigger logging by radar	false
		See Setting	udp.verbose.trigger		
radar	[radarip]	udp.verbose.statistics	Bool	Verbose stats logging by radar	false
		See Setting	udp.verbose.statistics		
radar	[radarip]	udp.verbose.objectlist	Bool	Verbose objectlist logging by radar	false
		See Setting	udp.verbose.objectlist		
radar	[radarip]	udp.verbose.pvr	Bool	Verbose PVR by radar	false
		See Setting	udp.verbose.pvr		
radar	[radarip]	udp.counting.trigger	Bool	Terminal trigger counting	false
		See Setting	udp.counting.trigger		
radar	[radarip]	udp.counting.statistics	Bool	Terminal stats counting	false
		See Setting	udp.counting.statistics		
radar	[radarip]	udp.counting.objectlist	Bool	Terminal objectlist counting	false
		See Setting	udp.counting.objectlist		
radar	[radarip]	udp.counting.pvr	Bool	Terminal pvr counting	false
		See Setting	udp.counting.pvr		

3. Configuration Settings

Every key starts with "setting."

Key	Type	Description	Default
startup.cfg.file	Path	System Configuration file	
startup.run.mode	String	System run mode	
udp.keepalive…		UDP Keep Alive	
udp.keepalive.enabled	Bool	Enable/Disable service	true
udp.keepalive.callbackup	IP4	UDP Server host handling radar data	192.168.11.2:55555

Key	Type	Description	Default
udp.keepalive.castip	IP4	UDP Multicast address to reach radars	239.144.0.0:60000
udp.keepalive.cooldown	Millis	Cooldown between sends (frequency of sends)	1000
udp.keepalive.send.timeout	Millis	Deadline for sending UDP Multicast over socket	1000
udp.keepalive.reconnect.cycle	Int	Reconnect cycle at	5
		Reconnect cycle of 5 and cooldown of 1000 implies reconnect attempt every 5 seconds	
udp.keepalive.clientid	Int32	Radar Client ID	0x01000001
udp.keepalive.log.repeat.millis	Millis	Repeating UDP error logged once every	60000
udp.data…		UDP Server for Radar Data	
udp.data.enabled	Bool	Enable/Disable service	true
udp.data.read.timeout	Millis	UDP socket read timeout	3000
udp.data.reconnect.sleep	Millis	Cycle sleep if no connection	1000
udp.data.reconnect.cycle	Int	Cycle at which a reconnect will be attempted	5
		reconnect.sleep of 1000 and reconnect.cycle of 5 means reconnect every 5 seconds	
udp.data.log.repeat.millis	Millis	Repeating UDP error logged once every	60000
udp.keepalive.callbackip	IP4	UDP Socket uses the Keep Alive setting to specify the host address	192.168.11.2:55555
http…		Web Server	
http.enabled	Bool	Enable/Disable service	true
http.host	IP4	Web Host Address	0.0.0.0:8080
sdlc.uart…		SDLC UART Service	
sdlc.uart.enabled	Bool	Enable/Disable service	true
sdlc.uart.portname	String	Linux Device	/dev/ttymxc2
sdlc.uart.baudrate	Int	Baud Rate	115200
sdlc.uart.databits	Int	Data Bits	8
sdlc.uart.parity	Int	Parity	0
sdlc.uart.stopbits	Int	Stop Bits	0

Key	Type	Description	Default
sdlc.uart.csv.enabled	Bool	Is SDLC CSV Logging enabled	true
sdlc.uart.csv.filepath.template	PathFormat	File path in C format	/media/SDLOGS/logs/system/uart-%s.csv
sdlc.uart.csv.filepath.timeformat	DateFormat	GoLang Time Format	20060102
		The timeformat is used to determine when to roll over a file	
sdlcexec.uart.staticrequest.every	Millis	Get static status request every	5000
log…		Logging Service	
log.level	EnumStr	Logging Level (debug,trace,info,warn,error)	info
log.to.console	Bool	Enable/Disable Logging to console	false
log.file.dir	Directory	Log to directory	/media/SDLOGS/logs/system
log.file.name	Filename	Log filename	rvm.log
log.file.maxsizemb	Int	Max size in megabytes per log	10
log.file.maxagedays	Int	Max age of logging archive files	30
log.file.maxbackups	Int	Maximum number of backups per log	10
udp.verbose.trigger	Bool	Executing as activity, for any radar, print trigger to terminal	false
udp.verbose.objectlist	Bool	Executing as activity, for any radar, print objectlist to terminal	false
udp.verbose.statistics	Bool	Executing as activity, for any radar, print statistics to terminal	false
udp.verbose.pvr	Bool	Executing as activity, for any radar, print PVR to terminal	false
udp.counting.trigger	Bool	As activity, for any radar, print trigger counts	false
udp.counting.objeclist	Bool	As activity, for any radar, print objectlist counts	false
udp.counting.statistics	Bool	As acticity, for any radar, print statistics counts	false
udp.counting.pvr	Bool	As activity, for any radar, print pvr counts	false

4. Addendum

4.1. System Configuration Design

RVM is designed to hide its technical configuration in favor of defaults. It does this by following a 3-step process to establish its effective configuration:

1. **Program defaults** are loaded and merged to effective configuration
2. **Configuration file** is loaded and merged to effective configuration
3. **Command line overrides** merged to effective configuration

In other words:

1. Command line overrides override anything
2. Configuration file overrides program defaults
3. Program defaults specify a default, implied set of program features and behaviour.

The reason behind this intricate design is to allow for minimal configuration and reasonble ease to change behaviour while retaining the ability to configure anything in the system if and when necessary, as a walk through:

- ☑ Running RVM without configuration is the default RVM execution
- ☑ Running RVM with a configuration file gives you the opportunity to specialize RVM for different devices/scenarios
- ☑ Running RVM with a configuration and command line overrides allow, for testing, to inherit behaviour but allow additional terminal output, or change unwanted behaviour

IMPORTANT	System Configuration ONLY includes settings for features and behaviour of RVM at a technical level. User Configuration (e.g. Channel Configuration) is not included in these settings.

4.2. System Configuration Conventions

Please Note:

- System configuration settings are case sensitive
- System configuration settings follows a dot notation
- System configuration settings are all lowercase
- System configuration settings are broken into two groups of settings (singleton and indexed)
- Singleton configuration provides values that can only be specified for one service/feature
- Singleton configuration always start with a leading "setting."
- Indexed configuration provides defaults and value for array based services / features

- Indexed configuration, as a default always start with "default."

Terminology: terminal is loosely used as the term for the standard output Command line flag is an argument that is either present or not without any additional value (e.g. -h) Command line value is an argument that has a value (e.g. -m=show-help)<F11><F11>