IRP Automation Adapter Specification

Specification

Prepared by UCLA/CRESST

February 28, 2017

Table of Contents

Table of Contents

Introduction 3
Background 3
Architecture 5
Requirement 5
Reference Implementation 6
Revision History 7

Introduction

IRP v2.0 (http://smarterapp.cresst.net) has an IRP Automation Adapter Mode which allows a vendor to interact with a custom IRP Automation Adapter. An IRP Automation Adapter automates the creation of TDS Report XML documents from a State's Assessment Delivery System. It is temporarily hosted along with the State's Assessment Delivery System and provides an external user interface for interaction. Since the IRP Automation Adapter is temporarily hosted along with the State's Assessment Delivery System, it has access to the State's Assessment Delivery System's internal components and which allows it to drive the automation process. The IRP Automation Adapter's output is a list of URLs that point to TDS Report XML documents. The list of URLs are then passed to IRP. This document describes how the IRP Automation Adapter must pass the list of URLs to IRP. Compliance with this specification will help ensure the custom IRP Automation Adapter will work with IRP v2.0.

Keep in mind: The IRP Automation Adapter that is deployed along with a State's Assessment Delivery System should only be deployed for the duration necessary to use with IRP v2.0. It is not meant to be a permanent component of the Assessment Delivery System since it could possibly contain access to internal components. Vendors should use best security practices and infrastructure design when building and deploying the custom IRP Automation Adapter.

Background

IRP v2.0 is built with an IRP Automation Adapter Mode. When using this mode, the user enters the URL to the custom IRP Automation Adapter (Figure 1: IRP Automation Adapter Mode). IRP will display the IRP Automation Adapter's user interface in an iframe within a modal pop-up (Figure 2: IRP Automation Adapter Modal Popup iframe).

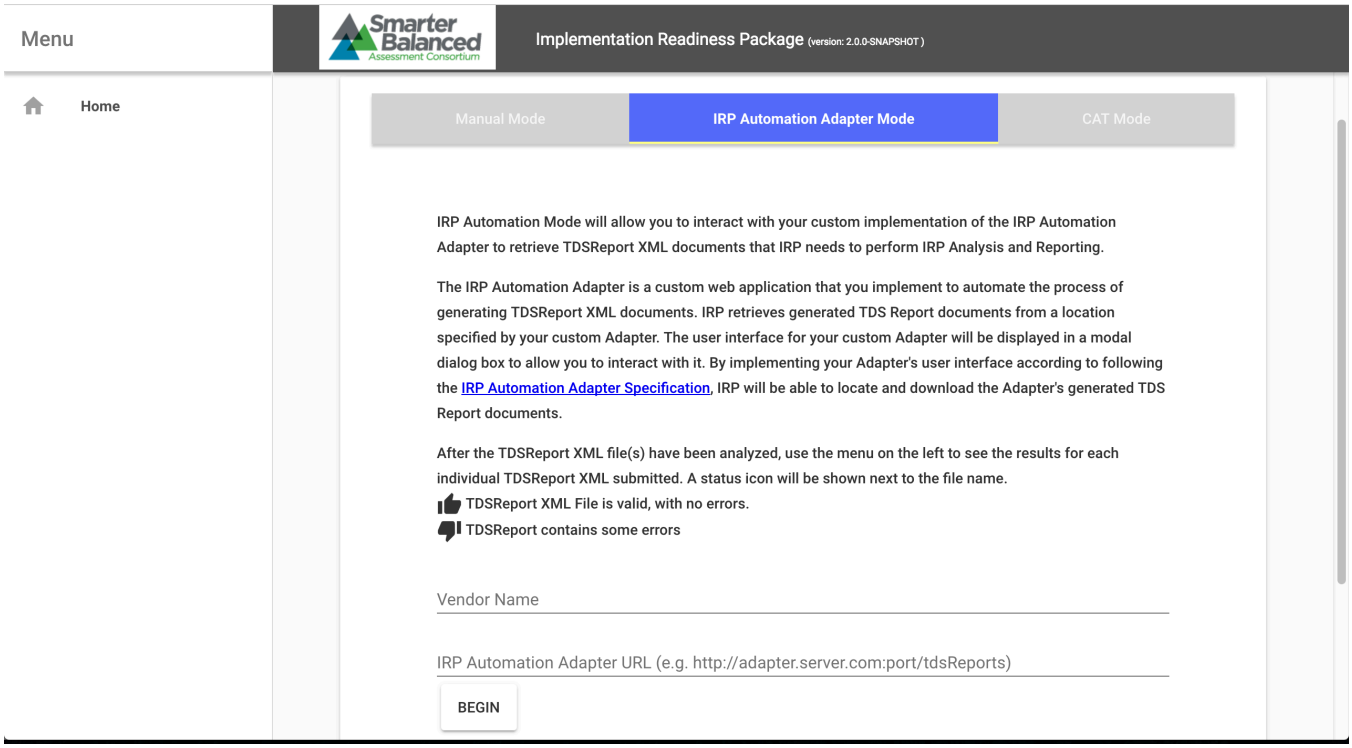

Figure 1: IRP Automation Adapter Mode

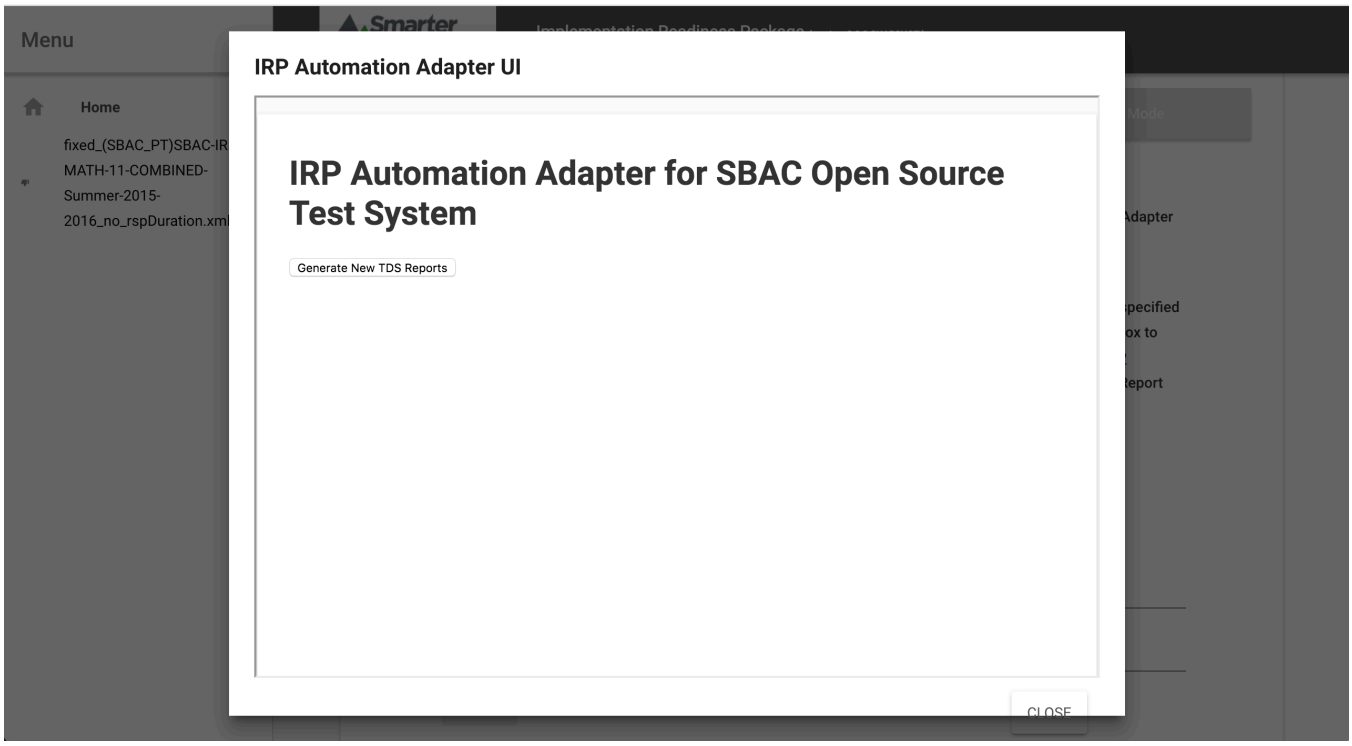

Figure 2: IRP Automation Adapter Modal Popup iframe

After the custom IRP Automation Adapter's user interface is displayed in the iframe, the user interacts with the Adapter to generated TDS Report XML documents. When the IRP Automation Adapter is finished generating TDS XML Reports, it constructs a JavaScript array containing URLs to each TDS Report XML document.

The following sections provide more detail and the JavaScript mechanism to pass the array to IRP's user interface.

Architecture

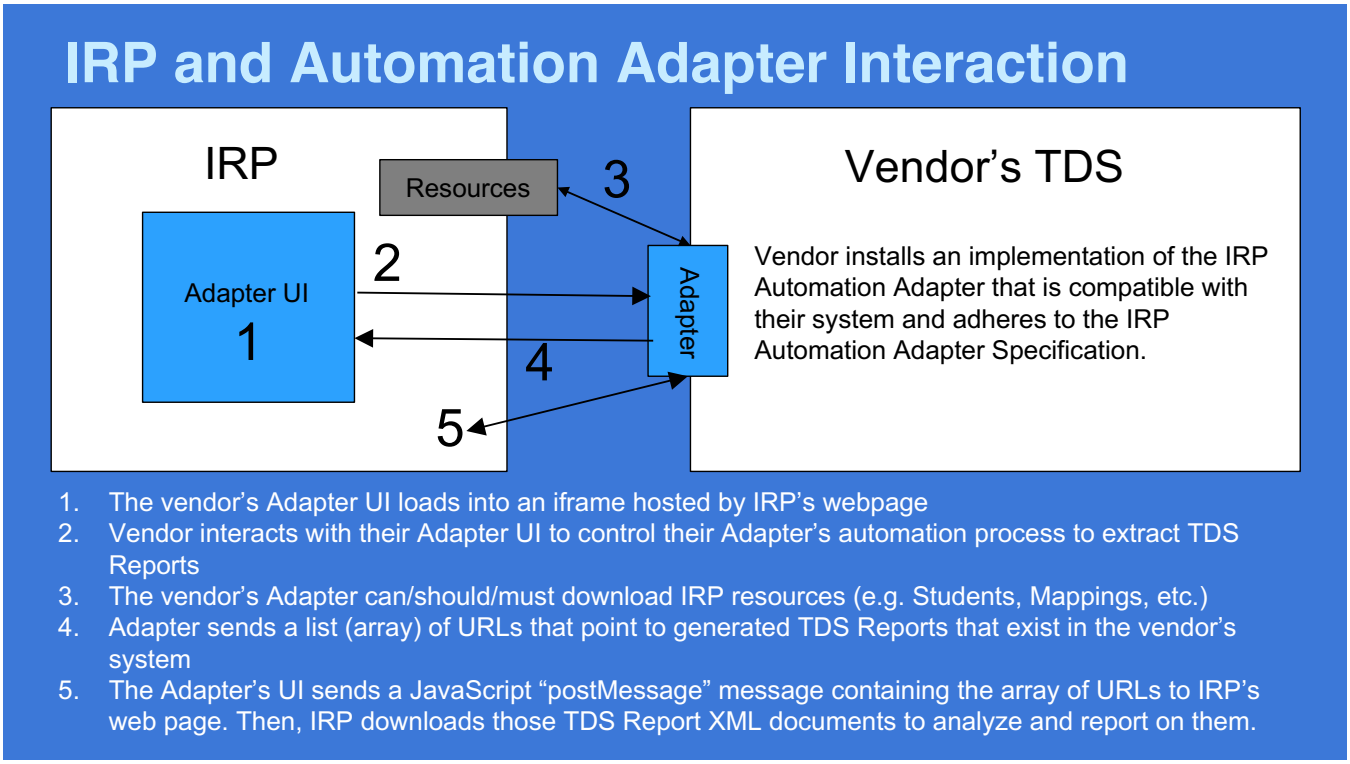

Figure 3: IRP and Adapter Interaction

In Figure 3: IRP and Adapter Interaction, the interaction between IRP and the Adapter. The figure lists the following steps:

1. The custom IRP Automation Adapter UI loads into an iframe hosted by IRP's webpage.
2. The user interacts with their Adapter UI to control their Adapter's automation process to extract TDS Reports.
3. The custom IRP Automation Adapter can/should/must download IRP resources (e.g. Students, Mappings, etc.) to support the generation of TDS Report XML documents.
4. Adapter sends a JavaScript array of URLs that point to generated TDS Reports XML documents via the JavaScript "`window.parent.postMessage`" method.
5. IRP's UI listens for message from the Adapter's iframe. Once received, it sends the array to IRP's webserver to download those TDS Report XML documents and analyze them.

Requirement

As the previous section indicates, the custom IRP Automation Adapter must send a JavaScript array of URLs (as strings) to IRP's UI via the "`window.parent.postMessage`" method.

Reference Implementation

A reference implementation of an IRP Automation Adapter for the Smarter Balanced Open Source Assessment Delivery System has been developed.

- The source code is located at https://bitbucket.org/sbcresst/irp-automation-adapter-sboss
- The deployed example is located at http://irp-adapter.us-west-2.elasticbeanstalk.com

The source code can be used to bootstrap a custom implementation of an IRP Automation Adapter.

Revision History

Date	Version	Description	Author
2017-02-28	2.0.0	Initial document	Paul Espinosa