‡ software AG

Adabas Transaction Manager

Adabas Transaction Manager Version 8.1.2 Release Notes

Version 8.1.2

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Table of Contents

1 Adabas Transaction Manager Version 8.1.2 Release Notes

This document describes the changes and enhancements provided with Adabas Transaction Manager Version 8.1.2.

Caution: ATM Version 8.1 performs more rigorous validation of the runtime control `UseHostSystemTransactionManager`. Incorrect use of this setting could cause runtime error "RSP240 Subcode 444". For more information, see **Avoid Error RSP240 Subcode 444**.

Note: This section also contains a list of new or modified error messages.

2 Prerequisites

See Adabas Transaction Manager Install documentation, section Prerequisites.

3 Operational Changes and Enhancements

This section describes the operational changes and enhancements provided by Version 8.1.

Improved Operational Efficiency

Adabas Transaction Manager has been enhanced internally to become more efficient, in addition to the changes to support the new Adabas Version 8.1 evolution. For example, the Transaction Manager now focuses only on your currently active transactions whereas previous releases took on more internal overheads. This will show some gains in efficiency over previous releases for sites that have a high number of concurrent Adabas sessions. Over the whole system, in a single-system laboratory test, cpu reductions were experienced across the sum of clients, Transaction Manager, and Adabas RMs. These reductions are likely to be seen in higher-end production systems rather than small-scale test systems.

Terminology Change: Job Parameters Replaced By Client Runtime Controls

ATM job parameters are now referred to as Client Runtime Controls.

For more information, see section ATM Parameters.

Avoid Error RSP240 Subcode 444

> **Note:** This section is relevant only to z/OS systems. The setting of the client control `UseHostSystemTransactionManager` is ignored in other systems.

In earlier versions of Adabas Transaction Manager, the screen for defining client runtime controls (job parameters) for ATM offered the value YES for the parameter `UseHostSystemTransactionManager`. ATM Version 8.1 validates this runtime control more rigorously than earlier versions, to ensure that the host-system transaction manager is used when, and only when it is required. It is therefore possible, if you use a configuration file that has been converted from a previous version, that inappropriate settings for this control will exist, and will cause runtime errors.

At Version 8.1, if you try to use a client session for which the runtime control `UseHostSystemTransactionManager` is set to YES and ATM's client proxy has *not* been configured to use the host system's transaction manager, response code 240, subcode 444 will be given, and you will be unable to continue processing normally. You should therefore check that the runtime control `UseHostSystemTransactionManager` is set correctly in all client runtime controls; set to YES only for client jobs or environments for which ATM supports the host system's transaction manager, and which have been correctly configured to use the host transaction manager.

Alternate Configuration File

ATM's client runtime controls are stored in a system file (configuration file). Many sites consider the configuration file to be a critical point in operations. Consequently, availability is critical. ATM now works with the Adabas System Coordinator to provide an alternate file facility, so that if one becomes unavailable the other is used automatically and dynamically. The switching to and from alternate is done on a session-by-session basis, dynamically. This means that at any point in time some sessions may be using one file, and some the other. This is as intended. If you wish to force all sessions to use the same file you can make the other unavailable for a long period and all sessions will move to it over time.

For more details please refer to the *Adabas System Coordinator* documentation.

> **Note:** It is your responsibility to make sure the contents of both configuration files are identical. See the *Adabas System Coordinator* documentation for more details.

Revised ETID Support

Previous versions of Adabas Transaction Manager worked on the assumption that a client would make consistent use of single ETID across all database session, or else no ETID would be used. However, there are requirements for a client to use an ETID for certain database sessions, but no ETID for others.

From Version 8.1, ATM supports more flexible use of ETIDs. A client session can use ETIDs for some database sessions, while using other databases concurrently without ETID. Software AG strongly recommends that a client use no more than one non-blank ETID at a time.

For further details, see Introduction: Interfacing to Adabas Applications.

CL Command to a Database at ET Status

If a `CL` command is issued to a database that is at `ET` status, when a global transaction is in progress against other databases, the `CL` command is processed, but the global transaction is not affected.

Ending a Transaction - Application Protocol

Adabas Transaction Manager acts to end a distributed transaction across all affected databases, with full transaction integrity, as soon as the application session issues an `ET` or `BT` command. Nevertheless, Adabas Transaction Manager expects an application to be well-formed in the way it pursues transaction outcome. Specifically, where multiple databases are modified, the application is expected to pursue transaction outcome on all the changed databases, in series. For example, if two databases are modified, Adabas Transaction Manager expects to see two `ET` commands (one to each database) to cause a positive transaction outcome; or two `BT` commands (one to each database) for a negative transaction outcome. If an application tries to issue a transactional command without having issued the expected `ET`/`BT` commands to all databases changed by the previous transaction, response code 240, sub-code 496 will be returned. This well-formed behaviour is significant to ensure the application is able to run successfully in the case where Adabas Transaction Manager is unable to operate temporarily or permanently due to some sort of planned or unplanned outage.

Support for Triggers

Triggers can execute global transactions under the control of Adabas Transaction Manager. Refer to the documentation for the Adabas System Coordinator to find out how to configure the System Coordinator for a trigger environment.

If your application causes participating triggers to be fired, and you require a global transaction to include changes made by both the application program and the participating trigger, you must ensure that the very first change command (store, delete or update) of the global transaction is issued by the application program, not by the trigger.

Removal of the Global User Queue

Operation of an ATM transaction manager has been streamlined by eliminating the Global User Queue. The Transaction Manager focuses on active transactions, without the need to maintain a list of active clients.

Pending Response Codes

Sometimes a transaction is terminated in such a way that the owner should receive a non-zero response code, but in circumstances in which it is not possible to return a response code; for example, the transaction manager backs the transaction out because its global transaction time limit has been exceeded. When this happens, the manager stores details of the pending response code in a new list, and returns it to the client at the first possible opportunity. Pending response codes can be listed and displayed using ATM's Online Services application.

Mandatory Use of Unmodified ADALNK

As in previous releases, there is a requirement to use an unmodified ADALNK in certain areas. With Version 8.1 this restriction has been reduced to unmodified ADALNK being needed only when running standalone Adabas utility jobs.

Default Change: ATM (Activate ATM Processing) Parameter

The default value for the `ATM ON/OFF` (Activate ATM Processing) parameter has been changed from ON to OFF.

For more information, see ATM Parameters.

Change of Parameter Length: TMCIDPREF (Dynamic Client ID Prefix) Parameter

The maximum length of this parameter has been reduced from 3 to 2 characters, to allow for a greater number of client IDs. A three-character value will be accepted, but only the first two characters will be used.

For more information, see ATM Parameters.

Deactivation of TMGTNA (Non-Activity Timeout) Parameter

Previous versions of Adabas Transaction Manager provided a global non-activity timeout feature, to prevent dormant or lost client sessions from retaining resources. The Adabas System Coordinator now provides such a facility in an integrated manner, which is effective not only for Adabas Transaction Manager, but also for other products which use the System Coordinator. Therefore, from Version 8.1, ATM's non-activity timeout facility has been removed, and the ADARUN parameter `TMGTNA` is no longer effective.

Deactivation of TMDYNTCIDS (Dynamic Client IDs) Parameter

Previous versions of Adabas Transaction Manager used the runtime parameter `TMDYNTCIDS` to limit the number of temporary, dynamic Client Identifiers that a transaction manager could assign, and there was a theoretical maximum of 64k. From Version 8.1, a transaction manager will be able to assign up to 16,777,215 Client Identifiers. The ADARUN parameter `TMDYNTCIDS` is therefore no longer effective.

Deactivation of SVC Client Control

With previous versions of Adabas Transaction Manager, a client control (job parameter) was used to identify the Adabas SVC for which ATM was required to provide transaction coordination. ATM would not interfere in any way with commands that were issued under a different Adabas SVC.

From Version 8.1, the client session's Adabas SVC will be taken to be the SVC used by the Adabas link module.

New or Modified Error Messages

The following error messages have been recently added or modified:

- ATM messages: ATM034, ATM065, ATM092, ATM104, ATM122, ATM129
- ATM Error Codes: 512,-517, 520, 524, 528
- Subcodes for RC 9: 73, 97

Please refer to the ATM Messages for more information.

Operations

- DTP Parameter
- Easier Upgrade Process for Multi-System Environments
- Handling of ET Data
- New Client Runtime Control: Application controls ET data
- New Client Runtime Control: Coordinate Adabas DBs outside the group

DTP Parameter

The ADARUN `DTP` parameter indicates whether or not a database is capable of full participation in Distributed Transaction Processing. Normally, when a database is started with `DTP=RM`, it is immediately "signed on" to the Transaction Manager for Distribute Transaction Processing. This means that the Transaction Manager uses two-phase commit protocol to guarantee the integrity of distributed transactions that modify this database.

There might be occasions, however, when the process of "signing on" for DTP cannot be completed immediately, perhaps because of a planned or unplanned outage of another component that is itself going through startup processing at the time. During this transient period, Adabas Transaction Manager ensures uninterrupted operation by treating databases that have not signed on for DTP as if they were running wth `DTP=NO`. In these circumstances, a commit operation is applied to all "unsigned on" databases in turn immediately after DTP commit has been completed for all databases in the transaction that are signed on, by means of serial `ET` commands. At some later point this transient "not signed on" period ends because the sign-on eventually succeeds, Adabas Transaction Manager recognizes the change, and from that point the database is treated as a `DTP=RM` database.

In a multi-system environment, it is possible to run completely separate System Coordinator groups in the separate systems. For example, a "production" group might run on system A, while a "test" group might run on system B. The databases used by the "production" environment would be executing outside the scope of the "test" System Coordinator group; that is, they would be "external" to the group. If an application in the "test" environment modifies a database in the "production" environment, Adabas Transaction Manager recognizes that the database is executing outside the scope of the current System Coordinator group. The client control `Application controls ET data`, can be used to determine the extent to which ATM should provide transaction coordination for changes on such "external" databases. By default, full coordination is provided for external databases running with `DTP=RM`, and serial `ET/BT` commands are used to provide coordination of `DTP=NO` databases.

This feature can be exploited to make it easier to upgrade multi-system environments. See the section **Easier Upgrade Process for Multi-System Environments**.

Easier Upgrade Process for Multi-System Environments

Historically it has been difficult to perform software upgrades in sites that deploy Adabas Transaction Manager across several inter-connected systems. A new client runtime control, `Coordinate Adabas DBs outside the group`, is provided, that makes it possible to upgrade one system at a time. The upgrade can be achieved by creating a new System Coordinator group in one system, replacing the previous software levels. The new client control can then be used to instruct ATM to provide DTP coordination across the System Coordinator groups.

Handling of ET Data

If an application issues an `ET` command with `ET` data, on a session for which no valid ETID has been provided, ATM, like Adabas, will now not store the `ET` data persistently. This is true, regardless of the setting of the `TMETDATA` parameter. Instead, it will proceed as follows:

- If the target database of the `ET` command is being managed using the two-phase protocol, the `ET` data will be ignored, but ATM will not draw attention to this fact by means of a non-zero response code;

- Otherwise, the `ET` data will be passed to the database which the application specified on the `ET` command, and to no other database.

In other respects the Transaction Manager will process the `ET` command as normal.

New Client Runtime Control: Application controls ET data

A new client runtime control, `Application controls ET data` is provided. It can be used to override the effect of the transaction manager's `TMETDATA` parameter, for the client session. If this control is set to YES, the `ET` data provided on an `ET` or `CL` command will be stored only in the database to which the command was issued.

New Client Runtime Control: Coordinate Adabas DBs outside the group

A new client runtime control, `Coordinate Adabas DBs outside the group` is provided, to allow the administrator to determine, by client session, the extent to which ATM should provide transaction coordination with databases executing outside the scope of the client's COR group.

By default, full coordination is provided for external databases running with `DTP=RM`, and serial `ET/BT` commands are used to provide co-ordination of `DTP=NO` databases. The administrator can specify that ATM should prevent transactional usage of external non-RMs, or of all external databases, by giving response code 240, subcode 544.

4 Inter-operating with Earlier ATM Versions

> ⊘ **Caution:** ATM Version 1.2 is not compatible with ATM Version 8.1, and the two versions cannot inter-operate. A system where ATM Version 1.2 is used must be upgraded to Version 8.1 in its entirety; client jobs, RM database and the TM must all be upgraded at the same time.

Inter-operation with ATM Version 7.4

An ATM 8.1 transaction manager can inter-operate with ATM 7.4 managers across different Entire Net-Work nodes. Version 8.1 ATM managers should execute alongside COR daemons which use the ATM81x library. Version 7.4 managers should also execute alongside COR daemons which use the ATM81x library. The COR daemons should all be members of the same System Coordinator group.

It is also possible to run versions 7.4 and 8.1 of ATM alongside each other in the same Entire Net-Work node. In this case, you will need to run a separate ATM manager for each version, alongside a COR daemon that uses the ATM81x library.

A `DTP=RM` database which runs with an ATM 8.1 library will be signed on to the 8.1 transaction manager; an RM running with a version 7.4 ATM library will sign on to the version 7.4 transaction manager. Then, by choosing which version of ATM library will be used by an application environment, you determine which ATM manager will take responsibility for coordinating transactions for that environment.

> 📄 **Note:** A `DTP=RM` database cannot interact with both a version 7.4 ATM manager and a 8.1 ATM manager at the same time. However, the interoperability of the two versions of ATM manager means that an RM can take part in distributed transactions, regardless of which version of manager it signs on to.

For further information about upgrading from an earlier version of Adabas Transaction Manager, see the section Upgrading from Earlier Versions of ATM.

Inter-operation with ATM Version 7.5

An ATM 8.1 transaction manager can inter-operate with ATM 7.5 managers across different Entire Net-Work nodes. Version 8.1 ATM managers should execute alongside COR daemons which use the ATM81x library. Version 7.5 managers should execute alongside COR daemons which use the ATM75x library. The COR daemons should all be members of the same System Coordinator group.

For further information about upgrading from an earlier version of Adabas Transaction Manager, see the section Upgrading from Earlier Versions of ATM.

5 Required Maintenance

During the final certification stages of this release, fixes were produced after the final freeze of the installation kit. Depending upon timing, some or all of the available fixes may be supplied with the kit in an "all zaps" dataset. These fixes should be applied during the installation process. The following fixes are currently known to be required:

```
AT812001, AT812002, AT812003, AT812004, AT812005
```

and in addition, for BS2000 sites, the following ADA 8.1.2 fix:

```
AB812007
```

6 Considerations for z/VSE

Required Maintenance

The following fix is required in order to run ATM's ET data migration utility:

- AD812010 (Adabas Version 8.1.2)
- AD744009 (Adabas Version 7.4.4)
- AD743019 (Adabas Version 7.4.3)