

SGW-06: Obtain queue prediction data for a computation task

A **science gateway developer** (hereafter referred to as “the developer”) needs a way for his/her gateway to inform researchers when to expect their computation tasks will finish. (These tasks are being submitted to XSEDE resources where either the gateway operator or the researcher using the gateway has an allocation. Tasks will likely not begin immediately due to competing uses of the system and scheduling policies.)

The developer prefers a software interface that can be built into the gateway application. The application can use this interface to obtain a prediction of when a given computation task on a given XSEDE resource will start running, how long the task is likely to take, and/or when it is expected to complete.

In most cases, the **developer** wants to experience it as follows.

1. First, the developer visits the XSEDE website and looks in the section for science gateway developers for something related to queue or compute time prediction. He/she should find documentation explaining the service, how to use it in science gateways, what to expect from the service (availability and quality expectations), and how to access an SDK for the service.
2. Then, the developer integrates the SDK into his/her gateway application by configuring the SDK and adding application code calling the SDK’s interface. The developer expects to call the SDK when the gateway has formulated a computation task, immediately before and/or immediately after the task has been submitted to the resource. SDK calls are expected to include information about the task similar to those included with a task submission: target resource, queue, requested computation resources, expected execution duration etc. The response should be an estimate of the queue time and execution time (or completion time) for the task.
3. If the developer has difficulty or technical questions during Step 2, he/she will submit a ticket to the XSEDE help desk and expect a helpful and timely response.
4. If the SDK does not behave as expected during the gateway’s operation, the developer (or the gateway’s operator) will submit a ticket to the XSEDE help desk and expect a helpful and timely response.

We’ll take any solution, as long as the following are true.

1. The documentation in Step 1 is openly available without requiring the developer to identify or authenticate him/herself.
2. The development environments for which SDKs are available ideally include: Python, Java.
3. The SDK is freely available for academic and research use.
4. When tasks are submitted as described in SDK requests, the actual times correspond reasonably well to the estimated times provided by the SDK.