

Scalable Manager Components

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Proposal

This document contains a proposal to change the SCAv4.0.1 specification to add support for scalability to the manager components. This proposal will allow SCAv4.1 manager components to selectively implement different standardized interfaces.

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Slide 4

Recommendation

Scalable Manager Components

Scalable Managers Approach

Approach follows similar pattern as was done for Component Scalable UOF Changes.

- Approach should be UML compliant as much as possible for modeling Manager components.
 - Removes optional IDL inheritance for Manager interfaces.
 - User Defined interfaces for scalable ApplicationManager, DeviceManager, and DomainManager components (e.g., MyApplication, MyDeviceMgr, MyDomainMgr).
- Allow for full and scalable Manager components.
- Interface name changes outside scope of Scalable Managers approach

Manager Components

Main Spec

- Assembly Component
- Application Manager Component
- Application Factory Component
- Device Manager Component
- Domain Manager Component

Appendix C

Appendix D

Appendix F

Assembly Component

Move AssemblyComponent to Application Components section since not a manager but developed by application developers

3.1.3.3.2.1.1 Description

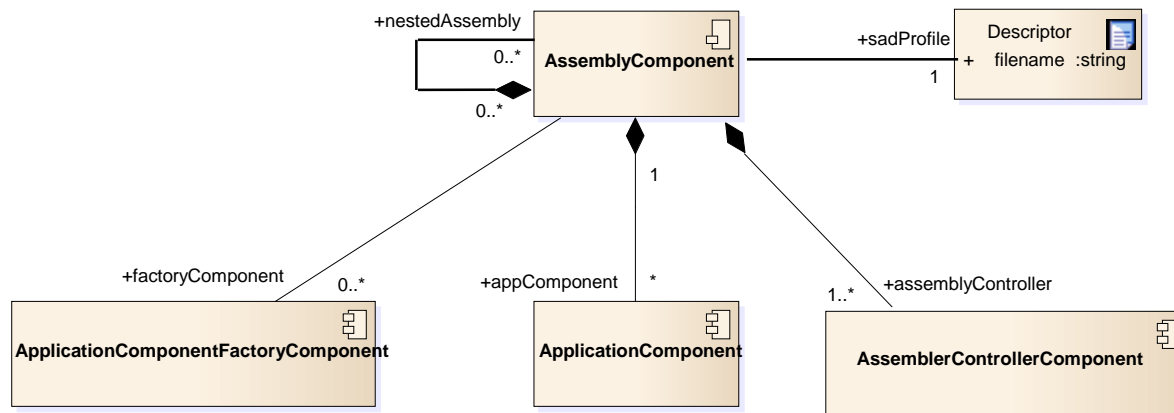
- Reword
 - “AssemblyComponents provide...” to “AssemblyComponent provides...”
 - “An AssemblyComponent contains dependencies to services, specified as connections, within the descriptor. A created AssemblyComponent contains a collection of ApplicationResourceComponent(s) and non-SCA components.” to “An AssemblyComponent contains dependencies to PlatformComponents, specified as connections, within the descriptor. A created AssemblyComponent contains a collection of ApplicationComponent(s) and optionally nested AssemblyComponent(s).”
- Figure 3-34 has Component that is not defined and label that is utilized (remove from figure), which is not in description. Also add missing optional aggregation of AssemblyComponent unto itself.

Assembly Component, cont'd

3.1.3.3.2.1.1 Associations

- Reword domainProfile to sadProfile: An AssemblyComponent has a SAD and other domain profile files.
- Reword “appComponent: The collection of ApplicationResourceComponents identified within the SAD” to “appComponent: The collection of ApplicationComponents identified within the SAD”
- Add nestedAssembly: The collection of nested AssemblyComponents identified within the SAD.
- Remove utilityComponent.

Assembly Component, Cont'd

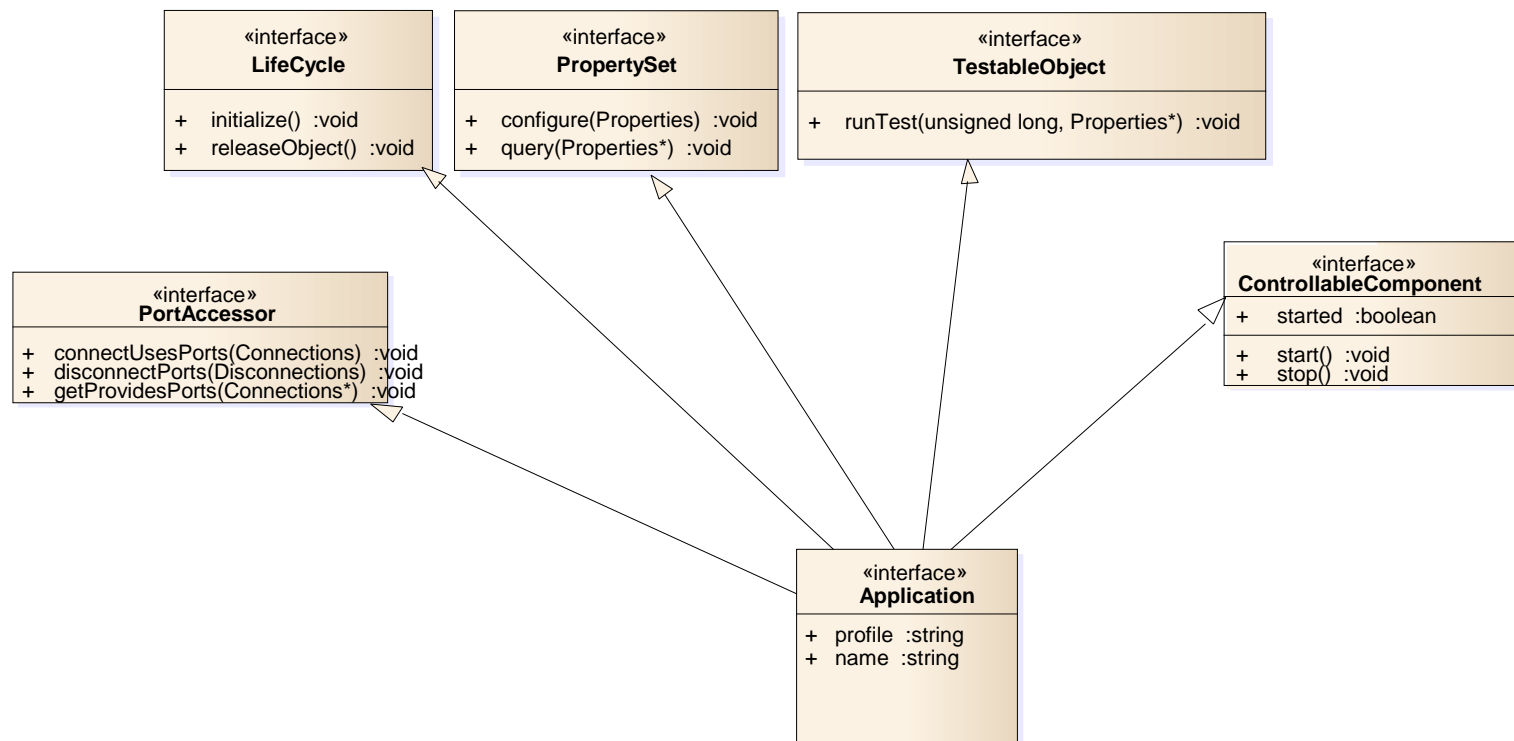


Application Manager Component

Application Interface

- Application Backwards Compatible replace inheritance with Resource with base interfaces but left optional ApplicationDeploymentData interface inheritance
- Remove ApplicationDeploymentData optional inheritance.
- Section 3.1.3.3.1.1.1 Description
 - Change from “The Application interface inherits the Resource interface. The Application interface supports most of the Resource base application interfaces (i.e. LifeCycle, ControllableComponent, PropertySet, TestableObject, and PortAccessor.) and can optionally support the ApplicationDeploymentData interface. ” to “The *Application* interface inherits *LifeCycle*, *ControllableComponent*, *PropertySet*, *TestableObject*, and *PortAccessor*. ”
- Update Appendix C
- Section 3.1.3.3.1.1.5.1.3 releaseObject Behavior
 - Tie requirements to optional Releasable UOF.
 - Non-releasable application will not unload, terminate, deallocates, and disconnects so the associations with modified to be zero to many.
 - Exception is still given out when Releasable UOF not supported.

CF Application Interface Change



Application Manager Component Changes, cont'd

Application Factory and Domain Manager Components still gives out an Application object which can be narrowed to ApplicationDeploymentData.

Add optional Application Deployment Data and application releasable UOF attributes to Appendix D DomainManager DCD XML attribute element as was done for Application Backwards Compatible UOF.

- This indicates when the Application Deployment Data is supported.
- This indicates when the Application releasable is supported
- This is depicted in Domain Manager Changes

■ Figure Changes

- “ComponentBaseDevice” to “DeviceCommponent” based upon scalable component changes and throughout text in Application Manager Component sections

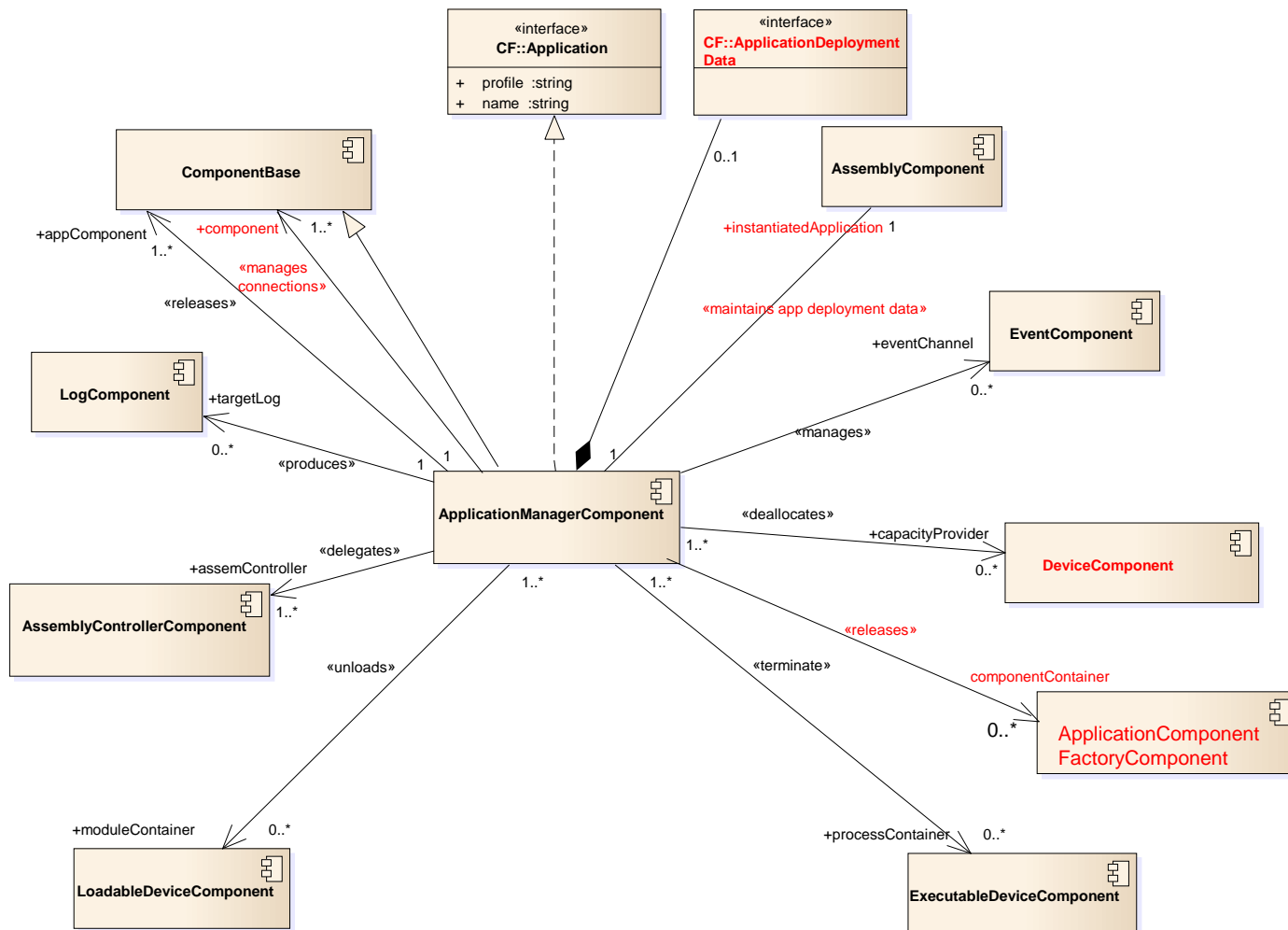
Application Manager Component Changes, cont'd

- Figure Changes (cont'd)
 - Added ApplicationComponentFactoryComponent
 - Added association text “componentContainer: An ApplicationFactoryComponent releases CF_ApplicationComponent(s).” To be consistent with ApplicationFactoryComponent.
 - For ComponentBase
 - Added association of manages connections to any component type:
 - component: ApplicationManager manages connections to other component types (e.g., CF_ApplicationComponent, PlatformComponent, and ApplicationManagerComponent) that an instantiated AssemblyComponent has been connected to.
 - Modified extApp role association to be “instantiatedApplication”
 - Changed label to “manages connections” to “maintains app deployment data”
 - instantiatedApplication: ApplicationManagerComponent maintains instantiated application deployment data.

Application Manager Component Changes, cont'd

- Association
 - Remove domainProfile since covered at ComponentBase and not in figure.
 - Other changes as described in Figure topic above.
- Make component name changes in Application Manager Component sections to be in sync with Scalable Component changes
- Semantics
 - Add – “An ApplicationManagerComponent shall realize the *ApplicationDeploymentData* interface. “. This requirement is linked to the ApplicationDeploymentData UOF.

SCA 4.0 Application Manager Component



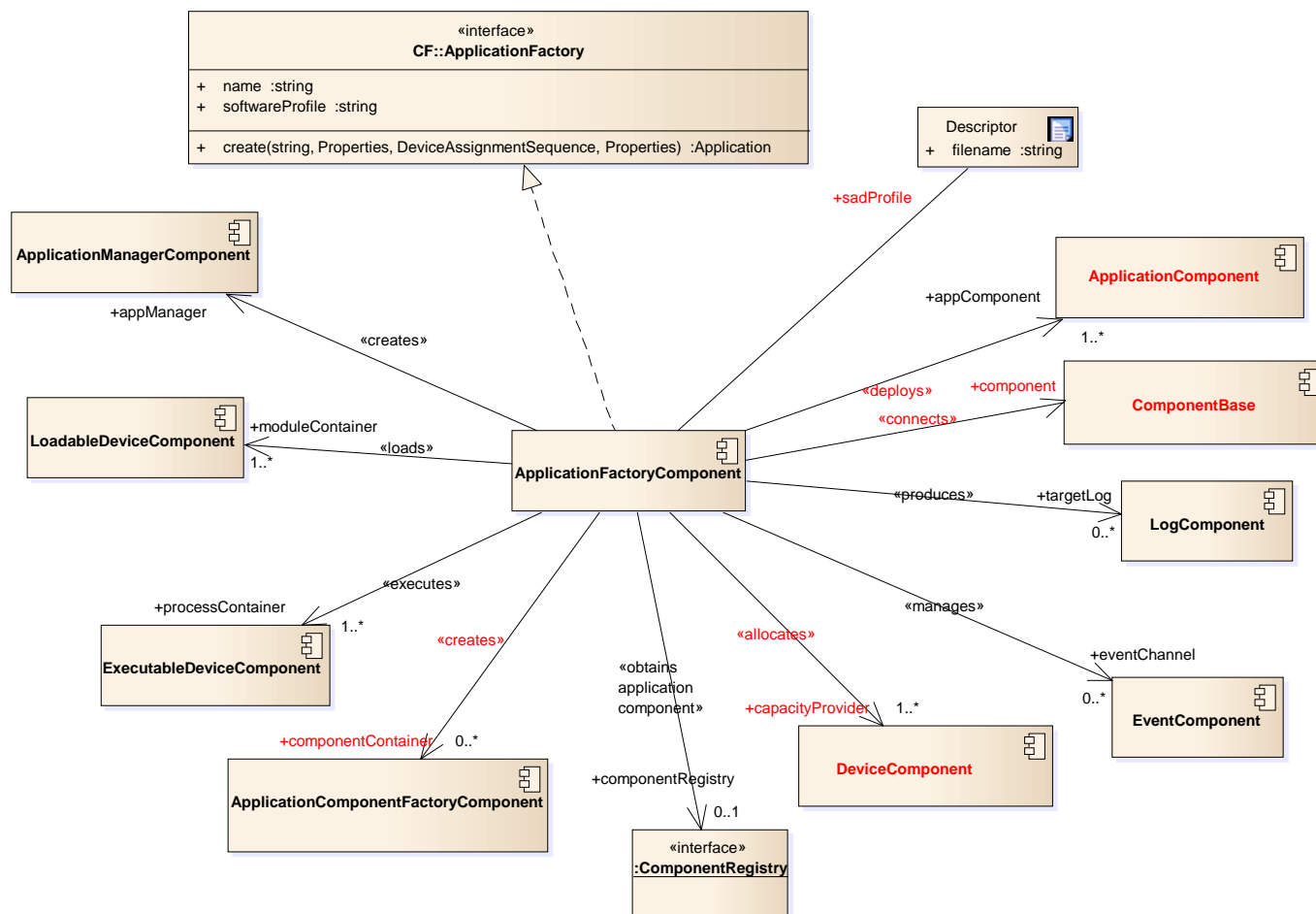
Application Factory Component Changes

Figure and Associations

- Changed “ApplicationResourceComponent” to “ApplicationComponent” based upon scalable component changes
- Changes “ComponentBaseDevice” to “DeviceCommponent” and its association label to “allocates” and role to “capacityProvider” to be consistent with Application Manager Component and based upon scalable component changes
- Change “domainProfile” to “sadProfile”
- Change “threadContainer” to “componentContainer” along with “executes” to “creates”
- Change “manages” to “deploys” for appComponent
- Added ComponentBase association to figure with label <<connects>>
 - Component: ApplicationFactoryComponent connects deployed application components together and against other components (e.g., ApplicationManagerComponent, PlatformComponent).

Make component name changes in Application Factory Component sections to be in sync with Scalable Component changes.

SCA 4.1 Application Factory Component Figure Changes



Device Manager Component Changes

Device Manager Interface Changes

- Remove Optional Inheritance
- Is Device Manager interface still needed?

Associations Changes

- Added
 - Full Manager Registry interface
 - Full Component Registry interface
 - ManagerRelease
 - DeviceManagerAttributes
- Collapse Device and Service Component into Platform component association
- Removed DomainProfile

Made associations to ComponentRegistry and ManagerRegistry interfaces zero to one since a light weight profile does not or may not require these interfaces.

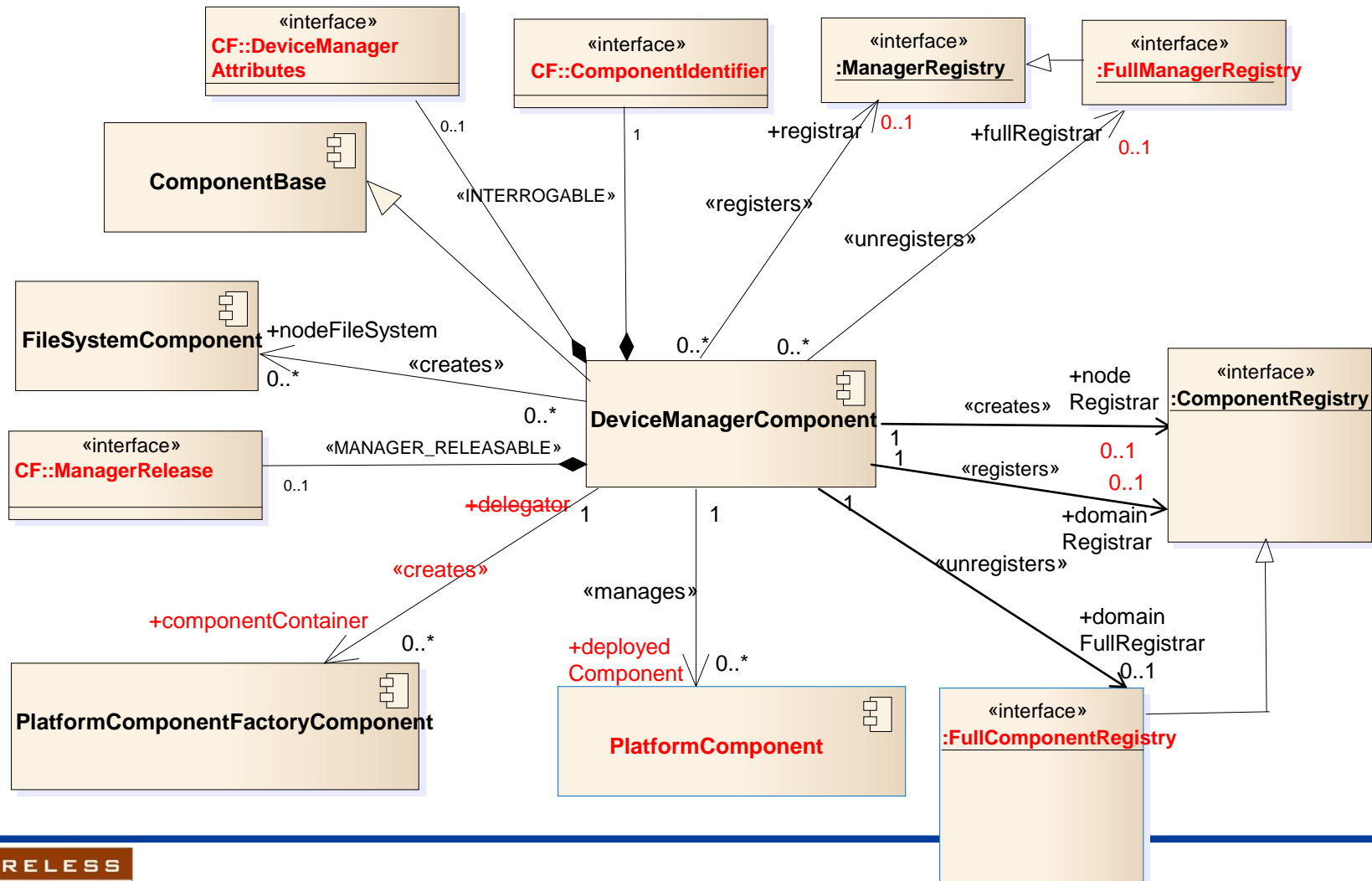
Modify SCA235 A DeviceManagerComponent shall fulfill the ComponentBase requirements with the exception that support for the ~~LifeCycle~~ interface is optional.

Semantics

A DeviceManagerComponent shall realize the DeviceManagerAttributes. This requirement is linked to the Interrogable UOF.

A DeviceManagerComponent shall realize the ManagerRelease interfaces. This requirement is linked to the ManagementReleasable UOF.

Scalable SCA 4.1 Device Manager Component without Device Manager IF



Domain Manager Component

Domain Manager Interface Changes

- Remove Optional Inheritance

Added Associations

- ApplicationManagerComponent
- FullComponentRegistry
- FullManagerRegistry
- EventChannelRegistry
- DomainInstallation

Removed LogComponent and DomainProfile associations covered at ComponentBase

Semantics

A DomainManagerComponent shall realize the DomainInstallation interface. This requirement is linked to the ApplicationInstallable UOF.

A DomainManagerComponent shall realize the EventChannelRegistry interface. This requirement is linked to the EventChannel UOF.

Domain Manager Component

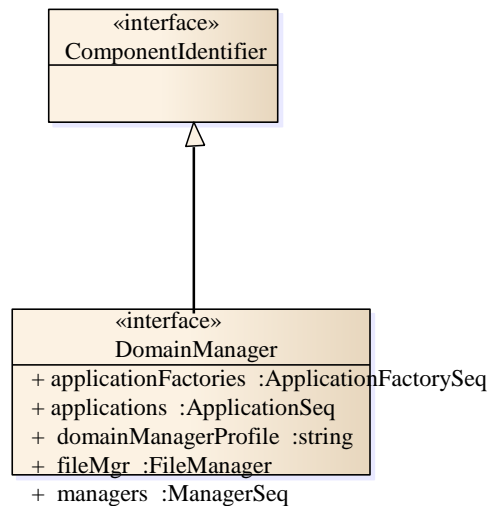
Modified Event Component association

- “eventChannel” to “domainEventChannel”
- “manages” to “manages incoming and outgoing domain Event channels”

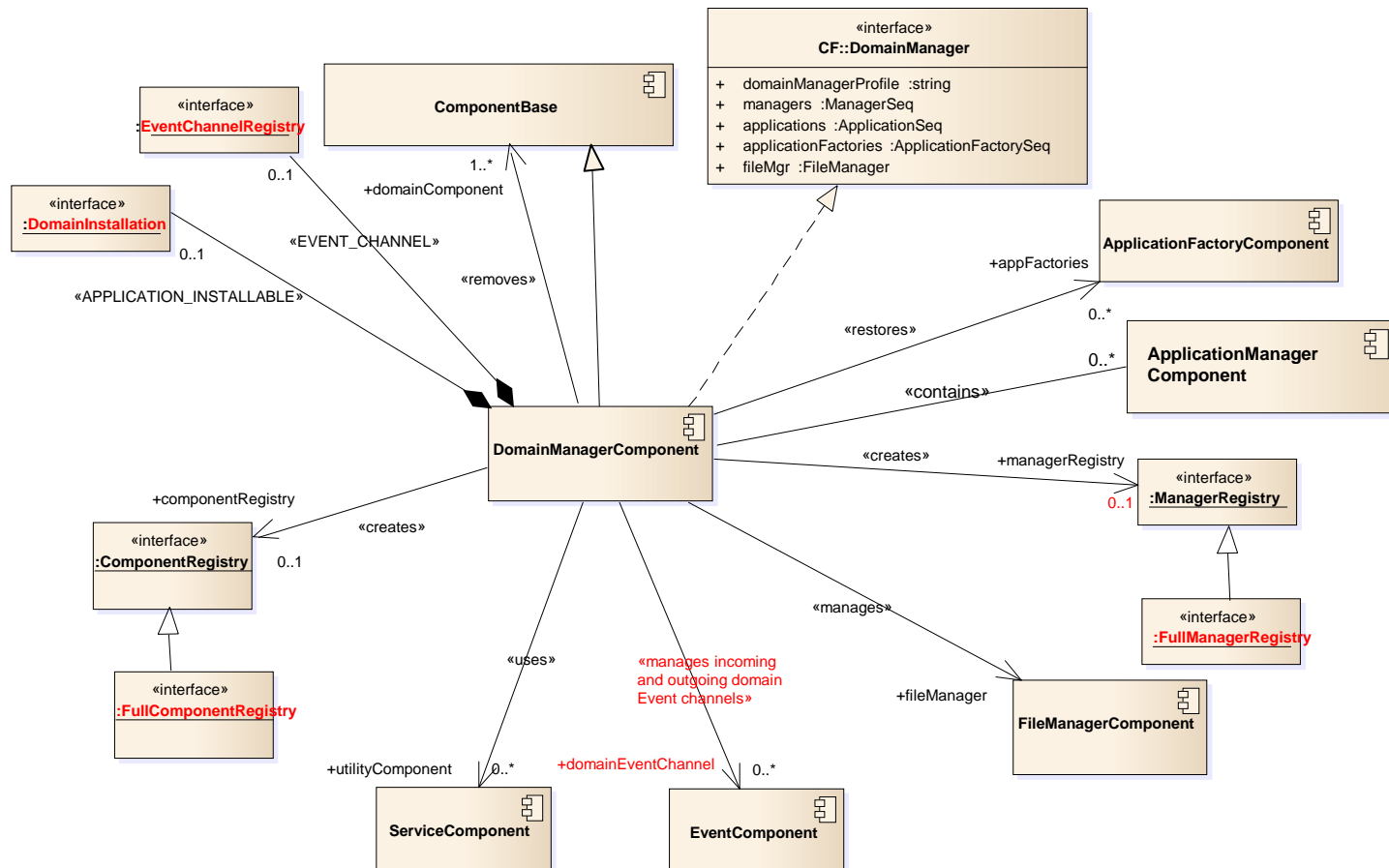
For Registry interfaces the associations changed to zero to one since a light weight profile does not or may not require these interfaces

Modify SCA532 A DomainManagerComponent shall fulfill the ComponentBase requirements ~~with the exception that support for the LifeCycle interface is optional.~~

Domain Manager Interface Changes



SCA 4.1 Domain Manager Component



Domain Manager Configuration Descriptor

Add Application Deployment Data and Releasable UOF attributes with default values to indicate when UOF is supported. False means UOF is not supported while true means UOF is supported.

- SCA V4 Application Deployment Data UOF attribute supported indication
- “app_deployment_data (false | true) “true”>”
- “app_releasable (false | true) “true”>”

The attributes allows SCA certification to know when to test for UOFs.

Update DMCD Text, Figure, and XML based upon Application Backwards Compatible changes.

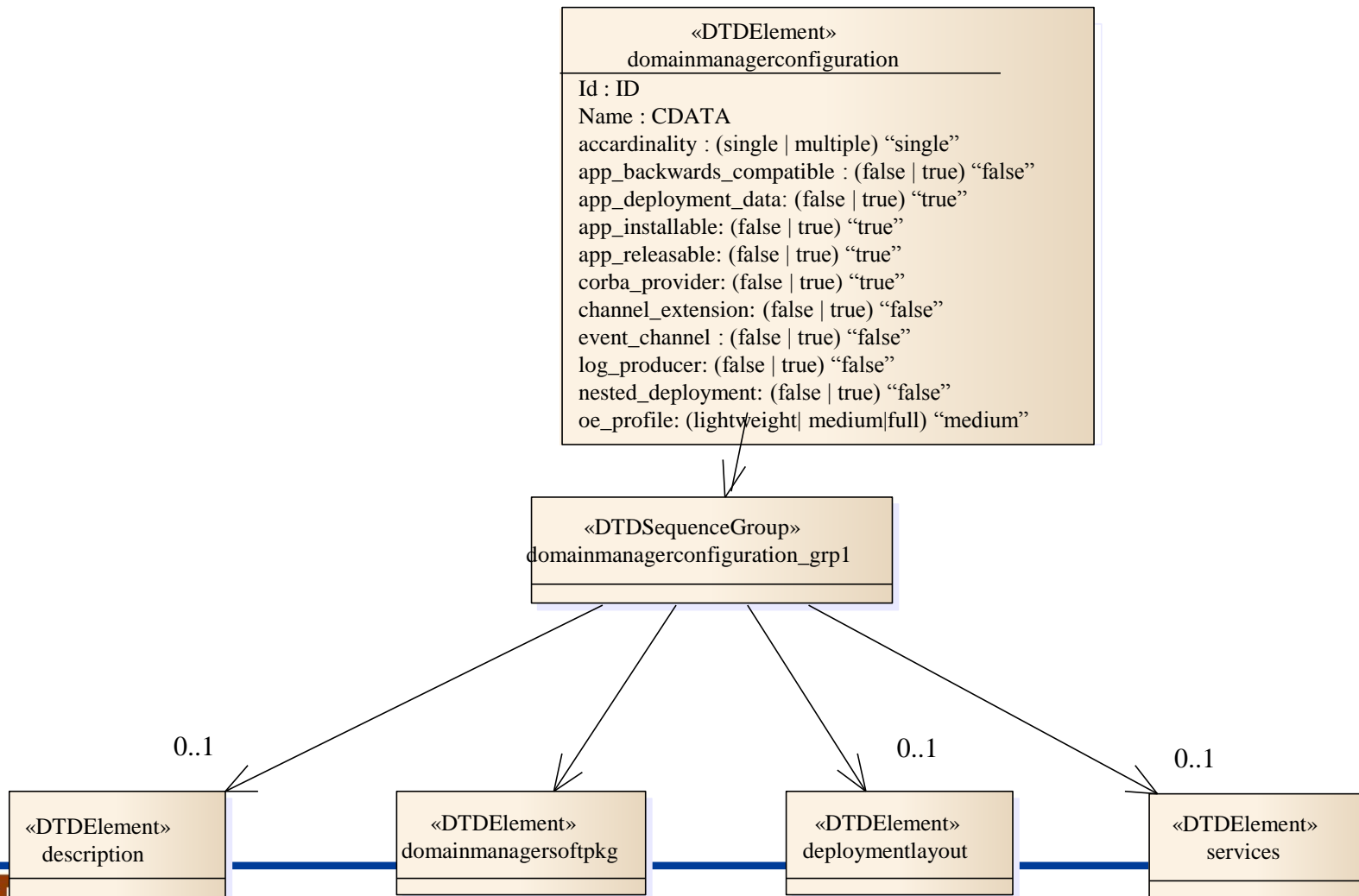
Appendix D 1.12.1

domainmanagerconfiguration

Add text to section.

- The app_backwards_compatible, app_deployment_data, app_installable, app_releasable, corba_provider, channel_extension, event_channel, log_producer, and nested_deployment attributes indicate the optional Units of Functionality (UOF) supported by the DomainManagerComponent. Cardinality indicated whether multiple assembly controllers are supported. The oe_profile attribute indicates the operating environment profile supported by the DomainManagerComponent.

Appendix D Figure 42 Changes



SCA V4.1 DMCD DTD Changes

<!ELEMENT domainmanagerconfiguration

(description?

, domainmanagersoftpkg

, deploymentlayout?

, services?

)>

<!ATTLIST domainmanagerconfiguration

id ID #REQUIRED

name CDATA #REQUIRED

accardinality (single | multiple) "single"

app_backwards_compatible (false | true) "false"

app_deployment_data (false | true) "true"

app_installable (false | true) "true"

app_releasable (false | true) "true"

corba_provider (false | true) "true"

channel_extension (false | true) "false"

event_channel (false | true) "false"

log_producer (false | true) "false"

nested_deployment (false | true) "false"

oe_profile (lightweight| medium|full) "medium">

Appendix D

Domain Manager Configuration Descriptor

- Add two new UOF Attributes for app deployment data and app releasable

Appendix C

Remove optional inheritances for Application and DeviceManager, and DomainManager interfaces. DeviceManger interface is removed from specification

Appendix F

F.6.1 Target Operating Environment Units of Functionality

- Add AppDeploymentData and AppReleasable UOFs
 - App Deployment Data – provides the application manager
 - Deployment data capability
 - App Releasable – provides the application manager releasing
 - capability

Update Figure 4: SCA Profiles with OE Units of Functionality with optional AppDeploymentData and AppReleasable UOFs