Proposal for SCA 4.1 Application Mixture Backwards Compatible UOF

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Proposal

This document contains a proposal to add in the SCAv4.0.1 specification an optional unit of functionality (UOF) to support applications composed of SCA 4 and SCA 2.2.2 components. Suggested name for this UOF is Application Mixture Backwards Compatible UOF.

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Recommendation

SCA 4.1 Application Mixture Backwards Compatible UOF

Topics

Proposal
Application Mixture Backwards Compatible Unit of Functionality (UOF)
Main Specifications Changes
Other Document Changes

Proposal

Mixed Application Components

- Application made of a mix of SCAv222 and SCAv4 components (use case 1.2, [SCAv4.1_backwards_compatibility_uses_cases 20140131])
- Rational is to
  - ❑ maximize investment made in SCAv222 by being able to create a SCAv4 application that reuse key SCAv222 components
  - ❑ allows a progressive migration from SCA222 to SCA4
    - avoid “all or nothing” migration
- Make it an optional Unit Of Functionality (UOF) that requires the Application Backwards Compatible UOF

Proposal

Application Mixture Backwards Compatible Unit of Functionality (UOF)

- Add an optional Application Mixture Backwards Compatible UOF to SCA 4.1 Appendix F Operating Environment (OE) profile to indicate that a SCA 4.1 OE supports the install and deploy of a SCAv4 Application containing SCAv222 components
  - F-6.1 Target Operating Environment Units of Functionality
    - Application Backwards Compatible – provides SCA V2.2.2 Application backwards compatibility capability
    - Application Mixture Backwards Compatible – supports Application composed of SCA V2.2.2 application components

Proposal

Application Mixture Backwards Compatible Unit of Functionality (UOF)

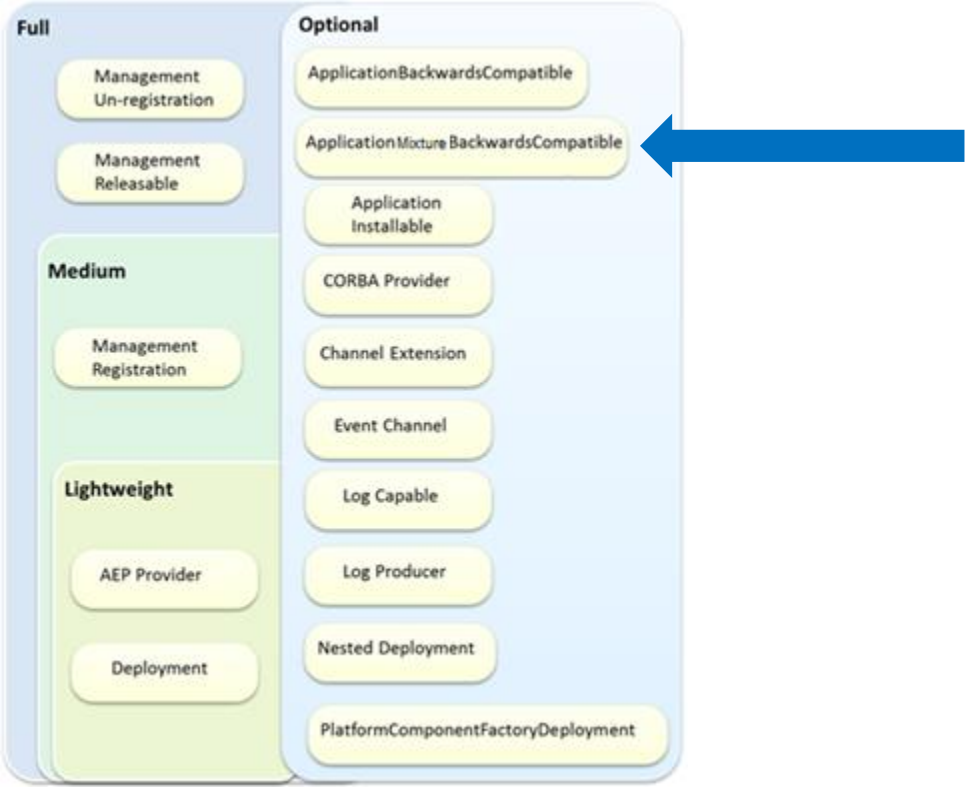
- Add section

F.6.5 Application Mixture Backwards Compatible Related Units of Functionality

With this optional unit of functionality (UOF), a Core Framework (CF) can instantiate SCA applications compliant to this version of the SCA specification that contain any number of SCA 2.2.2 components. The applications can have interconnections between SCA 2.2.2 components and components of this version of the SCA specification. This also implies the CF can use DTD files of different SCA versions. Using this UOF, SCA 2.2.2 applications can be migrated incrementally to the current version of the specification. This UOF relies upon the Application Backwards Compatible UOF.

Application Mixture Backwards Compatible Unit of Functionality (UOF)

- F-7 SCA PROFILES
  - Add optional Application Mixture Backwards Compatible UOF to figure 4



Main Specification Changes

3.1.3.3.1.3.5.1.1 Brief Rationale

- Add

The *create* operation may create an Application made of a mixture of SCA V2.2.2 components and components compliant to this version of the specification.

3.1.3.3.1.3.5.1.3 ApplicationFactory create operation behavior

SCA_TBD The *create* operation shall create an SCAv2.2.2 Resource or ResourceFactory component [3]. SCA V2.2.2 components being created adhere to SCA V2.2.2 requirements.

Main Specification Changes

3.1.3.3.1.5.5.1.3 DomainInstallation installApplication operation behavior

- Before SCA114, add

SCA_TBD The *installApplication* operation shall install an application made of a mixture of SCA V2.2.2 components and components compliant to this version of the specification. The SCA V2.2.2 components being part of such an application adheres to the requirements in SCA V2.2.2 [3].

3.1.3.3.1.5.5.1.5 Exceptions/Errors

- Add

SCA_TBD The *installApplication* operation shall raise the ApplicationInstallError exception when it does not support an application made of a mixture of SCA V2.2.2 components and components compliant to this version of the specification.

Main Specifications Changes

3.1.3.3.2.2.4 Constraints

- Add

  SCA_TBD An ApplicationManagerComponent shall release an application made of a mixture of SCA V2.2.2 [3] components and components compliant to this version of this specification. An SCA application being released adheres to the requirements of SCA V2.2.2 for the SCA V2.2.2 components.

Other Document Changes

Appendix C (IDL)

- No need for extra changes other than those for Application Backwards Compatible UOF

Appendix D (DTDs)

- DTD file name convention
  - No need for extra changes other than those for Application Backwards Compatible UOF
- Software Application Descriptor
  - Refine the SCA version attribute of SAD DTD to indicate if application mixture is supported.

Other Document Changes

Appendix D (DTDs) …

- Software Application Descriptor
  - D-1.10.1 Change (defined in the Application Backward Compatibility proposal)

    The software assembly element's sca_version is the version (i.e., 4.1) of the SCA.

    - to -

    The software assembly element's sca_version is the version (i.e. 4.1) of the SCA. If application mixture is supported, the sca_version indicates the versions of SCA specifications implemented by the components of the application separated by an underscore character (e.g. 4.1_2.2.2). The version numbers shall be specified in descending order.

  - D-1.10.1 Add

    A SCA 4.x SAD file can have references to SCA 2.2.2 SPD files (optional to Application Mixture Backwards Compatible UOF)

Other Document Changes

Appendix D (DTDs) …

- Software Application Descriptor
  - Figure 19
    - No need for extra changes other than those for Application Backwards Compatible UOF
  - Update XML
    - Use a text value and define in text what are the valid values.
    - sca_version CDATA “4.1” (e.g. “4.1”, “4.1_2.2.2”, etc)

Other Document Changes

- Domain Manager Configuration Descriptor
  - Refine the “app_backwards_compatible” attribute to use enumeration values to indicate the level of compatibility supported. False means compatible is not supported, true means compatibility to SCA 2.2.2 is supported, and mixture, means application mixture is supported.

    app_backwards_compatible (false | true | mixture) “false”

  - The attribute can be used to determine when to test for Application Mixture Backwards Compatible UOF

  - D-1.12.1 Change
    - Update figure 42
    - Update XML

Other Document Changes

- Software Component Descriptor
  - D-1.9.1 Add

    The softwarecomponent element's sca_version is the version (i.e. 4.1) of the SCA the component is compliant to.

  - Update figure 16 to sca_version : CDATA attribute in softwarecomponent element

  - Update XML

    <!ATTLIST softwarecomponent
    sca_version CDATA "4.1" >