|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Size comparison of "Hello World" using plain C, Embedded C++ or full C++ (v.6.10 +)**   |  |  | | --- | --- | | EW targets: | ARM | | EW component: | C/C++ compiler | | Keywords: | C code, C compiler, C++ | | Last update: | April 1, 2011 |   **Background** There exists a *'truth'* that states *'output based on C++ source is much, much larger than output based on C source'.*  It is of course true that the output is somewhat larger, but there are also strong reasons for using one of the C++ dialects.  **Further information from IAR on C++** The following resources from the IAR web site *(see the links to the right)* covers the beneficial aspects of C++ :   |  |  |  |  | | --- | --- | --- | --- | | Resource |  |  | Title | | Article |  |  | Instant C++ for C programmers | | Webinarium |  |  | The Inefficiency of C++, Fact or Fiction? | | Webinarium |  |  | Writing C++ for ARM Cortex-M3 |   **How much memory will be used?** To compare the basic consumption of memory we have written a *'Hello World project'* in all available (in EWARM 6.xx) dialects of C and C++. The result looks like:  *- - - C - - -*   |  |  | | --- | --- | | • | Compiler : ICCARM 6.10.3 | | • | Language : C | | • | C dialect : C89 / C99 | | • | Language conformance : Standard with IAR extensions | | • | Optimizations : Low | | • | Library Configuration : Normal | | • | printf/scanf formatters : Full |   // Hello World - Plain C  #include <stdio.h>  int main (void)  {  printf ("Hello World\n");  return (0);  }  8 858 bytes of readonly code memory 54 bytes of readonly data memory 8 712 bytes of readwrite data memory  *- - - Embedded C++ - - -*   |  |  | | --- | --- | | • | Compiler : ICCARM 6.10.3 | | • | Language : C++ | | • | C++ dialect : Embedded C++ / Extended Embedded C++ | | • | Language conformance : Standard with IAR extensions | | • | Optimizations : Low | | • | Library Configuration : Normal | | • | printf/scanf formatters : Full |   // Hello World - Embedded C++  #include <iostream>  int main (void)  {  cout << "Hello World" << endl;  return (0);  }  8 928 bytes of readonly code memory 252 bytes of readonly data memory 42 644 bytes of readwrite data memory  *- - - Full C++ - - -*   |  |  | | --- | --- | | • | Compiler : ICCARM 6.10.3 | | • | Language : C++ | | • | C++ dialect : C++ (With exceptions, With RTTI) | | • | Language conformance : Standard with IAR extensions | | • | Optimizations : Low | | • | Library Configuration : Normal | | • | printf/scanf formatters : Full |   //Hello World - Full C++ with exceptions  #include <iostream>  using namespace std;  int main (void)  {  try  {  cout << "Hello World" << endl;  }  catch (...)  {  cout << "Exception happened" << endl;  }  return (0);  }  21 963 bytes of readonly code memory 2 637 bytes of readonly data memory 42 680 bytes of readwrite data memory  **Summary**  Hello World - Plain C  8 858 bytes of readonly code memory  54 bytes of readonly data memory  8 712 bytes of readwrite data memory  Hello World - Embedded C++  8 928 bytes of readonly code memory  252 bytes of readonly data memory  42 644 bytes of readwrite data memory  Hello World - Full C++ with exceptions  21 963 bytes of readonly code memory  2 637 bytes of readonly data memory  42 680 bytes of readwrite data memory  *All product names are trademarks or registered trademarks of their respective owners.* |  |