

[illegible]

```
/*  
 * CPU Report  
*/
```

```
model name      : Intel(R) Core(TM) i7-4770K CPU @ 3.50GHz  
vendor_id       : GenuineIntel  
cpu cores       : 4  
siblings        : 8  
cache size      : 8192 KB
```

```
/*  
 * Problem Size Report  
 */
```

```
:3:3:3:3:3  
:4:4:4:4:4  
:3:3:3:3:3  
:4:4:4:4:4  
:3:3:3:3:3  
:4:4:4:4:4  
:3:3:3:3:3  
:4:4:4:4:4
```

```
/*
 * Matrix Multiplication using Serie Process Runtime Report In Seconds
 */

:1.40e-05:1.80e-05:1.20e-05:9.00e-06:2.60e-05
:1.20e-05:2.40e-05:1.70e-05:2.10e-05:1.70e-05
:1.10e-05:1.10e-05:1.60e-05:1.20e-05:1.10e-05
:1.20e-05:2.30e-05:2.00e-05:1.90e-05:2.00e-05
:1.20e-05:1.90e-05:1.60e-05:2.00e-05:2.90e-05
:2.00e-05:1.90e-05:3.00e-05:3.20e-05:1.40e-05
:1.20e-05:1.00e-05:8.00e-06:1.50e-05:2.90e-05
:1.10e-05:1.70e-05:2.20e-05:2.40e-05:2.30e-05
```

```
/*  
 * Matrix Multiplication using Line Rand Matrix Serie Runtime Report In Seconds  
 */  
  
:1.30e-05:2.10e-05:1.50e-05:1.20e-05:2.10e-05  
:1.90e-05:2.80e-05:2.00e-05:2.50e-05:1.80e-05  
:1.20e-05:1.50e-05:1.80e-05:1.50e-05:1.60e-05  
:1.30e-05:2.20e-05:2.40e-05:2.00e-05:2.40e-05  
:2.10e-05:2.10e-05:1.90e-05:1.60e-05:1.70e-05  
:2.40e-05:2.40e-05:2.30e-05:2.20e-05:1.80e-05  
:1.60e-05:1.30e-05:1.10e-05:1.90e-05:2.10e-05  
:1.40e-05:2.10e-05:3.60e-05:2.40e-05:2.80e-05
```

```
/*  
 * CPU Cores Report  
 */  
  
:2:2:2:2:2  
:2:2:2:2:2  
:4:4:4:4:4  
:4:4:4:4:4  
:6:6:6:6:6  
:6:6:6:6:6  
:8:8:8:8:8  
:8:8:8:8:8
```

```
/*
 * Matrix Multiplication using Parallel Process (MPI) Runtime Report In Seconds
 */

:4.08e-05:5.03e-05:1.24e-04:4.83e-05:3.92e-05
:5.34e-05:3.06e-05:2.93e-05:3.30e-05:8.12e-05
:8.98e-05:8.55e-05:1.99e-04:1.79e-04:1.77e-04
:1.42e-04:9.61e-05:7.91e-05:9.82e-05:8.10e-05
:1.38e-04:1.20e-04:1.03e-04:1.14e-04:1.08e-04
:1.06e-04:1.91e-04:1.30e-04:1.22e-04:1.14e-04
:1.27e-04:1.98e-04:1.54e-04:1.15e-04:1.13e-04
:1.68e-04:1.62e-04:2.40e-04:1.33e-04:1.96e-04
```

```
/*
 * Matrix Multiplication using Parallel Process (pthreads) Runtime Report In Seconds
 */

:8.04e-04:9.91e-04:6.51e-04:6.34e-04:6.72e-04
:8.45e-04:8.20e-04:5.79e-04:4.77e-04:3.65e-04
:6.75e-04:7.99e-04:3.73e-04:6.03e-04:6.24e-04
:8.27e-04:5.75e-04:1.20e-03:8.69e-04:1.16e-03
:5.87e-04:7.14e-04:1.31e-03:9.39e-04:5.45e-04
:6.08e-04:1.15e-03:5.49e-04:4.50e-04:1.21e-03
:2.10e-03:4.41e-04:6.35e-04:6.03e-04:5.38e-04
:5.21e-04:7.74e-04:7.47e-04:5.68e-04:6.92e-04
```



```
/*  
 * Matrix Multiplication using Parallel Process (MPI) Speedup Report  
 */  
  
:0.32:0.42:0.12:0.25:0.54  
:0.36:0.92:0.68:0.76:0.22  
:0.13:0.18:0.09:0.08:0.09  
:0.09:0.23:0.30:0.20:0.30  
:0.15:0.17:0.18:0.14:0.16  
:0.23:0.13:0.18:0.18:0.16  
:0.13:0.07:0.07:0.17:0.19  
:0.08:0.13:0.15:0.18:0.14
```

```
/*  
 * Matrix Multiplication using Parallel Process (pthreads) Speedup Report  
 */  
  
:0.02:0.02:0.02:0.02:0.03  
:0.02:0.03:0.03:0.05:0.05  
:0.02:0.02:0.05:0.02:0.03  
:0.02:0.04:0.02:0.02:0.02  
:0.04:0.03:0.01:0.02:0.03  
:0.04:0.02:0.04:0.05:0.01  
:0.01:0.03:0.02:0.03:0.04  
:0.03:0.03:0.05:0.04:0.04
```

```
/*  
 * Matrix Multiplication using Parallel Process (MPI) Efficiency Report  
 */  
  
:0.16:0.21:0.06:0.12:0.27  
:0.18:0.46:0.34:0.38:0.11  
:0.03:0.04:0.02:0.02:0.02  
:0.02:0.06:0.07:0.05:0.07  
:0.02:0.03:0.03:0.02:0.03  
:0.04:0.02:0.03:0.03:0.03  
:0.02:0.01:0.01:0.02:0.02  
:0.01:0.02:0.02:0.02:0.02
```

```
/*  
 * Matrix Multiplication using Parallel Process (pthreads) Efficiency Report  
 */  
  
:0.01:0.01:0.01:0.01:0.01  
:0.01:0.01:0.01:0.03:0.03  
:0.01:0.01:0.01:0.01:0.01  
:0.01:0.01:0.01:0.01:0.01  
:0.01:0.01:0.00:0.00:0.01  
:0.01:0.00:0.01:0.01:0.00  
:0.00:0.00:0.00:0.00:0.01  
:0.00:0.00:0.01:0.01:0.01
```