

# IPWorks Manual Health Check

## OPERATING INSTRUCTIONS

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# 1 Introduction

This document describes how to perform the health check procedure on the IPWorks. The health check procedures are recommended to be performed before and after a system update/upgrade, a normal backup, or during periodic maintenance.

If you want to perform the auto health check via ECLI, refer to the document [IPWorks Auto Health Check](#).

## 1.1 Prerequisites

This section states the prerequisites for performing the health check procedure.

### 1.1.1 Documents

Before starting this procedure, ensure that the following information or documents are available:

- For how to use Ericsson Command-Line Interface (ECLI), refer to [Ericsson Command-Line Interface User Guide](#).
- The current IPWorks version in the system.
- The network plan and the System Controller (SC) address of the cluster.

### 1.1.2 Conditions

By default all actions are performed on the SC, unless otherwise specified.

## 1.2 Related Information

For the trademark information, typographic conventions, definition, and explanation of acronyms and terminology, see the following documents:

- [Glossary of Terms and Acronyms](#)
- [Trademark Information](#)
- [Typographic Conventions](#)



## 2 Health Check Procedure

### 2.1 Checking Alarms

To check active alarms reported by the system:

1. Log on to ECLI.

```
#ssh <user>@<OAM IP Address> -p <port> -t -s cli
```

**Note:** The <user> can be root or IPWadministrator depending if Local Authorization is enabled or not.

2. Verify that no active alarms are shown.

```
>show ManagedElement=<Node Name>,SystemFunctions=1,Fm=1,total  
Active
```

The output must be zero. The string <node\_name> is specific for the ME.

3. If active alarms are present, check them.

```
>show ManagedElement=<Node Name>,SystemFunctions  
=1,Fm=1 -m FmAlarm  
show ManagedElement=<Node Name>,SystemFunctions=1,Fm=1 -m FmAlarm | filter
```

For specific information on alarms, refer to [IPWorks Alarm List](#).

4. Log out.

```
#exit
```

### 2.2 Checking UUID for Alarms

To check UUID on SC or PL:

```
# cat /sys/devices/virtual/dmi/id/product_uuid
```

### 2.3 Checking LDE Dump Files

1. For core dumps at Linux Distribution Extensions (LDE) level, check that the directory /cluster/dumps is empty.
2. If the directory is not empty, gather the information and report it to the next level of support.



## 2.4 Checking Core Middleware Services

Check that the state of the following system items at Core Middleware (Core MW) level is Status OK:

```
#cmw-status node app csiass comp node sg si siass su | grep
PresenceState | grep -v UNINSTANTIATED
```

The output must be empty.

If the output is not empty, use the following command to collect the information and report it to the next level of support.

```
#cmw-status node app csiass comp node sg si siass su pm
```

## 2.5 Checking CPU Load

1. On the SC, enter the following:

```
#for VAR in /etc/cluster/nodes/all/*/hostname; do echo
$(<$VAR); ssh $(<$VAR) "mpstat -P ALL"; done;
```

```
SC-1
Linux 3.12.55-52.42-default (SC-1)      08/29/16      _x86_64_      (2 CPU)
03:46:00 CPU      %usr  %nice  %sys %iowait  %irq  %soft  %steal %guest %gnice %idle
03:46:00 all      2.18  0.13  2.41  0.37  0.00  0.28  0.06  0.00  0.00  94.56
03:46:00 0        2.18  0.13  2.42  0.31  0.00  0.26  0.00  0.00  0.00  94.69
03:46:00 1        2.18  0.13  2.40  0.43  0.00  0.30  0.12  0.00  0.00  94.44
SC-2
Linux 3.12.55-52.42-default (SC-2)      08/29/16      _x86_64_      (2 CPU)
03:46:01 CPU      %usr  %nice  %sys %iowait  %irq  %soft  %steal %guest %gnice %idle
03:46:01 all      1.00  0.05  1.48  0.22  0.00  0.16  0.07  0.00  0.00  97.03
03:46:01 0        0.99  0.05  1.54  0.16  0.00  0.15  0.14  0.00  0.00  96.97
03:46:01 1        1.00  0.05  1.43  0.28  0.00  0.16  0.00  0.00  0.00  97.09
PL-3
Linux 3.12.55-52.42-default (PL-3)      08/29/16      _x86_64_      (2 CPU)
03:46:01 CPU      %usr  %nice  %sys %iowait  %irq  %soft  %steal %guest %gnice %idle
03:46:01 all      2.77  0.00  4.79  0.07  0.00  0.47  0.01  0.00  0.00  91.89
03:46:01 0        2.81  0.00  4.85  0.07  0.00  0.44  0.01  0.00  0.00  91.82
03:46:01 1        2.74  0.00  4.74  0.07  0.00  0.50  0.00  0.00  0.00  91.95
PL-4
Linux 3.12.55-52.42-default (PL-4)      08/29/16      _x86_64_      (2 CPU)
03:46:01 CPU      %usr  %nice  %sys %iowait  %irq  %soft  %steal %guest %gnice %idle
03:46:01 all      2.57  0.00  4.43  0.03  0.00  0.38  0.01  0.00  0.00  92.57
03:46:01 0        2.60  0.00  4.51  0.03  0.00  0.35  0.02  0.00  0.00  92.48
03:46:01 1        2.54  0.00  4.36  0.03  0.00  0.41  0.00  0.00  0.00  92.66
```

2. Verify that the %idle column shows values higher than 20%.

## 2.6 Checking Disk Use

1. On both SCs, enter the command:

```
#df -h -x tmpfs -x devtmpfs
```



Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/vda2	20G	2.4G	17G	13%	/
/dev/vda4	9.8G	634M	8.6G	7%	/var/log
/dev/vda1	3.9G	136M	3.5G	4%	/boot
/dev/mapper/lde--cluster--vg-lde--cluster--lv	50G	3.6G	44G	8%	/.cluster
169.254.100.101:/.cluster	50G	3.6G	44G	8%	/cluster
/dev/vda5	99G	2.6G	91G	3%	/local/ipworks
com_fuse_module	50G	3.6G	44G	8%	/var/filem/nbi_root

2. Verify that the used disk space does not exceed 80%, otherwise, clean up this partition.

## 2.7 Checking Memory Use

1. On every SC and PL, enter the following, enter the following:

```
# /opt/ipworks/common/scripts/ipworks_memory_health_check
```

```
SC-1
3.02633
SC-2
3.09388
PL-3
17.2859
PL-4
30.867
```

2. Verify that the free memory represents more than 10% of the total memory in all nodes.

## 2.8 Checking Internal Communication

All the links must be up. On the SC, enter the following:

```
#for VAR in /etc/cluster/nodes/all/*/hostname; do echo $(<$VAR);
ssh $(<$VAR) /sbin/tipc-config -n -l; done;
```

```
SC-1
Neighbors:
<1.1.2>: up
<1.1.3>: up
<1.1.4>: up
Links:
broadcast-link: up
1.1.1:eth0-1.1.2:eth0: up
1.1.1:eth0-1.1.3:eth0: up
1.1.1:eth0-1.1.4:eth0: up
SC-2
Neighbors:
<1.1.1>: up
<1.1.3>: up
<1.1.4>: up
```





```

Links:
broadcast-link: up
1.1.2:eth0-1.1.1:eth0: up
1.1.2:eth0-1.1.3:eth0: up
1.1.2:eth0-1.1.4:eth0: up
PL-3
Neighbors:
<1.1.1>: up
<1.1.2>: up
<1.1.4>: up
Links:
broadcast-link: up
1.1.3:eth0-1.1.1:eth0: up
1.1.3:eth0-1.1.2:eth0: up
1.1.3:eth0-1.1.4:eth0: up
PL-4
Neighbors:
<1.1.1>: up
<1.1.2>: up
<1.1.3>: up
Links:
broadcast-link: up
1.1.4:eth0-1.1.1:eth0: up
1.1.4:eth0-1.1.2:eth0: up
1.1.4:eth0-1.1.3:eth0: up

```

## 2.9 Checking Controller Status

To check or verify the controller status:

1. Log on to the SC.

```
# ssh <username>@<OAM IP Address>
```

2. Retrieve the Distributed Replicated Block Device (DRBD) state:

```
# drbdsetup status drbd0 --verbose --statistics
```

Example output:

```

drbd0 node-id:0 role:Secondary suspended:no
write-ordering:flush
volume:0 minor:0 disk:UpToDate
SC-2 node-id:1 connection:Connected role:Primary congested:no
volume:0 replication:Established peer-disk:UpToDate resync-suspended:no

```

Check the output result:

- Make sure that the SC is connected. That is, the value of the connection state field (connection) is connected.



- Make sure that the disk state is normal. That is, the value of the disk field is UpToDate.
  - Determine if the SC is primary or secondary by checking the role field:
    - On the primary SC: role:Primary
    - On the secondary SC: role:Secondary
3. Execute below command on both SC-1 and SC-2.

```
# drbdadm get-gi drbd0 | awk '{print substr($1,18,16)}'
```

The output **MUST** be 0000000000000000, otherwise the status is abnormal.

## 2.10 Checking Virtual IP Status

To check virtual IP status:

1. Run script on SC1.

```
SC-1:~ #/opt/ipworks/common/scripts/ipworks_evip_health_check
```

2. Check the result.

If the result is STATUS OK, the output is shown as the example below:

```
Connection closed by foreign host.
Connection closed by foreign host.
Connection closed by foreign host.
STATUS OK
```

If the result is STATUS NOT OK, proceed to check Abstract Load Balancer (ALB) Status.

- a. Connect to the eVIP CLI:

```
# telnet `/opt/vip/bin/getactivecontrol` 25190
```

- b. See the configured Abstract Load Balancer (ALB), and check that every listed ALB has status ACTIVE:

```
> show albs
```

```
0 : 'ipw_sig_sp' : ACTIVE
1 : 'ipw_data_sp' : ACTIVE
```

```
OK
```



- c. Use **show agents** for each listed ALB, check the agents status, and verify that all eVIP links or agents are ACTIVE, ACTIVE UP, and ACTIVE RDY.

```
> show agents ipw_sig_sp |grep -v '\[0\]'
```

```
> show agents ipw_data_sp |grep -v '\[0\]'
```

Take **show agents ipw\_sig\_sp** for example:

```
+-----[ ALB ipw_sig_sp (ACTIVE) ]-----+
+-----+-----+-----+-----+-----+-----+
| pagent (4) | PN | lbesel_pn (28) |
|[4] fe80::ff:fe01:21 : ACTIVE |
|[3] fe80::ff:fe01:1f : ACTIVE |
+-----+-----+-----+-----+-----+-----+
| ersipc (0) | | repdb (28) |
|[4] fe80::ff:fe01:21 : ACTIVE |
|[3] fe80::ff:fe01:1f : ACTIVE |
+-----+-----+-----+-----+-----+-----+
| lbeagent (44) | LBE | sesel_lbe (12) |
|[4] fe80::1:f4ff:fe01:4 : ACTIVE |
|[3] fe80::1:f4ff:fe01:3 : ACTIVE |
+-----+-----+-----+-----+-----+-----+
| feeagent (46) | FEE | sesel_fe (12) |
|[4] fe80::1:f6ff:fe01:19 : ACTIVE UP |
|[3] fe80::1:f6ff:fe01:17 : ACTIVE UP |
+-----+-----+-----+-----+-----+-----+
| seagent (12) | SE | lbesel_se (34) |
|[4] fe80::1:f5ff:fe01:e : ACTIVE RDY |
|[3] fe80::1:f5ff:fe01:d : ACTIVE RDY |
+-----+-----+-----+-----+-----+-----+
| sesel_se (10) | | |
|[4] fe80::1:f5ff:fe01:e : ACTIVE |
|[3] fe80::1:f5ff:fe01:d : ACTIVE |
+-----+-----+-----+-----+-----+-----+
| ikeagent (0) | IPSEC | ipsecuagent (6) |
| | |
|[4] fe80::ff:fe01:22 : ACTIVE R |
|[3] fe80::ff:fe01:20 : ACTIVE R |
+-----+-----+-----+-----+-----+-----+
eRSIP state: ACTIVE cIPSEC state: ACTIVE
```

- d. Exit the eVIP CLI:

```
# exit
```

## 2.11 Checking Latest Available Backup

1. Log on to ECLI.

```
#ssh <user>@<OAM IP Address> -p <port> -t -s cli
```

**Note:** The <user> can be root or IPWadministrator depending if Local Authorization is enabled or not.

2. Get the name of the latest created backup.

```
> show ManagedElement=<Node Name>,SystemFunctions=1,BrM=1,BrmB
ackupManager=SYSTEM_DATA,BrmBackupLabelStore=SYSTEM_DATA,last
CreatedBackup
```



```
lastCreatedBackup="<latest Backup name>" <read-only>
```

3. Get the date of the latest created backup.

```
>show -v ManagedElement=<Node Name>,SystemFunctions=1,BrM=1,B  
rmBackupManager=SYSTEM_DATA,BrMBackup=<latest Backup name> |  
filter creationTime
```

4. Log out.

```
>exit
```

5. Check that the latest backup is not older than 48 hours. This figure is just a recommendation, it depends on the periodicity of the scheduled backup in the system.

## 2.12 Checking IPWork Counters

1. To verify that the PmJob instances are active for the different IPWorks activated modules, execute the following command checking the ones that start with IPWorks:

```
#cmw-pmjob-list
```

### Note:

- Other counters can be also active in the node.
- Currently, independently of the module's activated, all IPWorks counters are active in the system by default.

2. Check that the IPWorks counters are stored under:

```
#ssh <user>@<OAM IP Address> -p <port> -t -s cli
```

```
>show ManagedElement=<Node Name>,SystemFunctions=1,FileM=1,Logi  
calFs=1,FileGroup=PerformanceManagementReportFiles
```

The counters are accessible also under `/var/filem/nbi_root/PerformanceManagementReportFiles` from one of the Service Controllers (SCs).

### Note:

- The `<user>` can be `root` or `IPWadministrator` depending if Local Authorization is enabled or not.
- Because of a current bug already reported, Local Authorization cannot be enabled in the node to access these files.

3. Go to the file location of IPWroks coutners and decompress the files using `gunzip` if there are compression files.



```
#cd /var/filem/nbi_root/PerformanceManagementReportFiles
```

- If there is no compression files there, go to Step 4 directly.
- If CompressionType is configured as GZIP, the counters files will be compressed. Firstly decompress the files.

Here is an example for DnsASDNSDefaultJob, in which compressionType is configured as GZIP.

```
>ManagedElement=IPWorkNode1,SystemFunctions=1,Pm=
1,PmJob=DnsASDNSDefaultJob
(PmJob=DnsASDNSDefaultJob)>show
PmJob=DnsASDNSDefaultJob
  compressionType=GZIP
  currentJobState=ACTIVE
  granularityPeriod=ONE_MIN
  reportingPeriod=ONE_MIN
  MeasurementReader=mr_1
(PmJob=DnsASDNSDefaultJob)>
```

Decompress the latest files using gunzip from the location in the SC.

```
#gunzip A20160603.2035+0200-2040+0200_1.xml.gz
```

**Note:** Although it complains about lack of permission, the operation is successful.

4. Look for IPWorks counters reflecting an undesired behavior.

The file specified here is just an example.

```
grep -i "userunknown unabletocomply rejected notallowed invalid
toobusy dontmatch unsupported missing" A20160603.2030+0200-20
40+0200_1.xml
```

## 2.13 Checking Nodes Restart

1. Enter the following:

```
#for VAR in /etc/cluster/nodes/all/*/hostname; do echo
$(<$VAR); ssh $(<$VAR) who -b; done;
```

2. Check that the date corresponds to the latest backup restore, or the latest planned cluster, or node reboot.

## 2.14 Checking IPWorks Application Logs

This section describes how to check server logs.



### 2.14.1 Checking DNS Logs

To check the DNS logs:

1. Log on to the PL which DNS starts on.

```
#ssh <username>@<OAM IP Address>
```

2. Display the errors logs.

```
#cat /cluster/storage/no-backup/ipworks/logs/<PL  
hostname>/ipworks_dns.log* | grep -i error
```

The expected result is that there is no major error information related to server start or traffic.

### 2.14.2 Checking ASDNS Logs

To check the ASDNS logs:

1. Log on to the PL which ASDNS starts on.

```
#ssh <username>@<OAM IP Address>
```

2. Display the error logs.

```
#cat /cluster/storage/no-backup/ipworks/logs/<PL  
hostname>/ipworks_asdnsmon.log* | grep -i error
```

The expected result is that there is no major error information related to server start or traffic.

### 2.14.3 Checking SS Logs

To check the SS logs:

1. Log on to the SC which Storage Server starts on.

```
#ssh <username>@<OAM IP Address>
```

2. Display the errors logs.

```
#cat /cluster/storage/no-backup/ipworks/logs/<SC  
hostname>/ipworks_ss_SC*.log* | grep -i error
```

The expected result is that there is no major error information related to server start or traffic.



#### 2.14.4 Checking ENUM Logs

To check the ENUM logs:

1. Log on to the PL which ENUM starts on.

```
# ssh <username>@<PL which ENUM starts on IP Address>
```

2. Display the error logs.

```
#cat /cluster/storage/no-backup/ipworks/logs/<PL  
hostname>/ipwenum.log* | grep -i error
```

The expected result is that there is no major error information related to server start or traffic.

#### 2.14.5 Checking ENUM-FE Logs

To check the ENUM-FE logs:

1. Log on to the PL which ENUM-FE starts on.

```
#ssh <username>@<OAM IP Address>
```

2. Display the error logs.

```
#cat /cluster/storage/no-backup/ipworks/logs/<PL  
hostname>/ipworks_enumfe_wrapper.log* | grep error
```

```
#cat /cluster/storage/no-backup/ipworks/logs/<PL  
hostname>/ipworks_fesync.log* | grep error
```

The expected result is that there is no major error information related to server start or traffic.

#### 2.14.6 Checking Radius AAA Logs

To check the Radius AAA logs:

1. Log on to the active SC.

```
#ssh <username>@<OAM IP Address>
```

2. Display the error logs.

```
#cat /cluster/storage/no-backup/ipworks/logs/<PL  
hostname>/aaa_radius_stack.log* | grep -I error
```

```
#cat /cluster/storage/no-backup/ipworks/logs/<PL  
hostname>/aaa_radius_backend.log* | grep -i error
```



The expected result is that there is no major error information related to server start or traffic.

### 2.14.7 Checking EPC AAA Logs

To check the EPC AAA logs:

1. Log on to the active SC.

```
#ssh <username>@<OAM IP Address>
```

2. Display the error logs.

```
#cat /cluster/storage/no-backup/ipworks/logs/<PL  
hostname>/aaa_diameter_server.log* | grep -i error
```

The expected result is that there is no major error information related to server start or traffic.

### 2.14.8 Checking DHCPv4 Logs

To check the dhcpv4 logs:

1. Log on to the active SC.

```
#ssh <username>@<OAM IP Address>
```

2. Display the error logs.

```
#cat /cluster/storage/no-backup/ipworks/logs/<PL  
hostname>/ipworks_dhcpv4.log* | grep -i error
```

The expected result is that there is no major error information related to server start or traffic.

## 2.15 Checking MySQL Nodes Status

Use the following command to check all the MySQL nodes state on SCs. The expected result is that at least the nodes (id: 1, 2, 27, 28) are started and one of the nodes (id: 3 or 4) is started.

For example:

```
# /etc/init.d/ipworks.mysql show-status
```

```
Connected to Management Server at: localhost:1186  
Cluster Configuration  
-----  
[ndbd(NDB)]      2 node(s)
```





```

id=27  @169.254.100.1  (mysql-5.6.31 ndb-7.4.12, Nodegroup: 0, *)
id=28  @169.254.100.2  (mysql-5.6.31 ndb-7.4.12, Nodegroup: 0)

[ndb_mgmd(MGM)] 2 node(s)
id=1    @169.254.100.1  (mysql-5.6.31 ndb-7.4.12)
id=2    @169.254.100.2  (mysql-5.6.31 ndb-7.4.12)

[mysqld(API)] 24 node(s)
id=3    @169.254.100.1  (mysql-5.6.31 ndb-7.4.12)

id=4 (not connected, accepting connect from SC-2)
id=5    @169.254.100.3  (mysql-5.6.31 ndb-7.4.12)
id=6    @169.254.100.4  (mysql-5.6.31 ndb-7.4.12)
id=7    @169.254.100.4  (mysql-5.6.31 ndb-7.4.12)
id=8    @169.254.100.3  (mysql-5.6.31 ndb-7.4.12)
id=9 (not connected, accepting connect from any host)
id=10 (not connected, accepting connect from any host)
id=11 (not connected, accepting connect from any host)
id=12 (not connected, accepting connect from any host)
id=13 (not connected, accepting connect from any host)
id=14 (not connected, accepting connect from any host)
id=15 (not connected, accepting connect from any host)
id=16 (not connected, accepting connect from any host)
id=17 (not connected, accepting connect from any host)
id=18 (not connected, accepting connect from any host)
id=19 (not connected, accepting connect from any host)
id=20 (not connected, accepting connect from any host)
id=21 (not connected, accepting connect from any host)
id=22 (not connected, accepting connect from any host)
id=23 (not connected, accepting connect from any host)
id=24 (not connected, accepting connect from any host)
id=25 (not connected, accepting connect from any host)
id=26 (not connected, accepting connect from any host)

```

The example shows that the nodes (id: 27, 28, 1, 2, 3, 4, 5, 6, 7, 8) are started.

## 2.16 Checking Number of MySQL Tables

If all the MySQL NDB nodes are started, use the following command to check number of the IPWorks relevant tables on the SC:

```

# /usr/local/mysql/bin/mysql -P 3307 -h ipw_sql --protocol=tcp
-e "SELECT count(*) FROM information_schema.TABLES where
table_schema='ipworks' or table_schema='ipw_prov_aaa' or
table_schema='ipw_enum' or table_schema='ipw_dhcp'";

+-----+
| count(*) |

```



```
+-----+
|      337|
+-----+
```

The expected result is that the number of tables is 337.

## 2.17 Checking Software Release Version

The operator can check the software version by ECLI or the command **cmw-repository-list**.

The expected result is that the correct software and version are installed on the machine. For details, refer to [View Software Information](#).

**Note:** On System Controller (SC), the command **cmw-repository-list** shows versions of all the installed software, including the installed software on Payload (PL).

On PL, the command only shows the versions of the installed software on the PL.

## 2.18 Checking License

To check or verify the license information of IPWorks servers:

1. Start an ECLI session on the active SC.

```
# ssh <username>@<OAM IP Address> -p 22 -t -s cli
```

2. Navigate to the Lm Managed Object (MO), for example:

```
> ManagedElement=<Node Name>,SystemFunctions=1,Lm=1
```

3. View the license information, for example:

```
(Lm=1)>show-table -m FeatureKey -p keyId,name,productType,validFrom,expiration
```

```
=====
| keyId          | name          | productType | validFrom | expiration |
=====
| FAT1023219/1   | FAT1023219/1 | IPWorks     | 2015-6-2  | 2016-8-21  |
=====
| FAT1023219/5   | FAT1023219/5 | IPWorks     | 2015-6-2  | 2016-8-21  |
=====
```

```
(Lm=1)>show-table -m CapacityKey -p keyId,name,productType,validFrom,expiration
```



```
=====
| keyId          | name          | productType | validFrom | expiration |
=====
| FAT1023219/4   | FAT1023219/4 | IPWorks     | 2015-6-2  | 2016-8-21  |
=====
| FAT1023219/2   | FAT1023219/2 | IPWorks     | 2015-6-2  | 2016-8-21  |
=====
```

The expected result is that the all the ordered licenses are not expired.

For more information about the `Lm` MO, refer to the class `Lm` in Managed Object Model (MOM).

## 2.19 Checking LDAP Connections

To check LDAP connections between IPWorks and CUDB when ENUM-FE or ERH-FE is activated, do the following:

1. Log on to the PL which ENUM starts on.

```
# ssh <username>@<OAM IP Address>
```

```
# ssh PL-X
```

2. Show LDAP connections between IPWorks and CUDB.

```
# netstat -apn | grep 389 | grep ESTABLISHED
```

The expected result is as below:

```
tcp          0      0 10.170.19.188:33024 80.0.5.141:389    ESTABLISHED 8863/ipwenum
```

**Note:** Either ENUM-FE or ERH-FE is activated, 16 connections are ESTABLISHED. If both of them are activated, 32 connections are ESTABLISHED.

## 2.20 Checking SOAP Listening Status

To check SOAP listening is OK when ENUM-FE is activated, do the following:

1. Log on to the PL which fesync starts on.

```
# ssh <username>@<OAM IP Address>
```

See Section 3.12.5 to get which PL fesync starts on.

2. Show SOAP connections between IPWorks and CUDB.

```
# netstat -apn | grep 808
```

The expected result is as below:



```
tcp      0      0 0.0.0.0:8080      0.0.0.0:*        LISTEN   8312/java
```

## 2.21 Checking Backup Files

To check backup files, the following sections work for all IPWorks modules to check backup files.

### Prerequisites:

- Backup must be created, refer to [Create Backup](#).

### 2.21.1 Checking the Backup Files

To check the backup files, do the following:

1. Log on to a System Controller by using SSH.

```
# ssh <username>@<OAM IP Address>
```

2. List the content of backup archive.

- For system backup,

```
# cd /cluster/brf/backup
```

```
# ls -lrt
```

- For user backup,

```
# cd /cluster/ipwbrf/backup/
```

```
# ls -lrt
```

In the command output, all backup files are listed. For backup files of different IPWorks modules, see the following subsections.

The expected results:

- All backup files are listed.
- Created time is correct.

**Note:** Use command `tar -tvf <File name>` to check the backed-up files.

For example:

```
/cluster/ipwbrf/backup/ndb_testUserDataBackup_2076 tar
-tvf ndb_testUserDataBackup_2076.tar.gz
```



### 2.21.2 SS Backup Files

The following SS-related files are included in the backup file which is created in Section 2.21.1 on page 16:

```
/cluster/home/ipworks/etc/root_cert.cfg  
/cluster/home/ipworks/etc/ipworks_ss_lm.conf  
/cluster/home/ipworks/etc/ipworks_ss.conf
```

Example 1 SS Backup Files

### 2.21.3 DNS Backup Files

The following DNS-related files are included in the backup file which is created in Section 2.21.1 on page 16:

```
/cluster/home/ipworks/etc/ipworks_asdnsmonsm.conf  
/cluster/home/ipworks/etc/ipworks_dnssm.conf  
/cluster/home/ipworks/etc/<hostname>/ipworks_dns.conf  
/cluster/home/ipworks/etc/<hostname>/ipworks_asdnsmon.conf
```

Example 2 DNS Backup Files

### 2.21.4 MySQL NDB Cluster Backup Files

The following MySQL NDB Cluster related files are included in the backup file which is created in Section 2.21.1 on page 16:

```
/cluster/home/ipworks/etc/mysql/conf/ipworks_mgm.conf  
/cluster/home/ipworks/etc/mysql/conf/ipworks_datanode_my.conf  
/cluster/home/ipworks/etc/mysql/conf/ipworks_sqlnode.conf
```

Example 3 MySQL NDB Cluster Configuration Files

If the backup file contains the MySQL data, use command `tar -tvf file_name.tar.gz` to check the backed-up files under `/cluster/ipwbrf/backup/<BACKUP NAME>`. The MySQL dump files are listed as follows:

`ipworks_dump.gz`

`ipw_prov_aaa_dump.gz`

`ipw_enum_dump.gz`

`ipw_dhcp_dump.gz`

`mysql_user_dump.sql`



### 2.21.5 ENUM Backup Files

The following ENUM-related files are included in the backup file which is created in Section 2.21.1 on page 16:

```
/cluster/home/ipworks/etc/enum/ipworks_enum.conf  
/cluster/home/ipworks/etc/enum/ldap_cluster.conf  
/cluster/home/ipworks/etc/ldapschema/ldap_dictionary.xml  
/cluster/storage/system/config/ss7caf-ana90137/etc/cp.cnf  
/cluster/storage/system/config/ss7caf-ana90137/etc/ecm.xml  
/cluster/storage/system/config/ss7caf-ana90137/etc/oam.cnf  
/cluster/storage/system/config/ss7caf-ana90137/etc/signmgr.cnf  
/cluster/storage/system/config/ss7caf-ana90137/etc/ss7license.lic
```

Example 4 ENUM Backup Files

### 2.21.6 ENUM-FE Backup Files

The following ENUM-FE related files are included in the backup file:

```
/cluster/home/ipworks/etc/enumfe/axis2.xml
```

Example 5 ENUM-FE Backup Files

### 2.21.7 Radius AAA Backup Files

The following Radius AAA-related directory (including all the sub folder and files) are included in the backup file which is created in Section 2.21.1 on page 16:

```
/cluster/home/ipworks/etc/PL-3/aaa_radius/  
/cluster/home/ipworks/etc/PL-4/aaa_radius/  
/cluster/home/ipworks/etc/aaa_radius/
```

Example 6 Radius AAA Backup Files

### 2.21.8 EPC AAA Backup Files

The following EPC AAA-related directory (including all the sub folder and files) are included in the backup file which is created in Section 2.21.1 on page 16:

```
/cluster/home/ipworks/etc/PL-4/aaa_diameter/  
/cluster/home/ipworks/etc/PL-3/aaa_diameter/  
/cluster/home/ipworks/etc/aaa_diameter/
```

Example 7 EPC AAA Backup Files



### 2.21.9 DHCPv4 Backup Files

The following DHCPv4-related directory (including all the sub folder and files) are included in the backup file which is created in Section 2.21.1 on page 16:

```
/cluster/home/ipworks/etc/ipworks_dhcpv4sm.conf
/cluster/home/ipworks/etc/<PL hostname>/ipworks_dhcpv4.conf
/cluster/home/ipworks/etc/<PL hostname>/dhcp/dhcpd.conf
/cluster/home/ipworks/etc/<PL hostname>/dhcp/dhcpkey.conf
/cluster/home/ipworks/etc/<PL hostname>/dhcp/dhcpv4
Option82format.conf
```

Example 8 DHCP Backup Files

## 2.22 Checking AAA Service Port Listening Status

### 2.22.1 Checking Radius AAA Service Port Listening Status

To check whether service port is listened correctly, do the following:

1. Log on to a System Controller by using SSH.

```
# ssh <username>@<OAM IP Address>
```

2. Check whether Radius AAA process is up.

```
# ipw-ctr status all
```

aaa\_radius\_stack, aaa\_radius\_backend, and aaasm must be running on all Payloads.

The expected result is as below:

```
on PL-3:
aaa_diameter is running.
aaa_radius_stack is running.
aaa_radius_backend is running.
aaasm is running.
```

```
on PL-4:
aaa_diameter is running.
aaa_radius_stack is running.
aaa_radius_backend is running.
aaasm is running.
```

3. Log on to PL-3 and check whether port 1812, 1813, 3799 and 3800 are listened correctly.

```
# ssh PL-3
```



```
# netstat -anp | grep 1812

udp 0 0 0.0.0.0:1812 0.0.0.0:* 30730/a3radiusd

#netstat -anp | grep 1813

udp 0 0 0.0.0.0:1813 0.0.0.0:* 30730/a3radiusd

# netstat -anp | grep 3799

udp 0 0 0.0.0.0:3799 0.0.0.0:* 30730/a3radiusd

# netstat -anp | grep 3800

udp 0 0 0.0.0.0:3800 0.0.0.0:* 30730/a3radiusd
```

4. Repeat Step 3 on PL-4.

**Note:** For PL-4, 3800 port should be 3801 according to the formula  $380x=3799+(4-2)$  defined in IPWorks IPTables Service Configuration.

5. If the result is not shown as expected, refer to section Radius AAA Server in IPWorks Troubleshooting Guideline.

## 2.22.2 Checking EPC AAA Service Port Listening Status

To check whether service port is listened correctly, do the following:

1. Log on to a System Controller by using SSH.

```
# ssh <username>@<OAM IP Address>
```

2. Check whether EPC AAA process is up.

```
# ipw-ctr status all
```

aaa\_diameter and aaasm must be running on all Payloads.

The expected result is as below:

on PL-3:

```
aaa_diameter is running.
aaa_radius_stack is running.
aaa_radius_backend is running.
aaasm is running.
```

on PL-4:

```
aaa_diameter is running.
aaa_radius_stack is running.
aaa_radius_backend is running.
aaasm is running.
```





3. Log on to PL-3 and check whether port 20001 is listened correctly.

```
# ssh PL-3
```

```
# netstat -anp | grep 20001
```

The expected result is as below:

```
tcp    0  0 169.254.100.3:20001 0.0.0.0:*  LISTEN  8508/beam.smp
```

4. Log on to PL-3 and check whether port 3868 is listened correctly.

```
# ssh PL-3
```

```
# netstat -anp | grep 3868
```

The expected result is as below:

```
tcp    0  0 192.168.20.193:3868 0.0.0.0:*  LISTEN  12745/DiaS
```

5. Repeat Step 4 on PL-4.
6. If the result is not shown as expected, refer to section Radius AAA Server in [IPWorks Troubleshooting Guideline](#).

## 2.23 Checking DHCPv4 Service Port Listening Status

To check whether service port is listened correctly, do the following:

1. Log on to a System Controller by using SSH.

```
# ssh <username>@<OAM IP Address>
```

2. Check whether DHCPv4 process is up.

```
# ipw-ctr status all
```

dhcp and dhcpsm must be running on all Payloads.

The expected result is as below:

```
on SC-1 :
ss is running as active role.
sqlnodemgr is running as active role.
```

```
on SC-2 :
ss is running as standby role.
sqlnodemgr is running as standby role.
```

```
on PL-3:
dhcp is running.
```



```
dhcpcsm is running.
```

```
on PL-4:
```

```
dhcp is running.
```

```
dhcpcsm is running.
```

3. Log on to PL-3 and check whether port 67 is listened correctly.

```
# ssh PL-3
```

```
# netstat -anp | grep 67
```

The expected result is as below:

```
udp 0 0 10.170.15.65:67 0.0.0.0:* 16417/dhcpd
```

4. Repeat Step 3 on PL-4.
5. If the result is not shown as expected, refer to section DHCPv4 Server in IPWorks Troubleshooting Guideline.

## 3 Problem Reporting

For details, refer to [IPWorks Troubleshooting Guideline](#) for any abnormal situation. If the problem still exists, consult the next level support.

Before reporting the problem, it is important to collect the related data according to [Data Collection Guideline for IPWorks](#).



## Reference List

### Ericsson Documents

- [1] Ericsson Command-Line Interface User Guide
- [2] IPWorks Troubleshooting Guideline
- [3] Data Collection Guideline for IPWorks
- [4] Command Line Interface User Guide for IPWorks SS
- [5] IPWorks Measurement List
- [6] Performance Management Report File Format
- [7] IPWorks Configuration Management
- [8] License Management
- [9] Backup and Restore
- [10] IPWorks Alarm List
- [11] IPWorks Auto Health Check