

CallManager Server: Use PsList to Troubleshoot a Memory Leak Problem

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Introduction

This document describes how to use the PsList utility in order to debug a memory leak problem on a Cisco CallManager server. Windows operating systems support the Performance Monitor utility that administrators use to view detailed information about process CPU and memory usage. However, it does not capture memory utilization for processes that started after the Performance Monitor utility starts. The PsList serves to fill this gap.

Note: PsList is a free utility. You can download it from SysInternals .

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Windows Operating Systems
- Cisco CallManager
- Windows Performance Monitor

Components Used

The information in this document is based on these software and hardware versions:

- Cisco CallManager

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Background

The default behavior of PsList is to show CPU-oriented information for all the processes that currently run on the local system. The information listed for each process includes the time the process executes, the amount of time the process executes in kernel and user modes, and the amount of physical memory that the OS assigns the process. Command-line switches allow you to view memory-oriented process information, thread statistics, or all three types of data.

Usage

This is the format of the utility:

```
pslist [-?] [-d] [-m] [-x][-t][-s [n] [-r n]][\\computer [-u username] [-p password]] [name]
```

This list provides a detailed description of each parameter:

- **-?** Displays the supported options and the units of measurement used for output values.
- **-d** This switch has PsList **show** statistics for all active threads on the system, and groups threads with their own process.
- **-m** This switch has PsList **show memory**-oriented information for each process, rather than the default of CPU-oriented information.
- **-x** With this switch, PsList shows CPU, memory, and thread information for each of the processes specified.
- **-t** Shows the tree of processes.
- **-s [n]** Causes PsList to run in a mode similar to a task manager update mode. Press the **Escape** key to optionally specify the number of seconds it runs and abort this mode.
- **-r n** Task manager mode refresh rate in seconds (default is 1).
- **name** Instead of listing all the running processes in the system, this parameter narrows PsList's scan to those processes that begin with the name process. For example, **pslist exp** displays statistics for all the processes that start with "exp". This includes Explorer.
- **-u** This parameter represents the username. If you want to kill a process on a remote system and the account you are executing in does not have administrative privileges on the remote system, then you must login as an administrator using this command line option. If you do not include the password with the **-p** option, then PsList prompts you for the password without echoing your input to the display.
- **-p** This parameter represents the password. This option lets you specify the login password on the command line so that you can use PsList from batch files. If you specify an account name and omit the **-p** option, PsList prompts you interactively for a password.
- **\\computer** Instead of showing process information for the local system, PsList shows information for the NT/Windows 2000 system specified. Include the **-u** switch with a username and password to login to the remote system if your security credentials do not permit you to obtain performance counter information from the remote system.
- **pid** Instead of listing all the running processes in the system, this parameter narrows PsList's scan to the process that has the specified Process ID (PID). For example, **pslist 53** dumps statistics for the process with PID 53.

Setup PsList on the Cisco CallManager Server

Complete these steps to setup PsList on the Cisco CallManager server:

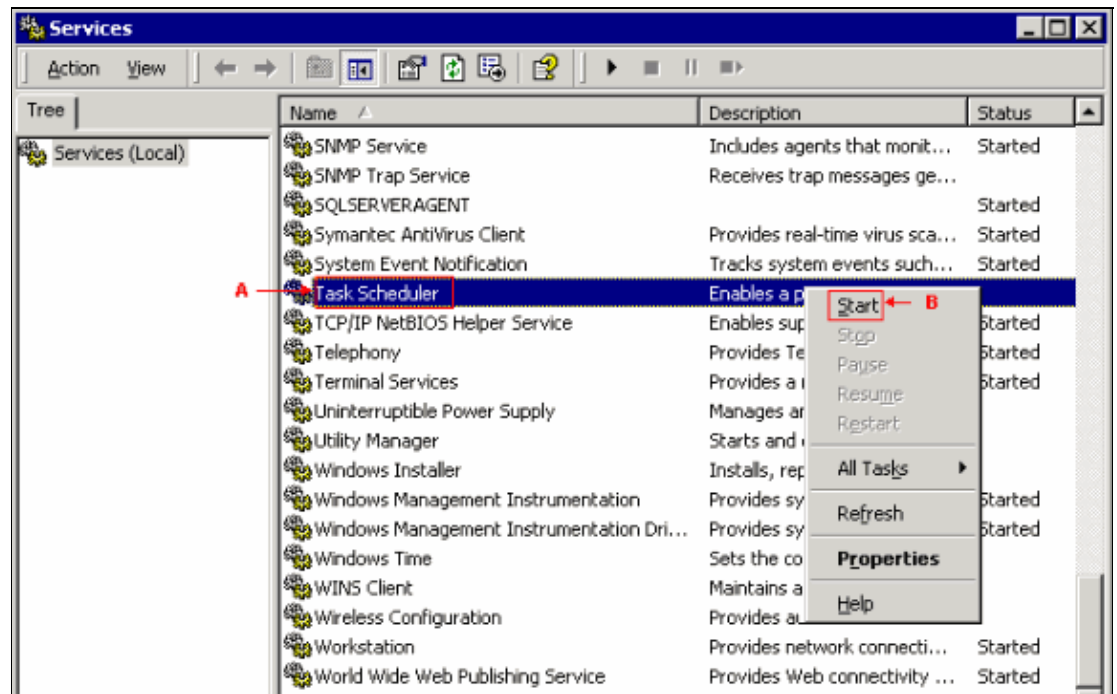
1. Create a batch file (memory.bat) with Notepad or a similar application. The content of the batch file contains:

```
echo %date% %time% >>c:\cron\mem.txt  
c:\dnld\pslist.exe -m >>c:\cron\mem.tx
```

2. Enable the Task Scheduler service on the Cisco CallManager server.

- a. Select **Start > Programs > Administrative Tools > Services**.
- b. Right-click **Task Scheduler** (see arrow A in Figure 1).
- c. Click **Start** (see arrow B in) from the popup box.

Figure 1: Services



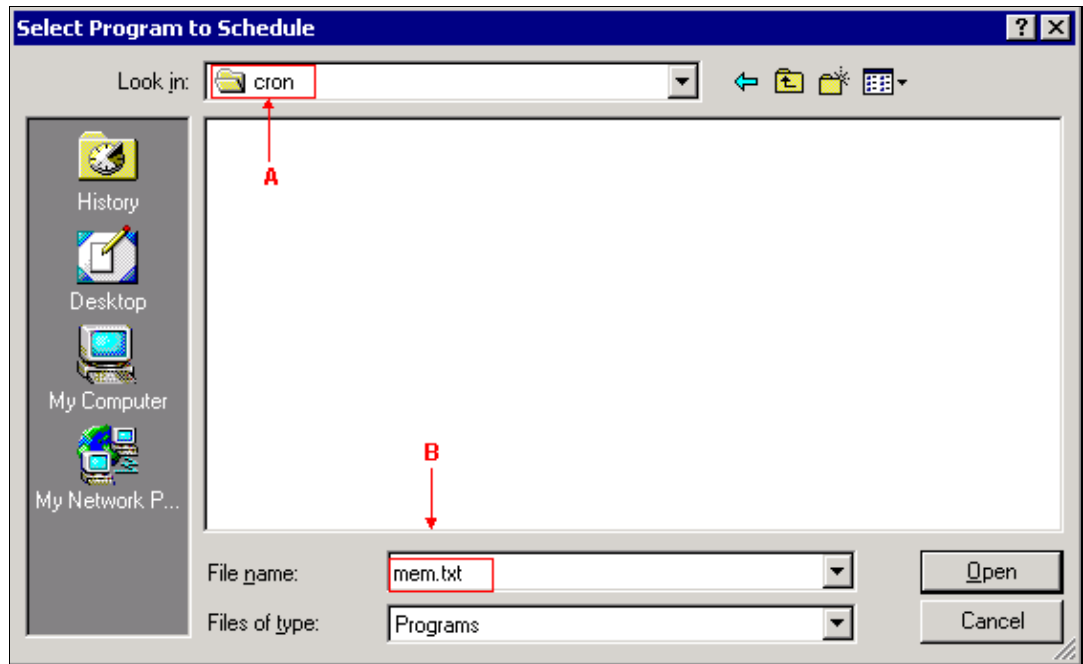
3. Schedule your batch file to run periodically.

Cisco recommends an interval of 10 minutes. You can adjust this interval subject to the problem need. It only takes a few seconds to run and therefore does not increase the load.

- a. Click **Start**, point to **Settings**, and click **Control Panel**.
- b. Double-click **Scheduled Tasks**.
- c. Click **Next**.
- d. Click **Browse**.
- e. Navigate to select the program to schedule.

In this case, the directory is cron (see arrow A in Figure 2) and the program is mem.txt (see arrow B in Figure 2).

Figure 2: Select Program to Schedule



f. Click **Open**.

Note: If you use the Scheduled Task Wizard, check **Open advanced properties for this task when I click Finish** and then click **Finish** to continue.

g. Type a name for this task.

h. Click **Daily**.

i. Click **Next**.

j. Select the time and day you want this task to start.

k. Click **Next**.

l. Enter the name and password of a user. The task runs as if it were started by the user.

m. Click **Next**.

n. Check **Open advanced properties for this task when I click Finish** and then click **Finish** to continue.

o. Click **Schedule**.

p. Click **Advanced**.

q. Check **Repeat task** and then specify the number of minutes or hours you want the task to repeat.

r. Click **OK** twice.

4. Wait for usage to grow.

5. Gather the log. For each run of PsList, this is the output:

Process memory detail for EVOICE-R16-CM1:

Name	Pid	VM	WS	Priv	Priv Pk	Faults	NonP	Page
Idle	0	0	16	0	0	1	0	0
System	8	1676	224	24	164	562211	0	0
SMSS	204	5256	376	1076	2760	886	1	6
CSRSS	232	30880	2604	1556	1592	2333	7	61
WINLOGON	256	35580	1296	7084	8800	16883	66	35
SERVICES	284	127396	89808	4032	6636	6713985	622	122
..								
..								

13:15:29.35

Note: Disable the scheduled job when you finish. Otherwise, the log fills the disk.

6. Use the pslistmem.pl script to parse the log and prepend the instance number to every line.

most recent conversations available in this technology.

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Voice & Video: IP Phone Services for Developers
Voice & Video: General

Related Information

- [Download PsList Utility](#)
- [Download Perl](#)
- [Voice Technology Support](#)
- [Voice and IP Communications Product Support](#)
- [Recommended Reading: Troubleshooting Cisco IP Telephony](#)
- [Technical Support & Documentation – Cisco Systems](#)

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