Context-Based Access Control Systems for Mobile Devices

Abstract

Mobile Android applications often have access to sensitive data and resources on the user device. Misuse of this data by malicious applications may result in privacy breaches and sensitive data leakage. An example would be a malicious application surreptitiously recording a confidential business conversation. The problem arises from the fact that Android users do not have control over the application capabilities once the applications have been granted the requested privileges upon installation. In many cases, however, whether an application may get a privilege depends on the specific user context and thus we need a context-based access control mechanism by which privileges can be dynamically granted or revoked to applications based on the specific context of the user. In this project we propose such an access control mechanism. Our implementation of context differentiates between closely located subareas within the same location. We have modified the Android operating system so that context-based access control restrictions can be specified and enforced. We have performed several experiments to assess the efficiency of our access control mechanism and the accuracy of context detection.

EXISTING SYSTEM

Mobile Android applications often have access to sensitive data and resources on the user device. In location-based policy systems are not accurate enough to differentiate between nearby locations without extra hardware or location devices.
DRAWBACK OF EXISTING SYSTEM
- Sensitive data leakage.
- Easily attacked by malicious.
- Security and privacy risks.

PROPOSED SYSTEM
Context-based access control mechanism by which privileges can be dynamically granted or revoked to applications based on the specific context of the user. Our implementation of context differentiates between closely located subareas within the same location. We have modified the Android operating system so that context-based access control restrictions can be specified and enforced.

ADVANTAGE OF PROPOSED SYSTEM
- Assess the efficiency.
- Accuracy of context detection.

SYSTEM SPECIFICATION

Hardware Requirements

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
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<tbody>
<tr>
<td>System</td>
<td>Pentium IV 2.4 GHz</td>
</tr>
<tr>
<td>Hard Disk</td>
<td>40 GB</td>
</tr>
<tr>
<td>Floppy Drive</td>
<td>1.44 Mb</td>
</tr>
<tr>
<td>Monitor</td>
<td>15 VGA Colour</td>
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</tbody>
</table>
Mouse : Logitech
Ram : 512 Mb

Software Requirements
Operating system : Windows Family
Tools : eclipse
Technology Used : Java
Backend Used : SQLite