# cmlmcol: Code Magus Metric Collector Version 1

# CML00093-01

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# Contents

# 1 Introduction

This document describes the interface to the Code Magus Limited `cmlmcol` server.

All Client requests for metrics are via the command interface of `cmlmcol`.

# 2 Command interface

## 2.1 Command Elements

The elements of the commands to `cmlmcol` comprise reserved words, identifiers, string literals, comments and integers. The commands are free format and white spaces have no grammatical meaning except where they might appear within string literals.

### 2.1.1 Comments

Comments are introduced by using a hash ('#') and continue up to the end of the current input line.

### 2.1.2 Reserved Words

Reserved words have a special meaning in terms of directing the parsing of commands. Please note that reserved words are not case sensitive. The reserved words are:

### 2.1.3 Identifiers

An *Identifier* is case sensitive, it starts with a letter which can be followed by any number of letters, digits or the under-score character.

Examples:

```
ncacrag_123   RecordStaffArrgmntDet
```

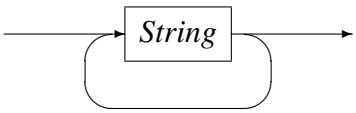
### 2.1.4 Strings

Strings are:

- any sequence of characters (except double quotes and the newline character) enclosed by double quotes.

- any sequence of characters (except single quotes and the newline character) enclosed by single quotes.

Strings cannot span source text lines, but they may be concatenated:




Examples:

```
"GigabitEthernet0/0 In Octets"
'$Revision: 1.1 $'
```

### 2.1.5 Integers

A *Integer* consists of a nonempty sequence of decimal digits '0' through '9'.

Examples:

```
1234
0
```

### 2.1.6 Numbers

A number consists of a nonempty sequence of decimal digits that

- possibly contains a radix character (decimal point '.').
- is optionally followed by a decimal exponent; consisting of an 'E' or 'e' followed by an optional plus or minus sign followed by a nonempty sequence of decimal digits that indicates multiplication by a power of 10.

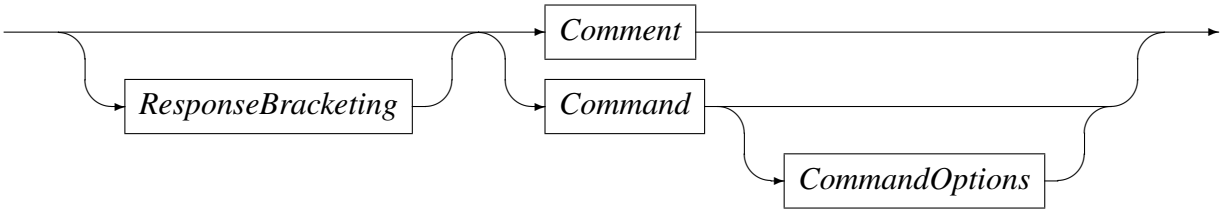
**Examples:**

```
1234
0.001
1.2
123.45E-12
```

### 2.1.7 TimeStamp

The *Timestamp* have the following format `CCYYMMDDhhmmss`.

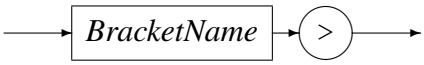
## 2.2 General Command Syntax




Input to the command processor is either:

- A *Comment*. The whole line is ignored by the command processor, see 2.1.1 on page 2.
- A *Command*, optionally followed by command options.

*ResponseBracketing*




*BracketName* can be any character except the '>' character. The response to the `cmlmcol` command will be preceded by '`.begin BracketName>`' and followed by a newline and '`.end BracketName>`'.

Example:

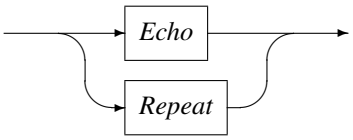
```
my context> get value metric(a.b.c) function(rate)
```

Response:

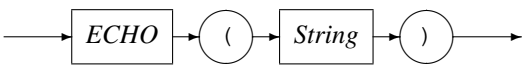
```
.begin my context>
.
.
.
.end my context>
```

All commands can be followed by zero or more of the command options. These options affect the way in which the command is executed; for example causing the command to be repeated at intervals.

*CommandOptions*




*Echo*



Causes the echo option as specified to be appended to the command response.

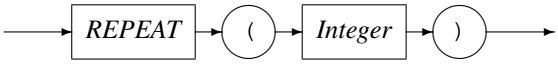
Example:

```
get value metric(a.b.c) function(rate) echo("my context")
```

Response:

```
.
.
.
echo("my context")
```

*Repeat*




Repeat the request every *Integer* seconds.

Example:
Repeat the request every 30 seconds.

```
get value metric(a.b.c) function(rate) repeat(30)
```

Repeat the request every 30 seconds with echo.

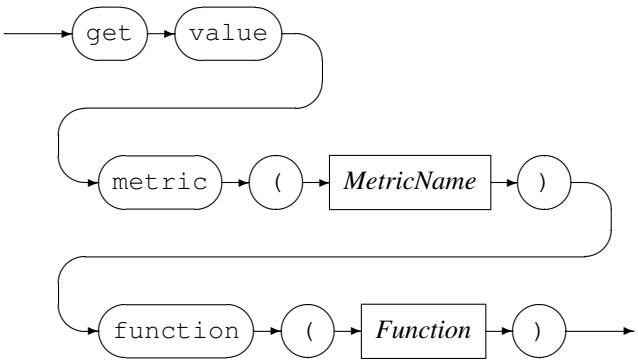
```
get value metric(a.b.c) function(rate) echo("my context") repeat(30)
```

## 2.3 List Command

## 2.4 Get Value Command

Responds with the value for the requested metric using the calculation as per the function specified.

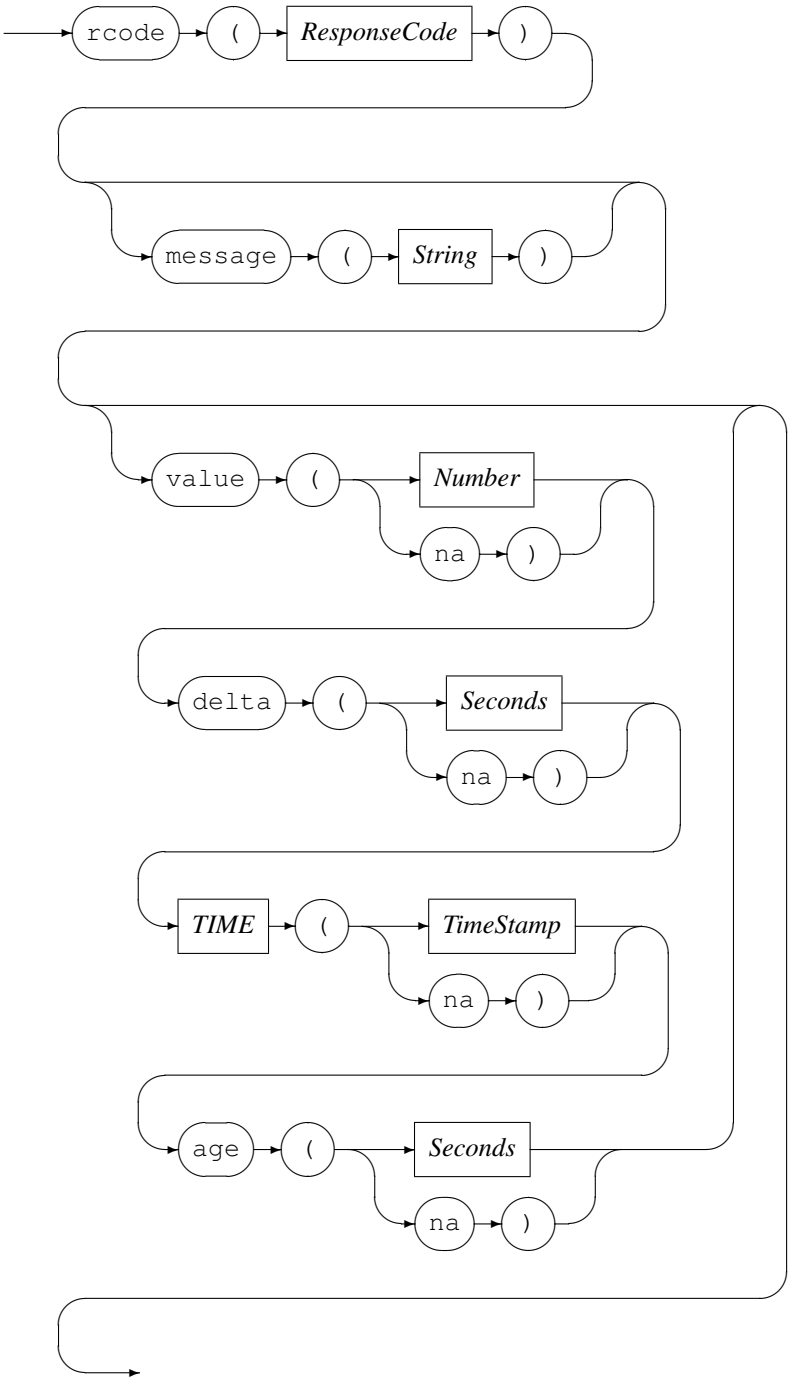
### 2.4.1 Request



For *MetricName* refer to appendix A on page 8

For *Function* refer to appendix C on page 9

### 2.4.2 Response




- *ResponseCode*

Completion code of the request. see appendix B on page 8

- `value`
  The calculated value using the requested function. Note if the value could not be calculated it contains the key word `na`.
- `delta`
  For the requested metric value, this is the time in seconds from the previous metric update received to the last update received by `cmlmcol`. Note if there was no previous update `delta` contains the key word `na`.
- `time`
  This is the *TimeStamp* of the last update received by `cmlmcol` for the requested metric. Note if the there was no updates `time` contains the key word `na`.
- `age`
  This is the seconds lapsed since the last update received by `cmlmcol` for the request metric. Note if the there was no updates `age` contains the key word `na`.

### 2.4.3 Examples

Get the value for `posipcon.prod_posipcon_00.session` using the function `last_5minutes_rate`. Request:

```
get value metric(posipcon.prod_posipcon_00.session)
   function(last_5minutes_rate)
```

Assuming the metric is defined and the function is a valid function, the response could be something like:

- Success full:

  ```
  rcode(0) value(3.053) delta(10) time(20131122094450) Age(7)
  ```

- Exception - no previous metric:

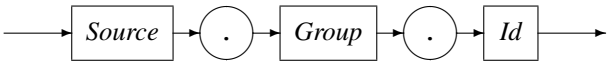
  ```
  rcode(1) message("No previous metric")
     value(na) delta(na) time(20131122094450) Age(7)
  ```

- Exception - no updates received:

  ```
  rcode(1) message("no updates")
     value(na) delta(na) time(na) Age(na)
  ```

# A Metric Name

A metric name is made up from three components:




*Source*


*Group*


*Id*


# B Response codes

| Code | Description |
|---|---|
| 0 | Request success full |
| 1 | Request success full, with exceptions. |
| 8 | Request have semantic errors. |
| 9 | Request have syntax errors. |

# C Functions

| Function | Description |
|---|---|
| delta_rate | interval rate |
| delta_average | interval average |
| smoothed_rate | smoothed rate |
| smoothed_average | smoothed average |
| last_5minutes_rate | last 5minutes rate |
| last_5minutes_average | last 5minutes average |
| current_count | count |
| current_sum | sum of values |
| current_sumsq | sum of the square of values |
| previous_count | previous count |
| previous_sum | previous sum of values |
| previous_sumsq | prev sum of the sq of values |
| delta_seconds | interval in seconds |
| delta_count | interval count |
| delta_sum | interval sum of values |
| delta_sumsq | interval sum of the square |
| last_5minutes_seconds | interval in seconds |
| last_5minutes_count | interval count |
| last_5minutes_sum | interval sum of values |
| last_5minutes_sumsq | interval sum of the square |
| last_hour_seconds | interval in seconds |
| last_hour_count | interval count |
| last_hour_sum | interval sum of values |
| last_hour_sumsq | interval sum of the square |
| start_of_day_count | |
| start_of_day_sum | |
| start_of_day_sumsq | |
| this_day_count | |
| this_day_sum | |
| this_day_sumsq | |
| this_day_sumsq | |
| previous_day_count | |
| previous_day_sum | |
| previous_day_sumsq | |
| start_of_hour_count | |
| start_of_hour_sum | |
| start_of_hour_sumsq | |

| Function | Description |
|---|---|
| this_hour_count | |
| this_hour_sum | |
| this_hour_sumsq | |
| previous_hour_count | |
| previous_hour_sum | |
| previous_hour_sumsq | |
| start_of_minute_count | |
| start_of_minute_sum | |
| start_of_minute_sumsq | |
| this_minute_count | |
| this_minute_sum | |
| this_minute_sumsq | |
| previous_minute_count | |
| previous_minute_sum | |
| previous_minute_sumsq | |