



Service Transition

**SERVICE ASSET AND  
CONFIGURATION MANAGEMENT  
PROCESS**

VERSION: 4.3

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## Section 1. Introduction

### 1.1 Purpose

The purpose of this document is to describe the Service Asset and Configuration Management (SACM) process.

SACM aims to maintain information about Configuration Items (CI) required for the delivery of an IT service, including their relationships.

This document will define the relationship of SACM to other processes, roles and responsibilities of SACM and the process flow.

### 1.2 Goal

The goal of the SACM process is to provide an understanding between incidents and configuration items.

The Configuration Management Database will be the source of truth for configuration items and their relationship to other configuration items at UCSF.

### 1.3 Overview

The Service Asset and Configuration Management process ensures the integrity of the IT infrastructure by the tracking, recording and reporting on configuration items.

In order to adequately manage and control these CIs, the SACM process is supported by a Configuration Management Database (CMDB) capable of holding information on all CIs, including attributes and relationships between them. SACM enables IT to achieve control and management over its IT assets and provides management information about the IT infrastructure.

The Service Asset and Configuration Management process is divided into five sub-processes:

#### Planning

Process Objective: To define the CMDB plan, including purpose, scope, and objectives. Defines Classes, naming conventions, roles and responsibilities, and interfaces with other systems.

#### Identification

Process Objective: To define and maintain the underlying structure of the CMDB (the Configuration Model), so that it is able to hold all information on CIs. This includes specifying the attributes describing CI types and their sub-components, as well as determining their interrelationships.

#### Configuration Control

Process Objective: To ensure that no CIs are added or modified without the required authorization and those modifications are adequately recorded in the CMDB.

#### Status Accounting

Process Objective: To ensure that CI details are updated as the CI goes through the lifecycle.

## Verification and Audit

Process Objective: To perform regular checks, ensuring that the information contained in the CMDB is an exact representation of the CIs actually installed in the live production environment.

## 1.4 Key Relationships with other processes

### Change Management

The Change Management and SACM processes are designed to work together seamlessly in order for the CMDB to accurately reflect the changes that have taken place. Change Management utilizes the information stored in the CMDB for the assessment and authorization of requests for change (RFCs). SACM, by holding information on the relationships between CIs, facilitates this process for Change Management.

### Incident Management

There is a strong relationship between SACM and Incident Management. Incident Management utilizes information from the CMDB for incident recovery and for informing users on the status of CIs in the infrastructure. The Service Desk can also assist with the validation of the integrity of information in the CMDB due to its function as the central point of contact for users and clients. Incident Management relies on information captured within the CMDB about CIs to perform its activities; it should be able to rely on the SACM process and the CMDB to provide accurate information.

### Problem Management

Problem Management procedures must ensure that each time a problem or known error occurs and is recorded in the IT Service Management tool, the corresponding process record is linked to the affected CI in the CMDB.

### Release Management

Release Management is responsible for the management of the introduction of new CIs to the IT infrastructure. The objective of this process is to ensure and coordinate the production readiness or supportability and distribution of new elements introduced to the IT infrastructure. The process accomplishes this in close collaboration with Change Management and SACM.

## 1.5 Definitions

### Configuration Management Database (CMDB)

CMDB is a logical database containing all relevant information about IT infrastructure components, as well as the relations between those components. Each component is referenced in the CMDB as a Configuration Item (CI).

### Configuration Item (CI)

A CI is the unitary element of a CMDB. Some CI examples: a server, a business application, a router, a disk array, etc. A CI is defined by four (4) components:

- **Status** – the CI's lifecycle. For a hardware CI, a typical lifecycle can be: Ordered, Delivered, Installed, In production, Stopped, Broken, Scrapped. For an application CI, another lifecycle could be: In production, Stopped, Decommissioned.
- **Traces** – the history of the CI and its updates.
- **Attributes** – informational fields related to the CI. They may vary depending on the CI Class. For example, a serial number is typical of hardware CIs, whereas a version number is more appropriate for software CIs.
- **Relations** – There are several types of relations (physical relations, logical relations, dependency relations, etc.) and relations have the characteristics of belonging to two CIs at the same time.

### **Configuration Item Class**

All CIs with the same nature are grouped within classes. All CIs within a CI class have the same behavior, for example the lifecycle. Some typical CI Classes: Application, Network Gear, Server, Documentation.

### **Configuration Audit Report**

A report summarizing the results of a CMDB audit, highlighting revealed differences between CMDB records and the actually installed CIs.

### **IT Infrastructure**

The sum of an organization's IT related hardware, software, data communications facilities, procedures, documentation and people.

### **ITIL**

ITIL defines the set of all necessary processes and provides best practices for IT Service delivery and support.

## Section 2. Roles and Responsibilities

### 2.1 Process Owner/Configuration Manager

- Accountable for the end-to-end process
- Ensures the success of the process
- Acts as the process advocate to the enterprise
- Supports the effective use of the Service Asset and Configuration Management process
- Provides process design and improvement guidance
- Leads the SACM process governance committee
- Defines access privileges

### 2.2 Configuration Item Class Owner

There are usually only one or two Class Owners for each CI Class.

Needs to understand and proficient in their class and recommend improvements for their respective classes.

Accountable for the following:

- Acts as subject matter expert for CI Class
- Creates/Modifies/Retires CI Class
- Creates/Modifies/Retires CIs within their Class
- Ensures the integrity and completeness of the CI Class
- Establishes relationships between CIs

### 2.3 Configuration Item Class Administrator

There are usually several Class Administrators for each CI class.

- In practice, the CI Class Administrators may be the Class Owner plus individuals who the CI Class Manager entrusts with the process, and there will be larger number of individuals who manage CIs in their respective class (larger number than 'Company Admins').
- CI Class Admins are knowledgeable about the CIs in their Class. They are, or will become content experts (SMEs) in the SACM/CMDB process and can be called upon, as secondary resource for Q&A or in Class Owner absence.
- Also, some CI Class Admins will attend workshops and will also train others in their class and assist in ensuring they're maintaining the CIs appropriately...so they may be a bit more senior.

Responsible for the following:

- Acts as designee of CI Class Owner
- Creates/Modifies/Retires CI Class
- Creates/Modifies/Retires CIs within their Class
- Ensures the integrity and completeness of the CI Class
- Establishes relationships between CIs

## 2.4 Configuration Item Company Administrator

There are usually only one or two Company Administrators. (This role can also be filled by a Class Administrator or Class Owner). It is elevated access from Class Administrator, but not all Class Administrators will have this role, as it should be limited. All Class Admins should not be able to add/modify vendors, manufacturer and models in the CMDB.

The Company Administrator has same rights as a CI Administrator, PLUS, they can also create and maintain the 'companies' (vendor type info) in the CMDB, i.e., create a new company record such as for Cisco or Comtel.

In practice, the CI Company Administrators may be the Class Owner plus one ('maybe' two) CI Class Administrators that have proven track record in following process and are detail oriented.

Responsible for the following:

- Add/Modify vendors, manufactures and models to the CMDB

## 2.5 IT Service Continuity Management (ITSCM) Role

When new CIs are created, the default value for the CI Tier Field is "Pending Business Impact Analysis". The holder of the ITSCM role is the only one who can change the Tier to the values of 1, 2, 3 or 4 once the Business Impact Analysis (BIA) is completed.

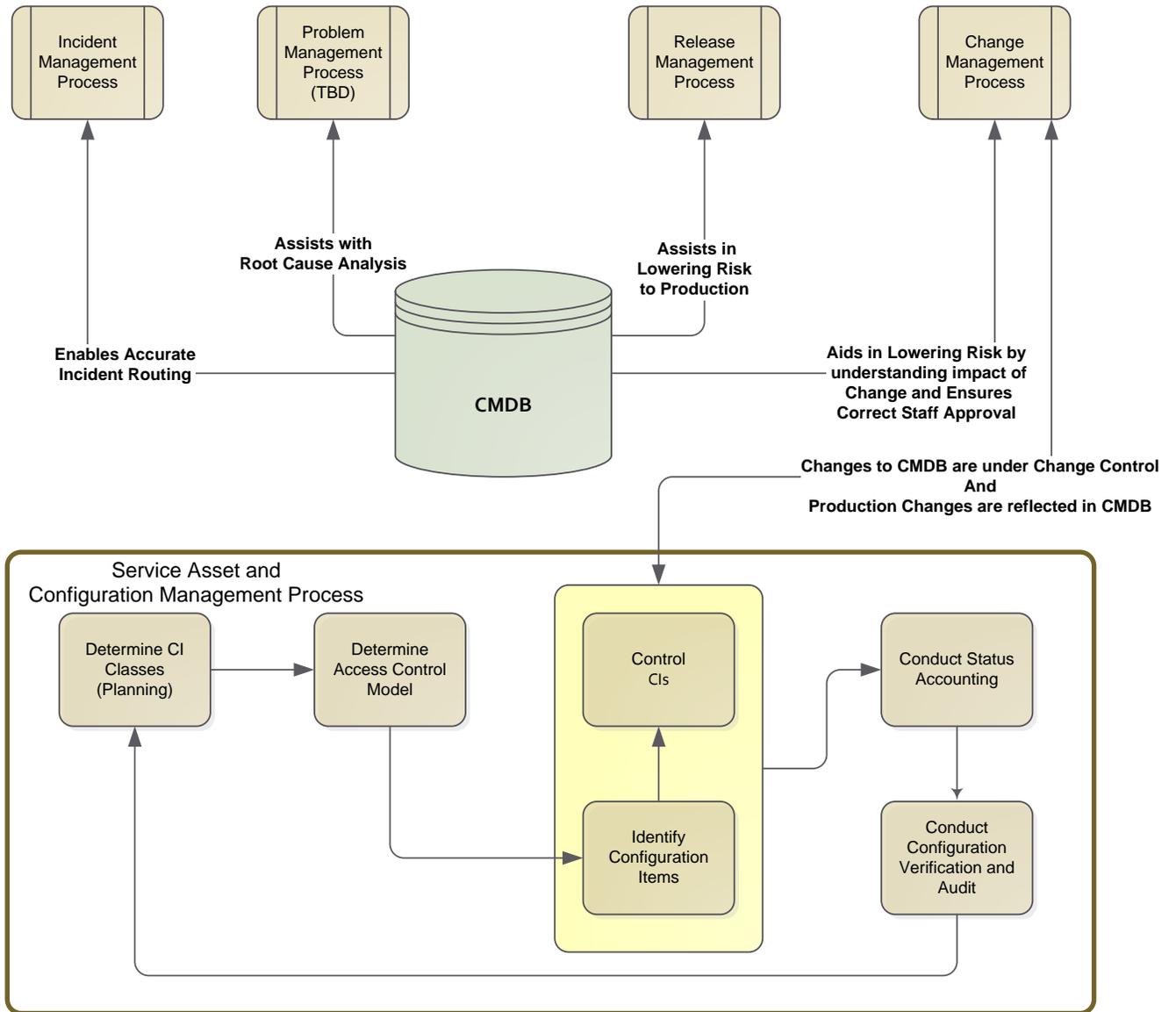
## 2.6 IT Staff

- Ensures valid CIs are selected against incidents and planned changes
- Validates CI information and highlight CI inaccuracies using the *CI Update Flag*, (which notifies the CI Class Owner).

## 2.7 ITSM Product Manager

- Manages the Service Asset and Configuration Management module
- Develop enhancements to CMDB
- Manages the Discovery tool

## Section 3. SACM Process and Relationship Map



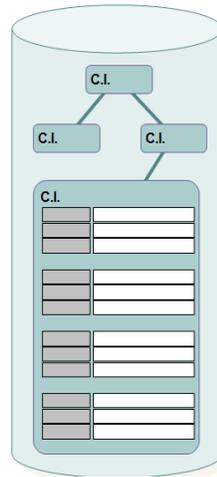
Other Process	Relationship
Incident Management	Incident Management uses CI information to understand what CIs are involved in an incident
Problem Management	Problem Management uses CI information to help track down the root cause of a problem
Change Management	Change Management uses CI information to understand the ramifications of a proposed change
Release Management	Release Management updates the Configuration Management System (CMS)* with information about deployed releases

## Section 4. Configuration Management Database

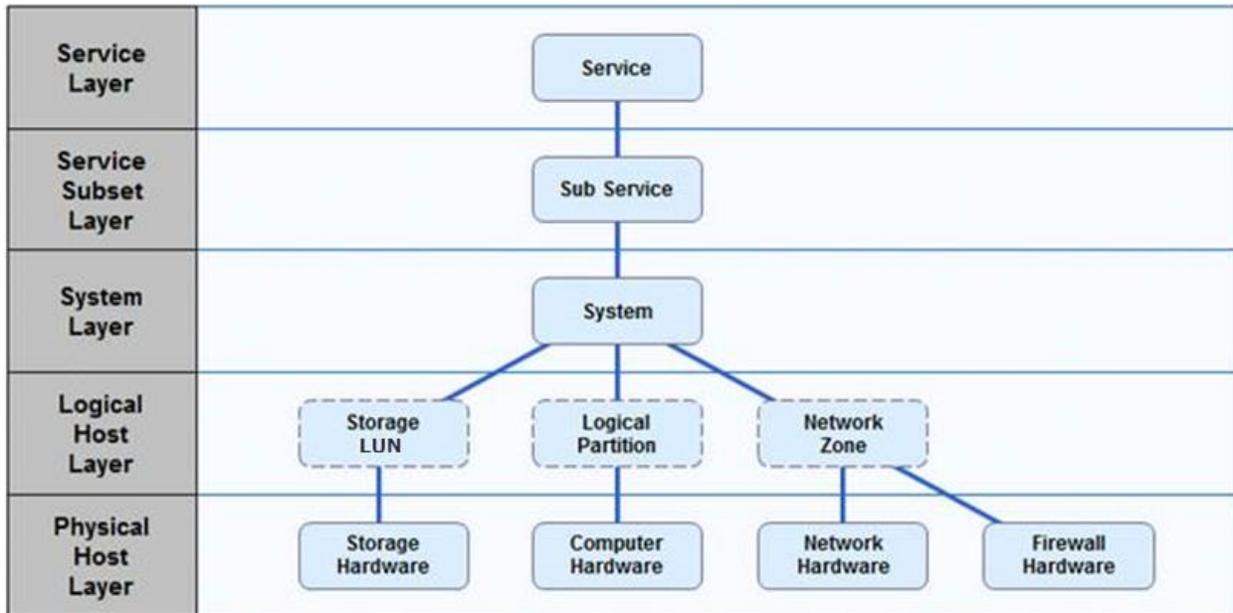
### 4.1 CMDB Content and Structure

The CMDB contains the following information:

- CI Class Configuration Items
- Attributes
- Relationships



Example of the CMDB Structure



### 4.2 Configuration Item Classes

CIs with the same nature will be grouped within classes that share the same data models. CIs within a CI Class have the same behavior, for example they will all follow the same lifecycle.

The following CI Classes have been identified to be implemented at UCSF. Each Class will have its own set of process and procedures.

<b>Class Name</b>	<b>Description</b>
Network Gear	Any piece of networking equipment that passes packets
Server	Physical or Virtual computer dedicated to run one or more services (as a host), to serve the needs of the users of other computers on a network. Also includes console servers.
Storage	Devices used for storing data
Application	Application that supports a business process.
Data Center	Any piece of equipment or application to support that environment, i.e., racks, monitoring systems
Computer	Done as part of Asset Management
Printer	Done as part of Asset Management
Communication Devices	Done as part of Asset Management

Note: Additional classes will be implemented over time.

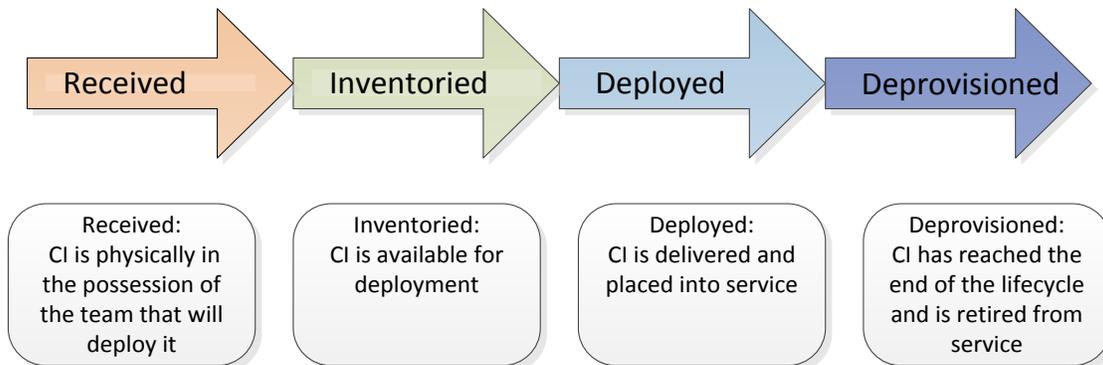
## Section 5. Network Gear Class Process and Procedures

### 5.1 Scope

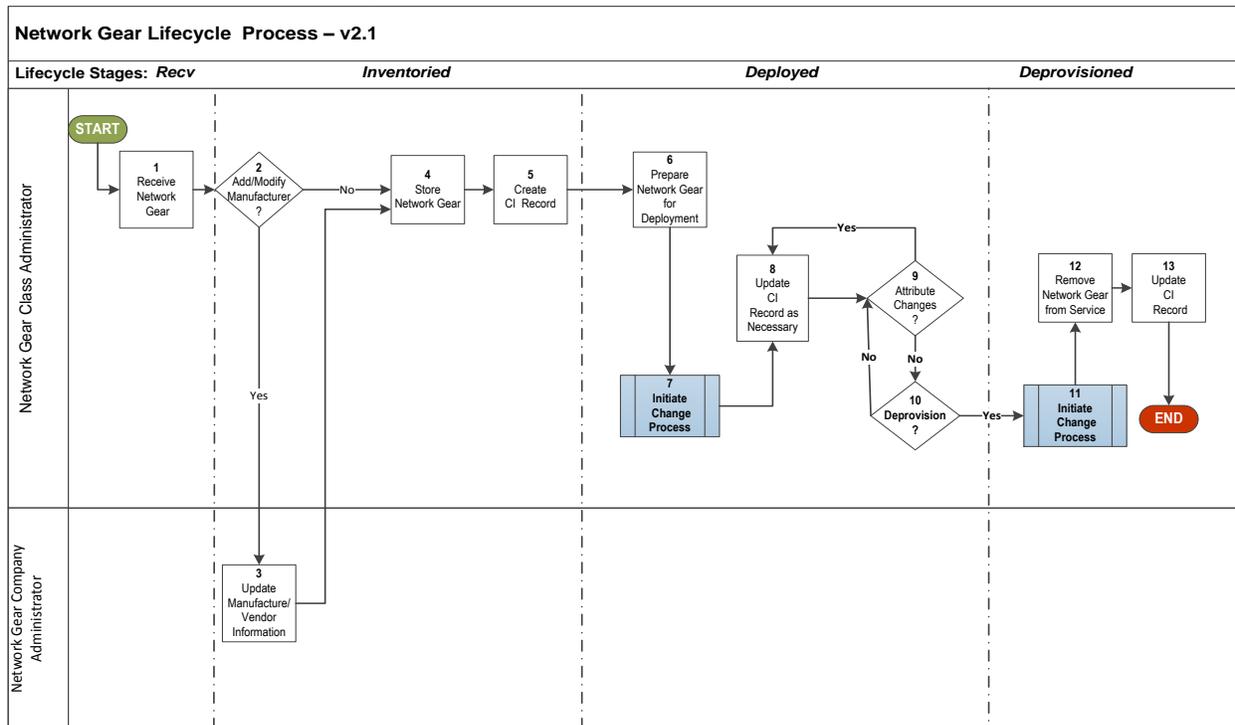
All network equipment that passes packets will be included in the Network Gear Class:

- Access Point
- Blade
- Chassis
- Firewall
- Load Balancer
- PBX
- Router
- Switch
- VPN
- Voice Gateway
- Wireless Controllers

### 5.2 Network Gear Class Lifecycle



### 5.3 Network Gear Lifecycle Process



### 5.4 Network Gear Class RACI Chart

#	Network Gear Lifecycle RACI	Network Gear Administrator	Network Gear Company Administrator	CAB	Output	Notes
<b>Received</b>						
1	Receive Network Gear	A/R				
<b>Inventoried</b>						
2	Add/Modify Manufacturer?	R	A			
3	Information		A/R			Including Model and Vendor
4	Store Network Gear					
5	Create CI Record	A/R			New CI record created	
<b>Deployed</b>						
6	Prepare Network Gear for Deployment	A/R				
7	Initiate Change Process	A/R		I		
8	Update CI Record & Establish Relationships as Necessary	A/R			Network Gear in service and relationships established	
9	Attribute Changes?	A/R				
10	Deprovision ?	A/R				
<b>Deprovisioned</b>						
11	Initiate Change Process	A/R		I		
12	Remove Network Gear from Service	A/R				
13	Update CI Record	A/R			Network Gear removed from service	

Responsible – Those who do the work, facilitate it and/or organize it  
 Accountable – The one who ensures the desired outcomes are reached and has yes/no decision making authority  
 Consulted – Those who have critical expertise to contribute before a decision is made  
 Informed – Those who are significantly affected by the activity/decision and must be informed to ensure successful implementation

## 5.5 Network Gear Entry Criteria

The Network Gear Procurement process has been completed and the Network Gear has been physically accepted by the Network Gear Administrator

## 5.6 Network Gear Process

ID	Step	Responsibility
<b>Received</b>		
1	<b>Received Network Gear</b> The Network Gear is physically received by the Network Gear Administrator.	<ul style="list-style-type: none"> <li>Network Gear Administrator</li> </ul>
<b>Inventoried</b>		
2	<b>Add/Modify Manufacturer?</b> The Network Gear Administrator determines if the Manufacturer information is in the system and needs to be updated or is not in the system and must be added. <b>Yes – Go to Step 3</b> <b>No – Go to Step 4</b>	<ul style="list-style-type: none"> <li>Network Gear Administrator</li> </ul>
3	<b>Update Manufacture/Vendor Information</b> The Network Gear Company Administrator is responsible for updating the Company, OS Version and Model tables in ServiceNow with the following information: <ul style="list-style-type: none"> <li>Manufacturer</li> <li>Model</li> <li>Vendor</li> </ul>	<ul style="list-style-type: none"> <li>Network Gear Company Administrator</li> </ul>
4	<b>Store Network Gear</b> The Network Gear is physically stored in an inventory location	<ul style="list-style-type: none"> <li>Network Gear Administrator</li> </ul>
5	<b>Create CI Record</b> The Network Gear Administrator is responsible for creating the Network Gear CI Record in ServiceNow. The following fields are required when the Status is Received & Inventoried.  Received: <ul style="list-style-type: none"> <li>Status – auto populated on creation</li> <li>Name</li> <li>Manufacturer</li> <li>Model Name</li> <li>Category</li> <li>Serial Number (unique identifier)</li> <li>Support Group</li> <li>Building Location</li> <li>Room</li> </ul> Inventoried: <ul style="list-style-type: none"> <li>Purchase Order</li> </ul>	<ul style="list-style-type: none"> <li>Network Gear Administrator</li> </ul>
<b>Deployed</b>		
6	<b>Prepare Network Gear for Deployment</b>	<ul style="list-style-type: none"> <li>Network Gear Administrator</li> </ul>
7	<b>Initiate Change Process</b>	<ul style="list-style-type: none"> <li>Network Gear Administrator</li> </ul>

ID	Step	Responsibility
8	<p><b>Update CI Record as Necessary</b></p> <p>The Network Gear Administrator is responsible for updating the Network Gear CI Record in ServiceNow. The following field is required when the Status is Deployed.</p> <p><b>Deployed:</b></p> <ul style="list-style-type: none"> <li>▪ Tier (Criticality)</li> <li>▪ Static IP Address</li> <li>▪ Establish relationships between CIs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Network Gear Administrator</li> </ul>
9	<p><b>Attribute Changes?</b></p> <p><b>Yes – Go to Step 8</b></p> <p><b>No – Go to Step 10</b></p>	<ul style="list-style-type: none"> <li>▪ Network Gear Administrator</li> </ul>
10	<p><b>Deprovision?</b></p> <p><b>Yes – Go to Step 11</b></p> <p><b>No – Go to Step 9</b></p>	<ul style="list-style-type: none"> <li>▪ Network Gear Administrator</li> </ul>
<b>Deprovisioned</b>		
11	<p><b>Initiate Change Process</b></p>	<ul style="list-style-type: none"> <li>▪ Network Gear Administrator</li> </ul>
12	<p><b>Remove Network Gear from Service</b></p> <p>The Network Gear Administrator can manually remove the Network Gear CI from service by deprovisioning the record or the ServiceNow Swap feature can be used to replace the CI in service with a CI from Inventory.</p>	<ul style="list-style-type: none"> <li>▪ Network Gear Administrator</li> </ul>
13	<p><b>Update CI Record</b></p> <p>The Network Gear Administrator is responsible for updating the Network Gear CI Record in ServiceNow. The following field is required when the Status is Deprovisioned:</p> <ul style="list-style-type: none"> <li>▪ Disposition Type</li> </ul> <p>A task will be created for the Support Group as a reminder to do the following:</p> <ul style="list-style-type: none"> <li>▪ Update the vendor maintenance contract</li> <li>▪ Submit an EIMR (Equipment Inventory Modification Request), if the Network Gear CI was over \$5,000.00</li> </ul>	<ul style="list-style-type: none"> <li>▪ Network Gear Administrator</li> </ul>

## 5.7 Network Gear Exit Criteria

The Network Gear CI has been removed from service, the CI has been deprovisioned and the Deprovisioning Task has been closed.

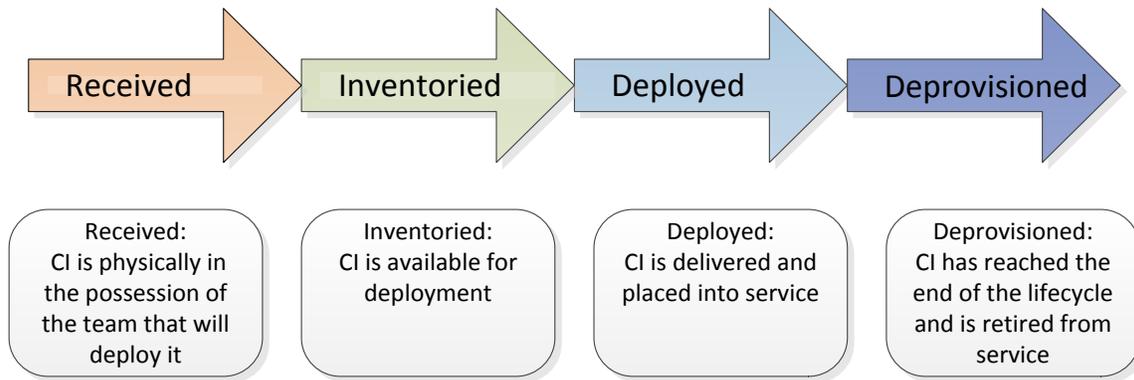
## Section 6. Server Class Process and Procedures

### 6.1 Scope

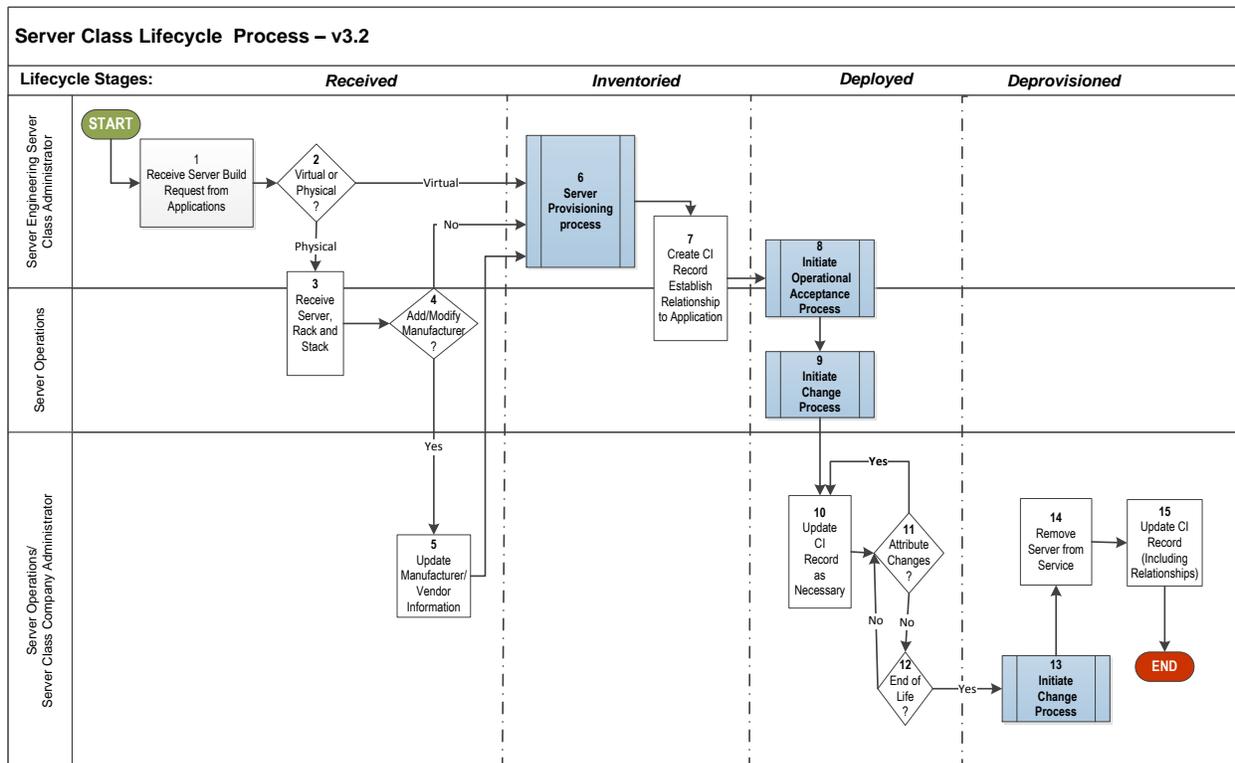
The Server Class will include the following category types:

- Physical Server
- Virtual Server
- Console Server
- Appliance

### 6.2 Server Class Lifecycle



### 6.3 Server Class Lifecycle Process



## 6.4 Server Class RACI Chart

#	Server Lifecycle RACI	Server ENGINEERING Server Administrator	Server OPERATIONS	Server Operations/ Server Power Administrator	CAB	Output	Notes
<b>Received</b>							
1	Receive Server build request from Applications	A/R					
2	Virtual or Physical?	R		A			
3	Receive Server, Rack and Stack	A	R				
4	Add/Modify Manufacturer		A				
5	Update Manufacturer/Vendor Information			R			Including Model and Vendor.
<b>Inventoried</b>							
6	Server Provisioning Process	A/R					
7	Create CI Record, establish relationship to application	R	A			Relationships established	
<b>Deployed</b>							
8	Initiate Operational Acceptance Process	R	A				
9	Initiate Change Process		A/R		I	Server in Service	
10	Update CI Record as necessary		A/R				
11	Attribute Changes?		A/R				
12	End of Life?		A/R				
<b>Deprovisioned</b>							
13	Initiate Change Process			A/R	I		
14	Remove Server from Service			A/R			
15	Update CI Record			A/R		Server removed from service	

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 Consulted – Those who have critical expertise to contribute before a decision is made  
 Informed – Those who are significantly affected by the activity/decision and must be informed to ensure successful implementation

## 6.5 Server Class Entry Criteria

A server build request is received from Applications.

## 6.6 Server Class Procedures

ID	Step	Responsibility
<b>Received</b>		
1	<b>Receive server build request from Applications</b>	<ul style="list-style-type: none"> <li>Server Engineering Class Administrator</li> </ul>
2	<b>Virtual or Physical?</b> Yes – Go to Step 6 No – Go to Step 3	<ul style="list-style-type: none"> <li>Server Engineering</li> </ul>
3	<b>Receive Server, Rack and Stack</b>	<ul style="list-style-type: none"> <li>Server Engineering</li> <li>Server Operations</li> </ul>
4	<b>Add/Modify Manufacturer?</b> The Server Administrator determines if the Manufacturer information is in the system and needs to be updated or is not in the system and must be added. Yes – Go to Step 5 No – Go to Step 6	<ul style="list-style-type: none"> <li>Server Engineering Server Administrator</li> </ul>

ID	Step	Responsibility
5	<p><b>Update Manufacturer/Vendor Information</b>                      The Server Company Administrator is responsible for updating the Company, OS Version and Model tables in ServiceNow with the following information:</p> <ul style="list-style-type: none"> <li>▪ Manufacturer</li> <li>▪ Model</li> <li>▪ Vendor</li> <li>▪ OS Vendor</li> <li>▪ OS Version</li> </ul>	<ul style="list-style-type: none"> <li>▪ Server Operations/ Server Company Administrator</li> </ul>
<b>Inventoried</b>		
6	<p><b>Server Provisioning Process</b></p>	<ul style="list-style-type: none"> <li>▪ Server Engineering</li> </ul>
7	<p><b>Create CI Record – establish relationship to application</b>                      The Server Administrator is responsible for creating the Server CI Record in ServiceNow. The following fields are required when the Status is Received &amp; Inventoried:</p> <p><b>Received:</b></p> <ul style="list-style-type: none"> <li>▪ Status – auto populated on creation</li> <li>▪ Name</li> <li>▪ Manufacturer</li> <li>▪ Model Name</li> <li>▪ Serial Number (unique identifier)</li> <li>▪ Support Group</li> <li>▪ Building Location</li> <li>▪ Processor Type (not required if Category = Appliance)</li> </ul> <p><b>Inventoried:</b></p> <ul style="list-style-type: none"> <li>▪ Category</li> <li>▪ Establish Application relationship(s)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Server Engineering</li> <li>▪ Server Operations</li> </ul>
<b>Deployed</b>		
8	<p><b>Initiate Operational Acceptance Process</b>                      The Server is configured and prepared for Production Operation</p>	<ul style="list-style-type: none"> <li>▪ Server Engineering</li> <li>▪ Server Operations</li> </ul>
9	<p><b>Initiate Change Process</b>                      Change Request is created by Server Operations and assigned to Server Operations who presents the change at CAB, processing it through closure.</p>	<ul style="list-style-type: none"> <li>▪ Server Operations</li> </ul>
10	<p><b>Update CI Record as Necessary</b>                      The Server Administrator is responsible for updating the Server CI Record in ServiceNow and establishing the relationships. The following fields are required when the Status is Deployed:</p> <ul style="list-style-type: none"> <li>▪ Tier (Criticality)</li> <li>▪ User Organization</li> <li>▪ Maintenance Conditions</li> <li>▪ Backup System RPO</li> <li>▪ Cabinet Location</li> <li>▪ Rack Unit Position</li> <li>▪ Chassis</li> <li>▪ Environment</li> <li>▪ Maintenance Group</li> <li>▪ Maintenance Window</li> </ul>	<ul style="list-style-type: none"> <li>▪ Server Operations</li> <li>▪ Server Administrator</li> </ul>

ID	Step	Responsibility
11	<b>Attribute Changes?</b> The Server Administrator is responsible for updating the CI record when the server attributes change. <b>Yes – Go to Step 10</b> <b>No – Go to Step 12</b>	<ul style="list-style-type: none"> <li>▪ Server Operations Server Administrator</li> </ul>
12	<b>End of Life?</b> The Server Administrator determines that server has reached end of life. <b>Yes – Go to Step 13</b> <b>No – Go to Step 11</b>	<ul style="list-style-type: none"> <li>▪ Server Operations Server Administrator</li> </ul>
<b>Deprovisioned</b>		
13	<b>Initiate Change Process</b> The Server Administrator creates the Change Request and processes it through closure.	<ul style="list-style-type: none"> <li>▪ Server Operations Server Administrator</li> </ul>
14	<b>Remove Server from Service</b> The Server Administrator can manually remove the Server CI from service by deprovisioning the record in ServiceNow.	<ul style="list-style-type: none"> <li>▪ Server Operations Server Administrator</li> </ul>
15	<b>Update CI Record (Including Relationships)</b> The Server Administrator is responsible for updating the Server CI Record in ServiceNow. The following field is required when the Status is Deprovisioned: <ul style="list-style-type: none"> <li>▪ Deprovisioned Date – auto populated when status is set to Deprovisioned</li> <li>▪ Disposition Type</li> </ul> A warning message is presented when the Status is Deprovisioned <ul style="list-style-type: none"> <li>▪ Please attach the appropriate deprovisioning worksheet</li> </ul>	<ul style="list-style-type: none"> <li>▪ Server Operations Server Administrator</li> </ul>

## 6.7 Server Class Exit Criteria

The Server CI has been removed from service, the CI has been deprovisioned and the deprovisioning worksheet has been attached to the Change Request.

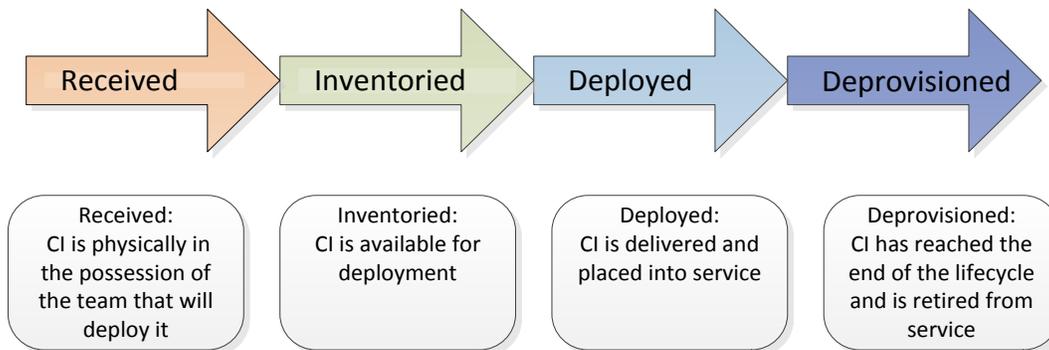
## Section 7. Storage Class Process and Procedures

### 7.1 Scope

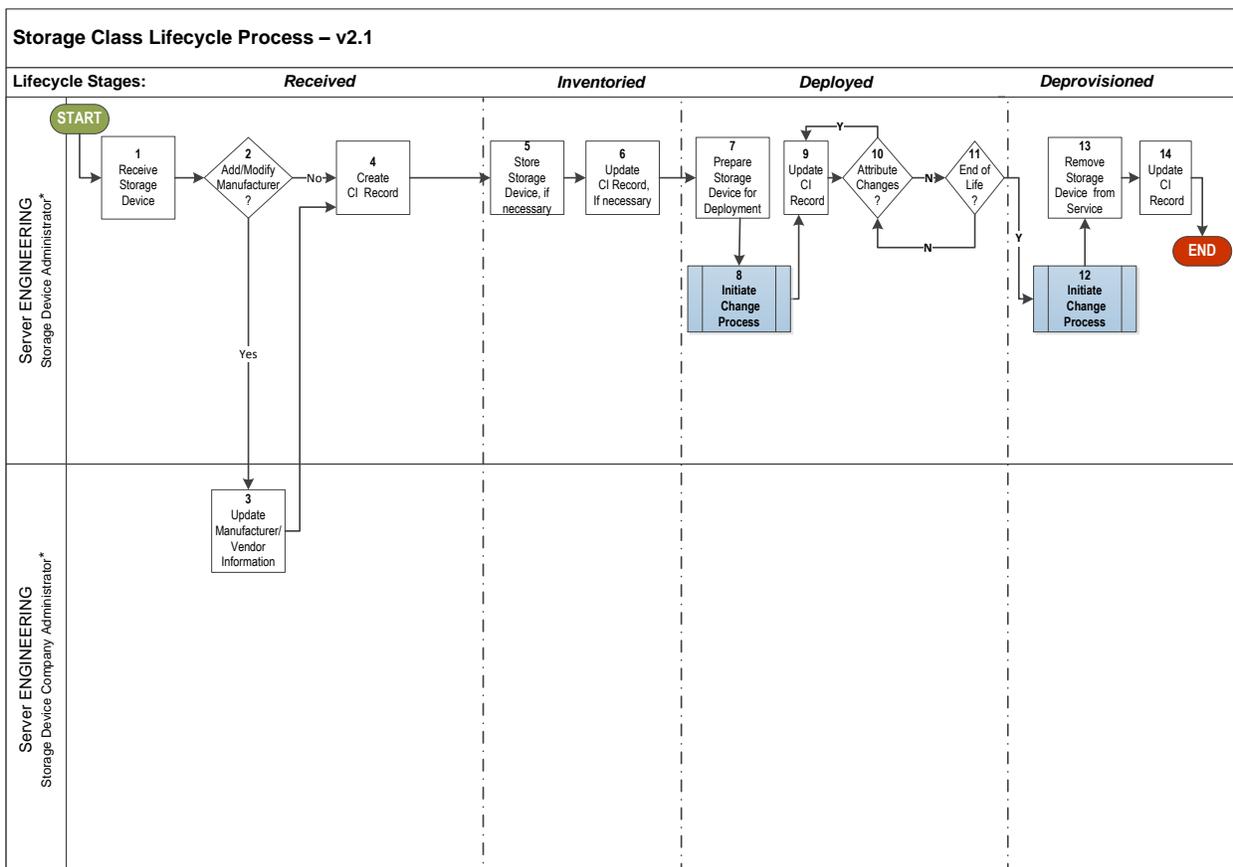
The Storage Device Class will include the following category types:

- NAS – Network Attached Storage
- SAN – Storage Area Network
- DAS – Direct Attached Storage

### 7.2 Storage Class Lifecycle



### 7.3 Storage Class Lifecycle Process



## 7.4 Storage Class RACI

#	Storage Class Lifecycle RACI	Server ENGINEERING Storage Device Administrator*	Server ENGINEERING Storage Device Company Administrator**	CAB	Output	Notes
<b>Received</b>						
1	Receive Storage Device	A/R				
2	Add/Modify Manufacturer?	R	A			
3	Update Manufacturer/Vendor Information		A/R			Including Model, OS Version and OS Vendor.
4	Create CI Record	A/R			New CI record Created	
<b>Inventoried</b>						
5	Store Storage Device	A/R				
6	Update CI Record	A/R			Storage Device in Inventory	
<b>Deployed</b>						
7	Prepare Storage Device for Deployment	A/R				
8	Initiate Change Process	A/R		I		
9	Update CI Record and Establish Relationships	A/R			Storage Device in service and relationships established	
10	Attribute Changes?	A/R				
11	End of Life?	A/R				
<b>Deprovisioned</b>						
12	Initiate Change Process	A/R		I		
13	Remove Storage Device from Service	A/R				
14	Update CI Record	A/R			Storage Device removed from service	

Responsible – Those who do the work, facilitate it and/or organize it

Accountable – The one who ensures the desired outcomes are reached and has yes/no decision making authority

Consulted – Those who have critical expertise to contribute before a decision is made

Informed – Those who are significantly affected by the activity/decision and must be informed to ensure successful implementation

## 7.5 Storage Class Entry Criteria

The Storage Device Procurement process has been completed and the Storage Device has been physically accepted by the Storage Device Administrator.

## 7.6 Storage Class Procedures

ID	Step	Responsibility
<b>Received</b>		
1	<b>Received Storage Device</b> The Storage Device is physically received by the Storage Device Administrator.	<ul style="list-style-type: none"> <li>Server ENGINEERING Storage Device Administrator</li> </ul>
2	<b>Add/Modify Manufacturer?</b> The Storage Device Administrator determines if the Manufacturer information is in the system and needs to be updated or is not in the system and must be added. <b>Yes – Go to Step 3</b> <b>No – Go to Step 4</b>	<ul style="list-style-type: none"> <li>Server ENGINEERING Storage Device Administrator</li> </ul>

ID	Step	Responsibility
3	<p><b>Update Manufacturer/Vendor Information</b> The Storage Device Company Administrator is responsible for updating the Company, OS Version and Model tables in ServiceNow with the following information:</p> <ul style="list-style-type: none"> <li>▪ Manufacturer</li> <li>▪ Model</li> <li>▪ Vendor</li> <li>▪ OS Vendor</li> <li>▪ OS Version</li> </ul>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Company Administrator</li> </ul>
4	<p><b>Create CI Record</b> The Storage Device Administrator is responsible for creating the Storage Device CI Record in ServiceNow. The following fields are required when the Status is Received:</p> <ul style="list-style-type: none"> <li>▪ Status – auto populated on creation</li> <li>▪ Name</li> <li>▪ Manufacturer</li> <li>▪ Model Name</li> <li>▪ Serial Number (unique identifier)</li> <li>▪ Support Group</li> </ul> <p><b>NOTES – Following to be reviewed via workshop with Class Owner:</b>  <b>After Save is selected:</b>  <b>Category=Resource is defaulted (other options: NAS, SAN, DAS, UPS)</b>  <b>Subcategory=File Share, is defaulted (other options: Controller, Storage, Enclosure with Disks)</b>  <b>These are NOT required fields</b></p>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>
<b>Inventoried</b>		
5	<p><b>Store Storage Device</b> The Storage Device is physically stored in an inventory location.</p>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>
6	<p><b>Update CI Record</b> The Storage Device Administrator is responsible for updating the Storage Device CI Record in ServiceNow. The following field is required when the Status is Inventoried</p> <ul style="list-style-type: none"> <li>▪ Status</li> </ul>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>
<b>Deployed</b>		
7	<p><b>Prepare Storage Device for Deployment</b> The Storage Device is configured and prepared for Deployment</p>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>
8	<p><b>Initiate Change Process</b></p>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>
9	<p><b>Update CI Record</b> The Storage Device Administrator is responsible for updating the Storage Device CI Record in ServiceNow and establishing the relationships. The following fields are required when the Status is Deployed:</p> <ul style="list-style-type: none"> <li>▪ Status</li> <li>▪ Tier (Criticality)</li> <li>▪ Establish Relationships Between CIs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>

ID	Step	Responsibility
10	<b>Attribute Changes?</b> The Storage Device Administrator is responsible for updating the CI record when the server attributes change. <b>Yes – Go to Step 9</b> <b>No – Go to Step 11</b>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>
11	<b>End of Life?</b> The Storage Device Administrator determines that server has reached end of life. <b>Yes – Go to Step 12</b> <b>No – Go to Step 10</b>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>
<b>Deprovisioned</b>		
12	<b>Initiate Change Process</b>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>
13	<b>Remove Storage Device from Service</b> The Storage Device Administrator can manually remove the Storage Device CI from service by deprovisioning the record in ServiceNow.	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>
13	<b>Update CI Record</b> The Storage Device Administrator is responsible for updating the Storage Device CI Record in ServiceNow. The following fields are required when the Status is Deprovisioned: <ul style="list-style-type: none"> <li>▪ Deprovisioned Date – auto populated when status is set to Deprovisioned</li> <li>▪ Disposition Type</li> </ul> A warning message is presented when the Status is Deprovisioned <ul style="list-style-type: none"> <li>▪ Please attach the appropriate deprovisioning worksheet</li> </ul>	<ul style="list-style-type: none"> <li>▪ Server ENGINEERING Storage Device Administrator</li> </ul>

## 7.7 Storage Class Exit Criteria

The Storage Device CI has been removed from service, the CI has been deprovisioned and the deprovisioning worksheet has been attached to the Change Request.

## Section 8. Application Class Process and Procedures

### 8.1 Scope

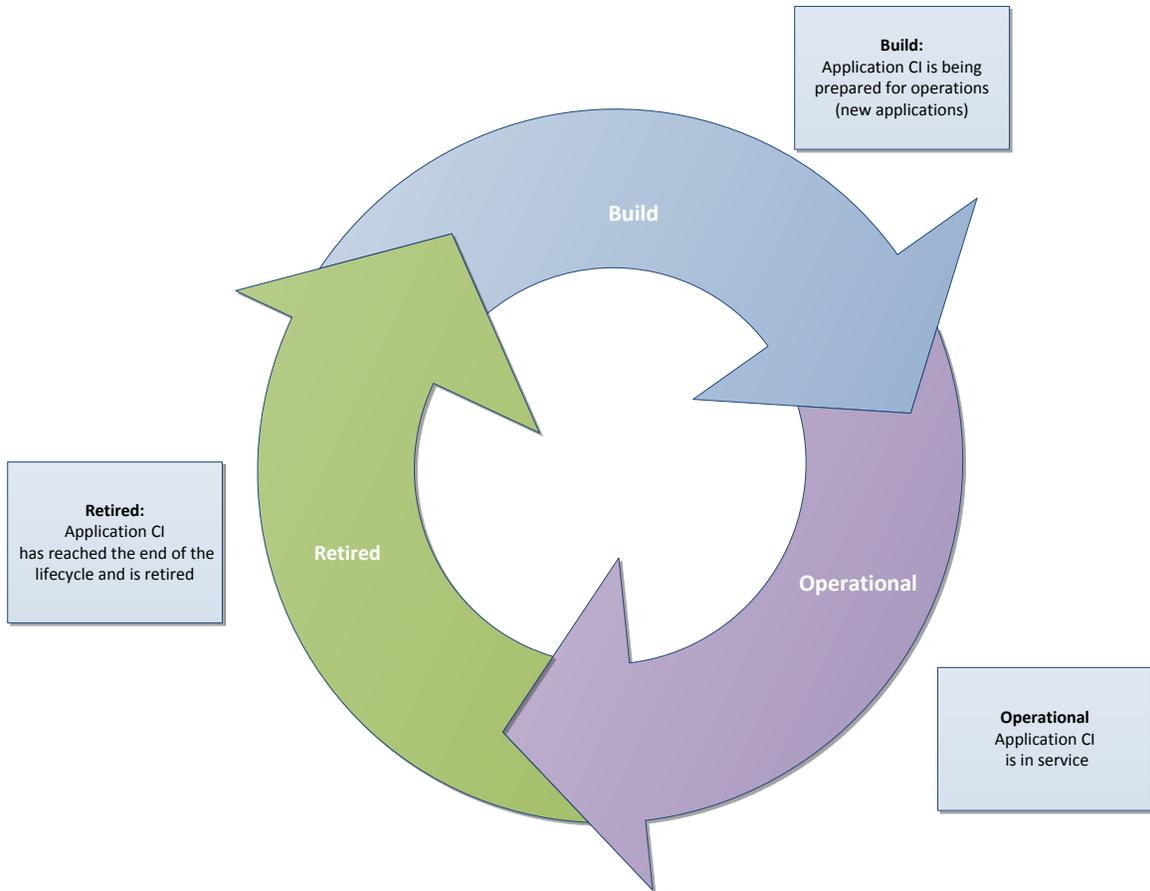
The Applications Class will include applications that are tracked through SDLC and Change Management process and which support a service that is delivered to a customer. This includes instances in various environments such as:

- Production – PRD
- Test - TST
- Development - DEV
- Stage – STG
- Training – TRN
- Performance – PERF
- Sandbox – SBX
- Disaster Recovery - DR
- Support – SUP

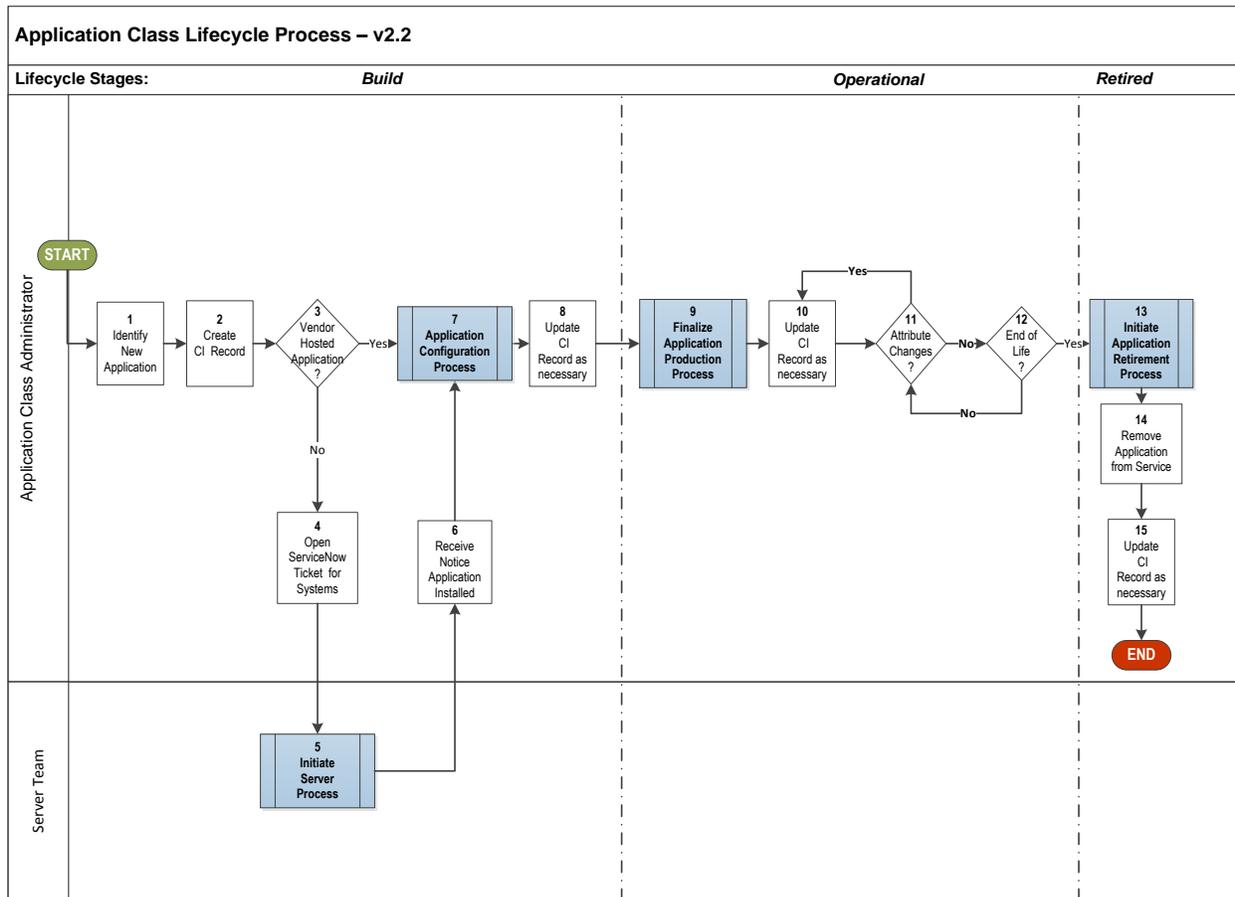
### 8.2 Definition: Business Service – Application - Software

Class	Description	Examples
Business Service	A category of services, which includes applications and software.	Applications, Access & Accounts
Application	Runs on a server. Solutions built on top of applications can be listed as modules (usually customer-facing) or utilities (usually administrative). Can be developed and/or hosted internally, or developed and/or hosted by a vendor.	Exchange, Epic, MyAccess
Software	Is a client and/or runs on an endpoint (e.g., desktop, laptop, mobile device). This can include commercial software or desktop and mobile applications created in-house.	Adobe Acrobat Pro, iList, Perceptive Experience

### 8.3 Application Class Lifecycle



### 8.4 Application Class Lifecycle Process



### 8.5 Application Class RACI

#	Application Class Lifecycle RACI	Application Administrator	Server Team	CAB	Output	Notes
<b>Received</b>						
1	Identify New Application	A/R				
2	Create CI Record	A/R			New CI record created	
3	Vendor Hosted Application?	A/R				
4	Open ServiceNow Ticket for Systems	A/R				
5	Initiate Server Process		A/R			
6	Receive Notice Application Installed	A	R			
7	Application Configuration Process	A/R				
8	Update CI Record as Necessary	A/R				
<b>Operational</b>						
9	Finalize Application Production Process	A/R		I	Change Request	
10	Update CI Record as Necessary	A/R			Updated CI record, application in service	
11	Attribute Changes?	A/R				
12	End of Life?	A/R				
<b>Retired</b>						
13	Initiate Application Retirement Process	A/R				
14	Remove Application from Service	A/R				
15	Update CI Record as Necessary	A/R			Application removed from service	

Responsible – Those who do the work, facilitate it and/or organize it  
 Accountable – The one who ensures the desired outcomes are reached and has yes/no decision making authority  
 Consulted – Those who have critical expertise to contribute before a decision is made  
 Informed – Those who are significantly affected by the activity/decision and must be informed to ensure successful implementation

## 8.6 Application Class Entry Criteria

The Application has been installed on a server and is ready for configuration.

## 8.7 Application Class Procedures

ID	Step	Responsibility
<b>Build</b>		
1	<b>Identify New Application</b> The need for a new application is identified by the Application Administrator.	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
2	<b>Create CI Record</b> The Application Administrator is responsible for creating the Application CI Record in ServiceNow. The following fields are required when the Status is Build: <ul style="list-style-type: none"> <li>▪ Status – auto populated on creation</li> <li>▪ Application Name</li> <li>▪ Version</li> <li>▪ Manufacturer Product Name</li> <li>▪ Manufacturer Product Version</li> <li>▪ Business Owner</li> <li>▪ Category</li> <li>▪ DR Site</li> <li>▪ Location (if DR Site=Other)</li> <li>▪ Number of Users</li> <li>▪ User Organization</li> <li>▪ Environment</li> <li>▪ Distribution List</li> <li>▪ Support Group</li> <li>▪ Description</li> <li>▪ Tier (Criticality) – This field will state, “Pending Business Impact Analysis” and be grayed out. To establish Tier level, create a Request Item:                             <ul style="list-style-type: none"> <li>○ Go to website: <a href="https://ucsf.service-now.com/ess/">https://ucsf.service-now.com/ess/</a> and select <b>Consulting &amp; Development &gt; Business Impact Analysis Request</b>. You will be contacted by a BIA ITSM team member.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
3	<b>Vendor Hosted Application</b> <b>Yes – Go to Step 7</b> <b>No – Go to Step 4</b>	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
4	<b>Open ServiceNow Ticket for Systems</b> The Application Administrator is responsible for opening a ServiceNow ticket for the Server team. The ticket will include: <ul style="list-style-type: none"> <li>• Hardware Requirements</li> <li>• Application CI Record</li> </ul>	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
5	<b>Initiate Server Process</b>	<ul style="list-style-type: none"> <li>▪ Server Team</li> </ul>
6	<b>Received Notice Application Installed</b> The Application Administrator has been notified that the application is installed and available for the build to start.	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>

ID	Step	Responsibility
7	<b>Application Configuration Process</b>	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
8	<b>Update CI Record as Necessary</b>	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
<b>Operational</b>		
9	<ul style="list-style-type: none"> <li>▪ <b>Finalize Application Production Process</b></li> </ul> The Application is prepared to be operational.	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
10	<b>Update CI Record as Necessary</b> The Application Administrator is responsible for updating the Application CI Record in ServiceNow and establishing the relationships. The following fields are required when the Status is Operational: <ul style="list-style-type: none"> <li>▪ Status</li> <li>▪ Hosted By</li> <li>▪ Support Hours</li> <li>▪ Operational Date</li> <li>▪ Establish Relationships Between CIs – Working with other respective IT Departments (Server), as necessary</li> </ul> (Update Version if this is an upgrade)	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
11	<b>Attribute Changes?</b> If the Application is being upgraded only the Version field on the CI record must be updated.  <b>Yes – Go to Step 10</b> <b>No – Go to Step 12</b>	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
12	<b>End of Life?</b> <b>Yes – Go to Step 13</b> <b>No – Go to Step 11</b>	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
<b>Retired</b>		
13	<b>Initiate Application Retirement Process</b> Includes a Change Request if necessary	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
14	<b>Remove Application from Service</b> The Application Administrator can manually remove the Application CI from service by updating the status to Retired.	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>
15	<b>Update CI Record as Necessary</b> The Application Administrator is responsible for updating the Application CI Record in ServiceNow. The following field is required when the Status is Retired: <ul style="list-style-type: none"> <li>▪ Retired Date – auto populated when status is set to Retired</li> </ul>	<ul style="list-style-type: none"> <li>▪ Application Administrator</li> </ul>

## 8.8 Application Class Exit Criteria

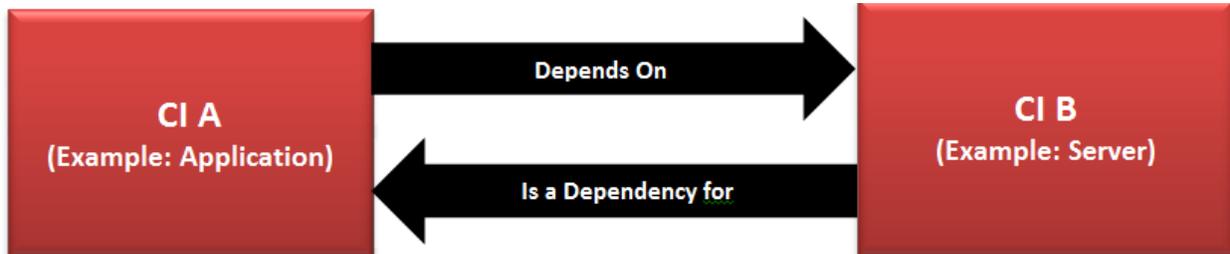
The Application Administrator has taken the Application out of service and the status has been set to retired.

## Section 9. Establishing Relationships in the CMDB

### 9.1 Applications and Server Relationships

All relationships within ServiceNow are Parent/Child.

- Application A [**Depends On**] Server B
- Server B [**Is a Dependency for**] Application A



## Section 10.SACM CMDB Audit Protocol

### 10.1 SACM CMDB Audit Purpose

The purpose of this protocol is to perform periodic audits of the Information Technology Service Management (ITSM) CMDB. The CMDB is the source of truth for CIs and their relationship to other CIs at UCSF. These audits will ensure adherence to the SACM process and the ongoing accuracy of the CMDB.

### 10.4 Background

This audit protocol was initially identified as an IT departmental goal for FY16 (see appendix 14.2), however the result of this effort was adopted as an ongoing periodic audit of the SACM CMDB. Ongoing periodic audits will be performed on a quarterly basis.

### 10.3 SACM CMDB Audit Process

The SACM process ensures the integrity of the IT infrastructure by tracking, recording and reporting on CIs and their relationships to other CIs. This process is supported by the CMDB as the vehicle for managing and controlling these CIs. Periodic audits of the CMDB will confirm the records to be the accurate source of truth for CIs within the UCSF IT infrastructure.

The periodic audit will consist of a three pronged approach to validate the data found in each record as well as the relationships between CIs.

- Spot Check Validation – Randomly select at least 20% of records from each CI class to be validated
- Recent Activity Validation – Select all CI records updated in the past three months sorted by class
- Identification of Irregularities – Export all to a spreadsheet and sort by class, inspect and identify inconsistencies/irregularities

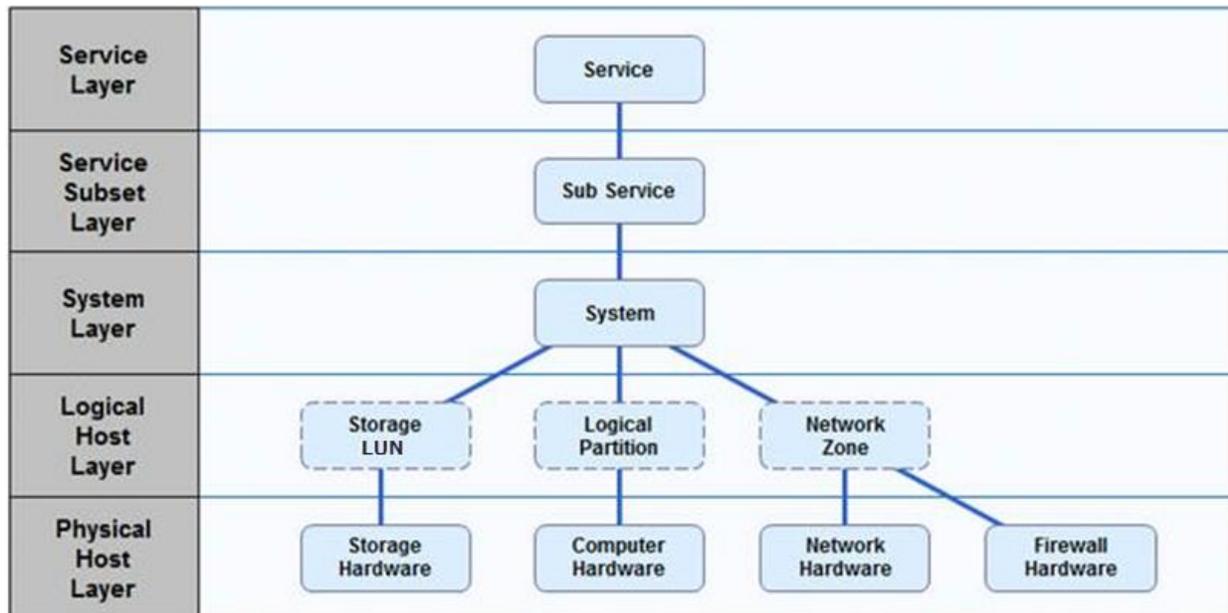
The following policy guidelines provide the framework for ensuring the integrity of the critical CI records contained in the CMDB:

- The Class Administrator is responsible for ensuring the accuracy of the record for each CI.
- Periodic auditing of randomly selected records from the CMDB is the accepted method of validating record accuracy.
- Records will be selected in such a way to be representative of the entire database and all records will have the same chance of being selected.
- The audit is performed on the required fields for each CI record to ensure accuracy and to confirm applications are correctly linked to associated servers.
- The data fields in the selected records will be validated against information gained from the actual CI.
- A designated neutral party selected by the Process Owner is responsible for performing the data review and relationship validation for the records audited.
- Compliance will be calculated based upon the cumulative results for all the CI records selected for validation.

Ongoing periodic audits will be performed on a quarterly basis.

## Section 11. CMDB Structure & Business Service Versus Application

### 11.2 CMDB Structure Model



The bottom layers, physical and logical are the Infrastructure CIs. Infrastructure is mostly closely associated with the hardware devices in the environment.

The middle layer or system, are the Applications CIs. Applications are the software elements that are directly touched and felt by end users. Examples include Microsoft Exchange, PeopleSoft, ServiceNow ITSM, or custom shipment-tracking system. Products like Microsoft Internet Explorer, MS Word, and Adobe Acrobat can also be seen as applications, but UCSF decided to include these in the software class instead. The distinction is applications require development and typically goes through a software development lifecycle (SDLC). Items in the Software class are off the shelf product you just install.

Business Service is the top layer of the CMDB structure model. Ideally, every application CI should support and roll up to a business service, i.e., “PeopleSoft Financials” and “PeopleSoft RAS” applications supports the business service “Financial Services” or “ServiceNow” and “PagerDuty” supports the business service “Service Management Services”. This class has not been formally rolled out so no review of attributes has been done or things added and removed have not yet been formally managed. UCSF is purely using this CI class right now for categorization purposes in Incident and Service Request. This class will be looked at formally as part of the Service Catalog / Service Portfolio at a future date. Until a process for this class is completed, information that needs to be tracked where there is no attribute, put it in the description field for now. There may currently be CIs in the Business Service class that needs to be in the Application or Software Class.

All three classes (Business Service, Application and Software) potentially have to go through Change Control, so this is not a distinguishing factor.

## **Section 12. Glossary**

*Define all terms and acronyms required to interpret the Project Charter properly.*

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## Section 13.Revision History

Version	Date	Name	Description
1.0	05/10/13	Terrie Coleman	Initial Draft
2.0	12/30/13	Terrie Coleman	Updated individual process maps, RACI and procedures
3.0	04/27/15	Lynn Bosworth	Updates due to process transition and necessary revisions throughout document
3.1	05/15/15	Lynn Bosworth	Updates stemmed from Class Owner Workshops, i.e., Server Class new Visio, modified RACI and procedures.
3.2	09/02/15	Lynn Bosworth	Added to Appendix: Added CMDB Structure & Business Service vs Application. Added Communication Devices Class Owners. Added Relationships chart
4.0	12/28/15	Kevin Barney	Revised format, updated process maps and added Audit Protocol
4.1	06/15/16	Kevin Barney	Addition of ITSCM Role & Business Service, Application and Software definition
4.2	10/17/16	Lynn Bosworth	Updating Class Owners and SMEs, section 14.1.
4.3	02/23/17	Lynn Bosworth	Completed updates to all Classes (added, moved, removed field names, status changes of when fields are required) and other updates throughout.

## Section 14.Appendices

### 14.1 CI Class Owners & Subject Matter Experts

Class Owners & SMEs			
<b>Network Gear</b>			
Ian Gwin	Class Owner – ITS	Sean Morford	SME ITS
Steve Young	Class Owner – MC	Emerson Mendoza	SME MC
<b>Server</b>			
Don Francis	Class Owner Operations – ITS & MC	David Carcamo	SME
Don Francis	Class Owner Engineering – ITS & MC	Rolinda Wang	SME
<b>Storage</b>			
Don Francis	Class Owner Operations – ITS & MC	David Carcamo	SME
Don Francis	Class Owner Engineering – ITS & MC	Rolinda Wang	SME
<b>Applications</b>			
Irene Brezman	Class Owner – MC	Pilar Collins Natasha Komarovskaya Connie Standfield	SME MC SME MC SME MC
Mimi Sosa	Class Owner – ITS	Freddie Tai Andy Li	SME ITS SME ITS
<b>Communication Devices Class</b>			
Sunny Bang	Class Owner – IT Clinical Systems	Connie Standfield	SME
Ian Gwin	Class Owner – IT All Others	Matt McFetridge (Video & TeleHealth)  Graham Perkins (Unified Communications)	SME MC/ITS SME MC/ITS

### 14.2 SACM CMDB FY16 Goal Milestone Schedule

IT Department FY16 Goal – “Improve IT Service Management through the implementation of operational processes

- Implementation of an IT Configuration Management Database
- Identify configuration items and their relationships
- Establish processes that define the full lifecycle of configured items and establish CMDB audit protocol
- Identify Tier 1 and 2 of IT supported production applications, servers and network gear for populating data and managing in CMDB
- Identify IT managed applications for populating data and linking to associated servers

Milestone/Deliverable	Planned Completion Date
<p><b>Threshold</b></p> <p>Development and adoption of the CMDB Audit Protocol Policy (this document)</p>	<p>December 31, 2015</p>
<p>Creation of the audit sampling mechanism developed and ready for use</p>	<p>March 15, 2016</p>
<p><b>Target</b></p> <p>First audit demonstrates that 90% of Tier 1 and 2 IT supported production Applications, Servers and Network Gear records are accurately populated and managed in the CMDB</p> <p>To determine the percentage met, a random sampling of 20 CIs from each CMDB Class (Application, Server, and Network Gear) will be audited based on Audit protocol established. The audit must reveal that 90% of the CIs audited are accurately managed</p>	<p>March 31, 2016</p>
<p><b>Outstanding</b></p> <p>Second audit demonstrates that 90% of IT managed applications as of May 31, 2015 are populated and accurately linked to associated server(s)</p> <p>To determine the percentage met, a random sampling of 30 Application CIs will be audited based on Audit Protocol established. The audit must reveal that 90% of the audited Application CIs are accurately linked to associated server(s)</p>	<p>June 30, 2016</p>