

ORACLE DATA MASKING PACK



THE INDUSTRY'S HIGH PERFORMANCE MASKING SOLUTION FOR ORACLE DATABASE APPLICATIONS

FEATURES

- Comprehensive and Extensible Mask Library
- Sensitive Data Discovery and Application Integrity
- Sophisticated Masking Techniques
- Secure High Performance Mask Execution

BENEFITS

- Consistent and automatic enforcement of data privacy policies across all enterprise data.
- Rapid sharing of production data in compliance with data privacy regulations
- Increased DBA productivity by automating the discovery and masking of sensitive data

Enterprises run the risk of breaching sensitive information when copying production data into non-production environments for the purposes of application development, testing or data analysis.

Oracle Data Masking Pack helps reduce this risk by irreversibly replacing the original sensitive data with fictitious data so that production data can be shared safely with IT developers or offshore business partners. Accessible via Oracle Enterprise Manager, this Management Pack provides end to end secure automation for provisioning test databases from production in compliance with regulations.

Comprehensive and Extensible Mask Library

Oracle Data Masking Pack provides a centralized library of out-of-the-box mask formats for common types of sensitive data, such as credit card numbers, phone numbers, national identifiers (social security number for US, national insurance number for UK). By leveraging the Format Library in Oracle Data Masking Pack, enterprises can apply data privacy rules to sensitive data across enterprise-wide databases from a single source and thus, ensure consistent compliance with regulations. Enterprises can also extend this library with their own mask formats to meet their specific data privacy and application requirements.

Select Format	Data Type	Sample	Description
<input checked="" type="radio"/> American Express Credit Card Number	Character	3433694987608867	~10 billion unique American Express credit card numbers
<input type="radio"/> Discover Card Credit Card Number	Character	6011407586271018	~10 billion unique Discover Card credit card numbers
<input type="radio"/> MasterCard Credit Card Number	Character	5522509790802167	~10 billion unique MasterCard credit card numbers
<input type="radio"/> Visa Credit Card Number	Character	4929985755344068	~10 billion unique Visa credit card numbers
<input type="radio"/> Generic Credit Card Number	Character	3448159156904235	~10 billion unique generic credit card numbers
<input type="radio"/> Generic Credit Card Number Formatted	Character	6011-5244-8289-7025	~10 billion unique generic credit card numbers
<input type="radio"/> National Insurance Number Formatted	Character	EE 75 07 83 D	Generates unique UK National Insurance Numbers
<input type="radio"/> Social Insurance Number	Character	672526209	~1 billion unique Canadian Social Insurance Numbers

Figure 1: Mask Format Library

Sensitive Data Discovery and Referential Integrity

Data may be sensitive for a variety of reasons, such as confidentiality (employee salary), regulatory (Sarbanes-Oxley or HIPAA compliance) or established business practices (PCI-DSS). Using Oracle Data Masking Pack’s search capabilities, information security administrators can quickly search the database to identify sensitive data. In some applications, the same sensitive data is maintained in multiple tables related by referential (primary key-foreign key) relationships, e.g. employee numbers in a Human Resources application. Oracle Data Masking Pack

discovers these relationships and masks all related data elements automatically while preserving referential relationships.

Masking Definition: Employee mask					
A data masking definition specifies what columns to be masked and the format of masked data.					
Name	Employee mask	Database	Human Resources	Description	
Columns					
Owner	Table Name	Column Name	Format		
HR	EMPLOYEES	EMPLOYEE_ID	99		
Foreign Key Columns					
Owner	Table Name	Column Name	Parent Owner	Parent Table	Parent Column
HR	DEPARTMENTS	MANAGER_ID	HR	EMPLOYEES	EMPLOYEE_ID
HR	EMPLOYEES	MANAGER_ID	HR	EMPLOYEES	EMPLOYEE_ID
HR	JOB_HISTORY	EMPLOYEE_ID	HR	EMPLOYEES	EMPLOYEE_ID
OE	CUSTOMERS	ACCOUNT_MGR_ID	HR	EMPLOYEES	EMPLOYEE_ID
OE	ORDERS	SALES_REP_ID	HR	EMPLOYEES	EMPLOYEE_ID
Dependent Columns					
Owner	Table Name	Column Name	Parent Owner	Parent Table	Parent Column
HR	MANAGERS	MGR_ID	HR	EMPLOYEES	EMPLOYEE_ID

Figure 2: Automatic Referential Integrity

Sophisticated Masking Techniques

Oracle Data Masking Pack provides a variety of sophisticated masking techniques to meet application requirements while ensuring data privacy. These techniques ensure that applications continue to operate without errors after masking. For example,

Condition-based masking: this technique makes it possible to apply different mask formats to the same data set depending on the rows that match the conditions. For example, applying different national identifier masks based on country of origin.

Compound masking: this technique ensures that a set of related columns is masked as a group to ensure that the masked data across the related columns retain the same relationship, e.g. city, state, zip values need to be consistent after masking.

Deterministic masking: this technique ensures repeatable masked values after a mask run. Enterprise may use this technique to ensure that certain values, e.g. a customer number gets masked to the same value across all databases.

Secure High Performance Mask Execution

Prior to mask execution, Oracle Data Masking Pack performs several pre-mask validation checks, such as validating that the mask formats matches the table data types, checking for space, to ensure that the masking process is error-free.

Unlike traditional masking processes that are typically slow, Oracle Data Masking Pack uses highly efficient parallelized bulk operations to replace the original sensitive data with masked data. Because the entire data masking process is done in place, enterprises can be assured of a greater sense of security knowing that the sensitive data would never leave the database during the masking process.

RELATED PRODUCTS AND SERVICES

The following are related products from Oracle:

- Oracle Database Gateways
- Oracle Provisioning and Patch Automation Pack for Databases
- Oracle Change Management Pack for Databases
- Oracle Real Application Testing
- Oracle Application Testing Suite
- Oracle Database Vault
- Oracle Advanced Security

Oracle Data Masking Pack is also integrated with Oracle Provisioning and Patch Automation Pack in Oracle Enterprise Manager to clone-and-mask via a single workflow. The secure high performance nature of Oracle Data Masking combined with the end-to-end workflow ensures that enterprise can provision test systems from production rapidly instead of days or weeks that it would with separate manual processes.

Optimized for Oracle databases

Oracle Data Masking Pack leverages key capabilities in Oracle databases to enhance the overall manageability of the masking solution. Some of these include:

- **Flashback:** Administrators can optionally configure Oracle databases to enable flashback to a pre-masked state if they encounter problems with the masked data.
- **PL/SQL:** Unlike other solutions, Oracle Data Masking Pack generates DBA-friendly PL/SQL that allows DBAs to tailor the masking process to their needs. This PL/SQL script can also be easily integrated into any cloning process.

Support for Heterogeneous Databases

Oracle Data Masking Pack can support masking of data in heterogeneous databases, such as IBM DB2 and Microsoft SQLServer, through the use of Oracle Database Gateways.

Oracle Enterprise Manager Integration

Oracle Data Masking Pack is completely integrated with Oracle Enterprise Manager. This allows DBAs to take advantage of capabilities, such as the Enterprise Manager Command Line Interface (EMCLI), job scheduler and privilege delegation support, to perform all tasks related to masking sensitive data.

Contact Us

For more information about Oracle Data Masking Pack, please visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



Oracle is committed to developing practices and products that help protect the environment

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