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# How to use Node-Cron



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# What is Node-Cron?

- Task scheduler
- Implements full crontab syntax
  - Crontab: command-line job scheduler on Unix-like OS's
- Designed for NodeJS
- Where can I find it?
  - Repo: [node-cron/node-cron](https://github.com/node-cron/node-cron)
  - NPM: [node-cron](https://www.npmjs.com/package/node-cron)

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# Why do I need a task scheduler?

- Used to automatically run tasks on a schedule
- Execution is unattended (e.g. no GUI)
- In general, used to offload cycles from the realtime workflow to non-prime time hours
- Example use cases:
  - Perform database maintenance (e.g. rebuild indexes)
  - Batch transaction processing (e.g. auditing of purchase orders)
  - Bulk emailing (e.g. reminders to update passwords)

# How do I schedule a task?

```
import cron from 'node-cron'

cron.schedule('* * * * *', () =>
  // Task logic to be run
})
```

```
# |----- second (optional)
# | |----- minute
# | | |----- hour
# | | | |----- day of month
# | | | | |----- month
# | | | | | |----- day of week
# | | | | | |
# | | | | | |
# * * * * * *
```

field	value
second	0-59
minute	0-59
hour	0-23
day of month	1-31
month	1-12 (or names)
day of week	0-7 (or names, 0 or 7 are sunday)

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# What are the scheduling options?

- Multiple values
  - `cron.schedule('* 5,10,15 * * * *', () => {...})`
  - For the first 15 minutes, run the task every 5 minutes
- Ranges
  - `cron.schedule('* * 8-12 * * *', () => {...})`
  - Run the task every hour from 8 a.m. - Noon
- Step values
  - `cron.schedule('* * 0/2 * * *', () => {...})`
  - Run the task every other hour
- Names - long or short
  - January - December, Monday - Friday
  - Jan - Dec, Mon - Fri

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# What issues can arise?

- Schedule doesn't run at the time you expect
  - Test the schedule expression using [Crontab-guru](#)
- Node-cron runs on the main thread
  - Use [bree](#) to run tasks in a sandboxed environment on worker threads
- Overruns
  - When the schedule task takes longer to run than the scheduled run time interval
  - Leads to a race condition where the task is always running
  - Use [Hexagon/croner](#) instead of node-cron
- Schedule tasks in a different timezone
  - ```
cron.schedule('0 1 * * *', () => {...}, {  
  scheduled: true, timezone: "America/Sao_Paulo" })
```

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# Let's experiment with node-cron!

- Repo: [idmedlock/roundtable-nodecron](https://github.com/idmedlock/roundtable-nodecron)