

Event Replicator for Adabas

Application Programmer's Reference

Version 3.7.1

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This document applies to Event Replicator for Adabas Version 3.7.1 and all subsequent releases.

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

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Table of Contents

Preface	v
1 About this Documentation	1
Document Conventions	2
Online Information and Support	2
Data Protection	3
2 Output Message Summary	5
3 Sample Output Message	9
4 Output Message Detail	17
URBC	18
URBD	19
URBE	20
URBH	21
URBI	22
URBL	25
URBP	37
URBQ	39
URBR	40
URBS	41
URBT	46
URBU	48
URBX	49
URBZ	51
5 Event Replicator Client Requests	55
Specifying the URBH	56
Destination Open and Close Requests	57
Initial-State Requests	60
Prior-Transaction Requests	76
Status Requests	80
6 Testing webMethods EntireX and WebSphere MQ Queues	85
Using the ADAMTR (Message Test Receive) Utility	86
Using the ADAMTS (Message Test Send) Utility	92
Index	99

Preface

The Event Replicator Server sends replication data to a target application through a messaging system. An output message sent by the Event Replicator for Adabas contains both control information (for example, transaction and record information) and payload data (for example, the replicated data).

The following DSECTs describe the types of control information:

- **URBC - Continuation element**
- **URBD - Data element**
- **URBE - End-of-transaction element**
- **URBH - Message header**
- **URBI - Input element**
- **URBL - Transaction log record element**
- **URBP - Subscription user exit parameter list element**
- **URBQ - User exit program parameter block**
- **URBR - Record element**
- **URBS - Status/response element**
- **URBT - Transaction element**
- **URBU - ADARPE extract header user element**
- **URBX - Subscription user exit parameter block element**
- **URBZ - User exit program parameter block**

For detailed information on each DSECT, see *Output Message Detail* section in this guide.

This document is organized as follows:

<i>Output Message Summary</i>	Provides a summary of the output messaging process.
<i>Sample Output Message</i>	Provides an example of the output messages that the Event Replicator will produce, in textual form.
<i>Output Message Detail</i>	Provides details for the URB DSECTs pertinent to Event Replicator for Adabas.
<i>Event Replicator Client Requests</i>	Describes Event Replicator client requests.
<i>Testing webMethods EntireX Broker and WebSphere MQ Queues</i>	Describes the ADAMTR and ADAMTS utilities, used to test webMethods EntireX Broker and WebSphere MQ queues without having (or prior to writing) a target application.

1 About this Documentation

▪ Document Conventions	2
▪ Online Information and Support	2
▪ Data Protection	3

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Monospace font	Identifies service names and locations in the format <code>folder.subfolder.service</code> , APIs, Java classes, methods, properties.
<i>Italic</i>	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 Output Message Summary

Following is a summary of output messaging process:

1. The output message will start with a URBH DSECT. The URBH:
 - a. Identifies the message as one sent by the Event Replicator for Adabas (URBHEYE).
 - b. Identifies the version of DSECTs sent in the message (URBHVERS).
 - c. Identifies the Event Replicator Server sending the message (URBHRPID and URBHRPNI).
 - d. Gives the length of the entire message (URBHLENT).
 - e. Includes a message sequence number by destination (URBHMSNR). This value identifies the sequence of messages sent to a destination.
 - f. Indicates the time that the Event Replicator Server passed the message to the messaging system (URBHTIME).
 - g. Indicates whether or not more data for the transaction will follow in the next message (URBTCONT).
2. A URBT identifies the start of a transaction's worth of replicated data. The URBT:
 - a. Identifies the database in which the transaction was executed (URBTDBID).
 - b. Identifies the related subscription (URBTSNAM).
 - c. Identifies the transaction sequence number within a subscription (URBTTSNR).
 - d. Identifies the number of records (URBRs) in the transaction (URBTRCNT).
 - e. Indicates the time that Adabas processed the ET commit (URBTTIM).
 - f. Indicates the time that the Event Replicator Server completed subscription processing for the transaction (URBTPTIM)
3. A URBR identifies a record within a transaction. The URBR:
 - a. Identifies the record that was updated (URBRFNR and URBRISN).
 - b. Identifies the record sequence number within a transaction (URBRRSNR).

- c. Identifies the number of data elements (URBDs) related to this record (URBRDCNT).
4. A URBD identifies and contains a before or after image of replicated data for one record. The URBD:
 - a. Identifies the data element sequence number for within a record (URBDDSNR).
 - b. Identifies the type of data (URBDTYP).
5. A URBE identifies the end of a transaction's worth of replicated data. Note: The end of a transaction's worth of replicated data may also be identified by:
 - a. Determining that the number of records (URBRs) received is equal to the number of records (URBTRCNT) in the transaction, and
 - b. Determining that all data elements (URBDs) have been received for each record (URBRDCNT).
6. A URBT will be sent prior to a URBR for the same transaction.
7. A URBR will be sent prior to a URBD for the same record.
8. A URBR will NOT always be followed by a URBD for the record. For example, if an error occurs that prevents decompression of the after image and there is no before image, a URBR will be sent with no URBD.
9. The replicated data for one transaction may be sent in one or more messages.
10. When the output message contains subsequent data for a transaction (i.e. the related URBT was in a previous message), the output message will start with a URBH followed by a URBC.
11. Replicated data for different transactions may be sent in the same message.
12. Replicated data for different transactions will NOT be interleaved. That is, all of the data for a transaction will be sent before any of the data is sent for a different transaction.
13. Replicated data for different subscriptions will not be sent in the same message.
14. A control message (URBS) will be sent during initialization of an Event Replicator Server.
15. A control message (URBS) will be sent during normal termination of an Event Replicator Server.
16. Sequence numbering (message sequence number, transaction sequence number) restarts at one after the restart of an Event Replicator Server.
17. A second or subsequent transaction's worth of data will only be put in the output message if the entire data related to that transaction fits in the remaining portion of the output message.

About Output Message Time Stamps

All timestamps given (URBHTIME, URBTTIM, etc.) are in STCK format. The timestamps represent the machine time. Depending on the time zone settings in the operating system, this may or may not be the local time where the machine is located.



Note: See IBM's *z/Architecture Principles of Operation* (SA22-7832-02), Chapter 4, Section "Time-of-Day Clock", and Chapter 7, "STORE CLOCK" for information on the STCK format.

At the time of this documentation's publication, this IBM manual can be found at <http://publibfi.boulder.ibm.com/epubs/pdf/dz9zr009.pdf>.

The timestamps for the last update of a data record (URBRTIME) and the transaction commit (URBTTTIM) are generated by Adabas. The timestamps for the end of subscription processing for a transaction (URBTPTIM) and the send of a message (URBHTIME) are generated by the Event Replicator Server. If Adabas and the Event Replicator Server reside on different machines, then it depends on the configuration of these machines whether these timestamps are comparable or by how much they may out of sync.

Provided these timestamps are comparable, they can be used to determine at which points during replication processing delays occurred: between the commit of a transaction in Adabas and the subscription processing in the Event Replicator Server, or between the subscription processing and the sending of the message, or between the sending of the message and its arrival at the target application.

3 Sample Output Message

This is an example of the output messages that the Event Replicator Server will produce, in textual form. The URB* elements are attached together in top-down sequence.



Notes:

1. Message sequence number 1 is the first message sent to each destination.
2. Message sequence number 6 in the following example is the final message sent to each destination when the Event Replicator address space is terminated normally.

Message boundary:

URBH -- URBHMSNR = 1 Message sequence number for this destination

URBS -- URBSSST = 'STRT' Reptor status information
 URBSTIME = Timestamp when URBS was created

Message boundary:

URBH -- URBHMSNR = 2 Message sequence number for this destination

URBT -- URBTSNAM = 'SUBS1' Subscription name
 URBTTSNR = 1 Transaction sequence number for this subscription
 URBTRCNT = 4 Record count in transaction

URBR -- URBRRSNR = 1 Record sequence number for this transaction
 URBRDCNT = 1 Data element count for record
 URBR TYP = 'I' Insert

URBD -- URBDDSNR = 1 Data element sequence number

Sample Output Message

```

        URBDTYP = 'A'      for record
        URBDDATA = ...     After image of record
                                Record data
URBR -- URBRRSNR = 2      Record sequence number for this
                                transaction
        URBRDCNT = 2      Data element count for record
        URBR TYP = 'U'     Update
URBD -- URBDDSNR = 1      Data element sequence number
                                for record
        URBDTYP = 'B'     Before image of record
        URBDDATA = ...     Record data
URBD -- URBDDSNR = 2      Data element sequence number
                                For record
        URBDTYP = 'A'     After image of record
        URBDDATA = ...     Record data
URBR -- URBRRSNR = 3      Record sequence number for this
                                transaction
        URBRDCNT = 1      Data element count for record
        URBR TYP = 'D'     Delete
URBD -- URBDDSNR = 1      Data element sequence number
                                for record
        URBDTYP = 'K'     Before image of primary key
        URBDDATA = ...     Key data
URBR -- URBRRSNR = 4      Record sequence number for this
                                transaction
        URBRDCNT = 2      Data element count for record
        URBR TYP = 'U'     Update
URBD -- URBDDSNR = 1      Data element sequence number
                                for record
        URBDTYP = 'B'     Before image of record
        URBDDATA = ...     Record data
URBD -- URBDDSNR = 2      Data element sequence number
                                for record
        URBDTYP = 'A'     After image of record
        URBDDATA = ...     Record data
URBE -- UR BESNAM = 'SUBS1' Subscription name
        UR BETSNR = 1      Transaction sequence number for
                                this subscription
URBT -- UR BT SNAM = 'SUBS1' Subscription name
        UR BT TSNR = 2      Transaction sequence number for
                                this subscription
        UR BT RCNT = 1      Record count in transaction
```

```

URBR -- UBRRSNR = 1          Record sequence number for
                             this transaction
      UBRDCNT = 1          Data element count for record
      UBRDTYPE = 'I'       Insert
URBD -- URBDSNR = 1         Data element sequence number
                             for record
      UBDTYPE = 'A'       After image of record
      UBDATA = ...        Record data
URBE -- URBESNAM = 'SUBS1'  Subscription name
      URBESNR = 2         Transaction sequence number for
                             this subscription
URBT -- URBTSNAM = 'SUBS1'  Subscription name
      URBTSNR = 3         Transaction sequence number for
                             this subscription
      UBRRCNT = 1        Record count in transaction
URBR -- UBRRSNR = 1          Record sequence number for this
                             transaction
      UBRDCNT = 1          Data element count for record
      UBRDTYPE = 'D'       Delete
URBD -- URBDSNR = 1         Data element sequence number
                             for record
      UBDTYPE = 'B'       Before image of record
      UBDATA = ...        Record data
URBE -- URBESNAM = 'SUBS1'  Subscription name
      URBESNR = 3         Transaction sequence number for
                             this subscription

Message boundary:
URBH -- URBHMSNR = 3        Message sequence number for this
                             destination
URBT -- URBTSNAM = 'SUBS2'  Subscription name
      URBTSNR = 1          Transaction sequence number for
                             this subscription
      UBRRCNT = 7          Record count in transaction
URBR -- UBRRSNR = 1          Record sequence number for this
                             transaction
      UBRDCNT = 1          Data element count for record
      UBRDTYPE = 'D'       Delete
URBD -- URBDSNR = 1         Data element sequence number
                             for record

```

Sample Output Message

```
        URBDTYP = 'B'      Before image of record
        URBDDATA = ...     Record data

URBR -- URBRRSNR = 2      Record sequence number for
                           this transaction
        URBRDCNT = 1      Data element count for record
        URBR TYP = 'I'    Insert

URBD -- URBDDSNR = 1      Data element sequence number
                           for record
        URBDTYP = 'A'      After image of record
        URBDDATA = ...     Record data

URBR -- URBRRSNR = 3      Record sequence number for
                           this transaction
        URBRDCNT = 1      Data element count for record
        URBR TYP = 'I'    Insert

URBD -- URBDDSNR = 1      Data element sequence number
                           for record
        URBDTYP = 'A'      After image of record
        URBDDATA = ...     Record data

URBR -- URBRRSNR = 4      Record sequence number for
                           this transaction
        URBRDCNT = 1      Data element count for record
        URBR TYP = 'I'    Insert

URBD -- URBDDSNR = 1      Data element sequence number
                           for record
        URBDTYP = 'A'      After image of record
        URBDDATA = ...     Record data

URBR -- URBRRSNR = 5      Record sequence number for
                           this transaction
        URBRDCNT = 2      Data element count for record
        URBR TYP = 'U'    Insert

URBD -- URBDDSNR = 1      Data element sequence number
                           for record
        URBDTYP = 'B'      Before image of record
        URBDDATA = ...     Record data

URBD -- URBDDSNR = 2      Data element sequence number
                           for record
        URBDTYP = 'A'      After image of record
        URBDDATA = ...     Record data

URBR -- URBRRSNR = 6      Record sequence number for
                           this transaction
        URBRDCNT = 1      Data element count for record
```

```

        URBR TYP = 'I'          Insert
URBD -- URBD DSNR = 1         Data element sequence number
                                for record
        URBD TYP = 'A'          After image of record
        URBD DATA = ...       Record data

URBR -- URBR RSNR = 7         Record sequence number for
                                this transaction
        URBR DCNT = 7          Data element count for record
        URBR TYP = 'U'          Update
URBD -- URBD DSNR = 1         Data element sequence number
                                for record
        URBD TYP = 'B'          Before image of record
        URBD DATA = ...       Record data

Message boundary:
URBH -- URBH MSNR = 4         Message sequence number for this
                                destination
URBC -- URBC SNAM = 'SUBS2'   Subscription name
        URBC TSNR = 1          Current transaction sequence number
        URBC RSNR = 7          Current record sequence number
        URBC DSNR = 1          Current data sequence number
URBD -- URBD DSNR = 2         Data element sequence number
                                for record
        URBD TYP = 'A'          After image of record
        URBD DATA = ...       Record data
URBE -- URBE SNAM = 'SUBS2'   Subscription name
        URBE TSNR = 1          Transaction sequence number for
                                this subscription
URBT -- URBT SNAM = 'SUBS2'   Subscription name
        URBT TSNR = 2          Transaction sequence number for this
                                subscription
        URBT RCNT = 2          Record count in transaction
URBR -- URBR RSNR = 1         Record sequence number for this
                                transaction
        URBR DCNT = 1          Data element count for record
        URBR TYP = 'I'          Insert
URBD -- URBD DSNR = 1         Data element sequence number
                                for record
        URBD TYP = 'A'          After image of record
        URBD DATA = ...       Record data

```

Sample Output Message

```
URBR -- URBRRSNR = 2      Record sequence number for this
                           transaction
      UBRBDCNT = 2      Data element count for record
      UBRBTYP = 'U'     Update
URBD -- URBDDSNR = 1      Data element sequence number
                           for record
      URBDTYP = 'B'     Before image of record
      URBDDATA = ...     Record data
URBD -- URBDDSNR = 2      Data element sequence number
                           For record
      URBDTYP = 'A'     After image of record
      URBDDATA = ...     Record data
URBE -- URBESNAM = 'SUBS2' Subscription name
      URBETSNR = 2      Transaction sequence number for
                           this subscription
```

Message boundary:

```
URBH -- URBHMSNR = 5      Message sequence number for this
                           destination
URBT -- URBTSNAM = 'SUBS1' Subscription name
      URBTTSNR = 4      Transaction sequence number for
                           this subscription
      URBTRCNT = 1      Record count in transaction
URBR -- URBRRSNR = 1      Record sequence number for
                           this transaction
      UBRBDCNT = 1      Data element count for record
      UBRBTYP = 'I'     Insert
URBD -- URBDDSNR = 1      Data element sequence number
                           for record
      URBDTYP = 'A'     After image of record
      URBDDATA = ...     Record data
URBE -- URBESNAM = 'SUBS1' Subscription name
      URBETSNR = 4      Transaction sequence number for
                           this subscription
```

Message boundary:

```
URBH -- URBHMSNR = 6      Message sequence number for this
                           destination
```

```
URBS -- URBSST = 'TERM'      Reptor status information
      URBSTIME =             Timestamp when URBS was created
```


4 Output Message Detail

▪ URBC	18
▪ URBD	19
▪ URBE	20
▪ URBH	21
▪ URBI	22
▪ URBL	25
▪ URBP	37
▪ URBQ	39
▪ URBR	40
▪ URBS	41
▪ URBT	46
▪ URBU	48
▪ URBX	49
▪ URBZ	51

DSECTs defining data structures known to the outside start with the characters 'URB'.

The data structures are shown in the form of an abridged assembly listing output to better fit into the documentation format. The columns have the following meaning.

Column	Meaning
Offset	The hexadecimal displacement from the beginning of the structure.
Num2	The optional hexadecimal value of literal definitions (EQU) – rightmost 2 bytes.
Num3	The optional hexadecimal size of the structure (DSECT).
Source	The assembler source line in the format: <i>label instruction parameters comments ←</i>

Each item is separated by space. For a detailed account of the Assembler Language please consult the HLASM Manual. For example:

```
Offset Num2 Num3 Source
00018          URBCDSNR DS      F          Current data sequence number for ←
record
```

This chapter provides details for the URB DSECTs.

URBC

```

                                URBC      ,          Replication buffer - Continuation
00000 00000 00030 URBC      DSECT
                                ←
*-----*
      *          *          URBC -- Continuation element                               ←
      *          *
      *          *          DSECT URBC is used by the Adabas Replication Facility. ←
      *          *
      *          *          DSECT URBC contains information related to a transaction ←
*          *          *          that is continued in the current message.           ←
      *          *
      *          *
      *          *          ←
*-----*
00000          URBC EYE DS      CL4          URBC eye-catcher 'URBC'
```

00004	URBCLEN	DS	F	Length of URBC
	*			
00008	URBCSNAM	DS	CL8	Subscription name
00010	URBCTSNR	DS	F	Current transaction sequence number within subscription/destination
	*			
00014	URBCRSNR	DS	F	Current record sequence number within transaction
	*			
00018	URBCDSNR	DS	F	Current data sequence number for ↵
record				
	*			
0001C	URBCCONT	DS	C	Indicator for transaction ↵
continuation:				
00E8	URBCCONY	EQU	C'Y'	More data to follow in the next ↵
message				
	*			for the same transaction
	*			
0001D		DS	XL19	Reserved area
00030		DS	0D	
0030	URBCL	EQU	*-URBC	DSECT length

URBD

00000	00000	00020	URBD	URBD	,	Replication buffer - Data
			DSECT			
			↵			

	*		URBD	--	Data element	↵
	*					↵
	*		DSECT	URBD	is used by the Event Replicator for Adabas.	↵
	*					↵
	*		DSECT	URBD	contains data related to a before or after	↵
	*				image associated with one record.	↵
	*					↵
	*		↵			↵

00000	URBDEYE	DS	CL4	URBD	eye-catcher 'URBD'	
00004	URBDLEN	DS	F	Length of URBD + related data + filler		
00008	URBDLENH	DS	F	Length of URBD		
0000C	URBDLEND	DS	F	Length of related data (at URBDATA)		
	*					
00010	URBDDSNR	DS	F	Data sequence number for record		
	*					

Output Message Detail

00014	URBDTYP	DS	C	Type of data:
00C1	URBDTYPA	EQU	C'A'	After image of data storage
00C2	URBDTYPB	EQU	C'B'	Before image of data storage
00D2	URBDTYPK	EQU	C'K'	Before image of primary key
	*			
00015		DS	XL11	Reserved area
	*			
00020	URBDDATA	DS	OD	Payload data (before or after image)
0020	URBDL	EQU	*-URBD	DSECT length

URBE

00000	00000	00020	URBE	URBE ,	Replication buffer - End
			DSECT		
			↵		

			* URBE -- End-of-transaction element		↵
	*				↵
	*				↵
	*		DSECT URBE is used by the Adabas Replication Facility.		↵
	*				↵
	*		DSECT URBE indicates the end of the transaction related		↵
	*		to the preceding record and data elements.		↵
	*				↵
	*				↵
			↵		

00000	URBEEYE	DS	CL4	URBE eye-catcher 'URBE'	
00004	URBELEN	DS	F	Length of URBE	
	*				
00008	URBESNAM	DS	CL8	Subscription name	
00010	URBETSNR	DS	F	Transaction sequence number within	
	*			subscription/destination	
	*				
00014		DS	XL12	Reserved area	
00020		DS	OD		
0020	URBEL	EQU	*-URBE	DSECT length	

URBH

00000	00000	00040	URBH	URBH	,	Replication buffer - Header
			DSECT			
			↔			

	*		*	URBH -- Message header		↔
	*		*			↔
	*		*	DSECT URBH is used by the Event Replicator for Adabas.		↔
	*		*			↔
	*		*	DSECT URBH contains information related to one message		↔
	*		*	sent to a replication target via a messaging system		↔
	*		*	(e.g., MQSeries or Entire Broker).		↔
	*		*			↔
	*		*	DSECT URBH is put at the start of each buffer sent to		↔
	*		*	the messaging system.		↔
	*		*			↔

00000			URBHEYE DS	CL4		URBH eye-catcher 'URBH' (in EBCDIC)
00004			URBHLEN DS	F		Length of URBH
			*			
00008			URBHVERS DS	CL2		Version indicator for URB* DSECTs:
	FOF1		URBHVER1 EQU	C'01'		First version
			*			Future releases may allow a new
						↔
layout of			*			the URB* DSECTs. In this case URBHVERS
			*			will be set to a different value.
0000A			URHBORD DS	H		Constant 1 to indicate the byte order:
	0001		URHBORH EQU	X'0001'		Big-endian (high-order byte first)
	0100		URHBORL EQU	X'0100'		Little-endian (low-order byte first)
			*			
0000C			URHLENT DS	F		Total message length (including URBH)
00010			URHMSNR DS	F		Message sequence number per
destination						↔
00014			URBHTIME DS	XL8		Time (STCK) when message was sent
			*			
0001C			URBHRPID DS	H		Target ID of originating Reptor

Output Message Detail

```

0001E      URBHRPNI DS      H      Nucleus ID of originating Reptor
00020      URBHNAME DS      CL8     Sender name ('REPTOR' if sent by
Reptor)
          *
00028      URBHRES1 DS      XL24    Reserved area
00040      DS      OD
          0040      URBHL     EQU      *-URBH     DSECT length
          *
          FOF1      URBHVERC EQU      URBHVER1     Current version - Initial
release

```

URBI

```

00000 00000 00060 URBI      URBI      ,      Replication buffer - Input
DSECT
          ↵
*-----*
          *      URBI -- Input element
          *
          *
          *      DSECT URBI is used by the Adabas Replication Facility.
          *
          *
          *      DSECT URBI contains input data for a request from a
          *
          *      target application to the Reptor.
          *
          *
          ↵
*-----*
          *
          * For all types of request, fill in:
          *   * The eye-catcher (URBIEYE).
          *   * The length of all data belonging to this URBI, comprising
          *     the URBI proper, any selection data, and any filler added
          *     for alignment or other purposes (URBILEN).
          *   * The length of the URBI proper (URBILENH).
          *   * The length of the selection data proper (URBILEND);
          *     zero, if there is no selection data.
          *   * An arbitrary token associated with the request (URBIRTOK).
          *     The token has no meaning to the Reptor. The Reptor returns
          *     it in all responses to the request. The token may be used
          *     by the requestor to associate the response(s) with the
          *     original request.
          *   * The destination to which the response(s) is/are to be sent
          *     (URBIRNAM). Responses are sent to all destinations that

```

```

*       are associated with the request. If URBIRNAM is filled in,
*       the response(s) will additionally be sent to the specified
*       destination.
*       * The request type (URBIRT).
*
* Set unused fields to binary zeros or, for character fields, ←
blanks.
*
* Character data may be specified in either EBCDIC or ASCII. The
* value provided in the eye-catcher in the URBH (URBHEYE) signals
* the way character data are provided in the entire message.
*
* Binary numbers may be specified in either big-endian (high-order
* byte first) or little-endian (low-order byte first) byte order.
* The value provided in the byte-order field in the URBH (URBHBORD)
* signals the way binary numbers are provided in the entire ←
message.
*
*
00000      URBIEYE DS      CL4          URBI eye-catcher 'URBI'
00004      URBILEN DS      F           Length of URBI + selection data + ←
filler
00008      URBILENH DS      F           Length of URBI proper (>= URBIL)
0000C      URBILEND DS      F           Length of selection data (may be zero)
00010      URBIRTOK DS      XL8        Request ID token (returned in ←
response)
00018      URBIRNAM DS      CL8        Destination name for response
*
00020      URBIRT  DS      CL4          Request type:
      C1E3      URBIRTST EQU    C'STAT'   Inquire subscription/destination ←
status
      E2E3      URBIRTIS EQU    C'INST'   Commence initial-state processing
      C1D5      URBIRTTA EQU    C'TRAN'   Retrieve data for prior transaction
      D5C4      URBIRTOD EQU    C'OPND'   Open a destination
      E2C4      URBIRTCD EQU    C'CLSD'   Close a destination
*
*
* For an initial-state request (INST), specify:
*   * The initial-state name (URBIINAM).
*   * The database ID (URBIDBID) and file number (URBIFNR).
*   * If an ISN list or selection criterion has been defined
*     for the initial-state process, the selection data
*     (starting at URBI + URBILENH), which is either a list
*     of ISNs or a value buffer.
*
* If the initial-state definition involves multiple files,
* provide one URBI for each file in one message (URBH) and
* specify the same request ID token, response destination,
* and initial-state name for each one.
*
00024      URBIDBID DS      H           Database ID (INST request)
00026      URBIFNR  DS      H           File number (INST request)

```

```

00028      URBIINAM DS    CL8          Initial-state name (INST request)
*
*
* For a status request (STAT), specify:
*   * The subscription name or blanks (URBISNAM).
*   * The destination name or blanks (URBIDNAM).
*
* At least one of them must be given.
* If both a subscription name and destination name are given, the
* status of the last transaction processed for the subscription
* will be sent to the destination in a URBS element.
* If only a subscription name is given, the status of the last
* transaction processed for the subscription will be sent in URBS
* elements to every destination defined for the subscription.
* If only a destination name is given, the status of the last
* transaction processed for every subscription defined for the
* destination will be sent in URBS elements to that destination.
*
*
* For a prior-transaction request (TRAN), specify:
*   * The subscription name (URBISNAM).
*   * The destination name (URBIDNAM).
*   * The transaction sequence number within the
*     subscription/destination (URBITSNR).
*
* The replication data from the transaction identified by the
* subscription and destination names and the sequence number
* will be sent to the specified destination.
* If the requested data is no longer available, a URBS with
* related error information will be sent to the response
* destination (URBIRNAM).
*
00030      URBISNAM DS    CL8          Subscription name or blank (STAT/TRAN)
00038      URBIDNAM DS    CL8          Destination name or blank (STAT/TRAN ←
req)
*
*
* The following three fields should be set if the selection data
* (URBIDATA) has a different encoding or architecture than the
* database. The usage is like the ACODE/WCODE and ARC parameters
* in the record buffer for the Adabas OP command.
* These fields may be used only if the Reptor is UES enabled.
* They may be used for an initial-state request with selection
* criterion and must be zero for all other requests.
*
00040      URBIACOD DS    F           Alpha field encoding in selection data
00044      URBIWCOD DS    F           Wide field encoding in selection data
00048      URBIARC  DS    X           Architecture flags for selection data
*
00049      URBIRES1 DS    XL3         Reserved area 1
*
0004C      URBITSNR DS    F           Transaction sequence number within

```

request)	*			subscription/destination (TRAN ←
00050	*	URBIRES2 DS	XL16	Reserved area 2
00060	*	URBIDATA DS	0D	Optional selection data (INST ←
request):	*			Value buffer or ISN list
0060	*	URBIL EQU	*-URBI	DSECT length

URBL

00000 00000 00040	URBL	URBL ,		Replication buffer - TLOG record
	DSECT ,			TLOG base record
	←			

	*			URBL - Reptor Transaction Log Record Definition ←
*	*			←
*	*			←
*	*			URBL is used by the Adabas Replication Facility. ←
*	*			←
*	*			←
record. *	*			The URBL contains the base information for one TLOG ←
record *	*			If URBLPTYP is nonzero, additional data follows this ←
*	*			and is mapped by the DSECT indicated by the equate value. ←
*	*			←
	*			←
	*			←

00000	URBLEYE DS	CL4		URBL eye-catcher 'URBL'
00004	URBLLEN DS	F		Length of URBL
00008	URBLTLEN DS	F		Total TLOG record length including ←
URBL				
0000C	URBLVER DS	CL2		Version of URBL structure:
FOF1	URBLVER1 EQU	C'01'		First version
	*			
0000E	URBLTYPE DS	CL2		Type of TLOG Record:
	*			
	*			Reptor processing events:
	*			
C1C1	URBLTPRL EQU	C'AA'		Lowest processing event
C1C1	URBLTTAQ EQU	C'AA'		Transaction on assignment queue
C1C2	URBLTNSM EQU	C'AB'		No subscription match
C1C3	URBLTSUI EQU	C'AC'		Input to subscription processing

Output Message Detail

C1C4	URBLTFIL	EQU	C'AD'	Data record filtered
C1C5	URBLTSUO	EQU	C'AE'	Output from subscription processing
C1C6	URBLTADS	EQU	C'AF'	Assigned to destination
C1C7	URBLTSLW	EQU	C'AG'	Transaction written to SLOG
C1C8	URBLTSLR	EQU	C'AH'	Transaction read from SLOG
C1C9	URBLTOUC	EQU	C'AI'	Output completion - Message sent
C1D1	URBLTTCQ	EQU	C'AJ'	Transaction on completion queue
C1D2	URBLTTXC	EQU	C'AK'	Transaction completed - Adabas ←
informed				
C1D3	URBLTRQR	EQU	C'AL'	Request received (from application)
C1D4	URBLTRQT	EQU	C'AM'	Request translated
C1D5	URBLTRQJ	EQU	C'AN'	Request rejected (undecipherable)
C1D6	URBLTRQE	EQU	C'AO'	Request error (execution failed)
C1D7	URBLTSTA	EQU	C'AP'	Response to status request
C1D8	URBLTRET	EQU	C'AQ'	Response to retransmit request
C1D9	URBLTISS	EQU	C'AR'	Initial-state request started
C1E2	URBLTISC	EQU	C'AS'	Initial-state request completed
C1E3	URBLTDOD	EQU	C'AT'	Destination output data
C1E4	URBLTFMA	EQU	C'AU'	Filter condition matched
C1E5	URBLTFNM	EQU	C'AV'	Filter condition not matched
C1E6	URBLTFIG	EQU	C'AW'	Filter condition ignored
C1E7	URBLTADE	EQU	C'AX'	ADABAS destination error
C2E9	URBLTPRH	EQU	C'BZ'	Highest processing event
*				
* Reptor state-change events:				
*				
D4C1	URBLTSCL	EQU	C'MA'	Lowest state-change event
D4C1	URBLTRPI	EQU	C'MA'	Reptor initialized
D4C2	URBLTRPT	EQU	C'MB'	Reptor terminated (normally)
D4C3	URBLTSBA	EQU	C'MC'	Subscription activated
D4C4	URBLTSBD	EQU	C'MD'	Subscription deactivated
D4C5	URBLTDSA	EQU	C'ME'	Destination activated
D4C6	URBLTDSD	EQU	C'MF'	Destination deactivated
D4C7	URBLTDSO	EQU	C'MG'	Destination opened
D4C8	URBLTDSC	EQU	C'MH'	Destination closed
D4C9	URBLTDSU	EQU	C'MI'	Destination unavailable
D4D1	URBLTDSE	EQU	C'MJ'	Destination error
D4D2	URBLTDSF	EQU	C'MK'	Destination full
D4D3	URBLTFLA	EQU	C'ML'	File activated
D4D4	URBLTFLD	EQU	C'MM'	File deactivated
D4D5	URBLTIQO	EQU	C'MN'	Input queue opened
D4D6	URBLTIQC	EQU	C'MO'	Input queue closed
D4D7	URBLTRPO	EQU	C'MP'	Replication pool overflow in Reptor
D4D8	URBLTRDL	EQU	C'MQ'	Replication data lost
D4D9	URBLTSUS	EQU	C'MR'	TLOGing suspended
D4E2	URBLTTSF	EQU	C'MS'	TLOG Space Allocation Failure
D4E3	URBLTRFR	EQU	C'MT'	Refresh requested
D4E4	URBLTRFF	EQU	C'MU'	Refresh failed
D4E5	URBLTRFE	EQU	C'MV'	Resource refreshed
D4E6	URBLTRFC	EQU	C'MW'	Refresh completed
D4E7	URBLTRFX	EQU	C'MX'	Refresh timed out
D4E8	URBLTRFA	EQU	C'MY'	Refresh aborted by user

D4E9	URBLTRFN EQU	C'MZ'	Refresh not done (resource not ↵ changed)
D4F0	URBLTDSR EQU	C'M0'	Retry open of destination attempted
D4F1	URBLTIQR EQU	C'M1'	Retry open of input queue attempted
D5E9	URBLTSCHEQU	C'NZ'	Highest state-change event
	*		
	*	End of URBL types	
	*		
00010	URBLTIME DS	XL8	Date/time (STCK) when event occurred
00018	URBLDNAM DS	CL8	Destination associated with event
00020	URBLSNAM DS	CL8	Subscription associated with event
	*		
00028	URBLPTYP DS	H	Type of TLOG data (at URBLDATA):
	*		
	*	The URBT, URBR, URBI, and URBS structures are available in	
	*	separate macros. All other structures are mapped using the	
	*	DSECTs below.	
	*		
0000	URBLPNOD EQU	0	No additional data
0001	URBLPUBT EQU	1	Output transaction ↵
(URBT)			
0002	URBLPUBR EQU	2	Output record ↵
(URBLR)			
0003	URBLPULD EQU	3	Output record image ↵
(URBLD)			
0004	URBLPULT EQU	4	Input transaction ↵
(URBLT)			
0005	URBLPULR EQU	5	Input record ↵
(URBLQ)			
0006	URBLPULB EQU	6	Input record image ↵
(URBLB)			
0007	URBLPRPI EQU	7	Reptor status change ↵
(URBLS->URBLSRPN)			
0008	URBLPFIL EQU	8	File status change ↵
(URBLS->URBLSDBI)			
0009	URBLPIQN EQU	9	Input Q status change ↵
(URBLS->URBLSIQN)			
000A	URBLPUBI EQU	10	User request input data ↵
(URBI)			
000B	URBLPUBS EQU	11	Status/response output data ↵
(URBS)			
000C	URBLPULI EQU	12	User request input buffer ↵
(URBLI)			
000D	URBLPCNT EQU	13	Event count ↵
(URBLS->URBLSCNT)			
000E	URBLPFLT EQU	14	Filter event data ↵
(URBLF)			
000F	URBLPEUS EQU	15	Extended status/response output ↵
(URBLE)			
0010	URBLPRFR EQU	16	Refresh resource info ↵
(URBLS->URBLSRRQ)			
0011	URBLPFCI EQU	17	Filter condition info ↵

Output Message Detail

```

(URBLC)
  0012      URBLPADA EQU  18      ADABAS error info
(URBLA)
  *
0002A      DS      XL22      Reserved
  *
00040      URBLDATA DS      0D      Data related to event follows
  0040      URBL    EQU  *-URBL    Length of TLOG base record
  ↵
*-----*
  *
  *      DSECT to map an ADABAS error record written to the TLOG
  *
  *
  *
  ↵
*-----*
00000 00000 00020 URBLA    DSECT ,      Output record image prefix
00000      URBLAEYE DS      CL6      URBLA eye-catcher 'URBLA '
00006      URBLASDB DS      H        Source database ID
00008      URBLASFN DS      H        Source file number
0000A      URBLATDB DS      H        Target database ID
0000C      URBLATFN DS      H        Target file number
0000E      URBLARSP DS      H        Response code
00010      URBLAREA DS      F        Reason code
00014      URBLAISN DS      F        ISN
00018      URBLACMD DS      CL2      Command code
0001A      DS      XL6      Reserved
  0020      URBLAL    EQU  *-URBLA    Length of ADABAS error record
  ↵
*-----*
  *
  *      DSECT to map an input record image
  *
  *      (before subscription processing)
  *
  *
  *
  ↵
*-----*
00000 00000 00030 URBLB    DSECT ,      Input record image prefix
00000      URBLBEYE DS      CL6      URBLB eye-catcher 'URBLB '
00006      URBLBTYP DS      C        Type of image:
  00C1      URBLBTYA EQU  C'A'      Compressed after image of data
storage
  00C2      URBLBTYB EQU  C'B'      Compressed before image of data
storage
  00D2      URBLBTYK EQU  C'K'      Compressed before image of primary
key
  00C4      URBLBTYD EQU  C'D'      Special type FDT

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00C6          URBLBTYF EQU  C'F'          Special type FCB
00007         DS          X              Reserved
00008         URBLBTTM DS    XL8          Transaction timestamp (commit time)
00010         URBLBRSN DS    F           Record sequence number in transaction
00014         URBLBISQ DS    F           Sequence number of image
00018         URBLBPAO DS    F           Offset into payload represented by
          *              this record
0001C         URBLBPAL DS    F           Payload length in this record
00020         DS          XL16          Reserved
00030         URBLBPAY DS    0D          Payload follows - Compressed record
          0030         URLBL   EQU    *-URBLB Length of input record image prefix
          ←
*-----*
          *
          *              DSECT to map the filter condition information written ←
for          *              a filter match, nomatch, or ignore TLOG event. ←
          *
          *
          *
          ←
*-----*
00000 00000 00050 URBLC   DSECT ,          Filter condition match/nomatch/ignore
00000         URBLCEYE DS    CL6          URBLC eye-catcher 'URBLC '
00006         URBLCFNM DS    CL8          Filter name
0000E         URBLCGRP DS    H           Filter group number
00010         URBLCNUM DS    H           Filter condition number
00012         URBLCCIN DS    C           Condition indicator:
          00C9         URBLCCIG EQU    C'I' Condition ignored
          00D4         URBLCCMA EQU    C'M' Condition matched
          00D5         URBLCCNM EQU    C'N' Condition not matched
00013         URBLCUPT DS    C           Update type:
          00C4         URBLCUPD EQU    C'D' Delete
          00C9         URBLCUPI EQU    C'I' Insert
          00D9         URBLCUPR EQU    C'R' Initial-state (refresh)
          00E4         URBLCUPU EQU    C'U' Update
00014         URBLCISN DS    F           ISN
00018         URBLCPAL DS    F           Payload length in this record
          *
          *              The following describes the source field of the condition.
          *
0001C         URBLCSFN DS    CL2          Source field name
0001E         URBLCSPE DS    H           Source PE number
00020         URBLCSMU DS    H           Source MU number
00022         URBLCSLN DS    H           Source field length
          *              0 if data not included in payload
00024         URBLCDBI DS    H           Database ID
00026         URBLCNUC DS    H           Nucleus ID in cluster
00028         URBLCFNR DS    H           File number
0002A         URBLCSIM DS    C           Source image:
          00C1         URBLCSAI EQU    C'A' After image of data storage

```

Output Message Detail

	00C2	URBLCSBI	EQU	C'B'	Before image of data storage
	00D2	URBLCSKY	EQU	C'K'	Before image of primary key
0002B		URBLCSTY	DS	C	Source type:
	00C1	URBLCSTA	EQU	C'A'	Alpha
	00C2	URBLCSTB	EQU	C'B'	Binary
	00C6	URBLCSTF	EQU	C'F'	Fixed point
	00C7	URBLCSTG	EQU	C'G'	Floating point
	00D7	URBLCSTP	EQU	C'P'	Packed
	00E4	URBLCSTU	EQU	C'U'	Unpacked
	00E6	URBLCSTW	EQU	C'W'	Wide character
		*			
0002C		URBLCCND	DS	CL2	Condition
0002E		URBLCCLK	DS	XL8	Transaction commit timestamp (STCK)
00036		URBLCRUT	DS	XL8	Record updated timestamp (STCK)
0003E		URBLCSBG	DS	XL2	Begin byte in source field
		*			
		*			The following fields are filled out only if the target
		*			of the condition is a field.
		*			
00040		URBLCTFN	DS	CL2	Target field name
00042		URBLCTPE	DS	H	Target PE number
00044		URBLCTMU	DS	H	Target MU number
00046		URBLCTLN	DS	H	Target field length
		*			0 if data not included in payload
		*			or no target field specified
00048		URBLCTIM	DS	C	Target image:
	00C1	URBLCTAI	EQU	C'A'	After image of data storage
	00C2	URBLCTBI	EQU	C'B'	Before image of data storage
	00D2	URBLCTKY	EQU	C'K'	Before image of primary key
00049		URBLCTTY	DS	C	Target type:
	00C1	URBLCTTA	EQU	C'A'	Alpha
	00C2	URBLCTTB	EQU	C'B'	Binary
	00C6	URBLCTTF	EQU	C'F'	Fixed point
	00C7	URBLCTTG	EQU	C'G'	Floating point
	00D7	URBLCTTP	EQU	C'P'	Packed
	00E4	URBLCTTU	EQU	C'U'	Unpacked
	00E6	URBLCTTW	EQU	C'W'	Wide character
		*			
0004A		URBLCTBG	DS	XL2	Begin byte in target field
0004C			DS	XL4	Reserved
00050		URBLCPAY	DS	0D	Payload follows - Source/target ↵
value(s)					
	0050	URBLCL	EQU	*-URBLC	Length of filter condition prefix
		↵			

		*			↵
*		*		DSECT to map an output record image	↵
*		*		(after subscription processing)	↵
*		*			↵

```

*
      ↵
*-----*
00000 00000 00030 URBLD   DSECT ,           Output record image prefix
00000           URBLDEYE DS   CL6           URBLD eye-catcher 'URBLD '
00006           DS   XL2           Reserved
00008           URBLDTTM DS   XL8           Transaction timestamp (commit time)
00010           URBLDRSN DS   F           Record sequence number in transaction
00014           URBLDISQ DS   F           Sequence number of image
00018           URBLDPAO DS   F           Offset into payload represented by
*           this record
0001C           URBLDPAL DS   F           Payload length in this record
00020           DS   XL16           Reserved
00030           URBLDPAY DS   OD           Payload follows - URBD
      0030           URBLDL  EQU  *-URBLD     Length of output record image prefix
      ↵
*-----*
*
*           *
*           *           DSECT to map the extended Status/Response event. This
*           *           is written when the URBS data must be written over
*           *           multiple TLOG records.
*           *
*           *
*           *
      ↵
*-----*
00000 00000 00030 URBLE   DSECT ,           Extended Status/response prefix
00000           URBLEEYE DS   CL6           URBLE eye-catcher 'URBLE '
00006           DS   XL2           Reserved
00008           URBLETIM DS   XL8           Time from field URBSTIME
00010           URBLETOT DS   F           Total length of input buffer ↵
(URBS+data)
00014           URBLEPAO DS   F           Offset into URBS+data represented by
*           this record
00018           URBLEPAL DS   F           Payload length in this record
0001C           DS   XL20           Reserved
00030           URBLEPAY DS   OD           Payload follows - URBS+data
      0030           URBLEL  EQU  *-URBLE     Length of extended status/response ↵
prefix
      ↵
*-----*
*
*           *
*           *           DSECT to map the data written for a filter event
*           *
*           *
      ↵
*-----*

```

Output Message Detail

```

00000 00000 00020 URBLF  DSECT ,           Filter event data
00000          URBLFEYE DS   CL6           URBLF eye-catcher 'URBLF '
00006          URBLFREA DS   C            Reason for exclusion:
          00C5    URBLFREQ EQU  C'E'       SFREPLICATENOTCHANGED specified and
          *                               AI=BI
          00D4    URBLFRFF EQU  C'M'       Matched an exclude filter
          00D5    URBLFRNI EQU  C'N'       Did not match any include filter
          00E7    URBLFRUX EQU  C'X'       Subscription user exit
00007          DS   X                    Reserved
00008          URBLFFNM DS   CL8           Name of filter (if any)
00010          URBLFGID DS   H            Filter group ID (if any)
00012          DS   XL14                  Reserved
          0020    URBLFL  EQU  *-URBLF     Length of filter event data
          ↵

```

```

*-----*
*
*                               ↵
*                               ↵
*                               ↵
*                               ↵
*                               ↵
*                               ↵
*                               ↵
*                               ↵
*                               ↵
*                               ↵
*                               ↵
*-----*

```

```

00000 00000 00020 URBLI  DSECT ,           User input buffer prefix
00000          URBLIEYE DS   CL6           URBLI eye-catcher 'URBLI '
00006          DS   XL2                  Reserved
00008          URBLIRSP DS   F            Zero for 'request received' event
          *                               Reason code for 'request rejected'
0000C          URBLITOT DS   F            Total length of input buffer
00010          URBLIPAL DS   F            Length of this portion
00014          URBLIPAO DS   F            Offset this portion represents
00018          DS   XL8                  Reserved
00020          URBLIPAY DS   OD           Payload follows - URBH, URBI
          0020    URBLIL  EQU  *-URBLI     Length of user input buffer prefix
          ↵

```

```

*-----*
*
*                               ↵
*                               ↵
*                               ↵
*                               ↵
*-----*

```

```

00000 00000 00040 URBLQ  DSECT ,           Input record prefix
00000          URBLQEYE DS   CL6           URBLQ eye-catcher 'URBLQ '
00006          URBLQIMT DS   C            Type of before image:
          0040    URBLQIMA EQU  C' '       No before image

```

00C2	URBLQIMB EQU	C'B'	Compressed data storage before image
00C6	URBLQIMF EQU	C'F'	FCB (within pseudo-transaction)
00D2	URBLQIMK EQU	C'K'	Compressed primary key value
	*		If initial-state process:
00C5	URBLQIME EQU	C'E'	End of file reached
00D9	URBLQIMR EQU	C'R'	Process stopped due to
	*		response code (in URBLQRSP/SUB)
00E2	URBLQIMS EQU	C'S'	Process stopped on request ←
(HALT/STOP)			
00007	URBLQUPT DS	C	Type of update:
00C4	URBLQUPD EQU	C'D'	Record deleted
00C9	URBLQUPI EQU	C'I'	Record inserted
00E4	URBLQUPU EQU	C'U'	Record updated
	*		Within pseudo-transactions:
00C6	URBLQUPF EQU	C'F'	FCB and FDT
00D3	URBLQUPL EQU	C'L'	Report of replication data loss
00D9	URBLQUPR EQU	C'R'	Record from initial-state process
00E8	URBLQUPY EQU	C'Y'	File replication reactivated
00E9	URBLQUPZ EQU	C'Z'	File replication deactivated
00008	DS	XL2	Reserved
0000A	URBLQFNR DS	H	File number
0000C	URBLQISN DS	F	ISN
00010	URBLQTTM DS	XL8	Transaction timestamp (commit time)
00018	URBLQRSN DS	F	Record sequence number in transaction
0001C	URBLQRSP DS	H	Response code
0001E	URBLQSUB DS	XL2	Response subcode
00020	URBLQFMT DS	XL8	STCK of 1st modification of same ←
FNR/ISN			
00028	URBLQLMT DS	XL8	STCK of last modification of same ←
FNR/ISN			
00030	URBLQBFZ DS	F	Adabas command counter
00034	DS	XL12	Reserved
0040	URBLQL EQU	*-URBLQ	Length of input record prefix
	←		

	*		←
*		DSECT to map an output record	←
*			←
*			←
	←		

00000 00000 00020	URBLR DSECT	,	Output record prefix
00000	URBLREYE DS	CL6	URBLR eye-catcher 'URBLR '
00006	DS	XL2	Reserved
00008	URBLRTTM DS	XL8	Transaction timestamp (commit time)
00010	DS	XL16	Reserved
00020	URBLRPAY DS	OD	Payload follows - URBR
0020	URBLRL EQU	*-URBLR	Length of output record prefix
	←		

Output Message Detail

```

*
*
*          *          DSECT to map records written for state change events
*
*
*
*
*-----*
00000 00000 00020 URBLSEYE DS CL6      State change event data
00000          URBLSEYE DS CL6      URBLSEYE eye-catcher 'URBLSEYE '
00006          DS XL2              Reserved
00008          URBLSESD DS OC       Event specific data follows here
*-----*
*
*          *          Data written for a Reptor-related state change event
*
*
*
*-----*
00008 00008 00008          ORG URBLSESD
00008          URBLSRPN DS CL8      Reptor address space name
00010          URBLSRPS DS C        Start indicator:
00010          00D9 URBLSRPR EQU C'R' Restart after abnormal shutdown
00010          00E2 URBLSRPI EQU C'S' Start after normal shutdown
00011          DS XL15             Reserved
00011          0020 URBLSRPL EQU *-URBLSE
*-----*
*
*          *          Data written for a file-related state change event
*
*
*
*-----*
00020 00020 00008          ORG URBLSESD
00008          URBLSDBI DS H        Database ID
0000A          URBLSFNR DS H        File number
0000C          DS XL20             Reserved
00020          URBLSDFL EQU *-URBLSE
*-----*
*
*          *          Data written for an input queue-related state change
event *
*
*

```

```

      ↵
*-----*
00020 00020 00008      ORG  URBLSESD
00008      URBLSIQN DS  CL8      Input queue name
00010      DS  XL16      Reserved
      0020      URBLSIQL EQU  *-URBLS
      ↵
*-----*
      *
      *
      *      Data written for state change events requiring counters ↵
      *
      *
      *
      ↵
*-----*
00020 00020 00008      ORG  URBLSESD
00008      URBLSCNT DS  F      Count of events
0000C      DS  XL20      Reserved
      0020      URBLSCNL EQU  *-URBLS
      ↵
*-----*
      *
      *
      *      Data written for a refresh of a specific resource ↵
      *
      *
      *
      ↵
*-----*
00020 00020 00008      ORG  URBLSESD
00008      URBLSRRO DS  C      Refresh request:
      00C1      URBLSRRA EQU  C'A'      Add a resource
      00C4      URBLSRRD EQU  C'D'      Delete a resource
      00D4      URBLSRRM EQU  C'M'      Modify a resource
      *
00009      URBLSRTY DS  C      Type of resource:
      00C1      URBLSRTA EQU  C'A'      Initial state
      00C4      URBLSRTD EQU  C'D'      Destination
      00C6      URBLSRTF EQU  C'F'      Full refresh
      00C7      URBLSR TG EQU  C'G'      Globals
      00C9      URBLSR TI EQU  C'I'      Input queue
      00D9      URBLSR TR EQU  C'R'      Resend buffer
      00E2      URBLSR TS EQU  C'S'      Subscription
      *
0000A      URBLSRNM DS  CL8      Resource name
00012      DS  XL14      Reserved
      0020      URBLSRFL EQU  *-URBLS
      ↵
*-----*
      *
      *

```

Output Message Detail

```

*          *          End of state change record          ↵
*
*
*          ↵
*-----*
00020 00020 00020          ORG          ,
      0020          URBLSL  EQU  *-URBLS          Maximum length of state change event ↵
data
          ↵
*-----*
*          *          DSECT to map an input transaction  ↵
*
*          *
*
*          ↵
*-----*
00000 00000 00060 URBLT    DSECT  ,          Input transaction data
00000          URBLTEYE DS    CL6          URBLT eye-catcher 'URBLT '
00006          DS    XL2          Reserved
00008          URBLTDBI DS    H          Originating Adabas database ID
0000A          URBLTNUI DS    H          Originating Adabas nucleus ID
0000C          URBLTGUI DS    XL28       Originating 28-byte user ID
00028          URBLTTBT DS    XL8       STCK at transaction begin
          *          (time of first replicated update)
00030          URBLTTTM DS    XL8       STCK at transaction end (commit time)
00038          URBLTTRI DS    F          Transaction ID (by nucleus)
0003C          URBLTTUT DS    F          Transaction ID (by user)
00040          URBLTREC DS    F          Number of records in transaction
00044          URBLTINS DS    F          Initial-state request relative number
00048          URBLTRSI DS    C          Indicator for possible double ↵
delivery:
      00E8          URBLTRSY EQU    C'Y'          Data for the same transaction
          *          may have been sent previously
00049          URBLTPTI DS    C          Pseudo-transaction indicator:
      00C3          URBLTSC5 EQU    C'C'          C5 user data pseudo-transaction
      00C4          URBLTSDA EQU    C'D'          File deactivation pseudo-transaction
      00C6          URBLTSEU EQU    C'F'          FCB/FDT pseudo-transaction
      00C9          URBLTSIS EQU    C'I'          Initial-state pseudo-transaction
      00D3          URBLTSLO EQU    C'L'          Lost replication data ↵
pseudo-transaction
          *
0004A          URBLTSRT DS    C          Indicates whether or not the ↵
transaction
          *          records have been sorted by file, ↵
ISN,
          *          and relative number:
      00E8          URBLTSRY EQU    C'Y'          Transaction has been sorted
      00D5          URBLTSRN EQU    C'N'          Transaction has not been sorted
0004B          DS    X          Reserved

```

0004C	URBLTSID	DS	CL8	Security system user ID
00054		DS	XL12	Reserved
0060	URBLTL	EQU	*-URBLT	Length of input transaction data
FOF1	URBLVERC	EQU	URBLVER1	Current version - Initial

release

URBP

```

Exit
00000 00000 00014 URBP      DSECT
                                ↵
*-----*
*      *      URBP -- Subscription user exit parameter list      ↵
*      *      ↵
*      *      ↵
*      *      DSECT URBP is used by the Event Replicator for Adabas. ↵
*      *      ↵
*      *      ↵
*      *      DSECT URBP describes the parameter address list passed ↵
*      *      to the Reptor subscription user exit.                ↵
*      *      ↵
*-----*
*      *      ↵
*      *      ↵
once  *      *      During Reptor session start, the user exit is called ↵
*      *      with the Initialize function.                          ↵
*      *      ↵
*      *      ↵
*      *      While the Reptor is running, the exit is called with the ↵
*      *      Process-record function for every record that is being ↵
*      *      replicated. The exit may filter the record (suppress its ↵
*      *      shipment to the destination(s)) or modify its contents. ↵
*      *      ↵
*      *      ↵
*      *      During Reptor shutdown (normal termination only), the ↵
exit  *      *      is called once with the Terminate function.     ↵
*      *      ↵

```

```

*
*
*
*-----*
*
*
*       The subscription user exit is called using a
*       standard BALR 14,15 interface, as follows:
*
*
*       On entry,
*
*           R1  -> URBP parameter address list
*
*           R13 -> Standard 72-byte register save area
*
*           R14 -> Return point
*
*           R15 -> User exit entry point
*
*
*       On exit,
*
*           information may be returned in the first parameter
*
*
*-----*
00000      URBPURBX DS    A           Addr of URBX parameter block
*
*       Only for the Process-record function (URBXFUNC=URBXFREC):
*
00004      URBPURBT DS    A           Addr of URBT
00008      URBPURBR DS    A           Addr of URBR
0000C      URBPABI  DS    A           Addr of URB of before image
*                                           Zero if no before image
00010      URBPAAI  DS    A           Addr of URB of after image
*                                           Zero if no after image
*
*       The user exit may change the before/after image record contents
* at URB.URBDDATA and may decrease their lengths at URB.URBDLEND.
*       However, it must not increase the record data lengths. If the
* exit sets a length to zero, the corresponding record image will
* not be shipped to the destination(s).
*
*       The last supplied address in the URBP parameter address list is
* marked with the high bit set.

```

0014	*	URBPL	EQU	*-URBP	DSECT length
------	---	-------	-----	--------	--------------

URBQ

```

000000 00000 00008  URBQ   DSECT
                                     ↵
                                     ↵
*-----*
*           *   URBQ -- User Exit Program Parameter Block           ↵
*           *   ↵
*           *   ↵
*           *   DSECT URBQ is used by the Adabas Replication Extract ↵
*           *   utility (ADARPE).                                     ↵
*           *   ↵
*           *   ↵
*           *   DSECT URBQ describes the parameter address list passed ↵
*           *   from the extract utility to a user exit program.     ↵
*           *   ↵
*           *   ↵
*           *   The user exit is called using a standard BALR 14,15 ↵
*           *   interface, as follows:                                ↵
*           *   ↵
*           *   ↵
*           *   On entry,                                           ↵
*           *   ↵
*           *   R1 -> URBQ parameter address list                    ↵
*           *   ↵
*           *   R13 -> Standard 72-byte register save area           ↵
*           *   ↵
*           *   R14 -> Return point                                   ↵
*           *   ↵
*           *   R15 -> User exit entry point                          ↵
*           *   ↵
*           *   ↵
*           *   On exit,                                             ↵
*           *   ↵
*           *   information may be returned in the first parameter ↵
*           *   ↵
*           *   ↵

```

Output Message Detail

```

                                ↵
*-----*
000000      URBQURBZ DS    A      Address of URBZ parameter block ↵
000004      URBQABUF DS    A      Address of output buffer for ↵
record
*
* The last supplied address in the URBQ parameter address list ↵
is
* marked with the high bit set.
*
000008      URBQL    EQU    *-URBQ      DSECT length ↵

```

URBR

```

00000 00000 00040 URBR      URBR      ,      Replication buffer - Record
                                DSECT
                                ↵
*-----*
*      URBR -- Record element ↵
*
*
*      DSECT URBR is used by the Adabas Replication Facility. ↵
*
*
*      DSECT URBR contains information related to one record. ↵
*
*
*
*
*
*
00000      URBREYE DS    CL4      URBR eye-catcher 'URBR'
00004      URBLEN  DS    F        Length of URBR
*
00008      UBRRSNR DS    F        Record sequence number within ↵
transaction
0000C      UBRDCNT DS    H        Count of data elements (URBDs)
*                               for this record
*
0000E      UBRFNR  DS    H        Original Adabas file number
00010      UBRISN  DS    F        Original Adabas ISN
00014      UBRTIME DS    XL8     Time (STCK) of last modification
*

```

0001C	URBRTYP	DS	C	Type of update:
00C4	URBRTYPD	EQU	C'D'	Delete
00C9	URBRTYPI	EQU	C'I'	Insert
00D9	URBRTYPR	EQU	C'R'	Initial State (refresh)
00E4	URBRTYPU	EQU	C'U'	Update
	*			
0001D	URBRRSND	DS	C	Indicator for possible double ↵
delivery:				
00E8	URBRRSNY	EQU	C'Y'	Data for same record may have been ↵
	*			sent previously
	*			
0001E	URBRRSP	DS	H	Response code
00020	URBRSUBC	DS	XL4	Subcode information
00024	URBRERRC	DS	CL8	Other error code information
	*			No record data (URBD) is shipped ↵
if the				
	*			record incurred a nonzero response ↵
code				
	*			(URBRRSP) or non-blank other error ↵
code				
	*			(URBRERRC) during replication
	*			processing.
	*			
0002C	URBRDCU	DS	C	Indicator for possible delete ↵
conversion:				
00E8	URBRDCUY	EQU	C'Y'	Delete converted to update
	*			
0002D	URBRUC	DS	C	Indicator for possible update ↵
conversion:				
00C4	URBRUCD	EQU	C'D'	Update converted to delete
00C9	URBRUCI	EQU	C'I'	Update converted to insert
	*			
0002E		DS	XL18	Reserved area
00040		DS	0D	
0040	URBRL	EQU	*-URBR	DSECT length

URBS

Status/response	URBS	,	Replication buffer - ↵
00000 00000 00140	URBS	DSECT	↵
			↵

	*	URBS -- Reptor status/response element	↵
*	*		↵
*	*		↵
	*	DSECT URBS is used by the Adabas Replication Facility.	↵

Output Message Detail

*	*				↔
*	*				
*	*			DSECT URBS contains status/response information sent	↔
*	*			from the Reptor to a Target Application.	↔
*	*				↔
*	*				↔
*	*				↔

00000	URBSEYE	DS	CL4	URBS eye-catcher 'URBS'	↔
00004 filler	URBSLEN	DS	F	Length of URBS + related data +	↔
00008 request),	URBSRTOK	DS	XL8	Request ID token (from original	↔
	*			zero if unsolicited Reptor message	↔
	*				↔
00010	URBSRT	DS	CL4	Request type (blank if no request):	↔
C1E3	URBSRTST	EQU	C'STAT'	Subscription status information	↔
E2E3	URBSRTIS	EQU	C'INST'	Initial-state processing information	↔
C1D5 information	URBSRTTA	EQU	C'TRAN'	Prior-transaction processing	↔
D5C4	URBSRTOD	EQU	C'OPND'	Open a destination	↔
E2C4	URBSRTCD	EQU	C'CLSD'	Close a destination	↔
	*				↔
00014	URBSST	DS	CL4	Reptor status/response information:	↔
C9E3	URBSSTIN	EQU	C'INIT'	Initial-state processing commenced	↔
D9D6 rejected	URBSSTER	EQU	C'ERRO'	Initial-state erroneous request	↔
D7D3	URBSSTCM	EQU	C'CMPL'	Initial-state processing completed	↔
C2E2	URBSSTSU	EQU	C'SUBS'	Subscription status information	↔
D9E3	URBSSTUP	EQU	C'STRT'	Normal Reptor session start	↔
E2E3	URBSSTAR	EQU	C'REST'	Reptor restart after abnormal end	↔
D9D4	URBSSTDN	EQU	C'TERM'	Normal Reptor session termination	↔
C1C3	URBSSTDA	EQU	C'DEAC'	Replication deactivated	↔

	C1C3	URBSSTRA EQU	C'REAC'	Replication reactivated	↔
request	E2D7	URBSSTTR EQU	C'TRSP'	Response to prior-transaction	↔
	E2E3	URBSSTLO EQU	C'LOST'	Possibly lost replication data	↔
command	C4C1	URBSSTC5 EQU	C'C5DA'	Replication user data from C5	↔
	C4E2	URBSSTLS EQU	C'LODS'	ADALOD LOAD started	↔
	C4C5	URBSSTLE EQU	C'LODE'	ADALOD LOAD ended	↔
	D3E2	URBSSTRS EQU	C'RPLS'	Replay process (ADARPL) started	↔
	D3C5	URBSSTRE EQU	C'RPLE'	Replay process (ADARPL) ended	↔
	C6D9	URBSSTRF EQU	C'REFR'	Resource refreshed	↔
	E5E2	URBSSTSS EQU	C'SAVS'	ADASAV RESTORE started	↔
	E5C5	URBSSTSE EQU	C'SAVE'	ADASAV RESTORE ended	↔
	E2E2	URBSSTGS EQU	C'RESS'	ADARES REGENERATE/BACKOUT started	↔
	E2C5	URBSSTGE EQU	C'RESE'	ADARES REGENERATE/BACKOUT ended	↔
	C4E2	URBSSTUS EQU	C'UPDS'	ADALOD UPDATE started	↔
	C4C5	URBSSTUE EQU	C'UPDE'	ADALOD UPDATE ended	↔
	E3C9	URBSSTAU EQU	C'AUTI'	Adabas utility service replication	↔
	D6E2	URBSSTCL EQU	C'CLOS'	Destination closed	↔
	C5D5	URBSSTOP EQU	C'OPEN'	Destination opened	↔
	C5C3	URBSSTAS EQU	C'ASEC'	Adabas security replication	↔
	D6D5	URBSSTSN EQU	C'SLON'	SLOG turned on for destination	↔
	D6C6	URBSSTSF EQU	C'SLOF'	SLOG turned off for destination	↔
on	C4D6	URBSSTD0 EQU	C'SLDO'	SLOG for DB-related input turned	↔
off	C4C6	URBSSTDF EQU	C'SLDF'	SLOG for DB-related input turned	↔
	C4E2	URBSSTDS EQU	C'SLDS'	SLOG for DB-related input suspended	↔
	C4D9	URBSSTDR EQU	C'SLDR'	SLOG for DB-related input resumed	↔
	C4C4	URBSSTDD EQU	C'SLDD'	SLOG for DB-related input disabled	↔

Output Message Detail

E4D3	URBSSTFL EQU	C'DFUL'	Destination full	↔
D9D9	URBSSTDE EQU	C'DERR'	Destination error	↔
C3D6	URBSSTCO EQU	C'DBCO'	Database connected	↔
C4C9	URBSSTDI EQU	C'DBDI'	Database disconnected	↔
D5D7	URBSSTNP EQU	C'DBNP'	Database not present	↔
D4D7	URBSSTDC EQU	C'DCMP'	Decompression error: AI, BI, FAI,	↔
FBI,	*		or KEY	↔
C6C7	URBSSTRG EQU	C'REFG'	Refresh Globals	↔
D6D7	URBSSTQO EQU	C'IQOP'	Input Queue opened	↔
C3D3	URBSSTQC EQU	C'IQCL'	Input Queue closed	↔
	*			↔
00018 created	URBSTIME DS	XL8	Time (STCK) when this URBS was	↔
	*			↔
00020	URBSRSP DS	F	Response code for request	↔
00024	URBSSUBC DS	F	Subcode for request	↔
00028	URBSERRI DS	CL8	Other pertinent error information	↔
	*			↔
00030	URBSINAM DS	CL8	Initial-state name (CMPL/ERRO/INIT	↔
	*		message)	↔
00038	URBSSNAM DS	CL8	Subscription name	↔
(ASEC/C5DA/DCMP/DEAC/	*		LOST/REAC/REFR/RPLE/RPLS/SUBS/TRSP	↔
	*		message)	↔
00040	URBSDNAM DS	CL8	Destination name	↔
(DEAC/DERR/FULL/REAC/	*		REFR/SLOF/SLON message)	↔
	*			↔
00048	URBSPTIM DS	XL8	Time (STCK) when last transaction	↔

was	*			processed for the subscription	↔
	*			(SUBS message)	↔
00050	URBSTTIM DS	XL8		Time (STCK) of transaction commit	↔
	*			(ASEC/AUTI/C5DA/SUBS message)	↔
00058	URBSTSNR DS	F		Transaction sequence number within	↔
msg)	*			subscription/destination (SUBS/TRSP	↔
	*				↔
0005C	URBSDBFN DS	OF		DBID and FNR	↔
(ASEC/CMPL/DCMP/DEAC/ERRO/	*			INIT/LODS/LODE/LOST/REAC/SAVS/SAVE/	↔
	*			UPDS/UPDE message)	↔
0005C	URBSDBID DS	H		Database ID	↔
(DBC0/DBDI/DBNP/RPLS/RPLE	*			messages)	↔
0005E	URBSFNR DS	H		File number	↔
	*				↔
00060	URBSLENH DS	F		Length of URBS	↔
00064	URBSLEND DS	F		Length of related data (at URBSDATA)	↔
	*				↔
00068	URBSUTOK DS	H		Utility token	↔
(CMPL/ERRO/INIT/LODS/LODE/	*			RPLS/RPLE/SAVS/SAVE/UPDS/UPDE	↔
message)	*				↔
0006A	URBSORIG DS	C		Origin of status (ASEC/C5DA message):	↔
00C1	URBSORIA EQU	C'A'		Coming from Adabas nucleus	↔
00D9	URBSORIR EQU	C'R'		Coming from ADARPL REPLAY	↔
	*				↔
0006B		DS	XL5	Reserved area	↔
00070	URBSIQNM DS	CL8		Input Queue name (IQCL/IQOP/REFR	↔

Output Message Detail

message)					
00078		DS	XL8	Reserved area	↔
	*				↔
00080	URBSDATA	DS	0D	Payload data (ASEC/C5DA/RPLE/RPLS	↔
	*			message)	↔
	*			Note: For the RPLS/RPLE message,	↔
file	*			URBSDATA contains a list of 2-byte	↔
with	*			numbers of the file(s) associated	↔
subscription	*			the replay process for the	↔
	*			given in URBSNAM	↔
	*				↔
00080	URBSL	EQU	*-URBS	DSECT length	↔

URBT

			URBT	,	Replication buffer - Transaction
00000	00000	00080	URBT	DSECT	
			↔		
*	-----*				
	*			URBT -- Transaction element	↔
	*				↔
	*			DSECT URBT is used by the Adabas Replication Facility.	↔
	*				↔
	*			DSECT URBT contains information related to one	↔
transaction.	*				↔
	*				↔
	*				↔
*	-----*				
00000	URBTEYE	DS	CL4	URBT eye-catcher 'URBT'	
00004	URBTLEN	DS	F	Length of URBT	
	*				
00008	URBTSNAM	DS	CL8	Subscription name	
00010	URBTTSNR	DS	F	Transaction sequence number within	

	*			subscription/destination
00014	URBTCNT DS	F		Count of records (URBRs) in ↵
transaction				
00018	URBTTTIM DS	XL8		Time (STCK) at transaction commit
00020	URBTPTIM DS	XL8		Time (STCK) at end of subscription
	*			processing
	*			
00028	URBTDBID DS	H		Originating Adabas database ID
0002A	URBTNUCI DS	H		Originating Adabas nucleus ID
0002C	URBTGUID DS	XL28		Originating 28-byte user ID
	*			
00048	URBTRPID DS	H		Reptor target ID (DBID parameter)
0004A	URBTRPNI DS	H		Reptor nucleus ID (not yet used) ↵
=> zero				
	*			
0004C	URBTUSRV DS	CL2		User subscription version indicator,
	*			set from parameter SVERSION in the
	*			subscription definition
0004E	URBTRSND DS	C		Indicator for possible double ↵
delivery:				
00E8	URBTRSNY EQU	C'Y'		Data for same transaction may have
	*			been sent previously
0004F	URBTINST DS	C		Indicator for initial state:
00E8	URBTINSY EQU	C'Y'		Data sent by initial-state process
	*			
00050	URBTRTOK DS	XL8		Request ID token (if response to ↵
request				
	*			from target application => URBIRTOK)
	*			
00058	URBTCONT DS	C		Indicator for transaction ↵
continuation:				
00E8	URBTCONY EQU	C'Y'		More data to follow in the next ↵
message				
	*			for the same transaction
	*			
	*			The fields URBTARC, URBTACOD and URBTWCOD contain the ↵
subscription				
	*			parameters SARC, SACODE and SWCODE, respectively.
	*			
00059	URBTARC DS	X		Architecture of transaction data
	*			
0005A	URBTPTRN DS	C		Indicator for prior-transaction ↵
request:				
00E8	URBTPTRY EQU	C'Y'		Resending data from prior transaction
	*			
0005B	URBTSORT DS	C		Indicates whether or not the ↵
transaction				
	*			records have been sorted by file, ↵
ISN,				
	*			and relative number:
00E8	URBTSORY EQU	C'Y'		Transaction has been sorted
00D5	URBTSORN EQU	C'N'		Transaction has not been sorted

000004	URBULEN	DS	F	Length of URBU	↔
	*				↔
000008	URBUVERS	DS	CL2	URBU version indicator:	↔
0F0F1	URBUVER1	EQU	C'01'	First version	↔
	*			Future releases may allow a new	↔
layout	*			of the ADARPE output file. In	↔
this case	*			URBUVERS will be set to a different	↔
	*			value.	↔
	*				↔
00000A	URBUNAME	DS	CL8	Extract name (ADARPE NAME	↔
parameter)					
000012	URBUTIME	DS	XL8	Time of execution (STCK)	↔
00001A	URBUDIST	DS	CL22	Local time (YYYY-MM-DD HH:MM:SS.hh)	↔
	*				↔
000030	DS	XL32		Reserved area	
000050	DS	0D			
000050	URBUL	EQU	*-URBU	DSECT length	↔

URBX

	URBX	,	Replication buffer - Par1 Subs.	↔	
Exit					
000000	000000	00060	URBX	DSECT	↔
			*		↔
	*		URBX -- Subscription user exit parameter block		↔
	*				↔
	*		DSECT URBX is used by the Adabas Replication Facility.		↔
	*				↔
	*		DSECT URBX describes the first parameter passed to the		↔

Output Message Detail

```

*
*          *          Reptor subscription user exit.          ↵
*
*          ↵
*-----*
00000      URBXEYE DS    CL4      (in)  URBX eye-catcher 'URBX'
00004      URBXLEN DS    F        (in)  Length of URBX
*
00008      URBXVERS DS  CL2      (in)  Version indicator for exit parameters:
      FOF1      URBXVER1 EQU  C'01'      First version
*          *          Future releases may allow a new layout
*          *          of the subscription user exit ↵
parameters
*          *          (URBP and URBX DSECTS). In this case
*          *          URBXVERS will be set to a different
*          *          value.
0000A      URBXVERH DS  CL2      (in)  Version indicator for URB* DSECTS,
*          *          corresponding to URBHVERS
*
0000C      URBXUSER DS  A        (in/out) Word for use by user exit:
*          *          Initially (Initialize function), zero
*          *          Then, value set by exit in previous ↵
call
*
00010      URBXFUNC DS  X        (in)  Function code:
      0001      URBXFINI EQU  X'01'      Initialize
      0002      URBXFTRM EQU  X'02'      Terminate
      0003      URBXFREC EQU  X'03'      Process record
*
00011      URBXRETC DS  X        (out) Return code:
      0000      URBXRSHP EQU  X'00'      Ship record (default setting)
      0001      URBXRFLT EQU  X'01'      Filter record (other nonzero
*          *          values cause filtering, too)
*
00012      URBXJNAM DS  CL8      (in)  Reptor job name
*
0001A      URBXERRC DS  CL8      (out) Other error code information:
*          *          Passed to destination in ↵
URBR.URBRERRC
*          *          (default setting is blanks)
*
00022      URBXRETD DS  X        (out) Return indicator for delete ↵
processing:
      0000      URBXRDEL EQU  X'00'      Process as delete (default setting)
      0001      URBXRUPD EQU  X'01'      Convert delete to update
*
*
00023      URBXRETU DS  X        (out) Return indicator for update ↵
processing:
      0001      URBXRUTI EQU  X'01'      Convert update to insert
      0002      URBXRUTD EQU  X'02'      Convert update to delete
*

```

00024		DS	XL58	Reserved area
00060		DS	0D	
0060	URBXL	EQU	*-URBX	DSECT length
	*			

URBZ

```

000000 00000 00040  URBZ    DSECT
                                ↵
                                ↵
*-----*
*          *          URBZ -- User Exit Program Parameter Block          ↵
*          *          ↵
*          *          ↵
*          *          DSECT URBZ is used by the Adabas Replication Extract ↵
*          *          utility (ADARPE).                                  ↵
*          *          ↵
*          *          DSECT URBZ describes the first parameter passed to the ↵
*          *          extract utility user exit.                          ↵
*          *          ↵
*          *          ↵
*          *          ↵
*          *          ↵
*-----*
000000          URBZEYE DS    CL4    (in)  URBZ eye-catcher 'URBZ'          ↵
000004          URBZLEN DS    F      (in)  Length of URBZ                  ↵
                                *                                          ↵
000008          URBZVERS DS    CL2    (in)  Version indicator for exit ↵
parameters:
0F0F1          URBZVER1 EQU   C'01'   First version                      ↵
                                *                                          ↵
                                *          Future releases may allow a new ↵
layout
                                *          of the extract user exit ↵
parameters.
                                *          In this case URBZVERS will be set ↵
to a
                                *          different value.                    ↵
00000A          URBZVERH DS    CL2    (in)  Version indicator for URB* DSECTs, ↵

```

Output Message Detail

	*			corresponding to URBHVERS	↵
	*				↵
00000C	URBZUSER DS	A	(in/out)	Word for use by user exit:	↵
	*			Initially (Initialize function),	↵
zero					
	*			Then, value set by exit in	↵
previous call					
	*				↵
000010	URBZDDN DS	CL8	(in)	Output DD/DLBL name	↵
000018	URBZDDML DS	F	(in)	Maximum record length of output	↵
file					
00001C	URBZDDWL DS	F	(in/out)	Length to write, modifiable by	↵
user exit					
	*				↵
000020	URBZDTYP DS	X	(in)	Type of data provided in buffer:	↵
00001	URBZTYPL EQU	1		URBL	↵
00002	URBZTYPT EQU	2		URBT	↵
00003	URBZTYPR EQU	3		URBLR/URBR	↵
00004	URBZTYPD EQU	4		URBLD/URBD	↵
00005	URBZTYPS EQU	5		URBS	↵
00006	URBZTYPE EQU	6		URBLE/URBS	↵
00007	URBZTYPP EQU	7		Raw payload	↵
	*				↵
000021	URBZFUNC DS	X	(in)	User exit function code:	↵
00001	URBZFINI EQU	X'01'		Initialize user exit	↵
00002	URBZFTRM EQU	X'02'		Terminate user exit	↵
00003	URBZFOUT EQU	X'03'		Process output data	↵
	*				↵
000022	URBZRETC DS	X	(out)	User exit return code:	↵
	*			Initialize/Terminate functions:	↵

00000	URBZITOK EQU	X'00'	Success	↔
00001	URBZITER EQU	X'01'	Error - will result in ADARPE	↔
Error-127	*		Process function:	↔
00000	URBZRVRT EQU	X'00'	Write record (default setting)	↔
00001	URBZRSKP EQU	X'01'	Skip record	↔
00002	URBZRERR EQU	X'02'	Error - will result in ADARPE	↔
Error-127	*			↔
000023	URBZERRC DS	CL8	(out) Other error code information -	↔
message as	*		will be printed in Error-127	↔
	*		"User Exit error code=xxxxxxx"	↔
	*			↔
00002B		DS XL21	Reserved area	↔
00040	URBZL EQU	*-URBZ	DSECT length	↔

5 Event Replicator Client Requests

- Specifying the URBH 56
- Destination Open and Close Requests 57
- Initial-State Requests 60
- Prior-Transaction Requests 76
- Status Requests 80

Clients can send requests to the Event Replicator Server by sending messages to an Event Replicator input queue.

An input message is composed of a combination of:

- a message header defined by the URBH DSECT
- one or more input elements defined by the URBI DSECT.

The following requests are defined:

- Destination open and close
- Initial-state processing
- Prior-transaction processing.
- Status inquiry on subscription

Specifying the URBH

The input message starts with a message header defined by the URBH DSECT. Set the elements in the URBH DSECT as described in the following table. Set all other elements in the URBH DSECT to the default value of binary zeroes or blanks according to the element type.

Element	Setting
URBHEYE	Set to 'URBH'. This value may be specified in either EBCDIC or ASCII. If this field contains 'URBH' in ASCII, all character fields in the URBH and URBI(s) will be translated from ASCII to EBCDIC.
URBHLEN	Set to the length of the URBH DSECT. This length is given in variable URBHL.
URBHVERS	Set to '01'.
URBHBORD	Set to the binary value of one. On big-endian machines, this will have the value X'0001'. On little endian-machines, this will have the value X'0100'. If this field is contains X'0100', all binary fields in the URBH and URBI(s) will be byte-swapped before being used by the Event Replicator Server.
URBHLENT	Set to the total message length. This includes the length of the URBH plus the length of each subsequent URBI.
URBHTIME	Optionally set this variable to the store clock time when the message was sent. The value in this variable within an input message is not referenced by the Event Replicator Server.
URBHNAME	Optionally set this variable to the name of the sender. The value in this variable within an input message is not referenced by the Event Replicator Server.

Destination Open and Close Requests

A destination open or close request will open or close a destination from your application program. Multiple requests can be made using multiple URBI s following a URBH header. The status message (URBS) contains the result of processing.

- [URBI Fields](#)
- [URBS Fields](#)
- [Destination Open Request Example](#)

URBI Fields

For a destination open or close request, set the elements in the URBI DSECT as described in the following table. Values may be provided for only these fields. All unused binary fields must be set to zero and all unused character fields must be set to blanks.

Element	Setting
URBIEYE	Set to 'URBI'.
URBILEN	Set to URBIL.
URBILENH	Set to URBIL.
URBIRT	Set to 'OPND' to request that the destination be opened; set to 'CLSD' to request that the destination be closed. One of these settings is required.
URBIDNAM	Supply the definition name of the destination that should be opened or closed. This element is required.
URBIRNAM	Optionally supply a response destination name.
URBIR TOK	Optionally supply the eight-byte token that allows your client program to recognize different open or close destination requests.

URBS Fields

Status messages for a destination open or close request contain the following information:

Status Element	Description
URBSRT	"OPND" appears if a destination was opened; "CLSD" appears if a destination was closed.

Destination Open Request Example

This example requests a destination named BROUT2 be closed. Destination BROUT1 is used as the response destination. The following topics are included in this section.

- [Create and send the destination close request](#)
- [Review the output in the BROUT1 destination](#)

Create and send the destination close request

The following application code requests that destination BROUT2 be closed:

```
rr=newMessage(bb.send_buffer) # start a new message beginning with URBH
rr.requestCloseDestination( # followed by URBI
    token=TOKEN001,
    rnam=BROUT1,
    dnam=BROUT2)
bb.send_length=rr.endMessage() # end message with URBHLENT = total message size
                                # and set length for messaging system
bb.send() # send message
```

This is the resulting message with URBH and URBI settings generated from the close destination request that is sent to the Event Replicator input queue:

```
0000 E4D9C2C8 00000040 F0F10001 000000A0 *URBH... 01.....-*
0010 00000010 BBBB BBBB BBBB BBBB 00000000 *.....*
0020 C3D3D6E2 C4C5E2E3 00000000 00000000 *CLOSDEST.....*
0030 00000000 00000000 00000000 00000000 *.....*
0040 E4D9C2C9 00000060 00000060 00000000 *URBI...-...-....*
0050 E3D6D2C5 D5F0F0F1 C2D9D6E4 E3F14040 *TOKEN001BROUT1 *
0060 C3D3E2C4 00000000 40404040 40404040 *CLSD.... *
0070 40404040 40404040 C2D9D6E4 E3F24040 *      BROUT2 *
0080 00000000 00000000 00000000 00000000 *.....*
0090 00000000 00000000 00000000 00000000 *.....*
```

Review the output in the BROUT1 destination

The following depicts the received message at destination BROUT1 for normal completion of the URBI:

```

0000 E4D9C2C8 00000040 F0F10001 000000C0 *URBH... 01.....*
0010 00000001 BB680AF2 C1C27F60 115C0000 *.....2AB"-.*..*
0020 D9C5D7E3 D6D94040 00000000 00000000 *REPTOR.....*
0030 00000000 00000000 00000000 00000000 *.....*
0040 E4D9C2E2 00000080 E3D6D2C5 D5F0F0F1 *URBS...TOKEN001*
0050 C3D3E2C4 C3D3D6E2 BB680AF2 C1C18060 *CLSDCLOSC .2AA.-*
0060 00000000 00000000 40404040 40404040 *.....*
0070 40404040 40404040 40404040 40404040 *.....*
0080 C2D9D6E4 E3F24040 00000000 00000000 *BROUT2 .....*
0090 00000000 00000000 00000000 00000000 *.....*
00A0 00000080 00000000 00004000 00000000 *.....*
00B0 00000000 00000000 00000000 00000000 *.....*

```

which can be interpreted as:

```

URBH element at offset X'0000'
  urbheye = "URBH"
  urbhlen = 64
  urbhvers = "01"
  urbhbord = X'0001'
  urbhlent = 192
  urbhmsnr = 1
  urbhtime = 2004-06-22 12:22:34.789927
  urbhrpid = 4444
  urbhrpni = 0
  urbhname = "REPTOR"

URBS element at offset X'0040'
  urbseye = "URBS"
  urbslen = 128
  urbsrtok = "TOKEN001"
  urbsrt = "CLSD"
  urbsst = "CLOS" Destination closed
  urbstime = 2004-06-22 12:22:34.789912
  urbsrsp = 0
  urbssubc = 0
  urbserri = "      "
  urbsinam = "      "
  urbssnam = "      "
  urbsdnam = "BROUT2  "
  urbsptim = 0
  urbsttim = 0
  urbstsnr = 0
  urbsdbid = 0
  urbsfnr = 0

```

Initial-State Requests

An initial-state request initiates the initial-state processing in the Event Replicator and the nucleus. During initial-state processing, the nucleus reads the selected records and passes them to the Event Replicator Server. The Event Replicator decompresses the records depending on the subscription format and sends the data to the assigned output destinations.

Records can be selected in one of the following manners:

- The complete file can be selected.
- Records are selected from the file based on an ISN list.
- Records are selected from the file based on specified selection criteria.

Initial-state requests must be supported by initial-state definitions. Initial-state definitions are specified in the Adabas Event Replicator Subsystem or by `INITIALSTATE` parameters in the Event Replicator Server startup job. For more information about initial-state definitions, read about maintaining initial-state definitions using the Adabas Event Replicator Subsystem (read *Adabas Event Replicator Subsystem User's Guide*). For information about the `INITIALSTATE` parameter, read *Event Replicator Initialization Parameters* in *Event Replicator for Adabas Reference Guide*

- [URBI Fields](#)
- [ISN List Format](#)
- [Responses](#)
- [Initial-State Request Examples](#)

URBI Fields

For an initial-state request, set the elements in the `URBI DSECT` as described in the following table. If the initial-state definition includes more than one file-database ID definition for the request (a list of them), the initial-state request must contain a URBI for each file.

Element	Setting
URBIEYE	Set to 'URBI'.
URBILEN	Set to <code>URBIL + URBILEND + length of filler for alignment</code>
URBILENH	Set to <code>URBIL</code> .
URBILEND	Set to <code>length(selection criteria or ISN list)</code> . This element should be set to zero ('0') in an initial-state request where the all records in the file are selected by the initial-state definition.
URBIRT	Set to 'INST'
URBINAM	Supply the initial-state definition name as defined in the Adabas Event Replicator Subsystem or by the <code>INITIALSTATE</code> parameter in the Event Replicator Server startup job. The value of this element must be the same for all URBI in a message.

Element	Setting
URBIFNR	Supply the file number of the Adabas input file.
URBIDBID	Supply the database ID of the Adabas database containing the input file.
URBIRNAM	Supply the name of the response destination definition.
URBIRTOK	Optionally supply the eight-byte token that allows your client program to recognize different initial-state requests. If you specify this element, its value must be the same in all URBI in a message.

The following three fields should be set if the selection data (URBIDATA) has a different encoding or architecture than the database. The usage is similar to the ACODE, WCODE, and ARC parameters in the record buffer for the Adabas OP command (as described in the Adabas command reference documentation found in *Adabas Command Reference*). These fields may be used only if the Event Replicator Server is UES-enabled. They must be zero for status requests and for initial-state requests:

Element	Description
URBIACOD	Alpha field encoding in selection data.
URBIARC	Architecture flags for selection data.
URBIWCOD	Wide field encoding in selection data.

ISN List Format

If the initial-state definition indicates that an ISN list should be used to select records for processing, the initial-state request must include an ISNLIST with the requested ISNs.

The ISNLIST comes behind the URBI structure. It contains a sequence of individual ISNs (fullword) or an ISN range with three fullwords consisting of:

- A range indicator X'FFFFFFFF'
- The starting ISN
- The ending ISN

An ISN list must conform to the following rules:

1. The same ISN must not be specified more than once with one exception: in a range the starting and ending ISN can be the same.
2. An individual ISN may not lie within an ISN range
3. ISN ranges must not overlap
4. starting ISN <= ending ISN

Violation of these rules will return to the response destination a URBS status message with response code 131, subcode 16.

Should a requested ISN not be present, the system reacts as follows:

- For an individual ISN, the initial-state payload will contain a URBR with response code 113, subcode 0 without record data, even if the ISN is beyond TOPISN or outside of MINISN through MAXISN.
- Only existent ISNs will be returned for the ISN range.

Responses

If the Event Replicator Server discovers an error in the initial-state request, it sends a URBS status message INST/ERRO to the response destination.

Otherwise, the URBS status message INST/INIT is sent to the response and related output destinations and the initial-state request will be forwarded to the nucleus.

Should any error occur with the nucleus (for example if the file is locked), the Event Replicator Server will terminate the initial-state processing and send a final URBS status message INST/CMPL with the error information to the response and output destinations. In contrast, when no error occurs, the nucleus will send initial-state data wrapped in pseudo transactions.

At the end, the Event Replicator Server will notify the response and related output destinations with a URBS status message INST/CMPL.

Initial-State Request Examples

This section provides several examples of initial-state requests.

- [Simple Request](#)
- [Request Using Selection Criteria and Conversion](#)

Simple Request

This example requests data based on the initial-state definition named ICOLOR.

- [Specify the replication parameters](#)
- [Create and send the initial-state request](#)
- [Review the output in the OUT1 destination](#)

- [Review invalid initial-state request](#)

Specify the replication parameters

The initial-state definition named ICOLOR indicates that file 4 of database 10006 should be used for initial-state processing. The subscription definition COLOR defines the output format and destination that will receive the initial-state data.

```
ADARPD INITIALSTATE NAME=ICOLOR,IFILE=4,IDBID=10006
*
ADARPD SUBSCRIPTION ←
NAME=COLOR,SFILE=4,SFDBID=10006,SFBAI='AA,AB.',SDESTINATION='OUT1'
```

Create and send the initial-state request

The following application code submits the initial-state request.

```
rr=newMessage(bb.send_buffer) # start a new message beginning with URBH

rr.requestInitialState( # followed by URBI
    token=TOKENTOK,
    rnam=OUT1,
    inam=ICOLOR,
    dbid=10006,
    fnr=4)

bb.send_length=rr.endMessage() # end message with URBHLENT = total message size
                                # and set length for messaging system

bb.send() # send message
```

This is the resulting message with URBH and URBI settings generated from the initial-state request that is sent to the Event Replicator input queue:

```
0000 E4D9C2C8 00000040 F0F10001 000000A0 URBH... 01.....
0010 00000000 00000000 00000000 00000000 .....
0020 C1849489 95404040 00000000 00000000 Admin .....
0030 00000000 00000000 00000000 00000000 .....
0040 E4D9C2C9 00000060 00000060 00000000 URBI...-...-....
0050 E3D6D2C5 D5E3D6D2 D6E4E3F1 40404040 TOKENTOKOUT1
0060 C9D5E2E3 27160004 C9C3D6D3 D6D94040 INST....ICOLOR
0070 40404040 40404040 40404040 40404040
0080 00000000 00000000 00000000 00000000 .....
      1 identical line(s) suppressed
```

Review the output in the OUT1 destination

The following messages are received on the OUT1 destination specified by the replication parameters:

1. The Event Replicator Server accepts the request and sends the INST/INIT status message. URBH is followed by URBS.

```

0000 E4D9C2C8 00000040 F0F10001 000000C0 URBH... 01.....
0010 00000067 BB57F5D2 9C176D82 27170000 .....5K.._b....
0020 D9C5D7E3 D6D94040 00000000 00000000 REPTOR .....
0030 00000000 00000000 00000000 00000000 .....
0040 E4D9C2E2 00000080 E3D6D2C5 D5F14040 URBS...TOKEN1
0050 C9D5E2E3 C9D5C9E3 BB57F5D2 8A8E6E62 INSTINIT..5K..>.
0060 00000000 00000000 40404040 40404040 .....
0070 C9C3D6D3 D6D94040 40404040 40404040 ICOLOR
0080 40404040 40404040 00000000 00000000 .....
0090 00000000 00000000 00000000 27160004 .....
00A0 00000000 00000000 00000000 00000000 .....
      1 identical line(s) suppressed

```

which can be interpreted as:

```

URBH element at offset X'0000'
urbheye = "URBH"
urbhlen = 64
urbhvers = "01"
urbhbord = X'0001'
urbhlent = 192
urbhmsnr = 103
urbhtime = 2004-06-09 17:22:52.308854
urbhrpid = 10007
urbhrpni = 0
urbhname = "REPTOR"

URBS element at offset X'0040'
urbseye = "URBS"
urbslen = 128
urbsrtok = "TOKEN1"
urbsrt = "INST"
urbsst = "INIT" Initial-state processing started
urbstime = 2004-06-09 17:22:52.237030
urbsrsp = 0
urbssubc = 0
urbserri = "      "
urbssnam = "ICOLOR"
urbssnam = "      "
urbsdnam = "      "
urbsptim =
urbsttim =
urbstsnr = 0

```

```
urbsdbid = 10006
urbsfnr  = 4
```

2. The initial-state data comes from the database; file 4 has only three records. The nucleus wraps the data in a pseudo-transaction (URBT) containing records (URBR) and after images (URBD).

```
0000 E4D9C2C8 00000040 F0F10001 00000250 URBH... 01.....&
0010 00000069 BB57F5D2 CF429E80 27170000 .....5K.....
0020 D9C5D7E3 D6D94040 00000000 00000000 REPTOR .....
0030 00000000 00000000 00000000 00000000 .....
0040 E4D9C2E3 00000070 C3D6D3D6 D9404040 URBT...COLOR
0050 00000000 00000003 BB57F5D2 AEE40D22 .....5K.U..
0060 BB57F5D2 B68E2102 27160000 11111111 ..5K.....
0070 22222222 BB57F5D2 93F61021 00000000 .....5K16.....
0080 27170000 00040000 27170000 404040E8 ..... Y
0090 E3D6D2C5 D5F14040 40000000 00000000 TOKEN1 .....
00A0 00000000 00000000 00000000 00000000 .....
00B0 E4D9C2D9 00000040 00000001 00010004 URBR... .....
00C0 00000002 BB57F5D2 AEA661A2 D9400000 .....5K.w/sR ..
00D0 00000000 40404040 40404040 00000000 ....
00E0 00000000 00000000 00000000 00000000 .....
00F0 E4D9C2C4 00000040 00000020 00000020 URBD... .....
0100 00000001 C1000000 00000000 00000000 ....A.....
0110 C7D9C5C5 D5404040 40404040 40404040 GREEN
0120 F2F0F0F4 F0F5F2F5 F1F8F3F5 F4F6F1F0 2004052518354610
0130 E4D9C2D9 00000040 00000002 00010004 URBR... .....
0140 00000003 BB57F5D2 AEE3BE02 D9400000 .....5K.T..R ..
0150 00000000 40404040 40404040 00000000 ....
0160 00000000 00000000 00000000 00000000 .....
0170 E4D9C2C4 00000040 00000020 00000020 URBD... .....
0180 00000001 C1000000 00000000 00000000 ....A.....
0190 C2D3E4C5 40404040 40404040 40404040 BLUE
01A0 F2F0F0F4 F0F5F2F5 F1F8F3F5 F4F6F1F1 2004052518354611
01B0 E4D9C2D9 00000040 00000003 00010004 URBR... .....
01C0 00000004 BB57F5D2 AEE3FF62 D9400000 .....5K.T..R ..
01D0 00000000 40404040 40404040 00000000 ....
01E0 00000000 00000000 00000000 00000000 .....
01F0 E4D9C2C4 00000040 00000020 00000020 URBD... .....
0200 00000001 C1000000 00000000 00000000 ....A.....
0210 E8C5D3D3 D6E64040 40404040 40404040 YELLOW
0220 F2F0F0F4 F0F5F2F5 F1F8F3F5 F4F6F1F2 2004052518354612
0230 E4D9C2C5 00000020 C3D6D3D6 D9404040 URBE...COLOR
0240 00000000 00000000 00000000 00000000 .....
```

which can be interpreted as:

```
URBH element at offset X'0000'  
urbheye = "URBH"  
urbhlen = 64  
urbhvers = "01"  
urbhbord = X'0001'  
urbhlent = 592  
urbhmsnr = 105  
urbhtime = 2004-06-09 17:22:52.518441  
urbhrpid = 10007  
urbhrpni = 0  
urbhname = "REPTOR"  
  
URBT element at offset X'0040'  
urbteye = "URBT"  
urbtlen = 112  
urbtsnam = "COLOR"  
urbttsnr = 0  
urbtrcnt = 3  
urbtttim = 2004-06-09 17:22:52.385856  
urbtptim = 2004-06-09 17:22:52.417250  
urbtdbid = 10006  
urbtnuci = 0  
urbtguid = X'1111111122222222BB57F5D293F61021000000002717000000040000'  
urbtrpid = 10007  
urbtrpni = 0  
urbtusrv = " "  
urbtrsnd = " "  
urbtinst = "Y"  
urbtrtok = "TOKEN1"  
urbtcont = " "  
  
URBR element at offset X'00B0'  
urbreya = "URBR"  
urbrlen = 64  
urbrrsnr = 1  
urbrdcnt = 1  
urbrrfnr = 4  
urbrrisn = 2  
urbrrtime = 2004-06-09 17:22:52.384870  
urbrrtyp = "R" initial state  
urbrrsnd = " "  
urbrrsp = 0  
urbrrsubc = 0  
urbrrerrc = " "  
  
URBD element at offset X'00F0'  
urbdeya = "URBD"  
urbdlen = 64  
urbdlenh = 32  
urbdlend = 32  
urbdnsnr = 1
```

```
    urbdtyp = "A" after image
    ubddata = "GREEN","2004052518354610"

URBR element at offset X'0130'
    urbreye = "URBR"
    urbrlen = 64
    urbrsrnr = 2
    urbrdcnt = 1
    urbrfnr = 4
    urbrsnr = 3
    urbrtime = 2004-06-09 17:22:52.385851
    urbrtyp = "R" initial state
    urbrsnd = " "
    urbrsrp = 0
    urbrsubc = 0
    urbrerrc = "      "

URBD element at offset X'0170'
    urbdeye = "URBD"
    urbdlen = 64
    urbdlenh = 32
    urbdlend = 32
    urbdsrnr = 1
    urbdtyp = "A" after image
    urbddata = "BLUE","2004052518354611"

URBR element at offset X'01B0'
    urbreye = "URBR"
    urbrlen = 64
    urbrsrnr = 3
    urbrdcnt = 1
    urbrfnr = 4
    urbrsnr = 4
    urbrtime = 2004-06-09 17:22:52.385855
    urbrtyp = "R" initial state
    urbrsnd = " "
    urbrsrp = 0
    urbrsubc = 0
    urbrerrc = "      "

URBD element at offset X'01F0'
    urbdeye = "URBD"
    urbdlen = 64
    urbdlenh = 32
    urbdlend = 32
    urbdsrnr = 1
    urbdtyp = "A" after image
    urbddata = "YELLOW","2004052518354612"

URBE element at offset X'0230'
```

```

urbeeye = "URBE"
urbelen = 64
urbesnam = "COLOR"
urbetsnr = 0

```

3. At the end of initial-state processing, the Event Replicator Server sends a completion status message URBS/INST/CMPL

```

0000 E4D9C2C8 00000040 F0F10001 000000C0 URBH... 01.....
0010 0000006A BB57F5D2 CF658501 27170000 .....5K..e.....
0020 D9C5D7E3 D6D94040 00000000 00000000 REPTOR .....
0030 00000000 00000000 00000000 00000000 .....
0040 E4D9C2E2 00000080 E3D6D2C5 D5F14040 URBS...TOKEN1
0050 C9D5E2E3 C3D4D7D3 BB57F5D2 B690FF62 INSTCMPL..5K....
0060 00000000 00000000 40404040 40404040 .....
0070 C9C3D6D3 D6D94040 40404040 40404040 ICOLOR
0080 40404040 40404040 00000000 00000000 .....
0090 00000000 00000000 00000000 27160004 .....
00A0 00000000 00000000 00000000 00000000 .....
      1 identical line(s) suppressed

```

which can be interpreted as:

```

URBH element at offset X'0000'
urbheeye = "URBH"
urbhlen = 64
urbhvers = "01"
urbhbord = X'0001'
urbhlent = 192
urbhmsnr = 106
urbhtime = 2004-06-09 17:22:52.519000
urbhrpid = 10007
urbhrpni = 0
urbhname = "REPTOR"

URBS element at offset X'0040'
urbseeye = "URBS"
urbslen = 128
urbstrtok = "TOKEN1"
urbstrt = "INST"
urbssst = "CMPL" Initial-state processing completed
urbstime = 2004-06-09 17:22:52.417295
urbstrsp = 0
urbssubc = 0
urbserri = "      "
urbssinam = "ICOLOR"
urbssnam = "      "
urbssdnam = "      "
urbssptim =
urbssttim =
urbstsnr = 0

```

```
urbsdbid = 10006
urbsfnr  = 4
```

Review invalid initial-state request

An invalid initial-state request is answered with a status response INST/ERRO to the response destination. The destination file number is not specified correctly.

```
0000 E4D9C2C8 00000040 F0F10001 000000C0 URBH... 01.....
0010 0000006C BB57FAA1 09D9A980 27170000 ...%.....Rz.....
0020 D9C5D7E3 D6D94040 00000000 00000000 REPTOR .....
0030 00000000 00000000 00000000 00000000 .....
0040 E4D9C2E2 00000080 E3D6D2C5 D5F14040 URBS...TOKEN1
0050 C9D5E2E3 C5D9D9D6 BB57FAA1 09D8A720 INSTERRO.....Qx.
0060 00000083 0000000C 40404040 40404040 ...c.....
0070 C9C3D6D3 D6D94040 40404040 40404040 ICOLOR
0080 40404040 40404040 00000000 00000000 .....
0090 00000000 00000000 00000000 27160002 .....
00A0 00000000 00000000 00000000 00000000 .....
      1 identical line(s) suppressed
```

which can be interpreted as:

```
URBH element at offset X'0000'
```

```
urbheye = "URBH"
urbhlen = 64
urbhvers = "01"
urbhbord = X'0001'
urbhlent = 192
urbhmsnr = 108
urbhtime = 2004-06-09 17:44:22.506906
urbhrpid = 10007
urbhrpni = 0
urbhname = "REPTOR"
```

```
URBS element at offset X'0040'
```

```
urbseye = "URBS"
urbslen = 128
urbsrtok = "TOKEN1"
urbsrt = "INST"
urbsst = "ERRO" Initial-state processing ERROR
urbstime = 2004-06-09 17:44:22.506890
urbsrsp = 131
urbssubc = 12 INITIALSTATE DBID/FNR definition not found as requested in URBI
urbserri = "      "
urbssnam = "ICOLOR"
urbssnam = "      "
urbsdnam = "      "
urbsptim =
urbsttim =
```

```
urbstsnr = 0
urbsdbid = 10006
urbsfnr = 2
```

Request Using Selection Criteria and Conversion

This example shows an initial-state request using selection criteria. In addition, since the client is on an Intel x86 machine, the data must be converted for the different machine architecture.

- [Specify the replication parameters](#)
- [Create and send the initial-state request](#)
- [Review the output in the OUT1 destination](#)

Specify the replication parameters

Let's assume the EMPLOYEES file (Adabas example) is replicated to a client application that stores the records on a separate database – for example to provide in-house web access to selected fields for name-telephone look-up.

The subscription definition, EMPLOYEE, defines the following:

- The data is to be delivered to destination OUT1.
- The data is to be converted to ISO8859-1/Latin-1 = ECS code page 819 for alpha fields. The data to be converted to UTF-8 = ECS code page 4091 for wide fields. Integer numbers are to be byte-swapped and floating point data is to be converted to IEEE.
- The file to be replicated is number 9 on database 10006.
- The global format, EMPLTEL, defines the format to be used for the before and after images.

The initial-state definition, IEMPLAA, defines a selection criteria on the PERSONNEL-ID. This is the unique primary key AA. The selection criteria "AA,S,AA." requires the starting and ending values for the primary key. In the example below the selection value "20011000" through "20011100" selects all records in this range – that is 2 records.

```
ADARPD SUBSCRIPTION NAME=EMPLOYEE
ADARPD SDESTINATION='OUT1'
ADARPD SACODE=819,SWCODE=4091,SARC=9
ADARPD SFILE=9,SFDBID=10006
ADARPD SGFORMATAI=EMPLTEL
*
ADARPD GFORMAT NAME=EMPLTEL Fields extracted for Telephone List WEBAPP
ADARPD GFB='AA,AC,AD,AE,' PERSONNEL-ID FIRST-NAME MIDDLE LAST-NAME
ADARPD GFB='AH,8,U,AN,AM,AO,AP.' BIRTH AREA-CODE PHONE DEPT JOB-TITLE
*
ADARPD INITIALSTATE NAME=IEMPLAA,IFILE=9,IDBID=10006,SELCRIT='AA,S,AA.'
*
```

Create and send the initial-state request

The following application code submits the initial-state request.

```
rr=newMessage(bb.send_buffer) # start a new message beginning with URBH

rr.requestInitialState( # followed by URBI
    token=EMPLTKN,
    rnam=OUT1,
    inam=IEMPLTEL,dbid=10006,fnr=4,
    arc=9,acode=819,wcode=4091)

bb.send_length=rr.endMessage() # end message with URBHLENT = total message size
    # and set length for messaging system

bb.send() # send message
```

This is the resulting message with URBH and URBI settings generated from the initial-state request that is sent to the Event Replicator input queue:

```
0000 55524248 40000000 30310100 B0000000 URBH@...01.....
0010 00000000 00000000 00000000 00000000 .....
0020 41646D69 6E202020 00000000 00000000 Admin .....
0030 00000000 00000000 00000000 00000000 .....
0040 55524249 70000000 60000000 10000000 URBIp.....
0050 454D504C 544F4B4E 4F555432 20202020 EMPLTKNOUT2
0060 494E5354 16270900 49454D50 4C414120 INST.'..IEMPLAA
0070 20202020 20202020 20202020 20202020
0080 33030000 FB0F0000 09000000 00000000 3.....
0090 00000000 00000000 00000000 00000000 .....
00A0 32303031 31303030 32303031 31313030 2001100020011100
```

Review the output in the OUT1 destination

The following messages are received on the OUT1 destination specified by the replication parameters:

1. The Event Replicator Server accepts the request and sends the INST/INIT status message. URBH is followed by URBS.

```
0000 55524248 40000000 30310100 C0000000 URBH@...01.....
0010 08000000 42CE8C88 B2BA7DBB 17270000 ....B.....'..
0020 52455054 4F522020 00000000 00000000 REPTOR .....
0030 00000000 00000000 00000000 00000000 .....
0040 55524253 80000000 454D504C 544F4B4E URBS...EMPLTKN
0050 494E5354 494E4954 626B8888 B2BA7DBB INSTINITbk.....
0060 00000000 00000000 20202020 20202020 .....
0070 49454D50 4C414120 20202020 20202020 IEMPLAA
0080 20202020 20202020 00000000 00000000 .....
0090 00000000 00000000 00000000 16270900 .....'
```

```
00A0 00000000 00000000 00000000 00000000 .....
      1 identical line(s) suppressed
```

which can be interpreted as:

```
URBH element at offset X'0000'
  urbheye = "URBH"
  urbhlen = 64
  urbhvers = "01"
  urbhbord = X'0001'
  urbhlent = 192
  urbhmsnr = 8
  urbhtime = 18:20:41.098444
  urbhrepid = 10007
  urbhrpni = 0
  urbhname = "REPTOR"

URBS element at offset X'0040'
  urbseye = "URBS"
  urbslen = 128
  urbsrtok = "EMPLTOKN"
  urbsrt = "INST"
  urbsst = "INIT" Initial-state processing started
  urbstime = 18:20:41.098374
  urbsrsp = 0
  urbssubc = 0
  urbserri = "      "
  urbsinam = "IEMPLAA"
  urbssnam = "      "
  urbsdnam = "      "
  urbsptim =
  urbsttim =
  urbstsnr = 0
  urbsdbid = 10006
  urbsfnr = 9
```

2. Here is the initial-state data message:

```
0000 55524248 40000000 30310100 90020000 URBH@...01.....
0010 09000000 803223B8 B2BA7DBB 17270000 .....2#.....'..
0020 52455054 4F522020 00000000 00000000 REPTOR .....
0030 00000000 00000000 00000000 00000000 .....
0040 55524254 70000000 454D504C 4F594545 URBTp...EMPLOYEE
0050 00000000 02000000 62297389 B2BA7DBB .....b)s.....
0060 00A205A5 B2BA7DBB 16270000 11111111 .....'.
0070 33333333 BB7DBAB2 889A9A02 00000000 3333.....
0080 27170000 00090000 17270000 20202059 '.....'.. Y
0090 454D504C 544F4B4E 20090000 33030000 EMPLTOKN ...3...
00A0 FB0F0000 00000000 00000000 00000000 .....
00B0 55524252 40000000 01000000 01000900 URBR@.....
00C0 5A020000 428F7289 B2BA7DBB 52200000 Z...B.r.....R ..
```

```

00D0 00000000 20202020 20202020 00000000 ....
00E0 00000000 00000000 00000000 00000000 .....
00F0 55524244 A0000000 20000000 80000000 URBD....
0100 01000000 41000000 00000000 00000000 ....A.....
0110 32303031 31303030 424F4220 20202020 20011000BOB
0120 20202020 20202020 20202020 48454E52 HENR
0130 59202020 20202020 20202020 20202020 Y
0140 41444B49 4E534F4E 20202020 20202020 ADKINSON
0150 20202020 30303334 30353035 30313031 003405050101
0160 20202833 31362933 38392D39 33323520 (316)389-9325
0170 2053414C 45323053 414C4553 20504552 SALE20SALES PER
0180 534F4E20 20202020 20202020 20202020 SON
0190 55524252 40000000 02000000 01000900 URBR@.....
01A0 5B020000 62F57289 B2BA7DBB 52200000 ...b.r....R ..
01B0 00000000 20202020 20202020 00000000 ....
01C0 00000000 00000000 00000000 00000000 .....
01D0 55524244 A0000000 20000000 80000000 URBD....
01E0 01000000 41000000 00000000 00000000 ....A.....
01F0 32303031 31313030 53484952 4C592020 20011100SHIRLY
0200 20202020 20202020 20202020 502E2020 P.
0210 20202020 20202020 20202020 20202020
0220 4D454C4B 414E4F46 46202020 20202020 MELKANOFF
0230 20202020 30303432 30373230 30313031 004207200101
0240 20202838 30342933 37362D30 38353020 (804)376-0850
0250 204D474D 5433304D 414E4147 45522020 MGMT30MANAGER
0260 20202020 20202020 20202020 20202020
0270 55524245 20000000 454D504C 4F594545 URBE ...EMPLOYEE
0280 00000000 00000000 00000000 00000000 .....

```

which can be interpreted as:

```

URBH element at offset X'0000'
urbh eye = "URBH"
urbh len = 64
urbh vers = "01"
urbh bord = X'0001'
urbh lent = 656
urbh msnr = 9
urbh time = 18:20:41.293363
urbh rpid = 10007
urbh rpni = 0
urbh name = "REPTOR"

URBT element at offset X'0040'
urbt eye = "URBT"
urbt len = 112
urbt snam = "EMPLOYEE"
urbt tsnr = 0
urbt rcnt = 2
urbt ttim = 18:20:41.102130
urbt ptim = 18:20:41.215066
urbt dbid = 10006

```

```

urbtnci = 0
urbtguid = X'1111111133333333BB7DBAB2889A9A0200000002717000000090000'
urbtrpid = 10007
urbtrpni = 0
urbtusrv = " "
urbtrsnd = " "
urbtinst = "Y"
urbtrtok = "EMPLTKN"
urbtcont = " "
urbtarc = X'09'
urbtacod = 819
urbtwcod = 4091

```

```

URBR element at offset X'00B0'
urbreye = "URBR"
urbrlen = 64
urbrrsnr = 1
urbrcdnt = 1
urbrrfnr = 9
urbrrisn = 602
urbrrtime = 18:20:41.102120
urbrrtyp = "R" initial state
urbrrsnd = " "
urbrrrsp = 0
urbrrsubc = 0
urbrrerrc = " "

```

```

URBD element at offset X'00F0'
urbdeye = "URBD"
urbdlen = 160
urbdlenh = 32
urbdlend = 128
urbddsnr = 1
urbdtyp = "A" after image
urbddata =

```

```

0000 32303031 31303030 424F4220 20202020 20011000B0B
0010 20202020 20202020 20202020 48454E52          HENR
0020 59202020 20202020 20202020 20202020 Y
0030 41444B49 4E534F4E 20202020 20202020 ADKINSON
0040 20202020 30303334 30353035 30313031      003405050101
0050 20202833 31362933 38392D39 33323520      (316)389-9325
0060 2053414C 45323053 414C4553 20504552      SALE20SALES PER
0070 534F4E20 20202020 20202020 20202020 SON

```

```

URBR element at offset X'0190'
urbreye = "URBR"
urbrlen = 64
urbrrsnr = 2
urbrcdnt = 1
urbrrfnr = 9

```

```

urbrsn = 603
urbrtime = 18:20:41.102127
urbrtyp = "R" initial state
urbrsnd = " "
urbrrsp = 0
urbrsubc = 0
urbrerrc = "      "

URBD element at offset X'01D0'
urbdeye = "URBD"
urbdlen = 160
urbdlenh = 32
urbdlend = 128
urbdsnr = 1
urbdtyp = "A" after image
urbddata =

0000 32303031 31313030 53484952 4C592020 20011100SHIRLY
0010 20202020 20202020 20202020 502E2020                P.
0020 20202020 20202020 20202020 20202020
0030 4D454C4B 414E4F46 46202020 20202020 MELKANOFF
0040 20202020 30303432 30373230 30313031      004207200101
0050 20202838 30342933 37362D30 38353020      (804)376-0850
0060 204D474D 5433304D 414E4147 45522020      MGMT30MANAGER
0070 20202020 20202020 20202020 20202020

URBE element at offset X'0270'
urbeeye = "URBE"
urbelen = 32
urbesnam = "EMPLOYEE"
urbetsnr = 0

```

3. Here is the initial-state completion message:

```

0000 55524248 40000000 30310100 C0000000 URBH@...01.....
0010 0A000000 603141B8 B2BA7DBB 17270000 .....1A.....'..
0020 52455054 4F522020 00000000 00000000 REPTOR .....
0030 00000000 00000000 00000000 00000000 .....
0040 55524253 80000000 454D504C 544F4B4E URBS...EMPLTKN
0050 494E5354 434D504C 801E08A5 B2BA7DBB INSTCMPL.....
0060 00000000 00000000 20202020 20202020 .....
0070 49454D50 4C414120 20202020 20202020 IEMPLAA
0080 20202020 20202020 00000000 00000000 .....
0090 00000000 00000000 00000000 16270900 .....'.
00A0 00000000 00000000 00000000 00000000 .....
      1 identical line(s) suppressed

```

which can be interpreted as:

```
URBH element at offset X'0000'  
  urbheye = "URBH"  
  urbhlen = 64  
  urbhvers = "01"  
  urhbord = X'0001'  
  urbhlent = 192  
  urbhmsnr = 10  
  urbhtime = 18:20:41.293843  
  urbhrpid = 10007  
  urbhrpni = 0  
  urbhname = "REPTOR"  
  
URBS element at offset X'0040'  
  urbseye = "URBS"  
  urbslen = 128  
  urbsrtok = "EMPLTOKN"  
  urbsrt = "INST"  
  urbsst = "CMPL" Initial-state processing completed  
  urbstime = 18:20:41.215105  
  urbsrsp = 0  
  urbssubc = 0  
  urbserri = "      "  
  urbsinam = "IEMPLAA"  
  urbssnam = "      "  
  urbsdnam = "      "  
  urbsptim =  
  urbsttim =  
  urbstsnr = 0  
  urbsdbid = 10006  
  urbsfnr = 9
```

Prior-Transaction Requests

If the target application detects a gap in the transaction sequence numbers, a prior-transaction request may be issued to have the Event Replicator Server attempt to send a missing transaction again. Defining a resend buffer and associating it with a subscription enables this capability. Gaps in the transaction number sequence should not occur when a guaranteed-delivery message transport system (such as WebSphere MQ) is being used. A prior-transaction request consists of one **URBH** followed by one **URBI**.

The resend buffer operates in a circular manner. Newer transactions will overwrite older ones. The number of transactions available for retransmission depends on the size of the buffer, the number of subscriptions sharing the buffer, and the size of the transactions. The resend buffer retains the **URBT** and **URBRs** from the transactions, as well as before-image **URBDs**. After-image **URBDs** are not retained.

The subscription name (URBISNAM), destination name (URBIDNAM), and transaction number (URBITSNR) are always required in the prior-transaction request. The transaction will be sent to the single destination identified in the request. Destinations receiving retransmitted transactions must be associated with the subscription and must be for WebSphere MQ or webMethods EntireX messaging systems.

If the optional reply destination (URBIRNAM) is provided, a status message (**URBS**) will be sent to that destination for successful prior-transaction requests.

A **URBS** status message with response code 131 and an appropriate subcode may also be generated for errors. Error status messages are routed depending on the error and whether valid optional destinations are available:

- If the prior-transaction request specifies a valid reply destination name (URBIRNAM), a status message is sent to the specified destination.
- If the prior-transaction request specifies a valid destination name (URBIDNAM), a status message is sent to the specified destination for certain errors (subcodes 34, 35, 37 and 39 to 43).
- If the reply destination name is also associated with the subscription, only one status message will be sent to that destination.
- If no active destination can be identified for an error status message, message ADAF1V will be generated on the operator's console and file DDPRINT.

Destinations receiving status messages must be for WebSphere MQ or webMethods EntireX messaging systems. Status messages contain the following information:

Element	Description
URBSTIME	STCK time when the URBS message was created.
URBSRTOK	User token provided with the URBI .
URBSSNAM	Subscription name provided with the URBI .
URBSDNAM	Destination name provided with the URBI .
URBSTSNR	Transaction sequence number within the subscription/destination provided with the URBI .
URBSRT	"TRAN"
URBSST	"TRSP"
URBSRSP	Response code.
URBSSUBC	Subcode.

This section covers the following topics:

- [URBI Fields](#)

- [Prior-Transaction Request Example](#)

URBI Fields

For a prior-transaction request, set the elements in the **URBI DSECT** as described in the following table. Values may be provided for only these fields. All unused binary fields must be set to zero, and all unused character fields must be set to blanks.

Element	Setting
URBIEYE	Set to "URBI".
URBILEN	Set to URBIL.
URBILENH	Set to URBIL.
URBIRT	Set to "TRAN".
URBISNAM	Supply the subscription name.
URBITSNR	Supply the transaction number for which retransmission is requested.
URBIDNAM	Supply the destination name associated with the supplied subscription for which retransmission is requested.
URBIRNAM	Optionally, supply a reply destination name.
URBIRTOK	Optionally, supply the eight-byte token that allows your target application to recognize different status requests.

Prior-Transaction Request Example

This example requests a prior-transaction run of the subscription named COLOR. The following topics are included in this section.

- [Specify the replication parameters](#)
- [Create and send the prior-transaction request](#)
- [Review the output in the OUT1 and OUT2 destinations](#)
- [Review the output in the OUT3 destination](#)

Specify the replication parameters

Assume that the RESEND1 resend buffer is defined with the size specified as shown below:

```
ADARPD RESENBUFFER NAME=RESEND1
ADARPD RSIZE=2048K
```

Assume also that the COLOR subscription is associated with output destinations and the RESEND1 resend buffer as shown below:

```
ADARPD SUBSCRIPTION NAME=COLOR
ADARPD SFILE=4,SFDBID=10006,SFBAI='AA,AB.',SDESTINATION='OUT1,OUT2'
ADARPD SRESENBUFFER=RESEND1
```

Create and send the prior-transaction request

The following application code requests retransmission of transaction 100 within subscription COLOR. The transaction will be sent to destinations OUT1 and OUT2, and a **URBS** status message will be sent to destination OUT3.

```
rr=newMessage(bb.send_buffer) # start a new message beginning with
    # URBH and followed by URBI
rr.requestPriorTransaction(
    token=TOKTOK,
    snam=COLOR,
    tsnr=100,
    rnam=OUT3)

bb.send_length=rr.endMessage() # end message with
    # URBHLENT = total message size
    # and set length for messaging system

bb.send() # send message
```

This is the resulting message with **URBH** and **URBI** settings generated from the status request that is sent to the Event Replicator input queue :

```
0000 E4D9C2C8 00000040 F0F10001 000000A0 URBH... 01.....
0010 00000000 00000000 00000000 00000000 .....
0020 C1849489 95404040 00000000 00000000 Admin .....
0030 00000000 00000000 00000000 00000000 .....
0040 E4D9C2C9 00000060 00000060 00000000 URBI.....
0050 E3D6D2E3 D6D24040 D6E4E3F3 40404040 TOKTOK OUT3
0060 E3D9C1D4 00000000 40404040 40404040 TRAN....
0070 C3D6D3D6 D9404040 40404040 40404040 COLOR
0080 00000000 00000000 00000000 00000000 .....
0090 00000000 00000000 00000000 00000000 .....
```

Review the output in the OUT1 and OUT2 destinations

If the transaction was found in the resend buffer, OUT1 and OUT2 will receive a message with a **URBH**, **URBT**, all **URBRs** and before-image **URBDs**, and ending with a **URBE**. The following fields are altered to indicate retransmission:

Element	Setting
URBTRSND	Set to "Y", indicating data may have been sent previously.
URBTPTRN	Set to "Y", indicating data from a previous transaction is being resent.
URBRRSND	Set to "Y", indicating data may have been sent previously.

If there were errors, OUT1 and OUT2 may each receive a URBS status message similar to the one described for **OUT3**.

Review the output in the OUT3 destination

The following depicts the received message at destination OUT3 for normal completion:

```

0000 E4D9C2C8 00000040 F0F10001 000000C0  URBH... 01.....
0010 00000004 BB680AF2 C1C27F60 27170000  ....2AB"-....
0020 D9C5D7E3 D6D94040 00000000 00000000  REPTOR  ....
0030 00000000 00000000 00000000 00000000  .....
0040 E4D9C2E2 00000080 E3D6D2E3 D6D24040  URBS...TOKTOK
0050 E3D9C1D4 E3D9E2D7 BB680AF2 C1C18060  TRANTRSP...2AA.-
0060 00000000 00000000 40404040 40404040  .....
0070 40404040 40404040 C3D6D3D6 D9404040  COLOR
0080 40404040 40404040 BB680A7E 1AF84B02  ...=.8..
0090 00000000 00000000 00000064 00000000  .....
00A0 00000000 00000000 00000000 00000000  .....
00B0 00000000 00000000 00000000 00000000  .....
    
```

Status Requests

A status request inquires about the status of a subscription.

- If the status request specifies a subscription and destination, a status message about the subscription/destination pair is sent to the specified destination.
- If the status request specifies only the subscription, a status message about each subscription/destination pair in the subscription is sent to all destinations defined in the subscription.
- If the status request specifies only the destination, a status message about the subscription/destination pair is sent to the specified destination for each subscription having the destination as output.

In addition, a reply destination can be specified in the status request. The reply destination receives a copy of the status messages. Destinations receiving status messages must be for WebSphere MQ or webMethods EntireX messaging systems.

The status message (URBS) contains the following information:

Status Element	Description
URBSTTIM	STCK Time of transaction commit. In other words, when database processed the ET
URBSSTIM	STCK Time when last records was processed by subscription
URBSTIME	STCK Time when URBS message was sent
URBSTSNR	Transaction sequence number within subscription/destination

This section covers the following topics:

- [URBI Fields](#)
- [Status Request Example](#)

URBI Fields

For a status request, set the elements in the URBI DSECT as described in the following table.

Element	Setting
URBIEYE	Set to 'URBI'.
URBILEN	Set to URBIL.
URBILENH	Set to URBIL.
URBILEND	Set to 0.
URBIRT	Set to 'STAT'
URBISNAM	Supply the subscription name. Either the subscription name (URBISNAM) or the destination name (URBIDNAM) or both are required.
URBIDNAM	Supply the destination name. Either the subscription name (URBISNAM) or the destination name (URBIDNAM) or both are required.
URBIRNAM	Optionally supply a response destination.
URBIRTOK	Optionally supply the eight-byte token that allows your client program to recognize different status requests.

Status Request Example

This example requests a status of the subscription named COLOR.

- [Specify the replication parameters](#)
- [Create and send the status request](#)

- Review the output in the OUT1 destination

Specify the replication parameters

The COLOR subscription defines the format and output destination:

```
ADARPD SUBSCRIPTION NAME=COLOR,SFILE=4,SFDBID=10006,SFBAI='AA,AB.',SDESTINATION='OUT1'
```

Create and send the status request

The following application code inquires about the status of subscription COLOR.

```
rr=newMessage(bb.send_buffer) # start a new message beginning with URBH
rr.requestStatus( # followed by URBI
  token=TOKTOK,,
  snam=COLOR)
bb.send_length=rr.endMessage() # end message with URBHLENT = total message size
# and set length for messaging system
bb.send() # send message
```

This is the resulting message with URBH and URBI settings generated from the status request that is sent to the Event Replicator input queue :

```
0000 E4D9C2C8 00000040 F0F10001 000000A0 URBH... 01.....
0010 00000000 00000000 00000000 00000000 .....
0020 C1849489 95404040 00000000 00000000 Admin .....
0030 00000000 00000000 00000000 00000000 .....
0040 E4D9C2C9 00000060 00000060 00000000 URBI...-...-....
0050 E3D6D2E3 D6D24040 40404040 40404040 TOKTOK
0060 E2E3C1E3 00000000 40404040 40404040 STAT....
0070 C3D6D3D6 D9404040 40404040 40404040 COLOR
0080 00000000 00000000 00000000 00000000 .....
      1 identical line(s) suppressed
```

Review the output in the OUT1 destination

The following depicts the received message on the OUT1 destination specified by the replication parameters:

```

0000 E4D9C2C8 00000040 F0F10001 000000C0 URBH... 01.....
0010 00000004 BB680AF2 C1C27F60 27170000 .....2AB"-....
0020 D9C5D7E3 D6D94040 00000000 00000000 REPTOR .....
0030 00000000 00000000 00000000 00000000 .....
0040 E4D9C2E2 00000080 E3D6D2E3 D6D24040 URBS...TOKTOK
0050 E2E3C1E3 E2E4C2E2 BB680AF2 C1C18060 STATSUBS...2AA.-
0060 00000000 00000000 40404040 40404040 .....
0070 40404040 40404040 C3D6D3D6 D9404040          COLOR
0080 40404040 40404040 BB680A7E 1AF84B02          ...=.8..
0090 BB680A7D F767EE02 00000002 00000000 ...'7.....
00A0 00000000 00000000 00000000 00000000 .....
      1 identical line(s) suppressed

```

which can be interpreted as:

```

URBH element at offset X'0000'
  urbheye = "URBH"
  urbhlen = 64
  urbhvers = "01"
  urbhbord = X'0001'
  urbhlent = 192
  urbhmsnr = 4
  urbhtime = 2004-06-22 12:22:34.789927
  urbhrpid = 10007
  urbhrpni = 0
  urbhname = "REPTOR"

URBS element at offset X'0040'
  urbseye = "URBS"
  urbslen = 128
  urbsrtok = "TOKTOK"
  urbsrt = "STAT"
  urbsst = "SUBS" Subscription status information
  urbstime = 2004-06-22 12:22:34.789912
  urbsrsp = 0
  urbssubc = 0
  urbserri = "      "
  urbsinam = "      "
  urbsssnam = "COLOR"
  urbsdnam = "      "
  urbsptim = 2004-06-22 12:20:32.471940
  urbsttim = 2004-06-22 12:20:32.326270
  urbstsnr = 2
  urbsdbid = 0
  urbsfnr = 0

```


6 Testing webMethods EntireX and WebSphere MQ Queues

- Using the ADAMTR (Message Test Receive) Utility 86
- Using the ADAMTS (Message Test Send) Utility 92

Event Replicator for Adabas provides two utilities you can use to test your EntireX and WebSphere MQ queues.

- The ADAMTR (Message Test Receive) utility can be used to receive one or more messages from an webMethods EntireX or WebSphere MQ queue, and, optionally, print the messages read from that queue.
- The ADAMTS (Message Test Send) utility can be used to send requests to the Event Replicator Server without having (or prior to writing) a target application.

Using the ADAMTR (Message Test Receive) Utility

The ADAMTR (Message Test Receive) utility can be used to receive one or more messages from an webMethods EntireX or WebSphere MQ queue and, optionally, print the messages read from that queue. This utility allows you to read and print messages sent to a queue by:

- an Event Replicator Server
- a target application
- the [ADAMTS utility](#)

The ADAMTR utility issues messages for any errors it encounters. For more information, read *ADAMTR Messages in Event Replicator for Adabas Messages and Codes Manual*.

This section covers the following topics:

- [Syntax](#)
- [Parameters](#)
- [Running the Utility](#)
- [Stopping the Utility](#)

Syntax

The overall syntax of the ADAMTR utility is:

```
ADAMTR [MTYPE = { ETBROKER | MQSERIES }]
       [IQBUFLEN = { nnn [K] | 32767 ]
       [MSGLIMIT = nnn | 0 ]
       [PAGESIZE = nnnn | 55 ]
       [PRINT = { YES | NO ]
       { EntireX-Communicator-parameters | MQSeries-parameters }
```

The webMethods EntireX and WebSphere MQ parameters you can specify in ADAMTR are described in the following sections:

- [webMethods EntireX ADAMTR Parameters](#)
- [WebSphere MQ ADAMTR Parameters](#)



Note: Do not mix webMethods EntireX parameters and WebSphere MQ parameters in the same ADAMTR run.

webMethods EntireX ADAMTR Parameters

The parameters that can be used for the ADAMTR utility when testing an webMethods EntireX queue are shown in the following syntax. Note that all but the MTYPE and ETBSCONV parameter are required.

```
ADAMTR [MTYPE = ETBROKER]
      [ETBBROKERNAME = { broker-name | BROKER }]
      ETBBROKERID = 'brokerid'
      ETBSERVICE = service
      ETBSERVICENAME = service-name
      ETBSERVICECLASS = service-class
      ETBSCONV = {YES | NO}
      ETBTOKEN = token-name
      ETBUSERID = user-id
```



Note: Do not specify any of the parameters associated with WebSphere MQ in the same ADAMTR utility run.

WebSphere MQ ADAMTR Parameters

The parameters that can be used for the ADAMTR utility when testing a WebSphere MQ queue are shown in the following syntax. Note that all parameters are required.

```
ADAMTR MTYPE = MQSERIES
      MQQMGRNAME = MQ-manager-name
      MQQNAME = 'user.local.queue.name'
```



Note: Do not specify any of the parameters associated with webMethods EntireX in the same ADAMTR utility run.

Parameters

Parameters for the ADAMTR utility vary, depending on the kind of queue you are using. Each input parameter line to DDKARTE should begin with ADAMTR and is structured in the same manner as other Adabas utilities. All of the parameters that can be specified in the ADAMTR utility are now described.

MTYPE

This required parameter identifies the type of queue (webMethods EntireX or WebSphere MQ) that will be read by ADAMTR. Valid values are "ETBROKER" or "MQSERIES". The default for MTYPE is "ETBROKER".

ETBBROKERID

Use this parameter to specify the webMethods EntireX Broker ID to use for the ADAMTR run. This parameter is required when MTYPE=ETBROKER and should not be specified otherwise.

Broker IDs come in two formats: one for TCP/IP communications and one for Adabas SVC communications. For TCP/IP communications, the format is:

```
ip-address:port-number:TCP
```

In this case, the *ip-address* setting is the TCP/IP IP address and the *port-number* setting should match the webMethods EntireX PORT parameter.

For Adabas SVC communications, the format is:

```
'broker-id:SVCnnn:NET'
```

In this case, the *broker-id* setting should match the webMethods EntireX BROKER-ID parameter in the Broker ETBFILE DD. The *nnn* setting should match either the webMethods EntireX ADASVC or ADA5SVC parameters in the Broker PARMs DD statement.

ETBBROKername

Use this parameter to specify the name of the EntireX Broker stub program to use for the ADAMTR run. This parameter can only be specified when MTYPE=ETBROKER. When not specified, this parameter defaults to "BROKER".



Notes:

1. EntireX Broker is a component of webMethods EntireX.

ETBSERVICE

Use this parameter to specify the webMethods EntireX service that should be used for the ADAMTR run. This should be the same as the value specified for the SERVICE parameter in webMethods EntireX. This parameter is required when MTYPE=ETBROKER and should not be specified otherwise.

ETBSERVICENAME

Use this parameter to specify the webMethods EntireX service name that should be used for the ADAMTR run. This should be the same as the value specified for the SERVER parameter

in webMethods EntireX. This parameter is required when MTYPE=ETBROKER and should not be specified otherwise.

ETBSERVICECLASS

Use this parameter to specify the webMethods EntireX service class that should be used for the ADAMTR run. This should be the same as the value specified for the CLASS parameter in webMethods EntireX. This parameter is required when MTYPE=ETBROKER and should not be specified otherwise.

ETBSCONV

Use this parameter to specify the webMethods EntireX queue is to run using single conversation mode. This parameter is optional when MTYPE=ETBROKER.

ETBTOKEN

Use this parameter to specify the webMethods EntireX queue is to run using single conversation mode. This parameter is optional when ETBSCONV=YES. When not specified, this parameter defaults to "ADAMTR".

ETBUSERID

Use this parameter to specify the webMethods EntireX queue is to run using single conversation mode. This parameter is optional when ETBSCONV=YES. When not specified, this parameter defaults to REPTOR-<node>- - - -<jobname>.

IQBUFLN

Use this parameter to specify the length (in bytes) of the input buffer that will be allocated and used by the ADAMTR utility. The default for IQBUFLN is 32,767 bytes. The minimum value is 2048 bytes and will be used if any lower value is entered for the IQBUFLN parameter.

The theoretical maximum value that can be specified for this parameter is 2,147,483,647 bytes. In practice, however, the maximum value for IQBUFLN specification is limited by the region size available to ADAMTR.

The value of the IQBUFLN parameter should be set to a value at least as large as the largest expected message. For example, when reading messages written by an Event Replicator Server, a user may want to set IQBUFLN to a value greater than or equal to the value set for the Event Replicator Server parameter MAXOUTPUTSIZE. If a message is read that is larger than the value specified for IQBUFLN, the message will be truncated prior to its receipt by ADAMTR.

The suffix "K" may be used to denote that the value is in kilobytes (e.g. 1K = 1024 bytes, 4K = 4096 bytes, etc.).

MQQMGRNAME

Use this parameter to specify the WebSphere MQ queue manager name that should be used for the ADAMTR run. This parameter is required when MTYPE=MQSERIES and should not be specified otherwise.

MQQNAME

Use this parameter to specify the WebSphere MQ queue name that should be used for the ADAMTR run. This parameter is required when MTYPE=MQSERIES and should not be specified otherwise.

MSGLIMIT

Use this parameter to specify the number of messages processed by this ADAMTR utility run. Valid values range from zero (0) through 2,147,483,647. A value of zero indicates that there is no size limit for the number of messages processed by the utility. The utility will terminate when it has read and optionally printed the number of messages specified for MSGLIMIT. The default is zero.



Note: When a Broker queue is read by the ADAMTR utility, the utility must read input messaging transactions in the same manner the transactions were written to the queue. That is, assuming the sending program sends three messages and then commits the messaging transaction, ADAMTR will read the three messages and then commit the input messaging transaction. The value for MSGLIMIT is only checked by ADAMTR *after* committing an input messaging transaction. In the previously described transaction, if MSGLIMIT=1 or MSGLIMIT=2 is specified, ADAMTR will only terminate after reading and optionally printing the three messages.

PAGESIZE

Use this parameter to specify the number of lines to print prior to printing a new output page. The default value is 55 lines. The minimum value is 10 lines. If a value less than 10 is specified, the default value of 55 will be used.

PRINT

Use this parameter to indicate whether or not the ADAMTR utility should print each message it reads from the messaging system. Valid values are "YES" or "NO". The default is "YES". When PRINT=YES is specified, ADAMTR will print each message read from the messaging system. When PRINT=NO is specified, ADAMTR will not print the contents of each message. Use PRINT=YES when you want to see the content of each message; use PRINT=NO when you want to read messages from a queue but do not care or want to see the contents of each message.

Running the Utility

The JCL and input parameters for the ADAMTR utility are structured in the same manner as other Adabas utilities. Example JCL is shown below:

```

// (jobcard)
// *
// *
// * ADAMTR
// *
// * Receive one or more messages from an Entire Broker or MQSeries
// * Queue.
// *
// ADAMTR EXEC PGM=ADARUN
// STEPLIB DD DISP=SHR,DSN=USER.ADABAS.LOAD
// DDCARD DD *
ADARUN PROGRAM=ADAMTR,SVC=xxx,DEVICE=dddd,DB=yyyyy
// DDDRUCK DD SYSOUT=*
// DDKARTE DD *
ADAMTR MTYPE=MQSERIES
ADAMTR MTYPE=ETBROKER
ADAMTR ETBBROKERNAME=BROKER
ADAMTR ETBBROKERID='III'
ADAMTR ETBSERVICE=SSSSSSSS
ADAMTR ETBSERVICENAME=SNSNSNSN
ADAMTR ETBSERVICECLASS=SCSCSCSC
ADAMTR MSGLIMIT=20000
ADAMTR PRINT=YES
// DDPRINT DD SYSOUT=*
// SYSUDUMP DD SYSOUT=*

```

Informational Messages

The following informational messages are displayed when ETBSCONV=YES.

```

Single Conversation Mode Set
Token =
Userid =

```

Example showing default values

```

Single Conversation Mode Set
Token = ADAMTR
Userid = REPTOR-DA3F-----USARCMTR

```

Stopping the Utility

You can stop ADAMTR utility execution in one of the following ways:

- If the MSGLIMIT parameter is set to a nonzero value, ADAMTR will terminate after processing the number of messages specified in the MSGLIMIT parameter.



Note: When a Broker queue is read by the ADAMTR utility, the utility must read input messaging transactions in the same manner the transactions were written to the queue. That is, assuming the sending program sends three messages and then commits the messaging transaction, ADAMTR will read the three messages and then commit the input messaging transaction. The value for MSGLIMIT is only checked by ADAMTR *after* committing an input messaging transaction. In the previously described transaction, if MSGLIMIT=1 or MSGLIMIT=2 is specified, ADAMTR will only terminate after reading and optionally printing the three messages.

- ADAMTR will terminate after processing an input message that contains the eight-byte string "terminat" (all in lower case letters). With this in mind, a user could run ADAMTR with MSGLIMIT=0 (or MSGLIMIT set to a very high value) and then send this eight-byte string to the related queue using ADAMTS. When ADAMTR receives this special message, ADAMTR will optionally print the message and then terminate.

Using the ADAMTS (Message Test Send) Utility

The ADAMTS (Message Test Send) utility can be used to send requests to the Event Replicator Server without having (or prior to writing) a target application. The utility allows functional testing of:

- requests (for example, initial-state requests, prior-transaction requests, or status requests) sent to an Event Replicator Server via an webMethods EntireX or WebSphere MQ queue.
- an webMethods EntireX or WebSphere MQ queue, by sending one or more messages to that queue.

The ADAMTS utility issues messages for any errors it encounters. For more information, read *ADAMTS Messages in Event Replicator for Adabas Messages and Codes Manual*.

This section covers the following topics:

- [Syntax](#)
- [Parameters](#)

- [Running the Utility](#)

Syntax

The overall syntax of the ADAMTS utility is:

```
ADAMTS [MTYPE = { ETBROKER | MQSERIES }]
        { EntireX-Communicator-parameters | MQSeries-parameters }
```

The webMethods EntireX and WebSphere MQ parameters you can specify in ADAMTS are described in the following sections:

- [webMethods EntireX ADAMTS Parameters](#)
- [WebSphere MQ ADAMTS Parameters](#)



Note: Do not mix webMethods EntireX parameters and WebSphere MQ parameters in the same ADAMTS run.

webMethods EntireX ADAMTS Parameters

The parameters that can be used for the ADAMTS utility when testing an webMethods EntireX queue are shown in the following syntax. Note that all but the MTYPE parameter are required.

```
ADAMTS [MTYPE = ETBROKER]
        [ETBBROKERNAME = { broker-name | BROKER }]
        ETBBROKERID = 'brokerid'
        ETBSERVICE = service
        ETBSERVICENAME = service-name
        ETBSERVICECLASS = service-class
        ETBSCONV = { YES | NO }
        ETBTOKEN = token-name
        ETBUSERID = user-id
```



Note: Do not specify any of the parameters associated with WebSphere MQ in the same ADAMTS utility run.

WebSphere MQ ADAMTS Parameters

The parameters that can be used for the ADAMTS utility when testing a WebSphere MQ queue are shown in the following syntax. Note that all parameters are required.

```
ADAMTS MTYPE = MQSERIES
      MQQMGRNAME = MQ-manager-name
      MQQNAME = ' user.local.queue.name '
```



Note: Do not specify any of the parameters associated with webMethods EntireX in the same ADAMTS utility run.

Parameters

Parameters for the ADAMTS utility vary, depending on the kind of queue you are using. Each input parameter line to DDKARTE should begin with ADAMTS and is structured in the same manner as other Adabas utilities. All of the parameters that can be specified in the ADAMTS utility are now described.

MTYPE

This required parameter identifies the type of queue (webMethods EntireX or WebSphere MQ) to which requests should be sent for the ADAMTS test. Valid values are "ETBROKER" or "MQSERIES". The default for MTYPE is "ETBROKER".

ETBBROKERID

Use this parameter to specify the webMethods EntireX Broker ID to use for the ADAMTS run. This parameter is required when MTYPE=ETBROKER and should not be specified otherwise.

Broker IDs come in two formats: one for TCP/IP communications and one for Adabas SVC communications. For TCP/IP communications, the format is:

```
ip-address:port-number:TCP
```

In this case, the *ip-address* setting is the TCP/IP IP address and the *port-number* setting should match the webMethods EntireX PORT parameter.

For Adabas SVC communications, the format is:

```
'broker-id:SVCnnn:NET'
```

In this case, the *broker-id* setting should match the webMethods EntireX BROKER-ID parameter in the Broker ETBFILE DD. The *nnn* setting should match either the webMethods EntireX ADASVC or ADA5SVC parameters in the Broker PARMS DD statement.

ETBBROKERNAME

Use this parameter to specify the name of the EntireX Broker stub program to use for the ADAMTS run. This parameter can only be specified when MTYPE=ETBROKER. When not specified, this parameter defaults to "BROKER".

 **Notes:**

1. EntireX Broker is a component of webMethods EntireX.

ETBSERVICE

Use this parameter to specify the webMethods EntireX service that should be used for the ADAMTS run. This should be the same as the value specified for the SERVICE parameter in webMethods EntireX. This parameter is required when MTYPE=ETBROKER and should not be specified otherwise.

ETBSERVICENAME

Use this parameter to specify the webMethods EntireX service name that should be used for the ADAMTS run. This should be the same as the value specified for the SERVER parameter in webMethods EntireX. This parameter is required when MTYPE=ETBROKER and should not be specified otherwise.

ETBSERVICECLASS

Use this parameter to specify the webMethods EntireX service class that should be used for the ADAMTS run. This should be the same as the value specified for the CLASS parameter in webMethods EntireX. This parameter is required when MTYPE=ETBROKER and should not be specified otherwise.

ETBSCONV

Use this parameter to specify the webMethods EntireX queue is to run using single conversation mode. This parameter is optional when MTYPE=ETBROKER.

ETBTOKEN

Use this parameter to specify the webMethods EntireX queue is to run using single conversation mode. This parameter is optional when ETBSCONV=YES. When not specified, this parameter defaults to "ADAMTS".

ETBUSERID

Use this parameter to specify the webMethods EntireX queue is to run using single conversation mode. This parameter is optional when ETBSCONV=YES. When not specified, this parameter defaults to REPTOR-<node>-----<jobname>.

MQQMGRNAME

Use this parameter to specify the WebSphere MQ queue manager name that should be used for the ADAMTS run. This parameter is required when MTYPE=MQSERIES and should not be specified otherwise.

MQQNAME

Use this parameter to specify the WebSphere MQ queue name that should be used for the ADAMTS run. This parameter is required when MTYPE=MQSERIES and should not be specified otherwise.

Running the Utility

The ADAMTS utility reads messages from the MTSIN file in its JCL and sends those messages to an webMethods EntireX or WebSphere MQ queue. JCL and input parameters for ADAMTS are structured in the same manner as for other Adabas utilities. The MTSIN should be defined with RECFM=VB.

This section covers the following topics:

- [Sample JCL](#)
- [Example of MTSIN Input Data](#)

Sample JCL

The JCL and input parameters for the ADAMTS utility are structured in the same manner as other Adabas utilities. Example JCL is shown below:

```
//ADAMTS EXEC PGM=ADARUN
//STEPLIB DD DISP=SHR,DSN=USER.ADABAS.LOAD
//DDDRUCK DD SYSOUT=X
//DDPRINT DD SYSOUT=X
//SYSUDUMP DD SYSOUT=X
//DDCARD DD *
ADARUN PROGRAM=ADAMTS,SVC=xxx,DEVICE=dddd,DB=yyyyy
/*
//DDKARTE DD *
ADAMTS MTYPE=MQSERIES
ADAMTS MQMGRNAME=MQnn
ADAMTS MQQNAME='user.local.queue'
/*
/* The MTSIN file should be defined with RECFM=VB
/* The messages to send are read from the MTSIN file.
//MTSIN DD DISP=SHR,DSN=ARFvrs.MVSMTSI
```

Informational Messages

The following informational messages are displayed when ETBSCONV=YES.

```
Single Conversation Mode Set
Token =
Userid =
```

Example showing default values

```
Single Conversation Mode Set
Token = ADAMTS
Userid = REPTOR-DA3F-----USARCMTS
```

This example JCL tests a WebSphere MQ queue.

Example of MTSIN Input Data

The file allocated by MTSIN in the JCL contains the messages to be read for the test. It should be defined with RECFM=VB.

The following sample MTSIN input data is shown with the hexadecimal offset in the first column, the hexadecimal representation of the data in the next four columns, and the actual data on the right of each line bounded by an asterisk.

```
0000 E4D9C2C8 00000040 F0F10001 000000A7 *URBH 01 . x*
0010 00000000 00000000 00000000 00000000 *
0020 C1D3C7D9 E3C8D4F1 00000000 00000000 *ALGRTHM1
0030 00000000 00000000 00000000 00000000 *
0040 E4D9C2C9 00000067 00000060 00000007 *URBI . - .*
0050 C1D3C7D9 E3C8D4F1 D6E4E3F1 40404040 *ALGRTHM1OUT1
0060 C9D5E2E3 00C7008F C9F1F9F9 F1F4F3F1 *INST G .I1991431*
0070 40404040 40404040 40404040 40404040 *
0080 00000000 00000000 00000000 00000000 *
0090 00000000 00000000 00000000 00000000 *
00A0 C4C4C4C4 C4C4C4 *DDDDDDDD*
```


Index

A

- ADAMTR utility, 86
 - parameter descriptions, 88
 - running, 90
 - stopping, 92
 - syntax, 86
 - webMethods EntireX parameters, 87
 - WebSphere MQ parameters, 87
- ADAMTS utility, 92
 - parameter descriptions, 94
 - running, 96
 - syntax, 93
 - webMethods EntireX parameters, 93
 - WebSphere MQ parameters, 94

C

- client requests, 55
 - destination open and close requests, 57
 - initial-state requests, 60
 - prior-transaction requests, 76
 - status requests, 80
 - URBH specifications, 56
- closing destinations within an application, 57

D

- destination open and close requests, 57
 - example, 58
 - URBI fields, 57
 - URBS fields, 57
- DSECTS
 - URBC, 18, 20
 - URBD, 19
 - URBE, 20
 - URBH, 21
 - URBI, 22
 - URBL, 25
 - URBP, 37
 - URBQ, 39
 - URBR, 40
 - URBS, 41
 - URBT, 46
 - URBU, 48
 - URBX, 49
 - URBZ, 51

E

- ETBBROKERID parameter
 - ADAMTR utility, 88
 - ADAMTS utility, 94
- ETBBROKERNAME parameter
 - ADAMTR utility, 88
 - ADAMTS utility, 95
- ETBSCONV parameter
 - ADAMTR utility, 89
 - ADAMTS utility, 95
- ETBSERVICE parameter
 - ADAMTR utility, 88
 - ADAMTS utility, 95
- ETBSERVICECLASS parameter
 - ADAMTR utility, 89
 - ADAMTS utility, 95
- ETBSERVICENAME parameter
 - ADAMTR utility, 88
 - ADAMTS utility, 95
- ETBTOKEN parameter
 - ADAMTR utility, 89
 - ADAMTS utility, 95
- ETBUSERID parameter
 - ADAMTR utility, 89
 - ADAMTS utility, 95
- Event Replicator for Adabas
 - programmer's reference, v
- Event Replicator for Adabas client requests, 55
 - destination open and close requests, 57
 - initial-state requests, 60
 - prior-transaction requests, 76
 - status requests, 80
 - URBH specifications, 56

I

- initial-state requests, 60
 - examples, 62
 - ISN list format, 61
 - responses, 62
 - URBI fields, 60
- IQBUFLN parameter, 89
- ISN list format, 61

M

- MQQMGRNAME parameter

- ADAMTR utility, 89
- ADAMTS utility, 95
- MQQNAME parameter
 - ADAMTR utility, 90
 - ADAMTS utility, 95
- MSGLIMIT parameter, 90
- MTYPE parameter
 - ADAMTR utility, 88
 - ADAMTS utility, 94

O

- opening destinations within an application, 57
- output message
 - detail, 17
 - sample, 9
 - summary, 5
 - time stamps, 6

P

- PAGESIZE parameter, 90
- PRINT parameter, 90
- prior-transaction requests, 76
 - example, 78
 - URBI fields, 78
 - URBS fields, 77

Q

- queues
 - testing webMethods EntireX and WebSphere MQ, 85

S

- status requests, 80
 - example, 81
 - URBI fields, 81
 - URBS fields, 80

U

- URBC DSECT, 18
- URBD DSECT, 19
- URBE DSECT, 20
- URBH DSECT, 21
- URBH specifications in client requests, 56
- URBI DSECT, 22
- URBL DSECT, 25
- URBP DSECT, 37
- URBQ DSECT, 39
- URBR DSECT, 40
- URBS DSECT, 41
- URBT DSECT, 46
- URBU DSECT, 48
- URBX DSECT, 49
- URBZ DSECT, 51
- utilities
 - ADAMTR, 86
 - ADAMTS, 92

W

- webMethods EntireX
 - ADAMTR parameters, 87
 - testing queues, 85
- webMethods EntireX ADAMTS parameters, 93
- WebSphere MQ
 - ADAMTR parameters, 87
 - testing queues, 85
- WebSphere MQ ADAMTS parameters, 94