

將ISE 3.3與JAMF整合為MDM伺服器

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簡介

本文檔介紹使用JAMF PRO例項10.48.X實施身份服務引擎v3.3的必要步驟。

必要條件

需求

思科建議瞭解以下主題：

- 身分識別服務引擎 (ISE)
- 作為MDM解決方案的JAMF

採用元件

本檔案中的資訊是根據以下軟體和版本：

- 思科身分識別服務引擎(ISE)v3.3
- JAMF PRO v10.48.1-t1689600654

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除 (預設) 的組態來啟動。如果您的網路運作中，請確保您瞭解任何指令可能造成的影響。

背景資訊

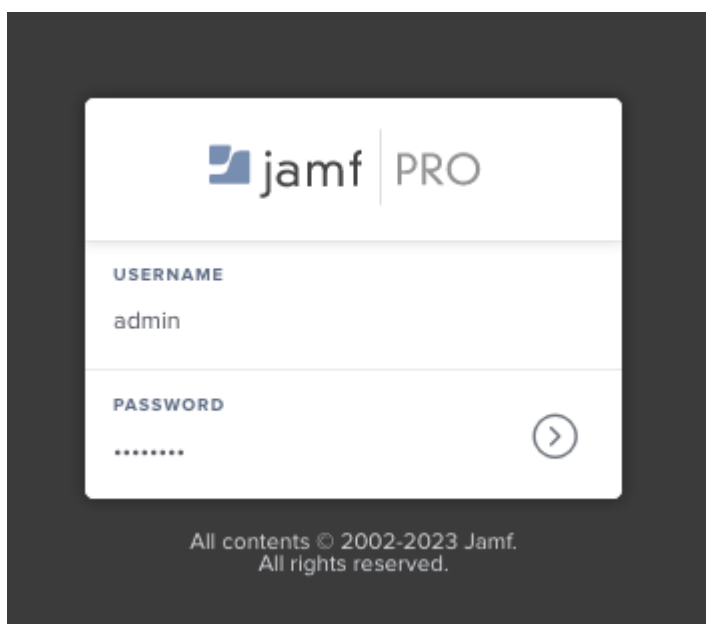
思科ISE支援JAMF作為MDM伺服器，用於管理Windows電腦。當這些電腦 (由JAMF管理) 連線並驗證時，ISE從JAMF伺服器檢索合規性資訊以檢索這些裝置的安全狀態的其他資訊。

根據ISE中配置的標準和條件，它使用資訊通過允許/拒絕這些電腦來實施安全訪問安全。因此，此實施有助於識別攻擊者可以利用的潛在漏洞和安全漏洞。

設定

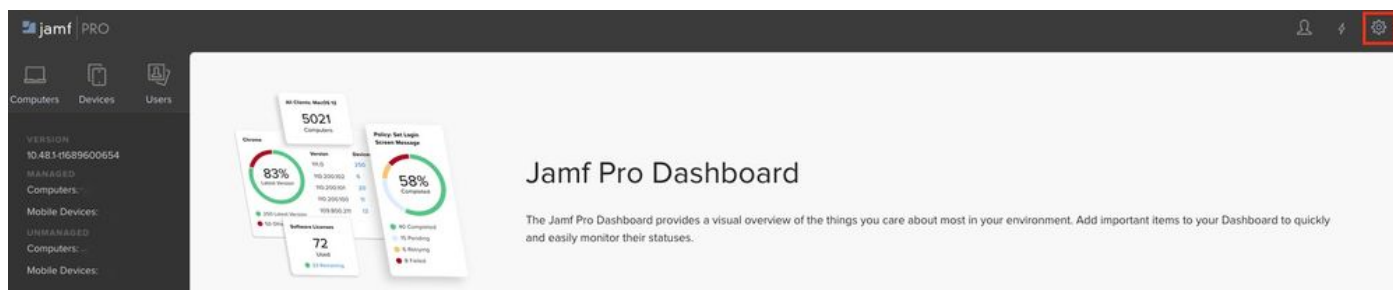
為MDM連線準備JAMF PRO

步驟1. 使用管理員許可權帳戶登入JAMF雲，網址為：
: https://YOUR_ACCOUNT.jamfcloud.com/index.html。



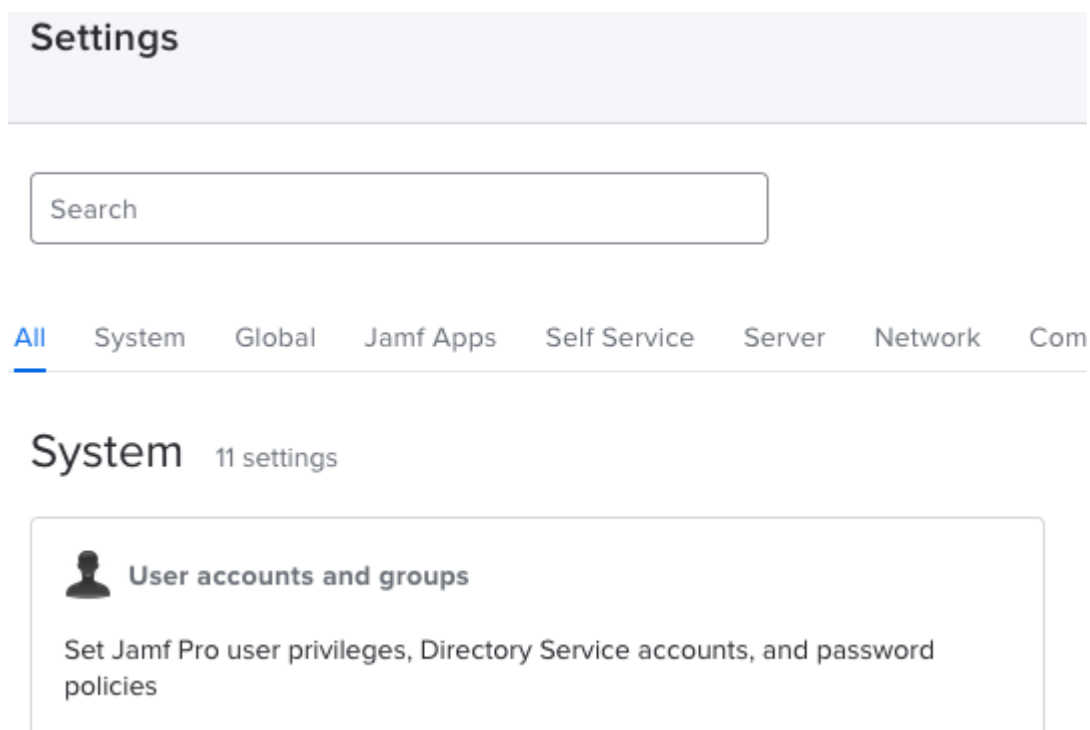
JAMF PRO登入頁

步驟2.從「Main Menu (主選單)」中選擇齒輪圖示。



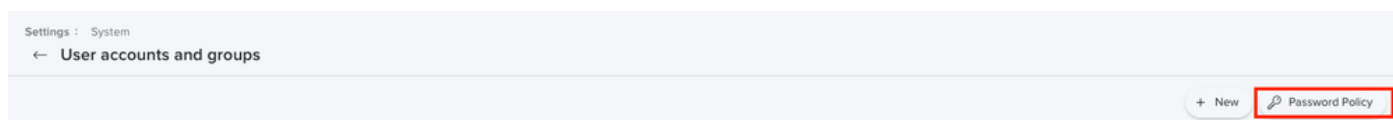
JAMF PRO控制面板

步驟3. 在主功能表上，選擇System > Useraccounts and groups。



JAMF PRO系統設定

步驟4 .選擇Password Policy選項。



JAMF PRO使用者帳戶和組

步驟5. 在本節中，確認除了承載令牌身份驗證外，您還有選項Allow Basic Authentication。



附註：從JAMF PRO v10.35開始，預設情況下不啟用API的基本身份驗證。因此，您必須啟用這些功能以確保MDM整合正常運行。

有關更多資訊，請檢視[標準API身份驗證更改](#)。

步驟6。啟用最後一項功能後，請前往步驟3中所述的「Menu Settings」，然後尋找「Network IntegrationMenu」並選取。

The screenshot shows the 'Settings' application interface. At the top, there is a search bar containing the text 'network integration' and a 'Clear' button to its right. Below the search bar, there are several category tabs: 'All', 'System', 'Global', 'Jamf Apps', 'Self Service', 'Server', and 'Network'. The 'Network' tab is currently selected. Below the tabs, the search results are displayed under the heading 'Network' with the text '1 result found for "network integration"'. A single result is shown in a card format with a globe icon, the title 'Network integration', and the description 'Integrate with a network access management service'.

JAMF PRO網路整合

步驟7.繼續選擇+ New以為ISE 3.3新增新例項。

The screenshot shows the 'Network integration' settings page. At the top, there is a breadcrumb trail 'Settings > Network' and a back arrow next to 'Network integration'. In the top right corner, there is a '+ New' button highlighted with a red box. Below this, there is a table with a header 'NAME' and a single row containing the text 'No Network integration'.

JAMF PRO網路整合設定

步驟8。在Network Access Management Service下的下拉選單中，保留標籤為Cisco ISE的選項。

- 接下來，在Display Name選單中提供一個名稱，如本例所示。
- 對於ISE的初始設定和連線，配置可以保留這些標準配置。
- 請繼續Save配置。

Network Access Management Service Network access management service to use for the network integration

Cisco ISE

Display Name Display name for the network integration
isev33

Advanced Computer Search For Compliance Verification Select the saved search for Cisco ISE to use to verify computers compliant to organizational standards
None

Computer Compliance Verification Failure Message Optional message to display to the user via Cisco ISE when the computer is not compliant

Computer Compliance Remediation Message Optional message to display to the user via Cisco ISE about how to become compliant

Advanced Mobile Device Search For Compliance Verification Select the saved search for Cisco ISE to use to verify mobile devices compliant to organizational standards
None

Mobile Device Compliance Verification Failure Message Optional message to display to the user via Cisco ISE when the mobile device is not compliant

Mobile Device Compliance Remediation Message Optional message to display to the user via Cisco ISE about how to become compliant

Remote Lock And Wipe Passcode Assignment Method For Computers Method to use to assign the passcode when locking or wiping computers via Cisco ISE
Create Random Passcode

Cancel Save

配置示例與ISE的網路整合

步驟9.整合將生成具有以下格式的網路整合

URL:https://YOUR_ACCOUNT.jamfcloud.com/networkIntegrationEndpoint/ID. 儲存此URL，因為您必須以後使用它來連線ISE。

為MDM連線準備ISE

步驟1.選擇Menu > Administration > Network Resources > External MDM，然後點選Add。

Identity Services Engine Administration / Network Resources

Deployment **Licensing** Certificates Logging Maintenance Upgrade Health Checks Backup & Restore Admin Access Settings

MDM / UEM Integrations

Unified Endpoint Management (UEM) and Mobile Device Management (MDM) integrations enable you to secure, monitor, and manage the endpoints on your network. Integrate UEM and MDM platforms with Cisco ISE to allow Cisco ISE to query the integrations for endpoint attributes. You can then use these attributes to create and apply necessary access control policies. Also, you can configure [General MDM Settings](#).

Add Duplicate Edit Delete Change Timeout Filter Download

<input type="checkbox"/>	MDM / UEM Integration Name	Status	Service Provider	Hostname / IP Adresse...	Description	Timeout (msec)
No data found.						

ISE MDM整合選單

步驟2. 將安裝命名為MDM/UEM整合名稱段。

- 在主機名/IP地址部分，從前面步驟中生成的URL中選擇YOUR_ACCOUNT.jamfcloud.com。
- 在埠中，為JAMF PRO例項的HTTPS連線選擇443。
- 在Instance Name部分中，繼續輸入值，其中所建立的URL中缺少一節(在這種情況下

: /networkIntegrationEndpoint/ID) 。

- 輸入具有對JAMF PRO例項完全訪問許可權的使用者名稱以及相應的密碼。
- 將MDM伺服器的Status更改為Enabled。

Identity Services Engine Administration / Network Resources

Network Devices Network Device Groups Network Device Profiles External RADIUS Servers RADIUS Server Sequences NAC Managers External MDM

MDM / UEM Integrations > New

New Server

Cisco ISE supports mobile device management and Microsoft configuration management servers. Click [here](#) to view the list of MDM servers supported by Cisco ISE.

MDM / UEM Integration Name*
JAMF_PRO

Description

Server Type
Mobile Device Manager

Authentication Type
Basic

Hostname / IP Address*
YOUR_ACCOUNT.jamfcloud.com

Port*
443 (max length: 5)

Instance Name
/networkIntegrationEndpoint/ID

Username*
admin

Password*
.....

Polling Interval*
240

MDM/UEM Device Compliance Timeout*
30000
1 to 30000 (milliseconds)

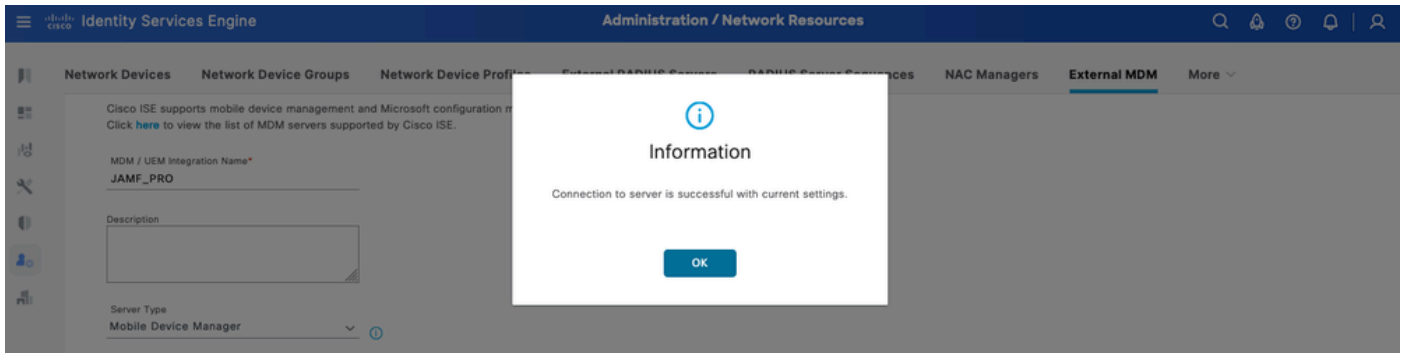
When re-authenticating an endpoint into the network Cisco ISE refers to cached MDM attributes of the endpoint. If the age of the cached MDM attributes is greater than the interval configured, Cisco ISE sends a fresh query to the MDM server for the endpoint's attributes. If there is a change in compliance status, Cisco ISE issues a Change of Authorization.

Compliance Cache Expiration Time*
1
1 to 10080 (minutes)

Status
Enabled

ISE MDM JAMF PRO配置示例

步驟3。向下滾動，然後繼續到測試連線。如果連線成功，則顯示此影象。如果您沒有收到相同的輸出，請參閱本文檔中的故障排除部分。



成功連線到MDM JAMF帳戶





步驟4。先前在選項中選擇OK。在頁面底部，查詢Device Identifier，其中ISE與終端會話相關聯。

- 根據您的場景，您可以選擇裝置的MAC地址或證書的屬性。
- 自定義此部分後，請儲存配置。

 This MDM or UEM server supports Cisco ISE API Version 3.

Device Identifier

Configure Cisco ISE to identify endpoints through variables other than MAC addresses. This allows accurate identification of endpoints even the MAC address presented Cisco ISE is not necessarily the MAC address of the physical network interface card (for example, when MAC address randomisation is enabled). Check the check boxes next to the device identifiers to be used. Drag and drop the device identifiers to define the sequence of verification. If the first device identifier on the list is not available for an endpoint, then Cisco ISE checks for the second identifier on the list, and so on.

Device Identifier 	Enabled
 1. Legacy MAC Address	<input checked="" type="checkbox"/>
 2. Cert - SAN URI, GUID	<input type="checkbox"/>
 3. Cert - CN, GUID	<input type="checkbox"/>

Cancel

Save

MDM伺服器的其他配置

驗證與JAMF PRO例項整合的初始連線。

封包擷取：如果連線成功，您可以檢視從ISE PAN伺服器傳送到JAMF PRO例項的HTTPS流量：

Protocol	Length	Info
TCP	74	47386 → 3128 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM TSval=211264130 TSecr=0 WS=128
TCP	74	3128 → 47386 [SYN, ACK] Seq=0 Ack=1 Win=65160 Len=0 MSS=1460 SACK_PERM TSval=503104063 TSecr=211264130 WS=128
TCP	66	47386 → 3128 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=211264131 TSecr=503104063
HTTP	183	CONNECT → 443 HTTP/1.1
TCP	66	3128 → 47386 [ACK] Seq=1 Ack=118 Win=65152 Len=0 TSval=503104064 TSecr=211264131
HTTP	105	HTTP/1.1 200 Connection established
TCP	66	47386 → 3128 [ACK] Seq=118 Ack=40 Win=29312 Len=0 TSval=211264384 TSecr=503104317
TLSv1..	387	Client Hello
TCP	66	3128 → 47386 [ACK] Seq=40 Ack=439 Win=64896 Len=0 TSval=503104318 TSecr=211264385
TLSv1..	166	Server Hello
TCP	1254	3128 → 47386 [PSH, ACK] Seq=140 Ack=439 Win=64896 Len=1188 TSval=503104457 TSecr=211264385 [TCP segment of a reassembled PDU]
TCP	66	47386 → 3128 [ACK] Seq=439 Ack=1328 Win=32128 Len=0 TSval=211264524 TSecr=503104457
TCP	1254	3128 → 47386 [PSH, ACK] Seq=1328 Ack=439 Win=64896 Len=1188 TSval=503104457 TSecr=211264385 [TCP segment of a reassembled PDU]
TLSv1..	2641	Certificate
TCP	66	47386 → 3128 [ACK] Seq=439 Ack=5091 Win=40192 Len=0 TSval=211264525 TSecr=503104457
TLSv1..	413	Server Key Exchange, Server Hello Done
TLSv1..	141	Client Key Exchange
TCP	66	3128 → 47386 [ACK] Seq=5438 Ack=514 Win=64896 Len=0 TSval=503104459 TSecr=211264526
TLSv1..	72	Change Cipher Spec
TLSv1..	111	Encrypted Handshake Message
TCP	66	3128 → 47386 [ACK] Seq=5438 Ack=520 Win=64896 Len=0 TSval=503104462 TSecr=211264529
TCP	66	3128 → 47386 [ACK] Seq=5438 Ack=565 Win=64896 Len=0 TSval=503104463 TSecr=211264529
TLSv1..	117	Change Cipher Spec, Encrypted Handshake Message
TLSv1..	360	Application Data
TCP	66	3128 → 47386 [ACK] Seq=5489 Ack=859 Win=64640 Len=0 TSval=503104601 TSecr=211264668
TLSv1..	1617	Application Data, Application Data
TCP	66	47386 → 3128 [ACK] Seq=859 Ack=7040 Win=46208 Len=0 TSval=211264922 TSecr=503104855

資料包捕獲使用JAMF例項連線的示例

ISE上的日誌：ISE相應地處理和分析資料，如ise-psc.log所示：

```

DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.api.MdmServerInfoApi -:::- inside the method : callMdmServerInfo
TRACE [admin-http-pool16][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -:::- Inside MDMVerifyServer.verifyServer
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -:::- apiVersionSb : 3, mdmApiVersion : 3
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -:::- MDM Rest API Server Query Success
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -:::- MDM Rest API Server Query Parameters
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -:::- 1. Connecting to the MDM server
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- sendGETRequestDom: start HTTP request
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- sendGETRequestDomNonComp: start HTTP request
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- ===mdmFlowInfo===null,====serverInfo====
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- QueryType is heartbeatQuery
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- using httpClient for http query
INFO [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- GET: MDM Server URL: https://YOUR_ACCOUNT.jamfcloud.com/enroll
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- Proxy Config in request = [PROXY_HOST, PROXY_PORT]
.
.
INFO [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- MDM Server Response Code: 200
TRACE [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::-
Response data received from the MDM server : <?xml version="1.0" encoding="UTF-8"?><ise_api><name>mdminfo</name></ise_api>
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- sendGETRequestDom: end HTTP request
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- sendGETRequestDomNonComp: end HTTP request
TRACE [admin-http-pool16][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -:::- isMdmSettingsIdNotNull flag is true
DEBUG [admin-http-pool16][[]] cisco.cpm.mdm.api.MdmServerInfoApi -:::- returning from the method : callMdmServerInfo
apiPath: /ID/ciscoise/v3
redirectUrl: https://YOUR_ACCOUNT.jamfcloud.com/enroll
queryMaxSize: 1000
apiVersion: 3
vendor: JAMF Software
productName: JSS
productVersion: 10.48.1-t1689600654
COMMA: ,

```

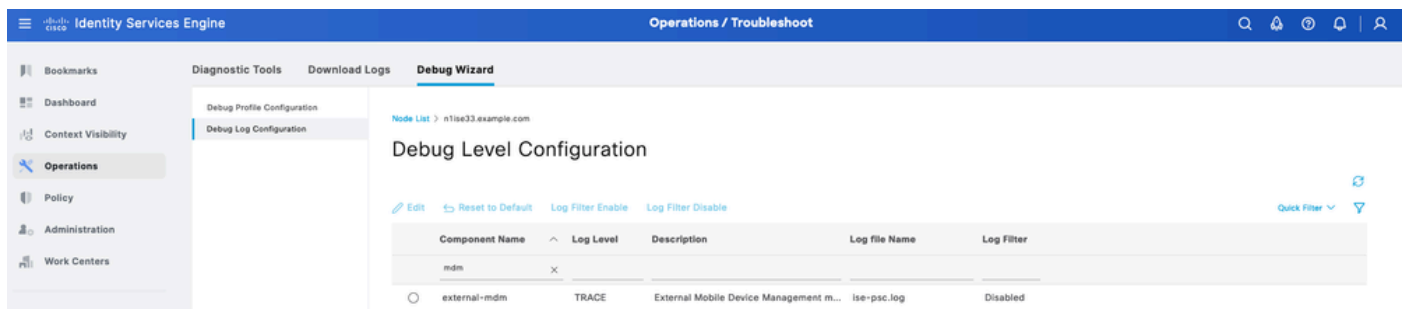
```
errorMsg: null
errorOccurred: false
}
```

MDM伺服器無法訪問故障排除

此整合的基礎包括ISE定期對JAMF-PRO例項執行的查詢。執行故障排除的參考點 (在此例項中) 是主管理節點(PAN)。 PAN節點是連線方法被配置為到達MDM伺服器的位置。此相同的方法會在實施的所有節點中複製。

後續步驟可用於排除可達性問題。

步驟1. 在PAN節點的TRACE級別上啟用external-mdm元件。

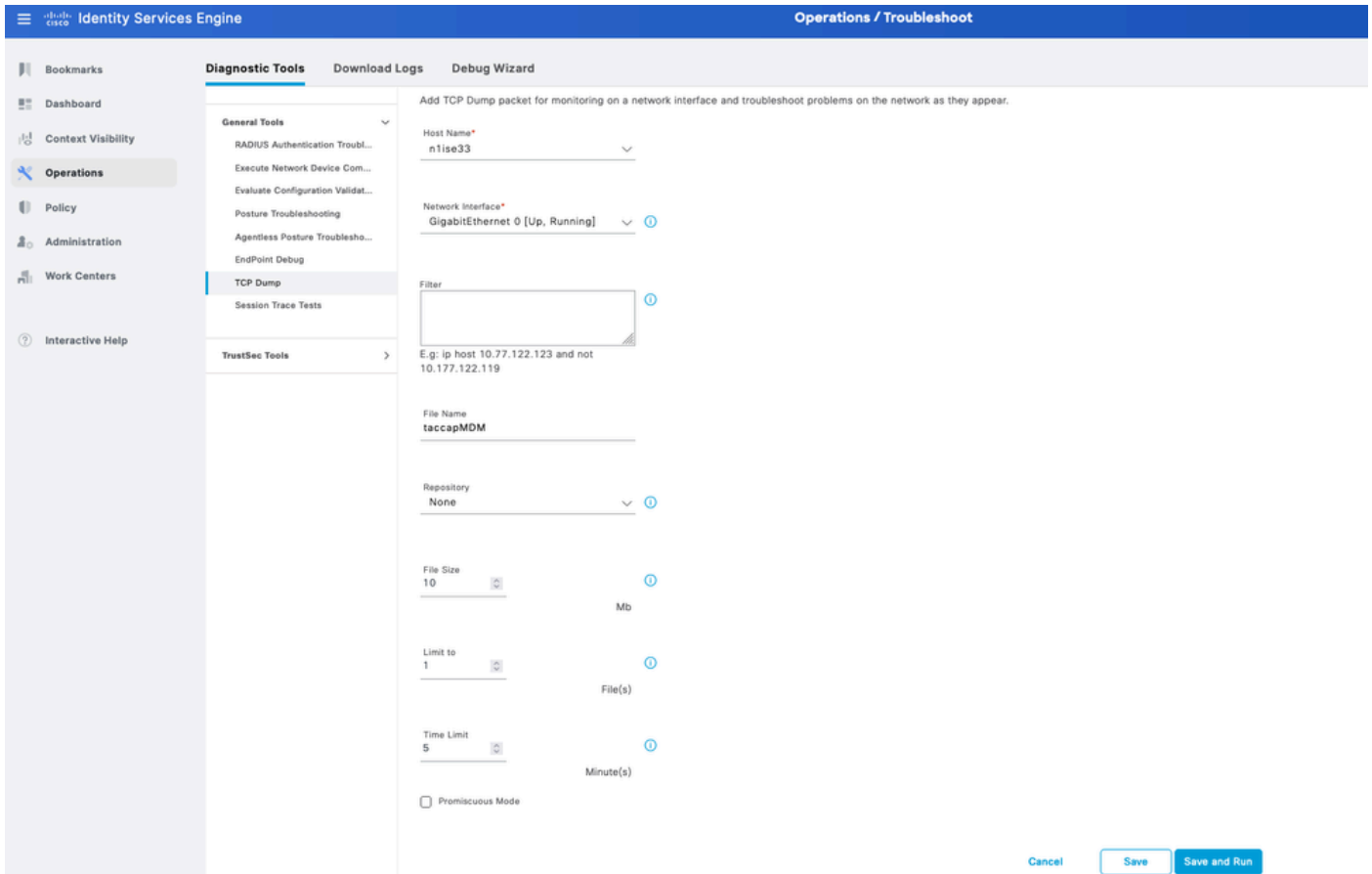


The screenshot shows the 'Debug Wizard' interface in the Cisco Identity Services Engine (ISE) console. The page title is 'Debug Level Configuration' for node 'n1ise33.example.com'. The interface includes a sidebar with navigation options like 'Bookmarks', 'Dashboard', 'Context Visibility', 'Operations', 'Policy', 'Administration', and 'Work Centers'. The main content area shows a table with columns for 'Component Name', 'Log Level', 'Description', 'Log file Name', and 'Log Filter'. The 'external-mdm' component is listed with a 'TRACE' log level and a 'Disabled' log filter. There are also buttons for 'Edit', 'Reset to Default', 'Log Filter Enable', and 'Log Filter Disable'.

Component Name	Log Level	Description	Log file Name	Log Filter
mdm	x			
external-mdm	TRACE	External Mobile Device Management m...	ise-psc.log	Disabled

跟蹤級別中的外部MDM元件進行故障排除

步驟2. 從PAN節點設定捕獲並保存配置。



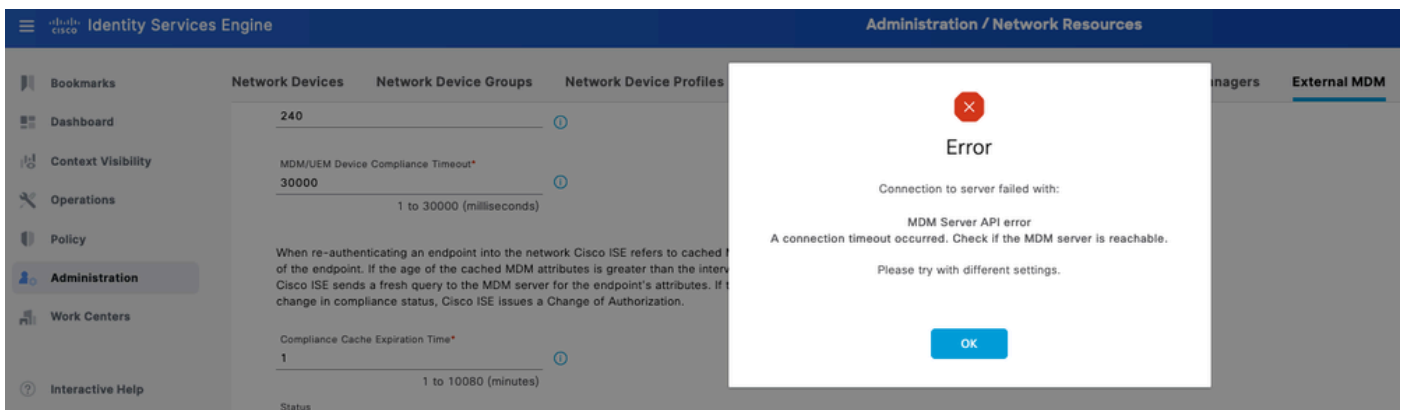
收集MDM連線資訊的資料包捕獲示例

步驟3. 瀏覽外部MDM菜單。從步驟2運行捕獲，然後選擇Test Connection. 按鈕等待錯誤出現。

步驟4. 停止步驟2中的捕獲。檢視對應於ise-psc.log的日誌以分析行為。

方案1. 連線超時

在此場景中，當您在測試與JAMF的連線時在ISE中收到此錯誤時：



MDM錯誤連線超時

與外部MDM相關的日誌顯示以下資訊：

```
TRACE [admin-http-pool26][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::::- Inside MDMVerifyServer.verify
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::::- API version retrieved from I
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::::- apiVersionSb : 3, mdmApiVer
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::::- MDM Rest API Server Query S
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::::- MDM Rest API Server Query P
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::::- 1. Connecting to the MDM se
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmRESTClient -:::::- sendGETRequestDom: start HTTP r
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmRESTClient -:::::- sendGETRequestDomNonComp: start
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmRESTClient -:::::- ===mdmFlowInfo===null,=====serve
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmRESTClient -:::::- QueryType is heartbeatQuery
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmRESTClient -:::::- using httpClient for http query
INFO [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmRESTClient -:::::- GET: MDM Server URL: https://YOU
INFO [Timer-12][[]] cisco.mnt.common.utility.AlarmMessageDiskQueue -:::::- Inside dequeue
INFO [Timer-12][[]] cisco.mnt.common.utility.AlarmMessageDiskQueue -:::::- root exists
INFO [Timer-12][[]] cisco.mnt.common.utility.AlarmMessageDiskQueue -:::::- alarm.1692086243915 deleted
INFO [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmServersCache -:::::- MDM server - Status : Active, r
ERROR [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmRESTClient -:::::- Error message while connecting to
Connection Failed to the MDM server host - YOUR_ACCOUNT.jamfcloud.com, and port - 443 : Connection time
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmRESTClient -:::::- sendGETRequestDom: end HTTP req
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.util.MdmRESTClient -:::::- sendGETRequestDomNonComp: end H
ERROR [admin-http-pool26][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::::- Exception occurred while co
ERROR [admin-http-pool26][[]] cisco.cpm.mdm.api.MdmClient -:::::- A connection timeout occurred. Check
DEBUG [admin-http-pool26][[]] cisco.cpm.mdm.api.MdmServerInfoApi -:::::- returning from the method : ca
    apiPath: null
    redirectUrl: null
    queryMaxSize: null
    apiVersion: null
    vendor: null
    productName: null
    productVersion: null
    COMMA: ,
    errorMsg: null
    errorOccurred: true
}
```

在封包擷取中，檢視下一個資訊：

DNS流量 — 如果在整合的設定部分輸入主機名，ISE將對您的JAMF相關例項執行查詢。如果您沒有看到主機名的解析度，請嘗試使用IP地址。此選項可用於配置，而不是配置主機名。

Source	Destination	Protocol	Length	Info
10.88.240.21	10.88.240.59	DNS	85	Standard query 0x5a75 A
10.88.240.21	10.88.240.59	DNS	85	Standard query 0x9f69 A
10.88.240.59	10.88.240.21	DNS	206	Standard query response
10.88.240.59	10.88.240.21	DNS	158	Standard query response

MDM流中的DNS流量

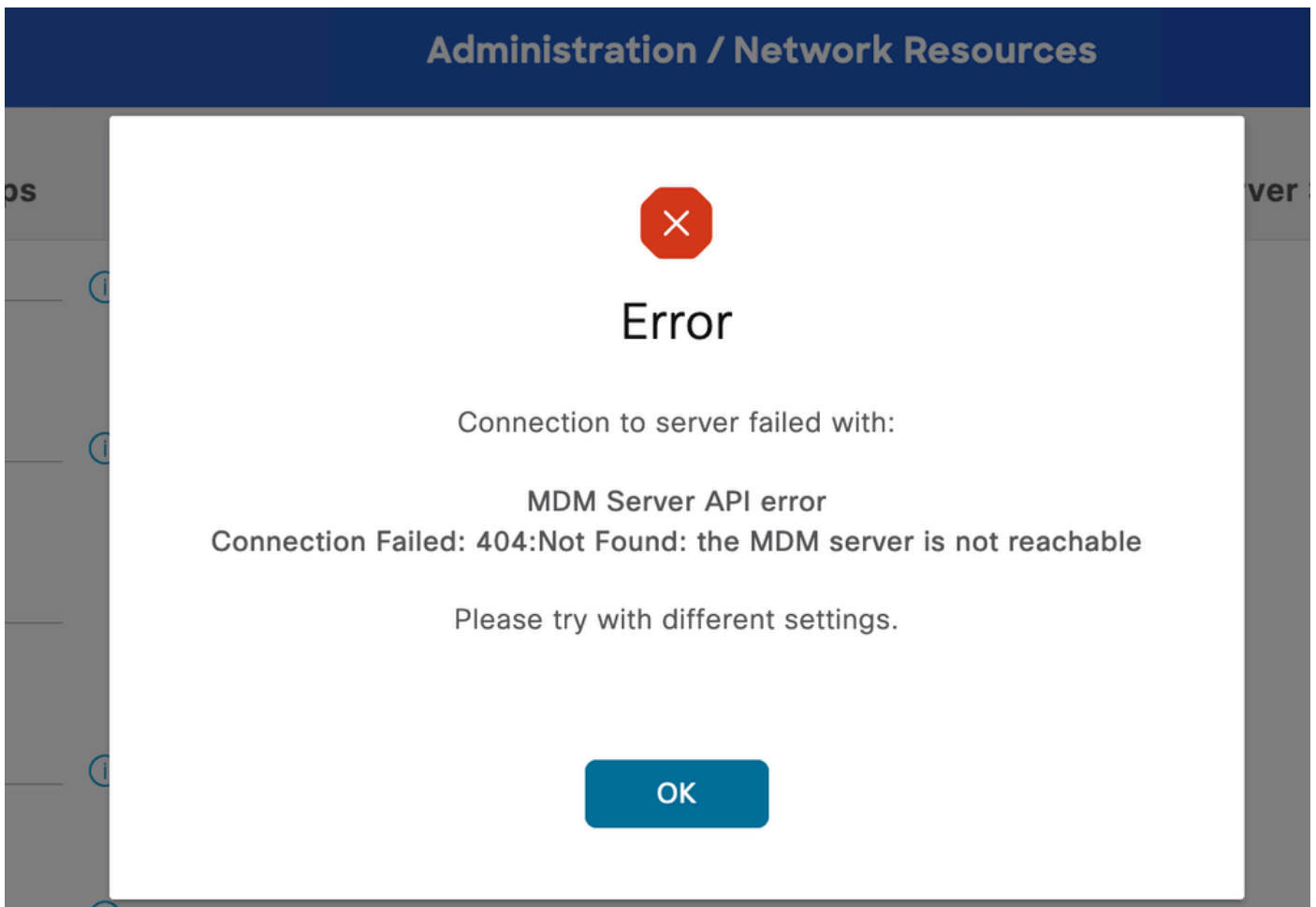
MDM連線埠中的重新傳輸 — 如果直接查詢IP地址（在DNS查詢或MDM設定中提供），您可能看到重複的SYN資料包。這表示沒有直接路由到JAMF例項或外部裝置干擾443埠上的通訊。

Source	Protocol	Length	Info
10.88.240.21	TCP	74	22432 → 443 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM TSval=272773814 TSecr=0 WS=128
10.88.240.21	TCP	74	[TCP Retransmission] 22432 → 443 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM TSval=272774846 TSecr=0 WS=128
10.88.240.21	TCP	74	[TCP Retransmission] 22432 → 443 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM TSval=272776894 TSecr=0 WS=128

連線到MDM超時示例

案例2.連線失敗：404

此事件表示您已連線到在設定MDM伺服器時配置的JAMF帳戶。但是，您指示連線的例項不存在或包含錯誤，因為找不到該例項。



MDM錯誤404示例

將顯示與此事件對應的日誌：

```

DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.api.MdmServerInfoApi -:::- inside the method : callMdmServerInfo
TRACE [admin-http-pool32][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::- Inside MDMVerifyServer.verifyServer
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::- API version retrieved from MDM Rest API Server Query
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::- apiVersionSb : 3, mdmApiVersion : 3
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::- MDM Rest API Server Query Parameters: {}
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -:::- 1. Connecting to the MDM Rest API Server
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -:::- sendGETRequestDom: start HTTP request

```

```

DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- sendGETRequestDomNonComp: start
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- ===mdmFlowInfo===null,=====serve
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- QueryType is heartbeatQuery
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- using httpClient for http query
INFO [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- GET: MDM Server URL: https://YOU
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- Proxy Config in request = [,PRO
INFO [admin-http-pool37][[]] cpm.admin.infra.spring.ISEAdminControllerUtils -:admin::- mapping path
INFO [admin-http-pool37][[]] cpm.admin.infra.spring.ISEAdminControllerUtils -:admin::- mapping path
INFO [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmServersCache -::::- MDM server - Status : Active,
ERROR [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- Error message while connecting to
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- sendGETRequestDom: end HTTP req
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- sendGETRequestDomNonComp: end H
ERROR [admin-http-pool32][[]] cisco.cpm.mdm.apiimpl.MDMVerifyServer -::::- Exception occurred while co
ERROR [admin-http-pool32][[]] cisco.cpm.mdm.api.MdmClient -::::- Connection Failed: 404:: the MDM serv
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.api.MdmServerInfoApi -::::- returning from the method : ca
    apiPath: null
    redirectUrl: null
    queryMaxSize: null
    apiVersion: null
    vendor: null
    productName: null
    productVersion: null
    COMMA: ,
    errorMsg: null
    errorOccurred: true
}
DEBUG [admin-http-pool32][[]] cisco.cpm.mdm.util.MdmServersCache -::::- mdm Guid: GUID is found in cac

```

此時的資料包捕獲提供一個HTTPS連線，其中包含在JAMF站點和ISE伺服器之間傳輸的應用資料。

Source	Protocol	Length	Info
10.88.240.21	HTTP	183	CONNECT :443 HTTP/1.1
10.31.104.78	HTTP	105	HTTP/1.1 200 Connection established
10.88.240.21	TLSv1.2	419	Client Hello
10.31.104.78	TLSv1.2	213	Server Hello, Change Cipher Spec, Encrypted Handshake Message
10.88.240.21	TLSv1.2	72	Change Cipher Spec
10.88.240.21	TLSv1.2	111	Encrypted Handshake Message
10.88.240.21	TLSv1.2	349	Application Data
10.31.104.78	TLSv1.2	1024	Application Data

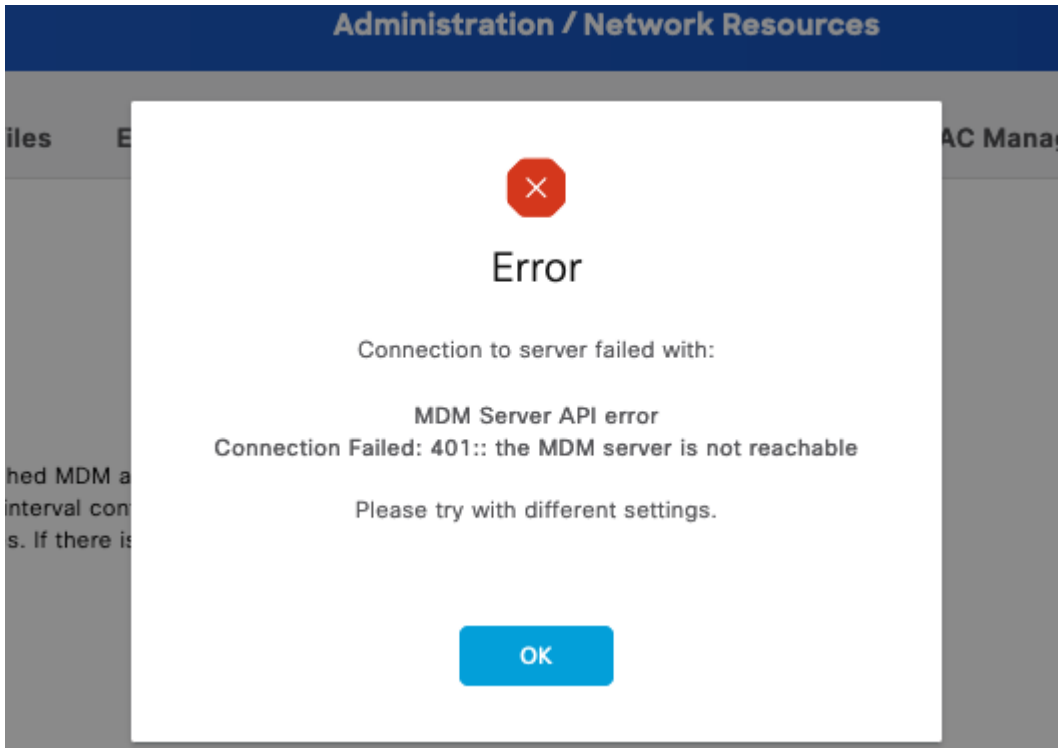
錯誤404 MDM中涉及的資料包

案例3.連線失敗：401

連線中的此錯誤表示您在MDM設定中部署要整合的使用者出現問題。

驗證使用者：

- 存在於JAMF帳戶中。
- 具有完成與ISE整合的相應許可權。
- 和可用於執行API身份驗證（如本指南前面所述）。



MDM連線錯誤代碼401

ISE上的日誌指示此行為：

```
INFO [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- GET: MDM Server URL: https://YOUR
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- Proxy Config in request = [,PROX
ERROR [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- Error message while connecting to
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- sendGETRequestDom: end HTTP requ
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- sendGETRequestDomNonComp: end HT
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -::::- retry connecting using api v
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -::::- MDM Rest API Server Query St
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -::::- MDM Rest API Server Query PA
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -::::- 2. On Error : re-connecting
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- sendGETRequestDom: start HTTP re
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- sendGETRequestDomNonComp: start
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- ===mdmFlowInfo===null,=====server
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- QueryType is heartbeatQuery
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- using httpClient for http query -
INFO [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- GET: MDM Server URL: https://YOUR
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- Proxy Config in request = [,PROX
ERROR [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- Error message while connecting to
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- sendGETRequestDom: end HTTP requ
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.util.MdmRESTClient -::::- sendGETRequestDomNonComp: end HT
DEBUG [admin-http-pool8][[]] cisco.cpm.mdm.apiimp].MDMVerifyServer -::::- retry connecting using api v
```

封包擷取會顯示類似以下行為：

Source	Protocol	Length	Info
10.88.240.21	HTTP	183	CONNECT :443 HTTP/1.1
10.31.104.78	HTTP	105	HTTP/1.1 200 Connection established
10.88.240.21	TLSv1.2	419	Client Hello
10.31.104.78	TLSv1.2	213	Server Hello, Change Cipher Spec, Encrypted Handshake Message
10.88.240.21	TLSv1.2	72	Change Cipher Spec
10.88.240.21	TLSv1.2	111	Encrypted Handshake Message
10.88.240.21	TLSv1.2	349	Application Data
10.31.104.78	TLSv1.2	1071	Application Data
10.88.240.21	TLSv1.2	349	Application Data
10.31.104.78	TLSv1.2	1071	Application Data

錯誤401中涉及的MDM資料包

相關資訊

- [JAMF與ISE 2.X整合，作為MDM](#)
- [在ISE上排除故障並啟用調試](#)
- [如何啟用ISE 3.x版本的調試。](#)

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。