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本æ^a"æ¡[°]介ç^rié **€**¢é¢ŽCisco Unified Communications Manager(CUCM)çš"Certificate Authority Proxy Function(CAPF)Online功èf½é€²è¡Œçš"自動憑è‰è¨»å†Šå'ŒçºŒè¨,ã€,

作者:Michael Mendoza,æ**ጭç**§′TAC工程å_s«ã€,

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- æ€�ç§'æ•´å�^通訊管ç�†å";
- X.509憑è‰
- Windows估�器
- Windows Active Directory(AD)
- Windows Internetè³‡è[™]Šæœ�å<™(IIS)
- NT(新技è;")LANç®;ç�†å"¡(NTLM)é©—è‰

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- CUCMç‰^本12.5.1.10000-22
- Windows Server 2012 R2
- IPé>»è©±CP-8865/韌é«'':SIP 12-1-1SR1-4å'Œ12-5-1SR2ã€,

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èfŒæ™⁻資訊

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- å°Žè[^]å[^]Local Server,é�,æ"‡Computer name以é–<啟System Properties
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啟ç"[™]å'Œé...�ç½®Active Directoryæœ�å‹™

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- $\varsigma^{11/4}\varsigma^{\circ} \times \mathfrak{E}$
- 安è£�完æ^�後,é�,æ"‡Close按é^•
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 DS〢ä, <颢將凰碾ä, €å€<è¦å′Šé ¢ç±¤ï¼Œæ¨™é;Œæ˜ã€ŒConfiguration required for Active Directory Domain Servicesï¼^Active

Directory域æœ�務所需çš"é...�置)ã€�ï¼›é�¸æ"‡ã€Œmoreã€�連çµ�,ç"¶å



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Ь		Active Directory Domain Services	Configuration Wizard		- 0 X
1	Domain Controlle	er Options		LAB-D	TARGET SERVER.
	Deployment Configuration	Select functional level of the new forest	and root domain		
	Additional Octions	Forest functional level:	Windows Server 2012 R2]
	Paths	Domain functional level	Windows Server 2012 R2	-]
	Review Options	Snerify domain controller canabilities			
	Prerequisites Check	Domain Name System (DNS) server			
		Global Catalog (GC)			
		Read only domain controller (RODC)		
		Type the Directory Services Restore Mo	de (DSRM) password		
		Passwordt			
		Confirm password:			

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€ Server N	lanager + AD DS	• @ I
Dashboard Local Server All Servers	SERVERS All servers 1 total Filter P (ii) • (ii) •	
H AD DS	Server Name IPv4 Address Manageability	Last Update
File and Storage Services P	LA8-DC-RTP 14.48.31.153 Online - Performance counters no	it started 2/26/2019 4/20:10 PM

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 Directoryè‰æ>,æœ�務,ç"¶å¾ŒæŒ‰ç...§æ��礰新增所需功èf½ï¼ˆæ‰€æœ%
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i.	Add Roles and Features Wizard	_ D X
Select role servic	es	DISTINATION SERVER LAB-DC-877 michamen.com
Before You Begin	Select the role services to install for Active Directory Certif	ficate Services
Installation Type	Role services	Description
Server Selection	Certification Authority	Certification Authority Web
Server Roles	Certificate Enrollment Policy Web Service	Enrollment provides a simple Web interface that allows users to
Features	Certificate Enrollment Web Service	perform tasks such as request and
AD CS	Certification Authority Web Enrollment	renew certificates, retrieve certificate revocation lists (CRLs), and enroll for
Role Services	Network Device Enrollment Service	smart card certificates.
Web Server Role (IIS)	Online Responder	
Role Services		
Confirmation		
Results		



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10 m		<u>6</u>		All Servers Task Detail	1		-
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	EVENTS	/dar	ρ 🛞 •	® •			
	All events [0 total	Status Task Name	Stage A	Annage	Action	They bear	10.0

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L	AD CS Configuration	- • ×
CA Name		DESTINATION SERVER LAB-DC-RTRmichamen.com
Credentials Role Services	Specify the name of the CA	
Setup Type CA Type Private Key	Type a common name to identify this certification authority (CA). This certificates issued by the CA. Distinguished name suffix values are auto be modified. Common name for this CA:	name is added to all omatically generated but can
Cryptography CA Name	LA8-DC-RTP	
Validity Period Certificate Database Confirmation Progress Results	Distinguished name suffice DC+michamen,DC+com Preview of distinguished name: CN+LAB-DC-RTP,DC+michamen,DC+com	

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File	Action	View	Favorites	Window	Help
	New			c	trl+N
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Active Directory Do	T GET FOR GET			Cons	ole Root			Edit Extensions
	Microsoft Cor				ctive Directo	ory Domain	and True	Event Excels (provide)
Active Directory Site	Microsoft Cor			EA	ctive Directo	ory Lisers a	nd Comp	Remove
Active Directory Use	Microsoft Cor	=		600	ertification /	Authority (L	ocal	
ActiveX Control	Microsoft Cor			1 2 0	ertificate Te	molates (L/	B-DC.mic	Mauralla
ADSI Edit	Microsoft Cor			100	ternet Info	mation Ser	vices (IIS	move up
Authorization Manager	Microsoft Cor							Move Down
Certificate Templates	Microsoft Cor		Add >					
Certificates	Microsoft Cor							
Certification Authority	Microsoft Cor							
Component Services	Microsoft Cor							
Computer Managem	Microsoft Cor							
Device Manager	Microsoft Cor							
Disk Management	Microsoft and							
DNS	Microsoft Cor	×		<		_	>	Advanced
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Cisco	oRA Propert	ties	? X			
Subject Name	lss	uance Require	ments			
Superseded Templates	Extensions	Security	Server			
General Compatibility Request Handling Cryptography Key Attestation Template display name: CiscoRA						
Validity period: Renewal period:						
Publish certificate in Active Directory Do not automatically reenroll if a duplicate certificate exists in Active Directory						
ОК	Cancel	Apply	Help			

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CiscoRA Properties ? X					
General Compatibility Request Handling Cryptography Key Attestation Subject Name Issuance Requirements Superseded Templates Extensions Security Server					
Group or user names:					
Administrator Administrator Administrator Administrator Administ (MICHAMEN1\Domain Admins) Enterprise Admins (MICHAMEN1\Enterprise Admins)					
Add Remove Permissions for Authenticated Users Allow Deny					
Full Control					
Read 🗹 🗌					
Write 🗹 🗌					
Autoenroli V					
For special permissions or advanced settings, click Advanced Advanced.					
OK Cancel Apply Help					

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	- 	
Consule Root Jackive Directory Domains and Trusts LAB-DC Jackive Directory Users and Computers LAB-DC b Seved Queries	Name & Administrator & Allowed RODC Password & calo-maintenance	Type User Security Gro User
 g) michamen.com g) Builtin b) Computers 	R. Cert Publishers	Security Gro Unit
Domain Controllers Differing/SecurityPrincipals Managed Service Accounts Uvers Uvers	建, Convestor Domain Contin. 建, Denied RODC Pessword 建, DrsAdmins 線, DrsAdmins 線, DrsAdmins 線, Domain Admins	Security Gre Security Gre Security Gre Security Gre Security Gre

IIS 谫份é©—è‰å'ŒSSL繫ç**¢é…¢ç½**®

啟ç'" NTLM é©—è‰

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- 功èf½æ,...å–®éj⁻礰在ä,<ä,€å¹€ä,ã€,按å...©ä**Authentication**功èf½åœ–礰



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Authentication,ç,,¶å¾Œåœ¨ã€Œæ"�作ã€�æj†æž¶ï¼^å�³çª—æ ¼ï¼‰ä,é�,æ"‡Enableé�,é

● ● ▲ LAB-DC-RTP →				
Connections Q.• 2 9, Start Page	Authentication			Actions Enable @ Help
LAB-DC-RTP (MICHAMENT)A D2 Application Pools D3 Sites	Name Anonymous Authentication ASP.NET Impersonation Windows Authentication	Status Enabled Disabled	Response Type	

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Connections	Authentication			Alerts
0,• 🔚 ☎ 🖗,	Authentication			A Click here to learn how
Start Page	Group by: No Grouping .	Configure Extended Protection.		
Application Paols	Name *	Status	Response Type	Artises
p- Stes	Anonymous Authentication ASP.NET Impersonation	Enabled Disabled		Disable
	Windows Authentication	Enabled	HTTP 401 Challenge	Advanced Settings
	Enabled Providers: AFLM Negotiate Negotiate.Korboros		Move Up Move Down Remove	
	Select a provider from the list o to add it to the enabled provide Available Providers:	f available provide ors.	ers and click Add	

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unextions	Que como	and Bandara			Actions
G (A 19,	Server G	eroncates			import
Stat Page LAB-DC-RTP IMONIMENTIA	Use this feature to req	uest and manage certificates that	the lifeb server can use with websites o	onfigured for 332	Create Certificate Request
Application Peols	Filter.	• 77 Se - 2 Stee M	Group byt. No Grouping .		Complete Certificate Reques
A Stell	Name *	hourd To	Issued By	Expiration Date	Create Domain Certificate
h Catinui		LAB-DC-RTP	LAB-DC-RTP	2/26/2024 4:34.42	Create Self-Signed Cethicate
s . @ CetSrv		Create	Certificate	7 X -	Enable Automatic Rabind of Renewed Certificate
	all ^e				
	Specify the required info efficial names and they	emation for the certificate. State) cannot contain abbreviations.	province and City/focality must be spec	fed m	
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1	Specify the required info efficial names and they Common name Organization	emation for the certificate. State/ cannot centain abbreviations.	province and City/locality must be spec pm	fer	
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	B ¹² Specify the required info efficie names and they Common name: Organizations Organizational unit: City/locality State/province	Interface for the certificate. Stately cannet centain alterolations.	province and City/Iscality must be spec	fed m	

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Create Certificate	? ×
Online Certification Authority	
Specify the certification authority within your domain that will sign the certificate. A friendly nam and should be easy to remember. Specify Online Certification Authority:	is required
LAB-DC-RTP\LAB-DC-RTP.michamen.com	Select
Example: CertificateAuthorityName\ServerName	
Friendly name:	
Web Cert issued by LAB-DC-RTP	
Previous Next Finish	Cancel

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Connections Q.• 🔛 🖄 😥	🖣 s	erver Certificates			
Start Page Start Page Lab-DC-RTP (MICHAMENT), a Assolution Pack	Use this fea	ture to request and mana	ge certificates that the Web serv	er can use with websites co No Geousing	nfigured for SSL
a 😹 Stei	Name		Issued To	Issued By	Expiration Date
a 😜 Default Web Site			LAB-DC-RTP	LAB-DC-RTP	2/26/2024 4:34:42
5-92 CertEnroll	Web Cert i	ssued by LAB-DC-RTP	LAB-DC-IS.michamen.com	LA8-DC-RTP	2/25/2021 6:56:01

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Microsoft Active Directory Certificate Services LAB-DC-RTP
Download a CA Certificate, Certificate Chain, or CRL
To trust certificates issued from this certification authority, install this CA certificate.
To download a CA certificate, certificate chain, or CRL, select the certificate and encoding method.
CA certificate:
Encoding method:
DER OBase 64
Install CA certificate
Download CA certificate
Download CA certificate chain
Download latest base CRL

 從OS Administrationé �é�¢å°Žè^aå[°]Security > Certificate Management,ç,,¶å¾Œé�,æ"‡Upload Certificate/Certificate chain按é[•]i¼Æä»¥ä,Šå,³CAè‰æ>,ï¼Æä,¦å°‡purposeè¨å®šç,°CAPF-trustã€,

Upload Certificate/Certific	ate chain
Upload 🖳 Close	
_ Status	
Warning: Uploading a clu	uster-wide certificate will distribute it to a
Upload Certificate/Certifi	cate chain
Certificate Purpose*	CAPF-trust
Description(friendly name)	
Upload File	Browse LAB-DC-RTP_CA.cer
Upload Close	
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...æ¤æ™,,最好上å,³è^‡*CallManagertrust*ç>¸å�Œçš"CAè‰æ>_ç,å> ç,°éœ€è¦�ç,°ç«¯é»žå•Ÿç″¨ï¼^æ^–將啟ç″¨ï¼‰å®‰å...¨ä¿¡ä»¤åŠ

- å°Žè½è‡³System > Service Parametersã€åœ¨ä¼°æœ�器欄ä½�ä,é�,æ"‡Unified CM Publisher估�器,在「æœ�å‹™ã€�欄ä½�ä,é�,æ"‡Cisco Certificate Authority Proxy功èf½
- å°‡Certificate Issuer to Endpointçš,,值è¨å®šç,°Online CA,ä,¦åœ¨Online CA
 Parametersæ¬,,ä½�ä,è¼,å...¥å€¼ã€,碰ä;�ä½;ç″¨Webä¼°æœ�器çš,,FQDNã€�之å‰�å»°ç«‹ç
 CAçš,,CAåž‹å^¥ï¼Œä,¦ä½;ç″¨ä¹‹å‰�å»°ç«‹çš,,CiscoRAä½;ç″¨è€...å,³æ^¶çš,,æ†'æ"š

Service Par	ameter Configuration
Save 🤅	Set to Default
Select Serv	ver and Service
Server*	cucm125pubCUCM Voice/Video (Active)
Service*	Cisco Certificate Authority Proxy Function (Active) 🗸
All paramete	ers apply only to the current server except parameters that are in the cluster-wide group(s).

Parameter Name	Parameter Value
Certificate Issuer to Endpoint *	Online CA
Duration Of Certificate Validity (in days) *	1825
Key Size *	1024
Maximum Allowable Time For Key Generation *	30
Maximum Allowable Attempts for Key Generation *	3

I	Online CA Hostname	lab-dc-iis.michamen.com
I	Online CA Port	443
I	Online CA Template	CiscoRA
I	Online CA Type *	Microsoft CA
I	Online CA Username	•••••
I	Online CA Password	•••••

 å¼2ˆå‡°è⊢窗通知æ, ¨éœ€è¢é‡�新啟å‹•CAPFæœ�å‹™ã€,但æ[~]首å...^,通é�ŽCisco Unified Serviceability > Tools > Service Activation啟ç'``怢ç§'è‰æ>,è ¨ »å†Šæœ�務,åœ ¨Serveræ¬,,ä½�ä,é�,æ"‡Publisherä,¦é� Certificate Enrollment Serviceè¦^å�-æ-¹åjŠï¼Œç,,¶å¾Œé�,æ"‡Save按é^•:

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é©—è‰IISè‰æ>¸

- 從連ç·šå[°]ä¼[°]朢å[™]çš,,PCçš,,Web瀢覽å[™]ï¼²最好è[‡]CUCMç[™]¼ä½^aä¼[°]朢å[™]ä https://YOUR_SERVER_FQDN/certsrv/
- éi⁻礰è‰æ>,ä,�å�—ä¿jä»»è¦å ±ã€,æ-°å¢žä¾‹å¤-ä,¦æª¢æŸ¥è‰æ>,ã€,碰ä¿�å®fè^‡é �期ç

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https://lab-dc-iis.michamen.com is requesting your username and passu User Name: ciscora	
	word.
Password: ••••••	

lab-dc-iis.michamen.com uses an invalid security certificate.

ç¶"é�Žè°«ä»½é©—è‰å¾Œï¼Œæ, ¨å¿...é ^èf½å¤ 檢è¦-AD CSï¼^Active
 Directoryè‰æ,æœ�務)æj迎é �é�¢ï¼š

Microsoft Active Directory Centificate Services - LAB.DC.RTP					
Welcome					
Use this Web site to request a certificate for you with over the Web, sign and encrypt messages,	r Web browser, e-mail client, or other program. By using a certificate, you can ve and, depending upon the type of certificate you request, perform other security t				
You can also use this Web site to download a ce request.	ertificate authority (CA) certificate, certificate chain, or certificate revocation list (C				
For more information about Active Directory Cer	tificate Services, see Active Directory Certificate Services Documentation.				
Select a task:					

View the status of a pending certificate request Download a CA certificate, certificate chain, or CRI,

é©—è‰CUCMé…�ç½®

執行通å, ¸è�執è;Œçš,,æ¥é©Ÿï¼Œä»¥ä¾¿åœ¨å...¶ä,ä,€å�°é›»è©±ä,Šå®‰è£�LSCè‰æ›,ã€,

æ¥é©Ÿ1.開啟CallManager Administrationé �é�¢ï¼Œä¾�次開啟Deviceå'ŒPhone

æ¥é©Ÿ2.ć�,æ"‡Find按é^•以é;¯ç¤^oé>»è©±

æ¥é©Ÿ3.é�,æ"‡è¦�安è£�LSCçš"電話

æ¥é©Ÿ4.å�'ä,‹æ»¾å‹•至憑è‰æŽˆæ¬Šå–®ä½�代ç�†åŠŸèf½(CAPF)資訊

æ¥é©Ÿ5.從「Certificate

Operationï¼^è‰æ>,æ"�作)ã€�ä,é�,æ"‡ã€ŒInstall/Upgradeï¼^安è£�/å�‡ç´šï¼‰ã€�ã€,

æ¥é©Ÿ6.é�,æ"‡Authentication Modeã€,ï¼^通é�ŽNullå—ä,²å�¯ä»¥é€²è;Œæ,¬è©¦ï¼‰

æ¥é©Ÿ7.滾å<•å^°é �é�¢çš"é ,éf¨ï¼Œç"¶å¾Œç,°é>»è©±é�¸æ"‡save,ç,,¶å¾Œé�¸æ"‡Apply Configã€,

æ¥é©Ÿ8.é>»è©±é‡�新啟å‹•ä,¦è¨»å†Šå›žå¾Œï¼Œä½;ç″¨LSCç‹€æ...‹é�Žæ;¾å™¨ç¢°èª�LSC安è£

- 從ADä¼°æœ�器å�´é-‹å•ŸMMC,展é-‹è‰æ›¸é ′發機æ§‹ç®jç�†å-®å...f以é�¸æ"‡ãŧ
- 電話æ¢�目顯示在æ′~è¦�檢視å...§ï¼Œä»¥ä¸‹æ~¯é;¯ç¤ºçš"一些詳細資訊:
 - ∘ è«‹æ±,ID:å"⁻一å**%**å^—號
 - è«‹æ±,者å��稱:å¿…é ^éj¯ç¤ºå·²é…�置的CiscoRA帳æ^¶çš"使ç″¨è€…å��稱
 - [∞] è‰æ›¸æ¨¡æ�¿ï¼šå¿…é ^é;[¯]ç¤⁰所å»°ç«‹çš"CiscoRAæ¨;æ�¿çš"å��稱
 - [∞] 已癹₄凰å…¬ç""å��稱:å¿…é ^éj¯ç¤°é™"åŠ åœ¨è£�ç½®å��稱ä,çš"電話型號
 - · è‰æ>,ç"Ÿæ•^日期å'Œè‰æ>,å^°æœŸæ—¥æœŸ

Console Root	Request ID	Requester Name	Binary Certificate	Certificate Template	Issued Common Name
Active Directory Domains and Tru	2	MICHAMEN1\Administrator	BEGIN CERTI	Web Server (WebSer	LAB-DC-IIS.michamen
Active Directory Users and Compu	3	MICHAMEN1\LAB-DC-RTP\$	BEGIN CERTI	Domain Controller (LAB-DC-RTP.michame
A Certification Authority (Local)	- 4	MICHAMEN1\ciscora	BEGIN CERTI	CiscoRA (1.3.6.1.4.1.3	CP-8865-SEP74A02FC0
🔺 🚽 LAB-DC-RTP	-				
Revoked Certificates					
Issued Certificates					
Pending Requests					
Failed Requests					
Certificate Templates					

ç>_關連**ç¢**

- <u>CAPFc·šä ŠCAæ•...éšœæŽ'除</u>
- <u>技è;"æ"⁻æ�´è^‡æ-‡ä»¶ Cisco Systems</u>

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)。