

# Where can I find more information on A\$ENCRYPT and A\$DECRYPT?

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Saved From: <http://support.veryant.com/support/phpkb/question.php?ID=138>

## Question:

Where can I find more information on A\$ENCRYPT and A\$DECRYPT? I am getting errors involving 'padding'; and 'multiple of 8 bytes'; when I use these routines.

## Answer:

The size of the key passed to A\$ENCRYPT or A\$DECRYPT must be less than or equal to 128-bits (i.e. 16 bytes). For example, use the following data item for your encryption key:

```
77 encryption-key          pic x(16).
```

When A\$ENCRYPT returns, the length of the encrypted-data is set to an exact value, and in A\$DECRYPT the length of data-to-decrypt must be exact. Use items defined as PIC X ANY LENGTH to ensure that you can retrieve and set the lengths precisely. For example, use the following data items for your encrypted-data and data-to-decrypt:

```
77 encrypted-data          pic x any length.
77 data-to-decrypt         pic x any length.
```

Then, for example, you can take the output from A\$ENCRYPT (i.e. encrypted-data) and pass it as the input to A\$DECRYPT (i.e. data-to-decrypt) to reverse the encryption.

See the attached sample program, encryption.cbl

*Note that the encrypted data is binary and is not an encoded character string.*

The A\$ENCRYPT routine does the equivalent of the following Java code:

```
public final static String CRYPT_ALGORITHM = "Blowfish";
Cipher cipher = Cipher.getInstance(CRYPT_ALGORITHM);
cipher.init(Cipher.ENCRYPT_MODE, new SecretKeySpec(encryptionKey, 0,
encryptionKey.length, CRYPT_ALGORITHM));
byte[] encryptedData = cipher.doFinal(dataToEncrypt, 0,
dataToEncrypt.length);
```

where dataToEncrypt, encryptionKey and encryptedData are the 3 parameters passed to A\$ENCRYPT.

The A\$DECRYPT routine does the equivalent of the following Java code:

```
public final static String CRYPT_ALGORITHM = "Blowfish";
Cipher cipher = Cipher.getInstance(CRYPT_ALGORITHM);
```

```
cipher.init(Cipher.DECRYPT_MODE, new SecretKeySpec(encryptionKey, 0,
encryptionKey.length, CRYPT_ALGORITHM));
byte[] decryptedData = cipher.doFinal(dataToDecrypt, 0,
dataToDecrypt.length));
```

where dataToDecrypt, encryptionKey and decryptedData are the 3 parameters passed to A\$DECRYPT.

PKCS5Padding is the default padding scheme for Blowfish ciphers.

Detailed information can be found in the [Java Cryptography Architecture \(JCA\) Reference Guide here.](#)