



# Performance Testing Best Practices for Mobile Center

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# Mobile Performance Testing Best Practices

To get accurate Transaction Response Time measurements (TRT), always use packaged applications for record and replay.

Packaging is an instrumentation method that injects the MC intercept library into the application bundle and also re-signs the app with proper credentials. The advantage of using packaged apps is to provide better object recognition for record/replay, as well as additional sensor simulations (photo, fingerprint, etc.).

To get TRT measurements, ensure that all steps have an end event.

Do not use wait functions, use object exist end event instead.

**NOTE:** If an object cannot be recorded on the packaged application and is recorded using the non-packaged application option, no TRT times will be calculated for that object.



# Mobile Performance Testing Best Practices

Generate load via HTTP / HTML traffic (95 - 98%) with Network Virtualization  
Web HTTP / HTML and / or TruClient - Mobile Web (only for browser based mobile application) protocols

- Network Emulation – Region 1
- Network Emulation – Region 2
- Network Emulation – Region 3
- Network Emulation – Region 4

Use real devices to measure end-to-end performance (2 - 5%) with Network Virtualization and different device configurations (version of OS / model etc.)  
TruClient - Native Mobile protocol

- iOS Devices
  - Network Emulation – Region 1
  - Network Emulation – Region 2
- Android Devices
  - Network Emulation – Region 1
  - Network Emulation – Region 2

Note: TruClient Mobile Web protocol supports only browser based mobile applications. For Native and Hybrid mobile application use Web HTTP / HTML protocol

# Mobile Performance Testing – 1000 Vusers Example

Generate load via HTTP / HTML traffic with Network Virtualization – 992 Vusers – Web HTTP / HTML and / or TruClient - Mobile Web (only for browser based mobile applications) protocols

- Network Emulation - 3G Busy – 200 Vusers
- Network Emulation – 3G Good - 300 Vusers
- Network Emulation – 4G Busy – 150 Vusers
- Network Emulation – 4G LTE – 342 Vusers

Use real devices to measure end-to-end performance with Network Virtualization – 8 Users (2 devices each with different configurations – version of OS / model etc.) – TruClient - Native Mobile protocol

- 4 iOS Devices
  - Network Emulation - 3G Busy - 2
  - Network Emulation – 3G Good - 2
- 4 Android Devices
  - Network Emulation – 4G Busy – 2
  - Network Emulation – 4G LTE - 2

Note: TruClient Mobile Web protocol supports only browser based mobile applications. For Native and Hybrid mobile application use Web HTTP / HTML protocol

# Mobile Performance Testing Best Practices

## Do not generate “LOAD” with devices

- Devices are single threaded and suffer from heat degradation. Load should be created using Web HTTP / HTML and / or TruClient - Mobile Web or other protocols.
- Mobile testing on devices should be added once peak load is achieved, but should NOT be used to create the load.

## Think Time and Pacing should ALWAYS be used with devices.

- Avoid over working devices. A single person would not be able to execute a task on a device without think time, therefore neither should replay.

## Do not “OVER-ITERATE”

- Again, avoid over working devices. Devices were not designed to withstand sustained iterations over long periods of time, and such iterations are not needed to understand TRT. Use basic sampling strategies to identify the number of iterations needed for measurements; target the minimum sampling needed.

# Mobile Performance Testing Best Practices

## Scenario design

Device ramp-up should take into account best practices:

- Introduce devices once full load is achieved.
- Avoid aggressive ramp-ups
- Avoid long durations with heavy iterations

## Device health should be included.

- Understanding device health during a test run is critical to ensuring clean metrics. Incorporate this into the scenario during runtime and post-run analysis.
- If running in an on-premises device lab, make sure that all devices have adequate venting to ensure they do not overheat, and do not contribute to heat issues with other nearby devices.





**Thank you.**

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