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Personal Introduction

- David Veuve Principal Security Strategist, Splunk
- ► SME for UEBA, Security, Architecture
- dveuve@splunk.com
- Former Splunk Customer
- Primary author of the Splunk Security Essentials app

▶ 2017 Talks:

- Security Ninjutsu Part Four (Hi!)
- Searching FAST: Start Using tstats and other acceleration techniques
- Quickly Advance Your Security Posture with Splunk Security Essentials

Prior Conf Talks:

- How to Scale Search from _raw to tstats
- Security Ninjutsu Part Three: .conf2016
- Security Ninjutsu Part Two: .conf 2015
- Security Ninjutsu Part One: .conf 2014
- Passwords are for Chumps: .conf 2014



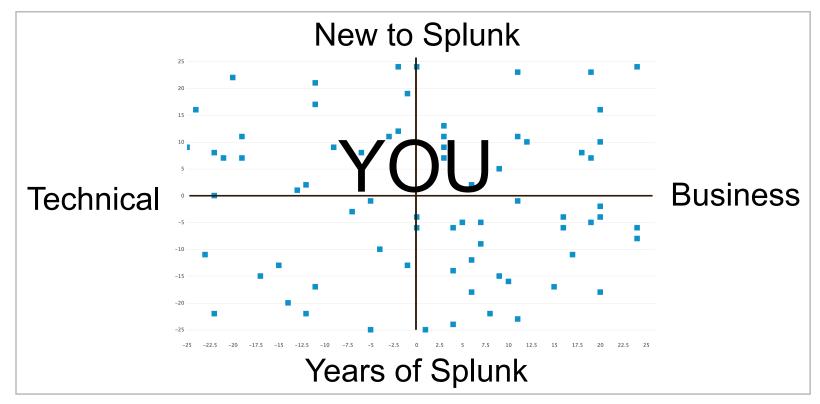
Why Are We Talking About an App?

- ► A showcase of what's possible in Splunk
- Just uses Splunk Enterprise
- ▶ It's quick
- ► It's easy
 ► It's free



Who Are You?

- ▶ Maybe a user of Splunk Security Essentials?
- All Levels of Splunk Experience
- Probably like Security





What Will You Get?

- ▶ Detect things better
- ► Learn about powerful free apps
- ▶ Only One Marketing Slide!





- 1. Splunk Security Essentials Overview
- 2. SSE Demo
- 3. End to End Scenario
- 4. Wrap Up



Splunk Security Essentials Overview



Technical Components for Successful Security Analytics

Alert Aggregation



Threat Detection

- Manage High Volume
- Track Entity Relationships
- Combination ML + Rules

Alert Creation



Simpler Detection

- ▶ Rules & Statistics
- Quick development
- Easy for analysts

ML Based Detection

- Detect unknown
- New vectors
- ► Heavy data science

Investigation



- Analyst Flexibility
- Provide access to data analysis solutions
- Record historical context for everything



The Splunk Portfolio

Splunk Premium Solutions







Rich Ecosystem of Apps & Add-Ons













splunk>enterprise

splunk>cloud

SDUNK Platform for Operational Intelligence





Syslog/ TCP

















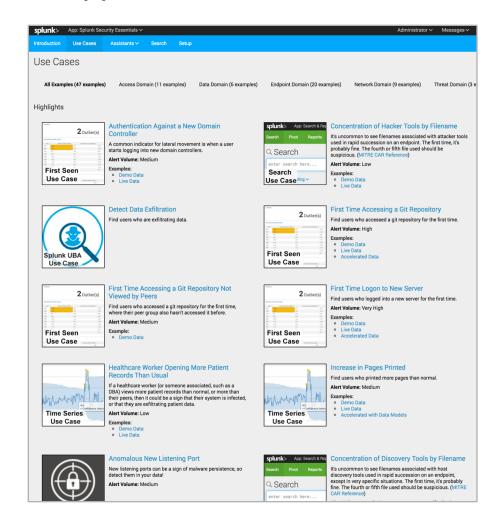
Splunk Security Essentials

https://splunkbase.splunk.com/app/3435/

- Identify bad guys:
 - 50+ use cases common in Security Analytics products, free on Splunk Enterprise
 - Target external and insider threats
 - Scales from small to massive companies
 - Save from app, send hits to ES/UBA

Solve use cases you can today for free, then use Splunk UBA for advanced ML detection.

/product.screen?product_id=FL-DSH-01&JSESSIONID=SD15L4FF10ADFF10 HTTP 1.1"
T/Oldinary=FPT0ADFF9 HTTP 1.1"
T/Oldinary=FPT11"
T/Oldinary=FPT





What about...

► Ransomware?



► Fraud?





What Can I Detect With Splunk Enterprise?









Splunk Security Essentials App Inventory

DOMAINS

- Access
- Data
- Endpoint
- Network
- Threat

DATA SOURCES

- Any Host Logs
- Electronic Medical Record System
- Email Logs
- Firewall
- Netflow

- Print Server Logs
- Salesforce Event Log File
- Source Code
 Repository Logs
- Splunk Notable Events

ALERT VOLUME

- Very Low
- Low
- Medium
- High
- Very High

"Say, aren't those all recommended data sources for Splunk Security in general?"

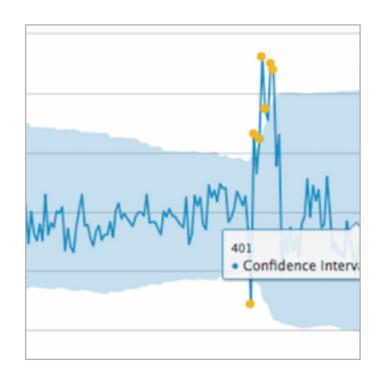


Splunk Security Essentials

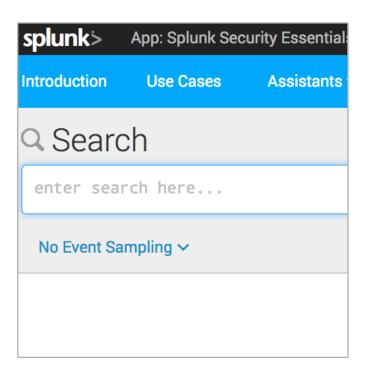
Types of Use Cases



First Time Seen powered by stats



Time Series Analysis with Standard Deviation



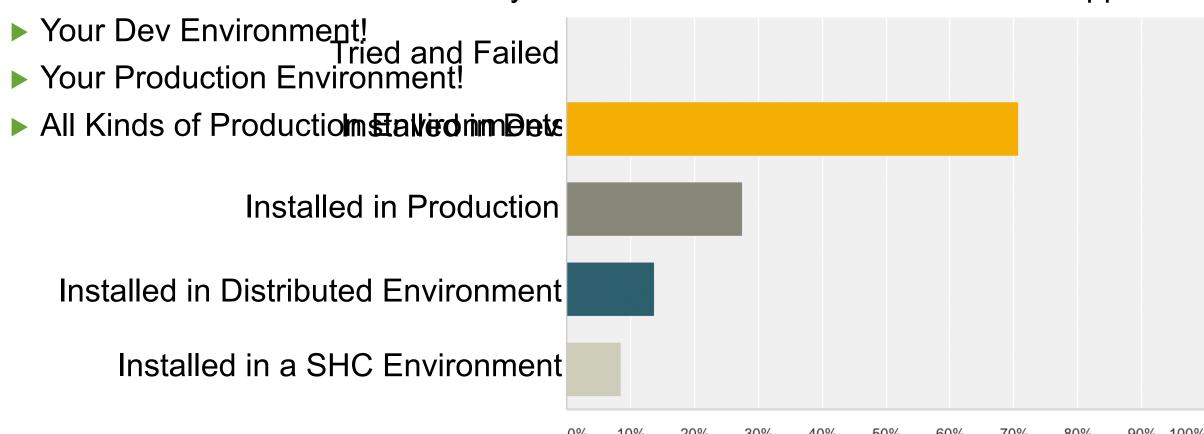
General Security Analytics
Searches



Where Can I Install Splunk Security Essentials?

Your Laptop!

Survey Results: Have You Tried to Install the App?





Getting Started with Splunk Security Essentials

- Download from apps.splunk.com
- ▶ Browse use cases that match your needs
- Data Source Check shows other use cases for your existing data
- ► Evaluate free tools to meet gaps, such as Microsoft Sysmon
 - (links inside the app)

| Use Case | Demo Data | Live Data | Accelerated Data |
|---|--------------|--------------|---------------------|
| First Time Accessing a Git Repository | ② | • | 0 |
| First Time USB Usage | ② | 0 | 0 |
| First Time Logon to New Server | ② | | ② |
| Increase in # of Hosts Logged into | ② | | NA |
| Increase in Pages Printed | ② | 0 | NA |
| Increase in Source Code (Git) Downloads | ② | 0 | NA |
| Find Unusually Long CLI Commands | ② | 0 | NA |
| Processes with High Entropy Names | ② | ② | NA |
| Authentication Against a New Domain Controller | ② | 0 | NA |
| New Parent Process for cmd.exe or regedit.exe | ② | 0 | NA |
| Find Processes with Renamed Executables | ② | 0 | NA |
| Source IPs Communicating with Far More Hosts Than Normal | ② | ② | ② |
| New AD Domain Detected | ② | ② | NA |
| New Host with Suspicious cmd.exe / regedit.exe / powershell.exe Service Launch | ② | 0 | NA. |
| New Path for a Common Filename with Process Launch | ② | ② | NA |
| Healthcare Worker Opening More Patient Records Than Usual | ② | 0 | NA |
| Remote PowerShell Launches | ② | ② | NA |
| Concentration of Hacker Tools by Filename | ② | ② | NA |
| Concentration of Hacker Tools by SHA1 Hash | ② | 0 | NA |
| Concentration of Discovery Tools by Filename | ② | ② | NA |
| Concentration of Discovery Tools by SHA1 Hash | ② | 0 | NA |
| Sources Sending Many DNS Requests | ② | ② | ② |
| Sources Sending a High Volume of DNS Traffic | ② | ② | ② |
| New Service Paths for Host | ② | ② | NA |



SSE Demo



What is Standard Deviation?

▶ A measure of the variance for a series of numbers

| User | Day One | Day Two | Day Three | Day Four | Avg | Stdev |
|------|---------|---------|-----------|----------|--------|--------|
| Jane | 100 | 123 | 79 | 145 | 111.75 | 28.53 |
| Jack | 100 | 342 | 3 | 2 | 111.75 | 160.23 |

| User | Day Five | # StDev Away from Average aka How Unusual? | | |
|------|----------|---|------------------|--|
| Jane | 500 | 12.6 | SUPER Anomalous! | |
| Jack | 500 | 2.42 | | |





Apply Splunk to Real Life Scenario

- Actor: Malicious Insider (because it's hardest)
- Motivation:
 Going to work for competitor
- ► Target: Accounts, Opportunities, Contacts in Salesforce
- Additional Target:
 Sales Proposals in Box
- Exfiltration:
 Upload to a remote server

Malicious Insider



Chris Geremy
Director of Finance

* Photo of Splunker, I promise she is not a malicious insider



Monitoring Challenges

- No proxy
- ▶ No standard file servers
- ► No agents on laptop
- ► Cloud Services with their own APIs

How would you detect that?



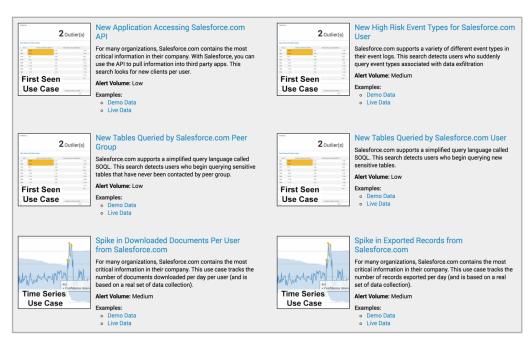


Set Up Monitoring

- Ingest Salesforce Event Log File
 - https://splunkbase.splunk.com/app/1931/
- Ingest Box Data
 - https://splunkbase.splunk.com/app/2679/
- ► Install Splunk Security Essentials
 - https://splunkbase.splunk.com/app/3435/

- Schedule Salesforce use cases
- Build a custom Box use case



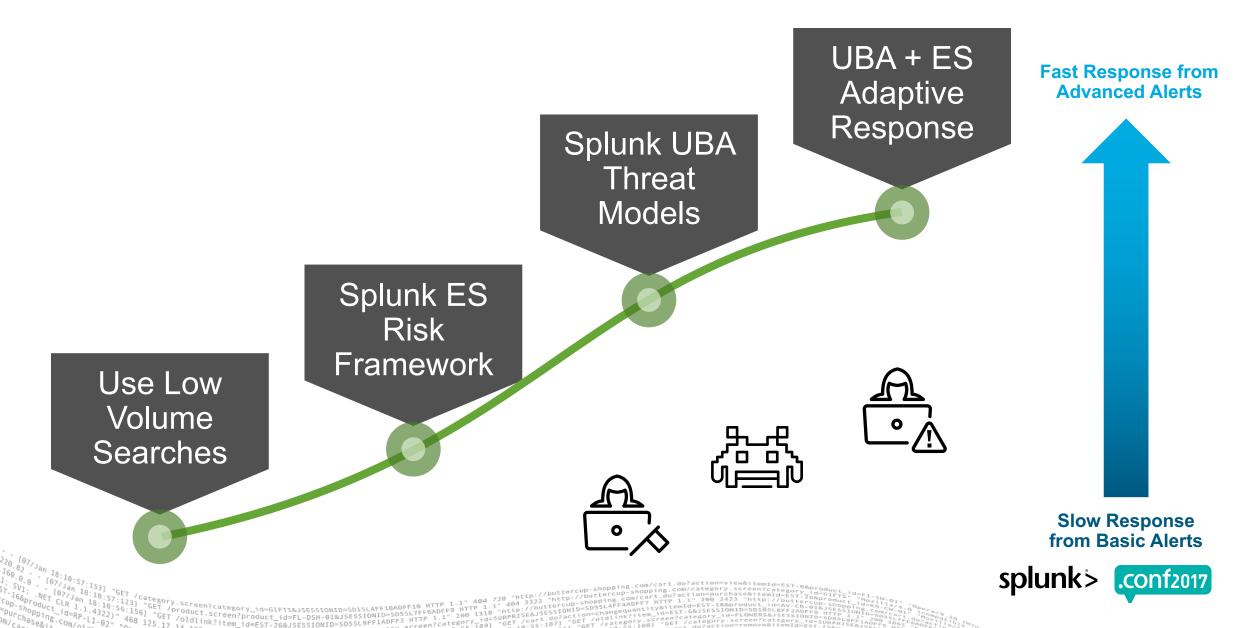




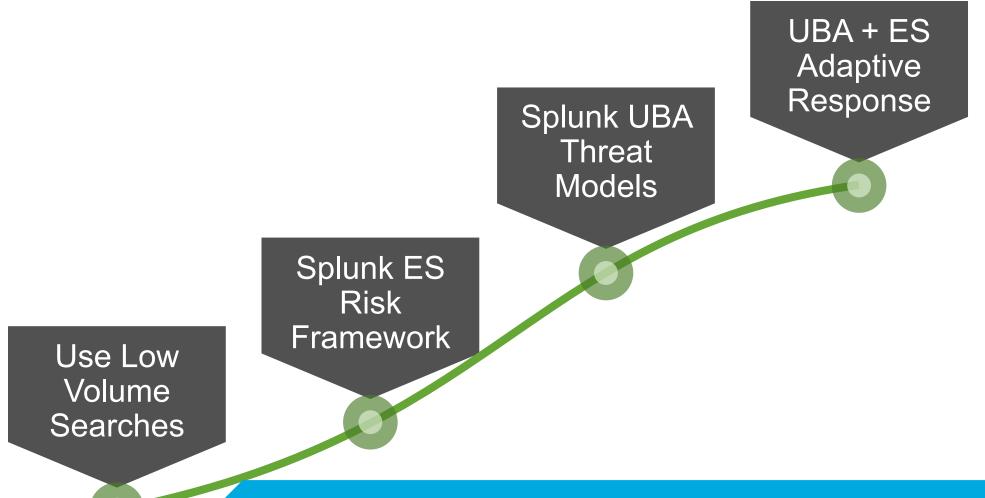
Splunk Security Essentials Demo



Managing Alert Volume vs Value



Managing Alert Volume vs Value



Everyone starts here, and spends most of their time here



Aggregate Alerting with ES Risk

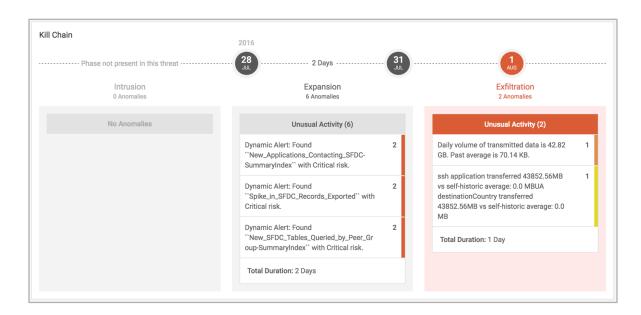
Enterprise Security has a Risk Framework designed for aggregating low severity indicators

| risk_object 🌣 | risk_object_type \$ | risk_score \$ | source_count \$ | count 0 |
|------------------------|---------------------|---------------|-----------------|---------|
| aseykoski | user | 480 | 2 | 6 |
| jsmith | user | 270 | 5 | 5 |
| Hax0r | user | 240 | 1 | 3 |
| agasiewski | user | 240 | 1 | 3 |
| aseykoski@acmetech.com | user | 240 | 1 | 3 |
| cargento | user | 240 | 1 | 3 |
| dmsys | user | 240 | 1 | 3 |
| htrapper@acmetech.com | user | 240 | 1 | 3 |
| wohler | user | 240 | 1 | 3 |
| atria@c1z.at | user | 120 | 1 | 3 |



Apply Machine Learning With Splunk UBA

- ► Splunk UBA Threat Models leverage Data Science, Machine Learning
- ▶ Finds important, inter-related anomalies that analysts should actually view
- Support more advanced anomaly detections!



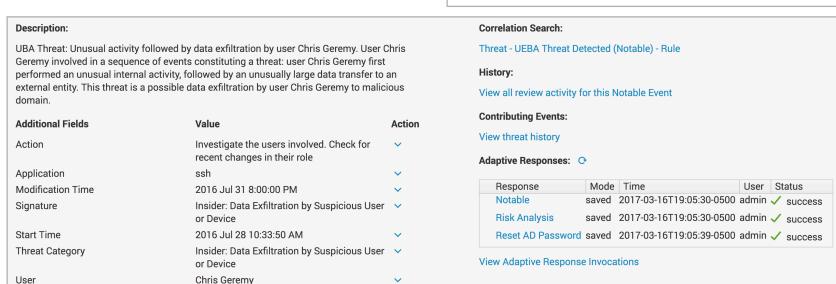


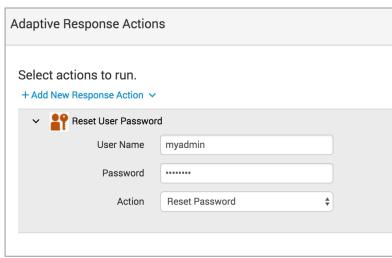
Respond With ES Adaptive Response

- ▶ High Confidence alerts from UBA fed into ES
- Take actions like
 - Box: "Change Permissions"
 - AD: "Reset Password" or "Disable Account"

/product.screen?product id=FL-DSH-01&JSESSIONID=SD5SL7FF6ADFF9
T /0141:

- PAN: Isolate Host
- ▶ 27 partners!







ES + UBA + SSE Demo

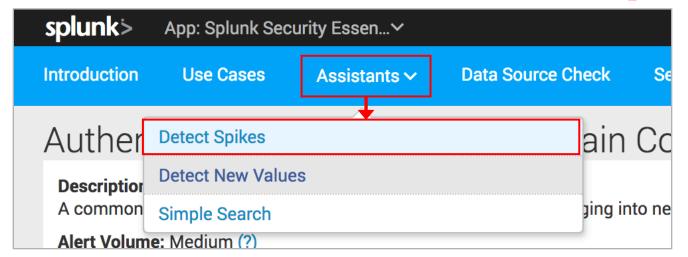


But My Company Is So Custom

- ▶ Do you want to build your own detections like this?
- What if your environment is totally custom?
- No product has ever worked out of the box, and that's why you like Splunk, right?

We've got you.

Click Assistants, then "Detect Spikes"





Use Case

- Our Malicious Insider, Jane Smith, also downloaded some proposals from Box
- ► Finding Box downloads spikes is easy, but we want focus on the Proposal Folder
- We will use the Detect Spikes assistant to help us



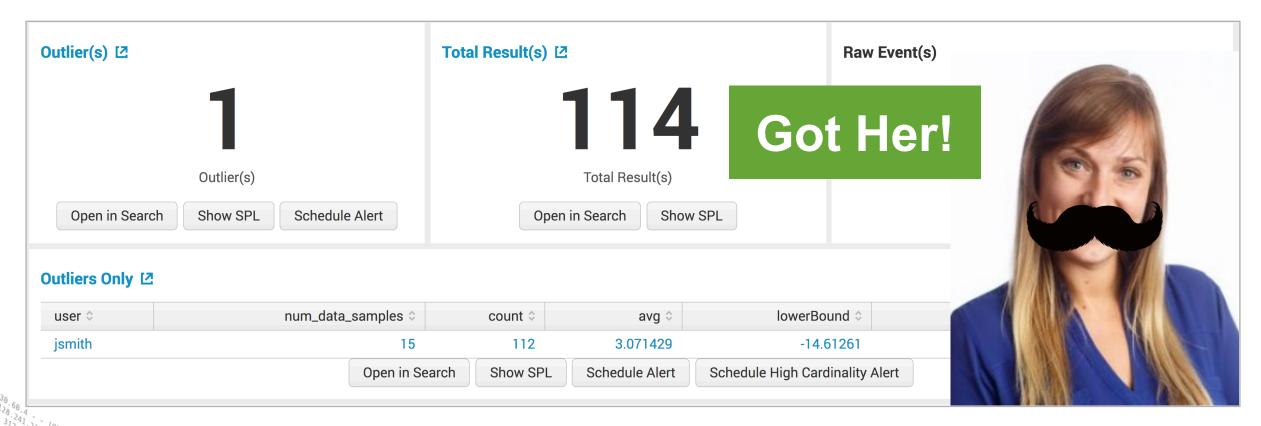


- | inputlookup anonymized_box_logs.csv | search folder="PROPOSALS"| bucket _time span=1d | stats count by user _time
- ► Looking for "count" by "user" with "6" standard deviations

| Detect Spikes | | | | | | |
|--|--|--------------------------------------|--------------------------------|--|--|--|
| Enter a search | | | | | | |
| inputlookup anonymized_box_ | _logs.csv search parent_fold | der="PROPOSALS" bucket _time span= | 1d stats count by user _time | | | |
| ✓ 237 results (2/14/17 12:00:00.000 AM | ✓ 237 results (2/14/17 12:00:00.000 AM to 3/16/17 12:00:00.000 AM) | | | | | |
| Field with data points (?) | Field for our subject (?) | Threshold method (?) | Threshold multiplier (?) | | | |
| count | user | ▼ Standard Deviation ▼ | 6 | | | |
| | | | | | | |
| Detect Spikes Open in Search Show SPL Create High Cardinality / High Scale Alert | | | | | | |
| | | | | | | |



- | inputlookup anonymized_box_logs.csv | search folder="PROPOSALS" | bucket _time span=1d | stats count by user _time
- ► Looking for "count" by "user" with "6" standard deviations





Wrap-Up



Splunk Security Portfolio



Enterprise Security Response

- OOB key security metrics
- Incident response workflow
- Adaptive response



Splunk Enterprise Detection

Realm of Known

- Log Aggregation
- Splunk Security Essentials
- Rules, statistics, correlation



Splunk UBA Detection

Realm of Unknown

- Risky behavior detection
- Entity profiling, scoring
- Kill chain, graph analysis

Human-driven



What Do I Want To Do Next?

- Powershell
- Database
- ► Full Splunk 7.0 Compatibility
- Historical Checking
- ► Auto-Enable?





- 1. Splunk Security Essentials shows you new detection use cases
- 2. Ultimately it just uses Splunk Enterprise Power of the Platform!
- 3. You can build your own use cases easily!
- 4. As you advance, look to ES or UBA to improve threat detection



- 1. Download Splunk Security Essentials
- 2. Try the Data Source Check dashboard
- 3. If you want to learn *how* -- attend Security Ninjutsu tomorrow!
- 4. If you want to build your own ML: Security Ninjutsu tomorrow Automating Threat Hunting w/ML tomorrow





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I get to come back if you give me good ratings. Rate high, early, and often!