

# Case Study: Improve Authentication, Authorization and Accounting for a small business

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## Scenario:

You're the first cybersecurity professional hired by a growing business.

Recently, a deposit was made from the business to an unknown bank account. The finance manager says they didn't make a mistake. Fortunately, they were able to stop the payment. The owner has asked you to investigate what happened to prevent any future incidents.

To do this, you'll need to do some accounting on the incident to better understand what happened. First, you will review the access log of the incident. Next, you will take notes that can help you identify a possible threat actor. Then, you will spot issues with the access controls that were exploited by the user. Finally, you will recommend mitigations that can improve the business' access controls and reduce the likelihood that this incident reoccurs.

# Access Controls Notes

## Notes that can help identify threat:

Event Type: Information
Event Source: AdsmEmployeeService
Event Category: None
Event ID: 1227
Date: 10/03/2023
Time: 8:29:57 AM
User: Legal/Administrator
Computer: Up2-NoGud
IP: 152.207.255.255
Description:
Payroll event added. FAUX_BANK

Name	Role	Email	IP address	Status	Authorization	Last access	Start date	End date
Lisa Lawrence	Office manager	l.lawrence@erems.net	118.119.20.150	Full-time	Admin	12:27:19 pm (0 minutes ago)	10/1/2019	N/A
Jesse Pena	Graphic designer	j.pena@erems.net	186.125.232.66	Part-time	Admin	4:55:05 pm (1 day ago)	11/16/2020	N/A
Catherine Martin	Sales associate	catherine_M@erems.net	247.168.184.57	Full-time	Admin	12:17:34 am (10 minutes ago)	10/1/2019	N/A
Jyoti Patil	Account manager	j.patil@erems.net	159.250.146.63	Full-time	Admin	10:03:08 am (2 hours ago)	10/1/2019	N/A
Joanne Phelps	Sales associate	j_phelps123@erems.net	249.57.94.27	Seasonal	Admin	1:24:57 pm (2 years ago)	11/16/2020	1/31/2020
Ariel Olson	Owner	a.olson@erems.net	19.7.235.151	Full-time	Admin	12:24:41 pm (4 minutes ago)	8/1/2019	N/A
Robert Taylor Jr.	Legal attorney	rt.jr@erems.net	152.207.255.255	Contractor	Admin	8:29:57 am (5 days ago)	9/4/2019	12/27/2019
Amanda Pearson	Manufacturer	amandap987@erems.net	101.225.113.171	Contractor	Admin	6:24:19 pm (3 months ago)	8/5/2019	N/A
George Harris	Security analyst	georgeharris@erems.net	70.188.129.105	Full-time	Admin	05:05:22 pm (1 day ago)	1/24/2022	N/A
Lei Chu	Marketing	lei.chu@erems.net	53.49.27.117	Part-time	Admin	3:05:00 pm (2 days ago)	11/16/2020	1/31/2020

- The event took place on 10/03/23.
- The user is Legal/Administrator.
- The IP address of the computer used to login is 152.207.255.255.

## Authorization Issues:

- Robert Taylor Jr is not an admin.
- His contract ended in 2019, but his account accessed payroll systems in 2023.

## Recommendations:

- User accounts should expire after 30 days.
- Contractors should have limited access to business resources.

- Enable multi-factor authentication (MFA).

**Summary:**

It appears as though a former employee is potentially the threat actor. However, it's possible that they were not the person responsible for this security incident.

It is common for people to reuse login credentials across many services. And if those credentials are compromised on one platform then an attacker can use them to gain access to others. In this case, implementing access controls, like password policies, limited file permissions and MFA can protect the business from incidents like this.