Alarms Troubleshooting Guide for Cisco NCS 4000 Series

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CONTENTS

Preface

This section explains the objectives, intended audience, and conventions of this publication and describes the conventions that convey instructions and other information.

Document Objectives

This document provides information on how to troubleshoot the various NCS 4000 series router alarms.

Audience

To use this publication, you should be familiar with Cisco or equivalent optical transmission hardware and cabling, telecommunications hardware and cabling, electronic circuitry and wiring practices, and preferably have experience as a telecommunications technician.

Document Conventions

This document uses the following conventions:

Convention	Description
^ or Ctrl	Both the ^ symbol and Ctrl represent the Control (Ctrl) key on a keyboard. For example, the key combination **^D** or **Ctrl-D** means that you hold down the Control key while you press the D key. (Keys are indicated in capital letters but are not case sensitive.)
bold font	Commands and keywords and user-entered text appear in **bold** font.
Italic font	Document titles, new or emphasized terms, and arguments for which you supply values are in *italic* font.

Convention	Description
`Courier font`	Terminal sessions and information the system displays appear in `courier` font.
`Bold Courier font`	Bold Courier font indicates text that the user must enter.
[x]	Elements in square brackets are optional.
...	An ellipsis (three consecutive nonbolded periods without spaces) after a syntax element indicates that the element can be repeated.
|	A vertical line, called a pipe, indicates a choice within a set of keywords or arguments.
[x | y]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
{x | y}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x {y | z}]	Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
< >	Nonprinting characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Waarschuwing

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van de standaard praktijken om ongelukken te voorkomen. Gebruik het nummer van de verklaring onderaan de waarschuwing als u een vertaling van de waarschuwing die bij het apparaat wordt geleverd, wilt raadplegen.

BEWAAR DEZE INSTRUCTIES

Varoitus

TÄRKEITÄ TURVALLISUUSOHJEITA

Tämä varoitusmerkki merkitsee vaaraa. Tilanne voi aiheuttaa ruumiillisia vammoja. Ennen kuin käsittelet laitteistoa, huomioi sähköpiirien käsittelemiseen liittyvät riskit ja tutustu onnettomuuksien yleisiin ehkäisytapoihin. Turvallisuusvaroitusten käännökset löytyvät laitteen mukana toimitettujen käännettyjen turvallisuusvaroitusten joukosta varoitusten lopussa näkyvien lausuntonumeroiden avulla.

SÄILYTÄ NÄMÄ OHJEET

Attention

IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS

Warnung

WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

Avvertenza **IMPORTANTI ISTRUZIONI SULLA SICUREZZA**

Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di intervenire su qualsiasi apparecchiatura, occorre essere al corrente dei pericoli relativi ai circuiti elettrici e conoscere le procedure standard per la prevenzione di incidenti. Utilizzare il numero di istruzione presente alla fine di ciascuna avvertenza per individuare le traduzioni delle avvertenze riportate in questo documento.

CONSERVARE QUESTE ISTRUZIONI

Advarsel **VIKTIGE SIKKERHETSINSTRUKSJONER**

Dette advarselssymbolet betyr fare. Du er i en situasjon som kan føre til skade på person. Før du begynner å arbeide med noe av utstyret, må du være oppmerksom på farene forbundet med elektriske kretser, og kjenne til standardprosedyrer for å forhindre ulykker. Bruk nummeret i slutten av hver advarsel for å finne oversettelsen i de oversatte sikkerhetsadvarslene som fulgte med denne enheten.

TA VARE PÅ DISSE INSTRUKSJONENE

Aviso **INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

Este símbolo de aviso significa perigo. Você está em uma situação que poderá ser causadora de lesões corporais. Antes de iniciar a utilização de qualquer equipamento, tenha conhecimento dos perigos envolvidos no manuseio de circuitos elétricos e familiarize-se com as práticas habituais de prevenção de acidentes. Utilize o número da instrução fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham este dispositivo.

GUARDE ESTAS INSTRUÇÕES

¡Advertencia! **INSTRUCCIONES IMPORTANTES DE SEGURIDAD**

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES

Varning! **VIKTIGA SÄKERHETSANVISNINGAR**

Denna varningssignal signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanliga förfaranden för att förebygga olyckor. Använd det nummer som finns i slutet av varje varning för att hitta dess översättning i de översatta säkerhetsvarningar som medföljer denna anordning.

SPARA DESSA ANVISNINGAR

Figyelem

FONTOS BIZTONSÁGI ELOÍRÁSOK

Ez a figyelmezeto jel veszélyre utal. Sérülésveszélyt rejto helyzetben van. Mielott bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplo figyelmeztetések fordítása a készülékhez mellékelt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján keresheto meg.

ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!

Предупреждение

ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ

Этот символ предупреждения обозначает опасность. То есть имеет место ситуация, в которой следует опасаться телесных повреждений. Перед эксплуатацией оборудования выясните, каким опасностям может подвергаться пользователь при использовании электрических цепей, и ознакомьтесь с правилами техники безопасности для предотвращения возможных несчастных случаев. Воспользуйтесь номером заявления, приведенным в конце каждого предупреждения, чтобы найти его переведенный вариант в переводе предупреждений по безопасности, прилагаемом к данному устройству.

СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ

警告

重要的安全性说明

此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

请保存这些安全性说明

警告

安全上の重要な注意事項

「危険」の意味です。人身事故を予防するための注意事項が記述されています。装置の取り扱い作業を行うときは、電気回路の危険性に注意し、一般的な事故防止策に留意してください。警告の各国語版は、各注意事項の番号を基に、装置に付属の「Translated Safety Warnings」を参照してください。

これらの注意事項を保管しておいてください。

주의

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이 지시 사항을 보관하십시오.

Aviso

INSTRUÇÕES IMPORTANTES DE SEGURANÇA

Este símbolo de aviso significa perigo. Você se encontra em uma situação em que há risco de lesões corporais. Antes de trabalhar com qualquer equipamento, esteja ciente dos riscos que envolvem os circuitos elétricos e familiarize-se com as práticas padrão de prevenção de acidentes. Use o número da declaração fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham o dispositivo.

GUARDE ESTAS INSTRUÇÕES

Preface

Advarsel

VIGTIGE SIKKERHEDSANVISNINGER

Dette advarselssymbol betyder fare. Du befinder dig i en situation med risiko for legemesbeskadigelse. Før du begynder arbejde på udstyr, skal du være opmærksom på de involverede risici, der er ved elektriske kredsløb, og du skal sætte dig ind i standardprocedurer til undgåelse af ulykker. Brug erklæringsnummeret efter hver advarsel for at finde oversættelsen i de oversatte advarsler, der fulgte med denne enhed.

GEM DISSE ANVISNINGER

تحذير

إرشادات الأمان الهامة

يوضح رمز التحذير هذا وجود خطر. وهذا يعني أنك متواجد في مكان قد ينتج عنه التعرض لإصابات. قبل بدء العمل، احذر مخاطر التعرض للصدمات الكهربائية وكن على علم بالإجراءات القياسية للحيلولة دون وقوع أي حوادث. استخدم رقم البيان الموجود في أخر كل تحذير لتحديد مكان ترجمته داخل تحذيرات الأمان المترجمة التي تأتي مع الجهاز.

قم بحفظ هذه الإرشادات

Upozorenje

VAŽNE SIGURNOSNE NAPOMENE

Ovaj simbol upozorenja predstavlja opasnost. Nalazite se u situaciji koja može prouzročiti tjelesne ozljede. Prije rada s bilo kojim uređajem, morate razumjeti opasnosti vezane uz električne sklopove, te biti upoznati sa standardnim načinima izbjegavanja nesreća. U prevedenim sigurnosnim upozorenjima, priloženima uz uređaj, možete prema broju koji se nalazi uz pojedino upozorenje pronaći i njegov prijevod.

SAČUVAJTE OVE UPUTE

Upozornění

DŮLEŽITÉ BEZPEČNOSTNÍ POKYNY

Tento upozorňující symbol označuje nebezpečí. Jste v situaci, která by mohla způsobit nebezpečí úrazu. Před prací na jakémkoliv vybavení si uvědomte nebezpečí související s elektrickými obvody a seznamte se se standardními opatřeními pro předcházení úrazům. Podle čísla na konci každého upozornění vyhledejte jeho překlad v přeložených bezpečnostních upozorněních, která jsou přiložena k zařízení.

USCHOVEJTE TYTO POKYNY

Προειδοποίηση

ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ

Αυτό το προειδοποιητικό σύμβολο σημαίνει κίνδυνο. Βρίσκεστε σε κατάσταση που μπορεί να προκαλέσει τραυματισμό. Πριν εργαστείτε σε οποιοδήποτε εξοπλισμό, να έχετε υπόψη σας τους κινδύνους που σχετίζονται με τα ηλεκτρικά κυκλώματα και να έχετε εξοικειωθεί με τις συνήθεις πρακτικές για την αποφυγή ατυχημάτων. Χρησιμοποιήστε τον αριθμό δήλωσης που παρέχεται στο τέλος κάθε προειδοποίησης, για να εντοπίσετε τη μετάφρασή της στις μεταφρασμένες προειδοποιήσεις ασφαλείας που συνοδεύουν τη συσκευή.

ΦΥΛΑΞΤΕ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ

אזהרה

הוראות בטיחות חשובות

סימן אזהרה זה מסמל סכנה. אתה נמצא במצב העלול לגרום לפציעה. לפני שתעבוד עם ציוד כלשהו, עליך להיות מודע לסכנות הכרוכות במעגלים חשמליים ולהכיר את הנהלים המקובלים למניעת תאונות. השתמש במספר ההוראה המסופק בסופה של כל אזהרה כד לאתר את התרגום באזהרות הבטיחות המתורגמות שמצורפות להתקן.

שמור הוראות אלה

Opomena

ВАЖНИ БЕЗБЕДНОСНИ НАПАТСТВИЈА

Симболот за предупредување значи опасност. Се наоѓате во ситуација што може да предизвика телесни повреди. Пред да работите со опремата, бидете свесни за ризикот што постои кај електричните кола и треба да ги познавате стандардните постапки за спречување на несреќни случаи. Искористете го бројот на изјавата што се наоѓа на крајот на секое предупредување за да го најдете неговиот период во преведените безбедносни предупредувања што се испорачани со уредот.

ЧУВАЈТЕ ГИ ОВИЕ НАПАТСТВИЈА

Ostrzeżenie

WAŻNE INSTRUKCJE DOTYCZĄCE BEZPIECZEŃSTWA

Ten symbol ostrzeżenia oznacza niebezpieczeństwo. Zachodzi sytuacja, która może powodować obrażenia ciała. Przed przystąpieniem do prac przy urządzeniach należy zapoznać się z zagrożeniami związanymi z układami elektrycznymi oraz ze standardowymi środkami zapobiegania wypadkom. Na końcu każdego ostrzeżenia podano numer, na podstawie którego można odszukać tłumaczenie tego ostrzeżenia w dołączonym do urządzenia dokumencie z tłumaczeniami ostrzeżeń.

NINIEJSZE INSTRUKCJE NALEŻY ZACHOWAĆ

Upozornenie

DÔLEŽITÉ BEZPEČNOSTNÉ POKYNY

Tento varovný symbol označuje nebezpečenstvo. Nachádzate sa v situácii s nebezpečenstvom úrazu. Pred prácou na akomkoľvek vybavení si uvedomte nebezpečenstvo súvisiace s elektrickými obvodmi a oboznámte sa so štandardnými opatreniami na predchádzanie úrazom. Podľa čísla na konci každého upozornenia vyhľadajte jeho preklad v preložených bezpečnostných upozorneniach, ktoré sú priložené k zariadeniu.

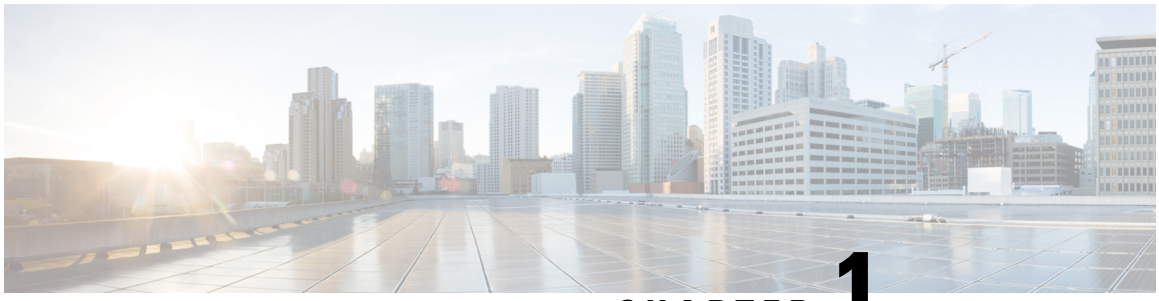
USCHOVAJTE SI TENTO NÁVOD

Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at Cisco Profile Manager.
- To get the business impact you're looking for with the technologies that matter, visit Cisco Services.
- To submit a service request, visit Cisco Support.
- To discover and browse secure, validated enterprise-class apps, products, solutions and services, visit Cisco Marketplace.
- To obtain general networking, training, and certification titles, visit Cisco Press.
- To find warranty information for a specific product or product family, access Cisco Warranty Finder.

Cisco Bug Search Tool

Cisco Bug Search Tool (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.



CHAPTER 1

Alarm Management

This chapter gives a description, severity, and troubleshooting procedure for each commonly encountered NCS 4000 alarm and condition. Sections Critical Alarms, on page 1 through NA Conditions, on page 2 provide lists of NCS 4000 alarms organized by severity. The alarms are organized alphabetically.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

Table 1: Feature History

Feature Name	Release Information	Feature Description
BITS alarms	Cisco IOS XR Release 6.5.31	Timing and synchronization alarms are supported on NCS 4000.

OTN Alarm Indexes

The following tables group alarms and conditions by their default severities in the OTN.

Note The OTN default alarm profile in some cases contains two severities for one alarm (for example, MJ/MN). It is assumed that all the alarms are generated on working path, default severity of alarms are as given in service affecting column. If an alarm is generated on protected path, then default severity of the alarm is considered as non-service affecting as given in the column.

Critical Alarms

The following table alphabetically lists Critical (CR) alarms.

Table 2: Critical Alarms List

FC-REDUNDANCY-LOST (CR)	OPUk-CSF (CR)
IMPROPRMVL (CR)	OPUk-PTIM (CR)
LOF (CR)	OTUk-LOM (CR)
LOS (CR)	RP-REDUNDANCY-LOST (CR)
MEA (CR)	TIM (CR)

Major Alarms

The following table alphabetically lists Major (MJ) alarms.

Table 3: Major Alarms List

EJECTOR-FLAPS-OPEN(MJ)	GFP-LFD (MJ)
FC-REDUNDANCY-LOST (MJ)	GFP-UP-MISMATCH (MJ)
FPD-NEED-UPGRADE (MJ)	Local Fault (MJ)
FEC-MISM (MJ)	ODUk-TIM-PM (MJ)
GFP-CSF (MJ)	Remote Fault (MJ)
GFP-CSF (MJ)	SIGLOSS (MJ)

NA Conditions

The following table alphabetically Not Alarmed (NA) conditions.

Table 4: NA Conditions List

AIS (NA)	ODUk-IAE (NA)
HI-LASERBIAS (NA)	ODUk-LCK-PM (NA)
HI-RXPOWER (NA)	ODUk-OCI-PM (NA)
HI-TXPOWER (NA)	ODUk-SD-PM (NA)
INSTALL-IN-PROGRESS (NA)	ODUk-SF-PM (NA)
ISSU-IN-PROGRESS (NA)	OTUk-BDI (NA)
LO-RXPOWER (NA)	OTUk-IAE (NA)
LO-TXPOWER (NA)	OTUk-SD (NA)
ODUk-AIS-PM (NA)	OTUk-SF (NA)

ODUk-BDI-PM (NA)	RDI (NA)
ODUk-BIAE (NA)	SD-L (NA)
ODUk-FTFL (NA)	SF-L/SF (NA)

NR Alarms

The following table alphabetically lists Not Reported (NR) alarms.

Table 5: NR Alarms List

LICENSE-COMM-FAIL (NR)	LICENSE-OUT-OF-COMPLIANCE (NR)

Trouble Characterizations

The OTN system reports trouble by utilizing standard alarm and condition characteristics, standard severities, and graphical user interface (GUI) state indicators. These notifications are described in the following paragraphs.

The system reports trouble notifications as alarms and status or descriptive notifications (if configured to do so) as conditions in the CTC Alarms window. Alarms typically signify a problem that the user needs to remedy, such as a loss of signal. Conditions do not necessarily require troubleshooting.

Alarm Characteristics

The OTN system uses standard alarm entities to identify what is causing trouble. All alarms generate due to hardware and software environment, or operator-originated problems whether or not they affect service. Current alarms for the network, CTC session, node, or card are listed in the Alarms tab. (In addition, cleared alarms are also found in the History tab.)

Condition Characteristics

Conditions include any problem detected on OTN. They can include standing or transient notifications. A snapshot of all current raised, standing conditions on the network, node, or card can be retrieved in the CTC Conditions window. (In addition, some but not all cleared conditions are also found in the History tab.)

Severity

The OTN system uses standard severities for alarms and conditions: Critical (CR), Major (MJ), Minor (MN), Not Alarmed (NA), and Not Reported (NR). These are described below:

- A Critical (CR) alarm generally indicates severe, Service-Affecting trouble that needs immediate correction.
- A Major (MJ) alarm is a serious alarm, but the trouble has less impact on the network.
- Minor (MN) alarms generally are those that do not affect service.
- Not Alarmed (NA) conditions are information indicators. They could or could not require troubleshooting, as indicated in the entries.
- Not Reported (NR) conditions occur as a secondary result of another event. These conditions do not in themselves require troubleshooting, but are to be expected in the presence of primary alarms.

Severities can be customized for an entire network or for single nodes, from the network level down to the port level by changing or downloading customized alarm profiles.

Service Effect

Service-Affecting (SA) alarms are those that interrupt service could be Critical (CR), Major (MJ), or Minor (MN) severity alarms. Service-Affecting (SA) alarms indicate service is affected.

State

The Alarms or History tab State (ST) column indicate the disposition of the alarm or condition as follows:

- A raised (R) event is one that is active.
- A cleared (C) event is one that is no longer active.
- A transient (T) event is one that is automatically raised and cleared in CTC during system changes such as user login, logout, loss of connection to node/shelf view, etc. Transient events do not require user action.

Troubleshooting Alarms

This chapter lists the alarms alphabetically and includes some conditions commonly encountered when troubleshooting the alarms. The severity, description, and troubleshooting procedure accompany each alarm and condition.

Note When you check the status of alarms for cards, ensure that the alarm filter icon in the lower right corner of the GUI is not indented. If it is, click it to turn it off. When you are done checking for alarms, you can click the alarm filter icon again to turn filtering back on.

Note When checking alarms, ensure that alarm suppression is not enabled on the card or port.

AIS

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

An alarm indication signal (AIS) is a maintenance signal that is sent downstream as an indication that an upstream defect has been detected. AIS occurs if the accepted STAT information is 111.

Clear the AIS Alarm

Procedure

Step 1 Check all the alarms on the circuit.

Step 2 Identify the root cause alarm which has triggered the AIS alarm. The alarms that could trigger the AIS alarm are - LOF, LOS, TIM, FEC-MISM, ODUk-TIM-PM, OTUk-SF, SF-L.

Step 3 Clear the root cause alarm.

The clearing procedures for the above mentioned alarms are discussed on the subsequent pages.

- LOF -Clear the LOF Alarm, on page 13
- LOS - Clear the LOS Alarm, on page 13
- FEC-MISM - Clear the FEC MISM Alarm, on page 6
- TIM - Clear the TIM Alarm, on page 29
- ODUk-TIM-PM - Clear the ODUk TIM PM Alarm, on page 19
- OTUk-SF - Clear the OTUk SF Alarm, on page 22
- SF-L - Clear the SF-L Alarm, on page 24

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

DISK-SPACE

Default Severity: Minor (when 80% of disk space is full) , Major (when 90% of disk space is full) and Critical (when 95% of disk space is full).

Logical Object: None

DISK-SPACE alarm is generated for “/misc/disk1”, “/misc/scratch”, “/var/log/”, “/” filesystems on the admin nodes. The alarm occurs when the disk space on the file system is low with respect to the configured threshold values.

Clear the DISK-SPACE Alarm

Procedure

Clear the unwanted files on the corresponding filesystem.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

EJECTOR-FLAPS-OPEN

Default Severity: The default severity depends on the card type.

- For route processor cards - Major, NSA (Non-service affecting)
- For line cards - Major, SA (Service affecting)

- For fabric cards - If one FC is down/ removed, the alarm is minor and NSA; if more than one FC is down, the alarm is major and SA.

Logical Object: EQPT

Clear the EJECTOR-FLAPS-OPEN Alarm

Procedure

For RP, remove the card and replace. For fabric cards and line cards, close the ejector flaps.

If the condition does not clear, log into the Technical Support Website athttp://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

FC-REDUNDANCY-LOST

Default Severity: Major (MJ) or Critical (CR), Non-Service-Affecting (NSA), or Service-Affecting (SA)

Logical Object: PORT

The Fabric Card Redundancy alarm occurs when one or more than one fabric card is removed.

Clear the FC-REDUNDANCY-LOST Alarm

Procedure

Either plug in 3 or all 4 fabric cards.

If the condition does not clear, log into the Technical Support Website athttp://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

FEC-MISM

Default Severity: Major (MJ), Service-Affecting (SA)

Logical Object: PORT

FEC Mismatch alarm occurs when there is a FEC configuration mismatch in a span.

Clear the FEC MISM Alarm

Procedure

Step 1 Check the configured FEC type on the controller and the connected port.

Step 2 This alarm is triggered, when the FEC type of the controller and the connected port are different. Set the same FEC type for the controller and the connected port.

The available FEC types are:

- Disable
- Standard
- Enhanced
- Enhanced 1.4
- Enhanced 1.7
- 20% High Gain FEC
- 7% High Gain FEC

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

FPD-NEED-UPGRADE

Default Severity: Major (MJ), Non-Service-Affecting (NSA)

Logical Object: EQPT

The FPD-NEED-UPGRADE alarm is raised when one or more FPDs are not in current state and require upgrade.

Clear the FPD Alarm

Procedure

Upgrade all the FPDs to CURRENT state. Use the **upgrade hw-module location** *location* **fpd** *fpd-name* command.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

GFP-UP-MISMATCH

Default Severity: Major (MJ), Service-Affecting (SA)

Logical Object: PORT

GFP-UP-MISMATCH alarm is raised when the accepted user payload (UPI) is different from the expected UPI.

Clear the GFP UP MISMATCH Alarm

Procedure

Match the AcUPI value to the expected UPI value or set GFP_SF to active.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

HI-LASERBIAS

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

The High Laserbias alarm occurs when the laser card has reached end of life.

Clear the HI LASERBIAS Alarm

Procedure

Replace the laser card.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

HI-RXPOWER

Default Severity: Minor (MN), Non-Service-Affecting (NSA)

Logical Object: OPTICS, PORT

The High Receive Power alarm occurs when the optical power coming into the receive fiber is too high. The high receive power alarm threshold for CXP/CXP2 is +7.0 dBm (0xC3C6).

Clear the HI RXPOWER Alarm

Procedure

Step 1 Check if the correct pluggable is properly inserted.

Step 2 Check the attenuation of the input signal. See the specification details of the pluggable and set the attenuation accordingly.

Step 3 Check if the power threshold values are set, per the recommended range. See the specification of the pluggable and set the power threshold values accordingly.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

HI-TXPOWER

Default Severity: Minor (MN), Non-Service-Affecting (NSA)

Logical Object: OPTICS, PORT

The High Transmit Power alarm occurs when the optical power coming out of the transmit fiber is too high. The high transmit power threshold for CXP/CXP2 is +7.0dBm (0xC3C6).

Clear the HI TXPOWER Alarm

Procedure

Step 1 Check if the correct pluggable is properly inserted.

Step 2 Check the attenuation of the input signal. See the specification details of the pluggable and set the attenuation accordingly.

Step 3 Check if the power threshold values are set , per the recommended range. See the specification of the pluggable and set the power threshold values accordingly.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

HOLDOVER-NOT-READY

Default Severity: Minor

Logical Object: RP

HOLDOVER-NOT-READY alarm occurs when timing source has switched and the holdover time (i.e. 6 minutes) has not elapsed.

The alarm is expected during RP Switchovers, TE Port flap, addition or deletion or flap of BITS/SYNC-E source.

Clear the HOLDOVER-NOT-READY Alarm

Procedure

This alarm is automatically cleared by the system when timing holdover is achieved, around 6 to 7 minutes after timing source has switched.

Note Any operation that can cause further timing switches should not be performed before this alarm is cleared.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

IMPROPRMVL

Default Severity: Major (MJ), Non-Service-Affecting (NSA)

In case more than one fabric cards are removed from the chassis, the alarm severity changes from Non-Service-Affecting to Service-Affecting (SA).

Default Severity (in case of SSD removal) : Minor (MN), Non-Service-Affecting (NSA)

Logical Object: EQPT, OPTICS, PORT

The Improper Removal alarm occurs under the following conditions:

- A card or pluggable is physically removed.
- An RP in a Line Card Chassis (or RPMC in a Fabric Card Chassis) is physically removed. The alarm is raised, irrespective of the current operational state of the RP/ RPMC.
- A redundant RP/RPMC detects RP/ RPMC removal.
- An SSD is physically removed.
- An RP detects the SSD removal.
- An FC is physically removed. The alarm is raised irrespective of the current operational state of the FC.
- RP detects FC removal.
- CXP2 pluggable removal from FC in LCC/FCC node. The alarm is raised irrespective of the current operational state of the pluggable.
- QSFP port of the NCS4K-4H-OPW-QC2 line card is configured as 10G, and the CVR-QSFP-SFP10G adapter is inserted in to the port but the SFP+ pluggable is not inserted.
- QSFP port of the NCS4K-4H-OPW-QC2 line card is configured as 10G, and the CVR-QSFP-SFP10G adapter and the SFP+ pluggable are not inserted.

Clear the Improper Removal Alarm

Procedure

Plug in the card or pluggable.

In case of a mutli chassis system, the RPMC and FC of the FCC should reach *Operational* state after they are inserted.

Alternatively, delete the configurations performed for the card when the card or pluggable is permanently removed.

If the condition does not clear, log into the Technical Support Website athttp://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

INSTALL-IN-PROGRESS

Default Severity: Not Alarmed (NA), Non-Service-Affecting (SA)

Logical Object: SYSADMIN

The Install In Progress alarm is raised when software upgrade starts or when sysadmin ISSU starts.

Clear the INSTALL_IN_PROGRESS Alarm

Procedure

This alarm is automatically cleared by the system once the system upgrade is complete; time taken for the upgrade is typically between 30 seconds to 3 minutes.

Human intervention is not required for clearing this alarm. Incase, the alarm is displayed for a long duration, it is recommended to reconfigure the port.

If the condition does not clear, log into the Technical Support Website athttp://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ISSU-IN-PROGRESS

Default Severity: Not Alarmed (NA), Non-Service-Affecting (NSA)

Logical Object: COM

The In-Service Service Upgrade In Progress alarm is raised when ISSU prepare phase starts.

Clear the ISSU-IN-PROGRESS Alarm

Procedure

ISSU-IN-PROGRESS Alarm is cleared when ISSU cleanup phase completes or if ISSU cancels.

If the condition does not clear, log into the Technical Support Website athttp://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

LICENSE-COMM-FAIL

Not Reported (NR), Non-Service-Affecting (NSA)

This alarm is raised when the router is not able to communicate with the CSSM license cloud server. The alarm is cleared when the communication is restored.

LICENSE-OUT-OF-COMPLIANCE

Default Severity: Not Reported (NR), Non-Service-Affecting (NSA)

This alarm is raised when the license consumption is more than the licenses that have been allocated in the Cisco Smart Software Manager (CSSM) license cloud server. The alarm is cleared when more licenses are purchased and updated in the CSSM license cloud server.

LO-RXPOWER

Default Severity: Minor (MN), Non-Service-Affecting (NSA)

Logical Object: OPTICS, PORT

This alarm occurs when the optical power coming into the receive fiber is too low. The low receive power alarm threshold for CXP/ CXP2 is -11.4 dBm (0x02D4).

Clear the LO RXPOWER Alarm

Procedure

Step 1 Check if the correct pluggable is properly inserted.

Step 2 Check the attenuation of the input signal. See the specification details of the pluggable and set the attenuation accordingly.

Step 3 Check if the power threshold values are set , per the recommended range. See the specification of the pluggable and set the power threshold values accordingly.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

LO-TXPOWER

Default Severity: Minor (MN), Non-Service-Affecting (SA)

Logical Object: OPTICS, PORT

This alarm occurs when the optical power coming out of the transmit fiber is too low. The low transmit power threshold for CXP/CXP2 is -9.5 dBm (0x0462).

Clear the LO TXPOWER Alarm

Procedure

Step 1 Check if the correct pluggable is properly inserted.

Step 2 Check the attenuation of the input signal. See the specification details of the pluggable and set the attenuation accordingly.

Step 3 Check if the power threshold values are set , per the recommended range. See the specification details of the pluggable and set the power threshold values accordingly.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

LOF

Default Severity: Critical (CR), Service-Affecting (SA)

Logical Object: PORT

The Loss of Frame (LOF) alarm occurs when the frame alignment process is in the out-of-frame (OOF) state for 3 milliseconds.

Clear the LOF Alarm

Procedure

Keep the frame alignment process in the in-frame (IF) state for 3 milliseconds.

In the case the alarm still persists, check the pluggables and fiber connections for any degrade.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

LOS

Default Severity: Major (MJ), Non-Service-Affecting (NSA)

Logical Object: OPTICS, PORT

Loss of Signal (LOS) alarm occurs when:

- The output connection point is not connected to the input connection point.
- Fiber connectivity issues.
- Receive power for CXP/ CXP2 pluggable is less than -40.

Clear the LOS Alarm

Procedure

Step 1 Ensure the cable between the interface ports is connected correctly. Correct the cable connections if necessary.

Step 2 Check for physical defects in the cable (such as cuts).

Step 3 Check the cable connectors. A reversal of the transmit and receive pairs or an open receive pair can cause errors. If yes, swap the transmit and receive pairs.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

Local Fault

Default Severity: Major (MJ), Service-Affecting (SA)

Logical Object: ETHERNET

The Local Fault (LF) alarm occurs when there is a fault in the local OTN network.

Clear the Local Fault (LF) Alarm

Procedure

Step 1 Ensure there is no alarm in the provider network of the peer port. In case an alarm is present, it needs to be cleared by following the clearing procedure for that alarm. The alarms that could trigger the LF alarm are - LOF, LOS, FEC-MISM, ODUk-TIM-PM, OTUk-SF.

Step 2 Clear the alarm causing the LF alarm.

The clearing procedures for the above mentioned alarms are here.

- LOF -#unique_59
- LOS - #unique_60
- FEC-MISM - #unique_61
- ODUk-TIM-PM - #unique_62
- OTUk-SF - #unique_63

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

MEA

Default Severity: Critical (CR), Service-Affecting (SA)

Logical Object: EQPT

The MEA alarm occurs under the following conditions:

- The physical card inserted into a slot does not match the card type that is already provisioned for that slot.
- A QSFP port on the NCS4K-4H-OPW-QC2 line card is configured as breakout or 40G or 100G and the CVR-QSFP-SFP10G adapter is plugged in.
- A QSFP port on the NCS4K-4H-OPW-QC2 line card is configured as non-breakout 10G and a QSFP+ or QSFP28 is inserted.

Clear the MEA Alarm

Procedure

Either plug out the card of incorrect card type or delete the pre-configuration and reinsert the card.

If the condition does not clear, log into the Technical Support Website athttp://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ODUk-AIS-PM

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

ODUk - AIS (Alarm Indication Signal) occurs if the accepted STAT information is 111.

Clear the ODUk AIS PM Alarm

Procedure

Identify the root cause alarm which has triggered this alarm. The alarms that could trigger the ODUk AIS PM alarm are - LOS , LOF. Follow the recommended clearing procedure to clear these alarms.

Also, check for any hardware failure in the upstream direction of the flow where this alarm has been detected.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ODUk-BDI-PM

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

ODUk-BDI-PM (Backward Defect Indication) alarm occurs when the BDI bit in the SM/TCMi/PM overhead field is "1" for 5 consecutive frames.

Clear the ODUk BDI PM Alarm

Procedure

Change the BDI bit in the SM/TCMi/PM overhead field to "0" for 5 consecutive frames.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ODUk-BIAE

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

ODUk - BIAE (Backward Incoming Alignment Error) alarm occurs if the BEI/BIAE bits in the SM/TCM overhead field (byte 3, bits 1 to 4) are "1011" for X consecutive frames.

Clear the ODUk-BIAE Alarm

Procedure

Change the BEI/BIAE bits in the SM/TCM overhead field. It should not be equal to "1011" for 3 consecutive frames.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ODUk-IAE

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

ODUk - IAE (Incoming Alignment Error) alarm occurs when IAE bit in the SM overhead field is "1" for 5 consecutive frames.

Clear the ODUk IAE Alarm

Procedure

Change the IAE bit in the SM overhead field to "0" for 5 consecutive frames.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ODUk-LCK-PM

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

ODUk-LCK (Locked) alarm occurs when the upstream connection is locked, and no signal is passed through.

Clear the ODUk LCK PM Alarm

Procedure

Unlock the upstream connection to pass the signal by deleting the shutdown condition (OOS, DSBLD) on the resource or along the fiber.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ODUk-OCI-PM

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

ODUk-OCI (Open Connection Indication) alarm occurs when the upstream signal is not connected to a trail termination source or incase of incomplete intermediate configurations in the ODUk path. This alarm can also occur during the ODUk path teardown, where one (or more) ODUk hardware along the path was not removed from the configuration.

Clear the ODUk-OCI-PM Alarm

Procedure

Check for missing or incomplete configurations on the ODUk path towards the upstream direction of the connected fiber. Complete the configurations as required.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ODUk-SD-PM

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

ODUk-SD-PM (Signal Degrade) alarm occurs when the quality of signal is so poor that the Bit Error Rate (BER) on the incoming optical line passed the signal degrade threshold.

Clear the ODUk SD PM Alarm

Procedure

Check if the cable is connected properly. Bent or damaged cables lead to signal loss. Replace the cable, if necessary.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ODUk-SF-PM

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

Hardware and software both can generate ODUk-SF-PM alarm based on the summarization of TIM, LCK, and AIS alarms.

Clear the ODUk SF PM Alarm

Procedure

ODUk SF alarm gets cleared when none of the defects, TIM, LCK or AIS exist.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

ODUk-TIM-PM

Default Severity: Major (MJ), Service-Affecting (SA)

Logical Object: PORT

TIM - PM (Trail Trace Identifier Mismatch) alarm occurs when the expected TTI string does not match the received section trace string.

Clear the ODUk TIM PM Alarm

Procedure

Step 1 Ensure that the physical fibers are correctly configured and attached.

Step 2 Ensure the send and expected Trail Trace Identifier (TTI) configurations are correct. In case of mismatch, configurations needs to be aligned. To set the sent and expected TTI values, use the **tti [expected | send]** {*ascii* | *dapi* | *hex* | *operator-specific* | *sapi* } command.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

OPUk-CSF

Default Severity: Critical (CR), Service-Affecting (SA)

Logical Object: PORT

OPUk - CSF (Client Signal Fail) alarm occurs when the CSF bit in the OPUk PSI overhead is "1" for 3 consecutive 256-frame multiframes.

Clear the OPUk CSF Alarm

Procedure

Change the CSF bit in the OPUk PSI overhead to "0" for 3 consecutive 256-frame multiframes.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

OPUk-PTIM

Default Severity: Critical (CR), Service-Affecting (SA)

Logical Object: PORT

OPUk-PTIM alarm is raised when the accepted payload type (AcPT) is not equal to the expected payload type(s) as defined by the specific adaptation function.

Clear the OPU PTIM Alarm

Procedure

OPU PTIM alarm is cleared when the accepted payload type is equal to the expected payload type(s), as defined by the specific adaptation function. An adaptation function may support more than one payload type.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

OTUk-BDI

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

OTUk-BDI (Backward Defect Indication) alarm occurs when the BDI bit in the SM/TCMi/PM overhead field is "1" for 5 consecutive frames.

Clear the OTUk BDI Alarm

Procedure

Change the BDI bit in the SM/TCMi/PM overhead field to "0" for 5 consecutive frames.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

OTUk-IAE

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

OTUk - IAE (Incoming Alignment Error) alarm occurs when IAE bit in the SM overhead field is "1" for 5 consecutive frames.

Clear the OTUk IAE Alarm

Procedure

Change the IAE bit in the SM overhead field to "0" for 5 consecutive frames.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

OTUk-LOM

Default Severity: Critical (CR), Service-Affecting (SA)

Logical Object: PORT

LOM (Loss of Multiframe) alarm occurs when the multiframe alignment process is in the out-of-multiframe (OOM) state for 3 milliseconds.

Clear the OTUk LOM Alarm

Procedure

Keep the multiframe alignment process in the in-multiframe (IM) state for 3 millisecond.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

OTUk-SD

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

This alarm occurs when the quality of the signal is so poor that the bit error rate on the incoming optical line has crossed the signal degrade threshold.

Clear the OTUk SD Alarm

Procedure

Check if the cable is connected properly. Bent or damaged cables lead to signal loss. Replace the cable, if required, to clear the alarm.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

OTUk-SF

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

Hardware and software both can generate OTUk-SF alarm based on the summarization of LOS, LOF, LOM, and SM-TIM alarms.

Clear the OTUk SF Alarm

Procedure

Check if the cable is connected properly. Bent or damaged cables lead to signal loss. Replace the cable, if necessary, to clear the alarm.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

RDI

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

The RDI-L signal indicates to the Line Terminating Equipment that its peer LTE has detected an AIS-L (or lower layer) defect on the signal that it (the first LTE) originated. An incoming RDI-L defect is used to derive an RFI-L failure.

Clear the RDI Alarm

Procedure

Clear the AIS-L alarm on the peer LTE.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

RP-REDUNDANCY-LOST

Default Severity: Major (MJ), Non-Service-Affecting (NSA)

Logical Object: PORT

The Route processor Redundancy alarm occurs in one of the following conditions.

1. When the route processor (RP) is reloaded, during ISSU.
2. RP is physically removed.

Clear the RP-REDUNDANCY-LOST Alarm

Procedure

Confirm if both the RPs are plugged in correctly and are in working condition. Once plugged in, the user will need to wait for sometime for all the software processes to get aligned and run without issues. This may take up to 10 minutes once the RP has been plugged or has been reloaded.

If the condition does not clear, log into the Technical Support Website athttp://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

Remote Fault (RF)

Default Severity: Major (MJ), Service-Affecting (SA)

Logical Object: ETHERNET

Remote Fault (RF) alarm is always a consequent action in the upstream direction of a local fault or is the result of loss of a signal. No fault is present at the path where the remote fault occurs; the actual fault is present at the local fault path.

Clear the Remote Fault (RF) Alarm

Procedure

Check the downstream direction of the local fault in the network and clear the alarm using the clearing procedure for that particular alarm. To clear the local fault, see #unique_102.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

SD-L

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

SD-L (Signal Degrade) alarm occurs when the quality of signal is so poor that the bit error rate (BER) on the incoming optical line has crossed the signal degrade threshold.

Various factors can trigger the SD-L alarm. The factors are discussed in the clearing the alarm section, below.

Clear the SD-L Alarm

Procedure

Step 1 Verify that the user-provisionable BER threshold is set at the expected level. To set the BER threshold, use the **threshold sd-ber** command. The available range is from 5 to 9.

Step 2 Use the **show controller optics** command to check the power level of the line and ensure that the level is within range.

Step 3 Use the **show inventory** command to get details of the optical receive levels of the pluggable and ensure that the levels are within range.

Step 4 Clean the fibers at both ends to prevent line signal failure.

Step 5 If the problem persists, check the transmitter at the other end of the optical line and contact Cisco TAC before replacing the same.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

SF-L

Default Severity: Not Alarmed (NA), Service-Affecting (SA)

Logical Object: PORT

Loss of Signal, Loss of Frame and AIS-L defects, and a Line BER exceeding 10-3 on an incoming OC-N are detected as SF conditions on that line.

Clear the SF-L Alarm

Procedure

SF-L alarm gets cleared when the above mentioned condition does not exist anymore.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

SIGLOSS

Default Severity: Major (MJ), Service-Affecting (SA)

Logical Object: PORT

Signal Loss (SIGLOSS) alarm occurs when the output connection point is not connected to the input connection point.

Clear the SIGLOSS Alarm

Procedure

Step 1 This alarm indicates a fiber connectivity issue. Check the cable connections between the interface ports.

Step 2 Ensure that the cable has no cuts or physical anomalies.

Step 3 Check the cable connectors. A swap of the transmit and receive pair or an unconnected receive pair can trigger this alarm.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

SSM-DUS

Default Severity: Not Alarmed (NA), Non-Service Affecting (NSA)

Logical Object: BITS

The Synchronization Status Message (SSM) Quality Changed to Do Not Use (DUS) condition occurs when the synchronization status message quality level degrades to DUS or is manually changed to DUS.

The signal is often manually changed to DUS to prevent timing loops from occurring. Sending a DUS prevents the timing from being reused in a loop. The DUS signal can also be sent for line maintenance testing.

Note SSM-DUS is an informational condition and does not require troubleshooting.

SSM-FAIL

Default Severity: Minor (MN), Non-Service Affecting (NSA)

Logical Objects: BITS

The SSM Fail alarm occurs when the synchronization status messaging received by the BITS port fails. The problem is external to BITS ports. The BITS port is set up to receive SSM, but the timing source is not delivering valid SSM messages.

Clear the SSM-FAIL Alarm

Procedure

Step 1 Verify that SSM is enabled on the external timing source.

Step 2 If timing is enabled, use an optical test set to determine that the external timing source is delivering SSM. For specific procedures to use the test set equipment, consult the manufacturer.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

SSM-OFF

Default Severity: Not Alarmed (NA), Non-Service Affecting (NSA)

Logical Objects: BITS

The SSM Off condition applies to references used for timing the node. It occurs when the SSM for the reference has been turned off. The BITS port is configured to receive SSM, but the timing source is not delivering SSM messages.

Clear the SSM-OFF Alarm

Procedure

Complete the Clear the SSM-FAIL Alarm, on page 25 procedure.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

SSM-PRC

Default Severity: Not Alarmed (NA), Non-Service Affecting (NSA)

Logical Object: BITS

The SSM Primary Reference Clock (PRC) Traceable condition occurs when the SSM transmission level is changed to PRC.

Note SSM-PRC is an informational condition and does not require troubleshooting.

SSM-PRS

Default Severity: Not Alarmed (NA), Non-Service Affecting (NSA)

Logical Object: BITS

The SSM Reserved (RES) For Network Synchronization Use condition occurs when the synchronization message quality level is changed to RES.

Note SSM-PRS is an informational condition and does not require troubleshooting.

SSM-SMC

Default Severity: Not Alarmed (NA), Non-Service Affecting (NSA)

Logical Object: BITS

The SSM SONET Minimum Clock (SMC) Traceable condition occurs when the synchronization message quality level changes to SMC. The login node does not use the clock because the node cannot use any reference beneath its internal level, which is ST3.

Note SSM-SMC is an informational condition and does not require troubleshooting.

SSM-ST2

Default Severity: Not Alarmed (NA), Non-Service Affecting (NSA)

Logical Object: BITS

The SSM Stratum 2 (ST2) Traceable condition occurs when the synchronization message quality level is changed to ST2.

Note SSM-ST2 is an informational condition and does not require troubleshooting.

SSM-ST3

Default Severity: Not Alarmed (NA), Non-Service Affecting (NSA)

Logical Objects: BITS

The SSM Stratum 3 (ST3) Traceable condition occurs when the synchronization message quality level is changed to ST3.

Note SSM-ST3 is an informational condition and does not require troubleshooting.

SSM-ST4

Default Severity: Not Alarmed (NA), Non-Service Affecting (NSA)

Logical Objects: BITS

The SSM Stratum 4 (ST4) Traceable condition occurs when the synchronization message quality level is lowered to ST4. The message quality is not used because it is below ST3.

Note SSM-ST4 is an informational condition and does not require troubleshooting.

SSM-STU

Default Severity: Not Alarmed (NA), Non-Service Affecting (NSA)

Logical Objects: BITS

The SSM Synchronization Traceability Unknown (STU) condition occurs when the reporting node is timed to a reference that does not support SSM, but the transmitting node has SSM support enabled. STU can also occur if the timing source is sending out SSM messages but SSM is not enabled on the receiving node.

Note SSM-STU is an informational condition and does not require troubleshooting.

TCA

Default Severity: Not Alarmed (NA) and Non-Service-Affecting (SA).

Logical Object: PORT

Threshold Cross Alert (TCA) alarm occurs when the Performance Monitoring (PM) counters cross the predefined threshold values. These PM counters are recorded in buckets of different lifetime like 15 minutes bucket or 24 hour bucket. TCA alarms can be viewed on following user interfaces:

- CTC : In the CTC conditions pane.
- TL1 : In the **RTRV-COND-ALL/<MOD2>** command output.
- CLI : In the **show alarms brief system conditions** command output.

Clear the TCA Alarm

Procedure

This alarm is automatically cleared by the system, when the TCA alarm bucket expires.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

TE-LOS

Default Severity: Critical.

Logical Object: TE PORT

TE-LOS alarm occurs when there is signal loss at the TE port .

Clear the TE-LOS Alarm

Procedure

Step 1 Check the physical TE port connections.

Step 2 Verify that the TE port status is not ADMIN-DOWN.

Step 3 Verify the TE port configuration.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

TE-PORT-UNAVAILABLE

Default Severity: Major (when only BACKUP TE-PORT is down) and Critical (when both PRIMARY TE port and BACKUP TE-port are down)

Logical Object: ECU0

TE-PORT-UNAVAILABLE alarm occurs when the physical TE port is unavailable or is not connected.

Clear the TE-PORT-UNAVAILABLE Alarm

Procedure

This alarm indicates connectivity issue. Check the connections between TE ports.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

TIM

Default Severity: Critical (CR), Service-Affecting (SA)

Logical Object: PORT

Trail Trace Identifier Mismatch (TIM) alarm occurs when the expected TTI string does not match the received TTI trace string. Section Trace Mode must be set to manual for this alarm to occur.

Clear the TIM Alarm

Procedure

Step 1 Ensure that the physical fibers are correctly configured and properly connected.

Step 2 Ensure the send and expected Trail Trace Identifier (TTI) configurations are correct. In case of mismatch, configurations needs to be aligned. To set the sent and expected TTI values, use the **tti [expected | send]** {*ascii* | *dapi* | *hex* | *operator-specific* | *sapi* } command.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

TIMING-FPGA-SEU

Default Severity: Critical.

Logical Object: None

TIMING-FPGA-single error upset alarm.

Clear the TIMING-FPGA-SEU Alarm

Procedure

This alarm is automatically cleared by the system, when the Timing-FPGA is upgraded to latest supported version.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/cisco/web/support/index.html for more information or call Cisco TAC (1 800 553-2447).

TIMING-ISOLATED-RACK

Default Severity: Critical.

Logical Object: ECU0

TIMING-ISOLATED-RACK alarm occurs when all the TE ports on a rack are down, causing isolation from timing perspective from all other racks in the MC system.

Clear the TIMING-ISOLATED-RACK Alarm

Procedure

Step 1 Verify that the isolated node is expected as per the topology.

Step 2 Check the physical TE port connections.

Step 3 Check the physical connections between the nodes.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

TIMING-LOAD-ERROR

Default Severity: Critical.

Logical Object: None

TIMING-LOAD-ERROR alarm occurs when the loading of firmware image on Timing-FPGA fails.

Clear the TIMING-LOAD-ERROR Alarm

Procedure

Step 1 Verify FPD status for Timing-FPGA and ECU-FPGA, use the **show hw-module fpd** <*fpd-name*> command.

Step 2 If the FPD(s) status is not CURRENT, then upgrade to the running version using **upgrade hw-module location all fpd** <*fpd-name*> command.

Step 3 Reload the LC using **hw-module location** <*LC location*> **reload** command.

Note Perform LC reload only if reload is required to complete the FPD upgrade.

Note Reload is traffic impacting operation and should be carried in planned maintenance window.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

TIMING-PCI-ERROR

Default Severity: Critical.

Logical Object: None

TIMING-PCI-ERROR alarm occurs when communication with the Timing-FPGA is lost because of PCI error.

Clear the TIMING-PCI-ERROR Alarm

Procedure

Step 1 Verify FPD status for Timing-FPGA and ECU-FPGA, use the **show hw-module fpd** <*fpd-name*> command.

Step 2 If the FPD(s) status is not CURRENT, then upgrade to the running version using **upgrade hw-module location all fpd** <*fpd-name*> command.

Step 3 Reload the LC using **hw-module location** <*LC location*> **reload** command.

Note Perform LC reload only if reload is required to complete the FPD upgrade.

Note Reload is traffic impacting operation and should be carried in planned maintenance window.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

TIMING-PLL-VAL-ERROR

Default Severity: Critical.

Logical Object: None

TIMING-PLL-VAL-ERROR alarm occurs when the Timing-PLL version check has failed.

Clear the TIMING-PLL-VAL-ERROR Alarm

Procedure

Step 1 Verify FPD status for Timing-FPGA and ECU-FPGA, use the **show hw-module fpd** <*fpd-name*> command.

Step 2 If the FPD(s) status is not CURRENT, then upgrade to the running version using **upgrade hw-module location all fpd** <*fpd-name*> command.

Step 3 Reload the LC using **hw-module location** <*LC location*> **reload** command.

Note Perform LC reload only if reload is required to complete the FPD upgrade.

Note Reload is traffic impacting operation and should be carried in planned maintenance window.

If the condition does not clear, log into the Technical Support Website at http://www.cisco.com/c/en/us/support/index.html for more information or call Cisco TAC (1 800 553-2447).

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