



Clearpass BYOT and Visitor Access Implementation Plan



Submitted By

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Revision History

Version	Date	Author	Sections Changed and Synopsis of Changes
1	Aug. 17, 2015	Joel McCotter	Original Draft

1 INTRODUCTION

Layer 3 Communications is a network consulting firm specializing in local and wide area networking. Our areas of expertise include network performance and fault analysis, network design and implementation, security vulnerability analysis, Voice over IP, infrastructure upgrades, and support services.

It is with a great deal of pride that we present to Cypress Fairbanks ISD this document, which is an overview of planned Visitor and BYOT wireless network access services as designed in Clearpass Policy Manager and Clearpass Guest, with corresponding implementation plan.

2 EXECUTIVE SUMMARY

CyFair ISD has asked for a design overview and implementation plan for the district's Clearpass Guest services, which encompasses BYOT and Visitor WLAN authentication and registration. This document details the overall policy design, captive portal verbiage, look and feel, and provides an implementation overview as well as details for long term support.

The document is comprised of the following sections:

- BYOT wireless network access design
- Visitor wireless network access design
- Custom captive portal skin
- Implementation plan
- Support plan

3 BYOT WIRELESS NETWORK ACCESS DESIGN

3.1 Summary

The CyFair ISD BYOT network provides wireless network access to staff and students using their personal devices, and has built in functionality to redirect all district BYOT users to a login page. Logins are tied to district user accounts through Clearpass integration with Active Directory. Users are limited to 3 registered devices in a given 7 day period.

Currently BYOT users are given unfettered access to the internal district network. The final authentication model for BYOT users will place students in a restricted role that prevents access to the internal network, but allows connectivity to the internet and access to a student services DMZ. Teacher BYOT users will be provided internal network access.

A MAC caching service will allow a user to reconnect within 48 hours without re-authenticating through the BYOT portal.

3.2 Captive Portal Examples

The following captive portal example illustrates the design, as well as the verbiage in the related page as the wireless user moves through the authentication workflow

3.2.1 BYOT Login



The **CFISD_BYOT** network is intended for access by student and employee owned personal devices using district issued AD access credentials **ONLY**

When a personal device connects to the network it's identity is registered with the system. Up to 3 personal devices per user are allowed simultaneously

Every Sunday night the identity of all personal devices will be cleared and the process will start over so that up to 3 new devices can be registered for the week

Enter your Cypress-Fairbanks ISD employee or student network login id and password.

Username:

Password:

Log In

Contact the Cypress-Fairbanks ISD Customer Care Center for assistance. 281-897-4357 (HELP)



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4 VISITOR WIRELESS NETWORK ACCESS DESIGN

4.1 Summary

The CyFair ISD Visitor network provides wireless internet access to district visitors, and has built in functionality to redirect all district visitors to a self-registration page. Upon providing basic information to identify the user, the visitor network will allow filtered access to the internet, dependent upon certain conditions that control access based on time of day, as described below.

The registration form provides registration receipts via email and SMS. Users are limited to 3 registered devices in a given 7 day period. A MAC caching service will allow a user to reconnect prior to the end of day without re-authenticating through the Visitor portal.

4.1.1 Weekday Access

Visitor registration is open 6:00 AM to 11:00 PM Monday through Friday. Between 6:00 AM and 2:30 PM, users must have sponsor approval to gain access to network resources. Between 2:30 PM and 11:00 PM, self-registration will not require sponsor approval in order to support after hours activities where IT and support staff may be limited.

Visitor access will expire at 11pm daily. The user will be dynamically moved back into an unauthenticated role, the visitor account will expire, and the registration portal will be blocked until the following morning.

4.1.2 Weekend Access

Visitor registration is open 9:00 AM to 11:00 PM Saturday and Sunday. On weekends self-registration will not require sponsor approval.

4.2 Per Campus Sponsorship Design

The CyFair ISD sponsored access visitor portal is designed to provide dynamic selection of local sponsors for each given site. The portal automatically selects a predetermined sponsor email address based upon the campus AP group from which the user authentication is originating. For those campuses where a local sponsor has not been defined, the portal will default to techrequest@cfisd.net as the sponsor email. This list of email address and AP group pairings is configurable per campus, and can be modified by CyFair IT staff or Layer 3 Communications as needed.

The per campus sponsor account will typically be a general campus account to which local users can be given proxy rights, or set up as a distribution list so that several local users can field sponsorship requests as needed.

Upon receiving a sponsorship request, the local sponsor should approve the request if it satisfies criteria established by the campus, IT department, or other authority, such as a requirement that visitors requesting WLAN access should check in with the front desk for approval.

Optionally, we can set up the sponsorship receipt so that the sponsor can manually grant special permissions to the requesting visitor, such as extended time until expiration (ie weekly pass), more liberal caps on bandwidth, or a special user role that allows less strict filtering at the firewall level,

for instance, a user needs VPN access which may be normally blocked by Fortinet firewall policies. These special permissions can be granted by the sponsor through the use of pre-configured drop down boxes in the sponsor receipt to override the default permissions of the visitor account.

4.3 Captive Portal Examples

The following captive portal examples illustrates the design, as well as the verbiage in the related pages as the wireless user moves through the registration and authentication workflow. The verbiage incorporates recommended changes by Layer 3 Communications for clarity and accuracy.

4.3.1 Sponsored Access Registration Form



The CFISD_VISITOR network is only intended for use by visitors to the district.

If you are a Cypress-Fairbanks employee or student with a network ID, please use the SSID CFISD_BYOT to login to the network.

You can register for visitor access in 4 easy steps

- Check in at front desk to request wireless access and to ensure security on the premises.
- Complete the visitor registration form below
- Click Register to submit the form and notify a sponsor of your request.
- Upon sponsor approval you will be allowed to complete your login and access the CFISD_VISITOR wireless network

You are allowed to login three devices and your access will be granted until 11 pm without having to re-login.

* Your Name:

Please enter your full name.

Phone Number:

Please enter your contact phone number.

* Email Address:

Please enter your email address. This will become your username to log into the network.

* Confirm:

I accept the terms of use

* required field

Already have an account? [Click Here To Sign In](#)



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4.3.2 Sponsored Access Registration Receipt



Upon sponsor approval, the "Login" button will become active. Please click on it at that time to access the CFISD_VISITOR wireless network.

If the "Login" button does not become active, please make sure you have requested access at the front desk or from a known Visitor WLAN sponsor.

Upon approval by a sponsor, please check your email for your visitor credentials

Your account is currently awaiting confirmation. This page will refresh every 30 seconds.

Guest's Name:

Joel R McCotter

Phone Number:

832291415

Account Username:

 mccotter@gmail.com

Guest Password:

 93216665

Activation Time:

Tuesday, 18 August 2015, 9:35 AM

Expiration Time:

Tuesday, 18 August 2015, 11:00 PM

Account Status:

Disabled

 [Log In](#)



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4.3.3 Visitor Login Form



Login to the network using your Cypress-Fairbanks Visitor login and password.

Username:

Password:

Terms:

I accept the [terms of use](#)

Log In

CFISD Visitors must create a Visitor account to obtain login credentials.

Click [Here](#) to Create a Visitor Account !



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4.3.4 Self-Registration Form (No Sponsor)



The CFISD_VISITOR network is only intended for use by visitors to the district.

If you are a Cypress-Fairbanks employee or student with a network ID, please use the SSID CFISD_BYOT to login to the network.

Guest self-registration is available from 2:30pm - 11:00pm each weekday and 9:00am - 11:00pm each weekend.

You can register for visitor access in 2 easy steps

- Complete the visitor registration form below
- Click Register to submit the form and create a visitor account

You are allowed to login three devices and your access will be granted until 11pm without having to re-login.

* Your Name:

Please enter your full name.

Phone Number:

Please enter your contact phone number.

Send SMS Receipt:

- Click to automatically receive an SMS receipt.

(Carrier charges may apply)

* Email Address:

Please enter your email address.

This will become your username to log into the network.

* Confirm:

- I accept the terms of use

Register

* required field

Login credentials received? [Click here to sign in](#)



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4.3.5 Self-Registration Receipt (No Sponsor)



The login credentials of your visitor account will be sent to the email address you provided. You will also receive an SMS receipt if you provided your cellular carrier.

Guest's Name:
Joel R McCotter

Phone Number:
8322291415

Account Username:
 mccotter@gmail.com

Activation Time:
Monday, 17 August 2015, 4:27 PM

Expiration Time:
Monday, 17 August 2015, 11:00 PM

Please click the button **Login with a Guest Account** to login.

[Login with a Guest Account](#)



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4.3.6 Visitor Email Receipt



Welcome **Joel R McCotter**, your account has been created and is now ready to use.



WiFi Network: **CFISD_VISITOR**

Visitor Account and Wi-Fi Instructions:

- 1 Make sure your wireless adapter is set to dynamically obtain an IP address
- 2 Connect to the wireless network: **CFISD_VISITOR**
- 3 Enter credentials:
 - Username: mccotter@gmail.com
 - Password: **30319390**
- 4 Account expires: Monday, August 17, 2015 23:00

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4.3.7 Visitor Self-Service Portal



ClearPass

Welcome to the visitor portal, Joel R McCotter.

- 👤 Username: **mccotter@gmail.com**
- 🕒 Account will expire at **Monday, 17 August 2015, 11:00 PM**
- 📄 Your IP address: **10.5.0.50**
- 🕒 Last network login: **Unknown**
- 🔑 [Change your password](#)
- 🚪 [Log out of self-service](#)



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5 CUSTOM CAPTIVE PORTAL SKIN

5.1 Summary

Layer 3 Communications, in conjunction with Aruba Networks, designed a custom skin for all Clearpass Guest captive portal driven services. This provides per campus branding and a custom look and feel intended to incorporate the visual style of the CFISD website.

5.2 Per Campus Custom Logos and Colors

The CyFair ISD custom skin is designed to provide dynamic selection of campus specific branding and colors for each given site. The skin automatically selects predetermined assets based upon the campus AP group from which the user authentication is originating. For those campuses where custom assets have not been defined, the skin will default to a district-wide logo and color selection incorporating the CyFair ISD logo. This list of campus logo, color, and AP group pairings is configurable per campus, and can be modified by CyFair IT staff or Layer 3 Communications as needed.

5.3 Captive Portal Skin Examples



CYPRESS CREEK HIGH SCHOOL

Login to the network using your Cypress-Fairbanks Visitor login and password.

Username:

Password:

Terms:

I accept the terms of use

Log In

CFISD Visitors must create a Visitor account to obtain login credentials.

Click [Here](#) to Create a Visitor Account !



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CY-LAKES HIGH SCHOOL

Login to the network using your Cypress–Fairbanks Visitor login and password.

Username:

Password:

Terms:

I accept the [terms of use](#)

Log In

CFISD Visitors must create a Visitor account to obtain login credentials.

Click [Here](#) to Create a Visitor Account !



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CY-FAIR HIGH SCHOOL

Login to the network using your Cypress–Fairbanks Visitor login and password.

Username:

Password:

Terms:

I accept the terms of use

Log In

CFISD Visitors must create a Visitor account to obtain login credentials.

Click [Here](#) to Create a Visitor Account !



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CY-FALLS HIGH SCHOOL

Login to the network using your Cypress-Fairbanks Visitor login and password.

Username:

Password:

Terms:

I accept the [terms of use](#)

Log In

CFISD Visitors must create a Visitor account to obtain login credentials.

Click [Here](#) to Create a Visitor Account !



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Login to the network using your Cypress-Fairbanks Visitor login and password.

Username:

Password:

Terms:

I accept the [terms of use](#)

Log In

CFISD Visitors must create a Visitor account to obtain login credentials.

Click [Here](#) to Create a Visitor Account !



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6 IMPLEMENTATION PLAN

6.1 Summary

All included portals and services are currently in production at schools with Aruba wireless currently deployed. High schools, hub sites, and Anthony middle school have been transitioned to the visitor registration model that includes local per-campus sponsorship and after-hours self-registration. All other sites maintain the centralized sponsorship design until approval has been established to transition these sites to the new model.

In addition, the shown skin with per campus branding has not been placed into production and also awaits approval.

6.2 Skin Implementation

Our recommendation for the custom skin implementation follows:

- Obtain approval of the included skin design.
- Establish a cutover date to activate the new skin prior to the start of school.
- Inform school administration that the Visitor and BYOT portal look and feel will change to reflect local campus branding
- Pre-stage skin change by finalizing and testing per campus customization
- Cutover to new skin district-wide during determined maintenance period
- Perform testing afterwards by simulating user authentication at various campuses.

The new skin, since it strictly encompasses look and feel, will not require major retraining, other than to instruct local school leadership that the appearance of the Visitor and BYOT portals has changed to reflect campus branding.

6.3 Local Sponsorship and After Hours Access Implementation

Our recommendation for the implementation of local sponsorship and after-hours access follows:

- Obtain approval of the described authentication services, and included portal verbiage
- Establish migration schedule for all remaining schools
- Update professional deliverable in the form of a quick reference guide to accurately reflect current policy and design changes. This document should provide instruction to staff and end users on how to establish Visitor and BYOT WLAN connectivity.
- Develop communication to campus leadership to inform of the change and the effect on operations after the transition. Include quick reference guide. School administration should disseminate instruction to all staff who will be recipients of sponsorship requests.
- Pre-stage campus cutover by finalizing controller and Clearpass design
- Cutover campuses to new design, may be a phased approach per the migration schedule, and perform testing afterward.

7 SUPPORT PLAN

7.1 Summary

Layer 3 Communications will provide assistance in the planning and execution of the solution included in this proposal, with assistance from CFISD staff where mandated.

This solution has many areas where custom development will need to be maintained and enhanced beyond the scope of this professional services engagement. Our recommendation for ongoing support follows:

- Establish CFISD team members who will maintain responsibility for the operations of the Clearpass Guest and Clearpass Policy Manager configuration
- Create documentation to provide general guidance on maintaining the Clearpass configuration
- Provide training on the basic maintenance of this solution

Provide a framework for long term support from Layer 3 Communications subject to the ongoing maintenance agreement, and contracted rate for additional professional services support.