

These instructions can be used to prepare a tabulated summary of the differences in the sizes of two AOT snapshots. The instructions assume that the Flutter Engine has been setup on the host (at `FLUTTER_ENGINE` in these instructions).

Build the AOT snapshot (`flutter build aot`) for the application but pass in the `--verbose` flag. We need to find the `gen_snapshot` invocation and re-run it with an extra option (`--print-instructions-sizes-to`). If you are instrumenting with a local engine, the `flutter build` takes the `--local-engine` flag as well.

Here is an example of the updated invocation. Specify the path to a JSON file that acts as a summary (`SUMMARY_LOCATION` in these instructions) as follows.

```
$FLUTTER_ENGINE/out/host_debug_unopt/gen_snapshot \
--print-instructions-sizes-to=$SUMMARY_LOCATION \
--causal_async_stacks \
--packages=.packages \
--deterministic \
--snapshot_kind=app-aot-blobs \
--vm_snapshot_data=build/aot/vm_snapshot_data \
--isolate_snapshot_data=build/aot/isolate_snapshot_data \
--vm_snapshot_instructions=build/aot/vm_snapshot_instr \
--isolate_snapshot_instructions=build/aot/isolate_snapshot_instr \
build/aot/app.dill
```

Save the file at `SUMMARY_LOCATION` as `before.json`

Now, either change the Dart code with the changes you wish to see the effects, or, rebuild the engine to create an updated `gen_snapshot` binary.

After you have made necessary changes, re-run `flutter build aot` again. This step is important because AOT compilation has a kernel compilation step before the `gen_snapshot` invocation.

Re-run the `gen_snapshot` invocation and save the resulting file to `after.json`.

Run the `compare_size.dart` tool and pass in the `before.json` and `after.json` files to generate the summary.

An example invocation looks as follow.

```
$FLUTTER_ENGINE/out/host_debug_unopt/dart-sdk/bin/dart \
  before.json \
  after.json
```

This should dump something like the following to the console.

Library	Method	Diff (Bytes)
dart:async	new ZoneSpecification.from	+2136
dart:async	runZoned	+1488
dart:async	new _CustomZone	+927

dart:async	runZoned.<anonymous closure>	+881	
dart:async	_rootFork	+504	
dart:async	_rootCreatePeriodicTimer	+500	
dart:async	_rootCreateTimer	+498	
dart:async	_rootRegisterUnaryCallback	+485	
dart:async	_rootRegisterBinaryCallback	+485	
dart:async	_rootRegisterCallback	+485	
dart:async	_rootPrint	+453	
dart:async	_CustomZone.fork	+396	
dart:async	_rootErrorCallback	+389	
dart:async	_CustomZone.bindUnaryCallbackGuarded	+368	
dart:async	_rootHandleUncaughtError	+342	
dart:async	_CustomZone.runBinary	+296	
dart:async	_CustomZone.runUnary	+293	
dart:async	_CustomZone.[]	+291	
dart:async	_CustomZone.registerCallback	+290	
dart:async	_CustomZone.run	+290	
dart:async	_CustomZone.registerUnaryCallback	+290	
dart:async	_CustomZone.registerBinaryCallback	+290	
dart:async	_CustomZone.runBinaryGuarded	+289	
dart:async	_CustomZone.runUnaryGuarded	+286	
dart:async	_RootZone.fork	+283	
dart:async	_CustomZone.bindCallback	+259	
dart:async	_CustomZone.bindUnaryCallback	+259	
dart:async	_CustomZone.bindUnaryCallback.<anonymous closure>	+248	
dart:async	_RootZone.bindUnaryCallback.<anonymous closure>	+248	
dart:async	_CustomZone.bindUnaryCallbackGuarded.<anonymous closure>	+248	
~~~~~			
	[Stub] Type Test Type: class 'PopupMenuEntry'	-128	
	[Stub] Type Test Type: class '_SyncIterator@0150898'	-128	
	[Stub] Type Test Type: class 'PopupMenuItem'	-128	
	[Stub] Type Test Type: class 'FormFieldState'	-128	
	[Stub] Type Test Type: class 'PopupMenuButton'	-128	
	[Stub] Type Test Type: class '_SyncIterator@0150898'	-131	
	[Stub] Type Test Type: class '_SplayTreeMapNode@3220832'	-139	
	[Stub] Type Test Type: class '_SplayTreeMapNode@3220832'	-165	
dart:io	new Directory	-211	
dart:io	new Link	-211	
+-----+			

Total change +24036 bytes.