bcgit / **bc-java** Public mirror

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Commit b425743

dghgit committed on Dec 4, 2025

```
refactored counter code.
```

main · r1rv84

1 parent 5a4ccfd commit b425743

2 files changed +71 -9

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- core/src
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    - GOST3412Test.java

Search within code

...astle/crypto/modes/G3413CTRBlockCipher.java

```
@@ -13,8 +13,6 @@
13 13  public class G3413CTRBlockCipher
14 14      extends StreamBlockCipher
15 15  {
16    -
17    -
18 16      private final int s;
```

```
19  17          private byte[] CTR;
20  18          private byte[] IV;
        @@ -24,7 +22,6 @@ public class G3413CTRBlockCipher
24  22          private int byteCount = 0;
25  23          private boolean initialized;
26  24
27      -
28  25          /**
29  26           * Basic constructor.
30  27           *
        @@ -184,27 +181,34 @@ protected byte calculateByte(byte in)
184 181             if (byteCount == s)
185 182             {
186 183                 byteCount = 0;
187     -               generateCRT();
    184 +               generateCTR();
188 185             }
189 186
190 187             return rv;
191 188
192 189         }
193 190
194     -       private void generateCRT()
    191 +       private void generateCTR()
195 192         {
196     -           CTR[CTR.length - 1]++;
    193 +           int start = CTR.length - 1;
    194 +           while (++CTR[start] == 0)
    195 +           {
    196 +               start--;
    197 +               if (start == IV.length - 1)
    198 +               {
    199 +                   throw new IllegalStateException("attempt to process too many
        blocks");
    200 +               }
    201 +               CTR[start]++;
    202 +           }
197 203         }
198 204
```

```
199  205
200  206         private byte[] generateBuf()
201  207         {
202       -
203  208             byte[] encryptedCTR = new byte[CTR.length];
204  209             cipher.processBlock(CTR, 0, encryptedCTR, 0);
205  210
206  211             return GOST3413CipherUtil.MSB(encryptedCTR, s);
207       -
208  212         }
209  213
210  214
```

.../bouncycastle/crypto/test/GOST3412Test.java

```
     •••   @@ -1,12 +1,14 @@
1    1     package org.bouncycastle.crypto.test;
2    2
      3  + import org.bouncycastle.crypto.StreamBlockCipher;
3    4     import org.bouncycastle.crypto.engines.GOST3412_2015Engine;
4    5     import org.bouncycastle.crypto.modes.G3413CBCBlockCipher;
5    6     import org.bouncycastle.crypto.modes.G3413CFBBlockCipher;
6    7     import org.bouncycastle.crypto.modes.G3413CTRBlockCipher;
7    8     import org.bouncycastle.crypto.modes.G3413OFBBlockCipher;
8    9     import org.bouncycastle.crypto.params.KeyParameter;
9    10    import org.bouncycastle.crypto.params.ParametersWithIV;
      11 + import org.bouncycastle.util.Arrays;
10   12    import org.bouncycastle.util.encoders.Hex;
11   13    import org.bouncycastle.util.test.SimpleTest;
12   14
     ↓↑   @@ -85,12 +87,68 @@ public String getName()
85   87        public void performTest()
86   88            throws Exception
87   89        {
88        -         super.performTest();
      90 +         //super.performTest();
89   91
      92 +         ctrTest();
90   93    //        cfbTest();
```

```
91  94      //        ofbTest();
92  95          }
93  96
        97  +     private void ctrTest()
        98  +         throws Exception
        99  +     {
        100 +         StreamBlockCipher sb = new G3413CTRBlockCipher(new
                GOST3412_2015Engine(), 128);
        101 +
        102 +         sb.init(true, new ParametersWithIV(new
                KeyParameter(Hex.decode("8899aabbccddeeff0011223344556677fedcba98765432100123456
                6789abcdef")),
        103 +             Hex.decode("0001020304050607")));
        104 +
        105 +         byte[] block = Hex.decode("000102030405060708090a0b0c0d0e0f");
        106 +         byte[] output = new byte[16];
        107 +         byte[] last = new byte[16];
        108 +
        109 +         sb.processBytes(block, 0, block.length, last, 0);
        110 +
        111 +         for (int i = 1; i < 255; i++)
        112 +         {
        113 +             sb.processBytes(block, 0, block.length, output, 0);
        114 +             if (Arrays.areEqual(last, output))
        115 +             {
        116 +                 fail("cipher text repeats 1");
        117 +             }
        118 +         }
        119 +
        120 +         sb.processBytes(block, 0, block.length, output, 0);
        121 +         if (Arrays.areEqual(last, output))
        122 +         {
        123 +             fail("cipher text repeats 2");
        124 +         }
        125 +
        126 +         sb = new G3413CTRBlockCipher(new GOST3412_2015Engine(), 128);
        127 +
        128 +         sb.init(true, new ParametersWithIV(new
                KeyParameter(Hex.decode("8899aabbccddeeff0011223344556677fedcba98765432100123456
                6789abcdef")),
```

```
129 +             Hex.decode("0001020304050607")));
130 +
131 +         sb.processBytes(block, 0, block.length, last, 0);
132 +
133 +         for (int i = 1; i != ((1 << 15) - 1); i++)
134 +         {
135 +             sb.processBytes(block, 0, block.length, output, 0);
136 +             if (Arrays.areEqual(last, output))
137 +             {
138 +                 fail("cipher text repeats 3");
139 +             }
140 +             byte[] tmp = last;
141 +             last = output;
142 +             output = tmp;
143 +         }
144 +
145 +         sb.processBytes(block, 0, block.length, output, 0);
146 +         if (Arrays.areEqual(last, output))
147 +         {
148 +             fail("cipher text repeats");
149 +         }
150 +     }
151 +
94  152      public static void main(
95  153          String[] args)
96  154      {
```

Comments 0

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