

Сетевой марафон: Catalyst 9800 – новая классика WLAN

Сессия 4 – Миграция на беспроводной контроллер Catalyst 9800 с использованием Prime Infrastructure и DNA Center

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Системный инженер Cisco



Сетевой марафон: Catalyst 9800 – новая классика WLAN

- 24 мая - Обзор процесса миграции и лучших практик при переходе с контроллеров AireOS на Catalyst 9800
- 25 мая - Миграция Flexconnect сети на беспроводной контроллер Catalyst 9800
- 26 мая - Разворачивание, настройка и использование виртуального беспроводного контроллера Catalyst 9800
- **27 мая - Миграция на беспроводной контроллер Catalyst 9800 с использованием Prime Infrastructure и DNA Center**
- 28 мая - Рекомендации по отладке и поиску неисправностей в сетях под управлением Catalyst 9800

Содержание

Варианты управления контроллером Catalyst 9800

Миграция с Prime на DNA Center

Миграция с AireOS на IOS XE при помощи DNA Center

Варианты управления контроллером Catalyst 9800

- Prime Infrastructure
- Cisco DNA Center
- Prime and Cisco DNA Center вместе

Миграция системы управления с Catalyst 9800



MSE



ISE

Services



ISE



Prime

Network
Management



Cisco DNA Center



AireOS

Wireless LAN
Controller



C9800



Access Points



Wi-Fi 6



Clients and
Sensors

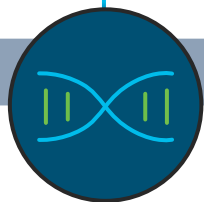


Cisco DNA Center

Единое управление для AireOS & IOS XE



Unified Experience for AireOS and Catalyst WLC



SDA-Wireless

Policy Segmentation and consistent wired-wireless management



Centralized

Ease of Deployment and management for large campuses



Flex Connect

Eliminate the need for a Controller at every Site for a distributed deployment



ME/EWC

Simplified Controller-less deployment for distributed deployments and small sites

Дифференциаторы DNA Center от Prime Infrastructure

Automation



- SWIM
- Plug and Play
- RMA
- Device Refresh
- Rolling AP Upgrade (IOS-XE)

Disruptive Solutions



- SD Access
- Application Policies
- Proactive Sensor Testing
- User Defined Network
- SD Bonjour

Integration Ecosystem

- DNA Spaces Integration
- ServiceNow Integration
- IPAM Integration
- Tableau Integration
- CX-Cloud Integration
- Ansible Module Integration

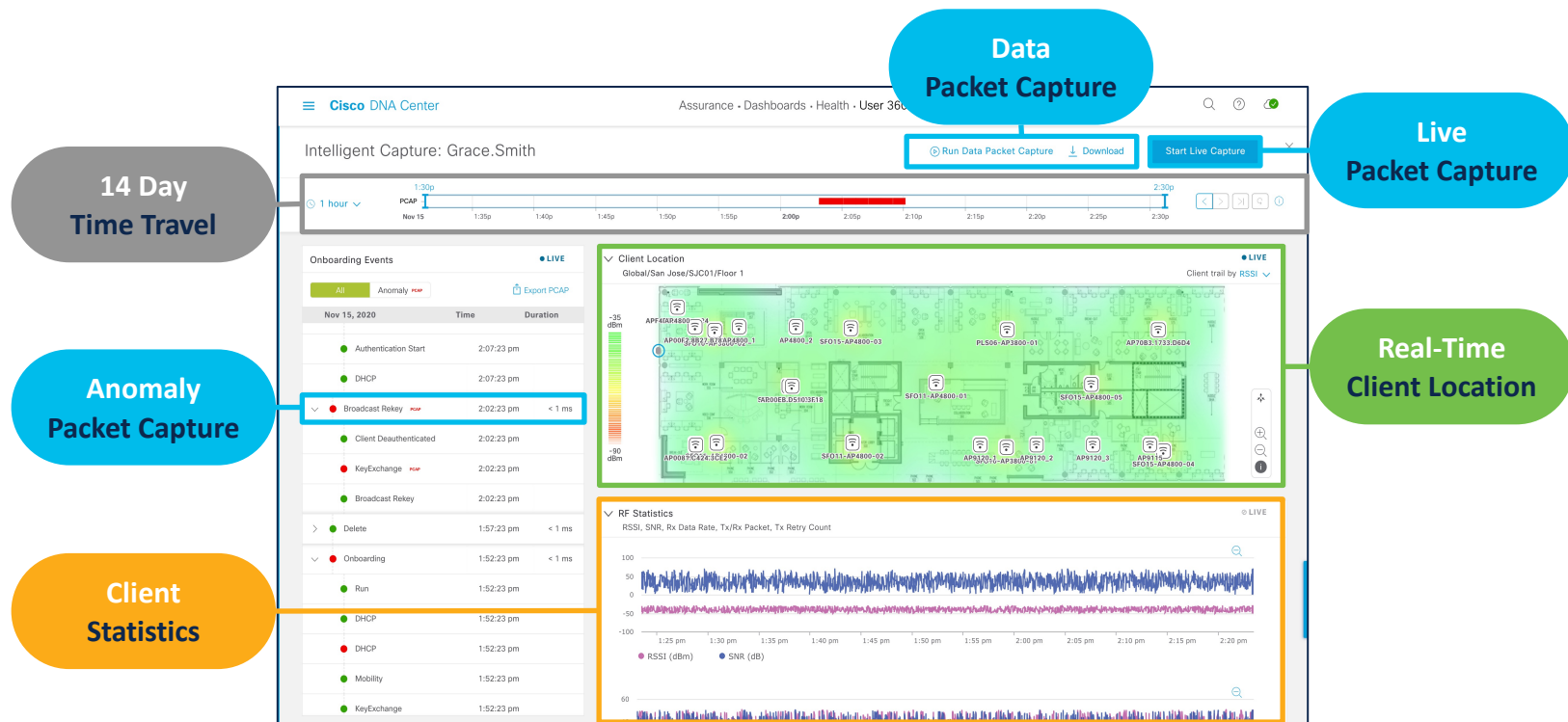


Assurance

- Time Travel (Troubleshooting)
- AI/ML based Analytics
- Path Trace
- Issues Suggestion/Remediation
- Assurance
- Wired/Wireless Sensors
- Intelligent Packet Capture (iCap)









Административная консоль Client Intelligent Capture



Navigation: [Open Menu] > Assurance > Health > Client > [Select Client] > Intelligent Capture

Cisco DNA Center / Prime для беспроводной сети

Customer Type	Greenfield Users New Cisco Customers	Network refresh Existing Cisco customers	Brownfield Users Existing Cisco customers
Management	 <p>Cisco DNA Center</p>	 Cisco DNA Center for new sites  Cisco Prime for Config  Cisco DNA Center for Assurance <div>Co-Existence</div>	 Cisco Prime for Config  Cisco DNA Center for Assurance <div>Co-Existence</div>
Recommendations	<ul style="list-style-type: none"> Cisco DNA Center for Automation and Assurance [PnP] Cisco DNA Center for simplified 802.11ax onboarding Cisco DNA Center CLI templates for advanced configuration 	<ul style="list-style-type: none"> Cisco DNA Center for Automation/Assurance for newer sites Prime-Cisco DNA Center Co-Existence for existing sites (Prime for Reporting, Compliance and Config, legacy devices / Cisco DNA Center for Assurance only) <p>If Advanced Configuration:</p> <ul style="list-style-type: none"> Cisco Prime for advanced configuration Cisco DNA Center for Assurance only 	<ul style="list-style-type: none"> Cisco DNA Center for Assurance Prime and Cisco DNA Center co-existence for network management (Prime for Reporting, Compliance and Config/ Cisco DNA Center for Assurance only) Prime for managing legacy devices

Факторы, ограничивающие переход с Prime на DNA Center

Cisco DNA Center
feature parity with
Prime

Deployment
Variant

Network with
legacy hardware

For example:
WLC: 5508, 8510, 2504
AP: 11xx, 12xx
WLC OS: <8.5

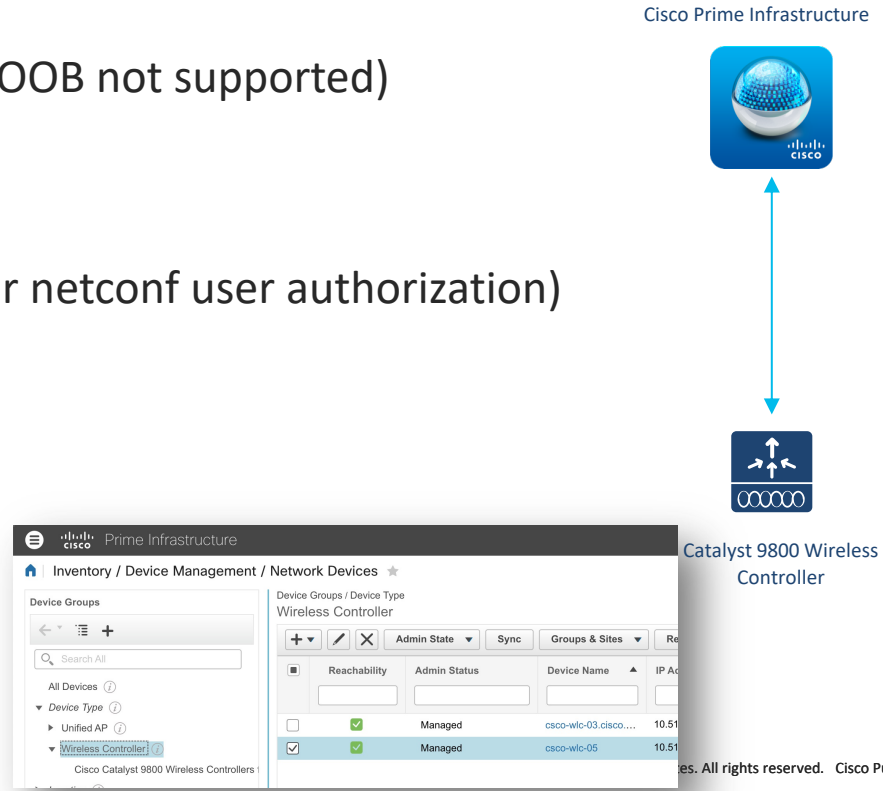
Migration from Prime to Cisco DNA Center will depend of one or more of the
above criteria

Варианты управления Catalyst 9800

- Prime Infrastructure
- DNA Center
- Prime и DNA Center совместно

1. Discover/Add Catalyst 9800 на PI

- Необходимые условия
 - Wireless Management Interface (OOB not supported)
 - Priv 15 User / SNMP community
 - SSH
 - aaa authorization default local (for netconf user authorization)
 - Netconf-yang enabled
- PI to WLC
 - SSH, SNMP, Netconf (Port 830)
- WLC to PI
 - SNMP, Telemetry (Port 20830)



2. Настройка Catalyst 9800 на PI (1/2)

- Lightweight AP Templates can be mostly reused

Configuration / Templates / Lightweight Access Points / New Lightweight AP Template

Configuration

AP Source

AP Selection

Schedule

Deploy Status

Template Basic | AP Parameters | Mesh | 802.11a/n/ac/ax | 802.11a SubBand | 802.11b/g/n/ax | 802.11g/n

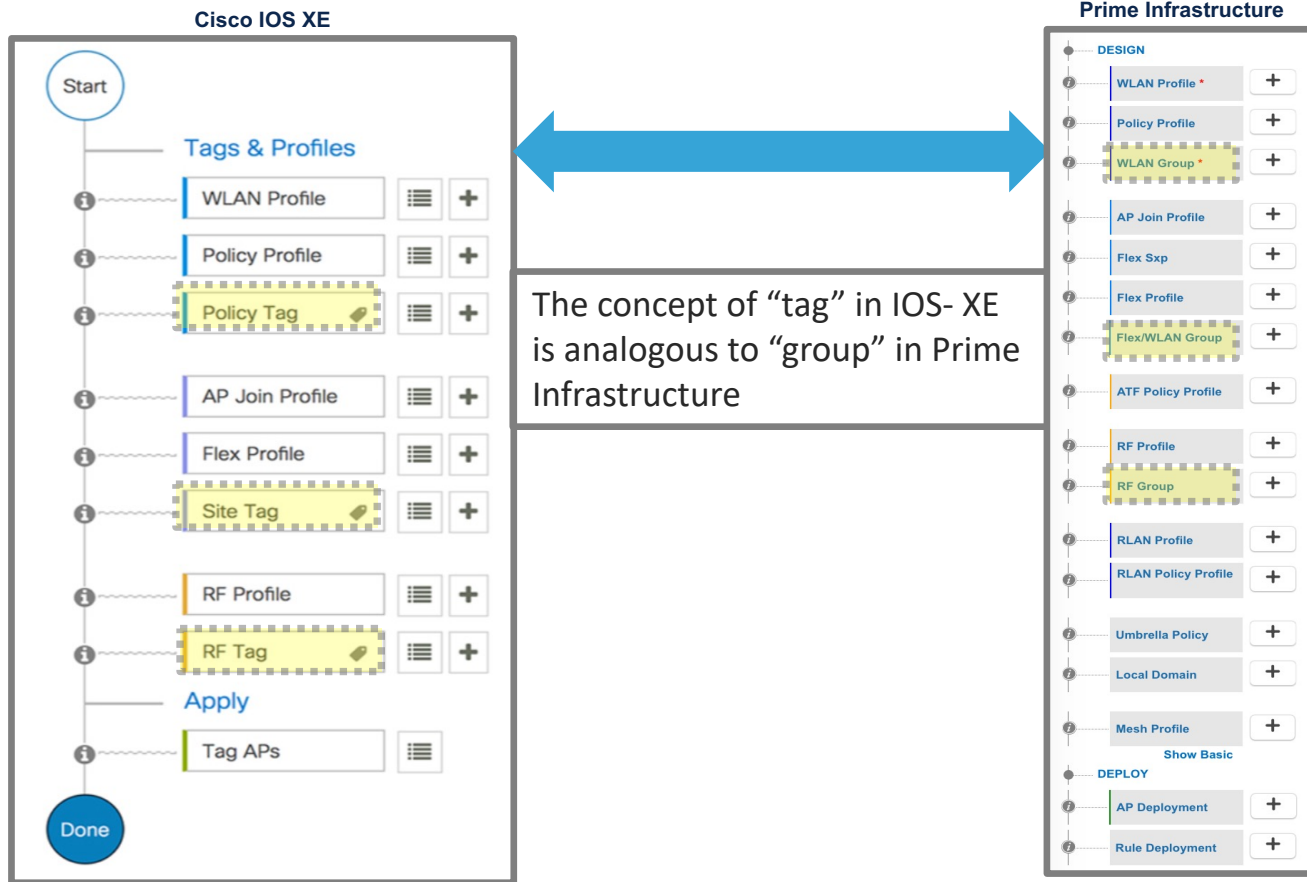
Template Name

Description

Unsupported Fields for Cisco Catalyst 9800 Controller

Not supported Fields	
Configuration ... ▲	Field Name
802.11a/b/g/n	Antenna Selection
802.11a/n/ac	Antenna Selection
802.11b/g/n	Antenna Selection
AP Parameters	TCP Adjust MSS
AP Parameters	AP Retransmit Configuration
AP Parameters	VLAN Tagging
AP Parameters	Pre-Standard 802.3af Switches
AP Parameters	AP Group Name
AP Parameters	Enhanced WIPS Engine

2. Настройка Catalyst 9800 на PI (2/2)





Важное примечание

- AP- and Client data is sent via Telemetry to Prime Infrastructure

```
csc0-wlc-05#show telemetry internal connection
Telemetry connection
```

Peer Address	Port	VRF	Source Address	Transport	State	Profile
10.51.75.134	20830	0	10.51.77.173	cntp-tcp	Active	

```
telemetry ietf subscription 1587911427
encoding encode-tdl
filter tdl-transform LradIfChannelInterference
stream native
update-policy periodic 180000
receiver ip address 10.51.75.134 20830 protocol cntp-tcp
```

- Requires compatibel ,coral' service on PI

- <https://www.cisco.com/c/en/us/td/docs/wireless/compatibility/matrix/compatibility-matrix.html#94893>
- *either 16.12 or 17.3 not both



IOS-XE	PI3.7	PI3.8	PI3.9*
16.12.x			
17.3.x			



Reference

Как добавить C9800 на Prime - Руководство

The screenshot shows the Cisco support page for the document titled "Managing Catalyst 9800 Wireless Controller Series with Prime Infrastructure using SNMP v2 and SNMP v3 and NetCONF". The page includes a navigation bar with links to Products, Support, Partners, and More. The document is updated as of June 4, 2020, with ID 214286. It features a table of contents with sections: Introduction, Prerequisites (Requirements, Components Used), Configure (Ports Used, SNMPv2 Configuration on Cat 9800 WLC, SNMPv3 Configuration on Cat 9800 WLC, NETCONF configuration on the Cat 9800 WLC, Configure (Prime Infrastructure 3.5 and later)), Verify (Verify telemetry status), Troubleshoot (Troubleshooting on Prime Infrastructure, Troubleshooting on Catalyst 9800 WLC), and Migration from PI to DNA-Center. On the right, there is a sidebar with a TAC (Technical Assistance Center) button, contributor information (Sudha Katgeri, Nicolas Darchis), a feedback section, and a list of related documents.

Products Support Partners More

Support / Product Support / Wireless / Cisco Catalyst 9800 Series Wireless Controllers / Troubleshooting TechNotes /

Managing Catalyst 9800 Wireless Controller Series with Prime Infrastructure using SNMP v2 and SNMP v3 and NetCONF

Updated: June 4, 2020 Document ID: 214286

Translations Download Print

Contents

Introduction

Prerequisites

- Requirements
- Components Used

Configure

- Ports Used
- SNMPv2 Configuration on Cat 9800 WLC
- SNMPv3 Configuration on Cat 9800 WLC
- NETCONF configuration on the Cat 9800 WLC
- Configure (Prime Infrastructure 3.5 and later)

Verify

- Verify telemetry status

Troubleshoot

- Troubleshooting on Prime Infrastructure
- Troubleshooting on Catalyst 9800 WLC

Migration from PI to DNA-Center

Contributed by Cisco Engineers

Sudha Katgeri
Cisco TAC

Nicolas Darchis
Cisco TAC

Was this Document Helpful?

Yes No Feedback

Viewers of This Document Also Viewed

- Catalyst 9800 Programmability and Telemetry Deployment Guide 16.10
- Cisco Wireless Solutions Software Compatibility Matrix
- Cisco Prime Infrastructure 3.7 Release Notes

+ Show 2 More

Contact Cisco

- Managing Catalyst 9800 Wireless Controller Series with Prime Infrastructure using SNMP v2 and SNMP v3 and NetCONF

Варианты управления Catalyst 9800

- Prime Infrastructure
- DNA Center
- Prime и DNA Center совместно



Catalyst 9800 Wireless Controller

1. Discover/Add Catalyst 9800 на DNA Center

- Prerequisites
 - Wireless Management Interface (OOB not supported)
 - Priv 15 User / SNMP community
 - SSH
 - aaa authorization default local (for netconf user authorization)
 - Netconf-yang enabled
 - Cisco DNAC to WLC
 - SSH, SNMP, Netconf (Port 830)
 - WLC to Cisco DNAC
 - SNMP, Telemetry (Port 25103)
 - AP to Cisco DNAC
 - Intelligent Capture (Port 32626)

New Discovery

Discovery Name*
C9800

CLI ☐ dnacadmin | admin

SNMPv2c Read ☐ public

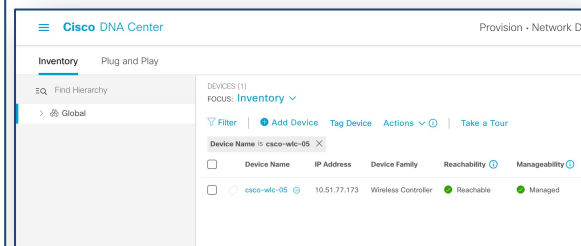
SNMPv2c Write ☐ private

SNMPv3 No credentials to display

HTTP(S) Read No credentials to display

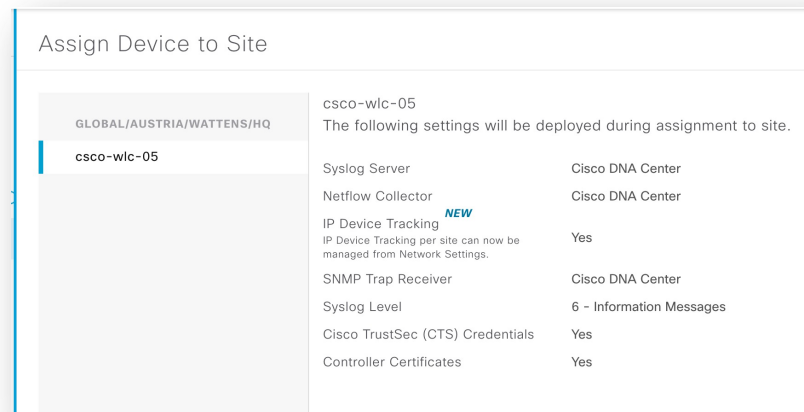
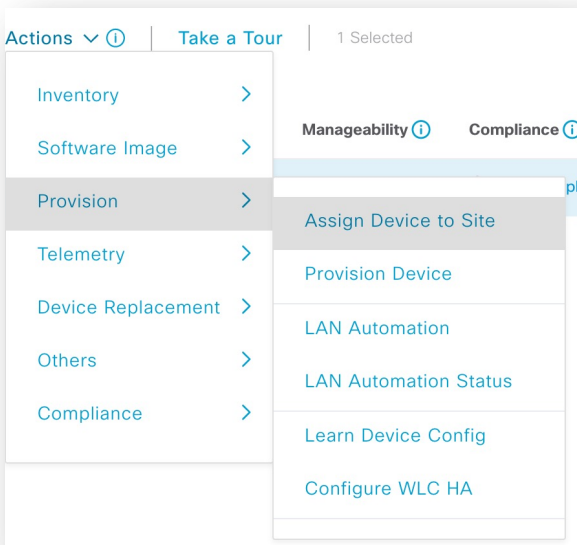
HTTP(S) Write No credentials to display

NETCONF ☐ 830



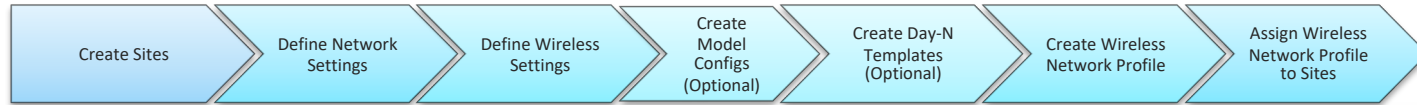
2. Настройка Catalyst 9800 на DNA Center (1/2)

- Assurance only
 - Assign device to Site (no provisioning required)

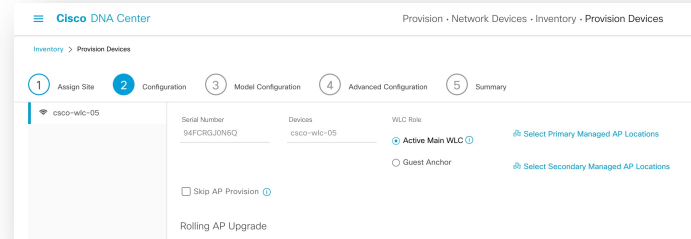


2. Настройка Catalyst 9800 на DNA Center (2/2)

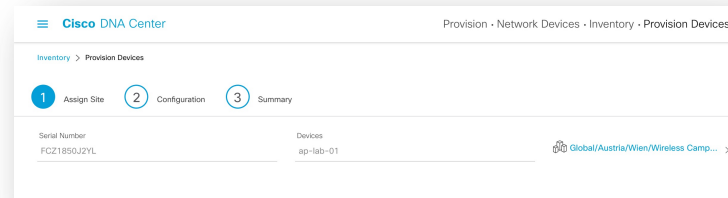
- Configuration and Assurance
 - Design your Wireless



- Provision WLC to Site



- Provision APs to respective Sites





Reference

Настройка C9800 с DNA Center

The screenshot shows the Cisco Support website interface. At the top, there's a navigation bar with the Cisco logo and links for Products, Support & Learn, Partners, and Events & Videos. A search bar and user profile icon are on the right. The main content area displays the title 'Managing and Provisioning Non-Fabric Catalyst 9800 Wireless LAN Controllers from Cisco DNA Center'. Below the title, there are links for Translations, Download, and Print. The document is dated February 9, 2021, with ID 214587. A 'Contents' section lists links for Introduction, Prerequisites (Requirements, Components Used), Configure (From Cisco DNA-C GUI, Provisioning C9800 via Cisco DNA-C, Step1: Design, Step2: Provisioning), and Troubleshoot. The 'Introduction' section states the article provides a sample configuration example. The 'Prerequisites' section mentions basic knowledge of Catalyst 9800 and DNA-Center configuration. The 'Requirements' section refers to a software compatibility matrix. On the right sidebar, it says 'Contributed by Cisco Engineers' with names Shankar Ramanathan and Joshua Sprague. It asks 'Was this Document Helpful?' with 'Yes' and 'No' buttons and a 'Feedback' link. Below that, it lists 'Viewers of This Document Also Viewed' with a link to 'Managing Catalyst 9800 Wireless Controller Series with Prime Infrastructure using SNMP v2 and SNMP v3 and NetCONF'. At the bottom of the sidebar, it says 'Contact Cisco', 'Open a Support Case', and 'Related Cisco Community Discussions'.

- Managing and Provisioning Non-Fabric Catalyst 9800 Wireless LAN Controllers from Cisco DNA Center

Варианты управления Catalyst 9800

- Prime Infrastructure
- Cisco DNA Center
- Prime и Cisco DNA Center совместно

Cisco Prime/DNA Center совмещено

Using Prime

- Running network wide reports
- Alarms and Notifications for the network
- Maps and changes done via Prime

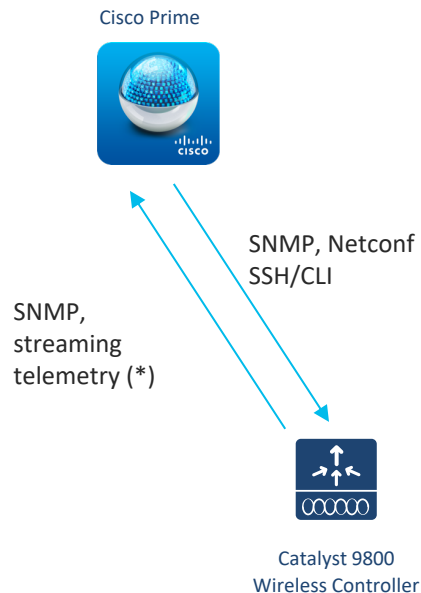
Using DNAC

- Adv. troubleshooting
- Packet Capture and Sensor enabled network
- ML/AI integration
- Cisco DNA Spaces integration

New Prime / Cisco DNA Center coexistence guide on CCO:

https://www.cisco.com/c/en/us/td/docs/net_mgmt/prime/infrastructure/3-9/migration/guide/bk_Cisco_Prime_Infrastructure_to_DNAC_Co-existence_guide.html

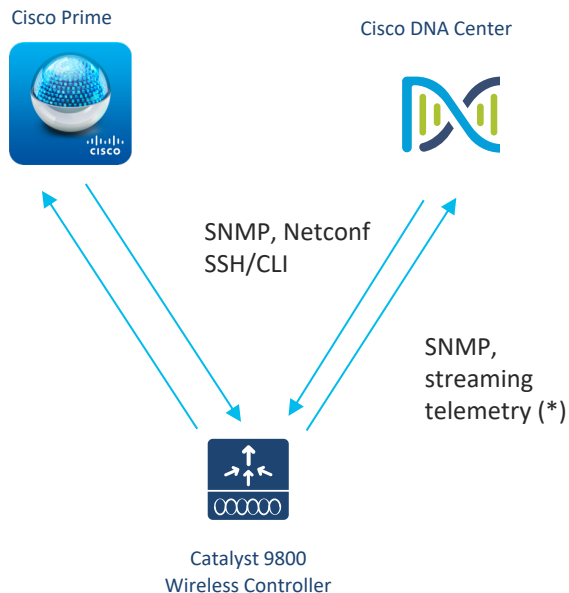
Вариант использования Prime and DNA Center вместе: Управление C9800 на Prime...



(*) TCP port **20830** (IOS-XE 16.12 and later)

- **Customer use case:** C9800 initially managed with Prime (Template, maps, reporting), Cisco DNA Center added for Assurance
- All config and templates available in Prime will be pushed via SNMP UDP port 161 and CLI. Netconf on TCP port 830 is used to push the telemetry configuration
- Operational data is obtained over SNMP. This uses UDP Port 162
- AP and client operational data are sent to Prime via streaming telemetry
 - TCP 20830 (for IOS-XE 16.12 and later) is used by C9800 to send data to Prime

Вариант использования Prime and DNA Center вместе: ... и C9800 на DNA Center для телеметрии



- **Customer use case:** C9800 initially managed with Prime (Template, maps, reporting), Cisco DNA Center added for Assurance
- Add C9800 to **DNA Center 2.1.2.x** using Discovery
- Telemetry configuration and certificates are pushed during 'Assign to Site'

Диагностика неисправностей с телеметрией - шаги

- Check if Assurance version and device version are compatible. Use the tool ([link](#))
- Check if time on the device is correct by running 'show clock'. Preferred to have DNA Center and device on UTC
- Check if the 9800 is in Managed state in inventory. Try to rediscover
- Run 'show network-assurance summary' on 9800 and make sure network-assurance shows as enabled and you see DNAC IP address correctly
- Run 'show run | inc trustpoint' command on 9800 and make sure 'DNAC-CA' and 'sdn-network-infra-iwan' trustpoints are listed
- Run 'show run | sec ietf' and make sure it lists down the subscriptions. Verify that the receiver ip address is matching with DNAC ip address
- 'show telemetry internal connection' command and make sure it shows DNAC ip address and State as 'Active'
- Make sure ports used are open in firewall

....still issue? TAC case!

Миграция с Prime на DNA Center

- Coexistence Tool
- Demo #1
- Maps Migration

Постепенный переход с PI на DNA Center

DNA Center

Assurance only

Prime for
Automation

Getting Started
with DNAC

DNA Center

Automation and Assurance
for compatible part of
network

Prime Co-existence

Older hardware/software and
DNAC compatible software and
hardware for missing
functionalities

Coexistence

DNA Center

Automation and
Assurance for full
network

No Prime

Prime/DNA Center сосуществование - Сценарии

- Full Migration from Prime to Cisco DNAC

- Prime and Cisco DNAC together

1

Cisco DNAC in Assurance Mode

PI = R/W, DNAC = RO

2

Cisco DNAC in Automation + Assurance Mode

PI = RO, DNAC = R/W

3

Cisco DNAC in Automation Mode

PI = RO, DNAC = R/W

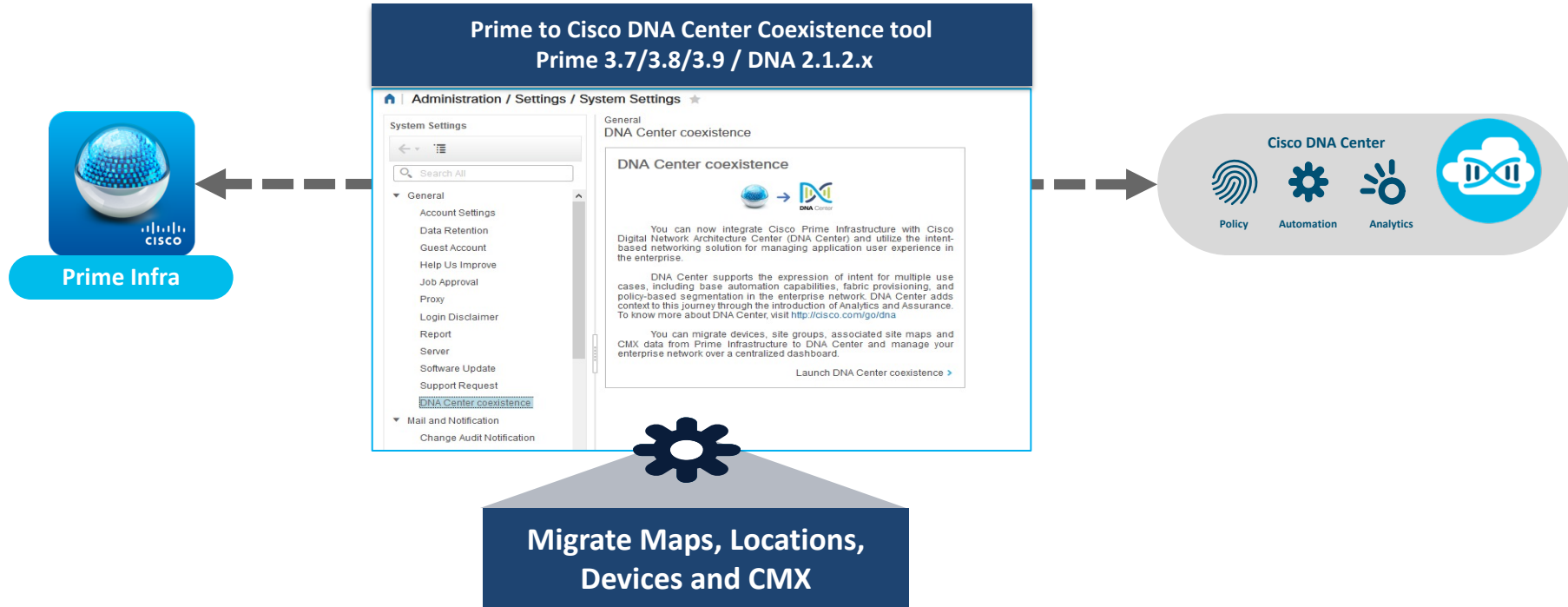
There is only one system that will make changes to the network

Миграция с Prime на DNA Center

- Coexistence Tool
- Demo #1
- Maps Migration

Prime / Cisco DNA Center Coexistence Tool

Migrate Data, Site and Services from Prime to Cisco DNA Center

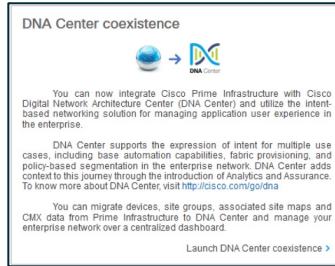
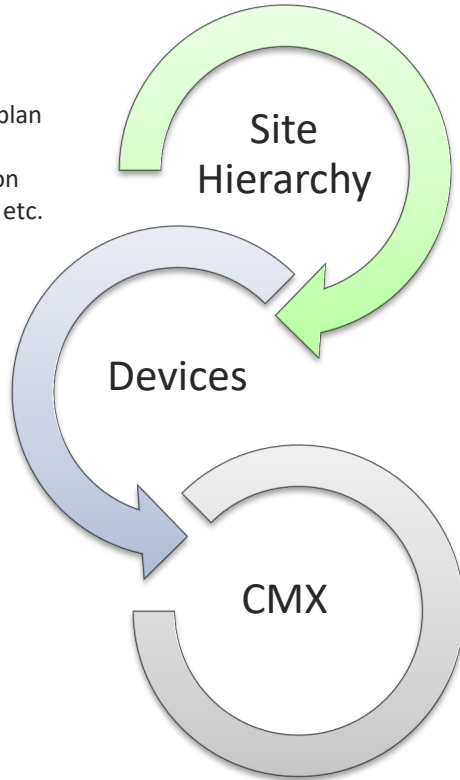


Cisco Prime/Cisoc DNA Center coexistence - Обзор

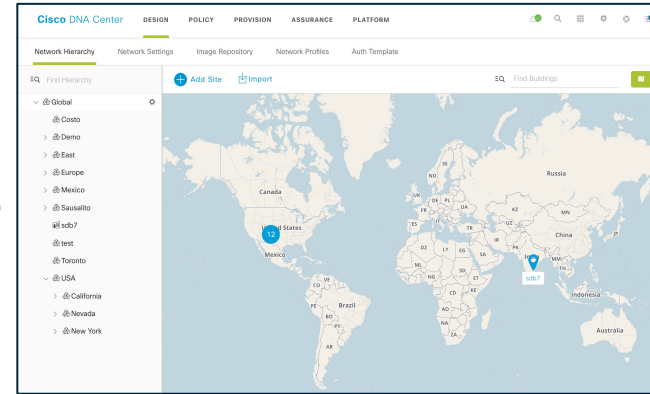
- Sites
- Buildings
- Floors with floor plan
- Floor elements – Inclusion/Exclusion Areas, Obstacles, etc.

- WLCs
- APs
- Routers
- Switches

- CMX Servers



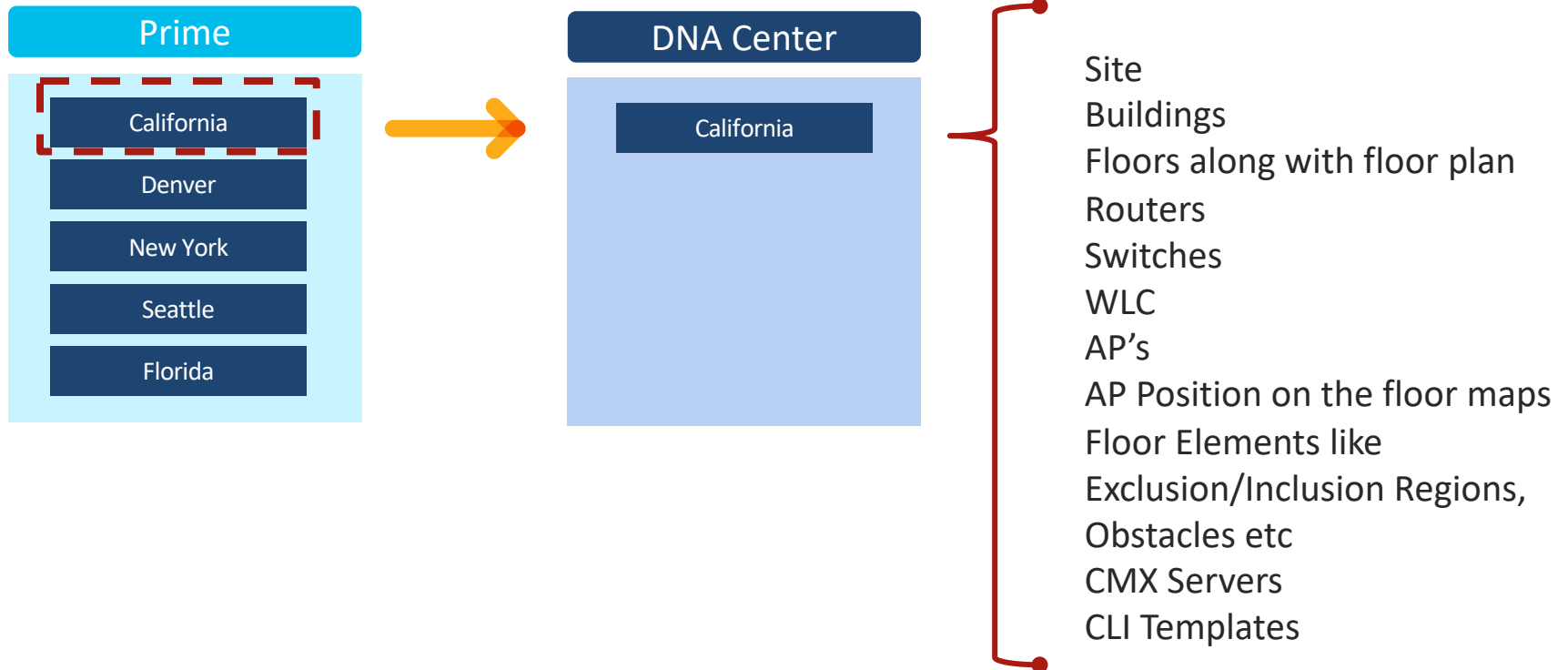
Prime Infrastructure
3.8.1 Update 1




Cisco DNA Center –2.1.x

Jump start with Cisco DNA Center with a readily available site layout

Cisco Prime/DNA Center coexistence - Сценарии



Prime Coexistence Tool – Запуск

 Prime Infrastructure

Application Search

0

root - ROOT-DOMAIN

Administration / Settings / System Settings

System Settings

Search All

General

Account Settings

Data Retention

Guest Account

Help Us Improve

Job Approval

Proxy

Login Disclaimer

Report

Server

Software Update



Support Request

Cisco DNA Center coexistence

General

Cisco DNA Center coexistence

Cisco DNA Center coexistence

 → 

You can now integrate Cisco Prime Infrastructure with Cisco Digital Network Architecture Center (Cisco DNA Center) and utilize the intent-based networking solution for managing application user experience in the enterprise.

Cisco DNA Center supports the expression of intent for multiple use cases, including base automation capabilities, fabric provisioning, and policy-based segmentation in the enterprise network. Cisco DNA Center adds context to this journey through the introduction of Analytics and Assurance. To know more about Cisco DNA Center, visit <http://cisco.com/go/dna>

You can migrate devices, site groups, associated site maps and CMX data from Prime Infrastructure to Cisco DNA Center and manage your enterprise network over a centralized dashboard.

Launch Cisco DNA Center coexistence >

Prime Coexistence– Предоставление данных о DNA Center



Cisco DNA Center Server

Prime Infrastructure supports integration of Cisco DNA Center for the versions specified [here](#). You can only integrate one Cisco DNA Center Server at a time.

* Server IP or Hostname

192.168.117.3

✓

* Username

admin

* Password

.....

* Confirm Password

.....

Remove

Update

Next

Prime Coexistence Tool – Настройка синхронизации



- ☒ Enables automatic synchronization of data integrated with Cisco DNA Center ?
- ☒ Include newly added data during dynamic synchronization ?
- ☒ Enable CMX settings ?
- ☒ Migrate User Defined CLI Templates ?

Select all the applicable settings and preferences

Supported / Available Limits

	Recommended Scale	Available
Site Groups / Site Maps	500	388
Devices	1000	984

Ensure that you don't exceed the recommended scale.

Previous

Next

Prime Coexistence Tool – Разработка иерархии сайтов



Site Groups / Site Maps: Selected 0 / Maximum 388

Devices: Selected 0 / Maximum 984

☐ Replicate Parent Hierarchy

Prime Infrastructure Location Groups

- ☐ All Locations
- ☐ System Campus

1

Select sites to be added for Prime Migration

3

Unselect sites to be removed from getting migrated

Move =>

4

Cisco DNA Center Site Groups

- ☐ Chennai
- ☐ CMX-Campus22
- ☐ CMX-Campus33
- ☐ CopyOfCampus_1
- ☐ Default1
- ☐ IT campus 1
- ☐ MapsTestKK
 - ☐ NewA_test1
- ☐ new_test1
- ☐ pmCamp1

2


Select Destination

Previous

Next

Prime Coexistence Tool – Выбор CMX Server

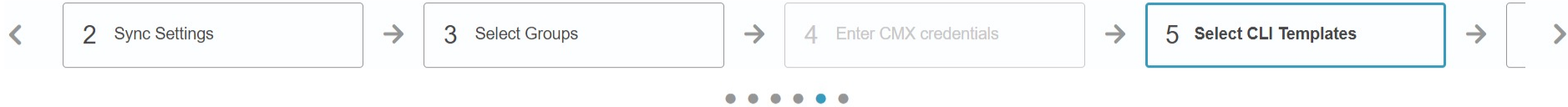


 No CMX available in the selected location groups.

Previous

Next

Prime Coexistence Tool – Выбор CLI Templates



Non-Migrated Templates

Migrated Templates

Following are the templates available in Prime Infrastructure to be migrated to Cisco DNA Center.

Selected 0 / Total 0

Show <input type="text" value="Quick Filter"/>			
<input type="checkbox"/>	Name	Type	Description
	<input type="text"/>	<input type="text"/>	<input type="text"/>

No data is available

Previous

Next

Prime Coexistence Tool – Summary and Status



Groups Devices Maps CMX CLI Templates Sync Settings

Automatic synchronization of data integrated with Cisco DNA Center : Enabled ?

Include newly added data during dynamic synchronization : Enabled ?

CMX settings : Enabled ?

Migrate User Defined CLI Templates : Enabled ?

Status : Not Available

Previous

Submit

Prime coexistence tool – Журнал активности

Activity Log

Detailed step-by-step status



Initializing



Groups Migration



Maps Migration



CMX Migration

Description

Date

Start Time

End Time

Status

Prime Infrastructure - DNA Center data migration has started (1/3 Completed) [Show Less](#) ^

25-Oct-2018

04:09:00

N/A

In-Progress

Groups

Migration of Grouping module from Prime Infrastructure to DNA Center

25-Oct-2018

04:09:00

04:09:03

Complete

Maps

Migration of Maps module from Prime Infrastructure to DNA Center

25-Oct-2018

04:09:03

N/A

In-Progress

CMX

Migration of CMX module from Prime Infrastructure to DNA Center

N/A

N/A

N/A

Yet to start

Prime coexistence tool - Советы

- Migration workflow resides on Prime Infrastructure
- Cisco Prime and Cisco DNA Center require IP reachability from each other
- Recommended release: DNA Center 2.1.x and Prime 3.7/3.8/3.9 with latest Prime Data Migration Tool patch
- If Cisco DNAC certificate changed, use Prime CLI to reset

```
ncs certvalidation tofu-certs listcerts
```

```
ncs certvalidation tofu-certs deletecert host <host>
```

Cisco DNA Center Server

Prime Infrastructure supports integration of Cisco DNA Center for the versions specified [here](#). You can only integrate one Cisco DNA Center Server.

*Server IP or Hostname: vielab-dnac1.cisco.com

*Username: admin

*Password:

*Confirm Password:

Remove Update

Cisco DNAC server certificate is invalid

Миграция с Prime на DNA Center

- Coexistence Tool
- Demo #1
- Maps Migration

Сценарии демонстраций

- **Демо #1:**

PI = R/W, DNAC = RO

- **Situation:** Prime Infrastructure and AireOS 3504 Controller
- **Goal:** Keep Prime for configuration, use Cisco DNAC for monitoring and Assurance
- **Demo:** Use Prime Coexistence Tool to migrate maps and 3504 to Cisco DNA Center.

- **Демо #2:**

PI = N/A, DNAC = R/W

- **Situation:** 3504 is monitored by Cisco DNA Center
- **Goal:** Complete Migration from 3504 Controller to 9800 Controller
- **Demo:** Learn 3504 Controller config, provision 9800 and decommission 3504.



Демо #1

Metrics



Last Updated: Monday, March 8, 2021 at 6:01:20 PM CST



Filters

Time Frame

Past 1 Hour

Apply

Top N Interface Utilization

Zoom: 1h | 6h | 1d | 1w | 2w | 4w | 3m | 6m | 1y | From: 3/8/2021, 5:01 PM To: 3/8/2021, 6:01 PM

Transmitted(Tx) of port group - ALL | [View Details](#)

Device	Device IP	Maximum Tx	Interface	Speed
--------	-----------	------------	-----------	-------

No devices added in the system

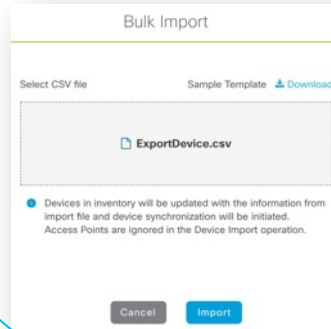
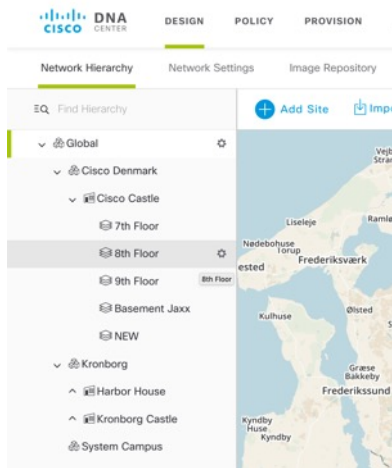
Миграция с Prime на DNA Center

- Coexistence Tool
- Demo
- Maps Migration

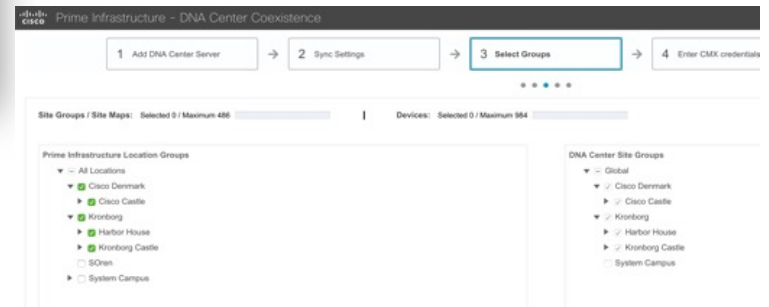
Как создать Иерархию/Карты сайта в DNAC?

2) Manually Export /Import from Prime

1) Manually



3) Prime Coexistence Tool



Что вам нужно знать о Картах в PI...



Maps and Prime

- Prime can sync maps / floorplans with MSE
- Prime requires a manual process of export/import maps with CMX/Cisco DNA Spaces
- Prime can consume location data from MSE and CMX
- PI supports 3 level hierarchies:
 - Campus → Building → Floor
 - There are also coverage zones but these are for CMX/Cisco DNA Spaces and don't represent a site hierarchy in Prime
 - Nested hierarchy can be achieved through Network Device Groups > Location, but are not visible within the Site Maps

Что вам нужно знать о Картах в DNA Center...



Maps and DNA Center

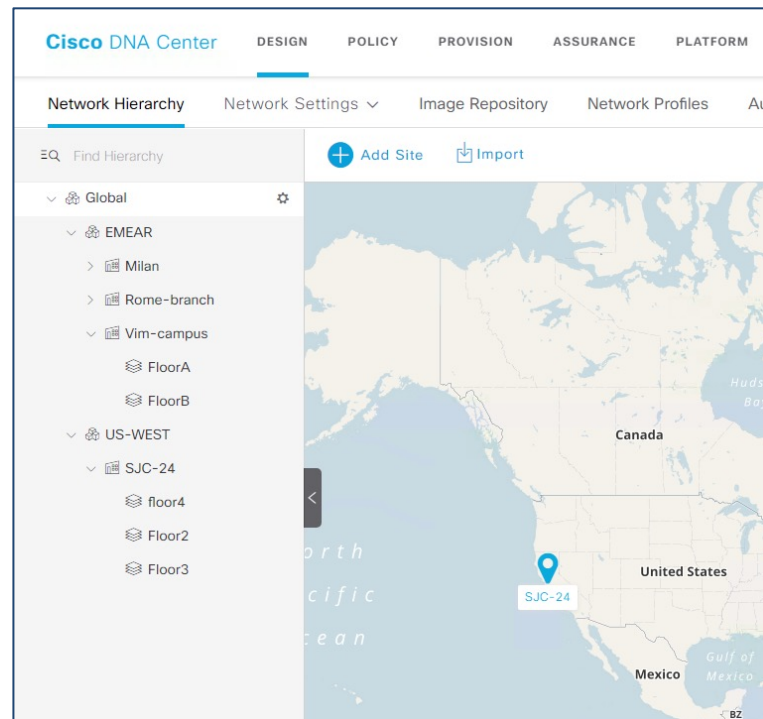
- Cisco DNA Center supports multi-level hierarchy:
Global > Area (one or more) > Building > Floor
- Cisco DNA Center does not allow the use of the character "/" in the name of the Area, Building or Floor.
- Cisco DNA Center has a limit of 200 APs per floor map, consider this when migrating from Prime
- Cisco DNA Center can sync maps with CMX or Cisco DNA Spaces*
- Map export can also be used for manual upload to Cisco DNA Spaces
- Cisco DNA Center can consume location data from CMX or Cisco DNA Spaces*

*Cisco DNAC 2.1.2.x or higher

Миграция карт в DNA Center

Вариант 1 = manual

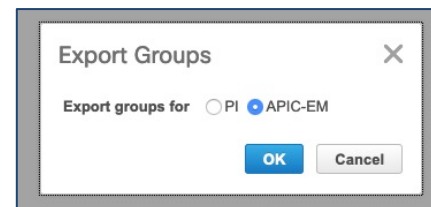
- User creates the needed hierarchy in DNA center and load maps there directly
- Recommended only if need to start from scratch
- No real migration, time consuming



Миграция карт в DNA Center

Вариант 2 = Export/import from Prime (1/4)

- Export the site Hierarchy. Go to *Inventory / Group Management / Network Device Groups* and click on "Export Groups"
- Click on Export for APIC-EM and OK
- The generated CSV file needs to be edited to add the country info for each Building (info required by Cisco DNA Center)

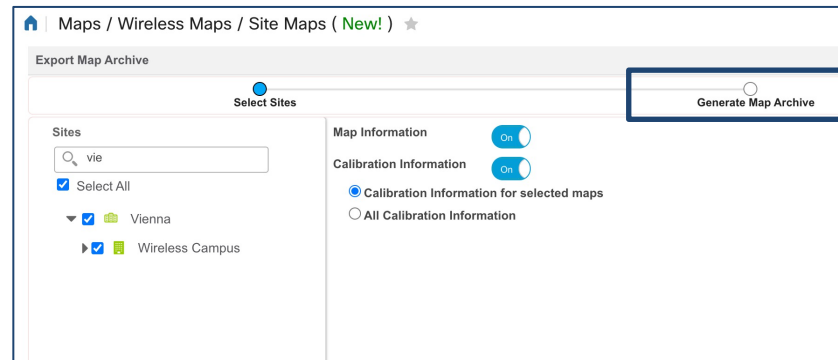
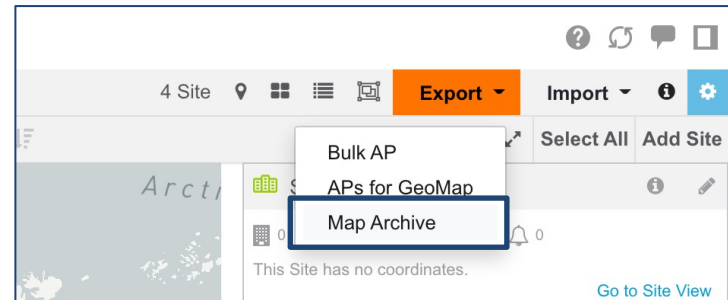


	A	B	C	D	E	F	G	H
1	#This file will be used to migrate sites from PI to APIC-EM							
2	GroupName	GroupTypes	ParentHierarchy	namespace:Location:type	namespace:Location:latitude	namespace:Location:longitude	namespace:Location:address	namespace:Location:country
3	Richardson	SITE	Global	area	33.0014534	-96.68202209	3601 Jupiter Road, Plano, Texas 75074, United States	
4	RCDN-5	SITE	Global/Richardson	building	33.001453	-96.68202	3601 Jupiter Road, Plano, Texas 75074, United States	United States
5	Floor-1	SITE	Global/Richardson/RCDN-5	floor	33.001453	-96.68202	This Building has no coordinates.	
6	Floor-3	SITE	Global/Richardson/RCDN-5	floor	33.001453	-96.68202	This Building has no coordinates.	
7	Floor-4	SITE	Global/Richardson/RCDN-5	floor	33.001453	-96.68202	This Building has no coordinates.	
8	System Campus	SITE	Global	area				

Миграция карт в DNA Center

Option 2 = Export/import from Prime (2/4)

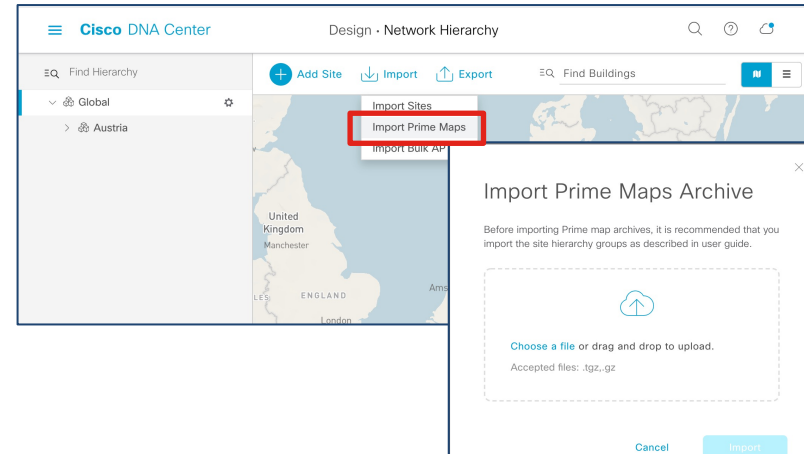
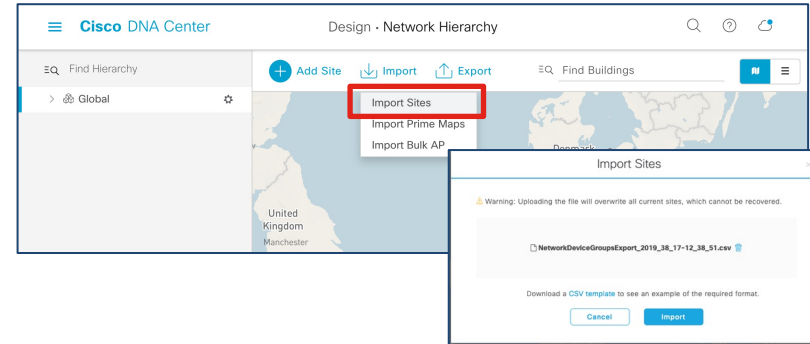
- Export the maps from Prime by clicking on Map Archive
- Select the sites you want to export and click on Generate Map Archive
- This will generate a tar.gz file



Миграция карт в DNA Center

Option 2 = Export/import from Prime (3/4)

- Prepare Cisco DNA Center: add the WLC to Cisco DNA Center Inventory (Access Points need to be in the database)
- Import the site hierarchy from Prime by going to Design / Network Hierarchy and import the CSV file generated earlier
- Now you can import the maps by clicking on Import Prime Maps and loading the tar.gz file
- **NOTE:** In Cisco DNA Center geo coordinates are mandatory, in Prime these are optional.



Миграция карт в Cisco DNA Center

Option 2 = Export/import from Prime (4/4)

- To add the geo coordinates in Prime before exporting, edit the map at Campus or Building level

The screenshot shows the Cisco DNA Center Maps interface. On the left, the 'Domain Navigator' shows a tree structure with 'Vienna' and 'Wireless Campus'. The main area displays a map of Europe with a blue pin on Vienna. On the right, the 'Edit Site' dialog is open, showing fields for 'Site Name' (Vienna), 'Contact', 'Parent Location Group' (Austria), 'Civic Location' (Handelskai 94-96, 12), 'Latitude' (48,2406), 'Longitude' (16,386927), and 'Dimensions (Meters)' (Width: 50,00, Length: 50,00). A blue arrow points from the text 'Enter the civic address or coordinates' to the 'Civic Location' field.

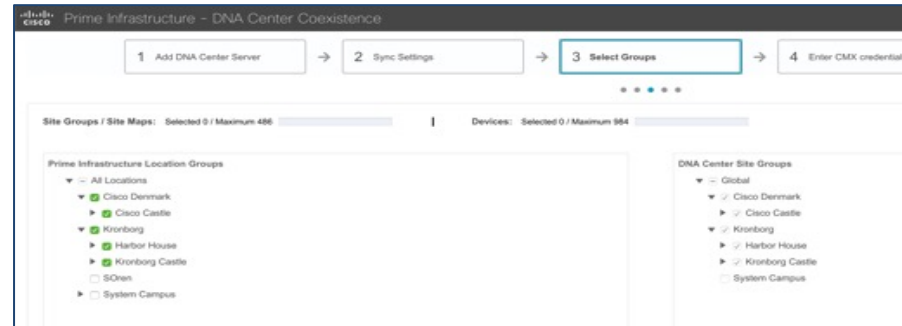
Field	Value
Site Name	Vienna
Contact	
Parent Location Group	... > Austria
Civic Location	Handelskai 94-96, 12
Latitude	48,2406
Longitude	16,386927
Dimensions (Meters)	
Width	50,00
Length	50,00

Enter the civic address or coordinates

Миграция карт в DNA Center

Option 3 = Use the Prime DNA Center coexistence tool

- Same requirements as option 2
- Prime co-existence tool will prompt to push the CMX details to Cisco DNA Center; there is not a way to uncheck this during the migration flow.
- It is possible to remove the sync between CMX & Site Maps getting migrated for the brief period and enable the sync back once the building/floor maps are migrated





Миграция с AireOS на IOS XE при помощи DNA Center

- Config Translation/Learning
- Demo

Миграция конфигурации AireOS

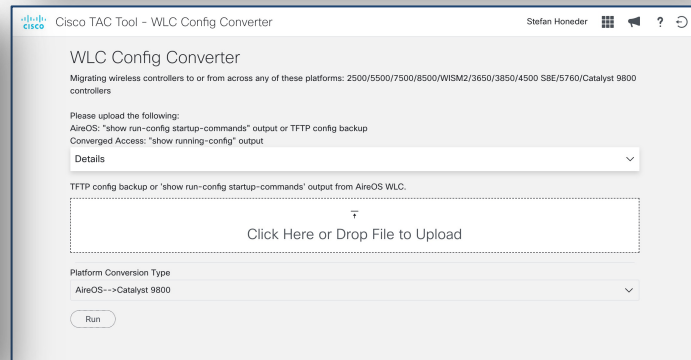
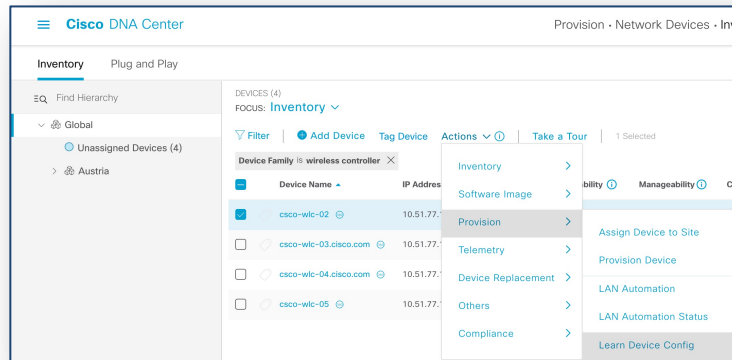
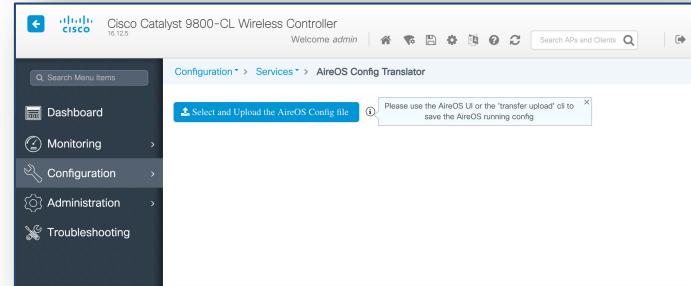
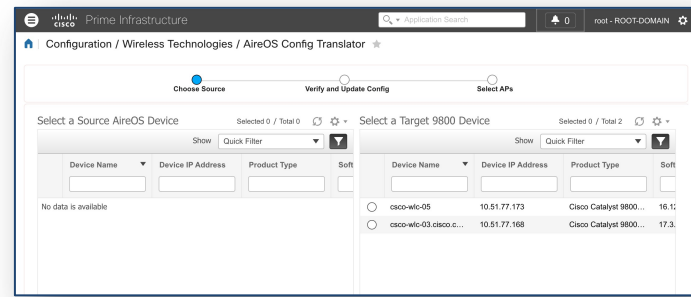
- Prime Infrastructure: AireOS Config Translator

- C9800: AireOS Config Translator

- Cisco TAC Tool: WLC Config Converter

- Cisco DNA Center

- Learn Device Config
- Migration Tool



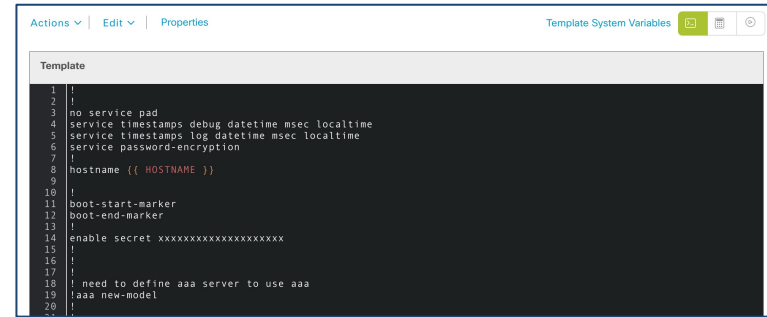
Существующая сеть - Learn Device Config

- Use a managed AireOS Controller to "Learn" Controller Configuration
- Assign Site
- Resolve Conflicts
- Design Object Details
 - Network
 - Wireless
 - Ignored Config*
- Network Profile

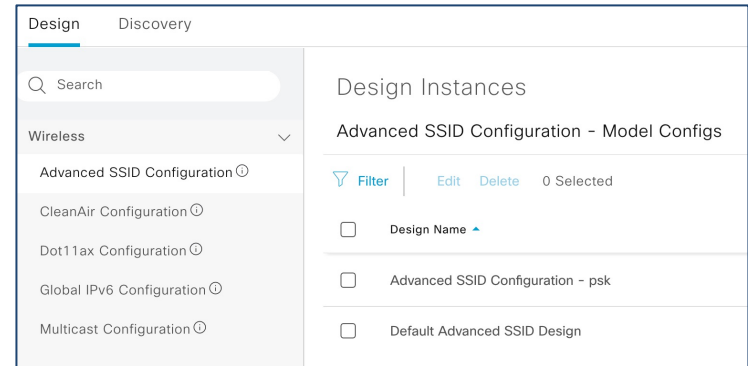
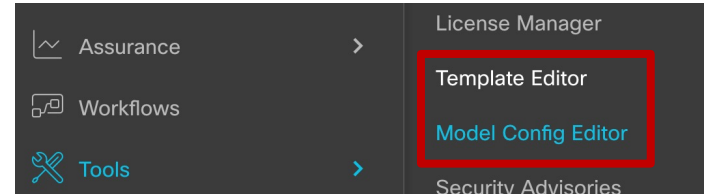
Inventory >	Reachability ⓘ Manageab
Software Image >	
Provision >	Assign Device to Site
Telemetry >	Provision Device
Device Replacement >	LAN Automation
Others >	LAN Automation Status
Compliance >	Learn Device Config
	Configure WLC HA

Окончательные настройки

- Use the Migration Tools
 - On-line
 - [Cisco TAC Tool - WLC Config Converter](#)
- Build & test to validate the Controller Config
- Template Editor
- Model Config Editor
- Apply Template & Model Config



```
1 |  
2 |  
3 no service pad  
4 service timestamps debug datetime msec localtime  
5 service timestamps log datetime msec localtime  
6 service password-encryption  
7 |  
8 hostname {{ HOSTNAME }}  
9 |  
10 |  
11 boot-start-marker  
12 boot-end-marker  
13 |  
14 enable secret xxxxxxxxxxxxxxxxxx  
15 |  
16 |  
17 |  
18 | need to define aaa server to use aaa  
19 aaa new-model  
20 |
```



Миграция на 9800 при помощи DNA Center

- Config Translation/Learning
- Demo #2

Сценарии демонстраций

- **Демо #1:**

PI = R/W, DNAC = RO

- **Situation:** Prime Infrastructure and AireOS 3504 Controller
- **Goal:** Keep Prime for configuration, use Cisco DNAC for monitoring and Assurance
- **Demo:** Use Prime Coexistence Tool to migrate maps and 3504 to Cisco DNA Center.

- **Демо #2:**

PI = N/A, DNAC = R/W

- **Situation:** 3504 is monitored by Cisco DNA Center
- **Goal:** Complete Migration from 3504 Controller to 9800 Controller
- **Demo:** Learn 3504 Controller config, provision 9800 and decommission 3504.

The background is a dark blue field filled with numerous small, semi-transparent squares and dots. These elements are scattered across the frame, with a higher concentration of larger squares in the upper left and lower right corners. A diagonal band of smaller dots and squares runs from the top center towards the bottom right. The colors of the squares and dots include various shades of blue, cyan, green, yellow, orange, and red, creating a vibrant, pixelated effect.

Демо #2

Metrics



Last Updated: Monday, March 8, 2021 at 6:01:20 PM CST

Filters Time Frame Past 1 Hour Apply

Top N Interface Utilization

Zoom: 1h | 6h | 1d | 1w | 2w | 4w | 3m | 6m | 1y | From: 3/8/2021, 5:01 PM To: 3/8/2021, 6:01 PM

Transmitted(Tx) of port group - ALL View Details

Device	Device IP	Maximum Tx	Interface	Speed
--------	-----------	------------	-----------	-------

No devices added in the system

Важное примечание

- Demo Used C9800 running IOS-XE 17.3.3
 - Prior versions will require manually writing Tags to AP after Migrating APs from 3504
 - Or other strategy
 - Refer to [Cisco Catalyst 9800 Series Configuration Best Practices](#) White Paper

Cisco Catalyst 9800 Series pro...

General controller settings

General access point settings

Network controller settings

Network access point settings

Currently, to push the tags to the AP so that the AP can save and remember this information, you need to use a CLI command in exec mode:

```
c9800-1#ap name <APname> write tag-config
```

Besides the write command, another way to preserve tags as you move APs from one controller to the other is to use an AP tag filter. Let's say you want to move APs that are on floor 1 from WLC1 to WLC2. Let's assume that you have named the AP accordingly as "APx_floor1," where "x" is the AP number. You need to configure the desired tags on both controllers and then, on WLC2, configure a filter rule to match any AP name that ends with "floor1" and assign it to the desired tags. Go to Configuration > Tags & Profiles > Tags, and click Filter:

[Configuration](#) > [Tags & Profiles](#) > [Tags](#)



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[Cisco PI to Cisco DNAC Co-existence Guide](#)

[DNA Center compatibility information](#)

[DNA Center release notes](#)

[DNA Center user guides](#)

[Cisco Wireless Solutions Software Compatibility Matrix](#)

[YouTube Brownfield learn device config example](#)

[Cisco DNAC YouTube Channel](#)

[C9800 Release Notes](#)

[C9800 Configuration Guides](#)

[C9800 Technical References](#)

[C9800 Configuration Examples and Tech Notes](#)

[C9800 Command References](#)

[C9800 Deployment Best Practices](#)

[C9800 WLC Configuration Model](#)

[WLC Configuration Converter](#)

[WLC Compatibility Matrix](#)

[AireOS to IOS-XE Command Mapping](#)

[AireOS to C9800 Wireless Controller Feature Comparison Matrix](#)

[Understand FlexConnect on a 9800 WLC](#)

[Cisco Learning Partners](#)

[Cisco WLAN YouTube Channel](#)



Сетевой марафон: Catalyst 9800 – новая классика WLAN

- 24 мая - Обзор процесса миграции и лучших практик при переходе с контроллеров AireOS на Catalyst 9800
- 25 мая - Миграция Flexconnect сети на беспроводной контроллер Catalyst 9800
- 26 мая - Разворачивание, настройка и использование виртуального беспроводного контроллера Catalyst 9800
- **27 мая - Миграция на беспроводной контроллер Catalyst 9800 с использованием Prime Infrastructure и DNA Center**
- 28 мая - Рекомендации по отладке и поиску неисправностей в сетях под управлением Catalyst 9800

The background is a dark blue field filled with numerous small, semi-transparent squares and dots. These elements are scattered across the frame, with a higher concentration in the upper left and lower right areas. The colors of these elements include various shades of blue, green, yellow, orange, and red, creating a vibrant, pixelated effect.

Спасибо!