

```
1 //-----
2 // MPI_Scan
3 //-----
4 #if (defined __linux__) || (defined _AIX)
5     #include <sys/types.h>
6     #include <sys/stat.h>
7     #include <unistd.h>
8 #elif (defined _WIN32) || (defined _WIN64)
9     #include <conio.h>
10    #include <direct.h>
11 #endif
12
13 #include <mpi.h>
14 #include <stdlib.h>
15 #include <stdio.h>
16 #include <iostream>
17 using namespace std;
18 //-----
19 int main(int argc, char* argv[])
20 {
21     int rank, size, x, y;
22
23     MPI_Init(&argc, &argv);
24     MPI_Comm_size(MPI_COMM_WORLD, &size);
25     MPI_Comm_rank(MPI_COMM_WORLD, &rank);
26     if (rank == 0) {
27         printf("\nThere are %d processors.\n", size);
28         cout << "y is the sum of preceding ranks:\n";
29         fflush(stdout);
30     }
31
32     x = rank;
33
34     MPI_Scan(&x, &y, 1, MPI_INT, MPI_SUM, MPI_COMM_WORLD);
35
36     cout << "process " << rank << ": y = " << y << endl;
37
38     MPI_Finalize();
39
40     return 0;
41 }
```