software AG

Adabas Fastpath

Adabas Fastpath Configuration

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ADABAS & NATURAL

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Preface

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**

1   About this Documentation

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
`Monospace font`	Identifies service names and locations in the format *`folder.subfolder.service`*, APIs, Java classes, methods, properties.
Italic	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
`Monospace font`	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

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2 Using Adabas Fastpath in a Distributed System Environment

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:
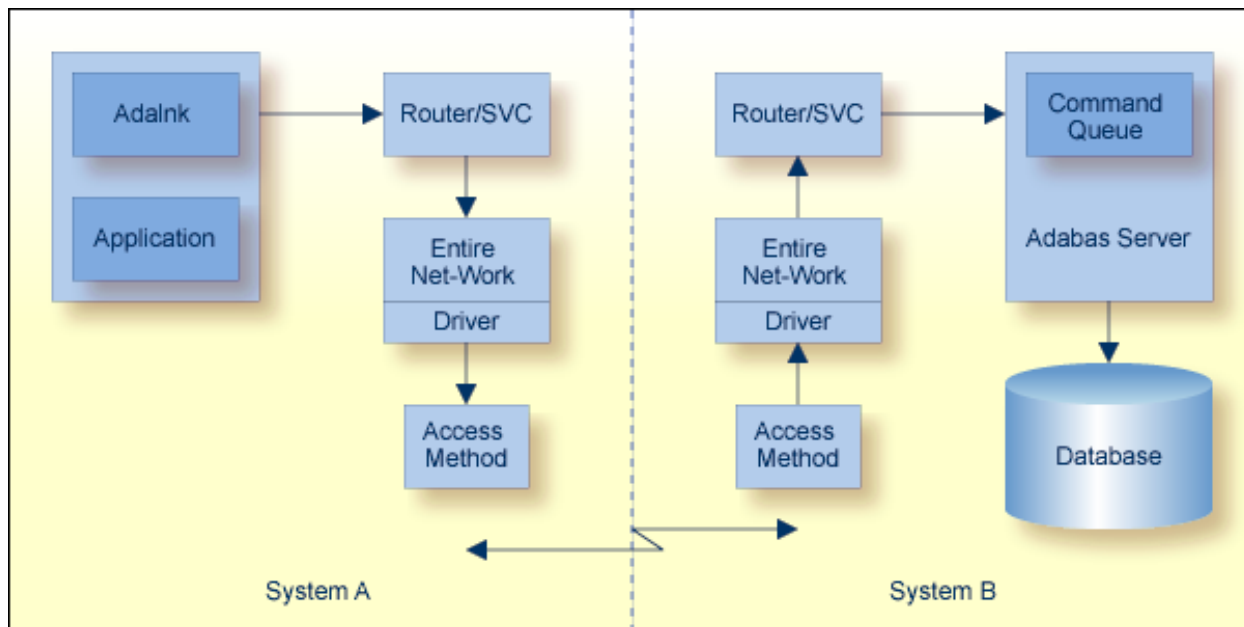
Entire Net-Work Operation without Adabas Fastpath

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.
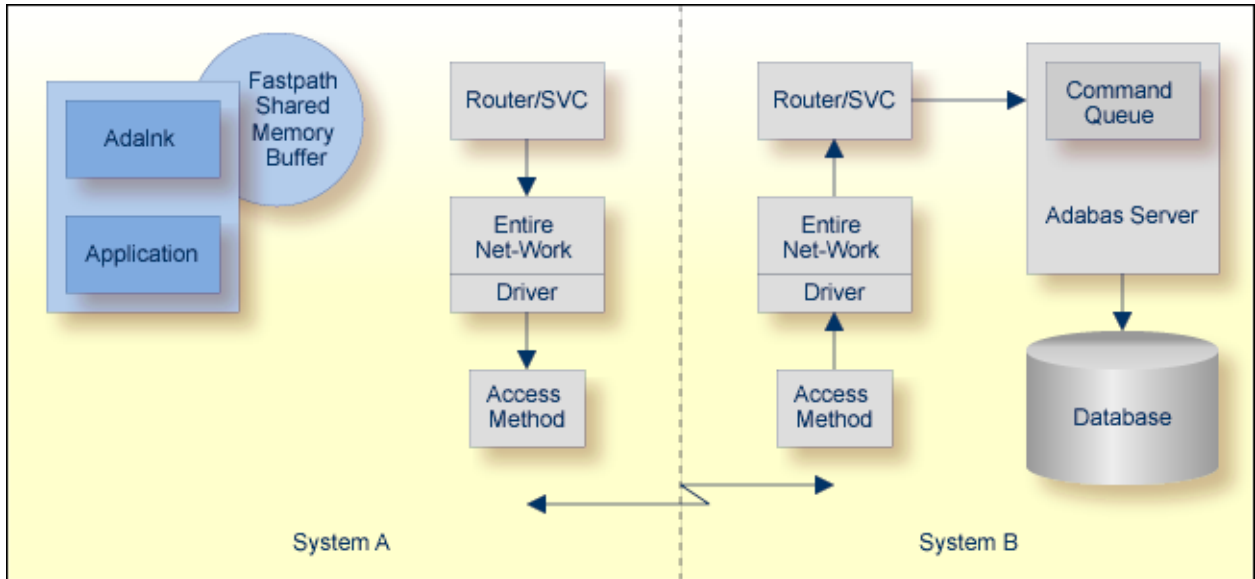
Optimizing with the Fastpath Buffer Local to the Client Process

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

This section describes the update notification processing used to maintain data integrity in the Fastpath Buffer(s).

- Updating with the Fastpath Buffer Local to the Database
- Updating with the Fastpath Buffer Remote to the Database
- Updating with multiple Fastpath Buffers
- Updating when using Adabas Cluster Services
- Updating multiple Fastpath Buffers when using Adabas Cluster Services

- Updating Considerations

Updating with the Fastpath Buffer Local to the Database

In a single system implementation or a multisystem implementation where the Fastpath Buffer is in the same operating system image as (that is, local to) the updated Adabas server, the Fastpath Buffer Manager enlists with the Adabas server according to their defined file parameters.

When the Fastpath component in the Adabas server is subsequently notified of an update, the details are immediately reflected in the Fastpath Buffer as depicted below:
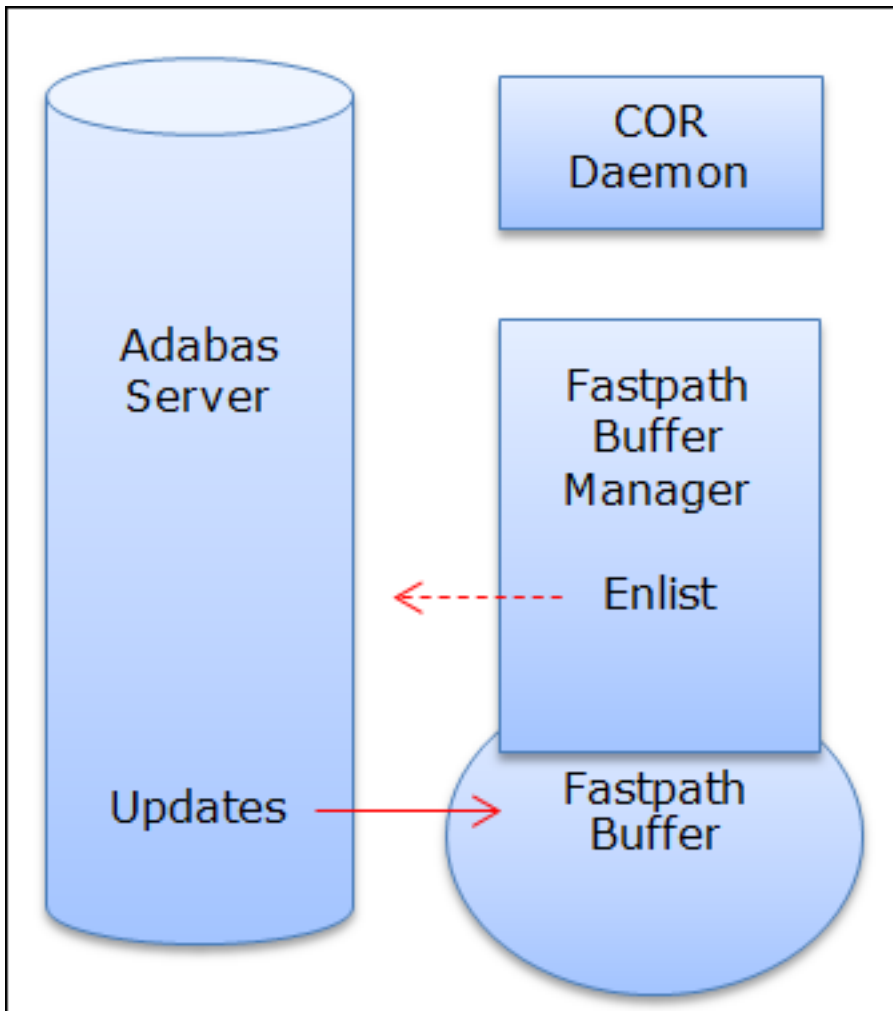
Updating with the Fastpath Buffer Remote to the Database

In a multisystem implementation where the Fastpath Buffer is *not* local to the updated Adabas server, the remote Fastpath Buffer Manager enlists with the Adabas server according to the Update Sensitivity of their defined file parameters.

When the Fastpath component in the Adabas server is subsequently notified of an update, it forwards the update notification to its local COR daemon which forwards it to the COR daemon local to the remote Fastpath Buffer. On receipt, this COR daemon forwards the update notification to the Fastpath Buffer Manager and the details are immediately reflected in the Fastpath Buffer as depicted below:
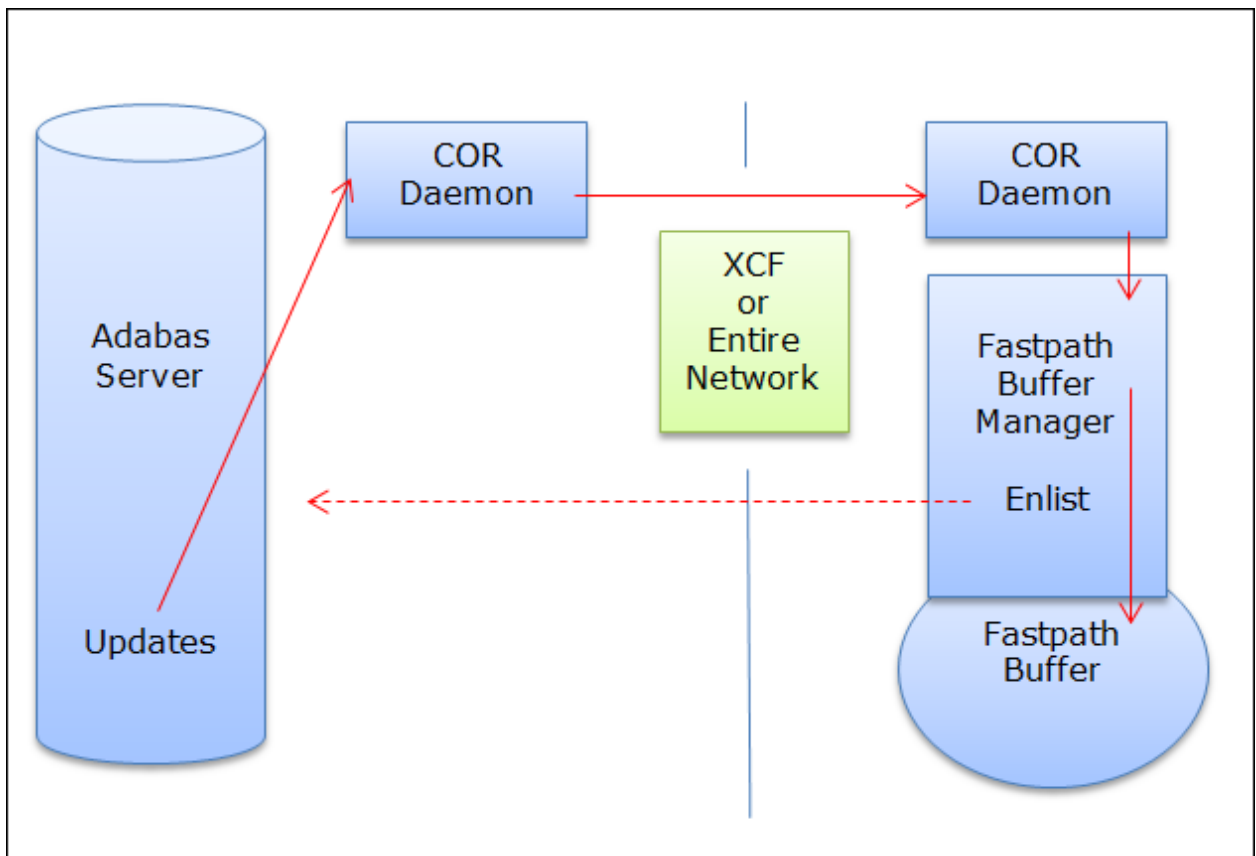
Updating with multiple Fastpath Buffers

In a multisystem implementation where multiple Fastpath buffers are both local and remote to the updated Adabas server, each Fastpath Buffer Manager enlists with the Adabas server according to the Update Sensitivity of their defined file parameters.

When the Fastpath component in the Adabas server is subsequently notified of an update, it uses a combination of the update signalling described in the previous sections. Updates are reflected in the Fastpath Buffers either directly by the Adabas Fastpath component in the Adabas server or indirectly by COR daemon forwarding as depicted below:
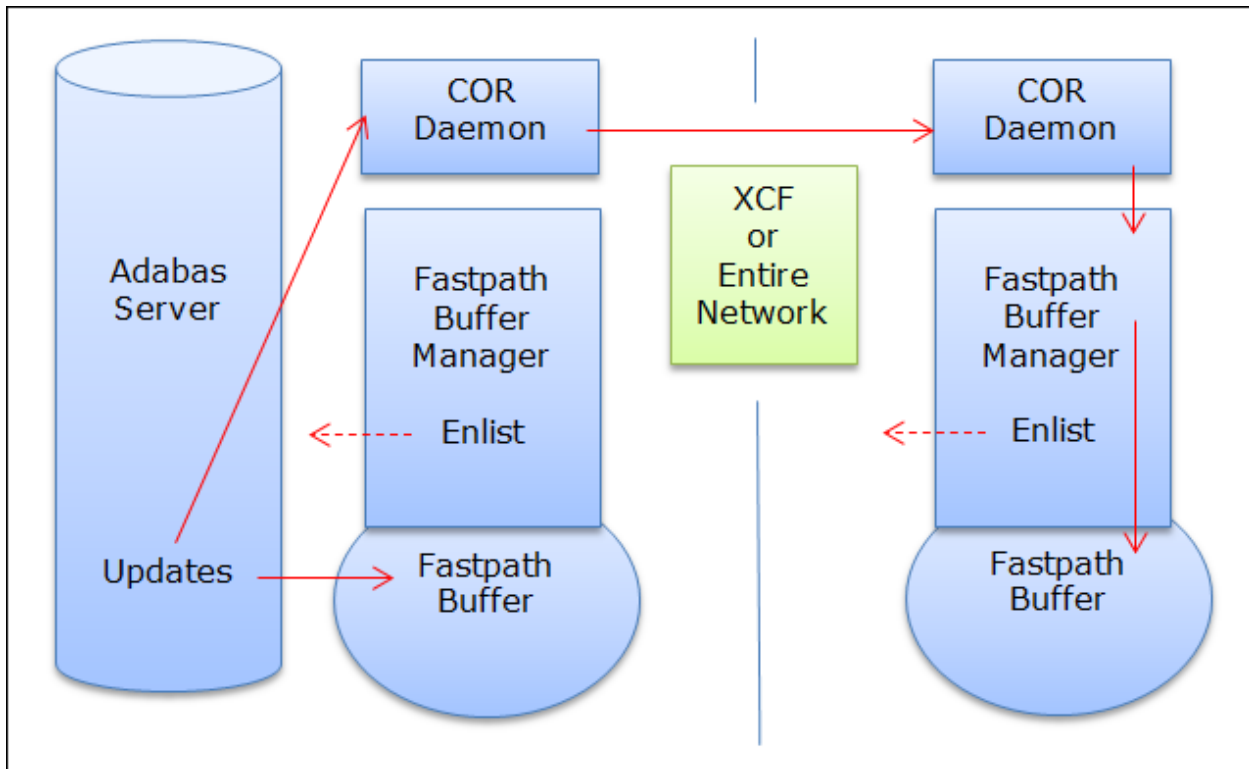
Updating when using Adabas Cluster Services

With Adabas Cluster Services, instances of an Adabas server may exist both locally and remotely. To ensure data integrity in the Fastpath Buffer there must be a COR daemon in every operating system image where an Adabas server instance is active.

The Fastpath Buffer Manager enlists with all instances of the Adabas server according to the Update Sensitivity of their defined file parameters.

Note: For files residing on ALS databases, the Update Sensitivity is automatically set to "D" (Distributed record level) at runtime.

Using a combination of the update signalling described in the previous sections, update notifications from all instances of the Adabas server are reflected in the Fastpath Buffer either directly by the Adabas Fastpath component in the Adabas server instance or indirectly by COR daemon forwarding as depicted below:
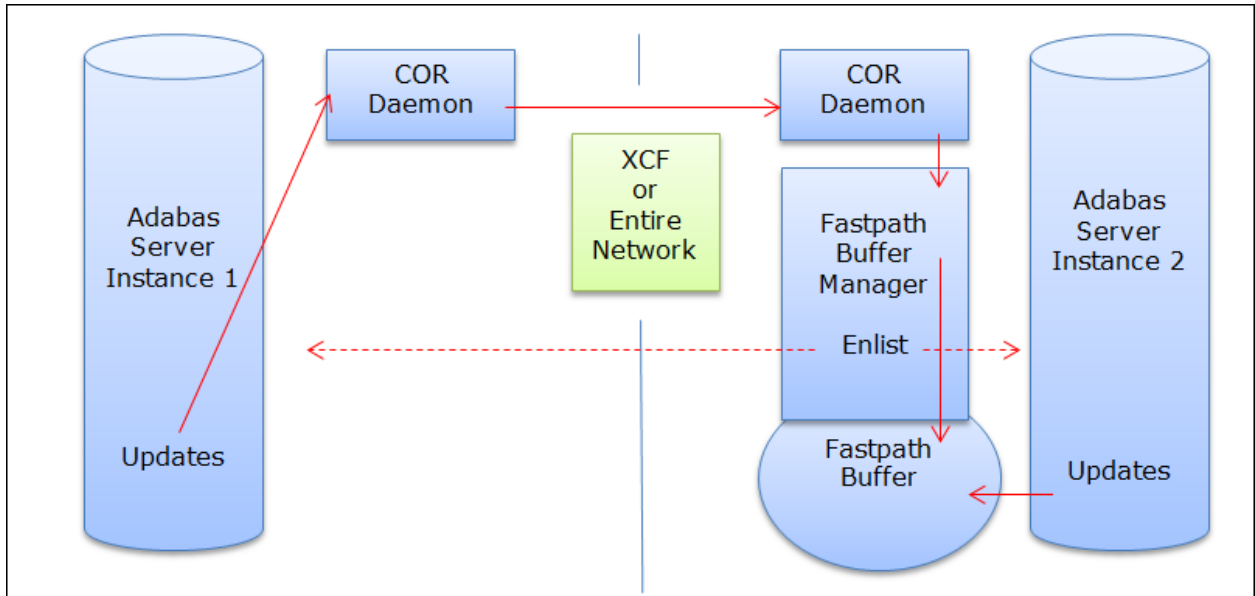
Updating multiple Fastpath Buffers when using Adabas Cluster Services

With Adabas Cluster Services, instances of an Adabas server may exist both locally and remotely. To ensure data integrity in each Fastpath Buffer there must be a COR daemon in every operating system image where an Adabas server instance is active.

Each Fastpath Buffer Manager enlists with all instances of the Adabas server according to the Update Sensitivity of their defined file parameters.

Note: For files residing on ALS databases, the Update Sensitivity is automatically set to "D" (Distributed record level) at runtime.

Using a combination of the update signalling described in the previous sections, update notifications from all instances of the Adabas server are reflected in each Fastpath Buffer either directly by the Adabas Fastpath component in the Adabas server instance or indirectly by COR daemon forwarding.

The following diagram shows how an update in Adabas Server Instance 1 is reflected in each Fastpath Buffer:
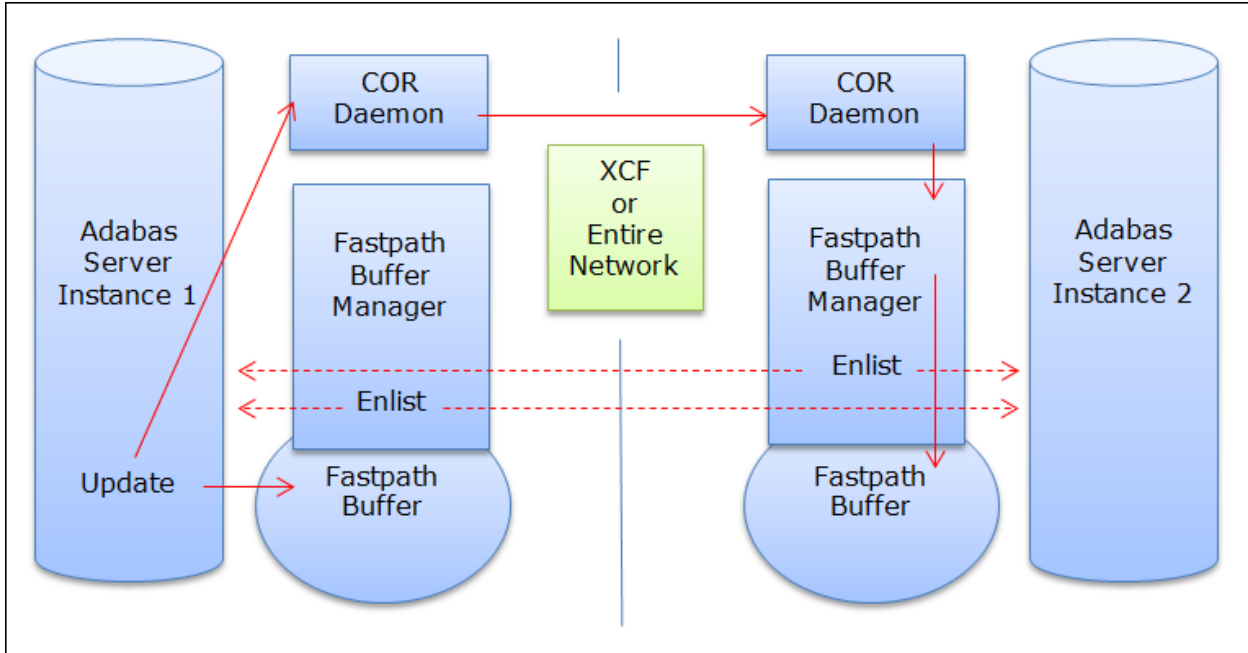
The following diagram shows how an update in Adabas Server Instance 2 is reflected in each Fastpath Buffer:
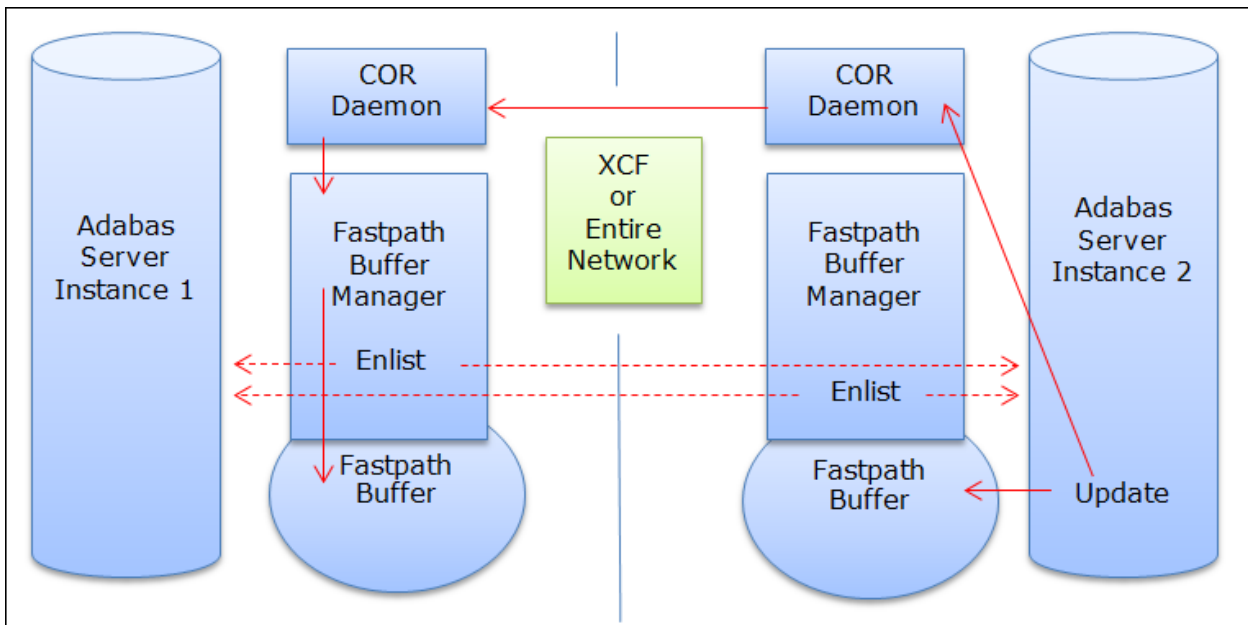
Updating Considerations

1. In large multisystem implementations it is likely that multiple Fastpath Buffer Managers will enlist with the same Adabas server. 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.

2. In a multisystem implementation where COR daemon forwarding is used to signal update notifications to remote Fastpath Buffers, if an individual COR daemon is unilaterally brought down then update notifications from Adabas servers in that operating system image can no longer be forwarded to any remote Fastpath Buffers. Under these circumstances, and in order to protect data integrity within the Fastpath Buffers, direct-access optimization will automatically be switched off for those files that rely upon COR daemon forwarding for update notifications. Such files are identified by having a defined File Parameter Update Sensitivity of value "D" (Distributed record level).

   Note that an AFP RESTART or NEWCOPY issued to any COR daemon will cause all active Fastpath Buffers in the multisystem group to be re-initialized. Direct-access optimization will resume. Refer to Operator Commands for additional considerations regarding the use of AFP RESTART and NEWCOPY in multisystem implementations.

3 Using Adabas Fastpath with Adabas Cluster Services

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

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.

- 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 daemon of the Adabas System Coordinator group. In this example, the daemon 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 for 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 daemon. The name of the daemon 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. This node number must not be currently used for any other purpose. In our example the daemon name will be SYSCO1. The Node ID allocated in this example is 9001. It is entered in the daemon 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.

```
 17:47:02 ***** A D A B A S   SYSTEM COORDINATOR 8.2.1 (I001) *****  2011-07-11
                   -  System Coordinator Group Daemons   -          C11260M1
 Run-mode: Local (node 0)
Group Name: TESTSING                         Operating System: Single
   SVC ID: 253
                  Daemon
   Purge(P)       Job Name          Node ID
      _            SYSCO1__          9001_
                   _____          _____
                   _____          _____
                   _____          _____
                   _____          _____
                   _____          _____
                   _____          _____
                   _____          _____
                   _____          _____
                   _____          _____
                   _____          _____
                   _____          _____

No records found for selection
 Command ==>




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

3. You must now define in SYSAFP the Adabas Fastpath global buffer memory size to be managed by the Asynchronous Buffer Manager (FASTABM) service that will run in the Adabas System Coordinator daemon. There is a fixed relationship between a buffer and the daemon in which it is to run. This is more relevant for sites with multisystem images. You must use the same name as the Adabas System Coordinator Group daemon name defined above; in this example SYSCO1. The Adabas System Coordinator group and daemon must have been defined prior to defining the Adabas Fastpath buffer:

```
 14:36:37                   2011-07-11
          Add Buffer    F11110MB


     Size(k)    : 4096__


  System Coordinator
      Group Name : TESTSING
      Daemon Name: SYSCO1__


 (Leave empty to select)
 Dataspace Name:     _____
 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(s) that house the Adabas Fastpath buffer (FASTABM) service. You only identify the group, not an individual daemon, 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 the daemons in the group for each system image, for example, SYSCO10 and SYSCO11.

■ Define an Adabas Fastpath global buffer for each daemon (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.

```
17:59:41                      Add                      2011-07-11
                  System Coordinator Group             C11210M1


          Group Name: TESTMULT      SVC ID: 253__

  System Type: _   Standard single-system image...
   (Mark one)      There is only one daemon in the group.
             X   Standard multi-system images - XCF...
                 This enables multiple XCF group daemons.
             _   Standard multi-system images - Net-Work...
                 This enables multiple Net-Work group daemons.




  Automatic Pool Recovery: Y



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

2. The following shows the daemon job 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.

```
 17:42:45 ***** A D A B A S   SYSTEM COORDINATOR 8.2.1 (I001) *****  2011-07-11
                  -  System Coordinator Group Daemons  -           C11260M1
 Run-mode: Local (node 0)
Group Name: TESTMULT                           Operating System: Multi
    SVC ID: 253
                     Daemon
    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
```

3. In this example, an Adabas Fastpath buffer will be run in each system image (one per daemon). 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.

```
14:36:37                 2011-07-11
          Add Buffer    F11110MB


     Size(k)    : 4096__


 System Coordinator
     Group Name : TESTMULT
     Daemon Name: SYSCO10_

(Leave empty to select)
Dataspace Name:     _____
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(s) that house the Adabas Fastpath buffer (FASTABM) service. You only identify the group, not an individual daemon. 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(s) that house the Adabas Fastpath buffer (FASTABM) service. You only identify the group, not an individual daemon, 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 daemon in the group, for example, member SYSCO20.

- Define an Adabas Fastpath global buffer for the daemon (image). This must be named SYSCO20.

- Define the client jobs that are to use Adabas Fastpath, for example, job CICSDTR* that includes job names CICSDTR1 and CICSDTR2 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:

```
17:52:02                    Add                      2011-07-11
               System Coordinator Group              C11210M1

          Group Name: TESTSING      SVC ID: 253__

  System Type: X  Standard single-system image...
   (Mark one)     There is only one daemon in the group.
              _   Standard multi-system images - XCF...
                  This enables multiple XCF group daemons.
              _   Standard multi-system images - Net-Work...
                  This enables multiple Net-Work group daemons.




  Automatic Pool Recovery: Y



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

2. The following shows the example daemon job 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.

```
 17:50:22 ***** A D A B A S   SYSTEM COORDINATOR 8.2.1 (I001) *****  2011-07-11
                  -  System Coordinator Group Daemons  -           C11260M1
 Run-mode: Local (node 0)
Group Name: TESTDTR                                Operating System: Single
   SVC ID: 253
                    Daemon
   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
```

3. 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.

```
 14:36:37                   2011-07-11
          Add Buffer    F11110MB


       Size(k)    : 4096__


  System Coordinator
       Group Name : TESTDTR_
       Daemon Name: SYSCO20_


 (Leave empty to select)
 Dataspace Name:     _____
 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, CICSDTR 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-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 CICTDTR as the control name.

   Here is the example:

```
17:54:35 ***** A D A B A S   SYSTEM COORDINATOR 8.2.1 (I001) *****  2011-07-11
                    -  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 daemons) with PRODUCT=DTR
 AND the daemon(s) in 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:

```
17:57:21 ***** A D A B A S   SYSTEM COORDINATOR 8.2.1 (I001) *****  2011-07-11
               -  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(s) that house the Adabas Fastpath buffer (FASTABM) service. You only identify the group, not an individual daemon, 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
```