

Artigo

[Fernando Ferreira](#) · Mar. 18, 2022 · 8min de leitura

Migrando uma instância com Mirror/Shadow de Caché/Ensemble para IRIS (Parte 03).

Olá comunidade! Nesta parte do artigo temos um cenário onde o nosso ambiente InterSystems Caché/Ensemble possui um ou mais servidores com Shadow e/ou Mirror.

Como comentado no início do artigo, componentes de um software possuem uma evolução natural e outros componentes são depreciados. E uma tecnologia muito utilizada pelos nossos clientes que está depreciada no InterSystems IRIS é o Shadow (esta informação está na página 18 do documento InterSystems IRIS Adoption Guide que volto a recomendar que você faça o download no WRC).

Como o Shadow é um componente depreciado, o cenário que vamos utilizar no artigo é um ambiente com dois servidores em Shadow.

Como primeiro passo, precisamos olhar para os pré-requisitos do nosso ambiente, já comentado na [parte 01 do artigo](#).

Vamos utilizar como exemplo dois servidores Ensemble 2018.1.4 com Shadow rodando em um servidor Red Hat 8.0 e vamos executar a migração no mesmo hardware por estes atenderem os pré-requisitos (o ambiente teste que estou utilizando são duas EC2-t2.medium na AWS).

Não vou tratar neste artigo diferenças do Shadow X Mirror e os detalhes da configuração de ambos, vou deixar aqui alguns links importante sobre o assunto:

- Artigo da comunidade internacional:
<https://community.intersystems.com/post/cach%C3%A9-mirroring-101-brief-guide-and-faq>
- Convertendo um Shadow para um servidor Mirror:
<https://docs.intersystems.com/latest/csp/docbook/DocBook.UI.Page.cls?KEY=GHAmirror#GHAmirrorsetbpshadow>
- Guia de alta disponibilidade do InterSystems
IRS: <https://docs.intersystems.com/irislatest/csp/docbook/DocBook.UI.Page.cls?KEY=GHA>

Uma dica essencial para o processo:

Como, durante este processo de migração, vamos migrar primeiro o servidor secundário do FailOver e depois o primário, ou seja, durante o processo de migração o seu ambiente terá um servidor Caché como primário e um IRIS como secundário. Para que isso seja possível, lembre-se de olhar os pré-requisitos e a matriz de compatibilidade que se encontra no InterSystems IRIS Migration Guide (lembrando que é possível fazer o download via WRC) e ter certeza que os bancos que se encontram no Shadow/Mirror são bancos somente de Globais, pois não existe compatibilidade entre Caché/Ensemble e IRIS nos bancos de rotinas!

Abaixo um exemplo da lista de **compatibilidades**, existente na documentação oficial:

Technology	Minimum Caché/Ensemble Version	Minimum InterSystems IRIS Version
ECP ¹	2017.1	2018.1
Failover and DR Async Mirror Members	2017.1*	2019.1
Reporting Async Mirror Members	2017.1*	2019.1
Web Gateway ²	2017.1	2018.1
Rest/Web Services	2017.1	2018.1
LDAP	2018.1.3	2019.1.1
InterSystems Studio	2017.1	2018.1

***Important:** to support mixed mirror configurations between the two product lines, Caché/Ensemble should have a specific enhancement (SML2736). SML2736 enables a Caché/Ensemble instance to discover an InterSystems IRIS failover mirror. This change is available with Caché/Ensemble 2018.1.3. Please contact the InterSystems WRC for earlier versions. For details on the process of converting failover mirror configurations to InterSystems IRIS, please consult the Conversion Guide.

¹ Fully bidirectional supported for data access (Globals); Routines and Objects over ECP are not supported.

² InterSystems recommends using the Web Gateway for all C/E and InterSystems IRIS installations for version 2017.1 and later.

Então vamos colocar a mão na massa e com a dica mais **importante** para todo o processo:

Execute todo o processo de migração em ambiente de **testes** primeiro, **valide** sua aplicação e BACKUP, BACKUP e BACKUP..... e não esqueça de testar o RESTORE do ambiente!!

Obs: Caso o seu ambiente já possua Mirror, ignorar a etapa 1 do processo abaixo, seguir os passos a partir da etapa 2.

1 - A primeira etapa da migração é migrar os nossos servidores Shadow para Mirror.

Observar os

Shadow Origem:

Menu Home | About | Help | Logout System > Shadow Servers > Data Source Ensemble by InterSystems

Data Source Server: ip-10-0-0-240.ec2.internal Namespace: %SYS User: _SYSTEM Licensed to: Sales Engineers Instance: SOURCE

This System as Data Source Last update: 2022-03-07 12:45:46.602 Auto

#	Port	Shadow IP	Journal	PID	Latency	Shadowing Rate
1	56774/1947	10.0.0.74	/opt/source/mgr/journal/20220307.001	1947	0 second	8669 KB/sec

Shadow Destino:

Menu Home | About | Help | Logout System > Shadow Servers > Shadows Ensemble by InterSystems

Server: **ip-10-0-0-74.ec2.internal** Namespace: %SYS
 User: **_SYSTEM** Licensed to: **Sales Engineers** Instance: **DESTINATION**

This System has been defined as a shadow server for other database server(s): Last update: 2022-03-07 12:46:56.578 Auto

Filter: Page size: 20 Items found: 1

#	Name	Status	Checkpoint	Errors	Open Transactions	Latency	Applying Journal (Percentage Complete)	Transferring Journal			
1	SHADOW	processing	9	0	YES	0 second	/opt/ensemble/shadowdest/20220307.001 (100%)	/opt/ensemble/shadowdest/20220307.001	Details	-	Suspend -

1. 1.1 O processo de migração se inicia criando o ambiente de Mirror e adicionando o Shadow Origem com membro primário: [Criando um Mirror](#).

Exemplo de configuração do Mirror:

Apps _Cachelris aws - Treinamentos Azure CompraHardware Editores on-line DemosInterSystems Git English Reading list

Menu Home | About | Help | Logout System > Configuration > Edit Mirror Edit Mirror

Server: **ip-10-0-0-240.ec2.internal** Namespace: %SYS
 User: **_SYSTEM** Licensed to: **Sales Engineers** Instance: **SOURCE**

Save Cancel Remove Mirror Configuration Remove Other Mirror Member Add New Async Member Edit Mirror

Use the form below to edit the existing Mirror 'MIRRORDEMO':

Mirror Information

Mirror Name: MIRRORDEMO

Use SSL/TLS: [Set up SSL/TLS](#)

Use of SSL/TLS is highly recommended!

Use Arbiter:
 Address: Port:
Required. Required.

Use Virtual IP:
 IP Address: Mask (CIDR format):
Required. Required.

Network Interface:
Required.

Quality of Service Timeout (msec):

Compression Mode For Failover Members:

Compression Mode For Async Members:

Allow Parallel Dejournaling:

Mirror Member Information

This member is CACHEPRIMARY

Name	Member Type	Instance Directory	Agent Address	Agent Port	Mirror Private Address	Superserver Port	Superserver Address
CACHEPRIMARY	Failover	/opt/source/	ip-10-0-0-240.ec2.internal	2188	ip-10-0-0-240.ec2.internal	56774	ip-10-0-0-240.ec2.internal

This member is the primary. Changes will be sent to other members.

1. 1.2 Agora como próximo passo adicione o Shadow destino como membro do Mirror ([Backup failover Member](#))
- 2.
3. Exemplo do servidor secundário como Backup FailOver:

Menu Home | About | Help | Logout System > Mirror Monitor

Mirror Monitor Server: **ip-10-0-0-74.ec2.internal** Namespace: %SYS
 User: _SYSTEM Licensed to: Sales Engineers Instance: DESTINATION

View Mirror Journal Files Stop Mirror On This Member Set No Failover Demote To DR Member Demote Other Member Refresh: off On 10

This system is a failover member in mirror MIRRORDEMO

Mirror Failover Member Information			Arbiter Connection Status	
	This Failover Member	Other Failover Member		
Mirror Member Name	CACHEFAILOVER	CACHEPRIMARY	Arbiter Address	10.0.0.54 2188
Superserver Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal	Failover Mode	Arbiter Controlled
Mirror Private Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal	Connection Status	Both failover members are connected to the arbiter

Mirror Member Status					
Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEPRIMARY	Failover	Primary	N/A	N/A	N/A
CACHEFAILOVER	Failover	Backup	Active	Caught up	N/A

Incoming Journal Transfer Rate for This Member (over refresh interval)
 --- (will be displayed on refresh)

Mirrored Databases

Filters: Page size: 0 Max rows: 1000 Results: 0 Page: 1 of 1

Name	Directory	Status	Next Record To Dejournal (Time, Filename, Offset)
No Results			

Click 'Go' to perform an action on multiple databases
 --Select an action-- Go

1.3 Adicione os bancos que estão configurados como "Shadowed databases" no servidor primário do Mirror. [Adicionando um banco existente no Mirror.](#)

Exemplo com o banco adicionado:

Menu Home | About | Help | Logout System > Mirror Monitor

Mirror Monitor Server: **ip-10-0-0-240.ec2.internal** Namespace: %SYS
 User: _SYSTEM Licensed to: Sales Engineers Instance: SOURCE

View Mirror Journal Files Set No Failover Demote Other Member Refresh:

This system is a failover member in mirror MIRRORDEMO

Mirror Failover Member Information			Arbiter Connection Status	
	This Failover Member	Other Failover Member		
Mirror Member Name	CACHEPRIMARY	CACHEFAILOVER	Arbiter Address	10.0.0.54 2188
Superserver Address	ip-10-0-0-240.ec2.internal	ip-10-0-0-74.ec2.internal	Failover Mode	Arbiter Controlled
Mirror Private Address	ip-10-0-0-240.ec2.internal	ip-10-0-0-74.ec2.internal	Connection Status	Both failover members are connected to the arbiter

Mirror Member Status					
Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEPRIMARY	Failover	Primary	N/A	N/A	N/A
CACHEFAILOVER	Failover	Backup	Active	Caught up	N/A

Mirrored Databases

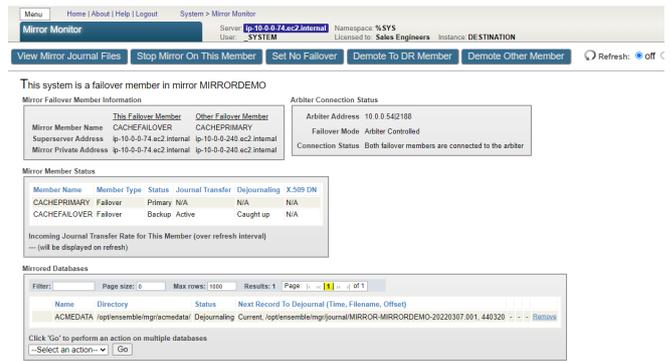
Filter: Page size: 0 Max rows: 1000 Results: 1 Page: 1 of 1

Name	Directory	Status	Next Record To Dejournal (Time, Filename, Offset)
ACMEDATA	/opt/source/mgr/acmedata/	Normal	N/A

Click 'Go' to perform an action on multiple databases
 --Select an action-- Go

1.4 - Agora precisamos sincronizar o banco de dados no servidor membro, existem duas formas:

- Utilizando o backup e restore
- Utilizando o utilitário: ConvertShadowDatabases^MIRROR, de acordo com o procedimento em: [Convertendo um servidor Shadow para Mirror.](#)

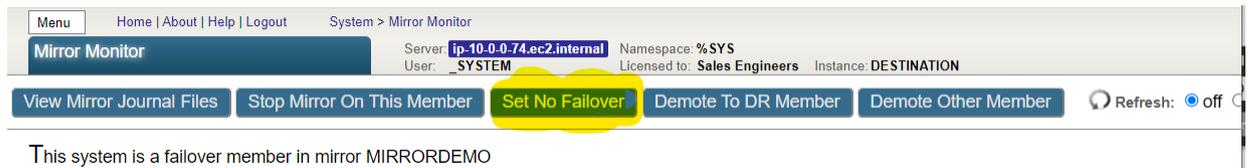


Pronto, agora que finalizamos a migração de Shadow para Mirror, podemos migrar nosso ambiente para InterSystems IRIS.

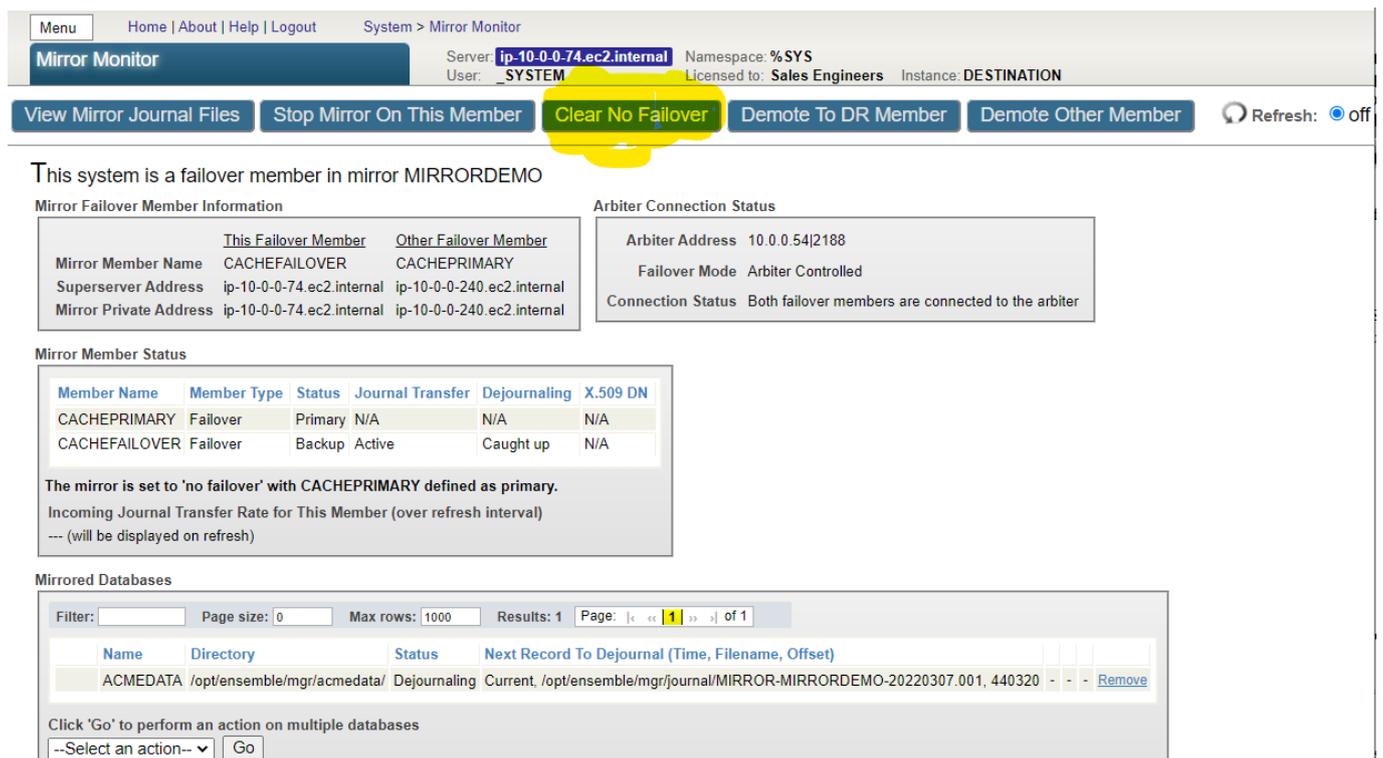
2 - Todos os passos nesta etapa 2 são feitas no servidor secundário membro backup do Failover.

Na documentação oficial: How to migrate to InterSystems IRIS existe uma um capítulo tratando com detalhes esta etapa que vou passar dicas aqui, ela se chama: Mirrored Environment Migration Checklist. (Sempre lembrando que a documentação está disponível no WRC)

2.1 – O primeiro passo é parar o Failover automático no servidor de membro de backup, clicando em Set No Failover:



O novo status do servidor ficará da seguinte maneira: Clear no Failover



1. 2.2 - Caso o ambiente seja Ensemble, lembre-se que é necessário desligar o Auto-Start da produção, este procedimento encontra-se na [parte 02 deste artigo](#).

2.3 - Se o seu ambiente utiliza o mapeamento %ALL, você precisa deletar este mapeamento, caso contrário durante o processo de migração o processo vai falhar e o ambiente ficará em um estado que não é possível a recuperação.

1. 2.4 Agora vamos desligar o servidor secundário membro do ambiente Failover, e verificar o log para confirmar que não existe nenhum problema no ambiente.

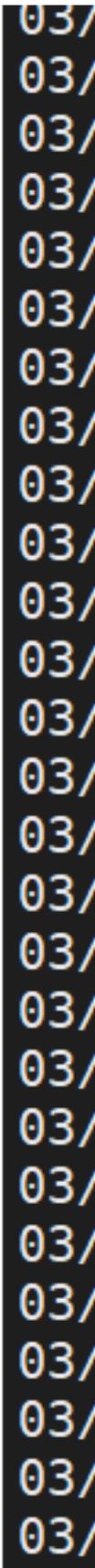
```
[root@ip-10-0-0-74 ec2-user]# ccontrol stop DESTINATION

Cache Shutdown Status: 12:36 pm 08 Mar 2022

0 interactive jobs (Telnet/Lat)
0 background jobs (from job command)
0 Cache Direct server jobs
8 CSP server jobs
0 ODBC server jobs
26 system jobs

Do you want to broadcast a message to anyone? No => No
Do you want to see the Cache status report? No => No
Do you want to run the user defined shutdown routine? Yes => Yes
Are you ready for the system to halt? Yes => Yes

12:36:54 Shutting down Cache
12:36:54 Notifying Clients
12:36:54 No user shutdown routines to execute
12:36:54 Stopping User Jobs
12:36:59 Stopping Network Servers
12:36:59 Withdrawing from License Domain
12:36:59 Waiting for users to stop
12:36:59 Stopping Client Networking
12:36:59 Disconnecting all mirror sets
12:37:00 Removing database locks
12:37:00 Updating Journal File
12:37:01 Waiting for database updates to complete
12:37:01 Database updates complete
12:37:01 Stopping System Jobs
12:37:03 Shutdown complete
[root@ip-10-0-0-74 ec2-user]#
```

2.5 - Como próximo passo é necessário parar e desativar o ISCAgent no servidor secundário membro do ambiente FailOver.

```
[root@ip-10-0-0-74 mgr]# systemctl stop ISCAgent
[root@ip-10-0-0-74 mgr]# systemctl disable ISCAgent
Synchronizing state of ISCAgent.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install disable ISCAgent
Removed /etc/systemd/system/multi-user.target.wants/ISCAgent.service.
[root@ip-10-0-0-74 mgr]# systemctl status ISCAgent
● ISCAgent.service - InterSystems Agent
   Loaded: loaded (/etc/systemd/system/ISCAgent.service; disabled; vendor preset: disabled)
   Active: inactive (dead)

Mar 07 12:11:33 ip-10-0-0-74.ec2.internal systemd[1]: Starting InterSystems Agent...
Mar 07 12:11:33 ip-10-0-0-74.ec2.internal systemd[1]: Started InterSystems Agent.
Mar 07 12:11:33 ip-10-0-0-74.ec2.internal ISCAgent[979]: Starting
Mar 07 12:11:33 ip-10-0-0-74.ec2.internal ISCAgent[981]: Starting ApplicationServer on *:2188
Mar 08 12:43:49 ip-10-0-0-74.ec2.internal systemd[1]: Stopping InterSystems Agent...
Mar 08 12:43:49 ip-10-0-0-74.ec2.internal systemd[1]: Stopped InterSystems Agent.
[root@ip-10-0-0-74 mgr]#
```

2.6 -Vamos rodar agora o script de instalação do InterSystems IRIS, atualizando o nosso ambiente corrente, lembrando que o instalador reconhecerá a instância de Caché/Ensemble, informando o nome da instância o instalador executará a atualização do ambiente.

```
[root@ip-10-0-0-74 IRIS-2021.1.0.215.0-lnxrhx64]# ./irisinstall

Your system type is 'Red Hat Enterprise Linux (x64)'.

Currently defined instances:

Cache instance 'DESTINATION'
  directory: /opt/ensemble
  versionid: 2018.1.4.505.1
  conf file: cache.cpf (SuperServer port = 56773, WebServer = 57773)
  status:    down, last used Tue Mar  8 12:37:00 2022

Enter instance name: DESTINATION
```

```
WARNING: You are about to convert your Ensemble instance 'DESTINATION'
         in directory '/opt/ensemble' to IRIS.
         Please make sure you have a full backup of your system.

Do you want to convert Ensemble instance 'DESTINATION' to IRIS <Yes>? yes

-----
NOTE: Users should not attempt to access InterSystems IRIS while
      the conversion is in progress.
-----

InterSystems IRIS did not detect a license key file

Warning: InterSystems IRIS requires a different license key than Ensemble.
If you do not have an InterSystems IRIS license key, please contact
InterSystems for an updated key.

License key file: /opt/iris.key

The license key is valid

Please review the Ensemble to InterSystems IRIS conversion options:
-----
Instance name: DESTINATION
Destination directory: /opt/ensemble
InterSystems IRIS version to convert to: 2021.1.0.215.0
Ensemble currently installed version: 2018.1.4.505.1
-----

Confirm Ensemble to InterSystems IRIS conversion <Yes>? yes
```


IRI
See
Sta
Onc
Sta
Usi

Sta
Glo
All
Cre
Thi
Sal
Cop
Any

1 a

You
to

Ins

2.7 - O alerta que é apresentando após a migração ocorre pois o ISCAgent está desativado. (Executado no passo 2.5).

Log:

System > System Logs > View Messages Log

File name: /opt/ensemble/mgr/messages.log

Search and highlight a string: Search Clear Highlight Cancel [\[Go to Bottom\]](#)

ALERTS From /opt/ensemble/mgr/alerts.log

File size: 270 bytes

```
03/08/22-12:56:28:957 (12976) 2 [Utility.Event] Failed to become either Primary or Backup at startup
03/08/22-12:58:30:573 (13137) 2 [Utility.Event] [SYSTEM MONITOR] ISCAgent Alert: ISCAgent reported ERROR #2162: Failed to identify the ISCAgent application server port.
```

O agente também foi atualizado durante o processo de instalação, como próximo passo precisamos reativar o ISCAgent.

```
[root@ip-10-0-0-74 IRIS-2021.1.0.215.0-lnxrhx64]# systemctl start ISCAgent
[root@ip-10-0-0-74 IRIS-2021.1.0.215.0-lnxrhx64]# systemctl status ISCAgent
● ISCAgent.service - InterSystems Agent
  Loaded: loaded (/etc/systemd/system/ISCAgent.service; disabled; vendor preset: disabled)
  Active: active (running) since Tue 2022-03-08 13:06:35 UTC; 6s ago
  Process: 16795 ExecStart=/usr/local/etc/irissys/ISCAgent (code=exited, status=0/SUCCESS)
  Main PID: 16797 (ISCAgent)
  Tasks: 2 (limit: 23944)
  Memory: 3.7M
  CGroup: /system.slice/ISCAgent.service
          └─16797 /usr/local/etc/irissys/ISCAgent
            └─16798 /usr/local/etc/irissys/ISCAgent

Mar 08 13:06:35 ip-10-0-0-74.ec2.internal systemd[1]: Starting InterSystems Agent...
Mar 08 13:06:35 ip-10-0-0-74.ec2.internal systemd[1]: Started InterSystems Agent.
Mar 08 13:06:35 ip-10-0-0-74.ec2.internal ISCAgent[16797]: Starting
Mar 08 13:06:35 ip-10-0-0-74.ec2.internal ISCAgent[16798]: Starting ApplicationServer on *:2188
[root@ip-10-0-0-74 IRIS-2021.1.0.215.0-lnxrhx64]#
```

1. 2.8 - Após o ISCAgent estar ativo, precisamos validar se o servidor membro do backup FailOver está ativo.

InterSystems Management Portal

Home About Help Contact Logout

Server ip-10-0-0-74.ec2.internal Namespace %SYS User SuperUser Licensed To Sales Engineers_Adv.Server_IAM Instance DESTINATION

System > Mirror Monitor

Mirror Monitor View Mirror Journal Files Stop Mirror On This Member Clear No Failover Demote To DR Member

This system is a failover member in mirror MIRRORDEMO

Mirror Member Name	This Failover Member	Other Failover Member
CACHEFAILOVER	CACHEFAILOVER	CACHEPRIMARY
Superserver Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal
Mirror Private Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal

Arbiter Address	10.0.0.54 2188
Failover Mode	Arbiter Controlled
Connection Status	Both failover members are connected to the arbiter

Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEPRIMARY	Falover	Primary	N/A	N/A	N/A
CACHEFAILOVER	Falover	Backup	Active	Caught up	N/A

The mirror is set to 'no failover' with CACHEPRIMARY defined as primary.
Incoming Journal Transfer Rate for This Member (over refresh interval)
--- (will be displayed on refresh)

1. 2.9 - Como o servidor primário ficou ativo, precisamos ligar novamente o Mirror para que os bancos sincronizem, clique em Clear no Failover e verifique o monitor do Mirror e valide se todos os bancos sincronizaram:

Mirror Monitor

[View Mirror Journal Files](#)

[Stop Mirror On This Member](#)

[Set No Failover](#)

[Demote To DR Member](#)

This system is a failover member in mirror MIRRORDEMO

Mirror Failover Member Information

	This Failover Member	Other Failover Member
Mirror Member Name	CACHEFAILOVER	CACHEPRIMARY
Superserver Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal
Mirror Private Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal

Arbiter Connection Status

Arbiter Address	10.0.0.54 2188
Failover Mode	Arbiter Controlled
Connection Status	Both failover members are connected to the arbiter

Mirror Member Status

Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEPRIMARY	Failover	Primary	N/A	N/A	N/A
CACHEFAILOVER	Failover	Backup	Active	Caught up	N/A

Incoming Journal Transfer Rate for This Member (over refresh interval)

--- (will be displayed on refresh)

Mirrored Databases

Filter: Page size: Max rows: Results: Page: |< << **1** >> >| of 1

Name	Directory	Status	Next Record To Dejournal (Time, Filename, Offset)			
ACMEDATA	/opt/ensemble/mgr/acmedata/	Dejournaling	Current, /opt/ensemble/mgr/journal/MIRROR-MIRRORDEMO-20220308.001, 279948	-	-	Remove

Click 'Go' to perform an action on multiple databases

--Select an action--

3 - Agora esta etapa será realizada no servidor primário que está com Caché/Ensemble (neste momento o ambiente não pode ficar disponível para nenhum usuário). Uma dica importante, como no primeiro momento o processo está sendo feito em ambiente de teste, este é um bom momento para medir o tempo de downtime do ambiente a fim de colocar no planejamento da sua migração oficial.

1. 3-1 - Caso o ambiente seja Ensemble, lembre-se que é necessário desligar o Auto-Start e parar a produção, este procedimento encontra-se na [parte 02 deste artigo](#).
- 2.
3. 3.2 - Se seu ambiente utiliza o mapeamento %ALL, você precisa deletar este mapeamento. Caso contrário, durante o processo de migração o processo vai falhar e o ambiente ficará em um estado que não é possível a recuperação.
1. 3.3 - Como próximo passo agora vamos desligar o servidor primário.

```
[root@ip-10-0-0-240 ec2-user]# ccontrol stop SOURCE

Cache Shutdown Status:  2:27 pm 08 Mar 2022

 0 interactive jobs (Telnet/Lat)
 0 background jobs (from job command)
 0 Cache Direct server jobs
 8 CSP server jobs
 0 ODBC server jobs
24 system jobs

Do you want to broadcast a message to anyone? No => No
Do you want to see the Cache status report? No => No
Do you want to run the user defined shutdown routine? Yes => Yes
Are you ready for the system to halt? Yes => Yes

14:27:19 Shutting down Cache
14:27:19 Notifying Clients
14:27:19 No user shutdown routines to execute
14:27:19 Stopping User Jobs
14:27:24 Stopping Network Servers
14:27:24 Withdrawing from License Domain
14:27:24 Waiting for users to stop
14:27:24 Stopping Client Networking
14:27:24 Disconnecting all mirror sets
14:27:25 Removing database locks
14:27:25 Updating Journal File
14:27:26 Waiting for database updates to complete
14:27:26 Database updates complete
14:27:26 Stopping System Jobs
14:27:28 Shutdown complete
[root@ip-10-0-0-240 ec2-user]#
```

4 - Agora precisamos validar se o servidor secundário membro do Failover assumiu corretamente o posto, e se tornou primário:

The screenshot shows the Mirror Monitor web interface. At the top, there are buttons for "View Mirror Journal Files", "Set No Failover", and "Demote Other Mem". Below this, a message states: "This system is a failover member in mirror MIRRORDEMO".

Mirror Failover Member Information

	This Failover Member	Other Failover Member
Mirror Member Name	CACHEFAILOVER	CACHEPRIMARY
Superserver Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal
Mirror Private Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal

Arbiter Connection Status

Arbiter Address	10.0.0.54/2188
Failover Mode	Agent Controlled
Connection Status	Only this member is connected to the arbiter

Mirror Member Status

Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEFAILOVER	Failover	Primary	N/A	N/A	N/A
CACHEPRIMARY	Failover	Down	Disconnected on 03/08/2022 14:27:26.46	Disconnected on 03/08/2022 14:27:26.46	N/A

Mirrored Databases

Filter: [] Page size: 0 Max rows: 1000 Results: 1 Page: 1 of 1

Name	Directory	Status	Next Record To Dejournal (Time, Filename, Offset)		
ACMEDATA	/opt/ensemble/mgr/acmedata/	Normal	N/A	-	Remove

Click 'Go' to perform an action on multiple databases
--Select an action-- Go

É possível verificar no Monitor do Mirror que tudo está certo!

4.1 – Se seu ambiente utiliza o mapeamento %ALL, agora chegou a hora de recriá-lo.

1. 4.2 - Vamos agora compilar as aplicações (Classes, Rotinas e CSP), este procedimento está

- descrito [parte 02 do artigo](#).
- 2.
 3. 4.3 - Caso seu ambiente seja Ensemble chegou a hora de iniciar a produção.
 1. 4.4 - Para prevenir problemas durante a atualização do servidor Caché (que se encontra parado), vamos parametrizar para não ocorrer o Failover automático no servidor IRIS, clicando em Set No Failover.

System > Mirror Monitor

Mirror Monitor

[View Mirror Journal Files](#) Set No Failover

This system is a failover member in mirror MIRRORDEMO

Mirror Failover Member Information

	This Failover Member	Other Failover Member
Mirror Member Name	CACHEFAILOVER	CACHEPRIMARY
Superserver Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal
Mirror Private Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal

Arbiter Connection Status

Arbiter Address	10.0.0.54 2188
Failover Mode	Agent Controlled
Connection Status	Only this member is connected to the arbiter

Mirror Member Status

Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEFAILOVER	Failover	Primary	N/A	N/A	N/A
CACHEPRIMARY	Failover	Down	Disconnected on 03/08/2022 14:27:26.46	Disconnected on 03/08/2022 14:27:26.46	N/A

Mirrored Databases

Filter: Page size: 0 Max rows: 1000 Results: 1 Page: |< << 1 >> >| of 1

Name	Directory	Status	Next Record To Dejournal (Time, Filename, Offset)			
ACMEDATA	/opt/ensemble/mgr/acmedata/	Normal	N/A	-	-	Remove

Click 'Go' to perform an action on multiple databases

--Select an action--

O status que precisamos é que mude para Clear no Failover:

System > Mirror Monitor

Mirror Monitor

[View Mirror Journal Files](#) Clear No Failover

This system is a failover member in mirror MIRRORDEMO

Mirror Failover Member Information

	This Failover Member	Other Failover Member
Mirror Member Name	CACHEFAILOVER	CACHEPRIMARY
Superserver Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal
Mirror Private Address	ip-10-0-0-74.ec2.internal	ip-10-0-0-240.ec2.internal

Arbiter Connection Status

Arbiter Address	10.0.0.54 2188
Failover Mode	Agent Controlled
Connection Status	Only this member is connected to the arbiter

Mirror Member Status

Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEFAILOVER	Failover	Primary	N/A	N/A	N/A
CACHEPRIMARY	Failover	Down	Disconnected on 03/08/2022 14:27:26.46	Disconnected on 03/08/2022 14:27:26.46	N/A

The mirror is set to 'no failover' with CACHEFAILOVER defined as primary.

Mirrored Databases

Filter: Page size: 0 Max rows: 1000 Results: 1 Page: |< << 1 >> >| of 1

Name	Directory	Status	Next Record To Dejournal (Time, Filename, Offset)			
ACMEDATA	/opt/ensemble/mgr/acmedata/	Normal	N/A	-	-	Remove

Click 'Go' to perform an action on multiple databases

--Select an action--

Podemos reparar no Monitor do Mirror o status Down do servidor.

5 - Esta etapa será realizada no servidor Caché que está desligado. (Antigo servidor primário membro do FailOver).

5.1 - É necessário parar e desativar o ISCAgent no antigo servidor primário membro do ambiente FailOver.

```
[root@ip-10-0-0-240 IRIS-2021.1.0.215.0-lnxrhx64]# systemctl stop ISCAgent
[root@ip-10-0-0-240 IRIS-2021.1.0.215.0-lnxrhx64]# systemctl status ISCAgent
● ISCAgent.service - InterSystems Agent
   Loaded: loaded (/etc/systemd/system/ISCAgent.service; enabled; vendor preset: disabled)
   Active: inactive (dead) since Tue 2022-03-08 16:49:26 UTC; 4s ago
     Process: 947 ExecStart=/usr/local/etc/cachesys/ISCAgent (code=exited, status=0/SUCCESS)
    Main PID: 975 (code=exited, status=0/SUCCESS)

Mar 08 14:27:24 ip-10-0-0-240.ec2.internal ISCAgent[23373]: Serving application: ISC1REMCCTRL
Mar 08 14:27:24 ip-10-0-0-240.ec2.internal ISCAgent[23373]: Mirror remote control job 23373 started for /opt/source/
Mar 08 14:27:26 ip-10-0-0-240.ec2.internal ISCAgent[23389]: Serving application: ISC1REMCCTRL
Mar 08 14:27:26 ip-10-0-0-240.ec2.internal ISCAgent[23389]: Mirror remote control job 23389 started for /opt/source/
Mar 08 14:27:27 ip-10-0-0-240.ec2.internal ISCAgent[23399]: Serving application: ISC1REMCCTRL
Mar 08 14:27:27 ip-10-0-0-240.ec2.internal ISCAgent[23399]: Mirror remote control job 23399 started for /opt/source/
Mar 08 14:50:54 ip-10-0-0-240.ec2.internal ISCAgent[31816]: Serving application: ISC1REMCCTRL
Mar 08 14:50:54 ip-10-0-0-240.ec2.internal ISCAgent[31816]: Mirror remote control job 31816 started for /opt/source/
Mar 08 16:49:26 ip-10-0-0-240.ec2.internal systemd[1]: Stopping InterSystems Agent...
Mar 08 16:49:26 ip-10-0-0-240.ec2.internal systemd[1]: Stopped InterSystems Agent.
[root@ip-10-0-0-240 IRIS-2021.1.0.215.0-lnxrhx64]#
```

1. 5.2 - Agora vamos rodar o script de instalação do InterSystems IRIS para atualizar o Caché/Ensemble. Lembrando que o instalador reconhecerá a instância do Caché/Ensemble atualmente instalada.

```
[root@ip-10-0-0-240 IRIS-2021.1.0.215.0-lnxrhx64]# ./irisinstall
Your system type is 'Red Hat Enterprise Linux (x64)'.

Currently defined instances:

Cache instance 'SOURCE'
  directory: /opt/source
  versionid: 2018.1.4.505.1
  conf file: cache.cpf (SuperServer port = 56774, WebServer = 57774)
  status:    down, last used Tue Mar 8 14:27:25 2022

Enter instance name: SOURCE
```



```
Scheduling inventory scan
IRIS initialization complete

See the iboot.log file for a record of the installation.

Starting up InterSystems IRIS...
Once this completes, users may access InterSystems IRIS
Starting SOURCE
Using 'iris.cpf' configuration file

Starting Control Process
Global buffer setting requires attention. Auto-selected 25% of total memory.
Allocated 1222MB shared memory: 944MB global buffers, 94MB routine buffers
Creating a WIJ file to hold 99 megabytes of data
This copy of InterSystems IRIS has been licensed for use exclusively by:
Sales Engineers Adv.Server_IAM
Copyright (c) 1986-2021 by InterSystems Corporation
Any other use is a violation of your license agreement

1 alert(s) during startup. See messages.log for details.

You can point your browser to http://ip-10-0-0-240.ec2.internal:57774/csp/sys/UtilHome.csp
to access the management portal.

Installation completed successfully
ip-10-0-0-240-IRIS-2021-1-0-215-0-1-xxxxx6414
```

1. 5.3 - Se seu ambiente utiliza o mapeamento %ALL, agora chegou a hora de recriá-lo.

1. 5.4 - Próximo passo é iniciar o ISCAgent.

2.
3.

```
[root@ip-10-0-0-240 IRIS-2021.1.0.215.0-lnxrhx64]# systemctl start ISCAgent
[root@ip-10-0-0-240 IRIS-2021.1.0.215.0-lnxrhx64]# systemctl status ISCAgent
● ISCAgent.service - InterSystems Agent
  Loaded: loaded (/etc/systemd/system/ISCAgent.service; enabled; vendor preset: disabled)
  Active: active (running) since Tue 2022-03-08 17:04:43 UTC; 5s ago
  Process: 30260 ExecStart=/usr/local/etc/irissys/ISCAgent (code=exited, status=0/SUCCESS)
  Main PID: 30262 (ISCAgent)
  Tasks: 2 (limit: 23944)
  Memory: 3.9M
  CGroup: /system.slice/ISCAgent.service
          └─30262 /usr/local/etc/irissys/ISCAgent
            └─30263 /usr/local/etc/irissys/ISCAgent

Mar 08 17:04:43 ip-10-0-0-240.ec2.internal systemd[1]: Starting InterSystems Agent...
Mar 08 17:04:43 ip-10-0-0-240.ec2.internal systemd[1]: Started InterSystems Agent.
Mar 08 17:04:43 ip-10-0-0-240.ec2.internal ISCAgent[30262]: Starting
Mar 08 17:04:43 ip-10-0-0-240.ec2.internal ISCAgent[30263]: Starting ApplicationServer on *:2188
[root@ip-10-0-0-240 IRIS-2021.1.0.215.0-lnxrhx64]# systemctl status ISCAgent
```

4.

5. 5.5 - Agora precisamos verificar se o servidor se tornou um membro do Failover, como backup:

The screenshot shows the InterSystems Management Portal interface. At the top, there is a navigation bar with the InterSystems logo and links for Home, About, Help, Contact, and Logout. Below this, the current server information is displayed: Server ip-10-0-0-240.ec2.internal, Namespace %SYS, User SuperUser, Licensed To Sales Engineers_Adv.Server_IAM, Instance SOURCE. The main content area is titled 'Mirror Monitor' and includes buttons for 'View Mirror Journal Files', 'Stop Mirror On This Member', 'Clear No Failover', and 'Demote To DR Member'. A section titled 'This system is a failover member in mirror MIRRORDEMO' provides detailed information about the failover configuration. It includes a table for 'Mirror Failover Member Information' comparing 'This Failover Member' (CACHEPRIMARY) and 'Other Failover Member' (CACHEFAILOVER). The 'Arbiter Connection Status' section shows the Arbiter Address as 10.0.0.54|2188, Failover Mode as Arbiter Controlled, and Connection Status as Both failover members are connected to the arbiter. The 'Mirror Member Status' section contains a table with columns for Member Name, Member Type, Status, Journal Transfer, Dejournaling, and X.509 DN. The table shows CACHEFAILOVER as a Failover member with Primary status and N/A for other fields, and CACHEPRIMARY as a Failover member with Backup status and Active for Journal Transfer. Below this, a note states 'The mirror is set to 'no failover' with CACHEFAILOVER defined as primary.' and 'Incoming Journal Transfer Rate for This Member (over refresh interval) --- (will be displayed on refresh)'. The 'Mirrored Databases' section features a table with columns for Name, Directory, Status, and Next Record To Dejournal (Time, Filename, Offset). One database, ACMEDATA, is listed with its directory and status. At the bottom, there is a 'Click 'Go' to perform an action on multiple databases' section with a dropdown menu and a 'Go' button.

1. 5.6 - Caso o ambiente seja Ensemble, já é possível ligar o auto-start da Produção.

2.
3.

Edit Startup Settings

Save Cancel

Use the form below to edit a startup setting:

EnsembleAutoStart
 Please check the checkbox if the value for this setting is true.
 Auto start the Interoperability productions.

5.7 - Podemos ligar o Failover automático novamente, para sincronismo do banco de dados, clicando em Clear No FailOver:

Mirror Monitor

View Mirror Journal Files Stop Mirror On This Member **Clear No Failover** Demote To DR Member

This system is a failover member in mirror MIRRORDEMO

Mirror Failover Member Information

	This Failover Member	Other Failover Member
Mirror Member Name	CACHEPRIMARY	CACHEFAILOVER
Superserver Address	ip-10-0-0-240.ec2.internal	ip-10-0-0-74.ec2.internal
Mirror Private Address	ip-10-0-0-240.ec2.internal	ip-10-0-0-74.ec2.internal

Arbiter Connection Status

Arbiter Address	10.0.0.54 2188
Failover Mode	Arbiter Controlled
Connection Status	Both failover members are connected to the arbiter

Mirror Member Status

Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEFAILOVER	Failover	Primary	N/A	N/A	N/A
CACHEPRIMARY	Failover	Backup	Active	Caught up	N/A

The mirror is set to 'no failover' with CACHEFAILOVER defined as primary.
 Incoming Journal Transfer Rate for This Member (over refresh interval)
 --- (will be displayed on refresh)

Mirrored Databases

Filter: Page size: 0 Max rows: 1000 Results: 1 Page: 1 of 1

Name	Directory	Status	Next Record To Dejournal (Time, Filename, Offset)				
ACMEDATA	/opt/source/mgr/acmedata/	Dejournaling	Current, /opt/source/mgr/journal/MIRROR-MIRRORDEMO-20220308.002, 751856	-	-	-	Remove

Click 'Go' to perform an action on multiple databases
 --Select an action-- Go

O status mudará para e a sincronização dos bancos deve iniciar:

Mirror Monitor

View Mirror Journal Files Stop Mirror On This Member **Set No Failover** Demote To DR Member

This system is a failover member in mirror MIRRORDEMO

Mirror Failover Member Information

	This Failover Member	Other Failover Member
Mirror Member Name	CACHEPRIMARY	CACHEFAILOVER
Superserver Address	ip-10-0-0-240.ec2.internal	ip-10-0-0-74.ec2.internal
Mirror Private Address	ip-10-0-0-240.ec2.internal	ip-10-0-0-74.ec2.internal

Arbiter Connection Status

Arbiter Address	10.0.0.54 2188
Failover Mode	Arbiter Controlled
Connection Status	Both failover members are connected to the arbiter

Mirror Member Status

Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEFAILOVER	Failover	Primary	N/A	N/A	N/A
CACHEPRIMARY	Failover	Backup	Active	Caught up	N/A

Incoming Journal Transfer Rate for This Member (over refresh interval)
 --- (will be displayed on refresh)

Mirrored Databases

Filter: Page size: 0 Max rows: 1000 Results: 1 Page: 1 of 1

Name	Directory	Status	Next Record To Dejournal (Time, Filename, Offset)				
ACMEDATA	/opt/source/mgr/acmedata/	Dejournaling	Current, /opt/source/mgr/journal/MIRROR-MIRRORDEMO-20220308.002, 1448396	-	-	-	Remove

Click 'Go' to perform an action on multiple databases
 --Select an action-- Go

6 – A migração dos dois servidores foi finalizada, porém, como o procedimento se inicia pelo servidor secundário, o atual servidor secundário (antigo primário) ainda precisa da sua atenção, se faz necessário compilar a aplicação neste servidor e torná-lo principal novamente. Este procedimento também deixará o ambiente indisponível para os usuários.

6.1 – Caso seja Ensemble, parar a produção no servidor primário atual.

6.2 – Desligar o servidor com segurança.

```
[root@ip-10-0-0-74 home]# iris list
Configuration 'DESTINATION'
  directory: /opt/ensemble
  versionid: 2021.1.0.215.0
  datadir: /opt/ensemble
  conf file: iris.cpf (SuperServer port = 56773, WebServer = 57773)
  status: running, since Tue Mar 8 12:56:25 2022
  mirroring: Member Type = Failover; Status = Primary
  state: ok
  product: InterSystems IRIS
[root@ip-10-0-0-74 home]# iris stop destination

InterSystems IRIS Shutdown Status: 5:25 pm 08 Mar 2022

  0 interactive jobs (Telnet/Lat)
  0 background jobs (from job command)
  5 CSP server jobs
  0 ODBC server jobs
  33 system jobs

Do you want to broadcast a message to anyone? No => No
Do you want to see the InterSystems IRIS status report? No => No
Do you want to run the user defined shutdown routine? Yes => Yes
Are you ready for the system to halt? Yes => Yes

17:25:53 Shutting down InterSystems IRIS
17:25:54 Notifying Clients
17:25:54 No user shutdown routines to execute
17:25:54 Stopping User Jobs
17:25:57 Stopping Network Servers
17:25:57 Withdrawing from License Domain
17:25:57 Waiting for users to stop
17:25:57 Stopping Client Networking
17:25:57 Disconnecting all mirror sets
17:25:58 Removing database locks
17:25:58 Updating Journal File
17:26:00 Waiting for database updates to complete
17:26:00 Database updates complete
17:26:00 Stopping System Jobs
17:26:02 Shutdown complete
[root@ip-10-0-0-74 home]#
```

6.3 – Verificar se o servidor se tornou primário:

The screenshot shows the InterSystems Management Portal interface for the 'Mirror Monitor' section. At the top, there is a navigation bar with 'Home', 'About', 'Help', 'Contact', and 'Logout'. Below this, system information is displayed: 'Server ip-10-0-0-240.ec2.internal', 'Namespace %SYS', 'User SuperUser', 'Licensed To Sales Engineers_Adv.Server_IAM', and 'Instance SOURCE'. The main content area is titled 'Mirror Monitor' and includes buttons for 'View Mirror Journal Files', 'Set No Failover', and 'Demote Other Member'. A message states: 'This system is a failover member in mirror MIRRORDEMO'. Below this, there are two sections: 'Mirror Failover Member Information' and 'Arbiter Connection Status'. The 'Mirror Member Status' section contains a table with columns for Member Name, Member Type, Status, Journal Transfer, Dejournaling, and X.509 DN. The 'Mirrored Databases' section includes a table with columns for Name, Directory, Status, and Next Record To Dejournal (Time, Filename, Offset). The table shows one entry: 'ACMEDATA' in directory '/opt/source/mgr/acmedata/' with status 'Normal' and 'N/A' for the next record.

Member Name	Member Type	Status	Journal Transfer	Dejournaling	X.509 DN
CACHEPRIMARY	Failover	Primary	N/A	N/A	N/A
CACHEFAILOVER	Failover	Down	Disconnected on 03/08/2022 17:25:59:60	Disconnected on 03/08/2022 17:25:59:60	N/A

Name	Directory	Status	Next Record To Dejournal (Time, Filename, Offset)
ACMEDATA	/opt/source/mgr/acmedata/	Normal	N/A

6.4 – Agora se faz necessário compilar as aplicações (Classes, Rotinas e CSP), este procedimento está descrito [parte 02 do artigo](#).

6.5 – Agora vamos ligar o servidor secundário e verificar o sincronismo dos bancos de dados.

The screenshot displays the Mirror Monitor interface for a system named MIRRORDEMO. It includes navigation buttons like 'View Mirror Journal Files', 'Stop Mirror On This Member', 'Set No Failover', and 'Demote To DR Member'. The main content area is divided into several sections:

- Mirror Failover Member Information:** A table comparing 'This Failover Member' (CACHEFAILOVER) and 'Other Failover Member' (CACHEPRIMARY) with their respective addresses.
- Arbiter Connection Status:** Shows the arbiter address (10.0.0.54|2188), failover mode (Arbiter Controlled), and connection status (Both failover members are connected to the arbiter).
- Mirror Member Status:** A table with columns for Member Name, Member Type, Status, Journal Transfer, Dejournaling, and X.509 DN. It lists CACHEPRIMARY as Primary and CACHEFAILOVER as Backup.
- Mirrored Databases:** A table listing databases like ACMEDATA with their directories and journaling status. It includes a filter, page size, and a 'Go' button for actions.

Nossa migração foi finalizada com sucesso!

A próxima parte do artigo, vamos tratar de uma migração de um ambiente com ECP, até lá e obrigado!

[#Administração do Sistema](#) [#Bancos de dados](#) [#Gestão da Mudança](#) [#Tutorial](#) [#Caché](#) [#Documentação](#)
[#Ensemble](#) [#InterSystems IRIS](#) [#InterSystems IRIS for Health](#)

URL de origem: <https://pt.community.intersystems.com/post/migrando-uma-inst%C3%A2ncia-com-mirrorshadow-de-cach%C3%A9ensemble-para-iris-parte-03>