



Web Services

- The Web Services API refers to the API to support the development of web service protocols.
- Core protocols are:
 - **REST** – representational state transfer returning JSON or XML. The server is *not* RESTful
 - **SOAP** – Simple Object Access Protocol
 - **XML-RPC** – Extensible Markup Language (XML) Remote Procedure Calls (RPC)
- Web service protocols documentation is at https://docs.moodle.org/dev/Webservice_protocols
- Web Services API https://docs.moodle.org/dev/Web_services_API





External Services

- The External Service API allows any plugin to expose external services through a web service.
- A list of the core services can be found @

https://docs.moodle.org/dev/Web_service_API_functions#Core_web_service_functions

- External Functions API

https://docs.moodle.org/dev/External_functions_API





Uploads & Downloads

File uploads and downloads require the client to make two calls, one to the relevant endpoints and the other to the functionality passing the `itemid` for the file/s:

- ***/webservice/upload.php*** - files are saved in the token user's draft area and the results – including errors – are returned in JSON format. Positive results will return an array of file object details, including the `itemid`.
- ***/webservice/pluginfile.php*** – which works like the standard `pluginfile.php`.





Uploads & Downloads

- There are another two core Moodle web services available since Moodle 2.x to specifically upload/download files: `core_files_upload` and `core_files_get_files`, which are defined in ***//lib/db/services.php***.
- For more information about file support, please see Moodle documentation's 'Web Services File Handling' page (https://docs.moodle.org/dev/Web_services_files_handling).





Other External Integrations

Apart from web and external services, there are several other ways of integrating external systems.

- The SCORM activity module enables AICC (Aviation Industry Computer-based Training Committee) HACP (HTTP-based AICC/CMI Protocol) functionality.
- There are a few authentication plugins that communicate with external systems, including
 - LDAP/Active Directory
 - external database
 - Shibboleth
 - Oauth2

We have not covered the exporter class but it can be used in conjunction with the External Services to export consistent data. Please see the Moodle documentation's 'Exporter' page (<https://docs.moodle.org/dev/Exporter>) for more information.

