

Adabas Fastpath

Adabas Fastpath Configuration

Version 8.2.1

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This document applies to Adabas Fastpath Version 8.2.1.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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1 Adabas Fastpath Configuration

This document provides information related to Adabas Fastpath configuration.

The following topics are provided:

- **Using Adabas Fastpath in a Distributed System Environment**
- **Using Adabas Fastpath with Adabas Cluster Services**
- **Configuration Examples**

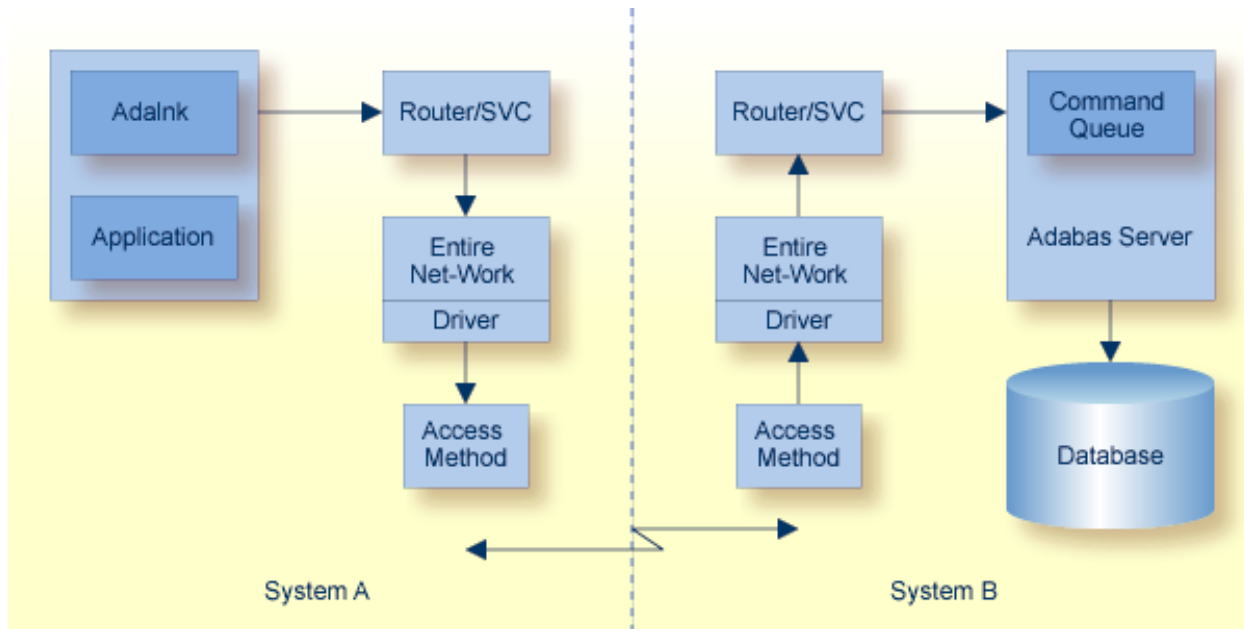
2 Using Adabas Fastpath in a Distributed System Environment

- Entire Net-Work Communication 4
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- Update Processing 5

Adabas Fastpath can be used to optimize Adabas databases that are remote to the client process while automatically maintaining the integrity of data in the Adabas Fastpath buffer.

Entire Net-Work Communication

The following graphic shows the communication components and path involved in a client query, without Adabas Fastpath, when the data resides in a remote Adabas server:

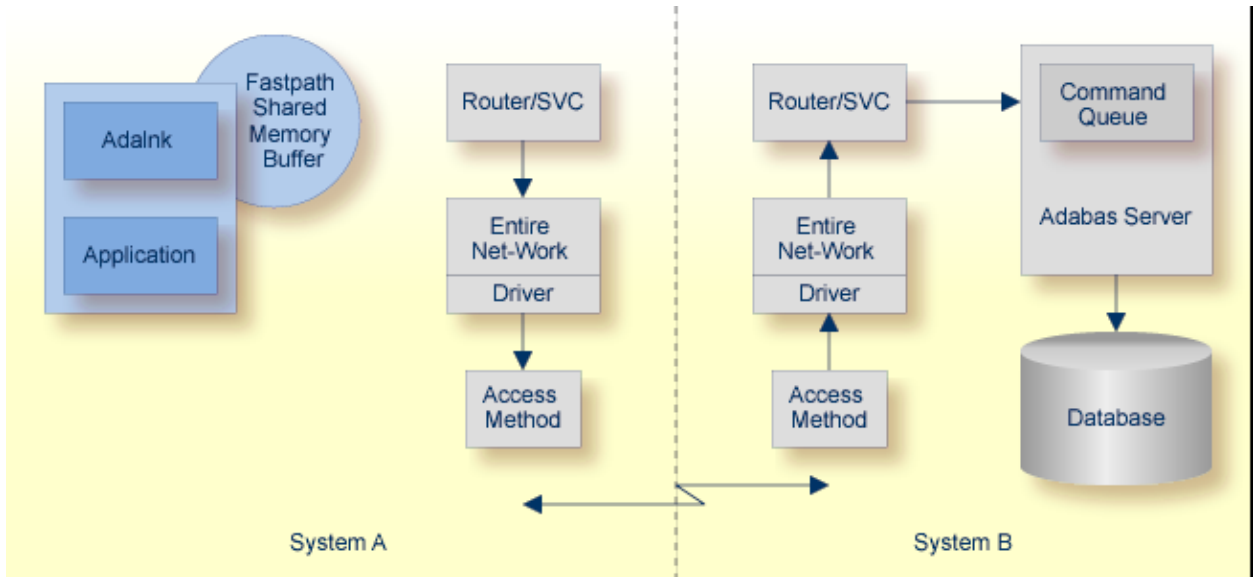


Entire Net-Work Operation without Adabas Fastpath

An Entire Net-Work communicator with an appropriate access method line driver is installed on both systems. The two line drivers establish the connection with each other through the appropriate access method services.

Remote Adabas Server

Adabas Fastpath can be used to optimize a client query for data from a remote database where the Adabas Fastpath buffer is in the same operating system image as the client. Entire Net-Work makes the location of the database transparent to the optimization process and there are no special installation requirements.

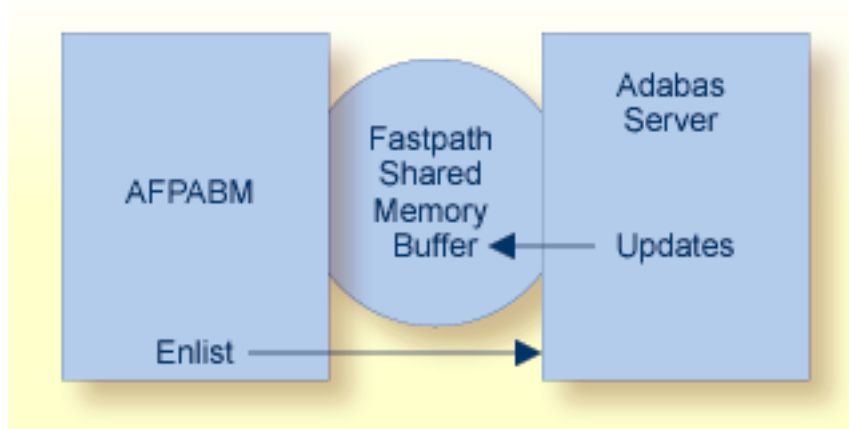


Optimizing with the Fastpath Buffer Local to the Client Process

When a command is optimized by Adabas Fastpath (that is, satisfied from the Adabas Fastpath shared memory buffer), the Entire Net-Work communication path is bypassed as well as the Adabas command processing.

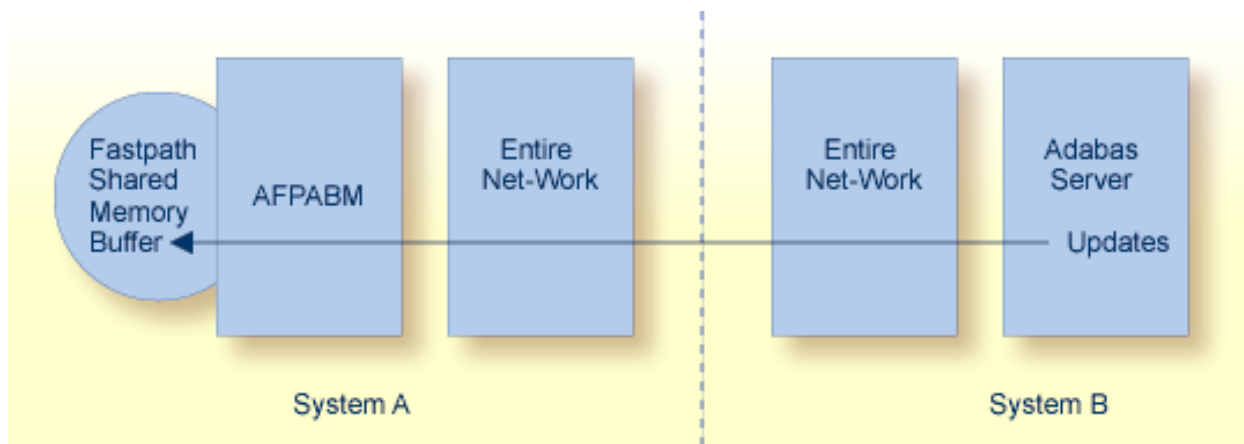
Update Processing

In a single system implementation or a multisystem implementation where the Adabas Fastpath buffer is in the same operating system image as (that is, local to) the updated Adabas server, AFPABM communicates with each Adabas server for which it has any file parameters with update-level sensitivity. When the integrated Adabas Fastpath update component in the Adabas server is alerted to an update, the details are immediately reflected in the local Adabas Fastpath buffer as follows:



Updating with the Fastpath Buffer Local to the Database

For multisystem implementations where the Adabas Fastpath buffer is *not* local to the updated Adabas server, the Adabas Fastpath update component in the Adabas server signals the remote AFPABM component in order to reflect the update in the remote system as follows:



Updating with the Fastpath Buffer Remote from the Database

The originating update command is delayed in the Adabas server until the remote AFPABM has received the update signal. Every effort is made by AFPABM to respond immediately, although some delay to the update thread in the Adabas server is inevitable. Other update threads function without delay unless they depend on the updated ISN.

Multiple AFPABM instances may enlist with the same Adabas server, especially in large implementations. In such cases, the update signalling cycle will take longer. You will need to consider the number of updates processed to determine the optimization benefits.

3 Using Adabas Fastpath with Adabas Cluster Services

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- Adabas Cluster Services 8
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- Client Runtime Controls for Clustered Applications 9

A clustered operating system is a collection of independent operating system images working together as one. The objective is to spread work around the cluster to achieve better load balancing, throughput, and availability.

Clustered applications appeared before their operating system counterpart. Application clusters operated over multiple processes within a single operating system image. Now clustered applications are enhanced to operate throughout an operating system cluster.

Adabas Cluster Services allows multiple instances of the Adabas server to operate against the same database across multiple operating system images, which enhances the general clustering approach for high-end systems.

Clustered Applications

A clustered application is a collection of independent jobs operating together as a single service.

Each implementation of a clustered application allows client sessions to migrate from one job to another across one or more images in an operating system cluster. The memory associated with a particular client session must be migrated along with the client session itself.

The following clustered applications may be implemented within a single operating system image:

- CICS/MRO with dynamic transaction routing in z/OS and VSE/ESA
- IMS/TM in z/OS
- UTM in BS2000

The following clustered applications are available for operating system clusters:

- CICSplex in z/OS
- IMSplex in z/OS

Adabas Cluster Services

Adabas Cluster Services allows you to use multiple images of the Adabas server across an operating system cluster in order to provide truly scalable throughput.

Adabas System Coordinator

Support for clustered applications within a single system image or across multiple system images in an operating system cluster is enabled by the Adabas System Coordinator when running one or more of the following Adabas add-on products:

- Adabas Fastpath
- Adabas Vista
- Adabas Transaction Manager
- Adabas SAF Security

Adabas Fastpath also uses the Adabas System Coordinator to host the Asynchronous Buffer Manager service.

Client Runtime Controls for Clustered Applications

When defining a job parameter for CICS/MRO with dynamic transaction routing or for CICSplex, select the job type CICS DTR.

CICS DTR jobs have user context information allocated from shared memory rather than from local (Job) memory.

Refer to the *Adabas System Coordinator* documentation for more information.

4 Configuration Examples

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This section provides example configurations of Adabas Fastpath with the Adabas System Coordinator. It guides you through typical configurations using the SYSAFP and SYSCOR administration tools. It is best to read through all the examples in turn because the configuration issues become more complex with each example.

The Role of the Adabas System Coordinator

The Adabas System Coordinator is a prerequisite technology for Adabas Fastpath, Vista, Transaction Manager and SAF Security. Traditionally these products have focused their functionality and benefit on Adabas client sessions rather than explicitly on Adabas servers. The type of Adabas session that has been required in the past can be described as "static". Static Adabas client sessions are not able to move from one job to another within the system for load balancing purposes (this is called dynamic transaction routing). However, increasing use and requirement is emerging for Adabas clients to be able to support dynamic transaction routing (DTR). One of the main purposes of the Adabas System Coordinator is to provide transparent DTR support for Adabas Fastpath, Adabas Vista, Adabas Transaction Manager and Adabas SAF Security.

These products always use Adabas System Coordinator services to support their clients. Traditional (static) clients only need to use the default (local) mode of Adabas System Coordinator services. In local mode, the Adabas System Coordinator software is embedded in the application job and provides local support for client sessions. However, DTR clients must use the Adabas System Coordinator daemon services to move client sessions around the system. In daemon mode, the local Adabas System Coordinator software works in conjunction with counterparts in the daemon to make sure the client sessions can be dynamically moved around the system. You must control these options by configuration.



Note: You may also configure static clients to use daemon services if you wish.

The Adabas System Coordinator daemon also provides another service. The daemon is able to run the Adabas Fastpath Asynchronous Buffer Manager (FASTABM). This is totally separate from the clustered application (DTR) services. The following examples are provided for running Adabas Fastpath with the Adabas System Coordinator:

- **Single System with Static Clients**

Static client support from the Adabas System Coordinator in local mode. The Adabas System Coordinator daemon is only needed to house the FASTABM service.

- **Multi System with Static Clients**

Static client support from the Adabas System Coordinator in local mode. The Adabas System Coordinator daemon is only needed to house the FASTABM service.

- **Single System with Dynamic Transaction Routing Clients**

DTR client support from the Adabas System Coordinator in daemon mode. The Adabas System Coordinator daemon is also needed to house the FASTABM service in each system image.

■ **SYSPLEX with Dynamic Transaction Routing Clients**

DTR client support from the Adabas System Coordinator in daemon mode using the IBM Coupling Facility to enable multi-systems client DTR. The Adabas System Coordinator daemon is also needed to house the FASTABM service in each system image.

Single System with Static Clients

A single system is one in which only one operating system image is used, perhaps in isolation within a larger complex site. In this type of environment, you will need to do the following:

- Obtain a new Node ID from your administrator to use for the Adabas System Coordinator daemon. In this example, Node ID 9001 is used.
- Define the Adabas System Coordinator group. This example shows a group called TESTSING.
- Define the sole member of the Adabas System Coordinator group. In this example, the member is SYSCO1.
- Define the Adabas Fastpath global buffer. This example uses the name SYSCO1.
- Define the job(s) for which Adabas Fastpath optimization is to be in effect. This example uses job CICTSING.

You can perform the required configuration by taking the following steps:

1. In this SYSCOR example the Adabas System Coordinator group name is TESTSING, the SVC is 253, and the system type is Standard (Single System Image). It is not necessary to specify a cluster facility name in this case because this is only required for running in SYSPLEX mode.

```

16:38:14                               Add                               2010-12-13
                               System Coordinator Group Member          C11210M1


                               Group Name: TESTSING          SVC ID: 253__

System Type: X Standard single-system image...
(Mark one)   There is only one group member.
             _ Standard multi-system images - XCF...
               This enables multiple XCF group members.
             _ Standard multi-system images - Net-Work...
               This enables multiple Net-Work group members.
             _ IBM Parallel Sysplex...
               This enables XCF group and use of the CF to
               allow dynamic transaction routing in the plex
Cluster Facility Name: _____
Automatic Pool Recovery: Y

Command ==>
           PF1 Help           PF3 Exit           PF5 Add           PF10 More

```

2. Now you must define the daemon member of the Adabas System Coordinator group in SYSCOR. There is usually one daemon running in each system image. Obviously in a single system there is only one member required. The name of the member must be the same as the job name to be run, otherwise the parameters will not be located at runtime. In addition to the name you must also specify the (database or) node number in the Software AG network to be used by the daemon member. This node number must not be currently used for any other purpose. In our example the member name will be SYSCO1. The Node ID allocated in this example is 9001. It is entered in the member definition, as shown below in the expanded group:

 **Note:** Here you are identifying the job name (and node number) of each Adabas System Coordinator daemon, you are NOT identifying databases or client jobs. The daemon job (SYSCO1) must specify a DDCARD input for `PRODUCT=AFP` and `PRODUCT=CAS`. These identify the services that will operate in the daemon job.


```
16:42:01          2010-12-13
      Add Buffer   F11110MB

      Size(k)     : 4096__

System Coordinator
  Group Name : TESTSING
  Member Name: SYSC01__

(Leave empty to select)

Memory Pool Name: _____
Fixed Memory Addr: 00000000
(Where appropriate, e.g. VM's
DCSS name,BS2000's Memory Pool)

Command ==>
  PF1 Help   PF3 Exit   PF5 Add
```

4. Now you must define SYSAFP job parameters for all the client applications that are to use Adabas Fastpath optimization in your system. In this example a standard CICS job with started task name CICTSING. At runtime, this CICS system produces static Adabas clients managed by the local Adabas System Coordinator (without help from the daemon). Default parameter settings are usually sufficient (and can be modified later if necessary), but there are certain parameters that need to be entered so that it is known that Adabas Fastpath is to apply these to the named job. Where optimization is to be applied to a job for the first time, you are asked to add a new set of job parameters in SYSAFP. Here you must first simply identify the job name and the type. The job type allows Adabas Fastpath to assume suitable defaults and be ready to use the correct operating system or TP system interfaces at runtime. In our example, the job name is CICTSING and the type is CICS (not CICS DTR), as follows:

```
16:43:29      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
              - Add Client Runtime Control -                          U11310M1

Select (mark one) :
      _ Batch
      _ COM-PLETE
      _ CICS (DTR - Dynamic transaction routing)
      X CICS (Standard)
      _ IMS (DTR)
      _ UTM (DTR)
      _ TSO
      _ CMS
      _ TIAM
      _ more choices for type or

      _ API controlled - type 1
      _ API controlled - type 2

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit                               Menu
```

5. Now you are asked to identify the job name. In this example, you enter CICTSING as the job name.

Here is the example:

```
16:44:17      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
              - Add Client Runtime Control -                          U11310M3

Type: CICS
Name: CICTSING (* for default controls for this type)

This is a standard type of runtime.

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit      Add                                  Menu
```

6. Details relevant to the runtime controls are requested and whether any API runtimes are to be specified. Please refer to the Adabas System Coordinator documentation for further details.

Here is the example:

```

16:40:56      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2011-03-04
              - System Coordinator Runtime Controls -                  U11310M5
                                Operation mode (mark one):
Type: CICS                                Use normal autodetect approach: X
Name: CICTSING                            Enable COR even if no products: _
                                           Disable all products including COR: _

Display activities through group: _____
Refresh activity statistics every.: _____ commands or _____ seconds
API runtime overrides....: N (Y/N)      Threadsafe operation...: Y (Y/N)
Use additional exits.....: N (Y/N)
Maximum idle time (sec)..: 3600_____ Non-terminal idle time.: _____
Generate RSP009/79 (Y/N)..: Y (until 0_____ seconds elapse)
Runtime messages.....: Y Console message job log (default)
                                _ Local (DDMSG) file
                                _ Forward to the Daemon (DDMSG) file
Latency (mark one).....: _ Disk (crash recoverable) - requires a group
                                _ Dataspace name:          (future)
                                _ Daemon-side memory      - requires a group
                                X Local memory            TSQ identity: _____

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit           Add                               Menu

```

7. Now you are asked to identify the Adabas System Coordinator group containing the daemon member(s) that house the Adabas Fastpath buffer (FASTABM) service. You only identify the group, not the member, because doing so allows sites with multisystem images to run jobs in any system and to dynamically receive the optimization benefits made available by the Adabas Fastpath buffer that is available in that local system. In this example, you enter TESTSING in the buffer group name entry.

Here is the example:

```
16:46:05      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
                - Adabas Fastpath Runtime Controls -                    U1132FM2

Name: CICTSING
Type: CICS

Fastpath ON/OFF for Job: ON

Using Group Name: _____ (Leave empty to select)

Please add Job Parameter details for Fastpath
Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit           Upd                               Menu
```

Multi System with Static Clients

A multisystem is one in which multiple operating system images are used in conjunction with each other. To do this, these images must be connected by Software AG's Entire Net-Work product. In these cases, it is likely that an Adabas Fastpath buffer is to be tasked with caching data from Adabas servers where one (or more) nucleus instances run in connected system images. This configuration means modifications occur to Adabas that are not automatically visible to all the Adabas Fastpath buffers running in all the system images. In this case, you must configure Adabas Fastpath and the Adabas System Coordinator daemon so that they are able to freely communicate this type of information when necessary.

The example will use IMAGE1 and IMAGE2. Only static clients are used, so the local Adabas System Coordinator does not need the help of the daemon to manage its client sessions. The daemon is used solely to house the FASTABM service. Each connected system image must run its own instance of the Adabas System Coordinator daemon.

Here are the steps that you take:

- Define a Adabas System Coordinator group, for example, TESTMULT.
 - Acquire/allocate a Node ID for each member (one per image), for example nodes 9010 and 9011 for systems IMAGE1 and IMAGE2.
 - Define a member of the group for each system image, for example, SYSCO10 and SYSCO11.
 - Define an Adabas Fastpath global buffer for each member (image) where a FASTABM service will be implemented. In this example, both images are included and are called SYSCO10 and SYSCO11.
 - Define the static client jobs that are to use Adabas Fastpath, for example, job CICTMULT.
1. Below is the SYSCOR definition of Adabas System Coordinator Group TESTMULT using SVC number 253; the system type is Standard (Multi System Images). Cluster Facility name is not required since this is only required for running in SYSPLEX mode.



Note: All members of an Adabas System Coordinator group must use the same SVC number at runtime.

```

18:09:00          Add          2010-12-13
                System Coordinator Group Member      C11210M1

                Group Name: TESTMULT          SVC ID: 253__

System Type:  _ Standard single-system image...
(Mark one)   _ There is only one group member.
              X Standard multi-system images - XCF...
              This enables multiple XCF group members.
              _ Standard multi-system images - Net-Work...
              This enables multiple Net-Work group members.
              _ IBM Parallel Sysplex...
              This enables XCF group and use of the CF to
              allow dynamic transaction routing in the plex
Cluster Facility Name: _____

Automatic Pool Recovery: Y

Command ==>
          PF1 Help          PF3 Exit          PF5 Add          PF10 More

```

2. The following shows the member definitions of the group when it has been expanded in SYSCOR.



Note: Here you are identifying the job name (and node number) of each Adabas System Coordinator daemon, you are NOT identifying databases or client jobs.

```

18:10:18      ***** A D A B A S   SYSTEM COORDINATOR 8.2.1 *****      2010-12-13
              - System Coordinator Group Members -                        C11260M1
Run-mode: Local (node 0)
Group Name: TESTMULT              Cluster Facility Name:
SVC ID: 253                        Operating System: Multi

      Member
Purge(P)  Job Name      Node ID
  -        SYSCO10_     9010_    <== Top of List
  -        SYSCO11_     9011_    <== End of List
          _____
          _____
          _____
          _____
          _____
          _____
          _____
          _____
          _____
          _____

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit Refr Upd                                Add      Menu

```

- In this example, an Adabas Fastpath buffer will be run in each system image (one per member). The example below shows the creation of the buffer definition to run as a service in the SYSCO10 member; a similar buffer definition would also be made for SYSCO11.

```
18:12:01          2010-12-13
      Add Buffer   F11110MB

      Size(k)    : 4096__

System Coordinator
  Group Name : TESTMULT
  Member Name: SYSCO10_

(Leave empty to select)

Memory Pool Name: _____
Fixed Memory Addr: 00000000
(Where appropriate, e.g. VM's
DCSS name,BS2000's Memory Pool)

Command ==>
  PF1 Help   PF3 Exit   PF5 Add
```

4. Below is the view of the second screen for the new Adabas Fastpath job parameters for CICT-MULT that will run in the same image as SYSCO10. This is a standard CICS job that does not require daemon mode for dynamic transaction routing. You must identify the Adabas System Coordinator group containing the daemon member(s) that house the Adabas Fastpath buffer (FASTABM) service. You only identify the group, not the member. Doing so allows sites with multisystem images to run jobs in any system and to dynamically receive the optimization benefits made available by the Adabas Fastpath buffer that is available in that local system. In this example, TESTMULT is the Buffer Group Name entry:

```
18:12:55      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
                - Add Client Runtime Control -                          U11310M1

Select (mark one) :
    _ Batch
    _ COM-PLETE
    _ CICS (DTR - Dynamic transaction routing)
    X CICS (Standard)
    _ IMS (DTR)
    _ UTM (DTR)
    _ TSO
    _ CMS
    _ TIAM
    _ more choices for type or

    _ API controlled - type 1
    _ API controlled - type 2

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit                                           Menu
```

5. Now you are asked to identify the job name. In this example, you enter CICTMULT as the job name.

Here is the example:

```
18:14:04      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
              - Add Client Runtime Control -                          U11310M3

Type: CICS
Name: CICSMULT (* for default controls for this type)

This is a standard type of runtime.

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit      Add                                  Menu
```

6. Details relevant to the runtime controls are requested and whether any API runtimes are to be specified. Please refer to the Adabas System Coordinator documentation for further details.

Here is the example:

```

18:14:43      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
              - System Coordinator Runtime Controls -                  U11310M5
                                           Operation mode (mark one):
Type: CICS                                           Use normal autodetect approach: X
Name: CICSMULT                                       Enable COR even if no products: _
                                           Disable all products including COR: _

General Settings
Statistics externally viewed using group: _____
Refresh statistics every: _____ commands or _____ seconds
API runtime overrides....: N (Y/N)   Threadsafe operation...: Y (Y/N)
Use additional exits.....: N (Y/N)
Maximum idle time (sec)..: 3600_____ Non-terminal idle time.: _____
Generate RSP009/79 (Y/N)..: Y (until 0_____ seconds elapse)
Runtime messages          : Y Console message job log (default)
                          _ Local (DDMSG) file
                          _ Forward to the Daemon (DDMSG) file
Latency controls:      TS queue prefix (blank is default): _____

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit      Add                               Menu

```

7. Now you are asked to identify the Adabas System Coordinator group containing the daemon member(s) that house the Adabas Fastpath buffer (FASTABM) service. You only identify the group, not the member, because doing so allows sites with multisystem images to run jobs in any system and to dynamically receive the optimization benefits made available by the Adabas Fastpath buffer that is available in that local system. In this example, you enter TESTSING in the buffer group name entry.

Here is the example:

```

18:15:21      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
                - Adabas Fastpath Runtime Controls -                U1132FM2

Name: CICSMULT
Type: CICS

Fastpath ON/OFF for Job: ON

Using Group Name: TESTMULT (Leave empty to select)

Please add Job Parameter details for Fastpath
Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit           Upd                               Menu

```

Single System with Dynamic Transaction Routing Clients

The following are examples of technologies that offer dynamic transaction routing (DTR) in a single system image:

- CICS/MRO
- IMS TM
- UTM



Note: The activation and use of DTR in the technologies listed above is under the control of the system administrator. You may be able to use these technologies without necessarily using DTR. Please be sure to check.

DTR is the most flexible implementation of load balancing and fault tolerance for these technologies. This is where multiple jobs run together to provide a single service. We refer to DTR-enabled technologies as clustered applications. Clustered applications allow client sessions to move from running in one job to another (within the same service) at any time a message pair completes.

Consequently, Adabas Fastpath, Adabas Vista, Adabas Transaction Manager and Adabas SAF Security must all be ready to react to this event, on demand. The Adabas System Coordinator provides an internal service to enable DTR support for these products.

Here are the steps that you take if you wish to use Adabas Fastpath optimization in DTR jobs within a single system:

- Define an Adabas System Coordinator group, for example, TESTDTR.
- Acquire/allocate a Node ID for the daemon, for example, 9020.
- Define the member of the group, for example, member SYSCO20.
- Define an Adabas Fastpath global buffer for the member (image). This must be named SYSCO20.
- Define the client jobs that are to use Adabas Fastpath, for example, job CICS DTR* that includes job names CICS DTR1 and CICS DTR2 that run together as a single DTR service.

1. Below is the definition of Adabas System Coordinator Group TESTDTR using SVC number 253. The System Type is Standard (Single System Image). Cluster Facility name is not required since this is only required for running in SYSPLEX mode:

```

18:16:29          Add          2010-12-13
          System Coordinator Group Member      C11210M1


          Group Name: TESTDTR_      SVC ID: 253__

System Type: X Standard single-system image...
(Mark one)   There is only one group member.
             _ Standard multi-system images - XCF...
             _ This enables multiple XCF group members.
             _ Standard multi-system images - Net-Work...
             _ This enables multiple Net-Work group members.
             _ IBM Parallel Sysplex...
             _ This enables XCF group and use of the CF to
               allow dynamic transaction routing in the plex
Cluster Facility Name: _____

Automatic Pool Recovery: Y

Command ==>
          PF1 Help      PF3 Exit      PF5 Add      PF10 More
    
```

2. The following shows the example member definition for the group expanded in SYSCOR:

 **Note:** Here you are identifying the job name (and node number) of each Adabas System Coordinator daemon, you are NOT identifying databases or client jobs. The started task for the SYSCO DAEMON will specify a DDCARD parameter PRODUCT=AFP, as well as

PRODUCT=CAS. This is because the SYSCO daemon will host the service for the Adabas Fastpath ABM. The Node ID reserved for the SYSCO Daemon is 9020.

```

18:17:37      ***** A D A B A S   SYSTEM COORDINATOR 8.2.1 *****      2010-12-13
              - System Coordinator Group Members -                      C11260M1
Run-mode: Local (node 0)
Group Name: TESTDTR                      Cluster Facility Name:
SVC ID: 253                               Operating System: Single

      Member
Purge(P)  Job Name      Node ID
      -    SYSCO20_     9020_      <== End of List
          _____
          _____
          _____
          _____
          _____
          _____
          _____
          _____
          _____
          _____

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit Refr Upd                      Add      Menu
  
```

- In this example, an Adabas Fastpath buffer is run in the Adabas System Coordinator member. The example below shows the definition of a new buffer to run as a service in member SYSCO20.

```
18:18:27          2010-12-13
      Add Buffer   F11110MB

      Size(k)     : 4096__

System Coordinator
  Group Name : TESTDTR_
  Member Name: SYSC020_

(Leave empty to select)

Memory Pool Name: _____
Fixed Memory Addr: 00000000
(Where appropriate, e.g. VM's
DCSS name,BS2000's Memory Pool)

Command ==>
  PF1 Help   PF3 Exit   PF5 Add
```

4. The following shows the second screen during the addition of a new job parameter for all the CICS/MRO jobs that are to run together as a single (clustered) DTR service. The "*" wildcard is used to reduce the number of job definitions required. The Adabas Fastpath optimization is based upon the Adabas System Coordinator group used to house the Adabas Fastpath buffer service. In this case, TESTDTR is used as the buffer group name.

Clustered applications that operate as a DTR service must be defined to run in daemon mode. Therefore, CICS DTR is entered as the common service name, and the Adabas System Coordinator group TESTDTR is also identified (this must be the same as the buffer group name above):



Note: It is important that all jobs of the same service have an identical setting for Clustered Application Service Name, especially when the wildcard option is not used. This is the only thing that relates jobs together as a single service.

```
18:21:33      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
              - Add Client Runtime Control -                          U11310M1

Select (mark one) :
      _ Batch
      _ COM-LETE
      X CICS (DTR - Dynamic transaction routing)
      _ CICS (Standard)
      _ IMS (DTR)
      _ UTM (DTR)
      _ TSO
      _ CMS
      _ TIAM
      _ more choices for type or

      _ API controlled - type 1
      _ API controlled - type 2

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit                                           Menu
```

5. Now you are asked to identify the job name. In this example, you enter CICTDTR as the control name.

Here is the example:

```
18:21:50      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
              - Add Client Runtime Control -                          U11310M4

      Type: CICS (DTR)
      Name: CICTDTR_

This is a complex type of runtime which is capable of running in basic mode
and in DTR mode.

You must define a System Coordinator group (and its members) with PRODUCT=DTR
AND the member(s) of that group must be executing in order to achieve DTR
capability, otherwise it is ignored.

The name specified above is a unique name for the runtime controls for the
DTR service (it is not a jobname). You must also use the 'Expand' line
command to enter the list of all jobs in the service.

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit           Add                               Menu
```

6. Details relevant to the runtime controls are requested and whether any API runtimes are to be specified. Please refer to the Adabas System Coordinator documentation for further details.

Here is the example:

```

15:23:59      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2011-03-16
              - System Coordinator Runtime Controls -                  U11310M5
                                Operation mode (mark one):
Type: CICS (DTR)                  Use normal autodetect approach: X
Name: CICTDTR_                   Enable COR even if no products: _
                                Disable all products including COR: _

Display activities through group: _____ (mandatory)
Refresh activity statistics every.: _____ commands or _____ seconds
API runtime overrides....: N (Y/N)   Threadsafe operation...: Y (Y/N)
Use additional exits.....: N (Y/N)
Maximum idle time (sec)..: 3600_____ Non-terminal idle time.: _____
Generate RSP009/79 (Y/N)..: Y (until 0_____ seconds elapse)
Runtime messages.....: Y Console message job log (default)
                                _ Local (DDMSG) file
                                _ Forward to the Daemon (DDMSG) file
Latency (mark one).....: _ Disk (crash recoverable) - requires a group
                                _ Dataspace name: (future)
                                X Daemon-side memory - requires a group
                                Local memory

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit           Add                               Menu

```

7. Now you are asked to identify the Adabas System Coordinator group containing the daemon member(s) that house the Adabas Fastpath buffer (FASTABM) service. You only identify the group, not the member, because doing so allows sites with multisystem images to run jobs in any system and to dynamically receive the optimization benefits made available by the Adabas Fastpath buffer that is available in that local system. In this example, you select TESTDTR in the buffer group name entry.

Here is the example:

```
18:23:01  Coordinator  2010-12-13
          Group Names  U1COGPM1

          _    RPEGRP1
          X    TESTDTR
          _    TESTMULT
          _    TESTSING

Mark to Select Group Name

          PF3 Exit
```

SYSPLEX with Dynamic Transaction Routing Clients

CICS in a Parallel Sysplex is an example of a technology that offers dynamic transaction routing (DTR) in a Clustered Operating System running in multiple images.



Note: The activation and use of DTR in these technologies is under the control of the system administrator. You may be able to use these technologies without necessarily using DTR. Please be sure to check.

DTR is the most flexible implementation of load balancing and fault tolerance for these technologies. This is where multiple jobs run together to provide a single service. We refer to DTR-enabled technologies as clustered applications. Clustered applications allow client sessions to move from running in one job to another (within the same application service) at any time a message pair completes. Consequently, Adabas Fastpath, Adabas Vista, Adabas Transaction Manager and Adabas SAF Security must all be ready to react to this event, on demand. The Adabas System Coordinator provides an internal service to enable DTR support for these products.

In a SYSPLEX configuration it is possible for a client session to be routed from one system image to another within the SYSPLEX. In order to facilitate this DTR, the Clustered Application Service running in the Adabas System Coordinator daemons must communicate in order to negotiate the transfer of the client session context from one system image to the other. This system level communication is assisted by use of the IBM Coupling Facility.

Here are the steps that you take if you wish to use Fastpath optimization in DTR jobs within a SYSPLEX:

- Define a Cache Structure in the Coupling Facility, for example, TESTMDTR-CFN.
- Define an Adabas System Coordinator group, for example, TESTMDTR.
- Acquire/allocate a Node ID for each member, for example, nodes 9030 and 9031.
- Define the member of the group, for example, members SYSCO30 and SYSCO31.

- Define an Adabas Fastpath global buffer for the member (image). This must be named SYSCO30.
 - Define the client jobs that are to use Adabas Fastpath. In the example, SYSPLEX DTR with jobs CICMDTR1 and CICMDTR2 working together as a single service.
1. Below is the SYSCOR definition of Adabas System Coordinator Group TESTMDTR using SVC number 253; the System Type is SYSPLEX (IBM Parallel Sysplex). The IBM Coupling Facility is used in this configuration. In the example, this is a cache structure called TESTMDTR-CFN. Your system administrator must define the actual structure, too:

```

18:28:10                Add                2010-12-13
                System Coordinator Group Member      C11210M1

                Group Name: TESTMDTR      SVC ID: 253__


System Type:  _ Standard single-system image...
(Mark one)   _ There is only one group member.
              _ Standard multi-system images - XCF...
              _ This enables multiple XCF group members.
              _ Standard multi-system images - Net-Work...
              _ This enables multiple Net-Work group members.
              X IBM Parallel Sysplex...
              _ This enables XCF group and use of the CF to
                allow dynamic transaction routing in the plex
                Cluster Facility Name: TEST-CFN_____

Automatic Pool Recovery: Y

Command ==>
                PF1 Help      PF3 Exit      PF5 Add      PF10 More

```

2. The following shows the member definitions of the expanded group in SYSCOR.

 **Note:** Here you are identifying the job name (and node number) of each Adabas System Coordinator daemon, you are NOT identifying databases or client jobs.

```

18:29:32      ***** A D A B A S   SYSTEM COORDINATOR 8.2.1 *****      2010-12-13
              - System Coordinator Group Members -                          C11260M1
Run-mode: Local (node 0)
Group Name: TESTMDTR                      Cluster Facility Name: TEST-CFN
SVC ID: 253                                Operating System: Sysplex

      Member
Purge(P)  Job Name      Node ID
  -        SYSCO30_     9030_    <== Top of List
  -        SYSCO31_     9031_    <== End of List
          _____
          _____
          _____
          _____
          _____
          _____
          _____
          _____
          _____
          _____

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit Refr Upd                                Add      Menu

```

- In this SYSAFP example, an Adabas Fastpath buffer is run in each system image (one per daemon member). The screen below shows the definition of the new buffer to run as a service in the member SYSCO30. A similar buffer definition would also be made for member SYSCO31.


```

18:30:17          2010-12-13
          Add Buffer   F11110MB

          Size(k)    : 4096__

System Coordinator
  Group Name : TESTMDTR
  Member Name: SYSC030_

(Leave empty to select)

Memory Pool Name: _____
Fixed Memory Addr: 00000000
(Where appropriate, e.g. VM's
DCSS name,BS2000's Memory Pool)

Command ==>
  PF1 Help   PF3 Exit   PF5 Add

```

4. The following shows, in SYSAFP, the second screen during the addition of a new job parameter for all the CICS/PLEX jobs that are to run together as a (clustered) DTR service. The "*" wildcard is used to reduce the number of job definitions required. The Adabas Fastpath optimization is based upon the Adabas System Coordinator group used to house the Adabas Fastpath buffer service. In this example, TESTMDTR is used as the buffer group name. Clustered applications that operate as a DTR service must be defined to run in daemon mode. Therefore, CICSMDTR is entered as the common service name, and the Adabas System Coordinator group TESTMDTR is also identified. This must be the same as the buffer group name above.



Note: It is important that all jobs of the same service have an identical setting for Clustered Application Service Name, especially when the wildcard option is not used. This is the only setting that relates jobs together as a single service.

```
18:31:44      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
              - Add Client Runtime Control -                          U11310M1

Select (mark one) :
      _ Batch
      _ COM-PLETE
      X CICS (DTR - Dynamic transaction routing)
      _ CICS (Standard)
      _ IMS (DTR)
      _ UTM (DTR)
      _ TSO
      _ CMS
      _ TIAM
      _ more choices for type or

      _ API controlled - type 1
      _ API controlled - type 2

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit                                           Menu
```

5. Now you are asked to identify the job name. In this example, you enter CICMDTR as the control name.

Here is the example:

```
18:32:21      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2010-12-13
              - Add Client Runtime Control -                          U11310M4

      Type: CICS (DTR)
      Name: CICMDTR_

This is a complex type of runtime which is capable of running in basic mode
and in DTR mode.

You must define a System Coordinator group (and its members) with PRODUCT=DTR
AND the member(s) of that group must be executing in order to achieve DTR
capability, otherwise it is ignored.

The name specified above is a unique name for the runtime controls for the
DTR service (it is not a jobname). You must also use the 'Expand' line
command to enter the list of all jobs in the service.

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit           Add                               Menu
```

6. Details relevant to the runtime controls are requested and whether any API runtimes are to be specified. Please refer to the Adabas System Coordinator documentation for further details.

Here is the example:

```

15:29:10      ***** A D A B A S   FASTPATH SERVICES 8.2.1 *****      2011-03-16
              - System Coordinator Runtime Controls -                    U11310M5
              Operation mode (mark one):
Type: CICS (DTR)                                Use normal autodetect approach: X
Name: CICMDTR_                                  Enable COR even if no products: _
                                                Disable all products including COR: _

Display activities through group: _____ (mandatory)
Refresh activity statistics every.: _____ commands or _____ seconds
API runtime overrides....: N (Y/N)    Threadsafe operation...: Y (Y/N)
Use additional exits.....: N (Y/N)
Maximum idle time (sec)..: 3600_____ Non-terminal idle time.: _____
Generate RSP009/79 (Y/N)..: Y (until 0_____ seconds elapse)
Runtime messages.....: Y Console message job log (default)
              _ Local (DDMSG) file
              _ Forward to the Daemon (DDMSG) file
Latency (mark one).....: _ Disk (crash recoverable) - requires a group
              _ Dataspace name:          (future)
              X Daemon-side memory      - requires a group
              Local memory

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit           Add                               Menu

```

7. Now you are asked to identify the Adabas System Coordinator group containing the daemon member(s) that house the Adabas Fastpath buffer (FASTABM) service. You only identify the group, not the member, because doing so allows sites with multisystem images to run jobs in any system and to dynamically receive the optimization benefits made available by the Adabas Fastpath buffer that is available in that local system. In this example, you enter TESTMDTR in the buffer group name entry.

Here is the example:

```
18:34:53 Coordinator 2010-12-13
          Group Names U1COGPM1

          _ RPEGRP1
          _ TESTDTR
          X TESTMDTR
          _ TESTMULT
          _ TESTSING

Mark to Select Group Name

          PF3 Exit
```

