

Summary of QGEN keywords and instructions:

QGEN keywords and directives

Data directives (files to read and write):

INTAP[n]	Input data files (read)
INDATA[n]	Data insert files (read)
OUTAP[n]	Output data files (write)
LISTING	Spec listing file name (write)
REPORT	Printed report file name (write)

Run options:

RUNOPS	Identifies the run options line.
CC	Card ID location in inserted data.
CLEAR	Clear sections of work area between records.
ID	Case ID in input data.
IDIN	Case ID in insert data.
INSTART	Start location in work area for input data.
LENGTH	Number of lines per page for printed output.
MAXERR	Maximum number of cleaning/error messages allowed.
NOMATCH	Turn off file mismatch messages on insert.
OUTSTART	Start location in work area for output data.
RECYCLE	Request additional spec pass after the last record.
SEQ	Check ID sequence of input data.
TEST	Limit run to spec test or limited number of cases.
WIDTH	Set width of report file.
ZCOUNTER	Set decimal places in listing for counters.

Keywords relating to spec compilation:

SETUP ADDRMODE	Select data addressing mode.
INSERT	Identifies data insert instructions.
DICTIONARY	Indicates the start of a dictionary.
TABLE	Indicates the start of a lookup table.
END	Indicates the end of a lookup table, dictionary or spec file.
STOPLIST	Stop listing specs.
STARTLIST	Resume listing specs.
STOPSPEC	Stop compiling specs.
STARTSPEC [IF...]	Resume compiling specs.
#INCLUDE	Include specs from another file.

OGEN instructions

Instructions take from 0 to 4 operands.

Logical instructions cause the data modification or action specified in the result field to take place.

Arithmetic and data conversion instructions place their output in the result field.

Prefixing the letter "C" to any instruction (except LOOP and NOP) makes it conditional on operand A evaluating true.

Logical instructions:

Code	Ops	Meaning
ALL	None	Do for all records
AND	1-4	A [and B [and C [and D]]] must be true
IF	1-4	Identical to AND
OR	1-4	A [or B [or C [or D]]] must be true
EOR	2-4	One and only one of A or B [or C [or D]] must be true

Arithmetic instructions:

Code	Ops	Meaning
ADD	1-4	add A[+B[+C[+D]]] and place sum in result field
DIV	2	divide A by B
MPY	2-4	multiply A*B[*C[*D]]
MPD	3	multiply A*B and divide by C
SUB	2	subtract B from A
SQ	1	square root of A

Comparison instructions (logical):

Code	Ops	Meaning (F=field compare/N=numeric compare)
FEQ/NEQ	2-4	A equal to B [and C [and D]]
FNE/NNE	2-4	A not equal to B [and C [and D]]
FHE/NHE	2-4	A higher than or equal to B [and C [and D]]
FHI/NHI	2-4	A higher than B [and C [and D]]
FLE/NLE	2-4	A lower than or equal to B [and C [and D]]
FLE/NLO	2-4	A lower than B [and C [and D]]
FRN/NRN	3	A is in range [B to C] inclusive
FNR/NNR	3	A is not in range [B to C] inclusive

Punch instructions (for column binary data only):

Code	Ops	Meaning
MP	1-4	test for more than one punch present
NEN	2-4	Bit-wise AND of A and B [and C [and D]]
NET	2-4	Bit-wise OR of A and B [and C [and D]]
NEX	2	Bit-wise Exclusive OR of A and B
SHI	1	save only highest punch
SLO	1	save only lowest punch
SPB	1-4	test for single punch or blank
TAL	1-4	tally (count) the number of punches

Data conversion instructions:

Code	Ops	Meaning
ATB	1	translate ASCII to column-binary
BTA	1	translate column-binary to ASCII
DEC	1-4	decode column-binary punches into an ASCII string of 1's and 0's
ED	1	edit a field with a mask
ATE	1	translate ASCII to EBCDIC
ETA	1	translate EBCDIC to ASCII
STR	1-4	convert column-binary punches to a string of ASCII characters

Other instructions:

Code	Ops	Meaning
LOOP	1-4	repeat instruction, with increments
MOV	1	copy data to another location
NOP	None	dummy instruction (use as place marker)
TLU	2	Table lookup
TLN	2	Table lookup (numeric)
TLR	2	Table lookup (numeric range)

QGEN actions

Actions are specified with keywords in the result field of a specification line.

File output actions:

DRPn	Drop from output stream n (OUTAPn).
GET'prompt'	Get (prompted) user input from the keyboard.
LST	Print the data area specified to listing file.
PRT	Print the data area specified to report file.
SAY	Output text to the screen.
SELn	Select file n for output.
WRT	Write current record immediately to open stream(s).
?<message>	Print message if condition is NOT met.

Program control actions:

BCH	Branch to subroutine, loop increments are not carried.
EOJ	End job after processing current record.
LNK	Link to subroutine, loop increments are carried.
RET	Return from a subroutine.
SKP	Go to another specification line.
SKPEND	Skip remaining processing for the current record.