


A translation about `initialize` from qiskit in OpenQASM cannot translate back into qiskit #8048

New issue

 Open **weucode** opened this issue on May 11, 2022 · 2 comments

weucode commented on May 11, 2022

Environment

- **Qiskit Terra version:** 0.36.1
- **Python version:** 3.7.4
- **Operating system:** Windows

What is happening?

After got the OpenQASM code about `initialize` operator, it will fail to use `from_qasm_file/from_qasm_str` to translate it back into qiskit code.

Part of error message is shown below:

```
File "D:\Program Files\pycharm_project\qiskit-benchmarks\venv\lib\site-packages\ply\yacc.py", line 1120, in
parseopt_notrack
p.callable(pslice)
File "D:\Program Files\pycharm_project\qiskit-benchmarks\venv\lib\site-packages\qiskit\qasm\qasmparser.py", line
400, in p_id_e
raise QasmError("Expected an ID, received '" + str(program[1].value) + "'")
qiskit.qasm.exceptions.QasmError: "Expected an ID, received 'reset'"
```

How can we reproduce the issue?

```
from qiskit import QuantumCircuit
```

```
circuit = QuantumCircuit(1)
circuit.initialize('0', circuit.qubits)
qasm_str = circuit.qasm()
print(qasm_str)
same_circuit = QuantumCircuit(1)
same_circuit = same_circuit.from_qasm_str(qasm_str)
print(same_circuit)
```

What should happen?

Run successfully.

Any suggestions?

No response



 **weucode** added the **bug** label on May 11, 2022

 **HuangJunye** added the **mod: qasm2** label on May 11, 2022

jakelishman commented on May 16, 2022

Member 

Sorry for the slow reply! This is very related to [#7351](#) and the reasons in [#7750 \(comment\)](#). The gist is that `initialize` is a non-unitary instruction (it includes a `reset`), and so we can't actually write it as a valid OpenQASM 2 `gate`. It's a bug that the exporter here puts a `reset` instruction within a gate - it should probably just fail at that point.

There won't be a way to round-trip a circuit with `initialize` in it from QASM 2 even if we do some tricks in the export, because the language just can't represent that instruction without it being inlined into the circuit, sorry. We could do some tricks with the (unitary) `StatePreparation` class, but extending the OpenQASM 2 support is a low priority for us right now, sorry.



Assignees

No one assigned

Labels

bug **mod: qasm2**

Projects

None yet

Milestone


No milestone

Development

No branches or pull requests

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4 participants

harshitta-gandhi commented on May 30 • edited



Hey, @jakelishman,
I too am facing the same issue while converting a pennylane circuit to qasm. What do you think, in the circuit, is causing this error to prop up?
And what is the probable timeline for this bug to be resolved?



jakelishman mentioned this issue 4 days ago

Qasm exporter creates invalid Qasm for subcircuits with classical registers #7750

Closed

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