

监控ITSM的Catalyst Center Automation (SWIM)事件

目录

[简介](#)

[背景信息](#)

[Cisco Catalyst Center-ITSM \(ServiceNow\)集成](#)

[架构：自动化活动\(SWIM\)](#)

[SWIM自动化工作流程：高级架构](#)

[SWIM自动化工作流程：深入探讨](#)

[事件流：Catalyst Center](#)

[事件流：ITSM \(ServiceNow\)](#)

[自动化事件\(SWIM\)捆绑配置](#)

[自动化事件\(SWIM\)工作流程执行](#)

[Catalyst中心](#)

[ITSM-ServiceNow](#)

[自动化事件\(SWIM\)工作流执行验证](#)

简介

本文档介绍如何监控自动化事件，例如Catalyst Center和ITSM (ServiceNow)集成的SWIM使用案例。

背景信息

本文档涵盖与SWIM闭环操作相关的所有详细信息，从所涉及的组件、前提条件、事件流、配置、工作流程执行和故障排除方案开始。如果ServiceNow实例上安装了Cisco DNA应用，则本文档将适用。

通过与ServiceNow for SWIM事件的闭环集成，票证创建、批准、实施到关闭过程实现了自动化。为SWIM更新打开的变更请求由ServiceNow中的变更所有者批准/拒绝，并且票证将根据批准状态移至下一状态。

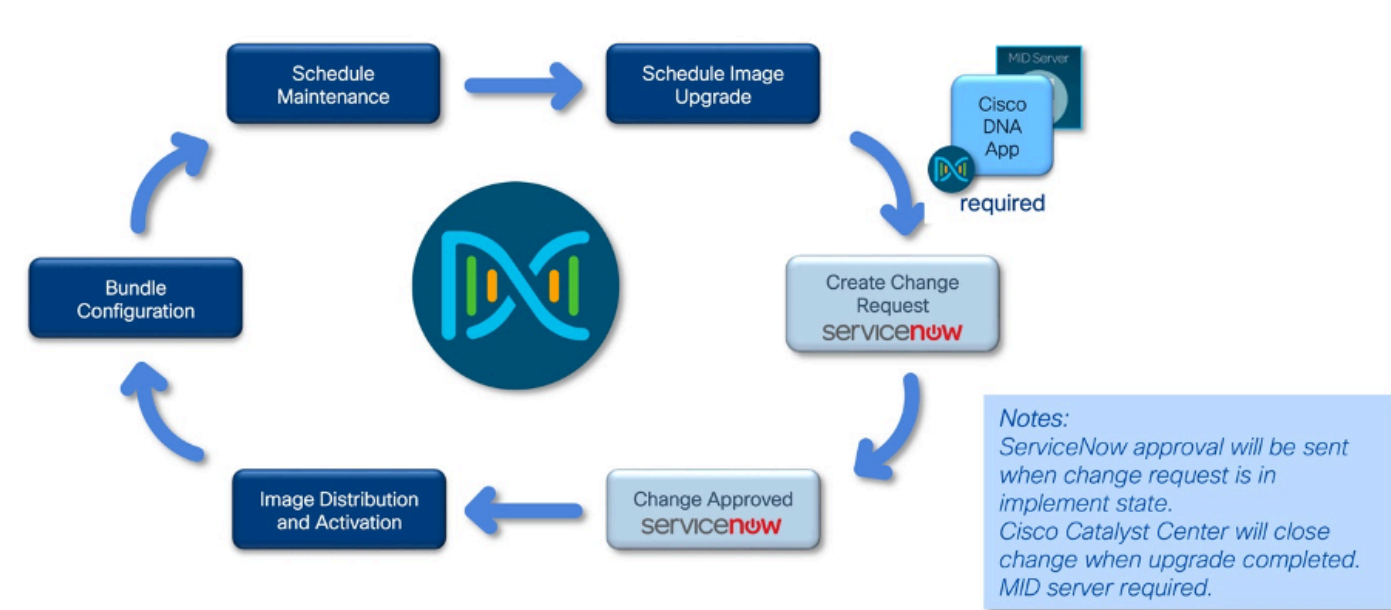
Cisco Catalyst Center-ITSM (ServiceNow)集成

有关Catalyst Center-ITSM集成的详细信息，请参阅以下TechZone：

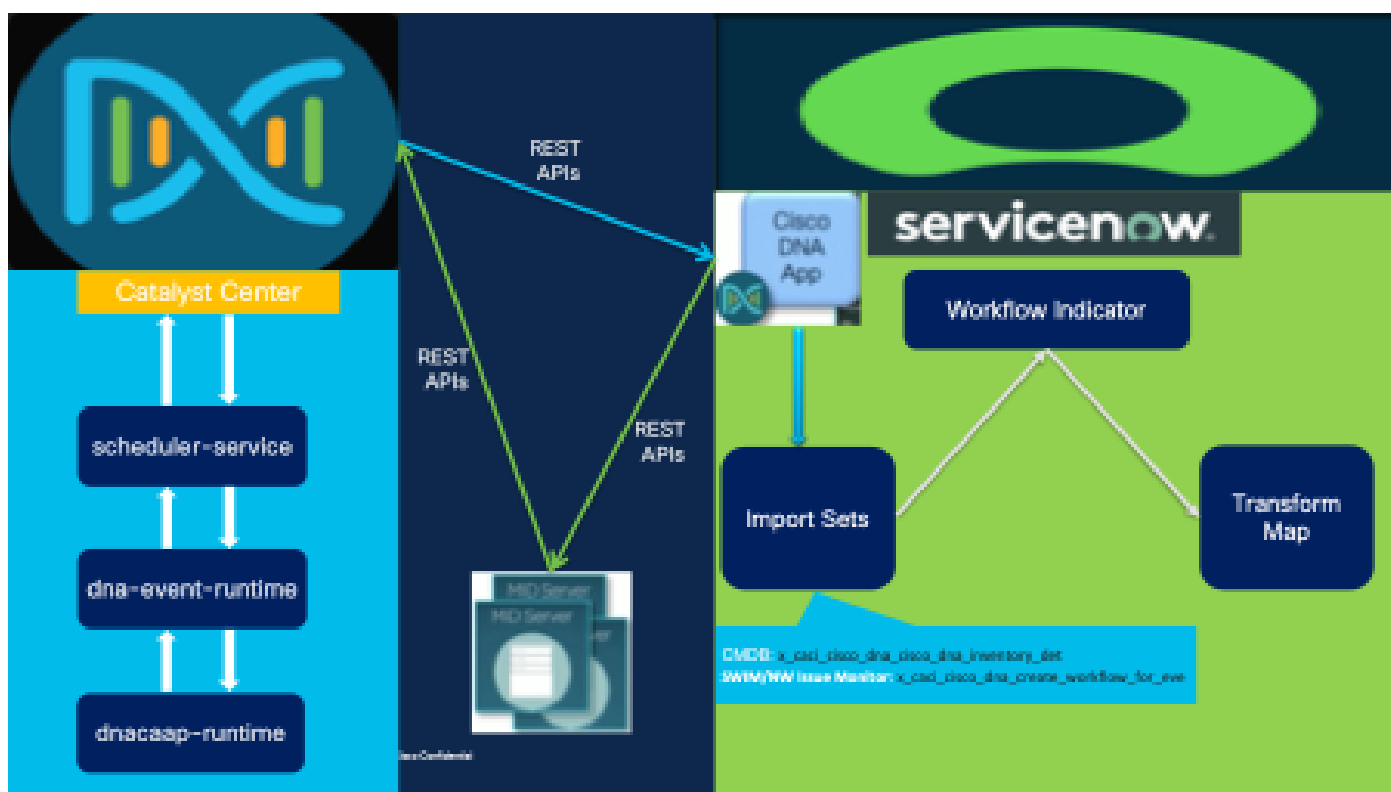
[介绍Catalyst Center和ITSM集成的基本概念](#)

架构：自动化活动(SWIM)

SWIM自动化工作流程：高级架构



SWIM自动化工作流程：深入探讨



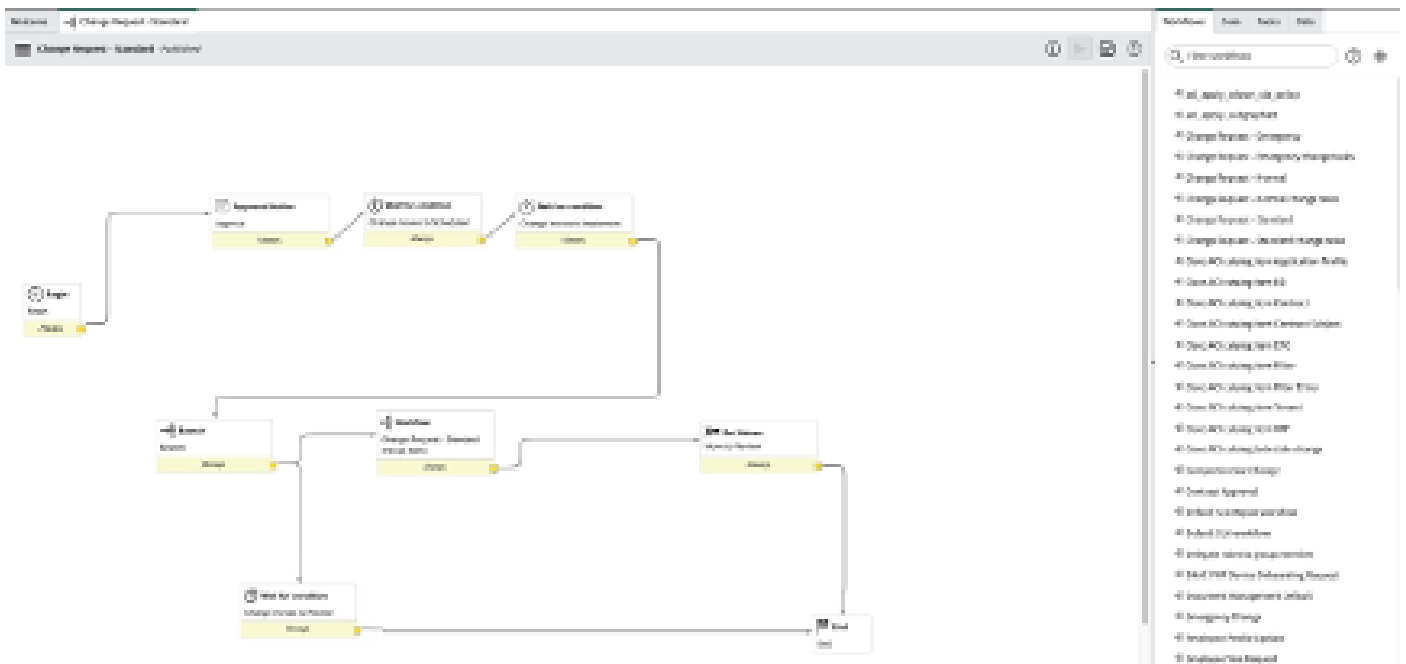
事件流：Catalyst Center

- 从Catalyst Center的“资产清单”(Inventory Dashboard)中安排SWIM事件时，将创建任务并通过scheduler-service安排任务；此任务的详细信息将通过dnacaap-runtime服务传递到ServiceNow实例。然后，Catalyst Center对ServiceNow实例上安装的思科DNA应用执行REST API调用。

- ServiceNow实例收到此事件，思科DNA应用将自动触发思科DNA中心发布的网络SWIM事件的更改请求 workflows。此变更请求需要由网络运营团队进行审核，并且需要进一步更新变更请求的状态。
- 当变更单处于“已计划”状态时，“变更请求”的批准状态属性是必需的。ServiceNow管理员/网络运营团队为计划窗口提供的审批/拒绝功能对故障单的处理至关重要。一旦票证被移至实施状态，ServiceNow中就会出现触发器，用于通知Cisco Catalyst Center根据提供的批准开始映像分发和升级。
- 然后，Catalyst Center在规定的计划时间触发SWIM活动，在成功完成任务后，变更请求会通过闭环自动化 workflow 在ServiceNow上关闭。

事件流：ITSM (ServiceNow)

- 使用ServiceNow中的ServiceNow Import Set API或脚本REST API或通用REST API终端，将Cisco Catalyst Center上计划的SWIM事件推送到ServiceNow。数据过帐到的导入集表为 x_caci_cisco_dna_create_workflow_for_eve。
- 根据事件配置中设置的工作流指示器值，系统会基于转换脚本在ServiceNow中创建更改请求。
- 来自DNA的每个SWIM事件记录都有一个相关的工作流指示符，用于确定事件在ServiceNow中经历的工作流类型。此代码段是工作流指示器的一个示例。



- 根据 workflow 指示器决策，执行转换映射之一，解析临时表中的数据，并将其映射到在SWIM事件情况下发生更改的适当目标表。

Name	Source table	Target table
Change CommandOutputUpdate	Change CommandOutputUpdate [x_caci_cisco_dna_change_commandoutputupdate]	Change Request [change_request]
Change DNA Update	Change DNA Update [x_caci_cisco_dna_change_dna_update]	Change Request [change_request]
Change Status Update	Ticket Status Update [x_caci_cisco_dna_ticket_status_update]	Change Request [change_request]

- 目标对象中的思科DNA应用通过来自Cisco Catalyst Center的网络设备详细信息丰富了ITSM更改请求。思科DNA应用会向Cisco Catalyst Center发出REST API调用，以获取各种类型的丰富信息，例如设备、问题、用户和用户创建的票证。

自动化事件(SWIM)捆绑配置

Cisco DNA Center Automation events for ITSM (ServiceNow)捆绑包检索与从Cisco DNA Center触发的软件映像更新相关的事件。然后，此捆绑包可以定期将事件数据发布到ITSM(Service Now)系统。事件数据可以发布到ServiceNow中的Event表中。

有关自动化事件(SWIM)捆绑配置，请参阅[Cisco DNA Center ITSM集成指南2.3.5版的配置Cisco DNA Center Automation Events for ITSM \(ServiceNow\)捆绑部分](#)。

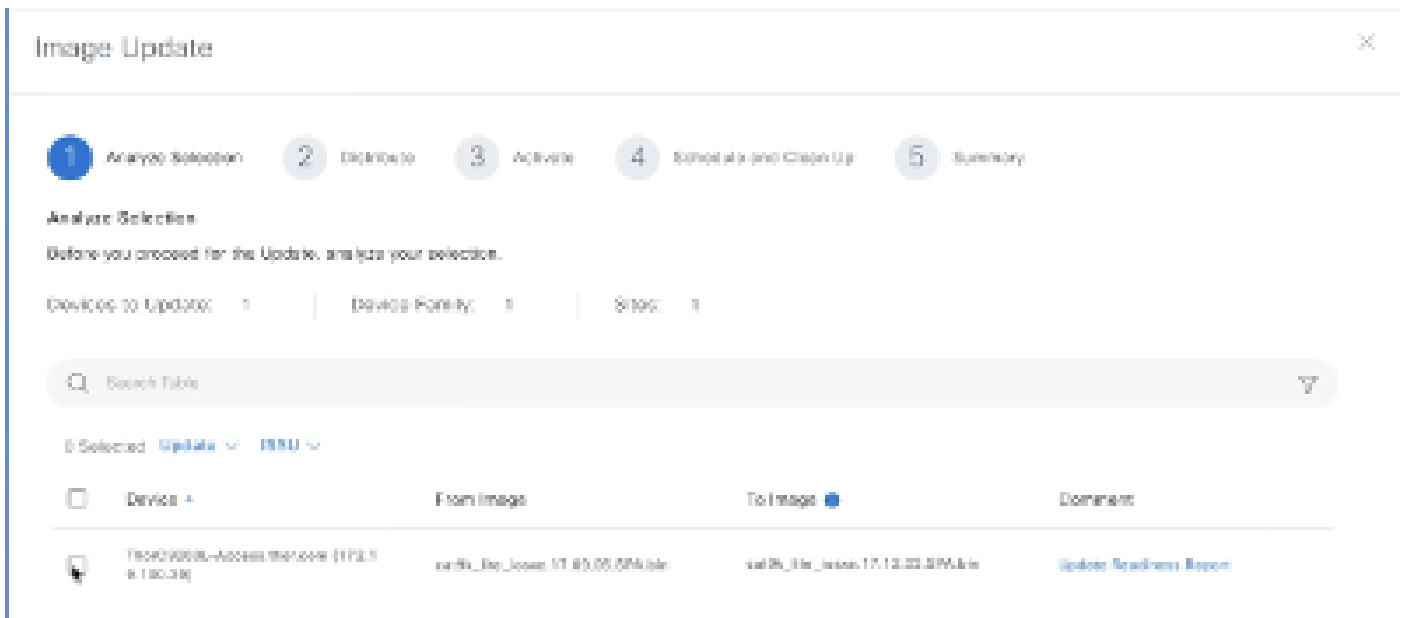
自动化事件(SWIM)工作流程执行

Catalyst中心

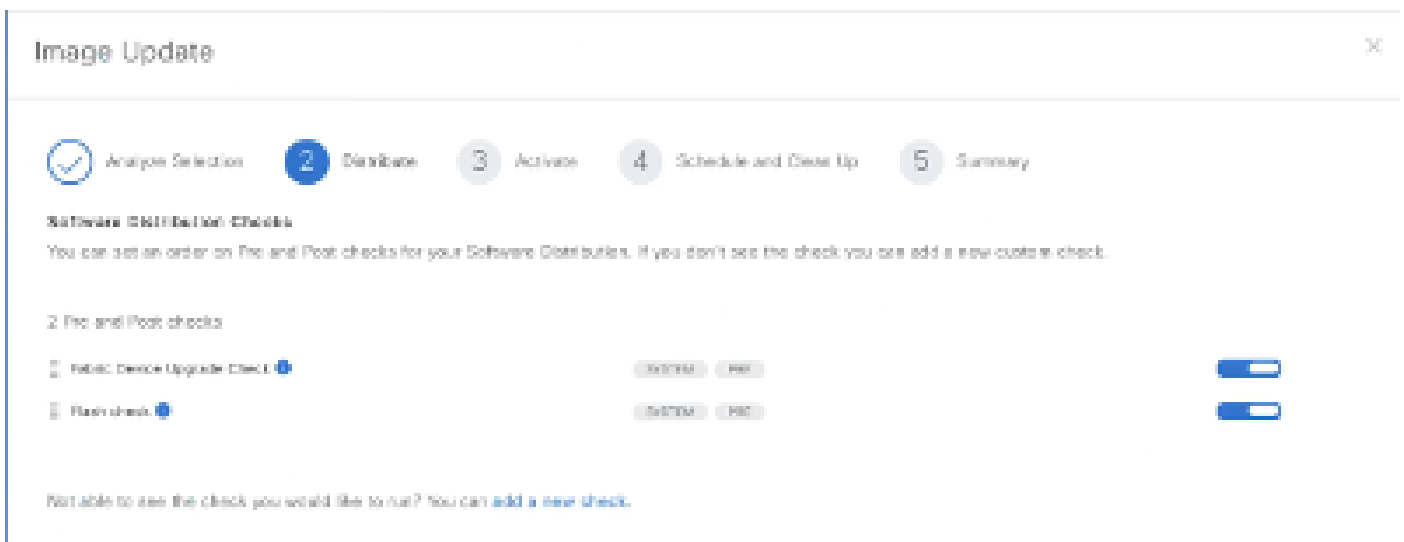
- a. 导航到资产>选择设备>操作>软件映像>映像更新。

The screenshot shows the 'Provision / Inventory' page in Cisco Catalyst Center. A search filter is applied to 'Devices (1)' with the criteria 'Focus: Software images'. One device is selected: 'Theor2800L-Access shorcom'. A context menu is open over this device, listing various actions. The 'Software Image' action is highlighted, and a sub-menu is visible showing options like 'Image Update', 'Image Update Status', 'Download Images - Refresh Report', and 'Cisco Image Update - Refresh'.

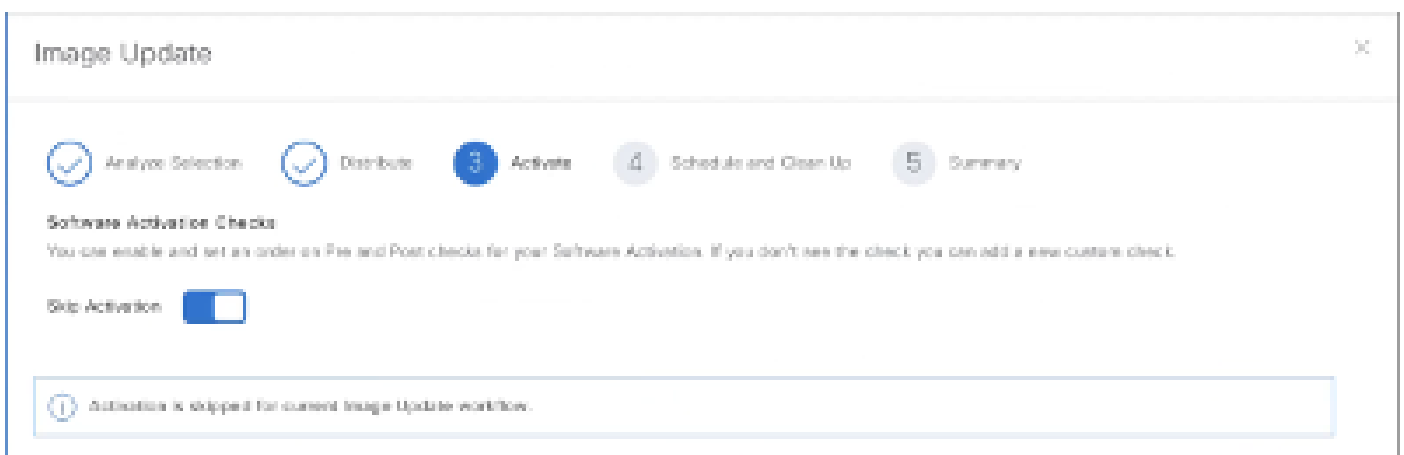
- b. 选择要为其安排升级的设备。



c. 启用对映像分配的检查。



d. 选择是否跳过映像激活。



e. 安排映像分发。

Image Update X

Analyze Selection
 Distribute
 Activate
 4 Schedule and Clean Up
 5 Summary

Schedule
Schedule when you want the software distribution and activation tasks to occur.

ⓘ The time zone of the site to which the device belongs will be used as the default site time zone.

Software Distribution
 ⚠ If the ITSM ServiceNow application is enabled, choose Later.

Now
 Later

Task Name*
Software Image Distribution

Start Date/Time
Aug 1, 2024 📅

1:00 PM ⌵

Time Zone
Asia/Calcutta ⌵

f. 查看SWIM任务，然后单击提交。

Image Update X

Analyze Selection
 Distribute
 Activate
 Schedule and Clean Up
 5 Summary

Summary
Review your entry and make changes if you wish to do

Devices to Update: 1 | Device Family: 1 | Sites: 1

Device	From Image	To Image	Update Support
The00000-Device000000 (100.18.10.0.00)	swim_image_1710800_200.km	swim_image_1710800PA00	

Software Distribution Checks

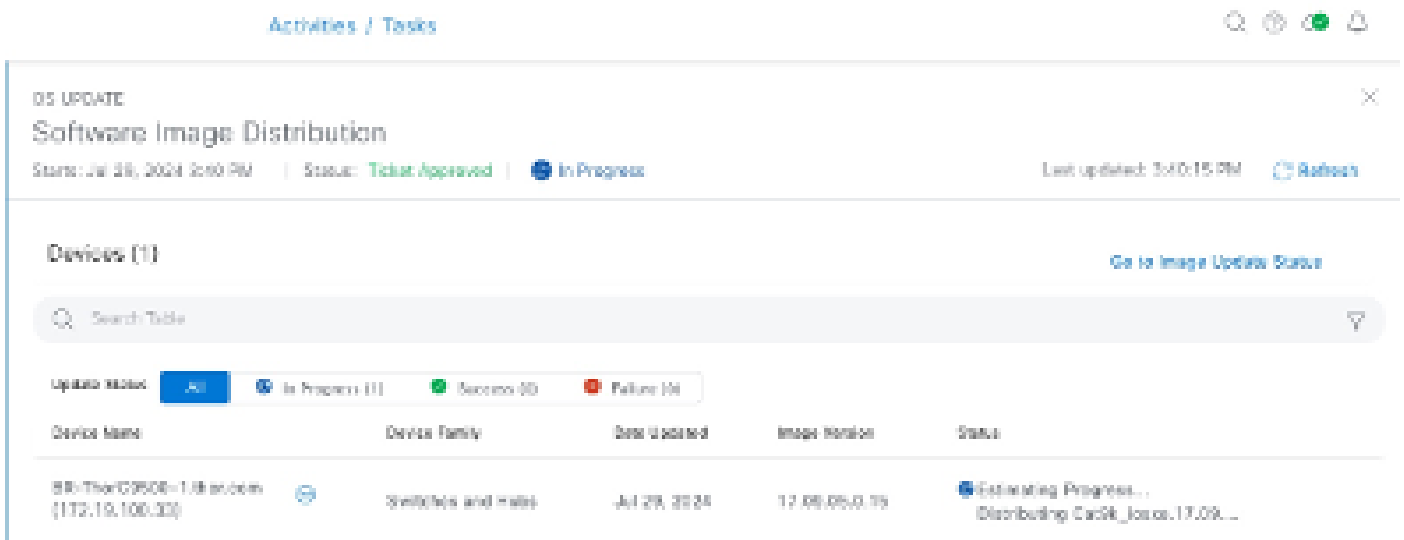
Scheduled On
Time: Aug 1, 2024 1:10 PM | Time Zone: Asia/Calcutta (GMT+5:30)

Pre And Post Checks

ii. a. 已安排的SWIM任务列在活动>任务下并处于“票证暂挂”状态。



b.如果更改单已在ServiceNow上获得批准并已移至“实施”状态，则Catalyst Center上各任务状态将更改为“已批准单”。



c.映像分发在计划的时间自动触发。

ThorC9200L-Access.thor.com (172.19.100.39) Image Distribution

Date: Aug 1, 2024 1:10 PM Duration: 1 minute 42 seconds Status: ● 100%
 Distributing Cat9k_Ita_... 17...

Operations Checks

▼ ● Distribution

Starting distribution of image: cat9k_Ita_... on device: 172.19.100.39 using protocol: HTTP

- > ● Image Integrity Verification(KGV)
1 second
- > ● Pre Distribution Operation
1 second
- > ● Distribution
1 minute 42 seconds

三。 a.已安排的SWIM任务在Catalyst Center的Platform Runtime控制面板上作为事件列出。

Event Summary ●

1

Events
(as defined)

DNA Event	
Severity	Count
1	0
2	1
3	0
4	0
5	0

▼ Filter

EQ Find

Domain	Event Name	Count
Site Management	SWIM Upgrade Request Creation Image Distribution	1

1 Records

Show Records: 10 ▼ 1 - 1 < ● >

b.安排的SWIM任务获取变更请求的“变更请求ID”和“ServiceNow”链接。

c.更改请求的ITSM状态将根据ServiceNow上的更改请求通知单的状态进行更新。

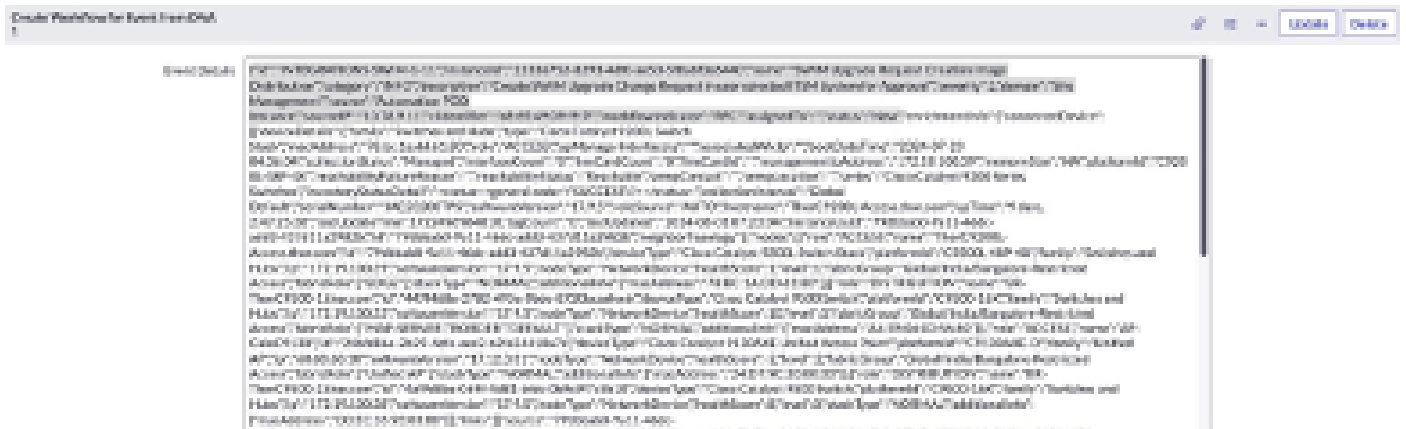
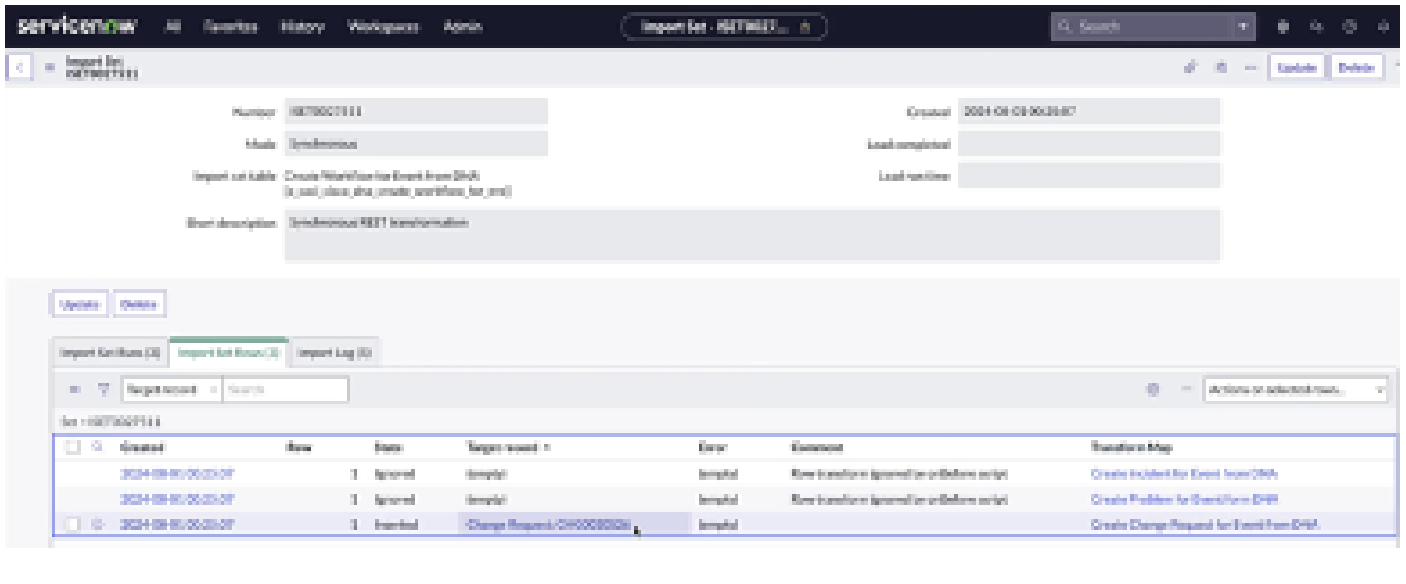
ITSM-ServiceNow

Cisco Catalyst Center的SWIM事件通过Import Set Table of ServiceNow接收。使用ServiceNow中的ServiceNow Import Set API或脚本REST API或通用REST API终端将数据推送到ServiceNow。

- 要检查从Cisco Catalyst Center发布到ServiceNow的数据，请导航到导入集，并查找表中的导入集条目：x_caci_cisco_dna_cisco_dna_inventory_det

1. 从表x_caci_cisco_dna_cisco_dna_inventory_det的“导入集”控制面板中筛选出导入集条目。

ii.检查导入集的详细信息，并检查相应事件编号的导入集行。



iii. 工作流指示器确定事件在ServiceNow中经历的工作流的类型；根据工作流指示器决策，执行转换映射之一。

iv. 要检查转换映射的详细信息，请点击导入集行的转换映射列中的超链接。



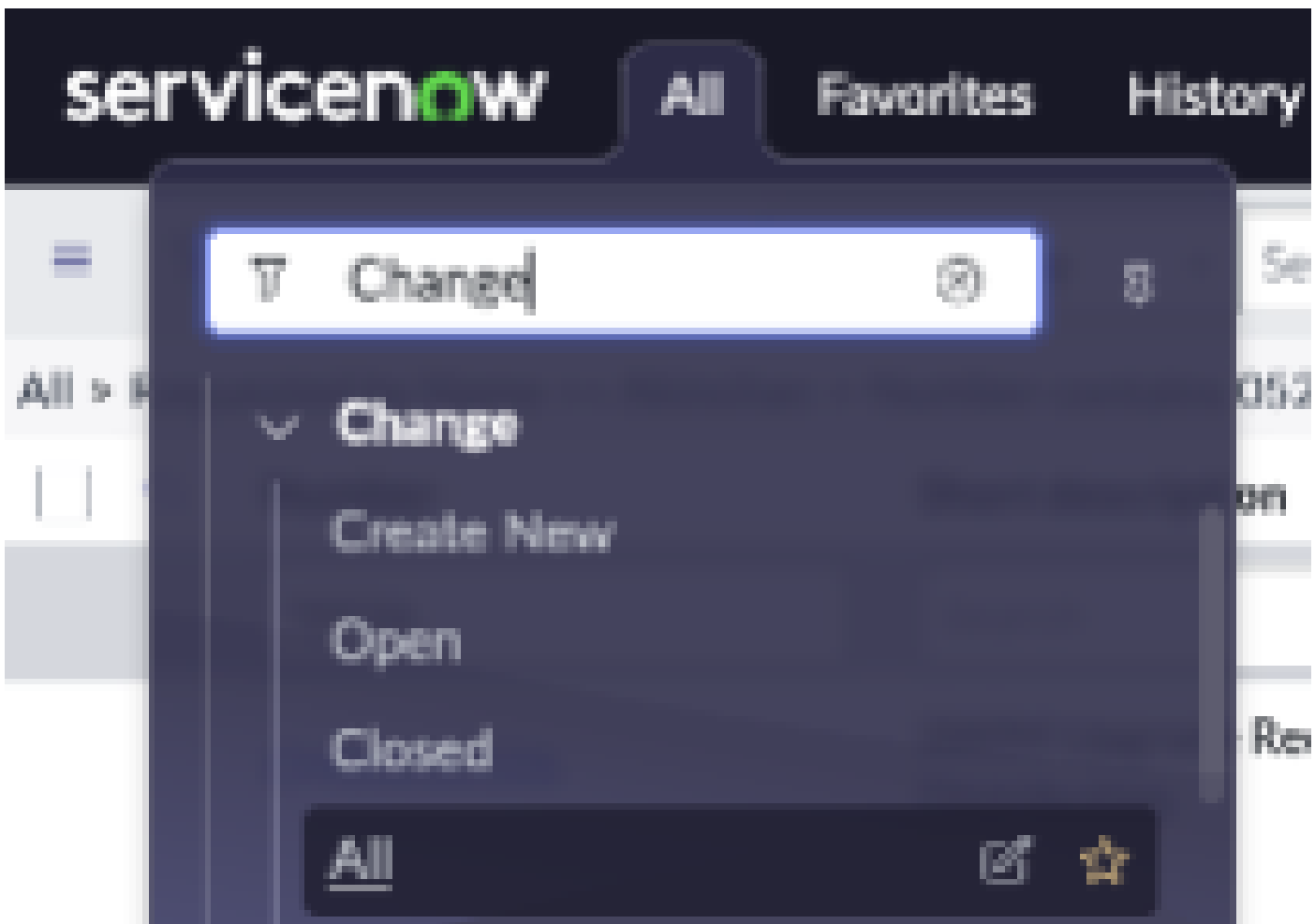
自动化事件(SWIM)的转换映射表：

Name	Source table	Target table
Change CommandOutputUpdate	Change CommandOutputUpdate [x_csd_class_dna_change_commandoutputupdate]	Change Request [change_request]
Change DNA Update	Change DNA Update [x_csd_class_dna_change_dna_update]	Change Request [change_request]
Change Status Update	Ticket Status Update [x_csd_class_dna_ticket_status_update]	Change Request [change_request]

自动化事件(SWIM)工作流程执行验证

- 成功安排SWIM工作流程后，系统将使用已为其安排SWIM升级的设备的详细信息创建变更请求。

1. 全局搜索(Global Search) >更改(Change) >全部(All)



ii.从更改请求控制面板中过滤更改请求。

servicenow | All | Favorites | History | Applications | Admin | Change Requests

Change Requests | Requesting | Search

All Requested by Name | Module | Number contains 000

Number	Short description	Type	Risk	Planned start date	Planned end date	Assigned to	Requested by
CH0000000	SPM Upgrade Request Critical Image Distribution	Incident	Critical	2024-01-01 09:00:00			Alexander Miles

iii. a. 单击更改请求以查看请求票证详细信息。

servicenow | All | Favorites | History | Applications | Admin | Change Request - CH0000000

Change Request - CH0000000

Open | Close | Follow | Schedule | Update | Delete

Incident

Number: CH0000000

Requesting: Alexander Miles

Category: Other

Service:

Service offering:

Configuration item:

Priority: 2 - High

Risk: Medium

Impact: 3 - Low

Short description: SPM Upgrade Request Critical Image Distribution

Description: Create SPM Upgrade Change Request in case critical IIS-100 can't be approved

Type: Incident

State: New

Configuration: Not Run

Configuration:

Assignment group:

Assigned to:

b. 验证更改请求的设备详细信息，批准该请求并安排更改。

Change Request - CH0000000

Planned | Schedule | Details | More | Details/Forms/Links | Close CHA

Close CHA Center IP Address: 10.10.1.1

Close CHA class: MDS-10.10.1.1/24/30/30/packetcapture

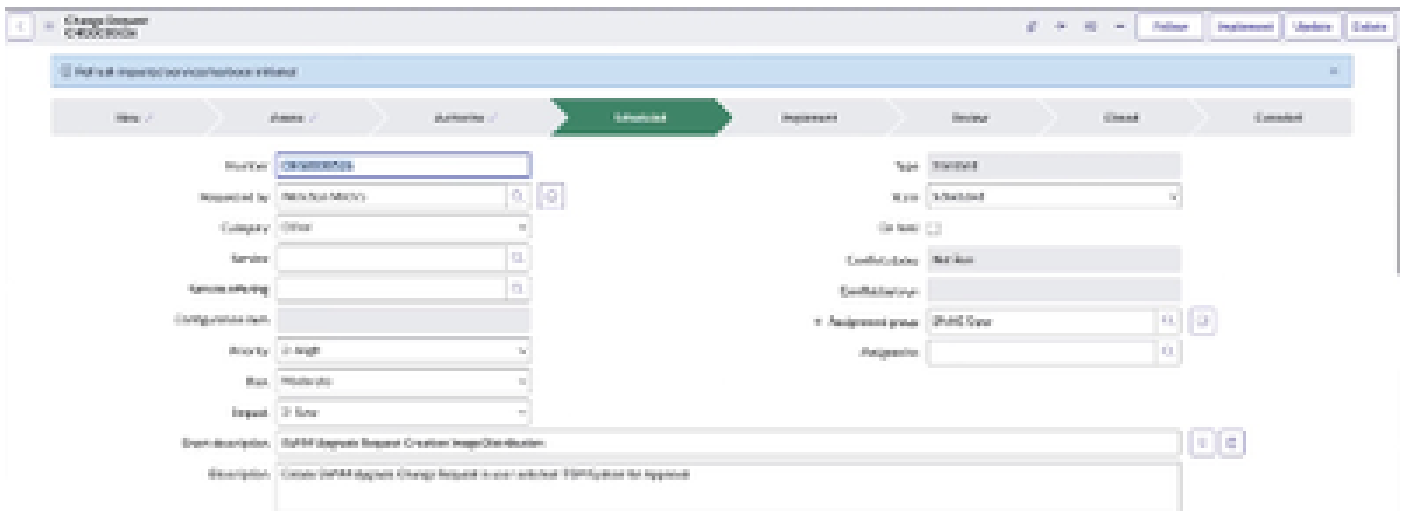
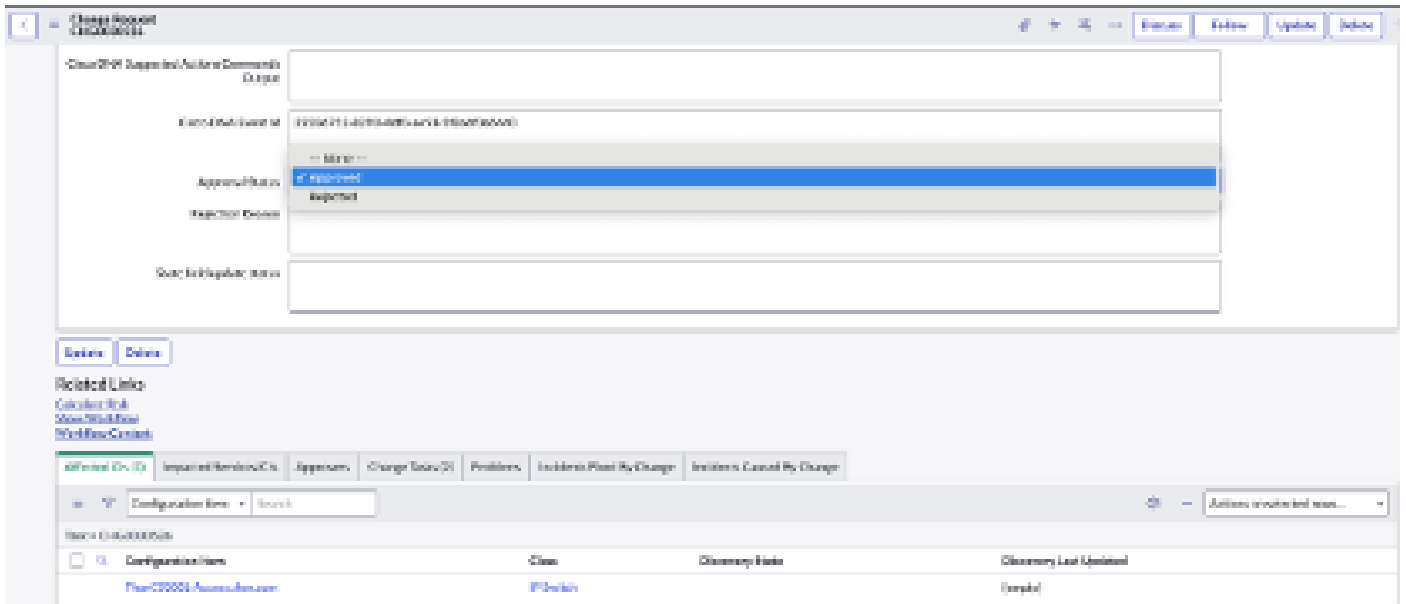
Close CHA Network Details:

- Component: Device 0
- Device 0:
 - Platform: 10.10.1.1/24/30/30/packetcapture
 - Model: 10.10.1.1/24/30/30/packetcapture
 - IP Address: 10.10.1.1/24/30/30/packetcapture
 - Manufacturer: PacketCapture
 - Device Software Version: 1.0.0
 - MAC Address: 00:00:00:00:00:00
- Neighbor:
 - Device 1:
 - Platform: 10.10.1.1/24/30/30/packetcapture
 - Model: 10.10.1.1/24/30/30/packetcapture
 - IP Address: 10.10.1.1/24/30/30/packetcapture
 - Manufacturer: PacketCapture
 - Device Software Version: 1.0.0
 - MAC Address: 00:00:00:00:00:00
 - Device 2:
 - Platform: 10.10.1.1/24/30/30/packetcapture
 - Model: 10.10.1.1/24/30/30/packetcapture
 - IP Address: 10.10.1.1/24/30/30/packetcapture
 - Manufacturer: PacketCapture
 - Device Software Version: 1.0.0
 - MAC Address: 00:00:00:00:00:00

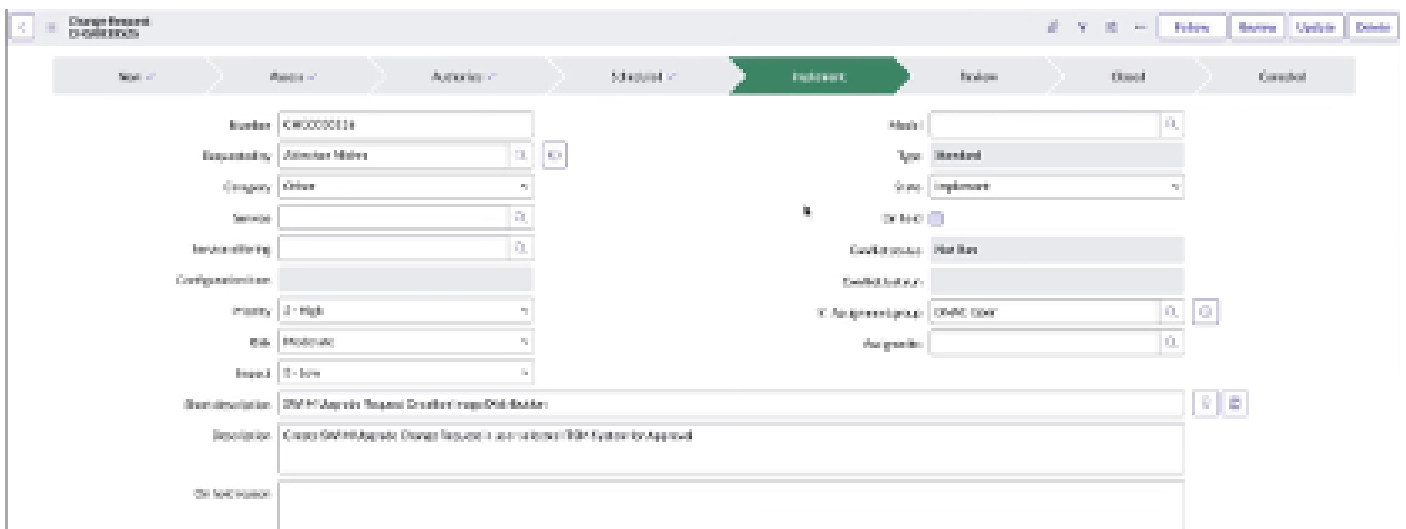
Close CHA Event Details: MDS-10.10.1.1/24/30/30/packetcapture

Close CHA Event Summary Suggested Actions:

- Event Details for Device 0: Platform: 10.10.1.1/24/30/30/packetcapture
- Device Software Status: SUCCEEDED
- Suggested Action: Action (Device Image) 10.10.1.1/24/30/30/packetcapture



c. 验证变更请求的详细信息并实施变更。



d. 成功完成SWIM workflow后，“变更请求”会通过“闭环自动化”自动移至“关闭”状态。

Change Request
C000000001

Home / Alerts / Alerts / Incidents / Incidents / Review / **Create** / Create

Number	C000000001	Type	Standard
Responsible to	Michael Martin	State	Closed
Category	Other	Continuous	Not Run
Service		Control Action	
Service offering		in Assignment group	DRAC Oper
Configuration item		Analysis	
Priority	2 - High		
Risk	Moderate		
Impact	4 - Low		
Description	IBM Upgrade Product Creation Image Drive Issues		
Basic notes	Create IBM Image to Deploy Baseos11 and install IBM Software for Approval		

• 为SWIM事件导入集执行：

1. 导航到全局搜索>所有结果>系统导入集>高级>导入集。

Import Set

ALL RESULTS

▼ Contact Tracing

▼ Devlo

Devlo Users Risk Report L..

▼ System Import Sets

Load Data

Create Transform Map

Run Transform

> Administration

▼ Advanced

Import Sets



ii. 确定导入集并选择它以检查详细信息。

Number	Description	Status	Imported Jobs	TableName	Created	LastRefreshed	Last run time
08700111	Create Problem for Event from DNA	Processed	0 jobs from 0 jobs. Created 0 jobs.	import	2024-08-06 11:24:07	2024-08-06 11:24:07	

iii. 在导入集详细信息下，选中导入集运行和导入集行。

Number: 08700111
 Mode: Periodic
 Import Set Job: Create Problem for Event from DNA
 Import Set Job: Periodic Import Set Job

Created: 2024-08-06 11:24:07
 Last Refreshed: 2024-08-06 11:24:07
 Last Run Time: 2024-08-06 11:24:07

Import Set Jobs:

Created	Row	Status	Imported Jobs	Error	Comments	Resolution Map
2024-08-06 09:02:07	1	Imported	Imported		Row imported (passed by validation script).	Create Incident for Event from DNA
2024-08-06 09:02:07	1	Imported	Imported		Row imported (passed by validation script).	Create Problem for Event from DNA
2024-08-06 09:02:07	1	Imported	Change Request: 08700111	Imported	Row imported (passed by validation script).	Create Change Request for Event from DNA

iv. 单击更改请求的“导入集行”条目，查看SWIM事件的详细信息，例如设备规格、版本等。

Event Details

```

[{"id": "08700111", "number": "08700111", "description": "Create Problem for Event from DNA", "status": "Imported", "imported_jobs": "1 jobs from 1 jobs. Created 1 jobs.", "table_name": "import", "created": "2024-08-06 11:24:07", "last_refreshed": "2024-08-06 11:24:07", "last_run_time": "2024-08-06 11:24:07"}, {"id": "08700111", "number": "08700111", "description": "Create Problem for Event from DNA", "status": "Imported", "imported_jobs": "1 jobs from 1 jobs. Created 1 jobs.", "table_name": "import", "created": "2024-08-06 11:24:07", "last_refreshed": "2024-08-06 11:24:07", "last_run_time": "2024-08-06 11:24:07"}, {"id": "08700111", "number": "08700111", "description": "Create Problem for Event from DNA", "status": "Imported", "imported_jobs": "1 jobs from 1 jobs. Created 1 jobs.", "table_name": "import", "created": "2024-08-06 11:24:07", "last_refreshed": "2024-08-06 11:24:07", "last_run_time": "2024-08-06 11:24:07"}

```

相关信息

- [介绍Catalyst Center和ITSM集成的基本概念](#)
- [将Catalyst Center库存与ServiceNow CMDB系统同步](#)
- [使用Catalyst Center Network Issue Monitor and Encryption for ITSM](#)

关于此翻译

思科采用人工翻译与机器翻译相结合的方式将此文档翻译成不同语言，希望全球的用户都能通过各自的语言得到支持性的内容。

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