statement\_list: statement statement\_list

| EPSILON

statement: expression\_statement

| selection\_statement

| iteration\_statement

| ‘{‘ statement\_list ‘}’

| declaration

declaration: type\_specifier declarator ASSIGN assignment\_expression ‘;’

declarator:: ID

| declarator '[' ']'

type\_specifier: VOID

| CHAR

| INT

| FLOAT

| BOOL

| PROCESSOR

| LINK

| CLUSTER

| JOB

| MEMORY

primary\_expression: ID

| CONSTANT

| STRING\_LITERAL

| '(' expression ')'

| constructor

| mem\_func

postfix\_expression: primary\_expression

| postfix\_expression '[' expression ']'

| postfix\_expression '(' ')'

| postfix\_expression '(' argument\_expression\_list ')'

| postfix\_expression '.' ID

| ID ‘.’ mem\_func

| postfix\_expression PTR\_OP IDENTIFIER

| postfix\_expression INC\_OP

| postfix\_expression DEC\_OP

| '{' initializer\_list '}'

initializer: '{' initializer\_list '}'

| assignment\_expression

initializer\_list: initializer

| initializer\_list ',' initializer

argument\_expression\_list: assignment\_expression

| argument\_expression\_list ',' assignment\_expression

unary\_expression: postfix\_expression

| INC\_OP unary\_expression

| DEC\_OP unary\_expression

| unary\_operator unary\_expression

unary\_operator: '&'

| '\*'

| '+'

| '-'

| '~'

| '!'

multiplicative\_expression: unary\_expression

| multiplicative\_expression '\*' unary\_expression

| multiplicative\_expression '/' unary\_expression

| multiplicative\_expression '%' unary\_expression

additive\_expression: multiplicative\_expression

| additive\_expression '+' multiplicative\_expression

| additive\_expression '-' multiplicative\_expression

relational\_expression: additive\_expression

| relational\_expression '<' additive\_expression

| relational\_expression '>' additive\_expression

| relational\_expression LE\_OP additive\_expression

| relational\_expression GE\_OP additive\_expression

equality\_expression: relational\_expression

| equality\_expression EQ\_OP relational\_expression

| equality\_expression NE\_OP relational\_expression

and\_expression : equality\_expression

| and\_expression '&' equality\_expression

exclusive\_or\_expression: and\_expression

| exclusive\_or\_expression '^' and\_expression

inclusive\_or\_expression: exclusive\_or\_expression

| inclusive\_or\_expression '|' exclusive\_or\_expression

logical\_and\_expression: inclusive\_or\_expression

| logical\_and\_expression AND\_OP inclusive\_or\_expression

logical\_or\_expression: logical\_and\_expression

| logical\_or\_expression OR\_OP logical\_and\_expression

conditional\_expression: logical\_or\_expression

| logical\_or\_expression '?' expression ':' conditional\_expression

assignment\_expression: conditional\_expression

| unary\_expression ’=’ assignment\_expression

expression: assignment\_expression

| expression ',' assignment\_expression

iteration\_statement: WHILE '(' expression ')' statement

| DO statement WHILE '(' expression ')' ';'

| FOR '(' expression\_statement expression\_statement ')' statement

| FOR '(' expression\_statement expression\_statement expression ')' statement

| FOR '(' declaration expression\_statement ')' statement

| FOR '(' declaration expression\_statement expression ')' statement

selection\_statement: IF '(' expression ')' statement ELSE statement

| IF '(' expression ')' statement

expression\_statement: ';'

| expression ';'

constructor: PROCESSOR ‘(‘ param\_list\_proc ‘)’

| MEMORY ’(‘ param\_list\_mem ‘)’

| JOB ‘(‘ param\_list\_job ‘)’

| LINK ‘(‘ param\_list\_link ‘)’

| CLUSTER ‘(‘ param\_list\_cluster ‘)’

| SCHEDULER ‘(‘ param\_list\_scheduler ‘)’

param\_list\_job: job\_param1 ‘,’ job\_param2 ‘,’ job\_param3 ‘,’ job\_param4 ‘,’ job\_param5

job\_param1: JOB\_ID ASSIGN assignment\_expression

| assignment\_expression

job\_param2: FLOPS\_REQUIRED ASSIGN expression

| assignment\_expression

job\_param3: DEADLINE ASSIGN assignment\_expression

| assignment\_expression

job\_param4: MEM\_REQUIRED assignment\_expression

| assignment\_expression

job\_param5: AFFINITY ASSIGN ‘[‘ assignment\_expression‘,’ assignment\_expression‘,’ assignment\_expression‘,’ assignment\_expression]’

| ‘[‘ assignment\_expression‘,’ assignment\_expression‘,’ assignment\_expression‘,’ assignment\_expression]’

param\_list\_proc: proc\_param1 ’,’ proc\_param2 ‘,’ proc\_param3 opt\_proc\_param4 opt\_proc\_param5

proc\_param1: ISA ASSIGN assignment\_expression

| assignment\_expression

proc\_param2: CLOCK\_SPEED ASSIGN FLOAT

| CLOCK\_SPEED ASSIGN assignment\_expression

| FLOAT

proc\_param3: L1\_MEMORY ASSIGN assignment\_expression

| assignment\_expression

| L1\_MEMORY ASSIGN assignment\_expression ‘,’

| assignment\_expression ‘,’

opt\_proc\_param4: L2\_MEMORY ASSIGN assignment\_expression

| L2\_MEMORY ASSIGN assignment\_expression ‘,’

| assignment\_expression

| assignment\_expression ‘,’

| EPSILON

opt\_proc\_param5: NAME ASSIGN assignment\_expression

| assignment\_expression

| EPSILON

param\_list\_mem: mem\_param1 ‘,’ mem\_param2 opt\_mem\_param3

mem\_param1: memory\_type ASSIGN assignment\_expression

| assignment\_expression

mem\_param2: MEM\_SIZE ASSIGN assignment\_expression

| assignment\_expression

| MEM\_SIZE ASSIGN assignment\_expression ‘,’

| assignment\_expression ‘,’

opt\_mem\_param3: NAME ASSIGN assignment\_expression

| assignment\_expression

| EPSILON

param\_list\_link: link\_param1 ‘,’ link\_param2 ‘,’ link\_param3 ‘,’ link\_param4 opt\_link\_param5

link\_param1: START\_POINT ASSIGN assignment\_expression

| assignment\_expression

link\_param2: END\_POINT ASSIGN assignment\_expression

| assignment\_expression

link\_param3: BANDWIDTH ASSIGN assignment\_expression

| assignment\_expression

link\_param4: CHANNEL\_CAPACITY ASSIGN assignment\_expression

| assignment\_expression

| CHANNEL\_CAPACITY ASSIGN assignment\_expression ‘,’

| assignment\_expression ‘,’

opt\_link\_param5: NAME ASSIGN assignment\_expression

| assignment\_expression

| EPSILON

param\_list\_cluster : cluster\_param1 ‘,’ cluster\_param2 ’,’ cluster\_param3 ‘,’ cluster\_param4 opt\_cluster\_param5

cluster\_param1: assignment\_expression

cluster\_param2: TOPOLOGY ASSIGN assignment\_expression

| assignment\_expression

cluster\_param3: LINK\_BANDWIDTH ASSIGN assignment\_expression

| assignment\_expression

cluster\_param4: LINK\_CAPACITY ASSIGN assignment\_expression

| assignment\_expression

| LINK\_CAPACITY ASSIGN assignment\_expression ‘,’

| assignment\_expression ‘,’

opt\_cluster\_param5: NAME ASSIGN assignment\_expression

| EPSILON

param\_list\_scheduler : schedule\_param1 ‘,’ schedule\_param2 ‘,’ schedule\_param3 ‘,’ opt\_schedule\_param4 opt\_schedule\_param5

schedule\_param1: JOB\_ARRAY ASSIGN assignment\_expression

| assignment\_expression

schedule\_param2: AFFINITY\_ARRAY ASSIGN assignment\_expression

| assignment\_expression

schedule\_param3: CLUSTER\_ARRAY ASSIGN assignment\_expression

| assignment\_expression

opt\_schedule\_param4: ALGO ASSIGN assignment\_expression

| assignment\_expression

| EPSILON

opt\_schedule\_param5: ALGO\_USER ASSIGN assignment\_expression

| assignment\_expression

| EPSILON

mem\_func: GET\_AVAILABLE\_MEMORY ‘(‘ ‘)’

| GET\_MEMORY ‘(‘ ‘)’

| IS\_RUNNING ‘(‘ ‘)’

| SUBMIT\_JOBS ‘(‘ assignment\_expression ‘)’

| GET\_CLOCK\_SPEED ‘(‘ ‘)’

| RUN ‘(‘ assignment\_expression ‘)’

| DISCARD\_JOB‘(‘ assignment\_expression ’)’