

TimeContext

December 1, 2024

```
[1]: import matplotlib.pyplot as plt
import pandas as pd
```

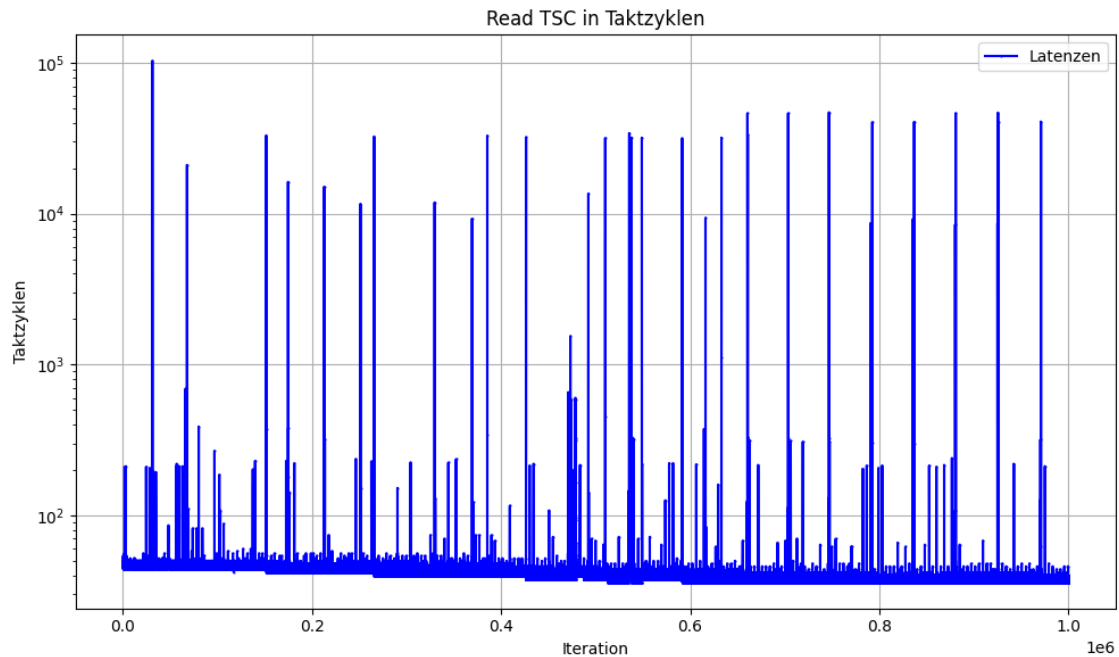
```
[2]: tsc = pd.read_csv('../resources/latencies_tsc.csv')

plt.figure(figsize=(10, 6))

plt.plot(tsc['Latenz_tz'], label="Latenzen", color='blue', linestyle='-',
        marker='.', markersize=1)

plt.title("Read TSC in Taktzyklen")
plt.xlabel("Iteration")
plt.ylabel("Taktzyklen")
plt.yscale('log')
plt.grid(True)
plt.legend()

plt.tight_layout()
plt.savefig('tsc.png')
plt.show()
```



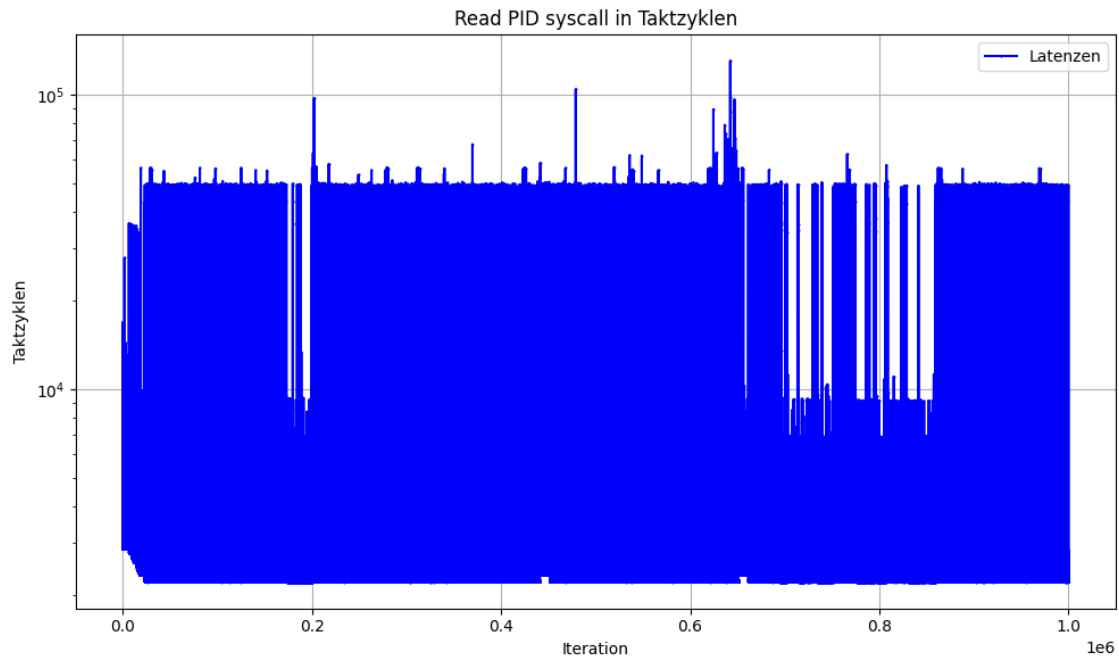
```
[3]: pid = pd.read_csv('../resources/latencies_pid.csv')

plt.figure(figsize=(10, 6))

plt.plot(pid['Latenz_tz'], label="Latenzen", color='blue', linestyle='-',
        ↪marker='.', markersize=1)

plt.title("Read PID syscall in Taktzyklen")
plt.xlabel("Iteration")
plt.ylabel("Taktzyklen")
plt.yscale('log')
plt.grid(True)
plt.legend()

plt.tight_layout()
plt.savefig('pid.png')
plt.show()
```



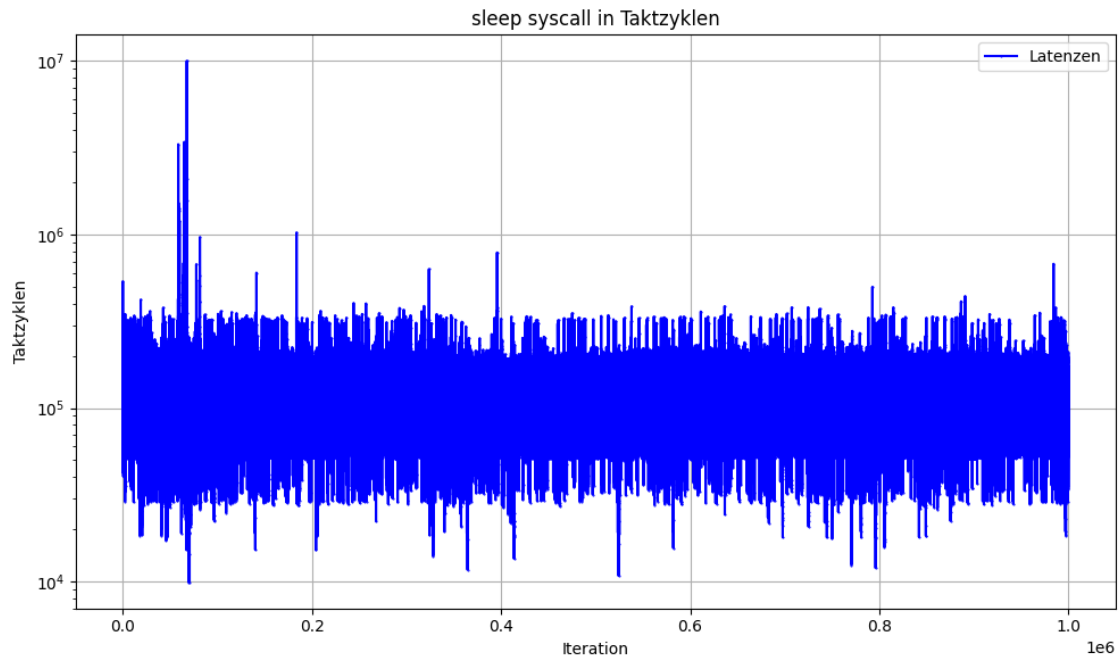
```
[4]: sleep = pd.read_csv('../resources/latencies_nanosleep.csv')

plt.figure(figsize=(10, 6))

plt.plot(sleep['Latenz_tz'], label="Latenzen", color='blue', linestyle='-',
        marker='.', markersize=1)

plt.title("sleep syscall in Taktzyklen")
plt.xlabel("Iteration")
plt.ylabel("Taktzyklen")
plt.yscale('log')
plt.grid(True)
plt.legend()

plt.tight_layout()
plt.savefig('nanosleep.png')
plt.show()
```



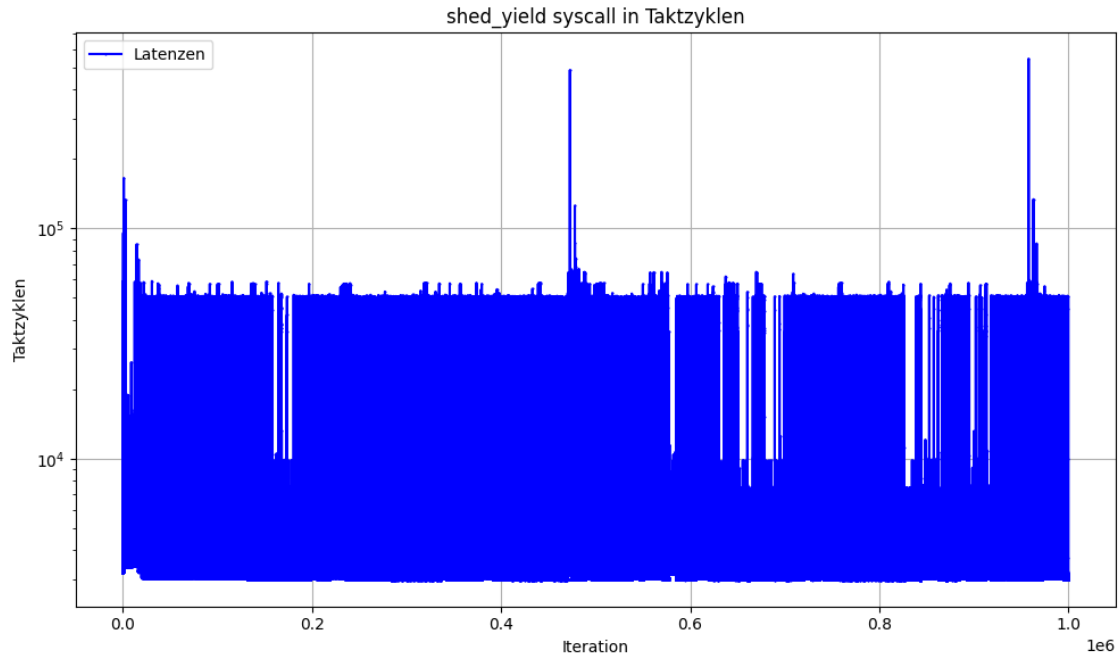
```
[5]: shed_yield = pd.read_csv('../resources/latencies_shed_yield.csv')

plt.figure(figsize=(10, 6))

plt.plot(shed_yield['Latenz_tz'], label="Latenzen", color='blue',
         linestyle='-', marker='.', markersize=1)

plt.title("shed_yield syscall in Taktzyklen")
plt.xlabel("Iteration")
plt.ylabel("Taktzyklen")
plt.yscale('log')
plt.grid(True)
plt.legend()

plt.tight_layout()
plt.savefig('shed_yield.png')
plt.show()
```



```
[6]: # Prozessortaktfrequenz in GHz
    prozessorschwindigkeit = 2.592005
```

```
[7]: tsc_mean = tsc['Latenz_tz'].mean()
    tsc_min, tsc_max = tsc['Latenz_tz'].min(), tsc['Latenz_tz'].max()
    f'TSC Taktzyklen: {tsc_mean:.2f}, {tsc_mean / prozessorschwindigkeit:.2f} ns_
    ↳Min: {tsc_min}, Max: {tsc_max}'
```

```
[7]: 'TSC Taktzyklen: 42.31, 16.32 ns Min: 36, Max: 103188'
```

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[8]: pid_mean = pid['Latenz_tz'].mean()
    pid_min, pid_max = pid['Latenz_tz'].min(), pid['Latenz_tz'].max()
    f'TSC Taktzyklen: {pid_mean:.2f}, {pid_mean / prozessorschwindigkeit:.2f} ns_
    ↳Min: {pid_min}, Max: {pid_max}'
```

```
[8]: 'TSC Taktzyklen: 2362.00, 911.26 ns Min: 2202, Max: 130268'
```

```
[9]: sleep_mean = sleep['Latenz_tz'].mean()
    sleep_min, sleep_max = sleep['Latenz_tz'].min(), sleep['Latenz_tz'].max()
    f'TSC Taktzyklen: {sleep_mean:.2f}, {sleep_mean / prozessorschwindigkeit:.2f}_
    ↳ns Min: {sleep_min}, Max: {sleep_max}'
```

```
[9]: 'TSC Taktzyklen: 162670.45, 62758.54 ns Min: 9890, Max: 10024418'
```

```
[10]: shed_yield_mean = shed_yield['Latenz_tz'].mean()
      shed_yield_min, shed_yield_max = shed_yield['Latenz_tz'].min(),
      ↪ shed_yield['Latenz_tz'].max()
      f'TSC Taktzyklen: {shed_yield_mean:.2f}, {shed_yield_mean /
      ↪ prozessorschwindigkeit:.2f} ns Min: {shed_yield_min}, Max: {shed_yield_max}'
```

```
[10]: 'TSC Taktzyklen: 3216.38, 1240.89 ns Min: 2962, Max: 543972'
```