**BE X-DC Limited Support**

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| --- | --- | --- |
| Author | Date | Summary of Change |
| Shekhar Singhal/Bala | 17th October 2016 | Initial Document |

# BE X-DC Support

BE will not support X-DC natively. ie, you cannot enable a BE/AS cluster for X-DC. This document covers the steps needed to connect to a standalone AS cluster configured for X-DC. The operational procedures are as follows. The first section covers the overall sequence followed by some details such as the actual commands to run for a test setup

## Initial Setup and Start Sequence

1. Configure a Primary and a DR Site with router **suspend=true**
2. Then enable replication to the DR Site
3. Then start the Client applications (BE connecting to a standalone AS cluster) only on the Primary Site
4. At this point, data will start replicating to the DR Site.

## When disaster happens

1. It is assumed that everything at the primary site is lost including the applications, AS cluster, router, etc.
2. At this point, restart all the client applications (BE) at the DR Site.
3. New data will start accumulating at the DR Site, till the Primary site is recovered

## Recover the Primary Site

As part of recovery, start the AS cluster and the router in suspend=true mode

## Flush the changes from DR Site back to the Primary Site

On the DR Site, simply change to suspend=false. This will cause the queued up transactions on the DR Site to flush back to the Primary side

## Get the Primary Site online again

1. Stop the client applications at the DR Site
2. change router to suspend=true at the DR Site
3. change router to suspend=false at the Primary site (so it starts routing back to the DR Site)
4. start the client applications on the Primary site

The configuration and steps for below cases have been shown here.

In Memory (no persistence)

1. Without Remote Client
2. With Remote Client

Shared Nothing (File based persistence)

1. With Remote Client
2. Without Remote Client

## In Memory (no persistence) – Without Remote Client

Prerequisites:

AS\_HOME is set.

BE\_HOME is set.

The discovery and listen url’s, members names, site names can be configured differently from those mentioned in the example.

### Start DR/Remote site as below and in sequence

Open a new console for as-agent

as-agent.exe -metaspace "my" -discovery "tibpgm://42000" -member\_name "DRMain" -site\_name "drSite"

Open a new console for as-router

as-router.exe -metaspace "my" -discovery "tibpgm://42000" -router\_listen "tcp://localhost:42200" -member\_name "router\_dr"

Open a new console for as-admin

1. as-admin -metaspace "my" -discovery "tibpgm://42000"
2. Once admin is started create site

create site "primarySite" router\_discovery "tcp://localhost:52200" suspend true

### Start Primary/Main site as below and in sequence

Open a new console for as-agent

as-agent.exe -metaspace "my" -discovery "tibpgm://52000" -member\_name "PrimariyMain" -site\_name "primarySite"

Open a new console for as-router

as-router.exe -metaspace "my" -discovery "tibpgm://52000" -router\_listen "tcp://localhost:52200" -member\_name "router\_primary"

Open a new console for as-admin

1. as-admin -metaspace "my" -discovery "tibpgm://52000"
2. Once admin is started create site

create site "drSite" router\_discovery "tcp://localhost:42200" suspend true

### Initialize your spaces on both DR and Primary site.

This can be done by attaching a member executing create space command or through as-admin cli.

An example of cli command to create space “myspace”.

define space 'myspace' (field name 'key' type 'integer' field name 'value' type 'string') key (fields ('key'))

### Put Tuples in Primary and same should be replicated to DR

1. On Primary admin

resume site "drSite"

1. This is optional. Start Primary’s clients. This can be a BE studio project (having AS channels and AS catalog functions) attached to primary site.

Ex.

%BE\_HOME%/bin/be-engine --propFile %BE\_HOME%/bin/be-engine.tra -u default -c sample.cdd sample.ear

1. Start a client which puts some tuples on Primary. Once tuples have been put, check out Primary and DR sites for those tuples. All the tuples created on Primary should be replicated to DR.

### Kill Primary site

This is the scenario when the current active site goes down, and passive site acts as active.

1. Kill any clients attached to Primary.
2. On Primary admin

suspend site "drSite"

1. Kill Primary admin, router, and agent members.
2. This is optional. Start DR/Remote clients. This can be a BE studio project (having AS channels and AS catalog functions) attached to DR site.

Ex.

%BE\_HOME%/bin/be-engine --propFile %BE\_HOME%/bin/be-engine.tra -u default -c sample.cdd sample.ear

1. Start a client which puts some tuples on DR/Remote. The tuples created at this point of time on DR will sit just in DR as the other site (Primary) is still down.

### Recover Primary

Start Primary agent, router, and admin (suspend = true) as described in Step 2.

Initialize your spaces on Primary as stated in step 3.

### Sync Back data from DR to Primary

On DR Admin

resume site "primarySite"

This will start syncing data from DR to Primary. Check to see if data created on DR while Primary was down, have been replicated back to Primary.

### Failback

1. Stop DR clients
2. On DR Admin

suspend site "primarySite"

1. On Primary admin

resume site "drSite"

1. Optionally start Primary’s client
2. Create some tuples on Primary.
3. Check if tuples created are replicated on DR.

## In Memory (no persistence) – With Remote Client

Same Steps as of case 1, just some extra configuration for remote client.

1. While starting agent open proxy port.

Example – opening port 1240

as-agent.exe -metaspace "my" -discovery "tibpgm://42000" -member\_name "DRMain" -site\_name "drSite" -remote\_listen "tcp://:1240"

1. While defining clients as remote client set discovery as remote true.

Example - set discovery to:

tcp://ipaddress:1240?remote=true

## Shared Nothing (File based persistence) – Without Remote Client

### Start DR/Remote site as below and in sequence

Open a new console for as-agent

as-agent.exe -metaspace "my" -discovery "tibpgm://42000" -member\_name "PrimariyMain" -site\_name "drSite" -remote\_listen "tcp://:1240" -data\_store "Some path p1"

Open a new console for as-router

as-router.exe -metaspace "my" -discovery "tibpgm://42000" -router\_listen "tcp://localhost:42200" -member\_name "router\_dr"

Open a new console for as-admin

1. as-admin -metaspace "my" -discovery "tibpgm://42000"
2. Once admin is started create site

create site "primarySite" router\_discovery "tcp://localhost:52200" suspend true

### Start Primary/Main site as below and in sequence

Open a new console for as-agent

as-agent.exe -metaspace "my" -discovery "tibpgm://52000" -member\_name "PrimariyMain" -site\_name "primarySite" -remote\_listen "tcp://:1250" -data\_store " Some path p2"

Open a new console for as-router

as-router.exe -metaspace "my" -discovery "tibpgm://52000" -router\_listen "tcp://localhost:52200" -member\_name "router\_primary"

Open a new console for as-admin

1. as-admin -metaspace "my" -discovery "tibpgm://52000"
2. Once admin is started create site

create site "drSite" router\_discovery "tcp://localhost:42200" suspend true

### Initialize your spaces on both DR and Primary site.

This can be done by attaching a member executing create space command or through as-admin cli.

Note some extra parameters are required in order to recover this space data back.

An example of cli command to create space “myspace”.

define space 'myspace' (field name 'eid' type 'integer' field name 'value' type 'string') key (fields ('eid')) distribution\_policy 'non\_distributed' replication\_count 1 replication\_policy ’sync’ capacity 10000 eviction\_policy 'none' persistence\_type ’share\_nothing’ persistence\_policy ’sync’

### Put Tuples in Primary and same should be replicated to DR

1. On Primary admin

resume site "drSite"

1. This is optional. Start Primary’s clients. This can be a BE studio project (having AS channels and AS catalog functions) attached to primary site.

Ex.

%BE\_HOME%/bin/be-engine --propFile %BE\_HOME%/bin/be-engine.tra -u default -c sample.cdd sample.ear

1. Start a client which would publish say 1000 tuples on Primary. Kill this agent after some 100 or 200 tuples have been put and not all 1000. Check if those 100 or 200 tuples replicated to DR.

### Kill Primary site

This is the scenario when the current active site is gone and passive site acts as active.

1. Kill clients attached to Primary.
2. On Primary admin

suspend site "drSite"

1. Kill Primary admin, router, and agent members.
2. This is optional. Start DR/Remote clients. This can be a BE studio project (having AS channels and AS catalog functions) attached to DR site.

Ex.

%BE\_HOME%/bin/be-engine --propFile %BE\_HOME%/bin/be-engine.tra -u default -c sample.cdd sample.ear

1. Start a client which put say 1000 tuples on DR/Remote. Let all 1000 tuples be published. The tuples created at this point of time on DR will sit just in DR as the other site (Primary) is still down.

### Recover Primary

* 1. Start Primary agent, router, and admin (suspend = true) as described in Step 2.
  2. Redefine spaces on Primary.
  3. Recover space data from persistent file. On Primary admin issue command

recover space "myspace"

### Sync Back data from DR to Primary

On DR Admin

resume site "primarySite"

This will start syncing data from DR to Primary. Check to see if data created on DR while Primary was down, have been replicated back to Primary.

The point to note here is after the sync 1000(as said in example) tuples should be there in Primary. 100 or 200 initially put, rest synced backed from DR, evicting the duplicates.

### Failback

1. Stop DR clients
2. On DR Admin

suspend site "primarySite"

1. On Primary admin

resume site "drSite"

1. Optionally start Primary’s client
2. Create some tuples on Primary.
3. Check if tuples created are replicated on DR.

## Shared Nothing (File based persistence) – With Remote Client

Same as above with remote client settings.