

CA IAMCS Round- Robin Load-Balancing for Endpoints

Example: Active Directory

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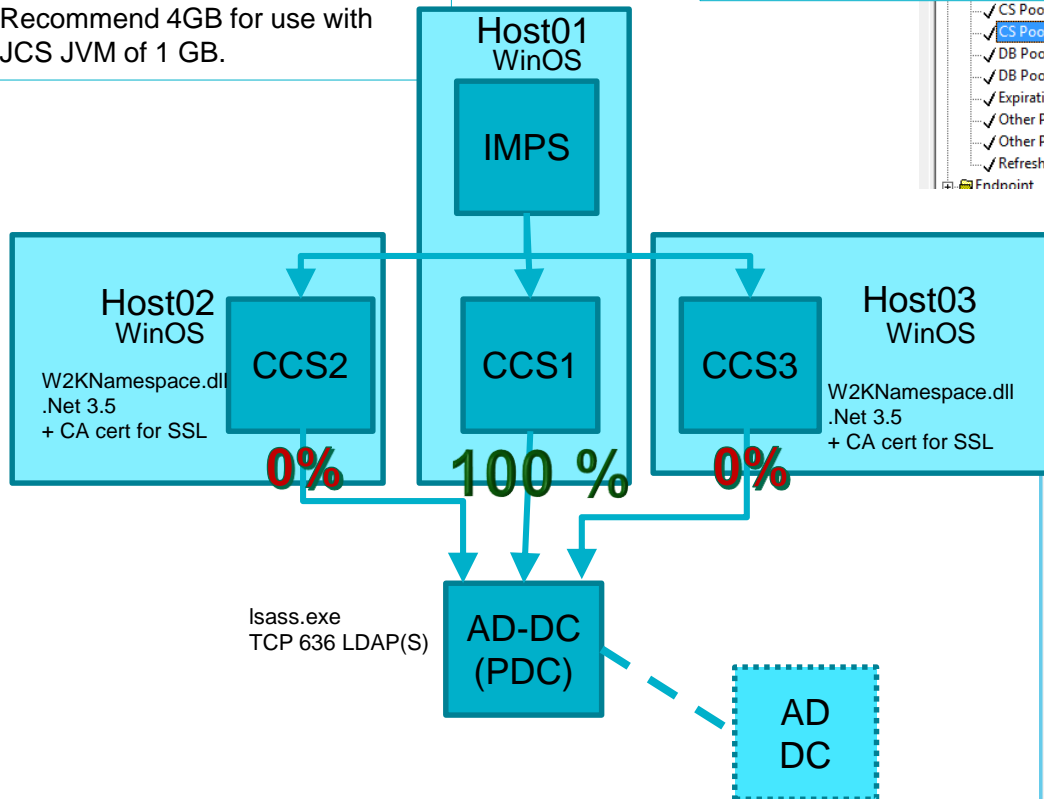


Increase IMPS to Endpoint Performance with “legacy” Failover CCS Service (CA IM r12.0/5 framework)

Increase vCPU from 1 to 2

RAM Size: min 2GB
Recommend 4GB for use with
JCS JVM of 1 GB.

Increase minimal pool of
CCS connections to
endpoints from 2 to 20



- ✓ CS Pool Maximum Size
- ✓ CS Pool Minimum Size
- ✓ DB Pool Maximum Size
- ✓ DB Pool Minimum Size
- ✓ Expiration Time
- ✓ Other Pool Maximum Size
- ✓ Other Pool Minimum Size
- ✓ Refresh Time

Domain Configuration | Statistics |

Parameter: Connections/CS Pool Minimum Size

Description: The minimum size of each of the provisioning server's CS Connection Pools. The connection monitor thread, when it closes expired idle connections, will retain at least this many

☐ Restore default ☐ Show default

Value(s): 20

Add... Edit... Remove

Use ConnectorXpress to update CCS
Default IMPS Server = null
Force Failover by endpoint type

Connector Server Host Name
imps001.exchange.dom

Port
0

TLS Port
20403

☒ Use TLS

Provisioning server (optional)
IMPS001

Password

Note that changing any of the host name, port, Provisioning Server or "Use TLS" fields requires that the password be re-entered.

☒ Make this the default CS

Managed Objects

Object Handle

Namespace=eTrust SSO WAC,Domain=im,Server=Server
Namespace=RSA,Domain=im,Server=Server
Namespace=Siebel,Domain=im,Server=Server
Namespace=CA-Top Secret,Domain=im,Server=Server
Namespace=Oracle Applications,Domain=im,Server=Server
Namespace=EIAM Namespace,Domain=im,Server=Server
Namespace=ActiveDirectory,Domain=im,Server=Server
Namespace=UNIX - NIS-NIS plus Domains,Domain=im,Server=Server
Namespace=DB2 ZOS Server,Domain=im,Server=Server
Namespace=Windows NT,Domain=im,Server=Server
Namespace=DB2 Server,Domain=im,Server=Server
Namespace=RACF,Domain=im,Server=Server
Namespace=UNIX - etc,Domain=im,Server=Server

Rate of Updates = 15-17 /sec

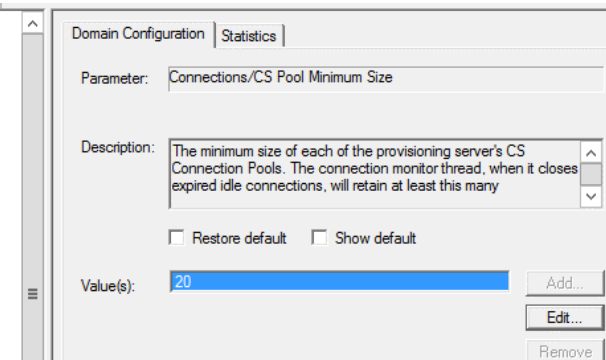
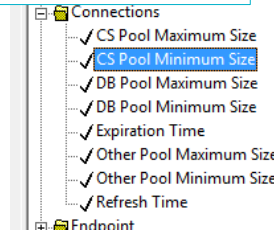
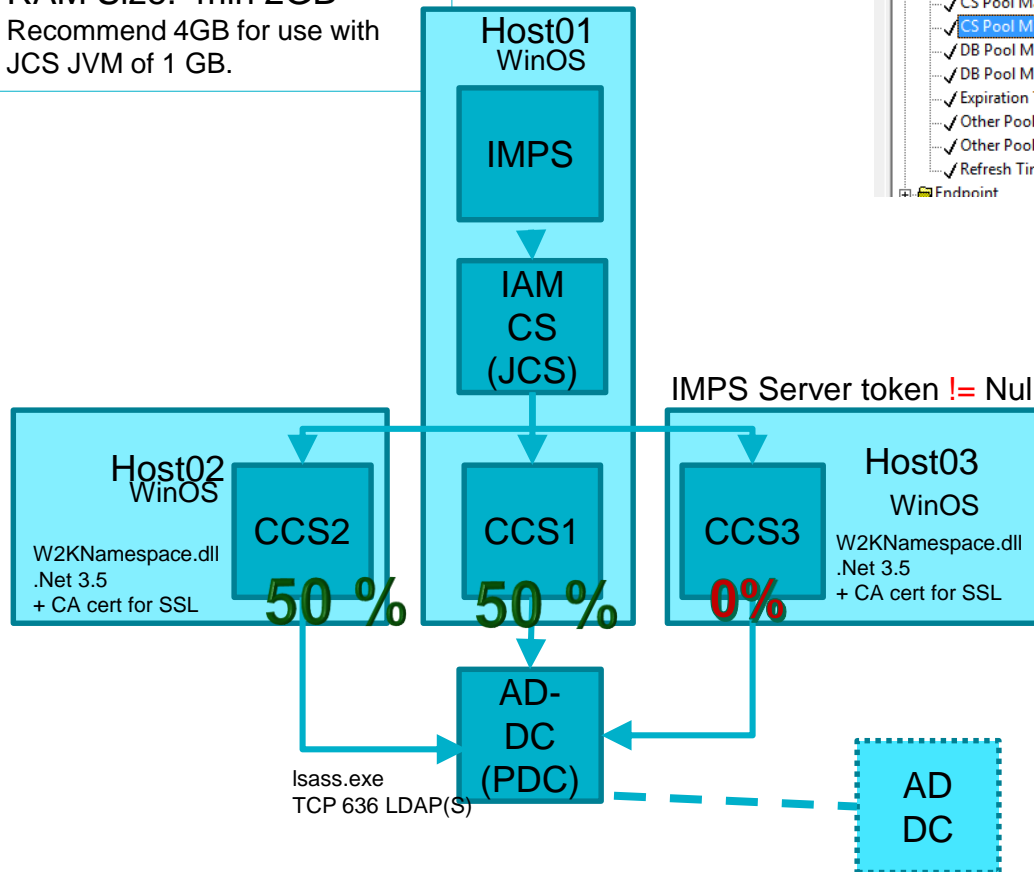
No LB feature in CA IM r12.0/5 framework for CCS; only Failover

Increase IMPS to Endpoint Performance with IAM CS (JCS) as a router (CA IM r12.6 framework)

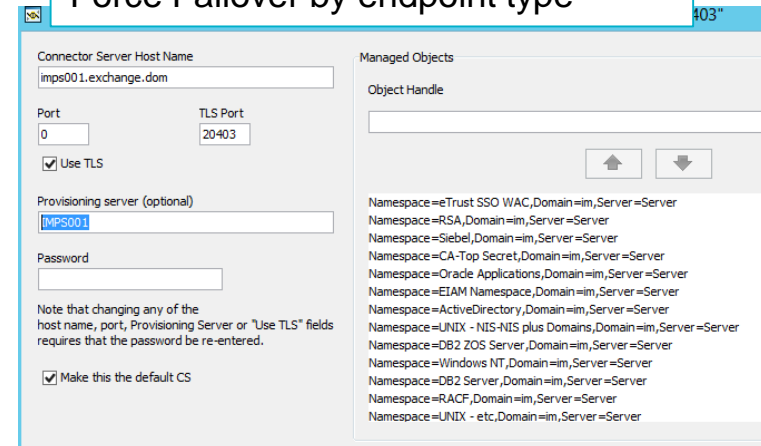
Increase vCPU from 1 to 2

RAM Size: min 2GB
Recommend 4GB for use with JCS JVM of 1 GB.

Increase minimal pool of CCS connections to endpoints from 2 to 20



Use ConnectorXpress to update CCS Default IMPS Server = null
Force Failover by endpoint type



Rate of Updates = **25-28 /sec**
with two (2) CCS + IAM CS => LoadBalancing in IM r12.6 framework

CA IMPS server with IAMCS service + im_ccs service

The screenshot displays a Windows desktop environment with the following components:

- Process Explorer - Sysinternals:** A window showing a list of running processes. The 'im_ccs.exe' process is highlighted in blue. The taskbar at the bottom shows the CPU usage at 79.64%.
- IAM Connector Server - localhost:** A web-based interface for managing the IAM Connector Server. The 'Connector Servers' tab is active, showing a 'Local Connector Server' for the 'localhost' domain. The 'Endpoints' tab is also visible, showing a list of endpoints with columns for 'Domain', 'Endpoint Type', and 'Endpoint Filter'. The 'im' domain is selected, and the 'ActiveDirectory' endpoint type is chosen. The 'Endpoint Filter' is set to 'Name:'. The 'Filter Endpoints' section on the right provides instructions on how to filter endpoints by domain, endpoint type, and endpoint name.
- Command Prompts:** Two command prompts are open, both running the command `C:\Windows\system32\cmd.exe`. The left command prompt shows the output of the `im_ccs.exe` command, displaying a list of endpoints and their details. The right command prompt shows the output of the `im_ccs.exe` command, displaying a list of endpoints and their details.

Server 2 with local im_ccs service managed by remote IAMCS

The screenshot displays a Windows Server 2014 desktop environment. The taskbar at the bottom shows the Start button, Quick Launch icons, and several pinned applications including Internet Explorer, File Explorer, and VMware Workstation. The system tray in the bottom right corner indicates the time as 12:03 PM on 1/9/2014.

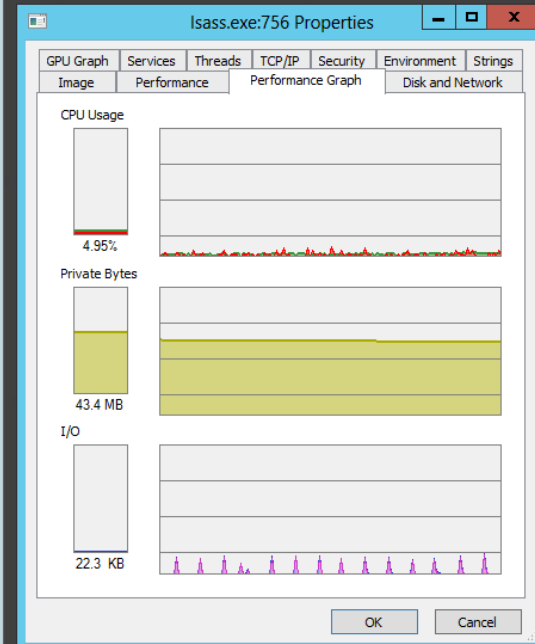
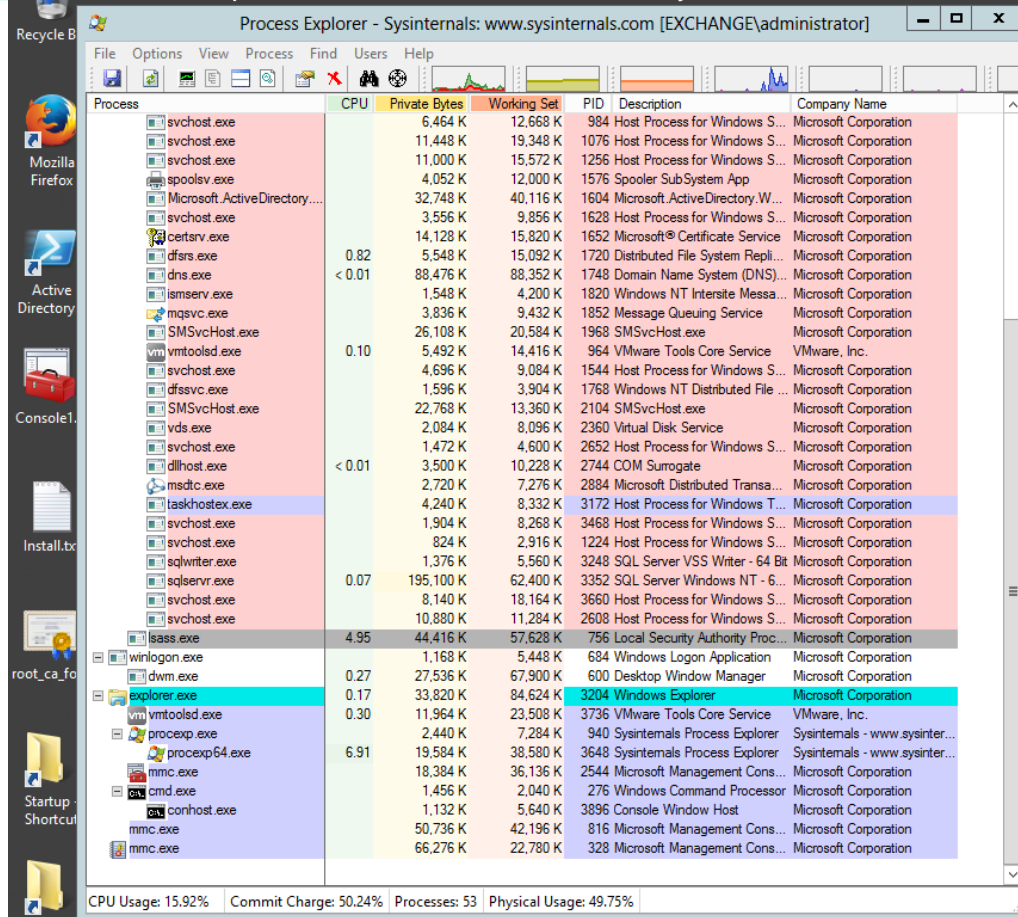
The main window is Process Explorer, titled "Process Explorer - Sysinternals: www.sysinternals.com [ROADRUNNER01\caadmin]". It shows a list of running processes with columns for CPU, Private Bytes, Working Set, PID, Description, and Company Name. The process list includes System Idle Process, System, Interrupts, smss.exe, csrss.exe, wininit.exe, services.exe, svchost.exe (multiple instances), spoolsv.exe, cam.exe, eCSqdmn.exe, taskhost.exe, eTFWService.exe, WUDFHost.exe, vmtoolsd.exe, eCSafmgr.exe, eCSLogD.exe, msdtc.exe, lsass.exe, winlogon.exe, dwm.exe, explorer.exe, vmtoolsd.exe, procexp.exe, procexp64.exe, iexplore.exe, and iexplore.exe. The CPU usage is 16.08%, Commit Charge is 10.13%, Processes are 40, and Physical Usage is 22.45%.

The "im_ccs.exe:2936 Properties" dialog box is open, showing the "TCP/IP" tab. The "Resolve addresses" checkbox is checked. The table below lists the network connections for the im_ccs service.

Protocol	Local Address	Remote Address	State	Servi...
TCP	roadrunner01.localdomain:49293	dc001.exchange...	ESTABLISHED	im_ccs
TCP	roadrunner01.localdomain:20403	roadrunner01:0	LISTENING	im_ccs
TCP	roadrunner01.localdomain:20403	imps001.exchan...	ESTABLISHED	im_ccs
TCP	roadrunner01.localdomain:20403	imps001.exchan...	ESTABLISHED	im_ccs
TCP	roadrunner01:20402	roadrunner01:0	LISTENING	im_ccs
UDP	roadrunner01:57585	im_ccs
UDP	roadrunner01:60657	im_ccs
TCPV6	roadrunner01:20402	roadrunner01:0	LISTENING	im_ccs
TCPV6	roadrunner01:20403	roadrunner01:0	LISTENING	im_ccs
TCPV6	roadrunner01:20403	roadrunner01:0	LISTENING	im_ccs

Active Directory server: Isass service manages the LDAP(s) communication to ADS Less than 5% CPU hit

<https://technet.microsoft.com/en-us/sysinternals/bb896653>



OS version: windows 2012

Snapshot Time: 11/14/2013 3:13 PM

System Type: Domain Controller, Primary, Terminal Server

Us... Windows Server 2012

Script to emulate PX framework; and determine maximum rate from IMPS and CCS to Active Directory for group modifications to AD accounts.

```
@echo on
```

```
"C:\Program Files (x86)\CA\Identity Manager\Provisioning Server\bin\etautil.exe" -o -d im -u etaadmin -p Password01 -f test03.txt
```

```
pause
```

Created input file with these two (2) lines copied 10K times

```
update
'eTADSOrgUnitName=Office_002,eTADSOrgUnitName=CompanyABC_Users_OU,eTADSDirectoryName=Example_03_Delegated_Access_with_Exchange,eTNa
mespaceName=ActiveDirectory,dc=im' eTADSAccount eTADSAccountName=test_user_01 to -eTADSmemberOf='CN=Help Desk,OU=Microsoft Exchange
Security Groups,DC=exchange,DC=dom';
update
'eTADSOrgUnitName=Office_002,eTADSOrgUnitName=CompanyABC_Users_OU,eTADSDirectoryName=Example_03_Delegated_Access_with_Exchange,eTNa
mespaceName=ActiveDirectory,dc=im' eTADSAccount eTADSAccountName=test_user_01 to eTADSmemberOf='CN=Help Desk,OU=Microsoft Exchange
Security Groups,DC=exchange,DC=dom';
update
```

Default setup: No changes to IMPS server: log level =3

IMPS 2GB RAM: 99% CPU utilization on 1 CPU (i7) for etautil CLI until file is read; then 5% execution for etautil + 5% for console CLI window.

NOTE: less than 1% CPU utilization for for im_ccs, im_ps, im_jcs, dxserver services during loading; then 25% for im_ccs and im_ps during execution.

AD 2GB RAM, <5% CPU utilization on 1 CPU (i7) for lsass process (which is used for LDAP(S) communication on AD)

Rate: max of 15-17 mods / second for Add AD group / Remove AD group from same account via etautil via CCS connector strings; based on number of entries in the IMPS etatrans logs for successful update/delete of the memberOf attribute.

Improve Performance for MS Exchange Powershell API by increase the default throttle limit from 18 to 100

1. Create a throttle limit to be used exclusively by the CA IdentityMinder service account. Set the limit to 100 concurrent connections. For example:

New-ThrottlingPolicy MaxPowershell -PowerShellMaxConcurrency 100

2. Apply the new policy to the CA IdentityMinder service account on the Exchange server. For example:

Set-Mailbox "User Name" -ThrottlingPolicy MaxPowershell where "User Name" = service account to manage AD & Exchange accounts for CA IM

Justification: Scenario: 2000 creations from IME BLC.

Exchange able to create user mailbox in 20 seconds. Timeouts bumped to 600 seconds

18 session pool: $2000 * 20 / 18 = 40,000 \text{ seconds} / 18 = 2222 \text{ seconds} = < 40 \text{ minutes}$ (Expect 5-10% failure due to timeout over 600 seconds)

100 session pool: $2000 * 20 / 100 = 40,000 \text{ seconds} / 100 = 400 \text{ seconds} = < 5 \text{ minutes}$ [Expect no failures]

3. Increase the default timeouts of the CA IdentityMinder Exchange Agent to 600 seconds.

a. On the Exchange server, increase the agent timeout as follows:

HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociates\Identity Manager\Ex2k7AgentTimeout = 600 (seconds)

b. On Provisioning servers (ALL of them), set the environmental variables as follows:

ADS_E2K_SEND_DC = 1 & **ADS_CONFIRM_MAILBOX** = 600 (seconds)

4. Restart the im_ccs service.

Ref: <http://cookbooks.ca.com/cagovernanceminder/2014/02/14/solution-for-microsoft-exchange-performance-problems/>