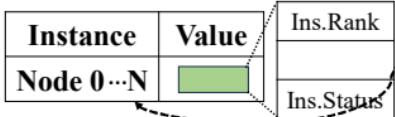


ScaleQsim

① Instance Manager



State Allocator

Active Instance Check

④

Two-phase Partitioning

↓ Node Partitioning

Node 0

0 ... $2^{36}/N - 1$

Node N

:
 $(N - 1 \times 2^{36}/N)$... $N \times (2^{36}/N) - 1$

↓ GPU Partitioning

Node 0

GPU 0 GPU 1

GPU 2 GPU 3

Node N

GPU 0 GPU 1

GPU 2 GPU 3

② State Generator

Statespace Calculator

↓ Initial State space

$$2^{36} = 68,719,476,736$$

↓ Create Qubit Index

Manage Qubit Index

Qubit Index

1 2 3 4 5 6 ... 36

③

Indices Manager

Global Indices Generator ⑤

READ
qubit index

Affected
IndidesBuilder

List of Affected Indices

StateSpace
Mapper

⑥

Affected ↓

Affected ↓

Affected ↓

Affected ↓

↓

Area of Node 0

Global Indices

Area of Node N

⑦ Kernel Simulator (Node 0)

Translator
(Global to Local)

Kernel
Execution

Kernel Simulator (Node N)

Translator
(Global to Local)

Kernel
Execution

Affected ↓

Affected ↓