云环境下的用户-角色分配优化算法

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摘要： 针对云环境下基于角色访问控制模型中用户角色指派不精确及效率低的问题，设计了基于属性和信任的角色访问控制模型，提出基于此模型的用户-角色分配优化算法，该算法融合了最小角色集合查找与基于属性的角色筛选，通过删除混杂角色层次结构中的角色激活和角色继承关系，得到最小角色集合，通过用户属性、环境属性、信任值筛选得到最佳角色集合，并精确匹配给用户.仿真实验表明，此算法能有效减少系统中的角色数，缩短用户角色的指派时间，提高用户-角色匹配的精确度.

关键词： 用户-角色指派；角色筛选；最佳角色集合；访问控制

User-role Assignment Optimization Algorithm in Cloud Evironment

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Abstract： Aiming at the problem of imprecise and inefficient user role assignment in the role-based access control model in the cloud environment, the role-based access control model based on attribute and trust is designed. and A user-role assignment optimization algorithm based on this model is proposed, the algorithm combines the minimum role set searching and the attribute-based role filtering, by deleting the role activation in the hybrid role hierarchy and Role inheritance, get the smallest role set, through the user attributes, environmental attributes, trust value filter to get the best role set, and accurate match to the user. Simulation results show that this algorithm can effectively reduce the number of roles in the system, shorten the assignment time of user roles and improve the accuracy of user-role matching in the presence of a large number of user role assignments in the cloud environment.

Key words： user-role assignment; role filter; the optional role set; access control

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