

## Details

### Operators legally allowed in a reduction

Operator	Initialization value
+	0
*	1
-	0
&	~0
	0
^	0
&&	1
	0

### Schedule types for the loop construct

- static** Iterations are divided into chunks of size *chunk\_size*, and the chunks are assigned to the threads in the team in a round-robin fashion in the order of the thread number.
- dynamic** Each thread executes a chunk of iterations, then requests another chunk, until no chunks remain to be distributed.
- guided** Each thread executes a chunk of iterations, then requests another chunk, until no chunks remain to be assigned. The chunk sizes start large and shrink to the indicated *chunk\_size* as chunks are scheduled.
- auto** The decision regarding scheduling is delegated to the compiler and/or runtime system.
- runtime** The schedule and chunk size are taken from the run-sched-var ICV.

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# Runtime Library Routines

Execution environment routines affect and monitor threads, processors, and the parallel environment. Lock routines support synchronization with OpenMP locks. Timing routines support a portable wall clock timer. Prototypes for the runtime library routines are defined in the file “omp.h”.

## Execution Environment Routines

- void omp\_set\_num\_threads(int num\_threads);**  
Affects the number of threads used for subsequent **parallel** regions that do not specify a **num\_threads** clause.
- int omp\_get\_num\_threads(void);**  
Returns the number of threads in the current team.
- int omp\_get\_max\_threads(void);**  
Returns maximum number of threads that could be used to form a new team using a “parallel” construct without a “num\_threads” clause.
- int omp\_get\_thread\_num(void);**  
Returns the ID of the encountering thread where ID ranges from zero to the size of the team minus 1.
- int omp\_get\_num\_procs(void);**  
Returns the number of processors available to the program.
- int omp\_in\_parallel(void);**  
Returns *true* if the call to the routine is enclosed by an active **parallel** region; otherwise, it returns *false*.
- void omp\_set\_dynamic(int dynamic\_threads);**  
Enables or disables dynamic adjustment of the number of threads available.
- int omp\_get\_dynamic(void);**  
Returns the value of the *dyn-var* internal control variable (ICV), determining whether dynamic adjustment of the number of threads is enabled or disabled.
- void omp\_set\_nested(int nested);**  
Enables or disables nested parallelism, by setting the *nest-var* ICV.
- int omp\_get\_nested(void);**  
Returns the value of the *nest-var* ICV, which determines if nested parallelism is enabled or disabled.
- void omp\_set\_schedule(omp\_sched\_t kind, int modifier);**  
Affects the schedule that is applied when **runtime** is used as schedule kind, by setting the value of the *run-sched-var* ICV.
- void omp\_get\_schedule(omp\_sched\_t \*kind, int \*modifier);**  
Returns the schedule applied when **runtime** schedule is used.