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############################################################
  Block Cipher Modes of Operation
      Methods for Key Wrapping
############################################################

Method 3 - TKW (Methods 1 and 2 are in a separate document)
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Example 3.1

Wrap 64 bits

Key1 is      00010203 04050607
Key2 is      08090A0B 0C0D0E0F
Key3 is      10111213 14151617
PT is        00112233 44556677
------------------------------------------------------------

Step    TDES Encrypt      A          R[1]       R[2]
                          A6A6A6A6   00112233   44556677
t= 1   7BA94C3C0A1FD001   7BA94C3D   44556677   0A1FD001
t= 2   268ACDE66CB62750   268ACDE4   0A1FD001   6CB62750
t= 3   D828E3F4D9DD0E9E   D828E3F7   6CB62750   D9DD0E9E
t= 4   C26ED963EDBCBAEB   C26ED967   D9DD0E9E   EDBCBAEB
t= 5   7AAB634843AE4B4B   7AAB634D   EDBCBAEB   43AE4B4B
t= 6   3B14C1A5A9395F3D   3B14C1A3   43AE4B4B   A9395F3D
t= 7   3DAEECFAACA4B062   3DAEECFD   A9395F3D   ACA4B062
t= 8   55291D77E2D070C1   55291D7F   ACA4B062   E2D070C1
t= 9   56DB3DA69588AC9F   56DB3DAF   E2D070C1   9588AC9F
t=10   CF560CDAF358E957   CF560CD0   9588AC9F   F358E957
t=11   F19D0E06B80D82A7   F19D0E0D   F358E957   B80D82A7
t=12   16277D116DE53A76   16277D1D   B80D82A7   6DE53A76
CT is        16277D1D B80D82A7 6DE53A76
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Example 3.2

Wrap 128 bits

Key1 is      00010203 04050607
Key2 is      08090A0B 0C0D0E0F
Key3 is      10111213 14151617
PT is        00112233 44556677 8899AABB CCDDEEFF
------------------------------------------------------------------

Step    TDES Encrypt      A          R[1]       R[2]       R[3]       R[4]
                          A6A6A6A6   00112233   44556677   8899AABB   CCDDEEFF
t= 1   7BA94C3C0A1FD001   7BA94C3D   44556677   8899AABB   CCDDEEFF   0A1FD001
t= 2   268ACDE66CB62750   268ACDE4   8899AABB   CCDDEEFF   0A1FD001   6CB62750
t= 3   BEE0441373E916D1   BEE04410   CCDDEEFF   0A1FD001   6CB62750   73E916D1
t= 4   7FE207EB5EE91330   7FE207EF   0A1FD001   6CB62750   73E916D1   5EE91330
t= 5   8BD1C6F558FEA0C7   8BD1C6F0   6CB62750   73E916D1   5EE91330   58FEA0C7
t= 6   9D3774B823D80E07   9D3774BE   73E916D1   5EE91330   58FEA0C7   23D80E07
t= 7   1B424F514053C308   1B424F56   5EE91330   58FEA0C7   23D80E07   4053C308
t= 8   2C6DCEFC8F1EADC2   2C6DCEF4   58FEA0C7   23D80E07   4053C308   8F1EADC2
t= 9   349BFFF9C30BE982   349BFFF0   23D80E07   4053C308   8F1EADC2   C30BE982
t=10   D03C77C039BA6E44   D03C77CA   4053C308   8F1EADC2   C30BE982   39BA6E44
t=11   472907DAC5E177A7   472907D1   8F1EADC2   C30BE982   39BA6E44   C5E177A7
t=12   DE2BF0BBCB335117   DE2BF0B7   C30BE982   39BA6E44   C5E177A7   CB335117
t=13   274C0D320CAA0D3E   274C0D3F   39BA6E44   C5E177A7   CB335117   0CAA0D3E
t=14   846A99B1E46BDD1D   846A99BF   C5E177A7   CB335117   0CAA0D3E   E46BDD1D
t=15   3791C7F7C4428FBF   3791C7F8   CB335117   0CAA0D3E   E46BDD1D   C4428FBF
t=16   DFBD77379F99AF78   DFBD7727   0CAA0D3E   E46BDD1D   C4428FBF   9F99AF78
t=17   44FCF75DB4A88880   44FCF74C   E46BDD1D   C4428FBF   9F99AF78   B4A88880
t=18   C32528F4518A879E   C32528E6   C4428FBF   9F99AF78   B4A88880   518A879E
t=19   0F271CEF4EE11034   0F271CFC   9F99AF78   B4A88880   518A879E   4EE11034
t=20   6C430DCD39FF9D67   6C430DD9   B4A88880   518A879E   4EE11034   39FF9D67
t=21   4DD4D2A321D739BA   4DD4D2B6   518A879E   4EE11034   39FF9D67   21D739BA
t=22   AB1194EA33F9619B   AB1194FC   4EE11034   39FF9D67   21D739BA   33F9619B
t=23   FC0A617752D2AB0D   FC0A6160   39FF9D67   21D739BA   33F9619B   52D2AB0D
t=24   75F5F27D29822081   75F5F265   21D739BA   33F9619B   52D2AB0D   29822081
CT is
    75F5F265 21D739BA 33F9619B 52D2AB0D
    29822081
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