NP BandwidthTest Library Overview

PlayStation®Vita Programmer Tool Runtime Library Release 3.50

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1 Library Overview

Purpose and Features

The NP BandwidthTest library provides the application with a function for measuring the communication bandwidth between the client and the PSN℠ server.

Used Resources

The NP BandwidthTest library uses the following system resources.

Resource	Description
Work memory	(The application is not required to provide memory.)
Thread	When `sceNpBandwidthTestInitStart()` is called, a thread for bandwidth measurement is generated. The above thread is stopped with `sceNpBandwidthTestShutdown()`. Thread priority and CPU affinity mask are specified from the application with the argument of `sceNpBandwidthTestInitStart()`. Stack size will be `SCE_NP_BANDWIDTH_TEST_THREAD_STACK_SIZE`(32KiB)

Embedding into a Program

Include np.h in the source program. Various header files will be automatically included as well.

Load also the PRX module in the program as follows.

```
if ( sceSysmoduleLoadModule(SCE_SYSMODULE_NP_UTILITY) != SCE_OK ) {
    // Error processing
}
```

Upon building the program, link libSceNpUtility_stub.a.

Sample Programs

The following program is provided as a NP BandwidthTest sample program for reference purposes.

sample_code/network/api_np/np_bandwidth_test

This sample shows the basic procedure for using the NP BandwidthTest library.

Reference Materials

Refer to the following document for an overview of the PSN℠ functionalities.

- PSN℠ Overview

Refer to the following documents regarding the NP library, which is commonly required when using the PSN℠ functionalities.

- NP Library Overview
- NP Library Reference

2 Usage Procedure

Pre-processing

(1) Load the PRX

Call `sceSysmoduleLoadModule()` with `SCE_SYSMODULE_NP_UTILITY` specified as the module ID to load the PRX.

(2) Initialize the library

First, perform initialization of network libraries with `sceNetInit()` and `sceNetCtlInit()`, and initialization of the libhttp with `sceHttpInit()`.

Then, call `sceNpInit()` to initialize the NP library. `sceNpInit()` returns 0 upon successful initialization.

Bandwidth Measurement

(1) Starting measurement

Call `sceNpBandwidthTestInitStart()`. An internal thread for bandwidth measurement will be generated. Specify the priority and CPU affinity mask of the internal thread in the arguments.

(2) Waiting for measurement termination

Poll `sceNpBandwidthTestGetStatus()` and wait until `SCE_NP_BANDWIDTH_TEST_STATUS_FINISHED` is returned to indicate measurement termination.

(3) Retrieving measurement results

Call `sceNpBandwidthTestShutdown()`. As argument, pass the pointer to the `SceNpBandwidthTestResult` structure for receiving measurement results. If the returned value of the *`result`* member of the structure is 0, measured bandwidth will be stored in *`uploadBps`* and *`downloadBps`*.

Post-processing

(1) Terminate the library

Call `sceNpTerm()` to terminate the NP library.

Subsequently, terminate the libhttp with `sceHttpTerm()`, and terminate network libraries with `sceNetCtlTerm()` and `sceNetTerm()`.

(2) Unload the PRX

Call `sceSysmoduleUnloadModule()` with `SCE_SYSMODULE_NP_UTILITY` specified as the module ID to unload the PRX.

3 Notes

libhttp Memory Pool Size Check

In the NP BandwidthTest library, the libhttp is used for bandwidth measurement.

Therefore, when calling `sceNpBandwidthTestInitStart()` (the function for starting bandwidth measurement), check whether sufficient size for bandwidth measurement is left in the memory pool of libhttp.

The libhttp memory pool size necessary for bandwidth measurement is defined by the `SCE_NP_BANDWIDTH_TEST_LEAST_HTTP_POOL_SIZE` macro, and is of 16KiB.

Limitations

In order to reduce the load on the PSN℠ server, avoid unnecessary repetition of bandwidth measurement.

Measurement is calculated based on the time taken for HTTP-based file transfer. Since calculation is made based on a limited number of trials, it is possible that results may vary widely.