

SCA 4.1 Domain Late Registration

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Slide 1

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Proposal

This document contains a proposal to change the Draft SCAv4.1 specification to finalize the late registration with the DomainManagerComponent. This capability was provided in SCAv222 by the DomainManager interface register operations.

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Recommendation

SCA v4.1 Domain Late Registration Completion

Topics

Description of the Issue

Summary of the Proposal

Detailed Proposal

Specifications Changes (found in a word document)

- Main Specification Changes
- IDL Specification Changes

Description of the Issue

Two Issues:

- How to determine the DeviceManagerComponent for BasePlatformComponent domain late registration without parsing each registered Device Manager's DCD XML.
- Missing requirements on updating the DomainManagerComponent's managers attribute for late registration.

Summary of the Proposal

1. SCA 4.1 Approach as shown at SCA 4.1 Kickoff meeting
 - Where only the DeviceManagerComponent registers with DomainManagerComponent
2. WINNF Original Approach
 - Where only the DeviceManagerComponent registers once with DomainManagerComponent and late registration is by BasePlatformComponent ComponentType.

Recommended Approach is WINNF Original Approach

Rationale for Recommended Approach

Rationale:

1. Concise and clearer requirements
2. More similar to SCA 2.2.2 implementations
3. Architecture flexibility to accommodate other features like self-launching.

Summary of the WINNF Approach Proposal

Defined a `DEVICE_MANAGER_ID` specializedInfo that is a device manager's identifier for a `BasePlatformComponent`'s `ComponentType` registration

- Remove `COMPONENT_ID`

Have the `DeviceManagerComponent` for late registering `BasePlatformComponent` register a `BasePlatformComponent` `ComponentType` and set its specializedInfo id to `DEVICE_MANAGER_ID` and value to registering component's `ComponentType`.

Have the `DomainManagerComponent` update registered `DeviceMangerComponent`'s `ManagerInfo` registeredComponents by either adding `ComponentType` for a late registered `BasePlatformComponent` or removing `ComponentType` for an unregistered `BasePlatformComponent`.

Detailed Proposal

Add ID statements as shown in red and in sync with Deployment Data change

3.1.3.1.3.28 ManagerInfo

The ManagerInfo structure defines the supplemental information that is used as the **ComponentType's** specializedInfo for a manager component. The fileSys field is the file system used by this manager component. The **registereddeployedComponents** field is a sequence of components that have **registered-with-been deployed by** this manager component. **The associated ID for ManagerInfo type is MANAGER_INFO_ID.**

struct ManagerInfo

```
{
    CF::FileSystem fileSys;
    CF::Components registereddeployedComponents;
}
```

Update Appendix C and SpecializedInfo IDL file.

Detailed Proposal

Add Section in spec

3.1.3.1.3.29 SpecializedInfo Identifiers

The constants defined in this section are to be used to identify the type value for a DataType within ComponentType's specializedInfo field.

Add Statements

This string constant is the identifier for a DeviceManagerComponent string identifier type value within a BasePlatformComponent ComponentType's specializedInfo

```
const string DEVICE_MANAGER_ID = "DEVICE_MANAGER_ID";
```

This string constant is the identifier for ManagerInfo type within a ComponentType's specializedInfo

```
const string MANAGER_INFO_ID = "MANAGER_INFO";
```

Remove

~~This string constant is the identifier for Component type within a ComponentType's specializedInfo~~

```
const string COMPONENT_ID = "COMPONENT";
```

Update Appendix C and SpecializedInfo IDL file. The IDs descriptions is only for IDL?

Detailed Proposal

3.1.3.3.2.3.3 DomainManagerComponent Semantics

Move SCA144 and SCA 149 requirements in this section. SCA144 and SCA149 are more applicable here otherwise confusing with other components implementing the Registry interfaces.

Detailed Proposal

Either at Component Registry interfaces or at each component (preference is at ApplicationFactoryComponent, DeviceManagerComponent, DomainManagerComponent) semantics section add clarification statements on register and unregister behavior.

DomainManagerComponent Semantics Example

The registerComponent operation upon successful BasePlatformComponent registration adds the registeringComponent to its corresponding registered DeviceManagerComponent's ManagerInfo registeredComponents in the DomainManagerComponent's managers attribute.

Following sentence may not be kept.

The unregisterComponent operation removes a registeredComponent from its DomainManagerComponent's managers attribute as identified by the unregisterComponent identifier.

Detailed Proposal

Same changes shown for Deployment Data Resolution

3.1.3.3.2.4.3 DeviceManagerComponent Semantics

Modify Statements - The **ComponentType's** type field of the registering **DeviceManagerComponent** is a DEVICE_MANAGER_COMPONENT. The registering DeviceManagerComponent ComponentType's specializedInfo field contains an ID of MANAGER_INFO_ID and a value of ManagerInfo ~~structure-data type~~ that holds the BasePlatformComponents that have ~~registered with the-been deployed by~~ DeviceManagerComponent.

Remove statement - ~~The specializedInfo field may contain a sequence of AllocationPropertyType structures that holds the BasePlatformComponent's allocation properties.~~

Detailed Proposal

Same changes shown for Deployment Data Resolution

3.1.3.3.2.4.3 DeviceManagerComponent Semantics

Modify Statement - SCA230 The ~~registerComponent operation-DeviceMangerComponent~~ shall register ~~a deployed component the registeringComponent~~ with the DomainManagerComponent ~~domain manager~~ when the DeviceManagerComponent ~~device manager~~ has previously already registered with DomainManagerComponent and ~~the registeringComponent has been successfully added to the DeviceManagerComponent's registeredComponents attribute.~~

Add Statements

For deployed BasePlatformComponents that register to the DeviceManagerComponent, their registration to DomainManagerComponent is done after they registered in to the DeviceManagerComponent.

The ComponentType's type field of the registering component is a BasePlatformComponent type (i.e., DEVICE_COMPONENT, LOADABLE_DEVICE_COMPONENT, EXECUTABLE_DEVICE_COMPONENT, SERVICE_COMPONENT, MANAGEABLE_SERVICE_COMPONENT, and PLATFORM_COMPONENT_FACTORY_COMPONENT). The registeringComponent's ComponentType specializedInfo contains an id of DEVICE_MANAGER_ID and a value of DeviceManagerComponent's identifier attribute.