

—Project Overview:

Least privilege is the basic security principle when dealing with resource management. A user is only allowed to access resources they need to finish his job but not other unrelated ones. This principle is important to almost all companies to ensure data privacy and preventing unintended information leakage.

Access control plays an essential role in the implementing least privilege principle. By giving an access control list, a company can supply different permissions on different resource based on user's role and responsibility. In order to assure access control is implemented properly, access review is a significant process to review the correctness of access control and needs to be paid more intention to when managing sensitive data and resources.

More and more web applications are used by the companies today. Most of the companies require do user access reviews to verify that none of left employees have accounts and all the other users have the correct access privileges at least four times a year. In most companies, this is done manually and requires a lot of burdensome human work.

2 Motivation

Coupa software has many services for internal use. For example they have AWS, RightScale, DNS and so on. There are also lots of employees in coupa with different roles. They are supposed to access and operate different applications and data within. For example most normal users would have read permissions of DNS data because they need to do domain lookup. But administrators of the DNS server will need permission to read and modify DNS data. So we need an efficient access review tool to manage all restricted resources and applications and make sure there is no permission abuse in the real implementation.

Goals and Solution:

In this Access Review project, we need to come up with a solution to make access review process easier to manage and realize better visualization. This solution has to make permission control more reliable and can greatly relieve the work of administrators

Our solution is to build a web application to handle role based access review process. It is a basic Applications as a service. The web application can provide access review service to enterprise users more efficiently, because it is distributed and maintained for all users at a single point – in the web server side.

All the modification and review operation are facilitated by providing different interface for different users implemented on the cloud service platform. Integrated with a variety of automated tools, account management, permission review can be implemented together in the application. In this way management and administration are more controllable and efficient too.