

Announcement

[Sergey Lukyanchikov](#) · Dec 14, 2019

Quantum ML using ML Toolkit

Hi Community, we would like to share the news about the "Bell State" example (a compact quantum computing program) automated using our ML Toolkit with a Rigetti QVM running in the background:

The screenshot displays the InterSystems Management Portal interface for the 'Q.BELLSTATE' process. The left pane shows the Business Process Designer with a flowchart for 'Q.BELLSTATE'. The central pane shows the 'Production Configuration' for the 'Q.BELLSTATE' process, including a timeline of events. The right pane shows the XML execution request and response.

Business Process Designer (Left Pane):

- Start node
- Import Python Modules (code: from pyquil import Program, get_qc from pyquil.gates import *)
- Construct Bell State Program (code: p = Program(H(0), CNOT(0, 1))
- Run Bell State Program (code: qc = get_qc("9q-square-qvm") result = qc.run_and_measure(p, trials=10) orig_stdout = sys.stdout
- End node

Production Configuration (Center Pane):

- Session ID: 23
- Legend, Printable Version, Go to items 1-9, Items per page 40, Show events, Show internal items, Apply Filter (None), Previous Page, Next Page
- Services: EnstLib.Testing Service
- Processes: EnstLib.Testing Process, Q.BELLSTATE
- Operations: isc.py.ens Operation
- Timeline of events (1-9) showing execution requests and responses.

XML Execution Request (Right Pane):

```
<?xml version="1.0" ?>
<!-- type: isc.py.msg.ExecutionRequest id: 27 -->
<ExecutionRequest xmlns:s="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xi="http://www.w3.org/2001/XMLSchema-instance"
  <code>qc = get_qc("9q-square-qvm")
  result = qc.run_and_measure(p, trials=10)
  orig_stdout = sys.stdout
  f = open('D:/InterSystems/IRIS/CSP/quantum/BELL
  sys.stdout = f
  print(result[0])
  print(result[1])
  sys.stdout = orig_stdout
  f.close()</code>
</ExecutionRequest>
```

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Source URL: <https://community.intersystems.com/post/quantum-ml-using-ml-toolkit>