Troubleshoot High Process Utilization for "acsmgr_icsr_frwk_instance_chkpt_falied()"

Contents

Introduction

This document describes the solution for sessmgr instances that go into WARN state due to high **acsmgr_icsr_frwk_instance_chkpt_falied()** process usage.

Problem Description

Platform ASR5500

SW Version: 21.27.4 and 21.19.10

Session manager instances in warn state due to high memory consumption on **acsmgr_icsr_frwk_instance_chkpt_falied()** function when session recovery is disabled:

```
[local]ASR5500# show task resources | grep -v good
                  task   cputime        memory     files      sessions
cpu facility      inst  used  allc   used  alloc used allc  used  allc S status
----------------------- ---------- ------------ --------- ------------ ------
1/0 sessmgr         13   26%  100% 930.8M 900.0M   37  500  4643 12000 I   warn
1/0 sessmgr         36   32%  100% 938.8M 900.0M   39  500  5155 12000 I   warn
1/0 sessmgr         53   29%  100% 937.8M 900.0M   40  500  4916 12000 I   warn
1/0 sessmgr         56   29%  100% 930.2M 900.0M   41  500  4649 12000 I   warn
1/0 sessmgr         83   35%  100% 970.2M 900.0M   40  500  5382 12000 I   warn
1/0 sessmgr         90   24%  100% 931.3M 900.0M   42  500  4621 12000 I   warn
1/0 sessmgr        130   28%  100% 935.0M 900.0M   40  500  4907 12000 I   warn
1/0 sessmgr        141   26%  100% 936.7M 900.0M   37  500  4917 12000 I   warn
1/0 sessmgr        145   23%  100% 933.9M 900.0M   39  500  4883 12000 I   warn
1/0 sessmgr        174   26%  100% 927.4M 900.0M   37  500  4620 12000 I   warn
1/0 sessmgr        188   31%  100% 963.0M 900.0M   40  500  5305 12000 I   warn
1/0 sessmgr        223   26%  100% 933.5M 900.0M   38  500  4631 12000 I   warn

Aggregate consumption per proc:
-------- ---------------------------------------- ------------- ------------- -------------
--------- ---------
| Nr     |                Process                 |   Similar    | Total Bytes  | Human Bytes
| Percent | % Acum  |
======== ======================================== ============= ============= =============
========= =========
| 1      | acsmgr_icsr_frwk_instance_chkpt_falied() |          757 |    108301860 |     103.3 MB
|  13.95% |  13.95% |
| 2      | egtpc_allocate_peer_rec()                |           89 |     77599472 |      74.0 MB
```

```
|  10.00% |  23.95% |
| 3      | sn_slist_dnode_alloc()                  |          471 |     64427392 |      61.4 MB
|   8.30% |  32.25% |
| 4      | sessmgr_allocate_callline()             |          156 |     48601944 |      46.4 MB
|   6.26% |  38.51% |
| 5      | sn_aaa_buffer_alloc_more_type()         |           45 |     34836120 |      33.2 MB
|   4.49% |  43.00% |

[local]ASR5500# show task resources | grep -v good
Session Recovery Status:
Overall Status : Not Enabled
Last Status Update : 8 seconds ago
```

Analysis

In order to isolate if the high amount of total subscribers triggers the process **acsmgr_icsr_frwk_instance_chkpt_falied()** to be over-utilized, a sessmgr instance busy-out is performed and it is confirmed that the sessmgr memory utilization did not decrease:

```
[local]ASR5500> show task resources facility sessmgr instance 10
                 task   cputime        memory     files      sessions
cpu facility      inst  used  allc   used  alloc used allc  used  allc S status
----------------------- ----------- ------------- --------- ------------- ------
8/0 sessmgr         10   20%  100% 981.8M 900.0M   43  500  4142 12000 I   warn
Total                 1  20.20%    981.8M            43         4142

[local]ASR5500> task sessmgr instance 10 busy-out
[local]ASR5500> show task resources facility sessmgr instance 10
                 task   cputime        memory     files      sessions
cpu facility      inst  used  allc   used  alloc used allc  used  allc S status
----------------------- ----------- ------------- --------- ------------- ------
8/0 sessmgr         10   19%  100% 979.7M 900.0M   42  500  3946 12000 B   warn
Total                 1  19.35%    979.7M            42         3946

[local]ASR5500> task sessmgr instance 10 enable
[local]ASR5500> show task resources facility sessmgr instance 10
                 task   cputime        memory     files      sessions
cpu facility      inst  used  allc   used  alloc used allc  used  allc S status
----------------------- ----------- ------------- --------- ------------- ------
8/0 sessmgr         10   17%  100% 979.8M 900.0M   40  500  4141 12000 I   warn
Total                 1  17.33%    979.8M            40         4141
```

From the logs, when a busy-out is performed on one of the affected sessmgr instances, it decreases the number of used sessions, but used memory allocation still remains high and shows to cause sessmgr instance to be in WARN state.

On further investigation, **acsmgr_icsr_frwk_instance_chkpt_falied()**function is called while the checkpoint information is processed. There are list addition/updation/deletion operations in this function which do not work as expected when session recovery is disabled and this is the reason for the increased memory consumption. The memory used here is accumulated in this scenario over time. This behavior only occurs in the scenario where the **require session recovery** is not configured. The accumulated memory to process **acsmgr_icsr_frwk_instance_chkpt_falied()** does not get freed up when (no **require session recovery**) which potentially causes the memleak."

Solution

Implement session recovery in order to resolve this issue.

Procedure

Step 1. At the Exec mode prompt, verify that the session recovery feature is enabled via the session and feature use licenses on the system with the **show license info** command. If the current status of the Session Recovery feature is Disabled, you cannot enable this feature until a license key is installed in the system.

Step 2. Use this configuration example to enable session recovery.

```
configure
require session recovery
end
```

This feature does not take effect until after the system has been restarted.

Step 3. Save your configuration as described in Verifying and Saving Your Configuration.

Step 4. Perform a system restart with the **reload** command. This is the prompt that appears:

```
Are you sure? [Yes|No]:
```

Confirm your desire to perform a system restart and enter **Yes**.

The system, when restarted, enables session recovery and creates all mirrored "standby-mode" tasks, performs packet processing card reservations, and other operations automatically.

Step 5. After the system has been restarted, you must verify the preparedness of the system to support this feature as described in Viewing Session Recovery Status. More advanced users can opt to insert the **require session recovery** command syntax into a configuration file that already exists with a text editor or other means, and then manually apply the configuration file. Please exercise caution when you do this, in order to ensure that this command is placed among the first few lines of any configuration file that already exists; it must appear before the creation of any non-local context.