

# IPWorks Measurement List for DL380 Gen9 Platform

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LIST

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# 1 Introduction

This document gives an overview of the counters for IPWorks G9 platform.

## **Scope**

This document only covers the Counters for Linux Platform.

## **Target Groups**

This document is intended for personnel handling gauges and counters. This includes network administrators and system administrators.

## 1.1 Related Information

Typographic conventions, definition, and explanation of abbreviations and terminology can be found in the following documents:

- *Trademark Information*, Reference [1]
- *Typographic Conventions*, Reference [2].
- *Glossary of Terms and Acronyms*, Reference [3].





## 2 Fetching SNMP Statistics Using SNMP Commands

This section guides users how to fetch the Performance Management (PM) using SNMP Commands.

IPWorks supports fetching SNMP statistics from all protocol servers and EM SS component by using SNMP commands: `snmpget`, `snmpgetnext`, `snmpbulkget`, `snmpwalk`, `snmpbulkwalk`. Only `snmpget` and `snmpwalk` are described in details here. For more information about the other SNMP commands, see the online help by using the `man` command.

**Note:** For the counters belonging to the `Table Counter` group, only the commands `snmpwalk` and `snmpbulkwalk` are applicable for users to fetch the SNMP statistics.

### 2.1 SNMPGET

`snmpget` is an SNMP application that uses the GET request to query for information on a network entity. Any specific counter can be retrieved using the `snmpget` command.

An example is shown for the `sysUpTime` counter. The command requires the exact name or the OID of the counter followed by ".0". In the following example, the output shows that the value for the counter is "0":

```
# snmpget -v 2c -c public localhost sysUpTime.0
```

or

```
# snmpget -v 2c -c public localhost .1.3.6.1.2.1.1.3.0
```

The output:

```
.1.3.6.1.2.1.1.3.0 = Timeticks: (4153130) 11:32:11.30
```

Where

- `snmpget` indicates the SNMPGET Operation to be performed.
- `-v` indicates the protocol version in which the request is to be sent. The supported versions are SNMPv1, SNMPv2c, and SNMPv3. If SNMPv3 is used, SNMPv3 must be configured beforehand. Refer to *IPWorks Fault Management Guide for DL380 Gen9 Platform*, Reference [4] for more information.
- `-c` indicates the community of the Agent. In this case, we specify `public`.



- `sysUpTime` is the name of the counter. It can also be the corresponding OID.
- `.0` indicates the instance for the scalar variable.

## 2.2 SNMPWALK

`snmpwalk` is an SNMP application that uses the `GET NEXT` requests to query for a tree of information about a network entity. All the child objects of a parent object can be retrieved using the `snmpwalk` command.

An example is shown for the system average load (`laLoad`) group. The output is a list of the counters in that group and their values. In the example below, the 1 min load average counter starts the list and has a value of “1”:

```
# snmpwalk -v 2c -c public localhost laLoad
```

or

```
# snmpwalk -v 2c -c public localhost .1.3.6.1.4.1.2021.10.1.3
```

The output:

```
.1.3.6.1.4.1.2021.10.1.3.1 = STRING: 24.64  
.1.3.6.1.4.1.2021.10.1.3.2 = STRING: 24.31  
.1.3.6.1.4.1.2021.10.1.3.3 = STRING: 24.41
```

- `snmpwalk` indicates the SNMPWALK Operation to be performed.
- `-v` indicates the protocol version in which the request is to be sent. The supported versions are SNMPv1, SNMPv2c, and SNMPv3. If SNMPv3 is used, SNMPv3 must be configured beforehand. Refer to *IPWorks Fault Management Guide for DL380 Gen9 Platform*, Reference [4] for more information.
- `-c` indicates the community of the Agent. In this case, we specify “public”.
- `laLoad` is the name of the parent object. It can also be the corresponding OID.





## 3 Format

The counters listed in this document are described in the following format:

- **Scan Name:** ipworks (Linux platform)
- **Description:** Description of measurement
- **Event Causing Counter Change:** Description of what causes the counter to increment
- **Type:** Counter
- **Output Unit:** Type of counter value. It can be one of the following: Integer, Integer32, String, Unsigned32, Unsigned64. Any type may have different presentations, for example, an integer may have a presentation of timeticks with the value of "0 hours, 0 minutes, 0 seconds".
- **Source:** Subsystem or Logical node
- **Managed Object Instance:** Measurement object instance





## 4 Counters for Linux Platform

Linux platform provides performance information regarding:

- Memory Related Parameters
- CPU Related Parameters
- System Load Parameters
- Interface Statistics
- Disk Related Counters

### 4.1 Memory Related Parameters

This section lists the parameters that are related to memory for Linux platform.

#### 4.1.1 memTotalSwap

- **Scan Name:** ipworks
- **Description:** Total Swap Size configured for the host.
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

#### 4.1.2 memAvailSwap

- **Scan Name:** ipworks
- **Description:** Available Swap Space on the host.
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform



- **Managed Object Instance:** IPWORKS

#### 4.1.3 **memTotalReal**

- **Scan Name:** ipworks
- **Description:** Total Real/Physical Memory Size on the host.
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

#### 4.1.4 **memAvailReal**

- **Scan Name:** ipworks
- **Description:** Available Real/Physical Memory Space on the host.
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

#### 4.1.5 **memTotalFree**

- **Scan Name:** ipworks
- **Description:** Total Available Memory on the host.
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS



## 4.2 CPU Related Parameters

This section lists the parameters that are related to CPU for Linux platform.

### 4.2.1 **ssCpuRawUser**

- **Scan Name:** ipworks
- **Description:** user CPU time
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

### 4.2.2 **ssCpuRawSystem**

- **Scan Name:** ipworks
- **Description:** system CPU time
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

### 4.2.3 **ssCpuRawIdle**

- **Scan Name:** ipworks
- **Description:** idle CPU time
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS



## 4.3 System Load Parameters

This section lists the parameters that are related to system load for Linux platform.

### 4.3.1 Load-1 (laLoad)

- **Scan Name:** ipworks
- **Description:** The 1 minute load average as a string.
- **Event Causing Counter Change:** N/A
- **Type:** Counter
- **Output Unit:** String
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

### 4.3.2 Load-5 (laLoad)

- **Scan Name:** ipworks
- **Description:** The 5 minute load average as a string.
- **Event Causing Counter Change:** N/A
- **Type:** Counter
- **Output Unit:** String
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

### 4.3.3 Load-15 (laLoad)

- **Scan Name:** ipworks
- **Description:** The 15 minute load average as a string.
- **Event Causing Counter Change:** N/A
- **Type:** Counter
- **Output Unit:** String
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS



## 4.4 Interface Statistics

This section lists the counters that are related to interface statistics for Linux platform.

### 4.4.1 iflnOctets

- **Scan Name:** ipworks
- **Description:** The total number of octets received on the interface, including framing characters.
- **Event Causing Counter Change:** Receipt of an octet on the interface.
- **Type:** Counter
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

### 4.4.2 iflnUcastPkts

- **Scan Name:** ipworks
- **Description:** The number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer.
- **Event Causing Counter Change:** The counter is incremented for every packet delivered by the sub-layer to a higher layer.
- **Type:** Counter
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

### 4.4.3 iflnDiscards

- **Scan Name:** ipworks
- **Description:** The number of inbound packets which were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher-layer protocol.
- **Event Causing Counter Change:** Discard of an inbound packet even though no errors had been detected.



- **Type:** Counter
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

#### 4.4.4 ifInErrors

- **Scan Name:** ipworks
- **Description:** For packet-oriented interfaces, the number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol.
- **Event Causing Counter Change:** Receipt of an inbound packet that contained errors.
- **Type:** Counter
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

#### 4.4.5 ifInUnknownProtos

- **Scan Name:** ipworks
- **Description:** The number of packets received via the interface which were discarded because of an unknown or unsupported protocol.
- **Event Causing Counter Change:** Discard of an inbound packet due to unknown or unsupported protocol.
- **Type:** Counter
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

#### 4.4.6 ifOutOctets

- **Scan Name:** ipworks
- **Description:** The total number of octets transmitted out of the interface, including framing characters.





- **Event Causing Counter Change:** Transmission of a octet out of the interface.
- **Type:** Counter
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

#### 4.4.7 ifOutUcastPkts

- **Scan Name:** ipworks
- **Description:** The total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent.
- **Event Causing Counter Change:** The counter is incremented for every packet that is requested by higher layers for transmission, which is not addressed to a multicast or broadcast address at this sub-layer, including the one that was not discarded or not sent.
- **Type:** Counter
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

#### 4.4.8 ifOutDiscards

- **Scan Name:** ipworks
- **Description:** The number of outbound packets, which were chosen to be discarded even though no errors had been detected to prevent their being transmitted.
- **Event Causing Counter Change:** Discard of a outbound packet even though no errors had been detected.
- **Type:** Counter
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS



#### 4.4.9 ifOutErrors

- **Scan Name:** ipworks
- **Description:** The number of outbound packets that could not be transmitted because of errors.
- **Event Causing Counter Change:** The counter is incremented for every outbound packet that could not be transmitted due to errors.
- **Type:** Counter
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

### 4.5 Disk Related Counters

This section lists the counters that are related to disk for Linux platform.

#### 4.5.1 dskTotal

- **Scan Name:** ipworks
- **Description:** Total size of the disk or partitions (KB).
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS

#### 4.5.2 dskAvail

- **Scan Name:** ipworks
- **Description:** Available space on the disk (KB).
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform



- **Managed Object Instance:** IPWORKS

#### 4.5.3

##### **dskUsed**

- **Scan Name:** ipworks
- **Description:** Used space on the disk (KB).
- **Event Causing Counter Change:** N/A
- **Type:** Integer32
- **Output Unit:** Integer
- **Source:** IPWorks Platform
- **Managed Object Instance:** IPWORKS





## Reference List

### **IPWorks Library Documents**

- [1] *Trademark Information*
- [2] *Typographic Conventions*
- [3] *Glossary of Terms and Acronyms*
- [4] *IPWorks Fault Management Guide for DL380 Gen9 Platform*