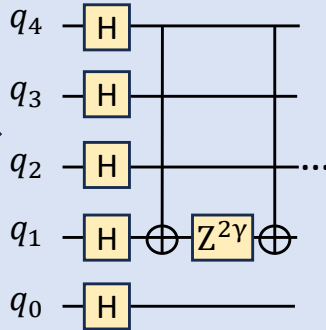


# Quantum Algorithm (# of Qubit)

*QFT* (36)  
*QSC* (34)  
*QV* (32)  
⋮

## Quantum Circuit



1

## Instance Manager

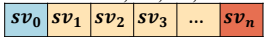
Instance	Value	Ins.Rank
Node 0...N		

## 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

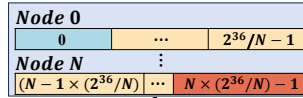
3

## State Allocator

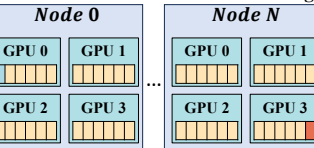
### Active Instance Check

### Two-phase Partitioning

Node Partitioning



GPU Partitioning



# ScaleQsim

## Indices Manager

### Global Indices Generator 6

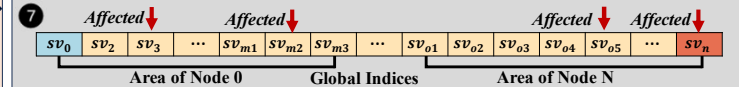
#### READ qubit index

#### Affected IndicesBuilder

List of Affected Indices

0000 0001 0010 0011 ... 1111

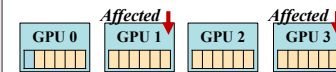
#### StateSpace Mapper



## Kernel Simulator (Node 0)

### Translator (Global to Local)

### Kernel Execution



## Kernel Simulator (Node N)

### Translator (Global to Local)

### Kernel Execution

