SECURITY DESIGN PATTERN EXAMPLE

Objective

Develop a secure security pattern for corporate emails

Problem Definition

Emails are sent and received on a daily basis containing sensitive data. As such, the confidentiality , integrity, authenticity and accountability of these emails must be achieved.

RUTs

- Email Servers
- Communication channel (emails)
- Email Users (senders & receivers)
- Threat actors (internal & external)

Attack Paths

- Insider can send sensitive documents to their personal account
- Insider can download sensitive documents from an email account to a USB device
- Man in the middle attacks can be used to intercept the exchange of emails
- Employee can deny sending an email
- Threat actors can send spoofed emails using the company's email domain
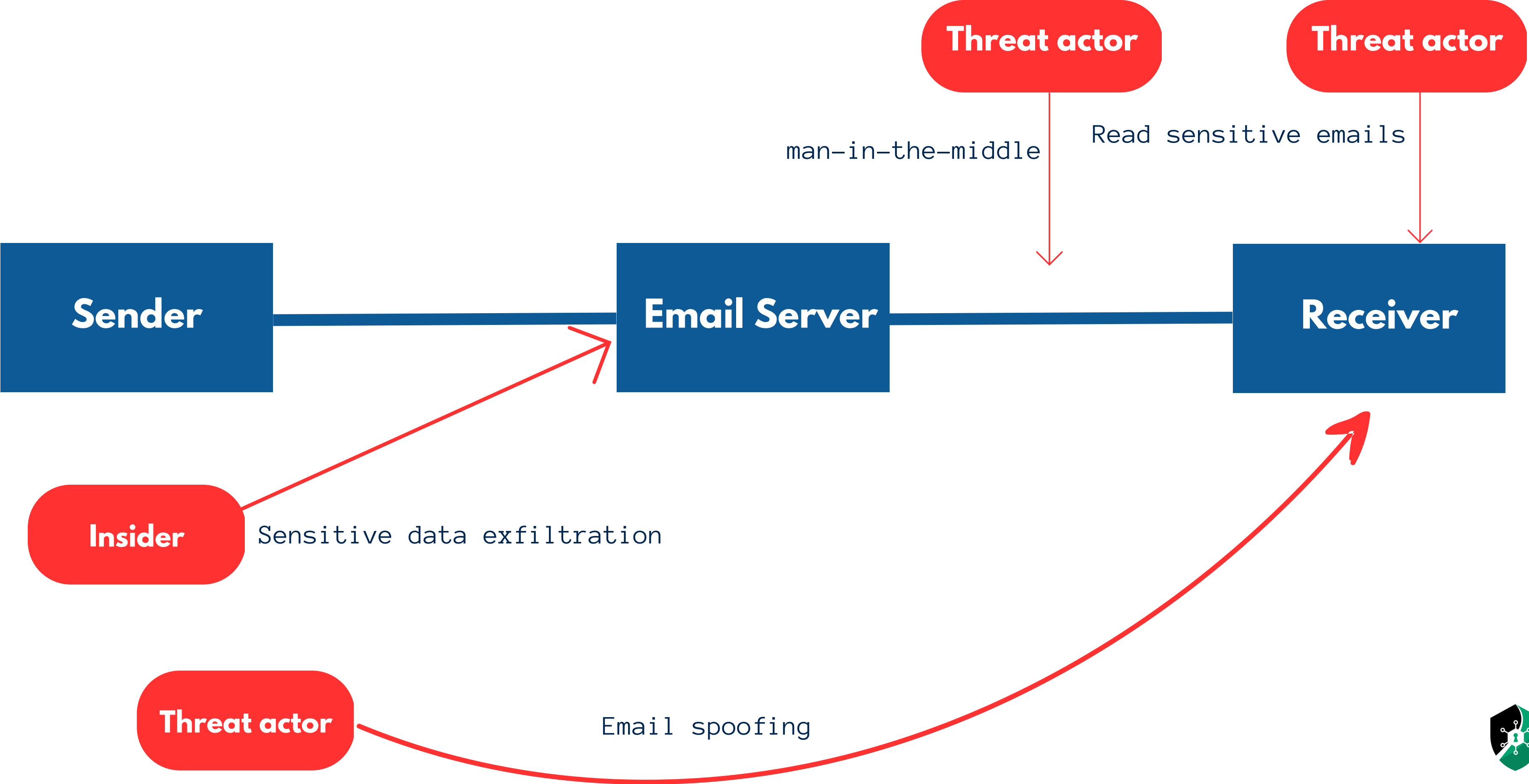
Protection Goals

- Ensure the confidentiality of the email communications
- Ensure the integrity of the email communications
- Ensure the authenticity of the email communications
- Ensure non-repudiation
- Prevent the incoming and outgoing of malicious emails and SPAM
- Prevent the unauthorized transmission of sensitive data

Resources Diagram

Protection Diagram