如何排除MRA的部分註冊故障

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簡介

本文說明如何對使用行動與遠端存取(MRA)的部分註冊作業階段啟始通訊協定(SIP)電話進行疑難排 解、為什麼會發生這種情況以及如何加以識別。

背景資訊

什麼是裝置的部分註冊?

部分登錄檔示SIP電話上的所有線路都沒有註冊。此問題可能是由於不同的原因造成的,例如線路 按鈕模板、身份信任清單/證書信任清單(ITL/CTL)不匹配、SIP消息大小、保持活動狀態等。

Real-time Device StatusRegistration:Partial RegisteredIPv4 Address:10.10.3.189Active Load ID:sip9951.9-4-2-13Inactive Load ID:sip9951.9-4-1SR1-2Download Status:None

多線路註冊的SIP電話

來自具有多個線路的端點的第一個暫存器包含配置為註冊所有線路的所有SIP線路。

然後預期每120秒(實際為115秒,即120減去SIP配置檔案中配置的增量值(預設情況下為5秒))出 現REGISTER(保持連線)消息。 在這種情況下,電話每115秒傳送一次keep-alive,如下圖所示 :

Time	Leg 1	Leg 2	CSeq	Source	Destination	Expires
21:17:42.610	→ REGISTER		200 REGISTER	10.2.60.26	10.2.60.24	0
21:17:42.613		→ REGISTER	200 REGISTER	10.2.60.24	10.2.60.21	0
21:17:42.614		← 100 TRYING	200 REGISTER	10.2.60.21	10.2.60.24	
21:17:42.614		← 200 OK	200 REGISTER	10.2.60.21	10.2.60.24	0
21:17:42.615	← 200 OK		200 REGISTER	10.2.60.24	10.2.60.26	0
21:19:42.726	→ REGISTER		202 REGISTER	10.2.60.26	10.2.60.24	0
21:19:42.728		→ REGISTER	202 REGISTER	10.2.60.24	10.2.60.21	0
21:19:42.729		← 100 TRYING	202 REGISTER	10.2.60.21	10.2.60.24	
21:19:42.730	← 200 OK		202 REGISTER	10.2.60.24	10.2.60.26	0
21:19:42.730		← 200 OK	202 REGISTER	10.2.60.21	10.2.60.24	0
21:21:42.813	→ REGISTER		203 REGISTER	10.2.60.26	10.2.60.24	0
21:21:42.816		→ REGISTER	203 REGISTER	10.2.60.24	10.2.60.21	0
21:21:42.817	← 200 OK		203 REGISTER	10.2.60.24	10.2.60.26	0
21:21:42.817		← 100 TRYING	203 REGISTER	10.2.60.21	10.2.60.24	
21:21:42.817		← 200 OK	203 REGISTER	10.2.60.21	10.2.60.24	0
21:23:42.900	→ REGISTER		204 REGISTER	10.2.60.26	10.2.60.24	0
21:23:42.903		→ REGISTER	204 REGISTER	10.2.60.24	10.2.60.21	0
21:23:42.904		← 100 TRYING	204 REGISTER	10.2.60.21	10.2.60.24	
21:23:42.905	← 200 OK		204 REGISTER	10.2.60.24	10.2.60.26	0

在第一個**REGISTER**中,SIP電話在會話描述協定(SDP)的**Content-Type**部分內傳送更多詳細資訊 ,如下圖所示:

SIPMSG:															
REGISTER sip:cucm01 SIP/2.0															
Via: SIP/2.0/TLS 172.16.84.116:53479:branch=z9hG4bK000067b6															
Call-ID: 00505696-ff30005e-00005f3d-00000f170172.16.84.116															
CSea: 2150 REGISTER															
Contact: <sip:01d82b96-c892-24ea-0794-46b5b9e55f6d@172.16.84.116:53479;transport=tls>;+sip.instance="<urn:uuid:00000000-0000-0000-0000-00505696ff30>";</urn:uuid:00000000-0000-0000-0000-00505696ff30></sip:01d82b96-c892-24ea-0794-46b5b9e55f6d@172.16.84.116:53479;transport=tls>															
+u.sip!devicename.ccm.cisco.com="alimad";+u.sip!model.ccm.cisco.com="503";video															
From: <sip:2001@cucm01>:tag=00505696ff30067500002408-00000a99</sip:2001@cucm01>															
To: <sip:2001@cucm01></sip:2001@cucm01>															
Max-Forwards: 70															
Aute: <sin:expe@l.apolo.local:transport=tls:lr>.<sin:10.15.13.15:5061:transport=tls:zone=id=1:directed:lr>.<sin:cucm@l:transport=tcn:lr></sin:cucm@l:transport=tcn:lr></sin:10.15.13.15:5061:transport=tls:zone=id=1:directed:lr></sin:expe@l.apolo.local:transport=tls:lr>															
User-Agent: Cisco-CSF															
Expires: 3600															
Date: Thu. 17 Jun 2021 23:56:04 GMT															
Proxy-Authorization: Digest username="Alimad", realm="expe01.apolo.local", uri="sip:cucm01", response="32872bf3e4ae98deff90f8f415cdfe24", nonce="2876968fd795de889669f607a2f381f09dc5ab24d18fe6af2d673a337f71", opaque="AQAAAGu/AqvV02M9X4g88YpmF/3z7P0x", cnonce="000043af", qop=auth, nc=00000001, algorithm=MD5 Supported: replaces,join,sdp=anat,norefersub,resource-priority,extended-refer,X-cisco-callinfo,X-cisco-serviceuri,X-cisco-serviceuro,T.acis															
								Reason: SIP :cause=200:text="cisco-alarm:111 Name=alimad ActiveLoad=Jabber for Windows-12.8.1.52494 InactiveLoad=Jabber for Windows-12.8.1.52494 Last=Annlication-Requested-Destrow'							
								Mime-Version: 1.0							
								Content-Type: multipart/mixed;boundary=uniqueBoundary							
Content-Length: 1271															
uniqueBoundary															
Content-Type: application/x-cisco-remotecc-request+xml															
Content-Disposition: session;handling=optional															
xml version="1.0" encoding="UTF-8"? <x-cisco-remotecc-request> <bulkregisterreq> <contact all="true"> <register></register> </contact> </bulkregisterreq></x-cisco-remotecc-request>															
uniqueBoundary															
Content-Type: application/x-cisco-remotecc-request+xml															
Content-Disposition: session;handling=optional															
xml version="1.0" encoding="UTF-8"? <x-cisco-remotecc-request> <optionsind> <combine max="6">< <remotecc> <status></status> </remotecc></combine></optionsind></x-cisco-remotecc-request>															
<service-control></service-control> <dialog usage="hook status"> <unot></unot> </dialog> <dialog usage="shared line"></dialog>															
<unot></unot> <presence usage="blf speed dial"> <unot></unot> </presence> <joinreq></joinreq>															
<cfwdall-anyline></cfwdall-anyline> <coaching></coaching> <oosalarm></oosalarm> <x-cisco-number></x-cisco-number> <bfcp></bfcp> <ix></ix>															
<gatewayrecording></gatewayrecording> <conferencedisplayinstance></conferencedisplayinstance>															
uliqueBoundary															

下一個REGISTER消息不包含任何其他Content-Type資訊。



MRASIP keep Alive(CUCM)CUCMkeep AliveCUCM MRAExpressway-CCUCM(TCP)CUCMSIP

疑難排解

收集下一個日誌檔案:

- Expressway C和E診斷日誌。下載Expressway診斷日誌和資料包捕獲 |思科虛擬活動

- CUCM跟蹤。Unified Communications Manager - RTMT跟蹤收集 | 思科虛擬活動

— 呼叫管理器

— 事件檢視器系統和應用程式日誌。

- IP電話埠。如何使用思科78XX和88XX電話收集合作終端PRT檔案 — 思科

Expressway日誌是即時獲取的,不可能知道何時是啟動/停止診斷日誌的好時機,因此如果您想檢 視上述資訊,可以執行下面的步驟:

可選故障排除過程

可以使用即時監控工具(RTMT)設定警報。 其理念是使用Windows Secure Copy(WinSCP)從 Expressway獲取日誌,緊接著收到來自RTMT工具的電子郵件警報。

附註:必須已配置電子郵件伺服器。<u>https://www.cisco.com/c/en/us/support/docs/unified-</u> communications/unity-connection/117890-technote-cucm-00.html

配置RTMT警報

一旦SIP電話處於Partial Registered狀態,可以使用RTMT工具建立傳送電子郵件的警報,以便按照 以下步驟實施警報:

- 1. 開啟RTMT工具,然後導航到Performance > Performance。然後選擇Cisco CallManager,查 詢PartialRegisteredPhone。
- 2. 然後按一下右鍵並選擇設定警報/屬性。



- 3. 選中Enable Alert, 並將Severity設定為Critical。
- 4. 在Threshold配置下, 選中Value, 然後可以將Over設定為1。
- 5. 選中Enable Email選項。
- 6. 在**Trigger Alert Action**下,選擇**Configure**,選擇**Add**,然後為Action List設定一個新名稱,在 此示例中,該名稱是emai。
- 7. 新增 要接收的警報的電子郵件地址。

8. 選擇Save。

Alert Properties: General ×	Alert Properties: Threshold \times	Alert Properties: Email Notif ×	Alert Action ×		
Name: licucm011Cisco CallManager/PartiallyRegisteredPhone Enable Alert Seventy: Critical Description:	Threshold: Trigger alert when following condition is met Value: ☑ Over 1 OR □ Under	Image: Second secon	Action List Add Default Edit email Defete		
	Value Calculated As:	User-defined email text:	Action Config ×		
Recommended Action:	O Delta (curr - prev) Delta Percentage ((curr - prev)/prev) Duration:	Name: email Description:			
	Trigger alert only when value constantly below or over threshold for 0 seconds Trigger alert immediately		Recipients: Recipient Enable email@apoto.local iz Delete		
<back next=""> Cancel</back>	<back next=""> Cancel</back>	<back cancel<="" save="" th=""><th>OK Cancel</th></back>	OK Cancel		

從RTMT工具收到警報後,您可以轉至Expressway伺服器並執行以下步驟:

1. 開啟WinSCP,使用IP地址或完全限定域名(FQDN)和根憑證訪問Expressway C和E。

- 2. 導航到/mnt/harddisk/log/。
- 3. 下載重要檔案: network_log消息developer_log

使用Expressway可以非常快速地覆蓋日誌檔案的資訊,確保您獲得具有正確時間戳的檔案。

5 log - root@10.15.13.15 - WinSCP −										
Local Mark Files Commands Session Options Remote Help										
🖽 🚟 😓 Synchronize 🔳 🦑 😰 🗇 Queue 🔹 Transfer Settings Default 🔹 🥔										
🖵 root@10.15.13.15 × 🛒 New Session										
🖹 My documer 🕶 🚰 🕶 🔽 🔹 🖘 😴 💼 🔂 🏠 🔁 🗞					📙 log 🔹 🕾 🐨 🗣 🖘 🔹 🖻 😰 🏠 🎜 Find Files 😪					
🕼 Upload 👻 🗹 Edit 👻 🛣 🖓 Properties 🗳 New 👻 🕀 🖂 🕅					📔 Download 👻 🗹 Edit 👻 🛣 🖓 Properties 📑 New 👻 🖃 🗑					
C:\Users\administrator.APOLO\Documents\					/mnt/harddisk/log/					
Size	Туре	Changed			Name	v	Size	Changed	Rights	Owner
	Parent directo	6/17/2021	5:26:3		sensors	.2	51,39	6/22/2021 6:17:2	rw-rr	root
	File folder	6/17/2021	5:26:4		sensors	.1	51,40	6/23/2021 6:23:3	rw-rr	root
	File folder	6/14/2021	7:10:5		sensors		36,04	6/24/2021 11:17:	rw-rr	root
					📄 package	esd.log	1 KB	6/17/2021 4:54:5	rw-rr	root
					🗋 network	k_log.11	10,24	6/18/2021 9:39:2	rw-rr	root
					network	k_log.10	10,24	6/19/2021 4:59:3	rw-rr	root
					network	k_log.9	10,24	6/20/2021 1:42:2	rw-rr	root
					network	k_log.8	10,24	6/20/2021 10:25:	rw-rr	root
					🗋 network	k_log.7	10,24	6/21/2021 6:41:5	rw-rr	root
					🗋 network	k_log.6	10,24	6/22/2021 4:31:1	rw-rr	root
					network	k_log.5	10,24	6/22/2021 2:21:0	rw-rr	root
					network	k_log.4	10,24	6/23/2021 12:10:	rw-rr	root
					network	k_log.3	10,24	6/23/2021 9:59:5	rw-rr	root
					network	k_log.2	10,24	6/23/2021 7:47:3	rw-rr	root
	.13.15 - W Commands ize ■ # 5 × ₽ N. 9 • Y • I it • × € size	13.15 - WinSCP Commands Session Option ize ■ ♥ ■ ♥ ♥ @ @ Que 5 × ♥ New Session ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ it ▼ ★ ♥ Poperties ■ it ▼ ★ ♥ Poperties ■ it ▼ ★ ♥ Poperties ■ it ▼ ★ ♥ I ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥ ♥	13.15 - WinSCP Commands Session Options Remote F ize ■ P ■ Queue ▼ Trans 5 × ♥ New Session • ♥ ♥ ■ Properties ■ New ▼ ♥ it ▼ ★ ★ Properties ■ New ▼ ♥ it ▼ ★ ★ Properties ■ New ▼ ♥ File folder 6/17/2021 File folder 6/14/2021 File folder 6/14/2021	13.15 - WinSCP Commands Session Options Remote Help ize ■ ■ ■ ■ ● ■ Queue ▼ Transfer Settin 5 × ■ New Session ■ ▼ ▼ ▼ ▼ ■ ■ ■ ■ ■ ■ ■ ■ it ▼ × ■ ■ Properties ■ New ▼ ■ ■ ♥ tor.APOLO\Documents\ Size Type Changed Parent directo 6/17/2021 5:26:3 File folder 6/14/2021 5:26:4 File folder 6/14/2021 7:10:5	A13.15 - WinSCP Commands Session Options Remote Help ize ■ ■ ■ ● ● Queue ▼ Transfer Settings Default ▼ 5 × ● New Session ■ ▼ ▼ ▼ ▼ ▼ ■ ■ ● ● ● ● ● ● ● ● ● ● ● ●	13.15 - WinSCP Commands Session Options Remote Help ize Image: Commands Session Ize Image: Commands Session Image: Size Image: Commands Session Image: Size Image: Commands Session Size Type Parent directo 6/17/2021 5:26:3 File folder 6/14/2021 7:10:5 File folder 6/14/2021 7:10:5 Image: Parent directo File folder File folder 6/14/2021 7:10:5	13.15 - WinSCP Commands Session Options Remote Help ize Image: Session Image: Sesesion Image: Sessi	I.13.15 - WinSCP Commands Session Options Remote Help ize Image: Commands Session Image: Session Size Type Changed Sessions: 1 Image: Session Session: 1	x.13.15 - WinSCP Commands Session Options Remote Help ize Image: Commands Session S × Image: Commands Session Size Type Commands Session Changed Parent director 6/17/2021 5:26:4 File folder 6/14/2021 7:10:5 Image: Commands Session Solution Image: Commands Session <td< td=""><td>x1.3.15 - WinSCP Commands Session Options Remote Help zze Image: Commands Session S × Image: Commands Session Size Type Changed Parent director 6/17/2021 5:26:3 File folder 6/17/2021 5:26:4 File fo</td></td<>	x1.3.15 - WinSCP Commands Session Options Remote Help zze Image: Commands Session S × Image: Commands Session Size Type Changed Parent director 6/17/2021 5:26:3 File folder 6/17/2021 5:26:4 File fo

在network_log檔案中包含的資訊中,可以確定REGISTER消息是否按時到達CUCM伺服器,並且如 果發生任何問題,IP電話會傳送一條或全部線路的REGISTER消息,以便重新註冊。

目前,CUCM無法通知部分註冊的SIP電話,已開啟一個允許CUCM的增強功能:CSCvw49110。

如增強請求所述,解決方法是:

- 重置端點以強制重新註冊所有行。
- •此外,將CUCM上SIP配置檔案中的**計時器註冊增量**值增加到20(預設值為5),以容忍更多延 遲並降低發生這種情況的可能性。