eCMD Command Line Interface

Version .2

Contact: Chris Engel / Hans-Joachim Hartmann

IBM Confidential

Table of Contents

1 Introduction

This document has been created using OpenOffice, a copy of the OpenOffice Suite can be obtained from: http://mcweb.boeblingen.de.ibm.com/OpenOffice/

This document describes the eCMD command line set. These commands are all written in C code against the eCMD C-Api and as such can run against any implementation of the eCMD C-Api. Currently this means scripts written to use the eCMD command line will be able to run against GFW for I/P/Z Series or Cronus without any modification.

2 Usage Instructions

2.1 Environment Setup

To run the eCMD command line interface requires a few environment variables be setup prior to executing any commands. The exact method to setup these variables may be different depending on which implementation of the C-Api you plan on running but will be documented here in the future.

2.2 Error Handling

All errors encountered running an eCMD command will display a message to the screen and will return a non-zero return code to the calling shell.

2.3 Required Input Files

eCMD queries all required files (ie scandefs/help text) from the dll that it is using. In the case of IP Series when running on the FSP commands requiring external input files may not run unless a NFS mount is setup to source these files.

2.4 Optional Arguments

All eCMD optional arguments start with a '-' character, these arguments can be specified in any order on the command line.

3 eCMD Common Commands

These are the core command line functions available through the eCMD interface and the syntax of the command. The help text is commented with the text 'Core Common Function' for all commands that are part of the core eCMD subset. Other Series or Cronus specific commands will be specified uniquely as well.

3.1 Common Command Arguments

These are common arguments that are supported on most of the eCMD commands.

3.1.1 Targeting Options

Most eCMD functions use the following commands to specify which chip/node/cage you are trying to target in the system. How these options map to physical hardware will be defined by the eCMD team and documented in a separate document for each product.

The valid targeting options:

- -k# (cage)
- -n# (node)
- -s# (slot)
- -p# (position)
- -c# (core)
- -t# (thread)

These options accept the following number strings:

• -p0	Single digit
• -p1,5,10	Comma separated list
• -p2..7	Range of positions
• -p1,2..5,9	Mixture of single and ranges
• -pall	Target all possible configured positions

The -t (thread) argument takes a special option -talive to specify all alive threads.

3.1.2 Data Output Formatting (-o<format>)

The -o argument is used by eCMD to decide how the data should be displayed to the user. The -o argument takes a format string , the available formats are displayed below:

Left-aligned Hex : -oX

```
FORMAT: X
gr      k0:n0:s0:p00:c0       000000000000000000000000
gr      k0:n0:s0:p01:c0       000000000000000000000000
gr      k0:n0:s0:p02:c0       000000000000000000000000
```

Left-aligned Hex Words : -oXW

```
FORMAT: XW
gr      k0:n0:s0:p00:c0       00000000 00000000 00000000
gr      k0:n0:s0:p01:c0       00000000 00000000 00000000
gr      k0:n0:s0:p02:c0       00000000 00000000 00000000
```

Left-aligned Hex Word Columns : -oXW2

```
FORMAT: XW2
gr      k0:n0:s0:p00:c0
0: 00000000 00000000
2: 00000000
gr      k0:n0:s0:p01:c0
0: 00000000 00000000
2: 00000000
```

Right-aligned Hex : -oXR

```
FORMAT: XR
gr      k0:n0:s0:p00:c0       000000000000000000000000
gr      k0:n0:s0:p01:c0       000000000000000000000000
gr      k0:n0:s0:p02:c0       000000000000000000000000
```

Right-aligned Hex Words : -oXRW

```
FORMAT: XRW
gr      k0:n0:s0:p00:c0       00000000 00000000 00000000
gr      k0:n0:s0:p01:c0       00000000 00000000 00000000
gr      k0:n0:s0:p02:c0       00000000 00000000 00000000
```

Right-aligned Hex Word Columns : -oRXW2

```
FORMAT: XRW2
gr      k0:n0:s0:p00:c0
0: 00000000 00000000
2: 00000000
gr      k0:n0:s0:p01:c0
0: 00000000 00000000
2: 00000000
```

Binary : -oB

```
FORMAT: B
gr      k0:n0:s0:p00:c0       000000000000000000000000000000000000000000000000
gr      k0:n0:s0:p01:c0       000000000000000000000000000000000000000000000000
gr      k0:n0:s0:p02:c0       000000000000000000000000000000000000000000000000
```

Binary Nibbles : -oBN

```
FORMAT: BN
gr      k0:n0:s0:p00:c0       0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
gr      k0:n0:s0:p01:c0       0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
gr      k0:n0:s0:p02:c0       0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
```

Binary Nibble Columns : -oBN8

```
FORMAT: BN8
gr      k0:n0:s0:p00:c0

    0           1           2           3
    0123 4567 8901 2345 6789 0123 4567 8901
00: 0000 0000 0000 0000 0000 0000 0000 0000
08: 0000 0000 0000 0000 0000 0000 0000 0000
16: 0000 0000 0000 0000 0000 0000 0000 0000
```

Binary Words : -oBW

```
FORMAT: BW
gr      k0:n0:s0:p00:c0       00000000000000000000000000000000
00000000000000000000000000000000 00000000000000000000000000000000
gr      k0:n0:s0:p01:c0       00000000000000000000000000000000
00000000000000000000000000000000 00000000000000000000000000000000
```

Binary Word Columns : -oBW1

```
FORMAT: BW1
gr      k0:n0:s0:p00:c0

   0         1         2         3
   01234567890123456789012345678901
0: 00000000000000000000000000000000
1: 00000000000000000000000000000000
2: 00000000000000000000000000000000
```

Memory Output : -omem

```
FORMAT: MEM
gr      k0:n0:s0:p00
0000000000000100: FEEDBEEF FEEDBEEF FEEDBEEF FEEDBEEF
0000000000000110: FEEDBEEF FEEDBEEF FEEDBEEF FEEDBEEF
```

Memory Output – Ascii Decode : -omema

```
FORMAT: MEMA
gr      k0:n0:s0:p00
0000000000000100: FEEDBEEF FEEDBEEF FEEDBEEF FEEDBEEF   [THISisTHEasciiTE]
0000000000000110: FEEDBEEF FEEDBEEF FEEDBEEF FEEDBEEF   [XT..............]
```

Memory Output – Ebcedic Decode : -omeme

```
FORMAT: MEME
gr      k0:n0:s0:p00
0000000000000100: FEEDBEEF FEEDBEEF FEEDBEEF FEEDBEEF   [THISisTHEebcedic]
0000000000000110: FEEDBEEF FEEDBEEF FEEDBEEF FEEDBEEF   [TEXT............]
```

Memory Output – Dcard Format : -odcard

```
FORMAT: DCARD
gr      k0:n0:s0:p00
D 0000000000000100 FEEDBEEFFEEDBEEF 0
D 0000000000000108 FEEDBEEFFEEDBEEF 1
D 0000000000000110 FEEDBEEFFEEDBEEF 0
D 0000000000000118 FEEDBEEFFEEDBEEF 1
```

Spy Enum Output – Only valid with getspy command : -oenum

```
FORMAT: ENUM
gr     k0:n0:s0:p00:c0 OFF
gr     k0:n0:s0:p00:c1 ON
```

3.1.3 Data Input Formatting (-i<format>)

The -i argument is used by eCMD to determine how to read the data provided by the user.

Left-aligned Hex : -iX

Right-aligned Hex : -iXR

Binary : -iB

Spy Enum – Only valid with putspy command : -ienum

3.1.4 Data Input Bit Modifiers (-b<modifier>)

The -b argument allows the user to specify a bit operation to perform on the data, this forces eCMD to do a read-modify-write on the data to perform the operation.

Or : -bor

Read data from hardware, or in data specified, write data back to hardware.

And : -band

Read data from hardware, and with data specified, write data back to hardware.

3.2 Command Help (-h)

All commands accept the '-h' argument, when specified eCMD will echo back the help text for the command. This text is the same as shown below in this document.

3.3 Chip Display/Alter Commands

3.3.1 checkrings

Syntax:

```
Syntax: checkrings <ChipSelect> <RingSelect> [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       checks for stuck bits and verifies scanring length by scanning
                        ones and zeros to scan chain.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Specifies the chip to operate on.

        RingSelect      Specifies chip ring to operate on.  Use "all" for all rings.
                        For a list of available rings, use the query command.

                        Ex:  ecmdquery rings memctrl
                             ecmdquery rings pu

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.
        --------------------------------------------------------------------------------

        Example:        checkrings pu all -p0,1 -c0
                        checkrings memctrl int -pall
```

Examples:

```
> checkrings test all
Performing 1's test on testring ...
Performing 0's test on testring ...
Performing 1's test on sgxbs ...
Performing 0's test on sgxbs ...
ecmd.exe checkrings test all
```

3.3.2 getarray

Syntax:

```
Syntax: getarray <ChipSelect> <ArrayName> <ArrayIndex> [NumEntries] [-o<format>]
                                  [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function
        Function:       Read the specified chip array.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to read array data from.

        ArrayName       Name of array to read from.

        ArrayIndex      Array Index in right aligned hex.

        NumEntries[opt] Number of consecutive entries to display
                        Address is incremented by 1

        -o<format>[opt] Output Format : default x - See doc for details

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Examples:       > getarray pu xgpr0 deadbeef80000000 -p0,1 -c1
```

Examples:

3.3.3 getbits

Syntax:

```
Syntax: getbits <ChipSelect> <RingName> <StartPos> <NumBits>  [-exp <data>]
                        [-k#] [-n#] [-s#] [-p#] [-c#] [-o<format>] [-i<format>]

        ECMD:           Core Common Function

        Function:       Long scans bits out of a chip's selected ring. (non-destructive)

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Specifies the chip to operate on.

        RingName        Specifies chip ring to operate on.  For a list of available
                        rings, use the ecmdquery command.

                        Ex:  ecmdquery rings memctrl
                             ecmdquery rings pu

        StartPos        Specifies starting bit position in Decimal.

        NumBits         Specifies number of bits to get from starting position (Decimal)
                        Specify the keyword 'end' to fetch from startPos to end of ring.
        -exp [optional] Provide expected data.  Returns error if expected != actual.  No
                        error/no data returned if expected == actual.
                        <data> is left aligned hex

        -o<format>[opt] Specifies the format type of the output: default 'b'

        -i<format>[opt] Specifies the format type of expect data

        -X   [optional] For simulation use only.  Must be used to display any Xstates
                        data in ring.

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Examples:       getbits pu stat 0 15
                        getbits pu cp_fxu 0 32 -oxw -exp feedbeef
                        getbits memctrl idreg 16 all
```

Examples:

```
> getbits test idreg 0 32
test   k0:n0:s0:p00         idreg(0:31)
0b11111110111011011011111011101111
ecmd.exe getbits test idreg 0 32

> getbits test idreg 0 16 -ox
test   k0:n0:s0:p00         idreg(0:15)
0xFEED
ecmd.exe getbits test idreg 0 16 -ox
```

3.3.4 getlatch

Syntax:

```
Sytnax: getlatch <ChipSelect> <RingName> <LatchName> [<Start> <Numbits>] [-exact]
                              [-nocompress] [-exp <value>] [-o<format>]
                              [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       Gets values for specified latch names in a ring.  The
                        latch names in the scandef file are searched for the
                        substring LatchName for a match.  Each register containing the
                        pattern-matched substring will be printed to the screen.  With
                        the -exact option, eCMD searches for an exact match, and will
                        return only the first latch that exactly matches (excluding any
                        parentheses). The -compress flag searches past the first match
                        for more matches and concatenates data if the register is broken
```

```
                into separate lines.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to get data from.

        RingName        Specifies chip ring to operate on.  For a list of available
                        rings, use the ecmdquery command.

                        Ex:  ecmdquery rings memctrl
                             ecmdquery rings pu

        LatchName       Desired latch to find in the ring. (case insensitive)

        Start     [opt] Starting bit position within the latch. Specify with Numbits.
                      NOTE : Not allowed when using -nocompress

        Numbits   [opt] Number of bits to get. Specify along with Start. If out of range,
                        and -exact not selected, prints a warning message instead of the
                        data. If -exact is selected, immediately return an error.
                      NOTE : Not allowed when using -nocompress

        -exact    [opt] No pattern matching. Instead, search for exact latch name.

        -nocompress[opt]Displays Latches as they are broken up in the scandef.

        -exp [optional] Provide an expected-value as the last argument. Returns error if
                        data miscompare, else nothing. Data is hex left aligned

        -o<format>[opt] Specifies the format type of both the output and
                        the expect-value
                        Defaults to binary for < 8 bits and hex for >= 8 bits.

        -i<format>[opt] Specifies the format type of expect data

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Examples:       getlatch pu cp_abist LATCH0
                        getlatch pu cp_fpu GCP.PFPU.FP_UNIT0.FP_REG -ox -exact -compress
-expect feed
```

Examples:

```
> getlatch test sgxbs ACCESS
test   k0:n0:s0:p00
ACCESS.SNPBUF 0b0
ecmd.exe getlatch test sgxbs ACCESS
```

3.3.5 getringdump

Syntax:

```
Syntax: getringdump <ChipSelect> <RingName1> [<RingName2> ...]
                                     [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       Gets values for all latchs in the entire scan ring.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to get data from.

        RingName        Specifies one or multiple chip rings to operate on.  For a list
                        of available rings, use the ecmdquery command.

                        Ex:  ecmdquery rings smi
                             ecmdquery rings pu

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Notes:          Output is binary for latches <= 8 bits in length and hex for > 8.

        Examples:       getringdump memctrl int
                        getringdump pu gps_fuse
                        getringdump pu gps_fuse gps_abist cp_ras
```

Examples:

```
> getringdump test sgxbs
test    k0:n0:s0:p00
***********************************************
* ECMD Dump scan ring contents, Tue Nov 25 12:58:44 2003
* Position 0:0, test sgxbs Ring
* Chip EC 9999
* Ring length: 573 bits
USE_GBX.CHANNELINL2(0:150) 0xAAAA0000000000000000000000000000000
USE_ENT_IOS.ERR_SET_GX_BOUNDARY.RECEIVER_LATCH.L2 0b0
USE_ENT_IOS.ERR_SET_GX_BOUNDARY.DRIVER_LATCH.L2 0b0
USE_ENT_IOS.ERR_SET_GX_BOUNDARY.ENABLE_LATCH.L2 0b0
USE_ENT_IOS.SYSTEM_ERR_BOUNDARY.RECEIVER_LATCH.L2 0b0
USE_ENT_IOS.SYSTEM_ERR_BOUNDARY.DRIVER_LATCH.L2 0b0
USE_ENT_IOS.SYSTEM_ERR_BOUNDARY.ENABLE_LATCH.L2 0b0
....
USE_ENT_IOS.DBUGX_OUT_123_BOUNDARY.MXM.BDYRML.L2Q 0b0
USE_ENT_IOS.DBUGX_OUT_123_BOUNDARY.MXM.BDYDML.L2Q 0b0
USE_ENT_IOS.DBUGX_OUT_123_BOUNDARY.MXM.BDYEML.L2Q 0b0
USE_GBX.CHANNELINL2(151:247) 0x0000000000000000000000000
ACCESS.SNPBUF 0b0
ecmd.exe getringdump test sgxbs
```

3.3.6 getscom

Syntax:

```
Syntax: getscom <ChipSelect> <ScanCommAddr> [-v] [-k#] [-n#] [-s#] [-p#] [-c#]
                         [-o<format>] [-i<format>] [-exp <data> [-mask <data>]]

        ECMD:           Core Common Function

        Function:       Gets Scan Communications registers.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to get scancomm data from.

        ScanCommAddr    Address in hex.

        -exp [optional] Provide expected data.  Returns error if expected != actual.  No
                        error/no data returned if expected == actual.

        -mask     [opt] Scom data is AND'ed with the mask bits. Only for use with -exp.

        -o<format>[opt] Output Format : default x - See doc for details

        -i<format>[opt] Input Format for expect and mask : default x - See doc for details

        -v   [optional] Print out Scan Comm bit meaning if available

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.
        --------------------------------------------------------------------------------

        Examples:       > getscom pu 6 -p0,1
                        > getscom memctrl 800009 -exp feed000000000001 -mask
ffff00000000ffff
```

Examples:

```
> getscom test 800000
test   k0:n0:s0:p00       FEEDBEEFAAAAAAAA
ecmd.exe getscom test 800000

> getscom test 800000 -obn8
test   k0:n0:s0:p00
    0           1            2           3
    0123 4567 8901 2345 6789 0123 4567 8901
00: 1111 1110 1110 1101 1011 1110 1110 1111
08: 1010 1010 1010 1010 1010 1010 1010 1010
16: 0000 0000 0000 0000 0000 0000 0000 0000
ecmd.exe getscom test 800000 -obn8
```

3.3.7 getspy

Syntax:

```
Syntax: getspy <ChipSelect> <SpyName> [<Start> <Numbits>] [-exp <value>]
                          [-o<format>] [-i<format>] [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       Display specified spy, works for edials, idials and aliases.
                        If a spy ecc error is detected all the ecc groupings will be
                        displayed along with a mask showing which bits are in error.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to get data from.

        SpyName         Desired spy name. (case insensitive)

        Start     [opt] Starting bit position within the spy. Specify with Numbits.
                        Only valid with non-enumerated spy's

        Numbits   [opt] Number of bits to get. Specify along with Start.
                        Only valid with non-enumerated spy's

        -exp [optional] Provides an expected value as the last argument. Returns error
                        only if miscompare. Expected value string is read depending
                        on format flag.

        -o<format>[opt] Specifies the format type of the output. (default: hex-left)
                        For enums use -oenum

        -i<format>[opt] Specifies the format type of expect data

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
```

```
                to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------


        Examples:       getspy pu MYALIAS
                        getspy pu REVERSE 16 64 -ox -exp aaaa5555
```

Examples:

3.3.8 pollscom

Syntax:

```
Syntax: pollscom <ChipSelect> <ScanCommAddr> [-exp <data> [-mask <data>]] [-o<format>]
                              [-i<format>] [-limit #[s|c]] [-interval #[s|c]] [-verbose]
                              [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       Repeatedly gets Scan Communications registers until expected data
                        matches actual data or until polling limit is reached.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to get scancom data from.

        ScanCommAddr    Address in hex.

        -exp      [opt] Provide expected data.  Returns error if expected != actual.  No
                        error/no data returned if expected == actual.

        -mask     [opt] Scom data is AND'ed with the mask bits before checking against
                        expected value.

        -i<format>[opt] Specifies the format type of expect and mask data : default 'x'

        -o<format>[opt] Specifies the format type of the output. : default: 'x'

        -limit #  [opt] Max polling number in iterations, seconds, or cycles. To specify
                        in seconds, append an 's' to #.  To specify number of cycles for
                        simulation, append a 'c' to #.  If limit is not specified,
                        defaults to 1000 iterations.  If limit = 0, polls indefinitely.
                        If limit = 0 and -interval is not specified, the interval defaults
                        to 5 seconds.

        -interval # [opt] Time between getscoms. To specify in seconds, append an 's'
                        to #.  To specify number of cycles for simulation, append a
                        'c' to # (number of cycles must be > 1000).  If -limit is not
                        specified with -interval, the limit defaults to ~240 seconds
                        or 1 million cycles, depending on how -interval is specified.
                        If neither -limit or -interval are specified, limit defaults to
                        60 seconds and interval defaults to 5 seconds.

        -verbose  [opt] Prints warning message after each getscom if actual != expected.
        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.
        --------------------------------------------------------------------------------

        Examples:       pollscom pu 800009 -exp feed000000000001 -limit 30s -interval 10s
-verbose -p1
                        pollscom pu 800009 -exp feed000000000001 -mask ffff00000000ffff
-limit 10
                        pollscom memctrl 400020 -limit 100000c -interval 5000c
```

Examples:

```
> pollscom test 800000 -exp FEED0000 -limit 5
test   k0:n0:s0:p00:c0:t0 Polling address 800000...
ERROR: (ECMD): Data miscompare occured at address: 00800000
test   k0:n0:s0:p00:c0:t0 Polling address 800000...
Actual            : FEEDBEEF AAAAAAAA 00000000
Expected          : FEED0000
ecmd.exe pollscom test 800000 -exp FEED0000 -limit 5
```

3.3.9 putarray

Syntax:

```
Syntax: putarray <ChipSelect> <ArrayName> <ArrayIndex> <ArrayData> [-i<format>]
                          [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       Write the specified data to the specified chip array.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to put array data to.

        ArrayName       Name of array to write to.

        ArrayIndex      Array Index in right aligned hex.

        ArrayData       Data to write to array: default "x"

        -i<format>[opt] Specifies the format type of input data

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.
        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Examples:       > putarray pu xgpr0 deadbeef80000000 -p0,1 -c1
```

Examples:

3.3.10 putbits

Syntax:

```
Syntax: putbits <ChipSelect> <RingName> <StartPos> <Data> [-i<format>] [-b<modifier>]
                          [-X] [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       Put bits to the specified chip ring.

        Paramaters:
        --------------------------------------------------------------------------------
        ChipSelect      Specifies the chip to operate on.

        RingName        Specifies chip ring to operate on.  For a list of available
                        rings, use the ecmdquery command.

                        Ex:  ecmdquery rings memctrl
                             ecmdquery rings pu

        StartPos        Specifies starting bit position in Decimal.

        Data            Bits to insert into chip ring.  Default is binary.

        -i<format>[opt] Specifies the format type of input data

        -b<mod>[opt]    Bit modifier to apply to current ring data.

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Example:        putbits pu int 567 ABAB -x -p0,1 -c1
```

```
                        putbits pu int 23 011X001X -p0
```

Examples:

3.3.11 putlatch

Syntax:

```
Syntax: putlatch <ChipSelect> <RingName> <LatchName> [<Start> <Numbits>] <Data>
                              [-i<format>] [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       Puts a value for a specified register into a ring.  The first
                        register in the scandef file that exactly matches the RegName
                        (not including parenthesis) will be used. If the register is
                        broken into multiple lines, the register lengths are
                        concatenated to form one complete register.

        Parmeters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to put data to.

        RingName        Specifies chip ring to operate on.  For a list of available
                        rings, use the ecmdquery command.

                        Ex:  ecmdquery rings memctrl
                             ecmdquery rings pu

        LatchName       Desired latchs to put in the ring.

        Start     [opt] Offset at which to begin writing data.  Also specify Numbits.

        Numbits   [opt] Number of bits to insert.  If not specified, start = 0 and
                        numbits is calculated from the length of the Data string.

        Data            Data to be written to the register specified.  Format depends on
                        format flag (default hex-left).

        -i<format>[opt] Specifies the format type of input data

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Example:        putlatch pu cp_fpu GCP.PFPU.FP_UNIT0.FPA_LATCH -ix feed
```

Examples:

3.3.12 putpattern

Syntax:

```
Syntax: putpattern <ChipSelect> <RingType> <Data> [-i<format>]
                                           [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       Puts a repeated pattern to the entire specified chip ring.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Specifies the chip to operate on.

        RingName        Specifies chip ring to operate on.  For a list of available
                        rings, use the ecmdquery command.

                        Ex:  ecmdquery rings memctrl
                             ecmdquery rings pu

        Data            32bit pattern to write.  (default: hex-right)

        -i<format>[opt] Specifies the format type of input data

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Example:        putpattern pu int FEEDBEEF -p0,1
```

Examples:

3.3.13 putscom

Syntax:

```
Syntax: putscom <ChipSelect> <ScanCommAddr> [<Start> <Numbits>] <Data> [-i<format>]
                             [-b<modifier>] [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function
        Function:       Write the specified data to the specified chip using scancom.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to put scancom data to.

        ScanCommAddr    Address in right aligned hex.

        Start     [opt] Starting bit position within the scom.  Specify with numbits.

        Numbits   [opt] Number of bits to insert. Specify with Start. If Start and Numbits
                        are not specified, start = 0 and numbits is calculated from
                        length of data string, rest of Scom register is padded with zeros.

        Data            Data to insert into Scom Register. Default is Hex-Left.

        -i<format>[opt] Specifies the format type of input data

        -b<mod>[opt]    Bit modifier to apply to current scom data.

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Examples:       > putscom pu 600000 deadbeef80000000  -p0,1 -c1
                        > putscom memctrl 2010 001001010110 -ib
                        > putscom l3 40320 0000800000 -bor -p12
```

Examples:

3.3.14 putspy

Syntax:

```
Syntax: putspy <ChipSelect> <SpyName> [<Start> <Numbits>] <Data>  [-i<format>]
                                  [-b<modifier>] [-k#] [-n#] [-s#] [-p#] [-c#]

        ECMD:           Core Common Function

        Function:       Write data to a spy.  Works with idial, edial and alias spy's.

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to write data to.

        SpyName         Desired spy name, (case insensitive)

        Start     [opt] Starting bit position within the spy.  Specify with numbits.
                        Only valid with non-enumerated spy's
        Numbits   [opt] Number of bits to insert. Specify with Start. If Start and Numbits
                        are not specified, start = 0 and numbits is calculated from
                        length of data string.
                        Only valid with non-enumerated spy's

        Data            Data to put into spy, either raw data or enum name.

        -i<format>[opt] Specifies the format type of the input data (default: hex-left)
                        For enums use -ienum

        -b<mod>[opt]    Bit modifier to apply to current spy data.

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                        to act on all nodes.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
                        to act on all slots.

        -p#  [optional] Specify which chip position to act on (0 is default). Specify
                        -pall to act on all chips.

        -c#  [optional] Specify which processor core to act on (0 is default). Specify
                        -call to act on all cores.

        --------------------------------------------------------------------------------

        Examples:       putalias pu MYALIAS -ixr feedbeeffeeedbeef
                        putalias pu EVERYOTHER 16 4 -ib 1010
                        putalias pu MYEDIAL ENUMVALUE -ienum
```

Examples:

3.3.15 sendcmd

Syntax:

```
Syntax: sendcmd <ChipSelect> <ScanInstrCode> <ScanInstrMod> [-v] [-k#] [-n#] [-s#] [-p#]

        ECMD:           Core Common Function

        Function:       Send a JTAG Instruction to the chip

        Parameters:
        --------------------------------------------------------------------------------
        ChipSelect      Chip to send ScanInstrCode to.

        ScanInstrCode   Scan instruction code to be sent (in hex).

        ScanInstrMod    Scan instruction modifier (for ACCESS/CFAM).

        -v   [optional] Verbose mode.  Displays the instruction
                        status in an easy-to-read format.

        -k#  [optional] Specify which cage to act on (0 is default). Specify -kall
                        to act on all cages.

        -s#  [optional] Specify which slot to act on (0 is default). Specify -sall
```

```
                 to act on all slots.

  -n#  [optional] Specify which node to act on (0 is default). Specify -nall
                 to act on all nodes.

  -p#  [optional] Specify which chip position to act on (0 is default). Specify
                 -pall to act on all chips.

--------------------------------------------------------------------------------

  Notes:          Leading zeros ARE NECESSARY if the command is not a full
                  16 bits (e.g. ACCESS)
                  Only valid with JTAG attached chips

  Example:        sendcmd pu 12 C00008 -p0,1
```

Examples:

3.4 Miscellaneous Commands

3.4.1 ecmdquery

Syntax:

```
Syntax: ecmdquery <Mode> [Mode Options]

        ECMD:           Core Common Function

        Function:       Query information from eCMD

        Parameters:
        --------------------------------------------------------------------------------
        Mode            Query type to perform

        Mode Values     rings ChipSelect [-k#] [-n#] [-s#] [-p#]
                            - Display all rings available for chip

        --------------------------------------------------------------------------------

        Example:        ecmdquery rings pu -p0,1
```

Examples:

```
> ecmdquery version
================================================
Dll Type         : Cronus
Dll Product      : Unknown
Dll Environment  : Hardware
Dll Build Date   : Nov 24 2003 14:19:14
Dll Capi Version : .1
================================================
ecmd.exe ecmdquery version

> ecmdquery rings test

Available rings for test      k0:n0:s0:p00        ec 0:
Ring Names                        Address    Length   Mask Chkable BroadSide ClockState
-------------------------------   --------   ------   ---- ------- --------- ----------
idreg                             0x000100   32        N     N         N     UNKNOWN
scancom                           0x000040   64        N     N         N     UNKNOWN
scancomprint                      0x000040   64        N     N         N     UNKNOWN
scancomstat                       0x000080   32        N     N         N     UNKNOWN
bypass32                          0x000010   32        N     N         N     UNKNOWN
access_ec                         0x000200   32        N     N         N     UNKNOWN
crcreg                            0x000020   32        N     N         N     UNKNOWN
gp1                               0x001000   32        N     N         N     UNKNOWN
gp2                               0x002000   32        N     N         N     UNKNOWN
gp3                               0x004000   32        N     N         N     UNKNOWN
testring                          0x800003   128       N     Y         N     UNKNOWN
sgxbs                             0x800009   573       N     Y         N     UNKNOWN
ecmd.exe ecmdquery rings test
```

3.5 Simulation Commands

3.5.1 simaet

Syntax:

```
Syntax: simaet on | off | flush

        ECMD:           Core Common Function

        Function:       Start/Stop Simulation AET logging

        Parameters:
        --------------------------------------------------------------------------------
        on              Enable AET

        off             Disable AET

        flush           Flush AET to disk

        --------------------------------------------------------------------------------

        Example:        simaet on
                        simaet off
```

Examples:

3.5.2 simcheckpoint

Syntax:

```
Syntax: simcheckpoint <checkpoint name>

        ECMD:           Core Common Function

        Function:       Store a checkpoint to the specified file

        Parameters:
        --------------------------------------------------------------------------------
        checkpointname  name to store checkpoint under

        --------------------------------------------------------------------------------

        Example:        simcheckpoint boot
```

Examples:

3.5.3 simclock

Syntax:

```
Syntax: simclock <cycles>

        ECMD:           Core Common Function

        Function:       Clock the simulator

        Parameters:
        --------------------------------------------------------------------------------
        cycles          Number of cycles to clock the simulator
        --------------------------------------------------------------------------------
        Example:        simclock 1000
```

Examples:

3.5.4 simecho

Syntax:

```
Syntax: simecho <message>

        ECMD:           Core Common Function

        Function:       Echo a string to stdout as well as sim logs

        Parameters:
        --------------------------------------------------------------------------------
        message         String to echo to sim

        --------------------------------------------------------------------------------

        Example:        simecho "Hello"
```

Examples:

3.5.5 simexit

Syntax:

```
Syntax: simexit

        ECMD:           Core Common Function

        Function:       Close down a simulation

        Parameters:
        --------------------------------------------------------------------------------

        --------------------------------------------------------------------------------

        Example:        simexit
```

Examples:

3.5.6 simEXPECTFAC

Syntax:

```
Syntax: simEXPECTFAC <facname> <data> <length> [<row> <offset>] [-i<format>]

        ECMD:           Core Common Function

        Function:       Perform expect on simulation facility using name

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        data            Data for expect on facility

        length          Bit length of data

        row  [optional] Facility row

        offset    [opt] Facility offset

        -i<format>[opt] Specifies the format type of input data. default: "xr"

        --------------------------------------------------------------------------------

        Example:        simEXPECTFAC TITAN.TCKFREQ C 4
```

Examples:

3.5.7 simexpecttcfac

Syntax:

```
Syntax: simexpecttcfac <facname> <data>  [<row> | -subset <startbit> <numbits>]
-i<format>

        ECMD:           Core Common Function

        Function:       Perform expect on a TCFAC Facility

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        data            Data for expect

        row  [optional] Facility row - not valid with -subset

        startbit  [opt] Facility offset - not valid with row

        numbits   [opt] Number of bits from startbit to read - not valid with row

        -i<format>[opt] Specifies the format type of the input data: default 'xr'

        --------------------------------------------------------------------------------

        Example:        simexpecttcfac TITAN.TCKFREQ F
```

Examples:

3.5.8 simgetcurrentcycle

Syntax:

```
Syntax: simgetcurrentcycle

        ECMD:           Core Common Function

        Function:       Retrieve the current cycle count

        Parameters:
        --------------------------------------------------------------------------------

        --------------------------------------------------------------------------------

        Example:        simgetcurrentcycle
```

Examples:

3.5.9 simGETFAC

Syntax:

```
Syntax: simGETFAC <facname> <length> [<row> <offset>] [-o<format>]

        ECMD:           Core Common Function

        Function:       Read a Simulation Facility using a facility name

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        length          Bit length of symbol to read

        row  [optional] Facility row

        offset    [opt] Facility offset

        -o<format>[opt] Specifies the format type of the output: default 'xr'

        --------------------------------------------------------------------------------

        Example:        simGETFAC TITAN.TCKFREQ 4
```

Examples:

3.5.10 simGETFACX

Syntax:

```
Syntax: simGETFACX <facname> <length> [<row> <offset>]

        ECMD:           Core Common Function
        Function:       Read a Simulation Facility using a facility name
                        Displaying Xstate data. format: "b"

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        length          Bit length of symbol to read

        row  [optional] Facility row

        offset    [opt] Facility offset

        --------------------------------------------------------------------------------

        Example:        simGETFACX TITAN.TCKFREQ 4
```

Examples:

3.5.11 simgettcfac

Syntax:

```
Syntax: simgettcfac <facname> [<row> | -subset <startbit> <numbits>] [-o<format>]

        ECMD:           Core Common Function

        Function:       Read a TCFAC Facility

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        row  [optional] Facility row - not valid with -subset

        startbit  [opt] Facility offset - not valid with row

        numbits   [opt] Number of bits from startbit to read - not valid with row

        -o<format>[opt] Specifies the format type of the output: default 'xr'
        --------------------------------------------------------------------------------

        Example:        simgettcfac TITAN.TCKFREQ
```

Examples:

3.5.12 siminit

Syntax:

```
Syntax: siminit [<checkpoint>]

        ECMD:           Core Common Function
        Function:       Initialize the simulation

        Parameters:
        --------------------------------------------------------------------------------
        checkpoint[opt] Name of checkpoint to load

        --------------------------------------------------------------------------------

        Example:        siminit
                        siminit boot
```

Examples:

3.5.13 simPUTFAC

Syntax:

```
Syntax: simPUTFAC <facname> <data> <length> [<row> <offset>] [-i<format>]

        ECMD:           Core Common Function

        Function:       Write a simulation facility using a name

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        data            Data to write to facility

        length          Bit length of symbol to read

        row  [optional] Facility row

        offset    [opt] Facility offset

        -i<format>[opt] Specifies the format type of input data. default: "xr"

        --------------------------------------------------------------------------------

        Example:        simPUTFAC TITAN.TCKFREQ C 4
```

Examples:

3.5.14 simPUTFACX

Syntax:

```
Syntax: simPUTFACX <facname> <data> [<row> <offset>] [-i<format>]

        ECMD:           Core Common Function

        Function:       Write a simulation facility using a name.
                        Write with Xstate data: format "b"

        Parameters:
```

```
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        data            Data to write to facility

        row  [optional] Facility row

        offset    [opt] Facility offset

        --------------------------------------------------------------------------------

        Example:        simPUTFACX TITAN.TCKFREQ 11XX01
```

Examples:

3.5.15 simputtcfac

Syntax:

```
Syntax: simputtcfac <facname> <data> [<row> <# of rows>] -i<format>

        ECMD:           Core Common Function

        Function:       Put a TCFAC Facility

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        data            Data to put

        row  [optional] Facility row

        # of rows [opt] Number of rows to put

        -i<format>[opt] Specifies the format type of the input data: default 'xr'

        --------------------------------------------------------------------------------

        Example:        simputtcfac TITAN.TCKFREQ F
```

Examples:

3.5.16 simrestart

Syntax:

```
Syntax: simrestart <checkpoint name>

        ECMD:           Core Common Function

        Function:       Load a checkpoint from the specified file

        Parameters:
        --------------------------------------------------------------------------------
        checkpointname  name to load checkpoint from

        --------------------------------------------------------------------------------

        Example:        simrestart boot
```

Examples:

3.5.17 simSTKFAC

Syntax:

```
Syntax: simSTKFAC <facname> <data> <length> [<row> <offset>] [-i<format>]

        ECMD:           Core Common Function

        Function:       Stick a simulation facility using name

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        data            Data for operation

        length          Bit length of data

        row  [optional] Facility row

        offset    [opt] Facility offset

        -i<format>[opt] Specifies the format type of input data. default: "xr"

        --------------------------------------------------------------------------------

        Example:        simSTKFAC TITAN.TCKFREQ C 4
```

Examples:

3.5.18 simstktcfac

Syntax:

```
Syntax: simstktcfac <facname> <data> [<row> <# of rows>] -i<format>

        ECMD:           Core Common Function

        Function:       Stick a TCFAC Facility

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        data            Data to stick

        row  [optional] Facility row
        # of rows [opt] Number of rows to stick

        -i<format>[opt] Specifies the format type of the input data: default 'xr'

        --------------------------------------------------------------------------------

        Example:        simstktcfac TITAN.TCKFREQ F
```

Examples:

3.5.19 simSUBCMD

Syntax:

```
Syntax: simSUBCMD <command>

        ECMD:           Core Common Function

        Function:       Run an rtx SUBCMD

        Parameters:
        --------------------------------------------------------------------------------
        command         rtx command to run

        --------------------------------------------------------------------------------

        Example:        simSUBCMD run left
```

Examples:

3.5.20 simUNSTICK

Syntax:

```
Syntax: simUNSTICK <facname> <length> [<row> <offset>]

        ECMD:           Core Common Function

        Function:       Unstick a Simulation Facility using a name

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility symbol name

        length          Bit length of symbol

        row  [optional] Facility row

        offset    [opt] Facility offset

        --------------------------------------------------------------------------------

        Example:        simUNSTICK 100 4
```

Examples:

3.5.21 simunsticktcfac

Syntax:

```
Syntax: simunsticktcfac <facname> <data> [<row> <# of rows>] -i<format>

        ECMD:           Core Common Function

        Function:       Unstick a TCFAC Facility

        Parameters:
        --------------------------------------------------------------------------------
        facname         Must be a facility name

        data            Data to write with unstick

        row  [optional] Facility row

        # of rows [opt] Number of rows to unstick

        -i<format>[opt] Specifies the format type of the input data: default 'xr'

        --------------------------------------------------------------------------------

        Example:        simunsticktcfac TITAN.TCKFREQ F
```

Examples: