The CVT routine actually calls a package of routines that perform long integer math. These are part of a Pascal unit called LONGOPS, that contains three procedures:

FREADDEC reads a long integer  
FWRITEDEC writes a long integer  
DECOPS performs several math operations.

A peculiarity of DECOPS is that it takes a variable number of parameters, depending on the operation to be performed. This is not correct Pascal, but it's sure more convenient this way! This is possible because DECOPS is actually an assembly routine, embedded into the Pascal unit. When calling DECOPS, the required parameters are pushed on the stack, followed by OP, the number of the operation to be executed (and by the return address, obviously).

Valid DECOPS operations are:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **OP** | **Name** | **Parameters** | **Return** | **Description** |
| 0 | Adjust | SIZE: word LINT: long | fixedlong | Strips the size word of LINT and converts it into SIZE words. If not possible: causes integer overflow. |
| 2 | Add | LINT1: long LINT2: long | long | Returns LINT1 + LINT2. Can cause overflow if the result is more than 10 words. |
| 4 | Subtract | LINT1: long LINT2: long | long | Returns LINT1 - LINT2. Can cause overflow if the result is more than 10 words. |
| 6 | Negate | LINT: long | long | Returns -LINT |
| 8 | Multiply | LINT1: long LINT2: long | long | Returns LINT1 \* LINT2. Can cause overflow if the result is more than 10 words. |
| 10 | Divide | LINT1: long LINT2: long | long | Returns LINT1 / LINT2. Can cause overflow or divide-by-zero errors. |
| 12 | Long to String | SIZE: word ADDR: word LINT: long | - | Converts LINT into a string and places it at address ADDR. SIZE is the maximum number of characters in the string, if it is exceeded a string-overflow error occurs. |
| 14 | TOS-1 to Long | TOS: long INT: word | TOS: long RESULT: long | Converts integer INT into a long integer leaving another long intact on the top of the stack. |
| 16 | Compare | TYPE: word LINT1: long LINT2: long | boolean | If TYPE = 0, returns LINT1 < LINT2 If TYPE = 1, returns LINT1 <= LINT2 If TYPE = 2, returns LINT1 >= LINT2 If TYPE = 3, returns LINT1 > LINT2 If TYPE = 4, returns LINT1 <> LINT2 If TYPE = 5, returns LINT1 = LINT2 |
| 18 | Int to Long | INT: word | long | Converts integer INT into a long integer. |
| 20 | Long to Int | LINT: long | word | Converts long integer LINT into an integer. Can cause overflow if the result doesn't fit in 16 bits. |