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Building an open source cloud environment with auto-scaling resources for executing bioinformatics and biomedical workflows

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**Highlights (for review)**

- We describe a scalable full open source cloud stack covering IaaS, PaaS, and SaaS.
- For high-throughput data transfers we integrate GridFTP with Galaxy.
- We enable automatic scaling of cloud resources for Galaxy with dynamicTORQUE.
- We present two use cases of bioinformatics and biomedical applications in the cloud.
- Runtime of applications can be speeded up through efficient scaling or resources.

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