# Cross-run-ID Comparison Report

(differences in bold)

MHZ_PER_CPU:
haMSb: 3394
wQ0ju: 3394

HELICS_VERSION:
haMSb: 2.5.0 (2020
wQ0ju: 2.5.0 (2020

GENERATOR:
**haMSb: Visual Studio 15 2017**
**wQ0ju: Visual Studio 16 2019**

SYSTEM:
haMSb: Windows
wQ0ju: Windows

SYSTEM_VERSION:
haMSb: 10.0.18363
wQ0ju: 10.0.18363

PLATFORM:
haMSb: x64
wQ0ju: x64

CXX_COMPILER:
haMSb: MSVC
wQ0ju: MSVC

CXX_COMPILER_VERSION:
**haMSb: 19.16.27026.1**
**wQ0ju: 19.25.28614.0**

BUILD_FLAGS_STRING:
**haMSb:  /DWIN32 /D_WINDOWS /GR /EHsc /O2 /Ob2 /DNDEBUG /machine:x64 /EHsc;/std:c++14**
**wQ0ju:  /DWIN32 /D_WINDOWS /GR /EHsc /O2 /Ob2 /DNDEBUG /GL /LTCG /arch:AVX2 /machine:x64 /EHsc;/std:c++14**

HOST_NAME:
haMSb: SIRIUS
wQ0ju: SIRIUS

HOST_PROCESSOR:
haMSb: AMD64
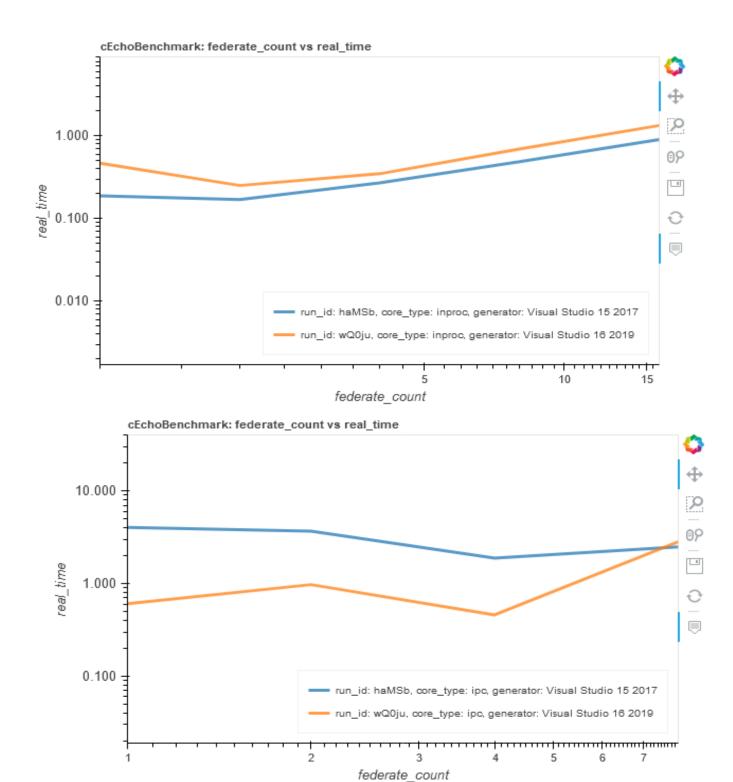wQ0ju: AMD64

NUM_CPUS:
haMSb: 32
wQ0ju: 32

DATE:
haMSb: 04/28/20 21:21:37
wQ0ju: 05/02/20 21:37:25

LIBRARY_BUILD_TYPE:
haMSb: release
wQ0ju: release

**cEchoBenchmark: federate_count vs real_time**



**cEchoBenchmark: federate_count vs real_time**

## cEchoBenchmark: federate_count vs real_time



**Legend:**
- run_id: haMSb, core_type: singleCore, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: singleCore, generator: Visual Studio 16 2019

## cEchoBenchmark: federate_count vs real_time



**Legend:**
- run_id: haMSb, core_type: tcp, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: tcp, generator: Visual Studio 16 2019

## cEchoBenchmark: federate_count vs real_time



run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019

## cEchoBenchmark: federate_count vs real_time



run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

**cEchoBenchmark: federate_count vs real_time**



— run_id: haMSb, core_type: zmq, generator: Visual Studio 15 2017
— run_id: wQ0ju, core_type: zmq, generator: Visual Studio 16 2019

**cEchoBenchmark: federate_count vs real_time**



— run_id: haMSb, core_type: zmqss, generator: Visual Studio 15 2017
— run_id: wQ0ju, core_type: zmqss, generator: Visual Studio 16 2019

echoBenchmark: federate_count vs real_time

run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019



echoBenchmark: federate_count vs real_time

run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019

echoBenchmark: federate_count vs real_time



echoBenchmark: federate_count vs real_time

**echoBenchmark: federate_count vs real_time**



run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019

**echoBenchmark: federate_count vs real_time**



run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

## echoBenchmark: federate_count vs real_time



run_id: haMSb, core_type: zmq, generator: Visual Studio 15 2017
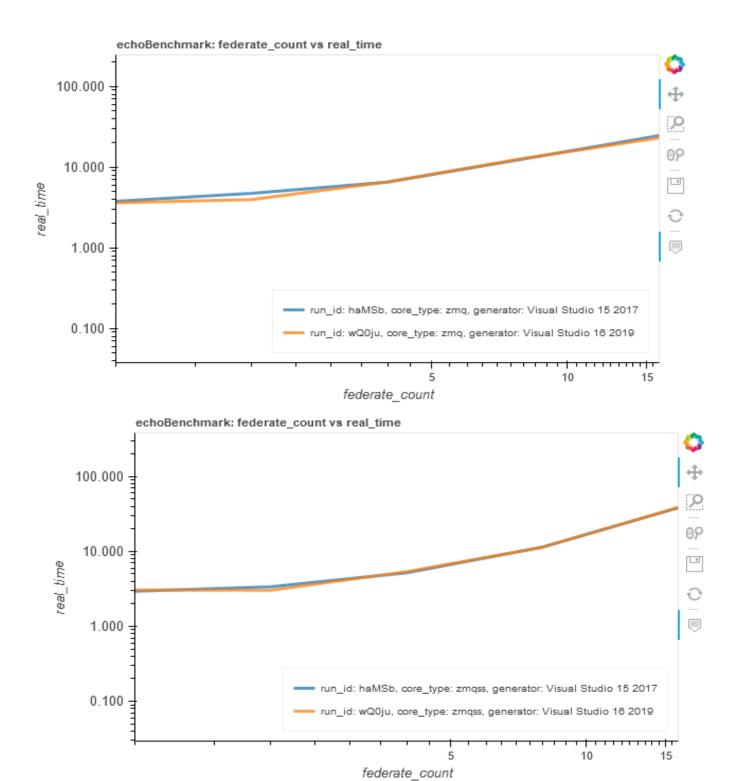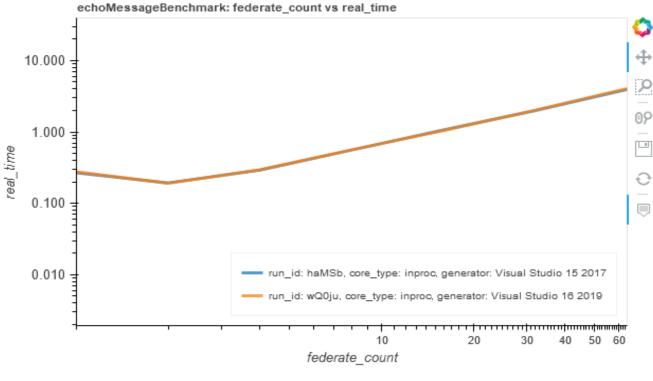run_id: wQ0ju, core_type: zmq, generator: Visual Studio 16 2019

## echoBenchmark: federate_count vs real_time



run_id: haMSb, core_type: zmqss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmqss, generator: Visual Studio 16 2019

echoMessageBenchmark: federate_count vs real_time

run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019
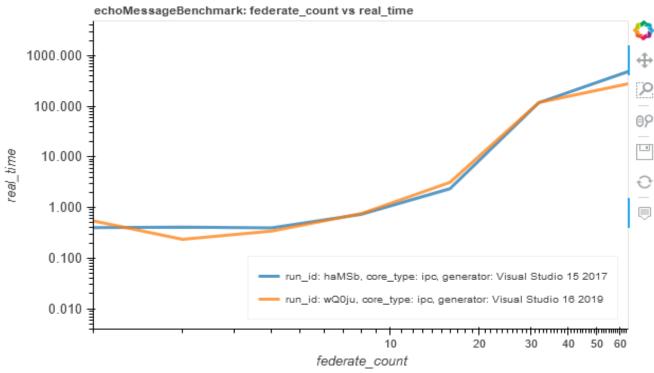
echoMessageBenchmark: federate_count vs real_time
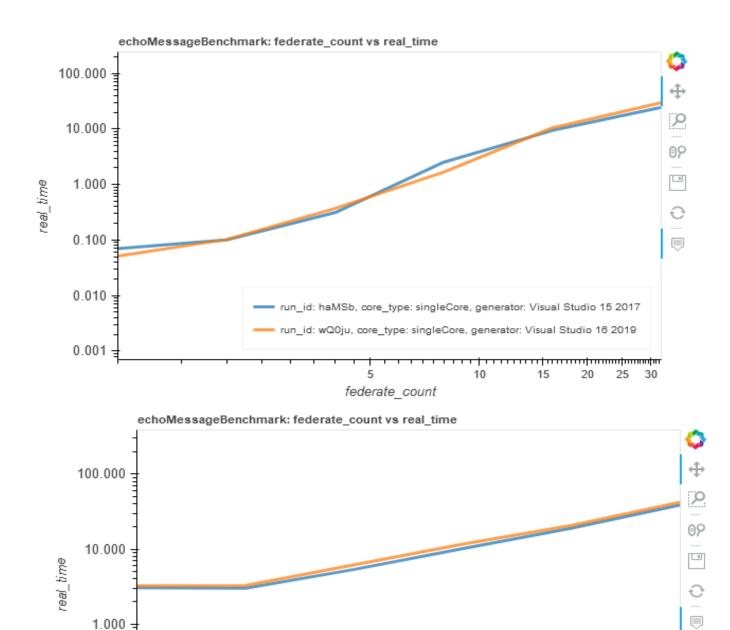
run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019

echoMessageBenchmark: federate_count vs real_time

run_id: haMSb, core_type: singleCore, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: singleCore, generator: Visual Studio 16 2019

echoMessageBenchmark: federate_count vs real_time

run_id: haMSb, core_type: tcp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcp, generator: Visual Studio 16 2019

**echoMessageBenchmark: federate_count vs real_time**

run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019



**echoMessageBenchmark: federate_count vs real_time**

run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
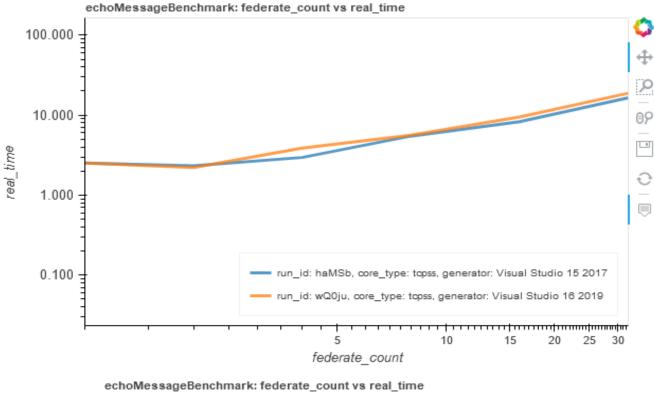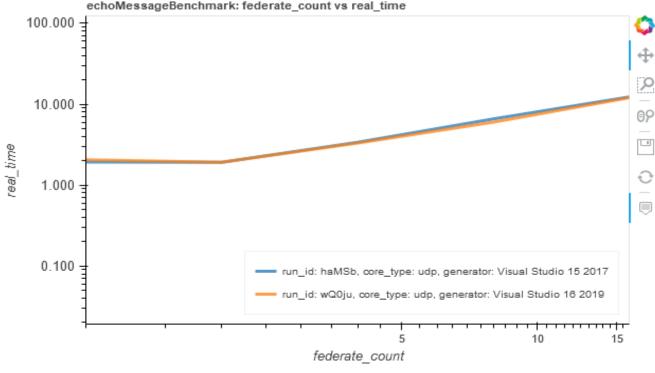run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

echoMessageBenchmark: federate_count vs real_time

run_id: haMSb, core_type: zmq, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmq, generator: Visual Studio 16 2019



echoMessageBenchmark: federate_count vs real_time

run_id: haMSb, core_type: zmqss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmqss, generator: Visual Studio 16 2019

**filter, fltr_loc=dest: federate_count vs real_time**

run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019



**filter, fltr_loc=dest: federate_count vs real_time**

run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
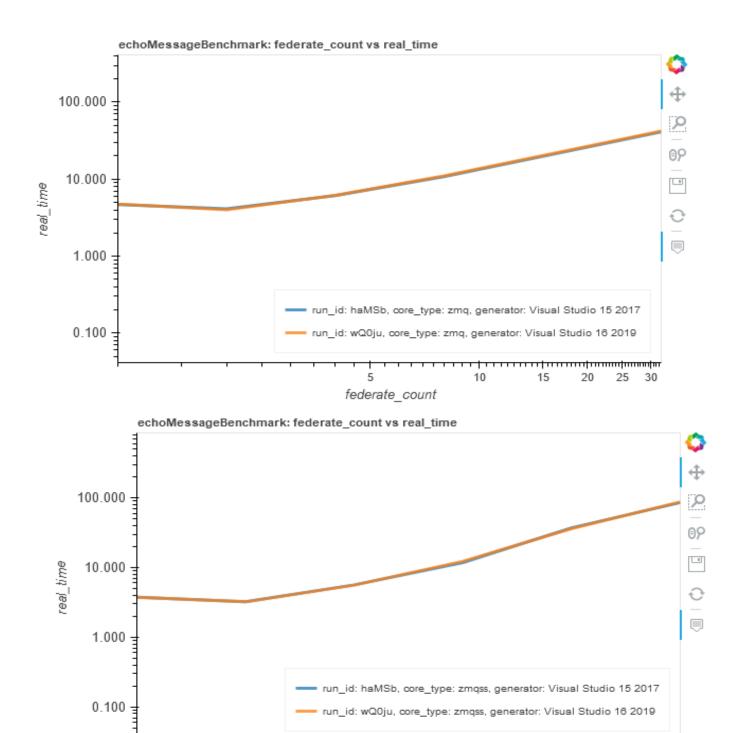run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019

**filter, fltr_loc=dest: federate_count vs real_time**



**filter, fltr_loc=dest: federate_count vs real_time**

**filter, fltr_loc=dest: federate_count vs real_time**



Legend:
- run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019
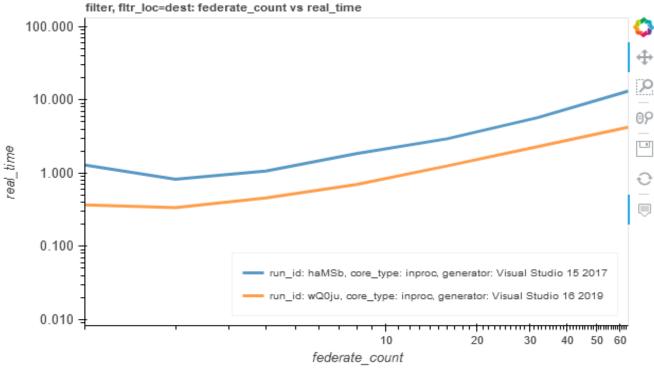
x-axis: federate_count
y-axis: real_time

**filter, fltr_loc=dest: federate_count vs real_time**



Legend:
- run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

x-axis: federate_count
y-axis: real_time

**filter, fltr_loc=dest: federate_count vs real_time**



run_id: haMSb, core_type: zmq, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmq, generator: Visual Studio 16 2019

**filter, fltr_loc=dest: federate_count vs real_time**



run_id: haMSb, core_type: zmqss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmqss, generator: Visual Studio 16 2019

**filter, fltr_loc=source: federate_count vs real_time**

run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019



**filter, fltr_loc=source: federate_count vs real_time**

run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019

**filter, fltr_loc=source: federate_count vs real_time**



run_id: haMSb, core_type: singleCore, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: singleCore, generator: Visual Studio 16 2019

*federate_count*

**filter, fltr_loc=source: federate_count vs real_time**



run_id: haMSb, core_type: tcp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcp, generator: Visual Studio 16 2019

*federate_count*

**filter, fltr_loc=source: federate_count vs real_time**



run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019

**filter, fltr_loc=source: federate_count vs real_time**



run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

**filter, fltr_loc=source: federate_count vs real_time**



**filter, fltr_loc=source: federate_count vs real_time**

## filter, singleCore: federate_count vs real_time



— run_id: haMSb, core_type: singleCore, generator: Visual Studio 15 2017
— run_id: wQ0ju, core_type: singleCore, generator: Visual Studio 16 2019

## messageLookup, fed_ct=2: interface_count vs real_time



— run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
— run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019

messageLookup, fed_ct=64: interface_count vs real_time

run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019



messageLookup, fed_ct=8: interface_count vs real_time

run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019

**messageSend, msg_ct=1: message_size vs real_time**

run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019



**messageSend, msg_ct=1: message_size vs real_time**

run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019

messageSend, msg_ct=1: message_size vs real_time

run_id: haMSb, core_type: singleCore, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: singleCore, generator: Visual Studio 16 2019

messageSend, msg_ct=1: message_size vs real_time

run_id: haMSb, core_type: tcp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcp, generator: Visual Studio 16 2019

**messageSend, msg_ct=1: message_size vs real_time**



- run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019

**messageSend, msg_ct=1: message_size vs real_time**



- run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

**messageSend, msg_ct=1: message_size vs real_time**

run_id: haMSb, core_type: zmq, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmq, generator: Visual Studio 16 2019

**messageSend, msg_ct=1: message_size vs real_time**

run_id: haMSb, core_type: zmqss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmqss, generator: Visual Studio 16 2019

## messageSend, msg_sz=1: message_count vs real_time



Legend:
- run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019

## messageSend, msg_sz=1: message_count vs real_time



Legend:
- run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019

**messageSend, msg_sz=1: message_count vs real_time**

run_id: haMSb, core_type: singleCore, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: singleCore, generator: Visual Studio 16 2019

**messageSend, msg_sz=1: message_count vs real_time**

run_id: haMSb, core_type: tcp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcp, generator: Visual Studio 16 2019

**messageSend, msg_sz=1: message_count vs real_time**



Legend:
- run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019

x-axis: message_count
y-axis: real_time

**messageSend, msg_sz=1: message_count vs real_time**



Legend:
- run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
- run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

x-axis: message_count
y-axis: real_time

**messageSend, msg_sz=1: message_count vs real_time**



**messageSend, msg_sz=1: message_count vs real_time**

## messageSend, singleCore: message_size vs real_time



## pholdBenchmark: federate_count vs real_time

pholdBenchmark: federate_count vs real_time

run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019



pholdBenchmark: federate_count vs real_time

run_id: haMSb, core_type: singleCore, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: singleCore, generator: Visual Studio 16 2019

pholdBenchmark: federate_count vs real_time



pholdBenchmark: federate_count vs real_time

pholdBenchmark: federate_count vs real_time

run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

pholdBenchmark: federate_count vs real_time

run_id: haMSb, core_type: zmq, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmq, generator: Visual Studio 16 2019

**pholdBenchmark: federate_count vs real_time**

*real_time*

100.000

10.000

1.000

0.100

0.010

0.001

5    10    15    20    25    30

*federate_count*

— run_id: haMSb, core_type: zmqss, generator: Visual Studio 15 2017

— run_id: wQ0ju, core_type: zmqss, generator: Visual Studio 16 2019

**ringBenchmark: federate_count vs real_time**

*real_time*

10.000

1.000

0.100

0.010

5    10    15

*federate_count*

— run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017

— run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019

**ringBenchmark: federate_count vs real_time**

run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019

**ringBenchmark: federate_count vs real_time**

run_id: haMSb, core_type: tcp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcp, generator: Visual Studio 16 2019

**ringBenchmark: federate_count vs real_time**

run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019



**ringBenchmark: federate_count vs real_time**

run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

**ringBenchmark: federate_count vs real_time**



run_id: haMSb, core_type: zmq, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmq, generator: Visual Studio 16 2019

**ringBenchmark: federate_count vs real_time**



run_id: haMSb, core_type: zmqss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmqss, generator: Visual Studio 16 2019

**ringMessageBenchmark: federate_count vs real_time**



— run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017
— run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019

*federate_count*

**ringMessageBenchmark: federate_count vs real_time**



— run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
— run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019

*federate_count*

**ringMessageBenchmark: federate_count vs real_time**

run_id: haMSb, core_type: tcp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcp, generator: Visual Studio 16 2019

**ringMessageBenchmark: federate_count vs real_time**

run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019

## ringMessageBenchmark: federate_count vs real_time



run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019

## ringMessageBenchmark: federate_count vs real_time



run_id: haMSb, core_type: zmq, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmq, generator: Visual Studio 16 2019

**ringMessageBenchmark: federate_count vs real_time**

real_time

100.000

10.000

1.000

0.100

— run_id: haMSb, core_type: zmqss, generator: Visual Studio 15 2017

— run_id: wQ0ju, core_type: zmqss, generator: Visual Studio 16 2019

2    3    4    5    6    7    8    9    10

federate_count

**timingBenchmark: federate_count vs real_time**

real_time

10.000

1.000

0.100

0.010

0.001

0.000

0.000

0.000

0.000

0.000

0.000

— run_id: haMSb, core_type: inproc, generator: Visual Studio 15 2017

— run_id: wQ0ju, core_type: inproc, generator: Visual Studio 16 2019

10    20    30    40    50    60

federate_count

timingBenchmark: federate_count vs real_time

run_id: haMSb, core_type: ipc, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: ipc, generator: Visual Studio 16 2019

timingBenchmark: federate_count vs real_time

run_id: haMSb, core_type: singleCore, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: singleCore, generator: Visual Studio 16 2019

timingBenchmark: federate_count vs real_time

run_id: haMSb, core_type: tcp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcp, generator: Visual Studio 16 2019

timingBenchmark: federate_count vs real_time

run_id: haMSb, core_type: tcpss, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: tcpss, generator: Visual Studio 16 2019

timingBenchmark: federate_count vs real_time

run_id: haMSb, core_type: udp, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: udp, generator: Visual Studio 16 2019



timingBenchmark: federate_count vs real_time

run_id: haMSb, core_type: zmq, generator: Visual Studio 15 2017
run_id: wQ0ju, core_type: zmq, generator: Visual Studio 16 2019

timingBenchmark: federate_count vs real_time