

# How to Extract an Attachment from the SYSATTACHMENT Table Directly?

## Attachment Related Parameters

There are two parameters that affect Service Manager’s behavior when dealing with attachments:

- **attachmentCompressed**

This parameter controls whether the attachment will be compressed or not. Note that the SYSATTACHMENTS table also has a field called “COMPRESSED”, which indicates whether the current attachment is compressed or not.

- **Attachmentsegmentsize**

This parameter determines the maximum number of bytes each segment record in the SYSATTACHMENTS table can use (default is 30000). When the size of an attachment is bigger than the segment size, RTE will divide it into segments.

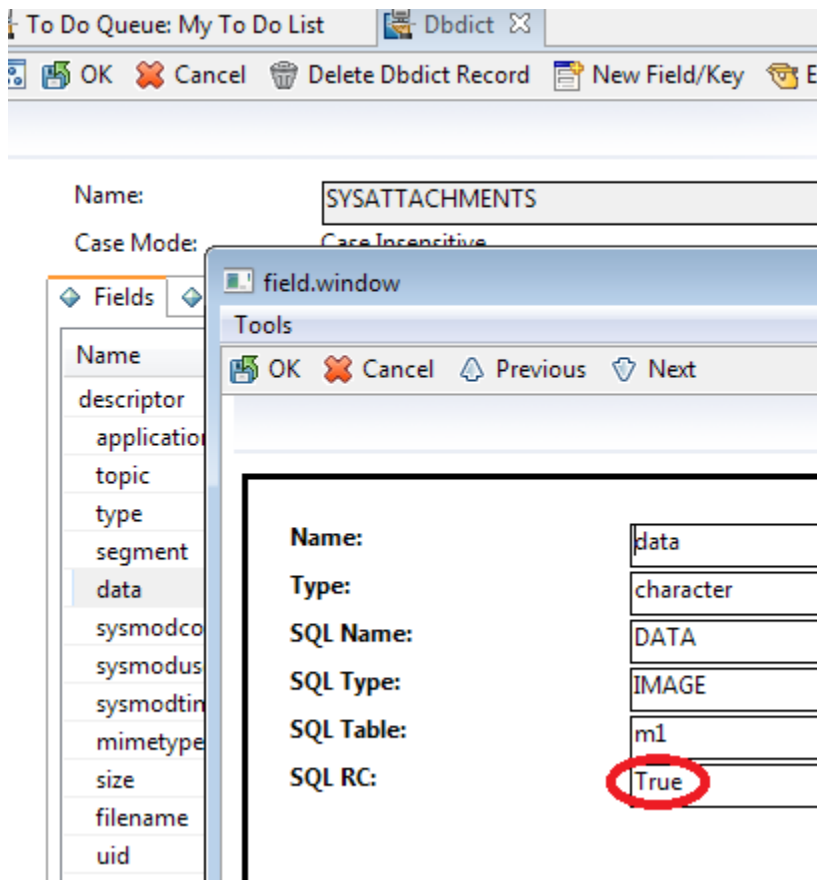
The following figure shows the SYSATTCHMENT table in the RDBMS:

APPLICATION	TOPIC	TYPE	SEGMENT	DATA	SYSMODCOUNT	SYSMODUSER	SYSMODTIME	MIMETYPE	SIZE	FILENAME	UID	COMPRESSED	COMPRESSED_SIZE
ovisualizationdecorator	Breached SLOs	3	0	0-f5f24346402a3020a9780a73f774b3804c146010608cc0	0	#aegh	2007-05-30 14:49:37.000	image/gif	178	Breached SLOs	45548901001a028030a3e78	t	169
ovisualizationdecorator	Critical CI (background)	3	0	0-f5f24346402a3020e027d780a73f774b3804c146010608cc0	0	falcon	2007-02-14 01:00:56.000	image/gif	742	Critical CI (background)	456248a20034a108032b86c8	t	637
ovisualizationdecorator	Current Change	3	0	0-f5f24346402a3020e027d780a73f774b3804c146010608cc0	0	falcon	2007-02-14 01:00:56.000	image/gif	236	Current Change	456248b10020a109032b86c8	f	0
ovisualizationdecorator	Future Change	3	0	0-f5f24346402a3020e027d780a73f774b3804c146010608cc0	0	falcon	2007-02-14 01:00:56.000	image/gif	408	Future Change	456248c002810a032b86c8	f	0
ovisualizationdecorator	Group Icon	3	0	0-f5f24346402a3020e027d780a73f774b3804c146010608cc0	0	falcon	2007-02-14 01:00:56.000	image/gif	2603	Group Icon	456248d0003a0a032b86c8	t	2343

You can see there is a SEGMENT field and a COMPRESSED field in the table, which control how SM deals with the attachment.

## Steps to Extract an Attachment:

1. Check whether the data field is RC format encoded or not.



If **SQL RC** is set to True, the attachment is RC format encoded. (highlighted in the figure above)

2. Read out the binary data from DATA field in SYSATTACHMENT table

If the attachment has been cut into several segments, you can use the following SQL statements to fetch all related records in the RDBMS:

```
SELECT ATC.TOPIC AS interaction_id, ATC.FILENAME AS file_name,
ATC."SIZE" AS size, ATC."DATA" AS data, ATC.SEGMENT AS segment,
ATC.compressed AS compressed FROM SYSATTACHMEM1 ATC WHERE ATC.filename
= 'kmleftLogo.gif' and ATC.compressed = 't' ORDER BY ATC.FILENAME,
ATC.SEGMENT
```

3. Decode the RC format encoded binary.

**Note:** If it is not RC format encoded, skip this step.

The following is example raw data from the RDBMS:

```
00000000h: 5F 52 43 46 4D 2A 3D 2E 3F 07 78 9C ED 7D 07 5C ;_RCFM*=?..x 泔}.\
00000010h: 13 49 FB FF 84 D0 5B 00 1B 22 92 00 0A 16 48 42 ;.!?勑[.."?"..HB
```

The algorithm is quite simple: skip the header (\_RCFM\*=), get the length (0x073F) of the real data block, and start reading. The following is a pseudo-code snippet of that:

```
int length = (int) blob.length(); // whole blob length
if ( length < 10 )
```

```

        return; // error

int start=0;
int iRealLength = 0;
// skip prefix: _RCFM*=
// read starting from the 8th byte
byte[] data = blob.getBytes(8, 1); // get the RC type indicator

// which means the next 1 byte is the length indicator
if (data[0] == 0x2D )
{
    start = 10;
    iRealLength = (char) data[1];
}
// which means the next 2 bytes are the length indicator
else if ( data[0] == 0x2E )
{
    start = 11;
    iRealLength = (short) &data[1];
}

data = blob.getBytes(start, iReallength);

```

According to the above code, the data is the highlighted (yellow) part of the raw data in the example data.

4. If one attachment has been cut into several segments, you should decode every segment as described in step 3.
5. Concatenate all the decoded segments into one buffer, and then uncompress the buffer with the Inflate algorithm.

You can refer to <http://www.zlib.net/zlib.html>, but note that the concatenated buffer cannot be saved as a zip/gzip/... file and unzipped by some other third party tools, because it doesn't have the file header that zip/gzip/... need. We suggest using java.util.zip.Inflater class for uncompressing.

6. Save the uncompressed data into file. It's done!