



Supporting Cisco Data Collections Manager

The following topics explain how to configure Cisco Data Collection Manager in Prime Performance Manager:

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Overview to DCM

The Cisco Data Collection Manager (DCM) provides a data collection framework for collecting data from Cisco devices. The DCM supports a profile-based configuration that allows you to set parameters for collecting, processing, and exporting the data.

The following notes and examples will help you implement DCM processing in Prime Performance Manager.

- Only IOS 15.3(1)T/PI20 (and IOS-XE 38 - 15.3(1)S - 3.8.0S support DCM 2.0
- Prime Performance Manager only supports DCM CPU and Memory reports.
- Use the DcmPoll macro to parse DCM files. See the cpu.xml and memoryPool.xml files for examples.
- Prime Performance Manager integrates DCM by parsing the DCM file with BulkStats.
- In SystemCapability.xml, the DCM capability indicate if the device supports DCM 2.0:

```
DCM = xmlPollPersist("DcmProfileStats", "ppm-profile");
```

- DcmProfileStats is the PAL capability poll key defined in etc/palRuntime/conf/DeviceCapability.xml.
- ppm-profile is the DCM profile name configured in the device and defined in properties/BulkStats.properties with the key name DCM_PROFILE_NAME

Because DCM is only available in Cisco devices, define DCM capabilities in CiscoDevices section. Other capabilities related to DCM should utilize this definition, for example:

```
DCM_CPU = DCM
@and xmlPollPersist("DcmDataGroupStats", "CPU-cpmCPUTotalTable")
@and xmlPollPersist("DcmDataGroupStats", "CPU-cpmCPUThresholdTable");
```

- DcmDataGroupStats is the PAL capability poll key defined in DeviceCapability.xml.

- CPU-cpmCPUTotalTable and CPU-cpmCPUThresholdTable are the data-group names configured in the device. CPU refers to the poller name defined in cpu.xml. cpmCPUTotalTable refers to the cache name of the DcmPoll return data as below,

```
cpmCPUTotalTable = dcmPoll("cpmCPUTotalIndex,
cpmCPUTotalPhysicalIndex,
cpmCPUTotal5minRev,
cpmCPUTotal1minRev");
```

Therefore, data-group name = poller name + '-' + cache name. If the data-group length name is longer than 32 characters, only the first 32 are valid.

- For information about the DCM profile structure the configure command format, see the [Cisco Data Collection Manager Configuration Guide](#).
- DCM configuration notes.
 - All DCM entity names must be less than 32 characters.
 - The profile name must be the same with the value of DCM_PROFILE_NAME in properties/BulkStats.properties.
 - Data groups cannot share one instance for known DCM issues.
 - The hostname configured in the device must not contain periods “.” even though periods are valid for hostnames.
 - DCM aging can be modified from the Prime Performance Manager GUI on the Reports/Group Settings tab Bulk Stats Aging parameters.

DCM Parameters

Table 7-1 shows the DCM parameters in properties and bulkstats.properties files.

Table 7-1 DCM Parameters

Property	Description
DCM_DROP_DIR	The directory where DCM pushes the performance management file.
DCM_PROFILE_NAME	The DCM profile prefix name configured in the device. Prime Performance Manager uses the prefix to filter DCM files.
DCM_DIR_MONITOR_REFRESH_INTERVAL	The rate (in seconds) at which the DCM Bulk Stats directory is monitored for new files. The default is 15 seconds.
DCM_DATAGROUP_INTERVAL	The data-group polling interval in seconds. This defines the interval at which of DCM polls device performance management data. The default is 60 seconds.
DCM_PROFILE_FILE_SIZE	Maximum buffer-size in bytes. Generally, one file should contain all performance monitoring data in one device interval. The default is 10240000 bytes.
DCM_PROFILE_FILE_RETAIN	The number of time(s) the DCM file retained in device is used with the retry transfer file. The default is 300.
DCM_PROFILE_FILE_RETRY	Number of times to retry transfer in case of transfer failure to both the primary and secondary URLs. Retries will take effect only if the retention of file is configured using retain. The default is 5

Table 7-1 DCM Parameters

Property	Description
DCM_PROFILE_FILE_URL_PRIMARY	The primary URL where the DCM file is pushed. DCM only pushes the file to the primary URL if it works. The default is ftp://root:password@ipaddress
DCM_PROFILE_FILE_URL_SECONDARY	The secondary URL where the DCM file is pushed. DCM only pushes the file to the secondary URL if the primary does not work. The default is ftp://root:password@ipaddress
DCM_PROFILE_INTERVAL_PROCESS	Sets the time period, in seconds, at which process files are created for the processed data and queued for transfer. The default is 1800 seconds.
DCM_PROFILE_INTERVAL_RAW	The period in seconds when the active file is frozen and queued for transfer. The default is 60 seconds.

If you only want to collect five-minute report data, modify the following parameters as follows:

- DCM_DIR_MONITOR_REFRESH_INTERVAL = 100
- DCM_DATAGROUP_INTERVAL = 300
- DCM_PROFILE_INTERVAL_RAW = 300

In addition, make Prime Performance Manager must read/write privileges on DCM_DROP_DIR.

DCM Configuration for CPU Reports

The following examples shows a DCM configuration for CPU reports using a 60-second interval.

```

bulkstat data CPU-cpmCPUTotalTable type snmp
  object 1.3.6.1.4.1.9.9.109.1.1.1.1.2
  object 1.3.6.1.4.1.9.9.109.1.1.1.1.8
  object 1.3.6.1.4.1.9.9.109.1.1.1.1.7
exit
bulkstat instance CPU-cpmCPUTotalTable type snmp
  wildcard
exit
bulkstat data-group CPU-cpmCPUTotalTable
  interval polling 60
  collect type snmp data CPU-cpmCPUTotalTable instance CPU-cpmCPUTotalTable
exit

bulkstat data CPUOLD-cpmCPUTotalTable type snmp
  object 1.3.6.1.4.1.9.9.109.1.1.1.1.2
  object 1.3.6.1.4.1.9.9.109.1.1.1.1.4
  object 1.3.6.1.4.1.9.9.109.1.1.1.1.5
exit
bulkstat instance CPUOLD-cpmCPUTotalTable type snmp
  wildcard
exit
bulkstat data-group CPUOLD-cpmCPUTotalTable
  interval polling 60
  collect type snmp data CPUOLD-cpmCPUTotalTable instance CPUOLD-cpmCPUTotalTable
exit

bulkstat data CPU-cpmCPUThresholdTable type snmp
  object 1.3.6.1.4.1.9.9.109.1.2.4.1.2
  object 1.3.6.1.4.1.9.9.109.1.2.4.1.4

```

```

exit
bulkstat instance CPU-cpmCPUThresholdTable type snmp
  wildcard
exit
bulkstat data-group CPU-cpmCPUThresholdTable
  interval polling 60
  collect type snmp data CPU-cpmCPUThresholdTable instance CPU-cpmCPUThresholdTable
exit

bulkstat data CPUOLD-cpmCPUThresholdTable type snmp
  object 1.3.6.1.4.1.9.9.109.1.2.4.1.2
  object 1.3.6.1.4.1.9.9.109.1.2.4.1.4
exit
bulkstat instance CPUOLD-cpmCPUThresholdTable type snmp
  wildcard
exit
bulkstat data-group CPUOLD-cpmCPUThresholdTable
  interval polling 60
  collect type snmp data CPUOLD-cpmCPUThresholdTable instance CPUOLD-cpmCPUThresholdTable
exit

bulkstat profile ppm-profile
  file size 10240000
  file retain memory 600
  file transfer url primary ftp://admin:admin@10.10.10.10
  file transfer url secondary ftp://root:root@10.10.10.20
  file transfer retry 5
  interval transfer raw 60
  data-group CPU-cpmCPUTotalTable
  data-group CPUOLD-cpmCPUTotalTable
  data-group CPU-cpmCPUThresholdTable
  data-group CPUOLD-cpmCPUThresholdTable
exit

```

DCM Configuration for Memory Reports

The following shows a sample DCM configuration for memory reports using a 60-second interval::

```

bulkstat data EnhancedMemoryPool-ciscoEnhMemor type snmp
  object 1.3.6.1.4.1.9.9.221.1.1.1.7
  object 1.3.6.1.4.1.9.9.221.1.1.1.8
  object 1.3.6.1.4.1.9.9.221.1.1.1.9
exit
bulkstat instance EnhancedMemoryPool-ciscoEnhMemor type snmp
  wildcard
exit
bulkstat data-group EnhancedMemoryPool-ciscoEnhMemor
  interval polling 60
  collect type snmp data EnhancedMemoryPool-ciscoEnhMemor instance
EnhancedMemoryPool-ciscoEnhMemor
exit

bulkstat data UCD_SNMP_MEMORY-memTable type snmp
  object 1.3.6.1.4.1.2021.4.5
  object 1.3.6.1.4.1.2021.4.6
  object 1.3.6.1.4.1.2021.4.11
exit
bulkstat instance UCD_SNMP_MEMORY-memTable type snmp
  wildcard
exit

```

```
bulkstat data-group UCD_SNMP_MEMORY-memTable
  interval polling 60
  collect type snmp data UCD_SNMP_MEMORY-memTable instance UCD_SNMP_MEMORY-memTable
exit

bulkstat data MemoryBuffer-cempMemBufferPoolTa type snmp
  object 1.3.6.1.4.1.9.9.221.1.1.2.1.3
  object 1.3.6.1.4.1.9.9.221.1.1.2.1.21
  object 1.3.6.1.4.1.9.9.221.1.1.2.1.22
exit
bulkstat instance MemoryBuffer-cempMemBufferPoolTa type snmp
  wildcard
exit
bulkstat data-group MemoryBuffer-cempMemBufferPoolTa
  interval polling 60
  collect type snmp data MemoryBuffer-cempMemBufferPoolTa instance
MemoryBuffer-cempMemBufferPoolTa
exit

bulkstat data MemoryPool-ciscoMemoryPoolTable type snmp
  object 1.3.6.1.4.1.9.9.48.1.1.1.2
  object 1.3.6.1.4.1.9.9.48.1.1.1.5
  object 1.3.6.1.4.1.9.9.48.1.1.1.6
  object 1.3.6.1.4.1.9.9.48.1.1.1.7
exit
bulkstat instance MemoryPool-ciscoMemoryPoolTable type snmp
  wildcard
exit
bulkstat data-group MemoryPool-ciscoMemoryPoolTable
  interval polling 60
  collect type snmp data MemoryPool-ciscoMemoryPoolTable instance
MemoryPool-ciscoMemoryPoolTable
exit

bulkstat data SystemExtMemory-cseSysMemoryPool type snmp
  object 1.3.6.1.4.1.9.9.305.1.1.2
exit
bulkstat instance SystemExtMemory-cseSysMemoryPool type snmp
  wildcard
exit
bulkstat data-group SystemExtMemory-cseSysMemoryPool
  interval polling 60
  collect type snmp data SystemExtMemory-cseSysMemoryPool instance
SystemExtMemory-cseSysMemoryPool
exit

bulkstat profile ppm-profile
  file size 10240000
  file retain memory 600
  file transfer url primary ftp://admin:admin@10.10.10.10
  file transfer url secondary ftp://root:root@10.10.10.20
  file transfer retry 5
  interval transfer raw 60
  data-group EnhancedMemoryPool-ciscoEnhMemor
  data-group UCD_SNMP_MEMORY-memTable
  data-group MemoryBuffer-cempMemBufferPoolTa
  data-group MemoryPool-ciscoMemoryPoolTable
  data-group SystemExtMemory-cseSysMemoryPool
exit
```

