

IPWorks Auto Health Check

OPERATING INSTRUCTIONS

Copyright

© Ericsson AB 2017, 2018. All rights reserved. No part of this document may be reproduced in any form without the written permission of the copyright owner.

Disclaimer

The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.

Trademark List

All trademarks mentioned herein are the property of their respective owners. These are shown in the document Trademark Information.



Contents

1	Introduction	1
1.1	Prerequisites	1
1.1.1	Documents	1
1.1.2	Tools	1
1.1.3	Conditions	2
1.2	Related Information	2
2	View Health Check Rule	2
3	Health Check Actions	5
3.1	Create Health Check Job	5
3.1.1	Create Health Check Job with One Rule Category	5
3.1.2	Create Health Check Job with Multiple Rule Categories	6
3.2	Execute Health Check Job	7
3.3	Examine Health Check Job Result	7
3.4	Delete Health Check Job	8
3.5	Schedule Health Check Job	8
	Reference List	9





1 Introduction

This document describes the configuration management operation on auto health check. For more detail information on Health Check Framework, refer to the document [Health Check Management](#).

1.1 Prerequisites

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

- An Ericsson Command-Line Interface (ECLI) session in Exec mode is in progress.
- All the operations described in this document are done via Ericsson Command-Line Interface (ECLI).

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](#).
- For the network plan, refer to [IPWorks Network Connectivity Overview](#).
- For the detail information about auto health check, refer to [Health Check Management](#).

1.1.2 Tools

To perform auto health check, the following tool is required:

- The health check rules must be loaded.

To check the version of the rules loaded:

```
hcrsfm -l
```

Example output:

RULE SET FILE ID	REVISION
CXC1739883_20	A



1.1.3 Conditions

- The system version is IPWorks 1.1 or higher.
- By default all actions are performed on the SC, unless otherwise specified.
- Have the knowledge of the network plan and the System Controller (SC) address of the cluster.

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 View Health Check Rule

Health Check Rule is responsible for checking some specific function area or environment, that is to say, the whole set of health check rules represent the scope of health checking supported by IPWorks. Each rule has the attribute of “categories”, which aims to facilitate the execution of rules to help customers the planning of their execution according to specific O&M activity. For more information, refer to the document [Health Check Management](#).

You can check the auto health check rules sorted by rule ID by executing the command:

```
>dn ManagedElement=<Node name>,SystemFunctions=1,HealthCheckM=1  
(HealthCheckM=1)>show-table -m HcRule -p hcRuleId,description,name  
,severity,administrativeState --sort
```

Example output:



hcRuleId	description	name
IPW_001	Check Active WARNING Alarms	Active WARNING Alarms
IPW_002	Check Active MINOR Alarms	Active MINOR Alarms
IPW_003	Check Active MAJOR Alarms	Active MAJOR Alarms
IPW_004	Check Active CRITICAL Alarms	Active CRITICAL Alarms
IPW_101	Check LDE Dumps Files	Core Dumps Files
IPW_102	Verify the idle CPU load is within the expected range.	CPU usage
IPW_103	Check for the disk usage percentage.	Disks usage
IPW_104	Check the current available amount of free memory.	Memory usage
IPW_105	Check the status of the NTP server.	NTP status
IPW_106	A check of the cluster internal messaging bus.	Internal Cluster Communication
IPW_107	The status of the Ethernet interfaces are check. All should be UP and RUNNING.	Ethernet interfaces
IPW_108	Check for software raid keeps the disks synchronised.	DRBD Status
IPW_201	Check Virtual IP addresses.	Virtual IP address
IPW_202	Check Abstract Load Balancer (ALB) Status	Abstract Load Balancer
IPW_301	Check COREMW services are up	COREMW services are up
IPW_302	Check if lm status is locked	LM status is not locked
IPW_401	Check IPW PMF Counters Activated	IPW PMF Counters Activated
IPW_402	Check right number of IPW DB tables	IPW DB table number
IPW_403	Check right status of all mysql NDB node	IPW NDB status
IPW_404	Check right status of SS	IPW SS status is correct
IPW_405	Check if IPW licenses are expired	IPW licenses are not expired
IPW_409	Check dns error log for the recent one day	IPW DNS server check
IPW_410	Do validation of dns zone file for grammar	IPW DNS server check
IPW_411	Check enum error log for the recent one day	IPW ENUM server error
IPW_412	Check if dns listen udp and tcp 53 port	IPW DNS server Port
IPW_413	Check if dns listen at port 5300, enum listen 53 port	IPW ENUM server Port
IPW_501	Check if Diameter identity exists	IPW Diameter identity
IPW_502	Check Diameter stack DN	IPW Diameter stack DN
IPW_503	IPW AAA Diameter log does not contain fatal or error messages	IPW AAA Diameter log
IPW_504	IPW AAA SM log does not contain fatal or error messages	IPW AAA SM log
IPW_505	Check right status of IPW AAA	IPW AAA status is correct

The explanation of the attributes are as following:

hcRuleId	The identity of Health Check Rule.
description	The purpose of Health Check Rule.
name	The name of health check rule.
severity	The severity of result for Health Check Rule.
administrativeState	The Administrative state of the Health Check Rule. If the value is LOCKED, this rule will not be executed at anytime. If the value is UNLOCKED, this rule will be executed in associated Health Check Job.
categories	The category this health check rule belongs to. One health check rule could be associated with several categories.

You can list rules for each category by executing the command:

```
>dn ManagedElement=<Node name>,SystemFunctions=1,HealthCheckM=1
(HealthCheckM=1)> show -m HcRule | filter -B 2 <CATEGORY_NAME>
```

Here is an example for DAILY, TROUBLESHOOT, SHORT:



```
>dn ManagedElement=<Node name>,SystemFunctions=1,HealthCheckM=1
(HealthCheckM=1)> show -m HcRule | filter -B 2 DAILY
```

```
HcRule=IPW_409
categories
DAILY
--
```

```
HcRule=IPW_410
categories
DAILY
--
```

```
HcRule=IPW_411
categories
DAILY
--
```

```
HcRule=IPW_412
categories
DAILY
--
```

```
HcRule=IPW_413
categories
DAILY
```

```
(HealthCheckM=1)>show -m HcRule | filter -B 2 TROUBLESHOOT
```

```
HcRule=IPW_102
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_103
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_104
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_105
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_106
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_107
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_108
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_201
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_202
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_302
categories
TROUBLESHOOT
--
```

```
HcRule=IPW_401
categories
TROUBLESHOOT
```

```
(HealthCheckM=1)>show -m HcRule | filter -B 2 SHORT
```

```
HcRule=IPW_001
categories
SHORT
--
```

```
HcRule=IPW_002
categories
SHORT
--
```

```
HcRule=IPW_003
categories
SHORT
--
```

```
HcRule=IPW_004
categories
SHORT
--
```

```
HcRule=IPW_101
categories
SHORT
--
```

```
HcRule=IPW_301
categories
```




3 Health Check Actions

This section describes the general procedures of auto health check with the health check job.

Health check job (**HcJob**) is associated with a group of health check rules by specifying the job attribute of **rulesCategories**. When executing the health check job, all the associated health check rules will be evaluated. For more information about health check job, refer to the document [Health Check Management](#).

To perform the health check, execute below steps:

1. Create health check job.

After IPWorks installation, there are three default health check jobs, named as “short”, “daily” and “troubleshoot”, and each one is associated with the corresponding category: SHORT, DAILY and TROUBLESHOOT.

SHORT	Rules that should be executed for quick checks.
DAILY	Rules that should be executed daily.
TROUBLESHOOT	Rules that should be executed for troubleshooting.

For details about the rules, refer to [HCF Integration Guideline](#).

If the default jobs are not enough, refer to [Section 3.1 on page 5](#) to customize new health check job.

2. Execute health check job.

Refer to [Section 3.2 on page 6](#) to execute the health check job and wait until the execution is done.

3. Examine health check result.

Refer to [Section 3.3 on page 7](#) to examine the health check result and do analysis if the result shows that the system is NOT HEALTHY.

3.1 Create Health Check Job

There are three supported rule categories: SHORT, TROUBLESHOOT and DAILY, the value of attribute **rulesCategories** should be one of them.

3.1.1 Create Health Check Job with One Rule Category

Here is an example of creating Health Check Job with SHORT category:



```
>dn ManagedElement=<Node name>,SystemFunctions=1,HealthCheckM=1
(HealthCheckM=1)>configure
(config-HealthCheckM=1)> HcJob=Basic
(config-HcJob=Basic)> rulesCategories=SHORT
(config-HcJob=Basic)>commit
(HcJob=Basic)>show
HcJob=Basic
  localFileStorePath="/storage/no-backup/nbi_root/health_check"
  rulesCategories
    SHORT
  progressReport
    actionName=""
    progressInfo=""
    progressPercentage=0
    result=NOT_AVAILABLE
    resultInfo=""
  HcJobScheduler=1
(HcJob=Basic)>
```

3.1.2 Create Health Check Job with Multiple Rule Categories

Here is an example of creating a Health Check Job with SHORT, TROUBLESHOOT, DAILY categories:

```
>dn ManagedElement=<Node name>,SystemFunctions=1,HealthCheckM=1
(HealthCheckM=1)>configure
(config-HealthCheckM=1)>HcJob=All
(config-HcJob=All)>rulesCategories=SHORT
(config-HcJob=All)>rulesCategories=TROUBLESHOOT
(config-HcJob=All)>rulesCategories=DAILY
(config-HcJob=All)>commit
(HcJob=All)>show
HcJob=All
  localFileStorePath="/storage/no-backup/nbi_root/health_check"
  rulesCategories
    SHORT
    TROUBLESHOOT
    DAILY
  progressReport
    actionName=""
    progressInfo=""
    progressPercentage=0
    result=NOT_AVAILABLE
    resultInfo=""
  HcJobScheduler=1
(HcJob=All)>
```



3.2 Execute Health Check Job

Login Ericsson Command-Line Interface, and then navigate to some HcJob Managed Object, for example:

```
>dn ManagedElement=<Node name>,SystemFunctions=1,HealthCheckM=1,HcJob=Basic
```

```
(HcJob=Basic)>execute
```

3.3 Examine Health Check Job Result

You can check the job result by executing the command:

```
(HcJob=Basic)>show
```

```
HcJob=Basic
  lastReportFileName="_Basic_20161128T172153_man"
  lastRunTime="2016-11-28T17:21:53"
  localFileStorePath="/storage/no-backup/nbi_root/health_check"
  rulesCategories
    SHORT
  status=NOT_HEALTHY
  failedRules
    hcRule="hcRuleId=IPW_003"
    reason="Node have alarm, Severity Level MAJOR"
    severity=CRITICAL
  progressReport
    actionName="EXECUTE"
    progressInfo="Job Execution completed"
    progressPercentage=100
    result=SUCCESS
    resultInfo="Job correctly executed"
    state=FINISHED
    timeActionCompleted="2016-11-28T17:21:53"
    timeActionStarted="2016-11-28T17:21:32"
    timeOfLastStatusUpdate="2016-11-28T17:21:53"
  HcJobScheduler=1
(HcJob=Basic)>
```

The result of a job execution, in terms of success or failure, is available in the `result` attribute. It shows the value `NOT_AVAILABLE` until job completion.

Once the job is executed without problems, it shows `SUCCESS`. If the job execution terminates because of an error, it shows `FAILURE`.

If the result is `FAILURE`, it may be related to one of the following reasons:



- It was not possible to write the report file in the output directory. Check the output directory on the file system.
- A rule set file contains rules that are not correct from a syntactic or semantic perspective. Check the rule set file (/opt/ipworks/common/confs/RuleFileSet.xml). For details, refer to HCF Troubleshooting Guideline.

In these cases, check the file stored under the folder /storage/no-backup/coremw/var/log/saflog/. If the root cause of the problem cannot be found, report it to next level of support and continue with the manual health check procedure.

If there are failed rules exist in the result of Health Check Job, refer to the recommended action in corresponding rule.

3.4 Delete Health Check Job

Delete the created health check job, execute the following command:

```
>ManagedElement=<Node name>,SystemFunctions=1,HealthCheckM=1
(HealthCheckM=1)>configure
(config-HealthCheckM=1)>no HcJob=Basic
(config-HealthCheckM=1)>commit
(HealthCheckM=1)>show
```

Double check whether Health Check Job is deleted.

3.5 Schedule Health Check Job

Based on the customized requirement, users can refer to the specific documents shown below to schedule health check job:

- Schedule Single Health Check Job
- Schedule Health Check Job Based on Calendar Event
- Schedule Health Check Job Based on Periodic Event



Reference List

IPWorks Library Document

- [1] Schedule Health Check Job Based on Periodic Event
- [2] Schedule Health Check Job Based on Calendar Event
- [3] Schedule Single Health Check Job
- [4] Health Check Management
- [5] Unlock Local Authorization Method

Documents in other Library

- [6] HCF Troubleshooting Guideline, 1553-APR 901 0574/2
- [7] HCF Integration Guideline, 1/1531-APR 901 0574/2