

# Telemetry

Stream metric data to a file and/or to the console.

## Description

Stream diagnostic output to the console during a render and/or report final values to a CSV-formatted file.

## Configuration

Required type for configuring the Telemetry listener from an `ini` file.

`type "telemetry"`

## Options

Listener Options	Type	Description	Required?	Default
type	string	Must be "telemetry"	y	
name	string	Unique name of the listener	y	""
outputFilename	string	The filename of the final report.	y	""
streamToConsole	bool	Set true for live streaming of metric values to stdout	n	0
onlyReportChanges	bool	Set true to only report updates when the value of the payload is different from the previous update. By default all updates received will be reported.	n	0
Metric Rules				
regexp	string	One or more metrics to be observed. If this is empty no metrics are reported.	n	""
samplingInterval	integer	Sampling interval in MS for the metrics requested in the preceding <code>regexp</code> param.	n	1000ms

The `outputFilename` setting can include environment variables which will be expanded when processed by the Listener. Standard environment variable formats are supported, as well as Linux shell variable expansion syntax:

```
$VAR
${VAR}
${VAR:-fallback}
${VAR:=fallback}
```

## Configuration Example: All Events

Enable streaming telemetry output reporting all events as they are received.

### telemetry\_events\_stats.ini

```
# Roz Stats default configuration file
# Copy this file to: /a/path/of/your/choosing
# set RMAN_STATS_CONFIG_PATH = /a/path/of/your/choosing
# or run prman -statsconfig thisfile.ini
version 0.1

# Stats processing log level.
# Range is 0 (none) to 5 (debug output). Default is 3 (warnings)
logLevel 3

# Session configuration
[Session]
name "Telemetry Session"
liveStatsEnabled 1

# List of listeners which the session should create and manage.
[ManagedListeners]
[Listener]
    type "telemetry"
    name "Event Telemetry"
    outputFilename "telemetry_events.csv"
    streamToConsole 1
    onlyReportChanges 1

[MetricRules]
[Rule]
    regexp "/rman/.*@.*"
```

## Output Example

**prman -statsconfig telemetry\_events\_stats.ini scene.rib**

```
EVENT elapsed: 0.004155s name: /rman/rib@renderBegin payload: []
EVENT elapsed: 0.193355s name: /rman/raytracing@traceGroupCreated payload: [{"World", 1}]
EVENT elapsed: 0.193739s name: /rman/rib@sceneBuildingBegin payload: []
EVENT elapsed: 0.19374s name: /rman/rib/processing:time@start payload: ["unspecified"]
EVENT elapsed: 0.350769s name: /rman/riley/createMaterial:time@start payload:
["defaultLightBxdf_continuation"]
EVENT elapsed: 0.351806s name: /rman/riley/createMaterial:time@stop payload: ["defaultLightBxdf_continuation"]
EVENT elapsed: 0.351809s name: /rman/riley/createMaterial:time@start payload:
["defaultLightBxdf_noContinuation"]
EVENT elapsed: 0.351819s name: /rman/riley/createMaterial:time@stop payload:
["defaultLightBxdf_noContinuation"]
EVENT elapsed: 0.352165s name: /rman/riley/createIntegrator:time@start payload: ["PxrPathTracer"]
EVENT elapsed: 0.353437s name: /rman/riley/createIntegrator:time@stop payload: ["PxrPathTracer"]
EVENT elapsed: 0.353552s name: /rman/riley/createCamera:time@start payload: ["world"]
EVENT elapsed: 0.354501s name: /rman/riley/createCamera:time@stop payload: ["world"]
EVENT elapsed: 0.354516s name: /rman/riley/createCamera:time@start payload: ["/root/world/cam/camera"]
EVENT elapsed: 0.354524s name: /rman/riley/createCamera:time@stop payload: ["/root/world/cam/camera"]
EVENT elapsed: 0.354543s name: /rman/riley/createRenderOutput:time@start payload: ["Ci"]
EVENT elapsed: 0.354545s name: /rman/riley/createRenderOutput:time@stop payload: ["Ci"]
EVENT elapsed: 0.354547s name: /rman/riley/createRenderOutput:time@start payload: ["a"]
EVENT elapsed: 0.354547s name: /rman/riley/createRenderOutput:time@stop payload: ["a"]
EVENT elapsed: 0.354549s name: /rman/riley/createRenderTarget:time@start payload: ["Ci_a"]
EVENT elapsed: 0.354558s name: /rman/riley/createRenderTarget:time@stop payload: ["Ci_a"]
...
```

## Configuration Example: Ray Count and Process Information

Enable streaming telemetry output with final CSV report written to: roz\_telemetry.csv. Report all of the "numRays" metrics, sampling 4x per second, and report process memory and time once per second.

## telemetry\_stats.ini

```
# Roz Stats default configuration file
# Copy this file to: /a/path/of/your/choosing
# set RMAN_STATS_CONFIG_PATH = /a/path/of/your/choosing
# or run prman -statsconfig thisfile.ini scene.rib
version 0.1

# Stats processing log level.
# Range is 0 (none) to 5 (debug output). Default is 3 (warnings)
LogLevel 3

# Session configuration
[Session]
name "Telemetry Session"
liveStatsEnabled 1

# List of listeners which the session should create and manage.
[ManagedListeners]
[Listener]
    type "telemetry"
    name "Telemetry Listener"
    outputFilename "telemetry_report.csv"
    streamToConsole 1
    onlyReportChanges 1

[MetricRules]
    # Sample raytracing "numRays" metrics 4x a second
    [Rule]
        regexp "/rman/raytracing.*numRays"
        samplingInterval 250

    # Sample process memory and time once a second
    [Rule]
        regexp "/system.processMemory|/system.processTime"
        samplingInterval 1000
```

## Output Example

**prman -statsconfig telemetry\_stats.ini scene.rib**

```
SAMPLE elapsed: 0.558336s name: /rman/raytracing.numRays payload: [0]
SAMPLE elapsed: 0.558336s name: /rman/raytracing/camera.numRays payload: [0]
SAMPLE elapsed: 0.558336s name: /rman/raytracing/transmission.numRays payload: [0]
SAMPLE elapsed: 0.558336s name: /rman/raytracing/photon.numRays payload: [0]
SAMPLE elapsed: 0.805461s name: /rman/raytracing.numRays payload: [325156]
SAMPLE elapsed: 0.805765s name: /rman/raytracing/camera.numRays payload: [70656]
SAMPLE elapsed: 0.805765s name: /rman/raytracing/transmission.numRays payload: [64883]
SAMPLE elapsed: 1.06023s name: /rman/raytracing.numRays payload: [1152606]
SAMPLE elapsed: 1.06023s name: /rman/raytracing/camera.numRays payload: [215808]
SAMPLE elapsed: 1.06023s name: /rman/raytracing/transmission.numRays payload: [325353]
SAMPLE elapsed: 1.30261s name: /rman/raytracing/light.numRays payload: [649675]
SAMPLE elapsed: 1.30261s name: /rman/raytracing/indirect.numRays payload: [371417]
SAMPLE elapsed: 1.30261s name: /system.processMemory payload: [[4457680, 6422528, 389931008]]
SAMPLE elapsed: 1.30261s name: /system.processTime payload: [[4.07387, 0.254927, 420.485]]
...
```