Geo-blocking Using NGFWs

Ty Love-Baker, Nathan Long

Department of Integrated Information Technology
University of South Carolina

April 12th, Spring 2021
Agenda

• Introduction

• Project description

• Background information

• Proposed solution and implementation

• Conclusion
Project Description

• Explore the use of Geo-blocking and its effectiveness

• Build a security policy using diverse geolocations and regions

• Protect the internal network using NGFWs

• Restrict internet access based on location

• Determine the location of a user using geolocation methods
Background Information

• Geo-blocking is a technology that restricts access to Internet content based upon the user’s geographical location

• The user location is determined using Internet geolocation techniques
  • User IP address against a blacklist or whitelist
  • Accounts
  • Measuring the end-to-end delay of a network connection to estimate the physical location of the users
Countries affected by geoblocking

Every country of the 177 that researchers examined – except one, the Seychelles – was subjected to geoblocking by at least one website.

Countries in gray were not examined in the geoblocking study.

Map: The Conversation, CC-BY-ND • Source: Allison McDonald, University of Michigan • Get the data
Proposed Solution and Implementation

• Block all incoming and outgoing traffic besides the U.S.

• This solution allows for maximum security by allowing for U.S. IP access only and blocking any IP from the outside
Conclusion

• Other concepts and uses for geolocation

• Nearby services

• Financial services and usage tracking

• Advertising and monitoring consumer behavior

• Questions?