Scripting on the CTM-200

Model	CTM – 200
Revision:	Rev 1.1

Revision Control

Description	Revision	Date
Updated directory to /var/data/reports/scripts/	Rev 1.1	22-Dec-2015
Initial Release	Rev 1.0	04-July-2012

Contents

1.Overview

Cypress Chameleon gateways (CTM-200 and later) can be configured to trigger the execution of a Linux shell script when a gateway report is triggered. A report is triggered by an event such as an interval of time or an input. Reports typically contain strings of information that describe such things as location, speed, etc. With report triggered scripts enabled a series of commands can be executed by the modem that can perform a series of simple or complex tasks involving logic.   The script is a Linux Bash shell script file (.sh) file that resides in the modems non-volatile memory. The name of the script correlates to a specific report so whenever the report is triggered, the script will execute if script execution is enabled. Triggered Scripts are always named reportN.sh where N corresponds to report being triggered.

2. CTM-200 Configuration (Command Line)

2.1   Sample Configuration

```
cmd pupcond 1 1            # Enables power up condition 1
cmd pupreport 1 1          # Use report 1 on power up
cmd reportscripts 1        # Enable report triggered scripts
cmd save                   # saves configuration
cmd pwr mode 2             # power cycles the gateway
```

When this is enabled the gateway will automatically look in the /var/data/reports/scripts/ directory of the CTM-200 for a file named reportN.sh where N is the number of the report. In this case the file name would be "**report1.sh**"

In the above example the trigger for the script is all what we are concerned about and pupcond 1 1 accomplishes this.

2.2   Reportscript Triggers

Custom scripts should be located in the directory /var/data/reports/scripts/, and must be named "reportN.sh" where N is

N = 1 to 999 for general reports 1 to 999
N = 1020 to 1027 GPS reports 1 to 8
N = 1040 to 1047 I/O reports 1 to 8

For example, if the trigger for the script was a GPS condition, such as:

```
cmd gpscond 1 1 30          # sets the modem to use gps report 1
cmd gpsrep 1 0 3            # sets the modem to use gps report type  1
```

Then if reportscripts 1 is set, the name of the script file to be executed would need to be **Report1020.sh**

2.3   Shell Script files

The shell script file is a text file that can be used to automate a series of tasks that need to be performed. They can be very simple and used to string together several modem "cmd" commands and Linux commands or they can be quite complex and have logic operations included.

2.3.1   Simple Shell script to pulse an output

```
#!/bin/sh
# script to pulse outputs
#
cmd dout 2 1
sleep 1
cmd dout 2 0
```

2.3.2   pingtest script to validate network connectivity using a ping

pingtest.sh

```
#!/bin/sh
# Script with full ping validation
# Copyright (C) Cypress Solutions Inc. 2012. All rights
reserved.

HOST=$1
COUNT=10

# Check number of arguments
if [ $# -ne 1 ]
then
  exit $?
fi

# Check WAN interface is up and connected
retval=$(/usr/bin/cmd linkstatus)
rstr=${retval:0:2}
if [ "$rstr" = "OK" ] ;then
# Ping the server COUNT times
  count=$(ping -c $COUNT -q $HOST | grep 'received' | awk -F','
'{print $2}' | awk '{print $1}')

  # Send message to event log if pings pass/fail
  if [ $count -eq 0 ]; then
      cmd event add "pingtest.sh_pingtest_FAIL"
  else
       cmd event add "pingtest.sh_pingtest_PASS"
  fi
fi
```

pingtest.sh accepts 1 variable:

pingtest.sh HOST

For example:
report1.sh runs a ping test, where each test pings 8.8.8.8 n times depending on what the "COUNT" variable is set to (see script above) :

```
/var/data/reports/scripts/pingtest.sh 8.8.8.8
```

The report script would be called report1.sh :

```
#!/bin/sh
/var/data/reports/scripts/pingtest.sh 8.8.8.8 &
```

2.4   Creating a Shell Script file

Script files are text documents created typically in a Linux operating environment. They can be created locally on the CTM modem or created remotely and copied onto the modem using a tool such as SCP (Secure Copy).   For ease of programming it is typically easier to write a shell script using a text editor and copy the file to the modem using the SCP method. For Windows™, WinSCP is available at www.winscp.net .   If a script is written on a Windows desktop and copied to the modem the file must be converted to respect the Unix line endings format using the dos2unix utility on the modem.

Shell scripts must have their mode changed to executable, this is accomplished by using the chmod command, ie chmod +x "filename.sh"

The CTM-200 modem supports the Bash shell.

Example:

scp report1.sh 192.168.1.1:/var/data/reports/scripts/
use scp to copy the file report1.sh to the correct location on the modem.

login to the modem using ssh/telnet
cd /var/data/reports/scripts/   # change directory to the scripts directory
dos2unix report1.sh   # convert the report1.sh file to Unix format
chmod +x report1.sh   # script file must be made executable

3. References

A good reference for shell programming is available at:

"Learning the bash Shell, Third Ed" http://oreilly.com/catalog/9780596009656/preview#preview

Technical Support

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