

# Cloudpath Enrollment System

# End-User Experience for Managed and Unmanaged Chromebooks

Software Release 5.1 May 2017

**Summary:** This document describes the end-user experience for managed and unmanaged Chromebooks that are using the Cloudpath to onboard to a secure wireless network. **Document Type:** Information **Audience:** Network Administrator, End-User



# **End-User Experience for Managed and Unmanaged Chromebooks**

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# End-User Experience for Managed and Unmanaged Chromebooks

### **Overview**

The Cloudpath Enrollment System (ES) extends the benefits of certificates to Chromebooks in environments with an existing Public Key Infrastructure (PKI).

The certificate is installed in the Trusted Platform Module (TPM), and can be used for certificate-based Wi-Fi (WPA2-Enterprise with EAP-TLS), web SSO authentication, web two-factor authentication and more.

Cloudpath can automatically distribute user and device certificates to both IT-managed and unmanaged (BYOD) Chromebooks.

- For IT-managed Chromebooks, Cloudpath deploys both user and device certificates via a Chrome extension provisioned through the Chromebook management console. Whether tied to the user or the device, the certificates are TPM-backed, which means they are burned into hardware for maximum protection.
- For unmanaged Chromebooks, Cloudpath provides a web portal for self-service and automated installation of the certificate along with configuration of related services, such as WPA2-Enterprise Wi-Fi using EAP-TLS.

Whether your network supports IT-managed, or unmanaged Chromebook devices (or both), Cloudpath provides a secure method for Automatic Device Enablement.

# **Supported Devices**

Cloudpath supports all Chrome OS devices supported by Google. To see a list of devices currently supported by Google, consult the following URLs:

https://www.google.com/chrome/devices/eol.html

# **Cloudpath User Experience**

Cloudpath provides the prompts that guide the user through the sequence of steps that make up the enrollment workflow. During this process, the user enters information as requested, and makes selections about user type, device type, among others. The sequence of steps for the enrollment differ, depending on the selection that is made.

# **Enrollment Workflow**

During enrollment, the Chrome OS is detected and Cloudpath provides Chrome OS-specific instructions for downloading the configuration file and installing it on the device manually, or automatically if extensions are configured. After the configuration file is installed, the user simply connects the secure network.

The following section provides an example of the Chromebook user experience.

- 1. The user connects to the deployment URL (either directly, or through a Captive Portal).
- 2. The Cloudpath Welcome screen displays.

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	Start Over Powered by Cloudpath Networks		
	Your Logo Here		
	Welcome to the Anna Test Network		
	Access to the Arna Test network is restricted to authorized usars and requires acceptance of the Terms & Candidons betwit. Durage conflictuae for network access.     I agree to the Terms & Conditions     Sert >		
	Assistance ID #904E		
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FIGURE 1. Wizard Welcome Page

The login screen is typically customized with the logo, colors, and text for the organization or institution. The screens in this example use the default look and feel of the application. Click Start to continue.

#### **User Type Prompt**

If required by the network, the user might see a User Type prompt. A user type prompt can provided a branch in the workflow for the different types of users on your network. For example, in an education network, the user types might be Student/Staff/Faculty, or in Enterprise network, they might be Employees/Visitors/Contractors.

#### FIGURE 2. User Type Prompt

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	Start Over	Powered by Cloudoath Networks			
	Your Lo	go Here			
	Visitors	Sample Corporation Visitor Valors to Sample Corporation are welcome to ultre the security writeries network. You will be provided internet-only access. To join the network, you must light to either Facebook or Linkedin.			
	Employees	Sample Corporation Employee Employees of sample Corporation may jon personal or IT-owned devices to the secure writess network. To do so, you must have your domain credentials.			
	< Back				
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Select the user type to continue. This example follows the *Employee* workflow.

#### **User Credentials**

If required by the network, the user can be prompted enter their credentials. A user credential prompt might request credentials from an AD or LDAP server, or from RADIUS via PAP.

#### FIGURE 3. User Credentials

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← → C Attachard Action Content Anna Test/Production/process		\$	<b>i</b> =
Start Over Powered by Cloudpath Networks			
Your Logo Here			
Your username and password are required to access the network.			X
Username:			
Password:			
Need Assistance?			
<bat continue=""></bat>			X
Assistance ID #5048			
			>
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Enter the user credentials and click Continue.

#### **Device Type**

If required by the network, the user might see a Device Type prompt. A device type prompt can provided a branch in the workflow for the different types of devices on your network.

#### FIGURE 4. Device Type Prompt

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	Start Over	Powered by Cloudpath Networks				
	Your Lo	go Here				
	Your Device	Personal Device Select this option if the device belongs to you.				V V
	Company Device	IT-Issued Device Select this option if the device belongs to Sample Corporation. To join the network, you must enter the voucher included on the green label on the device's box.				VAVA
	< Back					V V V
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Select the device type to continue. This example follows the Personal Device workflow.

# Managed or Unmanaged Chromebooks

The final portion of the user experience differs, depending on if the certificate and Wi-Fi settings are set for delivery using the ONC file (unmanaged devices) or an extension (managed devices). See the following links to continue with the user experience example for your configuration.

- Unmanaged Chromebook User Experience
- Managed Chromebooks With Extension User Experience

#### **Unmanaged Chromebook User Experience**

With an unmanaged Chromebook device, the user downloads and installs the ONC file, which contains configuration information required to access the secure network, including the certificate and Wi-Fi settings.

For unmanaged devices, the application detects the Chrome operating system and displays instructions for installing the Chrome configuration on the device.

C XpressConnect Enrollme ×		- <sup>1</sup> 2	×
← → C 🔒 https://bvtes.cloudpath.net/enroll/BVTEnrollment	System/Production/wizard/2/page4_download.html	☆ 🖪	=
	Microsoft Windows		
	Mac OS X Lion & Greater		
	Mac OS X Snow Leopard & Leopard		
	Apple iPhone, iPad, & iPod Touch		
	Android Devices		
	Ubuntu & Fedora Linux		
	Windows Surface RT		$\bigcirc$
	Chrome OS		~
	If you are not logged in as the Chromebook owner, log     out and log back in as the owner.		$\langle \rangle$
	Step 1: Download the Network File Simply download the file. Do not open it yet.		><
	Step 2: Import Network File Import the Downloaded ONC File		
	Open a new tab in the browser.     Type (or copy & paste) this address into the browser:     chrome:linet-internals#Chromeos		
	terrent content or set of the set of th		
https://bvtes.cloudpath.net/enroll/BVTEnrollmentSystem/Production/submit-selection?sel	lection=SelectionPromptItem-D4DFE674-33A8-4A87-95B0-B9AE1FC350E9		
	10:55	\$ 🕈 🛙	X

FIGURE 5. Configuration Installation Instructions

The manual download page shows the Chromebook instructions.

Step 1 provides the link to download the ONC file.

Step 2 provides instructions for importing the ONC file.

- Copy the URL from the instructions.
- Paste the URL into a new browser window. The Chrome OS Import ONC File page displays.

XpressConnect by Cloud x     C chrome://net-internals/# x
← → C 🗋 chrome://net-internals/#chromeos
ChromeOS • capturing events (25927)
Import ONC file
Choose File No file chosen
ONC file successfully parsed
Store Logs
Store Debug Logs
Network Debugging
Select interface for debugging Wi-Fi Ethernet Cellular WiMAX None

#### FIGURE 6. Import ONC File

• Click Choose File and browse to select the <NetworkName>.onc file.

After the ONC file installed, click the *Wi-Fi* icon in the bottom right corner of your screen and select the secure network.

#### FIGURE 7. Select Wi-Fi Network

🧟 Sample Campus	Secure
Searching for Wi-Fi netw	vorks
😪 cloudpath	
👳 Shin OnRamp	
< cpn-moto-help-eu	la
Join other	Settings
< Network	•
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Typically, user credentials are populated using the information passed during the enrollment process. Click *Connect*.

FIGURE 8. Enter User Credential
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Join Wi-Fi network		×
SSID:	Sample Campus Secure	
EAP method:	PEAP 👻	
Phase 2 authentication:	MSCHAPv2	
Server CA certificate:	Cloudpath IT Root CA I [Cloudpath IT Root 🤇 🔻	
Subject Match:		
User certificate:	None installed 🔹	
Identity:		
Password:		0
Anonymous identity:		
	Save identity and password	
	Connect Canc	el

The user should now be connected to the secure network.

#### Managed Chromebooks With Extension User Experience

If managed Chromebooks are configured, the download page does not display.

When Cloudpath detects the Chrome OS during enrollment, the extension automatically generates and installs the CA certificate into the TPM.

The extension generates the certificate.

FIGURE 9.	Generating	Certificate
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← → C 🔒 https://bvtes.cloudpath.net/enroll/BVTEnrollr	nentSystem/Production/wizard/2/page4_download.html#	☆ [	] ≡
	Your Logo Here		
	To access Processing ons below Microsoft Windows		A
	Mac OS X Lion & Greater		
	Mac OS X Snow Leopard & Leopard		
	Apple iPhone, iPad, & iPod Touch		
	Android Devices		
	Ubuntu & Fedora Linux		
	Windows Surface RT		
	Chrome OS		
	Install for ChromeOS Ock to basal Certificate The certificate is being operating	ated. This	×
DVES-Secure.onc *	may take up to a minute.		
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The extension imports the certificate into the TPM.

FIGURE 10.	Certificate	Imported
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XpressConnect Enrollme ×			
← → X 🔒 https://bvtes.cloudpath.net/	enroll/BVTEnrollmentSystem/Production	ı/wizard/2/page4_download.html#	☆ 🔞 🗄
	Start Over	Powered by Cloudpath Networks	
	Your	.ogo Here	
	To access based on y	Processing bns below	
	Microsoft Windows		
	Mac OS X Lion & Gr	eater	
	Mac OS X Snow Leo	pard & Leopard	
	Apple iPhone, iPad,	& iPod Touch	
	Android Devices		
	Ubuntu & Fedora Li	iux	
	Windows Surface R		
	Chrome OS		
		nstall for ChromeOS	
	→→→   ¥	Click to Install Certificate	Certificate Imported
DVES-Secure.onc			The certificate was imported into the TPM.
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When the certificate installation is complete, a message displays indicating that the certificate is installed and ready for use.

10

XpressConnect Enrollme ×			_ @ >
← → C  Https://bvtes.cloudpath.net/enroll/B	/TEnrollmentSystem/Productio	n/wizard/2/chromeExtensionDone	도 18 E
	<u>Start Over</u>	Powered by Cloudpath Networks	
	Your	Logo Here	
	The certific	ate has been installed.	
	The certificate is installed an	d ready for use. Select 'DVES-Secure' to connect	
	to the wireless network.		
	Assistance ID # JPE0		
DVES-Secure.onc *			Show all downloads ×
			0 2:21 😂 🗎 🌆

#### FIGURE 11. Certificate Installed

If not automatically migrated, click the *Wi-Fi* icon in the bottom right corner of your screen and select the secure network.

#### FIGURE 12. Select Wi-Fi Network

<b>P</b>	Sample Campus Secure				
Searching for Wi-Fi networks					
<b></b>	cloudpath				
(¢	Shin OnRamp				
Ş	📚 cpn-moto-help-eula				
	Join other	Settings			
<	Network	•			
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The user should now be connected to the secure network.