

# Oracle Data Masking and Subsetting Pack

The growing security threats have increased the need to limit exposure of sensitive information. At the same time, copying production data for non-production purposes such as test and development is proliferating sensitive data expanding the security and compliance boundary and increasing the likelihood of data breaches. Oracle Data Masking and Subsetting Pack provide a flexible solution that masks and subsets sensitive production data, allowing the data to be safely shared across non-production environments.

## KEY FEATURES

- Automated discovery of sensitive columns and parent-child relationships
- Comprehensive and extensible built-in masking transformations
- Creation and reuse of custom templates for applications
- Integrated data subsetting
- Mask and subset in database or by extraction
- Mask and subset on premise or in the Oracle Cloud
- High performance and repeatable process

## KEY BENEFITS

- Reduces sensitive data exposure in test and development environments
- Minimizes storage costs by subsetting data
- Improves compliance with information privacy laws and standards

## Introduction to Data Masking and Subsetting

Test and development environments are one of the potential targets for an attack as they generally contain copies of production data. Because such environments are typically not as protected or monitored as production systems, you need to mask and subset their data. Oracle Data Masking and Subsetting extracts entire copies or subsets of application data from the database, and masks sensitive data so that the data can be safely shared with test, development, and partners. Oracle Data Masking and Subsetting improves security by reducing the exposure of the sensitive production data for non-production environments. Compliance costs are lowered as the masked test and development databases are out of the scope for the audit teams.

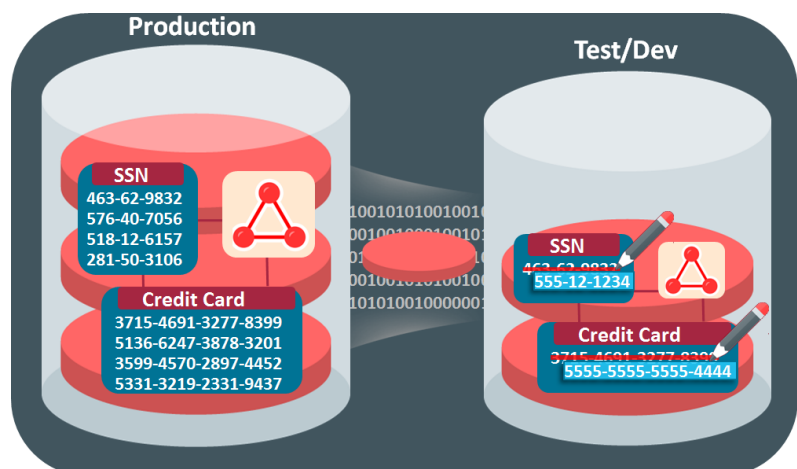


Figure 1. Oracle Data Masking and Subsetting Pack

**RELATED PRODUCTS**

Oracle Data Masking and Subsetting Pack is part of the Oracle Database Security solutions. Related Oracle Database Security products include:

- Oracle Advanced Security
- Oracle Key Vault
- Oracle Database Vault
- Oracle Label Security
- Oracle Audit Vault and Database Firewall

**RELATED SERVICES**

- Rapid start services for application templates are available from Oracle Consulting Services (OCS)

## Sensitive Data Discovery and Modeling

Finding sensitive data is a non-trivial task in today's complex applications. Application Data Modeling automates the discovery of columns holding sensitive data and the corresponding parent-child relationships defined in the database. The discovery process uses built-in extensible patterns such as credit card numbers and national identifiers to sample data and identify the sensitive columns. The resulting Application Data Model provides a complete set of sensitive columns along with their relationships ensuring that the application integrity is maintained by the masking and subsetting process.

## Masking Sensitive Data

Oracle Data Masking and Subsetting provides a comprehensive and extensible library of masking formats, functions/transformations, and application templates. Sensitive data such as credit card numbers, national identifiers, and other personally identifiable information (PII) can be easily masked with an out-of-the-box library of masking formats.

For simple cases, it provides masking transformations such as fixed characters or numbers, column substitution, and SQL or regular expression based masking. The library also provides several advanced transformations to create custom masking formats:

- **Shuffle Masking** shuffles fields within a column in a random fashion breaking one to one mapping between sensitive data elements. For example, columns containing salaries can be shuffled to break the employee-salary mapping.
- **Blurring or perturbation** generates random numbers, characters, and dates within a user defined range.
- **Encryption** encrypts the sensitive data using a key while preserving the format of the data. This transformation is useful when masked data sent to a third party has to be merged back along with further updates.
- **Format Preserving Randomization (or auto mask format)** randomizes the data, preserving the input length, position, the case of the character (upper or lower), and special characters in the input.
- **Conditional Masking** masks columns according to different conditions. For example, identifiers that belong to the United States can be masked using Social Security Number format and those that belong to the United Kingdom can be masked using National Insurance Number format.
- **Compound Masking** groups and masks related columns together. For example, if you want to shuffle address fields like city, state, and country, then grouping city and the state will keep these columns together during the shuffling process.
- **Deterministic Masking** generates consistent masked output for a given input across application schemas and databases. This makes it possible to mask names consistently or deterministically across different modules across your organization.
- **User Defined PL/SQL Masking Functions** can be used to compose a custom masking logic or migrate your existing masking scripts.

## Data Subsetting

Data Subsetting reduces security risks by deleting unnecessary rows from a database before sharing with internal and external teams. It also helps organizations minimize storage costs in non-production environments. Being able to properly subset enterprise-class applications without breaking the application is a challenging task.

Oracle Data Masking and Subsetting provides goal or condition based subsetting. A

goal can be a relative table-size such as extracting 1% subset of a table containing 10 billion rows for testing. Condition based subsetting can minimize risk exposure by discarding all user records created prior to a specific date, or by only extracting sales records in the eastern territory for the partners in the Asia.

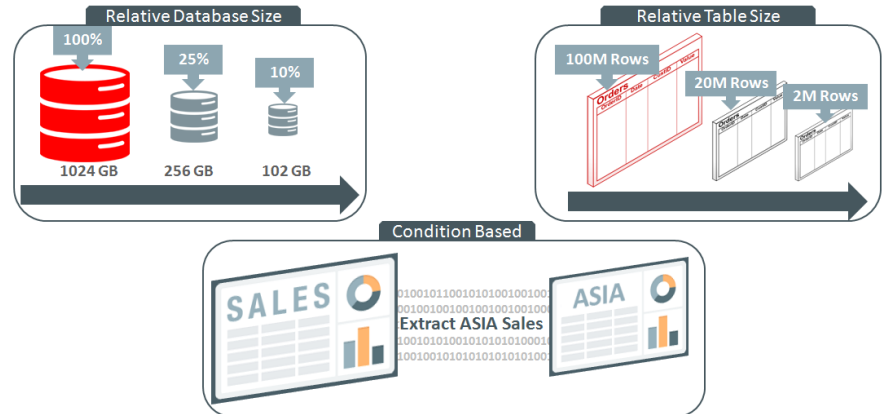


Figure 2. Goal and Condition based Subsetting

## Centralized Administration and Flexible Deployment

Oracle Enterprise Manager Cloud Control provides a centralized, unified, and browser-based GUI for administration. Oracle Data Masking and Subsetting Pack is installed by default with Oracle Enterprise Manager.

Masking and subsetting can be performed on a cloned copy of the original data, eliminating any overhead on production systems. Alternatively, masking and subsetting can be performed during database export, eliminating the need for staging servers.

High performance masking and subsetting is achieved through the integration with Oracle Database and Oracle Data pump. Once the Application Data Model is created, the masking process can be repeated minimizing the overhead.

Subsetting and masking can be performed on data in non-Oracle relational databases (MySQL, SQL Server, Sybase, DB2, Informix, and Teradata) by staging the data in an Oracle Database using Oracle Database Gateway.

## Software Lifecycle Integration

Oracle Data Masking and Subsetting is integrated with Oracle data management and testing tools. For example, the integration with Oracle Database Life Cycle Management Pack facilitates masking and database cloning in a single workflow. Integration with Oracle Real Application Testing Pack enables masking sensitive data in production workload capture and replaying it on test systems without the risk of exposing sensitive data. Integration with Oracle Data Integrator masks and subsets data during the data synchronization between source and target databases.

## Masking and Subsetting for Hybrid Cloud

Oracle Data Masking and Subsetting helps organizations achieve data privacy and compliance for test and development databases hosted in the Oracle Cloud. Using on-premise Oracle Enterprise Manager, you can mask and subset databases on-premise or in the Oracle Cloud. This hybrid management capability also facilitates masking and subsetting during the migration of data from on-premise to the Oracle Cloud.

### More Information

For more information such as product FAQ, white paper, tutorials, documentation, customer references, and product blog please visit the following Oracle Data Masking and Subsetting page on Oracle Technology Network.

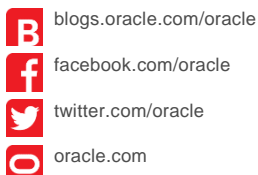
<http://www.oracle.com/technetwork/database/options/data-masking-subsetting/overview/index.html>



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For more information about Oracle Data Masking and Subsetting Pack, visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.

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