

Unity Product Standard



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| NAME | Unity Product Standard |
| LABEL FOR LOGO | Unity + Release (if subsequent) for example Unity |
| PURPOSE | To create a policy framework document outlining the particular implementation details and requirements for SIF Certification. This document is intended to specify technical details need for formal testing with the SIF Test Harness and specifically Unity Test Suite. |
| AUDIENCE | People involved in certification or quality assurance testing should read this document. |
| DESCRIPTION | <p>The Unity Product Standard defines the requirements for an application to be considered conformant to the SIF Implementation Specification (see below). The following definitions are used in this document:</p> <ul style="list-style-type: none">• The SIF Implementation Specification is one of any of the releases of the SIF Implementation Specification (NA) 4.x for which a sanctioned test suite is provided for use in certification, supplemented by any Interpretations¹ (in this document or the errata to the specification) applicable to this particular version and revision of the Specification. For a description of Interpretations, see Section 9.3.1 of the SIF Certification Program Policy.• A Certified Application is a product or service that has successfully completed the certification process and for which the Solution Provider has been notified in writing by the Certification Authority that certification has been achieved for such product or service. The details of these requirements are disclosed throughout the SIF Implementation Specification².• An Environment Provider manages Adaptors from the simplest service to the core of a logical enterprise setting. See section 4 and Appendix A of the Infrastructure Services 3.3 document for a summary of the roles and responsibilities of being an Environment Provider. Note: Applications seeking Unity Certification are <i>not</i> |

¹ <https://a4l.site-ym.com/resource/collection/D44B484D-4C49-4A46-BC51-FB1D3F672D15/SIF%20Certification%20Program%20Policy.pdf>

² SIF Implementation Specification documentation: <https://www.a4l.org/page/SIFSpecifications>

required to be an Environment provider nor create their own environment.

- Changes Since has proven to be a popular method of keep systems synchronized without the complications of a traditional eventing system. While Unity certification will include support for these mechanisms one is not preferred over the other and both are treated as optional.
- The Transport Layer Security (TSL) is version 1.2 of the TLS protocol, as specified in IETF RFC 5246³. For a discussion of TLS backward compatibility when negotiating connection parameters, see Appendix E of IETF RFC 5246. TLS details used for certification can be found in the Security Requirements section of this document. This section incorporates (and refines) requirements found in the SIF 3 Base Architecture document.
- HTTP is version 1.1 of the Hypertext Transport Protocol, as specified in IETF RFC 2616⁴
- XML is version 1.0, Third Edition, of the Extensible Markup Language, as specified in the W3C Recommendation of February 4, 2004.
- UTF-8 is a data encoding process refined by IETF RFC 2279⁵ of ISO 10646.
- REST is the building of services directly upon HTTP. The SIF Infrastructure specifies URL and HTTP Header requirements in a RESTful style. For tables detailing the use of these structures see Appendix C of the SIF Infrastructure Services document.
- XPath 2.0⁶ is a W3C recommended expression language for working with XML documents.
- XQuery 1.0⁷ is an XML query language recommendation published by the W3C.
- The SIF Specifications define XML Schemas (XSDs) for payload exchanged between an Environment Provider and a Certified

³ IETF RFC 5246: <https://tools.ietf.org/html/rfc5246>

⁴ IETF RFC 2616: <http://www.ietf.org/rfc/rfc2616.txt>

⁵ IETF RFC 2279: <http://www.ietf.org/rfc/rfc2279.txt>

⁶ XPath 2.0: http://en.wikipedia.org/wiki/XPath_2.0

⁷ XQuery 1.0: <http://en.wikipedia.org/wiki/XQuery>

Application. These files are downloadable from the Access 4 Learning (A4L) Community's public website⁸.

- Gzip is a compression scheme that may be employed to reduce the size of payloads.

A GUID is a Globally Unique Identifier (also known as a UUID or Universally Unique Identifier), is widely utilized in both the SIF Infrastructure and Data Model as specified in the IETF RFC 4122⁹.

SECURITY REQUIREMENTS

The Unity Product Standard, in order to ensure interoperability with both the Test Harness and other Certified Applications and services, includes the following requirements around security:

- All supported authentication schemes are treated as optional, however at least one must be chosen.
- When leveraging OAuth 2.0/Bearer authentication any supplied Initial Session Token is used as the client_id and any supplied Consumer Secret is used as the client_secret.
- Certificates exchanged to verify identity employ a key length of at least 2048bits.
- All certificates employed must be current.
- All valid certificates will be accepted.
- Hostname and certificate mismatches are allowed.
- All encrypted connections employ a cypher with a minimum key length of 128bits.
- TLS handshakes must be done in SSL 3.0 style and support the TLS 1.2 version {3, 2} within.
- Connections must support TLS 1.2.

COMPATIBILITY REQUIREMENTS

Interoperability between versions of SIF Specifications utilized in products is critical to on-going technology support. Because of this, SIF Certified Products are held to these resulting necessities.

- Certified Products must work with existing applications utilizing the same SIF (infrastructure and data model) versions and those only varying by the revision number.

⁸ All SIF Specifications can be found on the A4L website here: <https://a4l.site-ym.com/page/SIFSpecifications>

⁹ IETF RFC 1422: <http://www.ietf.org/rfc/rfc4122.txt>

- Certified Products must function without change with applications written to new versions of SIF that only differ by the revision number.

CONFORMANCE REQUIREMENTS The conformance requirements of the Unity Product Standard for a Certified Application are derived from the SIF Specification. A Certified Application must demonstrate that it can:

- Utilize authorization tokens to provide or access REST services using the Test Harness as a testing partner.
- Provide or Request/Subscribe and Receive data objects via the Environment Provider as disclosed in the application's CSQ.
- Encrypt, transport, and authenticate SIF messages in a manner that conforms to the Security Requirements section of this document.
- Exchange messages that are uniquely identified by a GUID and sequenced and processed in a manner that conforms to the SIF 3 Infrastructure.
- Produce messages that conform to the data definitions of the SIF Infrastructure version referenced by the Test Suite. Required and mandatory elements must be supported; and optional and conditional elements may be supported at the discretion of the implementer, as indicated in the CSQ.
- Produce messages containing data objects that conform to the SIF Data Model in the version referenced by the Test Suite. Required and mandatory elements must be supported; optional and conditional elements may be supported at the discretion of the implementer.
- Receive/process messages that conform to SIF Infrastructure version 3.3 (this requirement may be met by responding with the appropriate error).
- Receive/process messages containing data objects that conform to the SIF Implementation Specification (NA) 4.0 (this requirement may be met by responding with the proper error).
- Similar support for objects claimed in relation to a service path¹⁰ must also be demonstrated using object services¹¹.

¹⁰ See the [glossary of terms](#): service path.

¹¹ See the [glossary of terms](#): object services.

- Providers may be required to demonstrate PESC¹² JSON¹³ support (in addition to XML) based on the release or profile the Test Suite is built for.

There are no requirements placed upon a Certified Application that constrain the way that the conformance requirements are met, and in particular there are no requirements concerning how any software components are integrated together to constitute a conforming product or service.

INDICATORS OF CONFORMANCE A test report from a currently approved formal release of the Unity Application Test Suite is required. The Test Suites will be hosted on the Access 4 Learning (A4L) Community's web server and accessed over the Internet.

Revision History:

| Issue | Date | Change History |
|-------|----------------|--|
| 0.9 | March 24, 2020 | Reviewed by the Policy & Procedures Committee. |
| 1.0 | March 24, 2020 | First release of the Unity Product Standard. |

¹² [PESC Compliant JSON v 1.0](#)

¹³ See the [glossary of terms](#): JSON.