

## Supplementary Table 1. Comparison of cloud-friendly pipeline executors

Cloud-friendly pipeline executors are compared in various aspects, focused on compatibility with portable languages and degree of support for AWS cloud.

	Tibanna	Seven Bridges	DNA Nexus	Nextflow	Toil	Arvados	Cromwell	Snakemake
<b>Common Workflow Language (CWL) support</b>	yes	yes	no	no	yes	yes	yes	yes
<b>Workflow Description Language (WDL) support</b>	yes	no	yes	no	yes	no	yes	no
<b>computing on Amazon Web Services (AWS)</b>	yes	yes	yes	yes	yes	yes	yes	no
<b>computing on Google Cloud Platform (GCP)</b>	no	yes	no	yes	yes	yes	yes	yes
<b>easy to integrate with user's own cloud data storage system</b>	yes	moderate	no	yes	yes	no	yes	yes
<b>free and open source</b>	yes	no	no	yes	yes	yes	yes	yes
<b>Graphic User Interface (GUI)</b>	via AWS	yes	yes	no	no	yes	no	no
<b>Command-line interface (CLI)</b>	yes	yes	yes	yes	yes	yes	yes	yes
<b>Python Application Programming Interface (API)</b>	yes	yes	yes	no	yes	yes	no	yes
<b>easy setup on AWS cloud</b>	yes	yes	yes	no	no	no	no	-
<b>cloud resource allocation approach on AWS</b>	individual	individual	individual	cluster AWS Batch	cluster	cluster	AWS Batch	-
<b>master server required</b>	no	no	no	yes	yes	yes	no	no
<b>Comes with its own portal service</b>	no	yes	yes	no	no	yes	no	no