In [1]:

```
import numpy as np
import matplotlib.pyplot as plt

%matplotlib inline
```

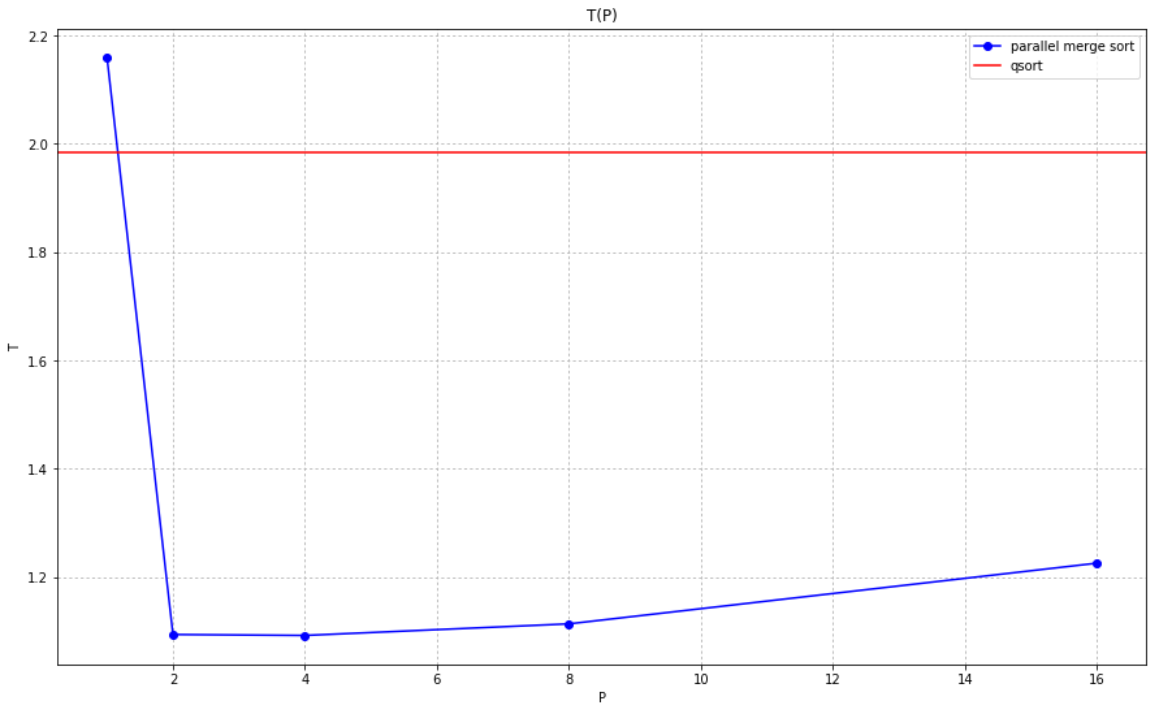
Делаем запуски при разном числе потоков при $N = 10000000$ и $m = 10000$. Также запускаем qsort.

In [14]:

```
qsort_time = 1.98382
P = np.array([1, 2, 4, 8, 16])
T = np.array([2.15973, 1.09352, 1.09182, 1.11319, 1.22525])
S = T[0] / T
E = S / P
```

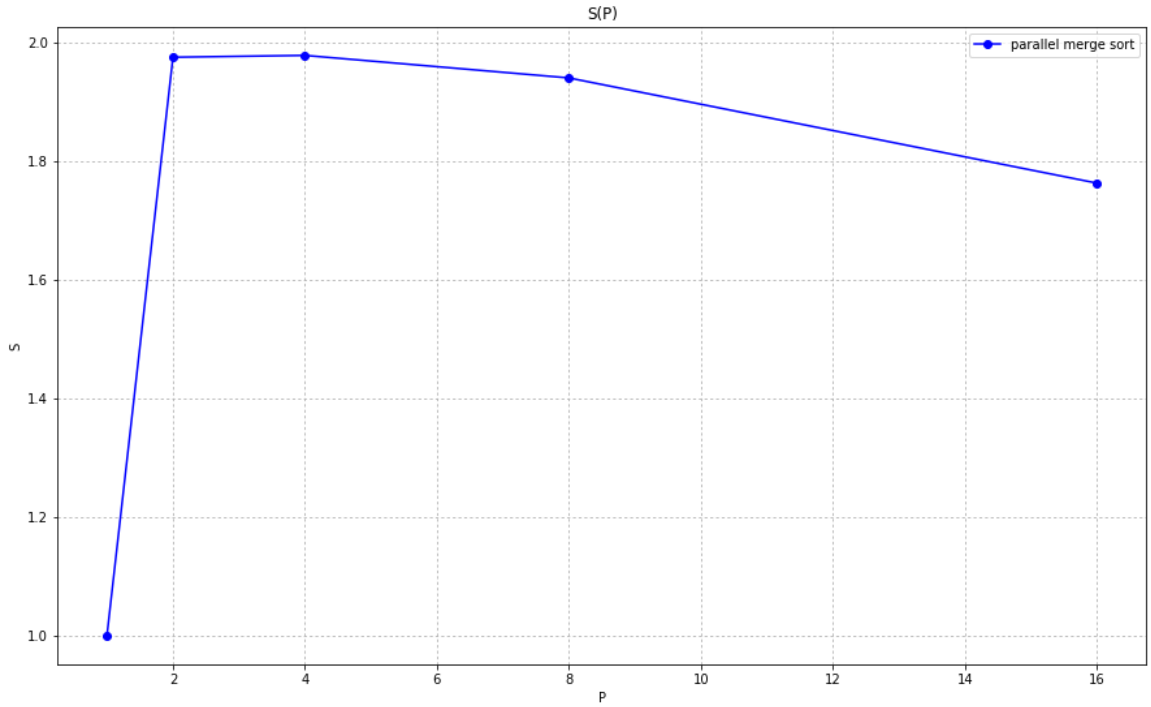
In [15]:

```
plt.figure(figsize=(15, 9))
plt.grid(ls=':')
plt.title('T(P)')
plt.xlabel('P')
plt.ylabel('T')

plt.plot(P, T, 'bo-', label='parallel merge sort')
plt.axhline(qsort_time, label='qsort', color='red')
plt.legend()
plt.show()
```



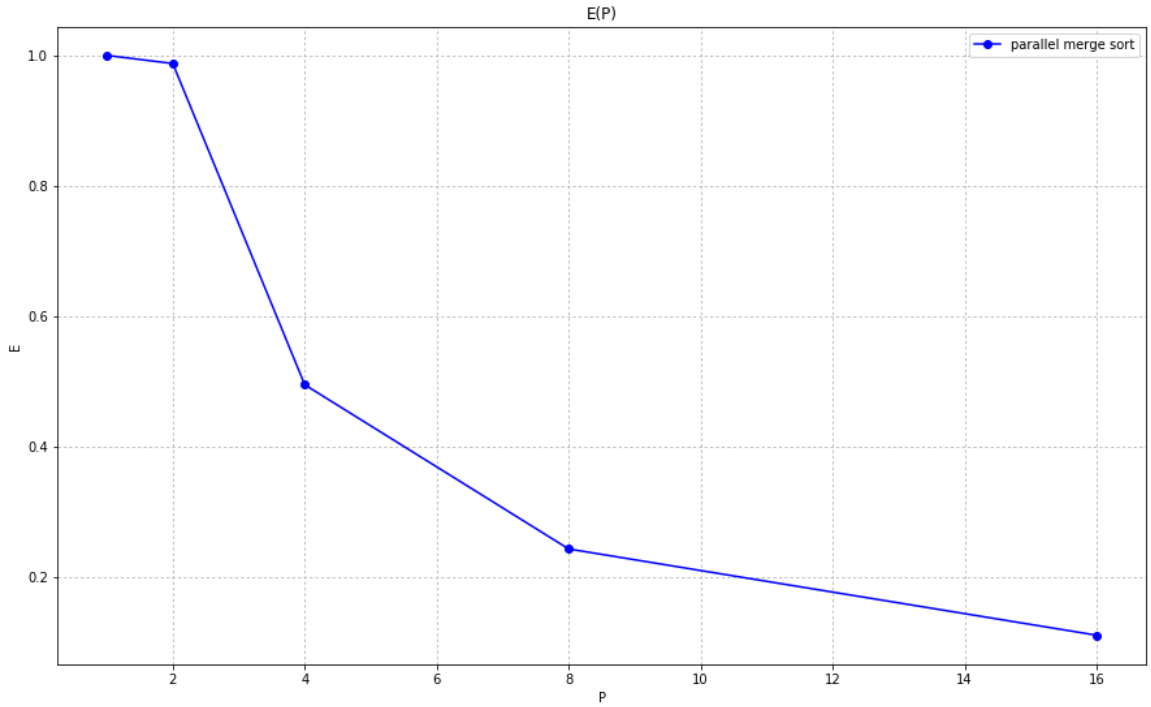
In [16]:

```
plt.figure(figsize=(15, 9))
plt.grid(ls=':')
plt.title('S(P)')
plt.xlabel('P')
plt.ylabel('S')

plt.plot(P, S, 'bo-', label='parallel merge sort')
plt.legend()
plt.show()
```



In [17]:

```
plt.figure(figsize=(15, 9))
plt.grid(ls=':')
plt.title('E(P)')
plt.xlabel('P')
plt.ylabel('E')

plt.plot(P, E, 'bo-', label='parallel merge sort')
plt.legend()
plt.show()
```



In [ ]:

```

```