Database Management
and Security

WARE VALLEY

DB보안의 첫걸음

접근통제와 비정형 쿼리 관리

2019 데이터 그랜드 컨퍼런스

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데이터베이스 보안 위협의 10가지

1. 과도한 권한과 사용하지 않는 권한
2. 권한 남용
3. SQL Injection
4. Malware
5. 약한 감사 추적
6. 저장 매체 노출
7. 취약하고 잘 못 구성된 데이터베이스의 악용
8. 관리되지 않는 민감한 데이터
9. Denial of Service Attack
10. 보안 전문 지식과 교육의 부족

Source : 2015 Verizon Data Breach Report

데이터베이스 취약점과 잘못된 설정 10가지

1. 기본, 공백 및 약한 사용자 이름과 암호
2. SQL Injection
3. 과도한 사용자 및 그룹 권한
4. 불필요하게 활성화 된 데이터베이스 기능
5. 손상된 구성 관리
6. Buffer Overflows
7. 권한 상승
8. Denial of Service Attack
9. 패치되지 않은 데이터베이스
10. 암호화되지 않은 민감한 데이터

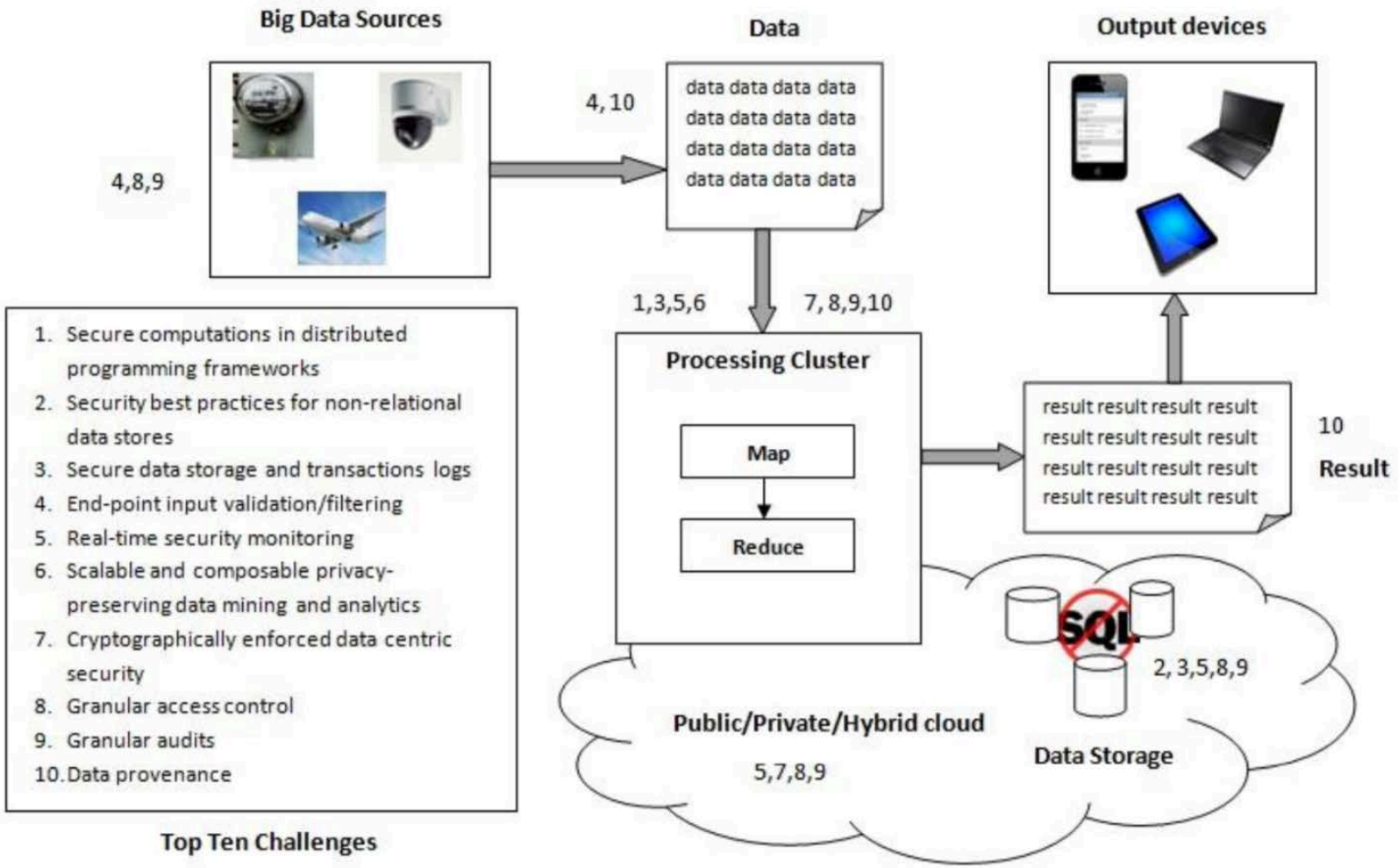
Source : Team SHATTER

Big Data Security Issues

- Vulnerability to fake data generation
- Potential presence of untrusted mappers
- Troubles of cryptographic protection
- Possibility of sensitive information mining
- Struggles of granular access control
- Data provenance difficulties
- High speed of NoSQL databases' evolution and lack of security focus
- Absent security audits

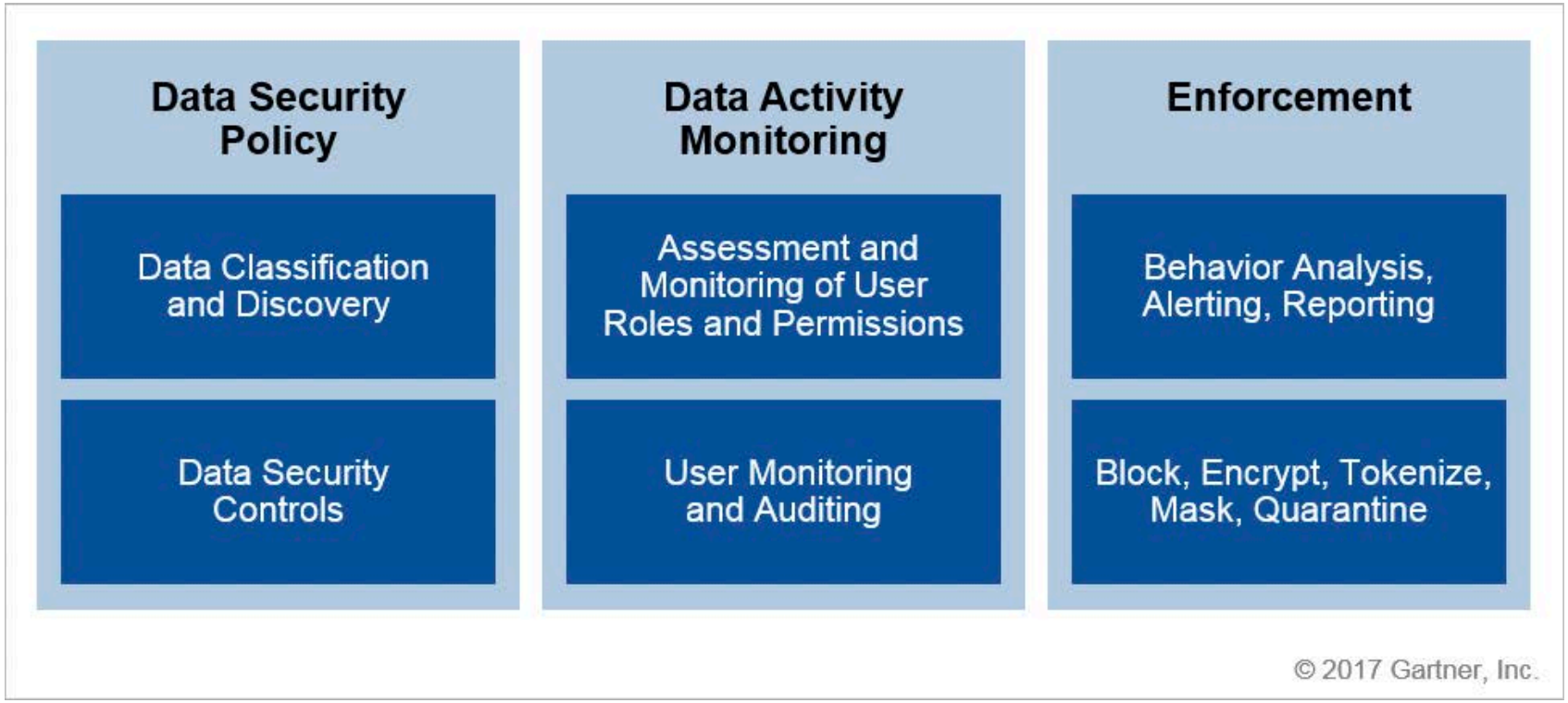
Source : A. Bekker. ScienceSoft

Big Data Security Challenges



Source : S. Rajan. Expanded Top Ten Big Data Security and Privacy Challenges

DCAP Capabilities offered by Vendors



Source : Gartner (Nov. 2017)

DCAP Capabilities

- Data Classification Discovery
  - Terms of speed and false-positive performance
  - A specific DBMS, file type, Hadoop or cloud
  - column/table metadata or within fields
  - a binary large object (BLOB) or character large object (CLOB)
  - unstructured files and rely on tagging
- Data Security Policy Management
  - based on user identities and business roles
  - identify individual users at the application level
- Monitoring User Privileges and Data Access Activity
  - monitor for changes to individual privileges.
  - detect changes and create alerts for privilege escalation or for changes to data
  - be able to intercept access by various administrators

Source : Gartner (Nov. 2017)

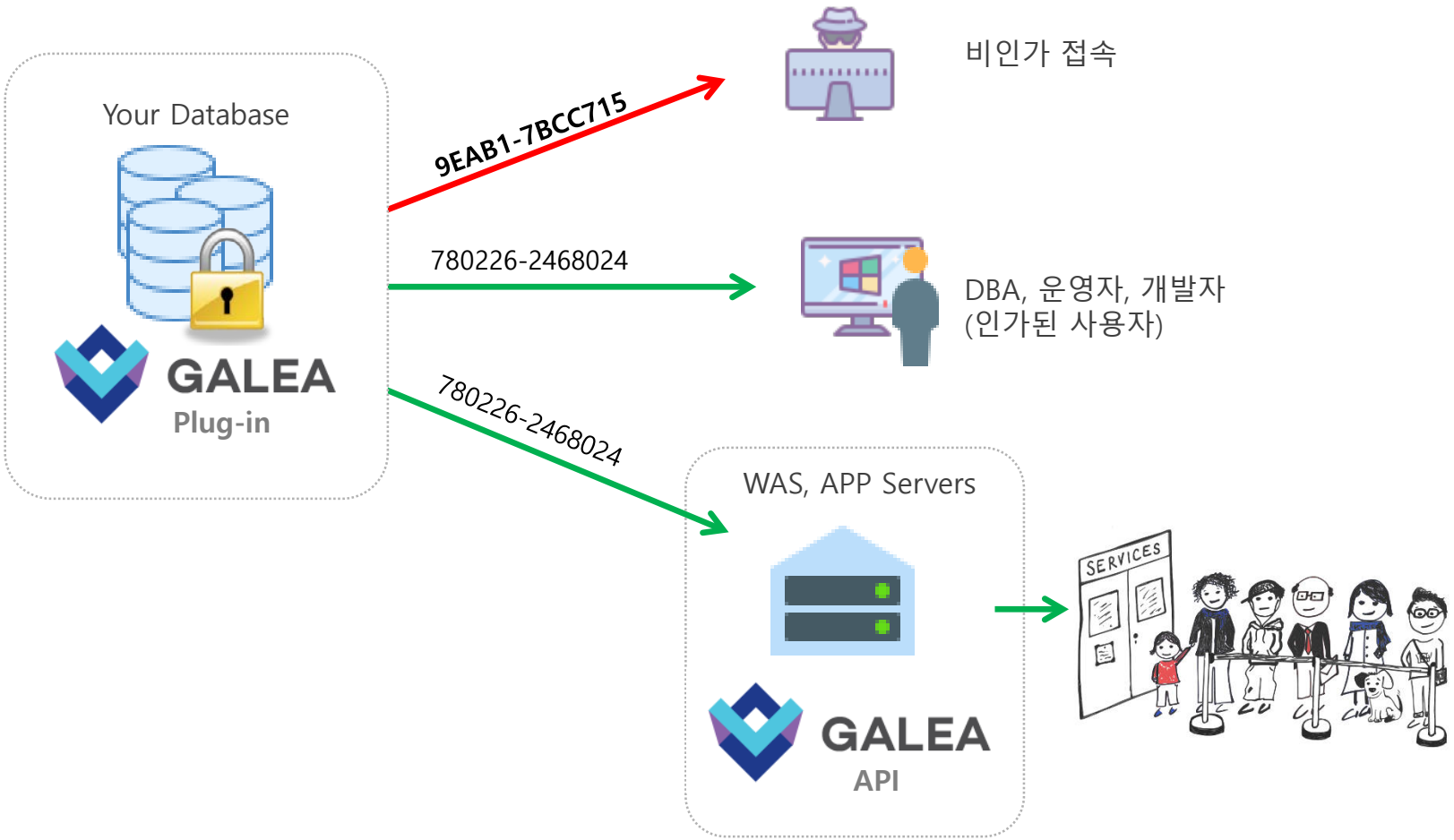
DCAP Capabilities

- Auditing and Reporting
  - require an audit trail, such as unusual user behaviors, changes to data, policy violations or changes to privileges.
  - be able to use the audit logs as a forensic analysis aid to investigate all activities including access, data changes or privileges.
- Behavior Analysis, Alerting and Blocking
  - An ability to create security alerts based upon preselected monitoring
  - Future products may even correlate rules to detect unusual behaviors.
  - The ability to analyze historical access trends will provide increasingly important forensic insights to detect inappropriate behaviors.
- Data Protection
  - encryption, tokenization or data masking

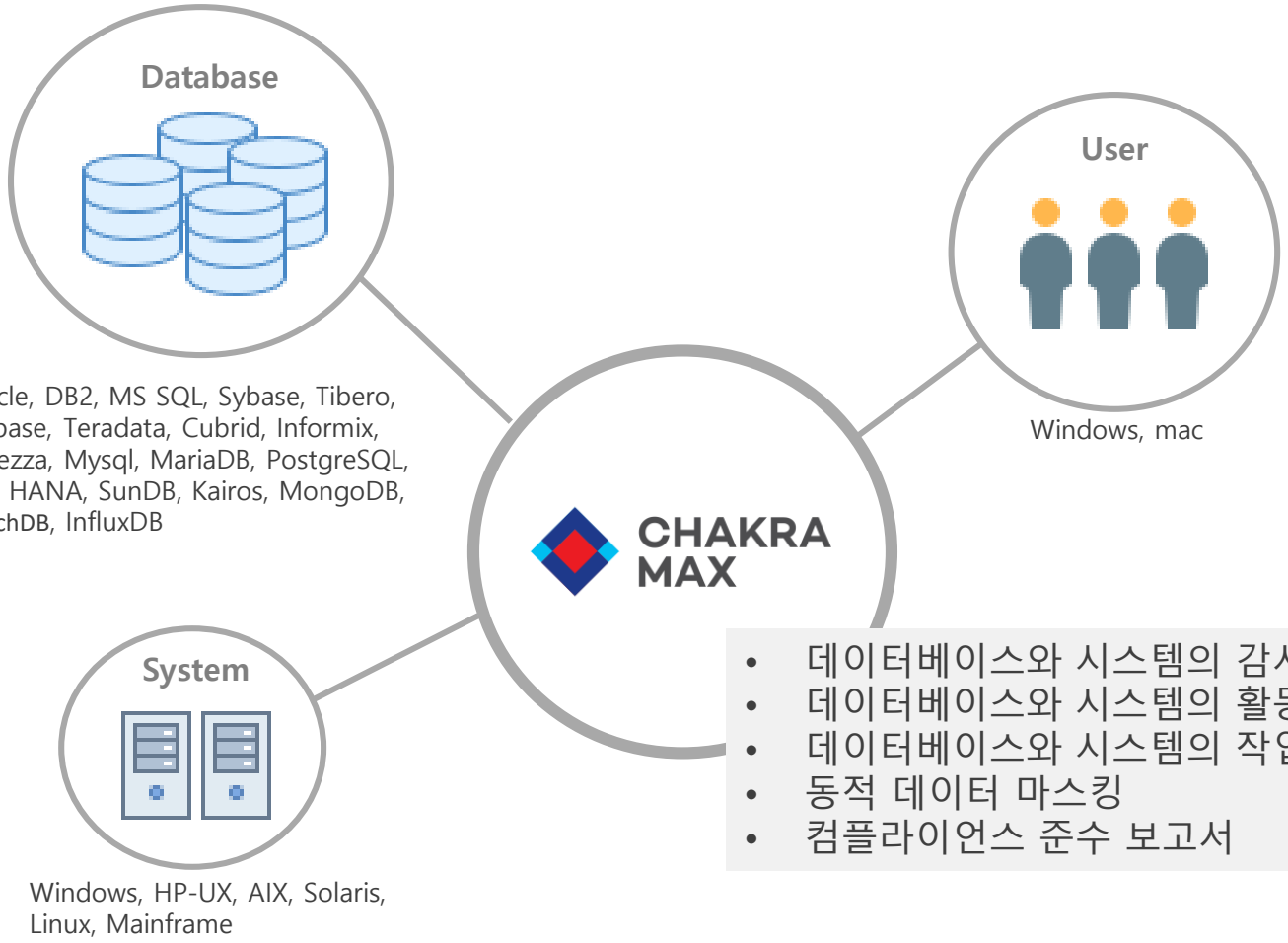
Source : Gartner (Nov. 2017)

WAREVALLEY : Database Security and Management

Galea : Column Level Database Encryption

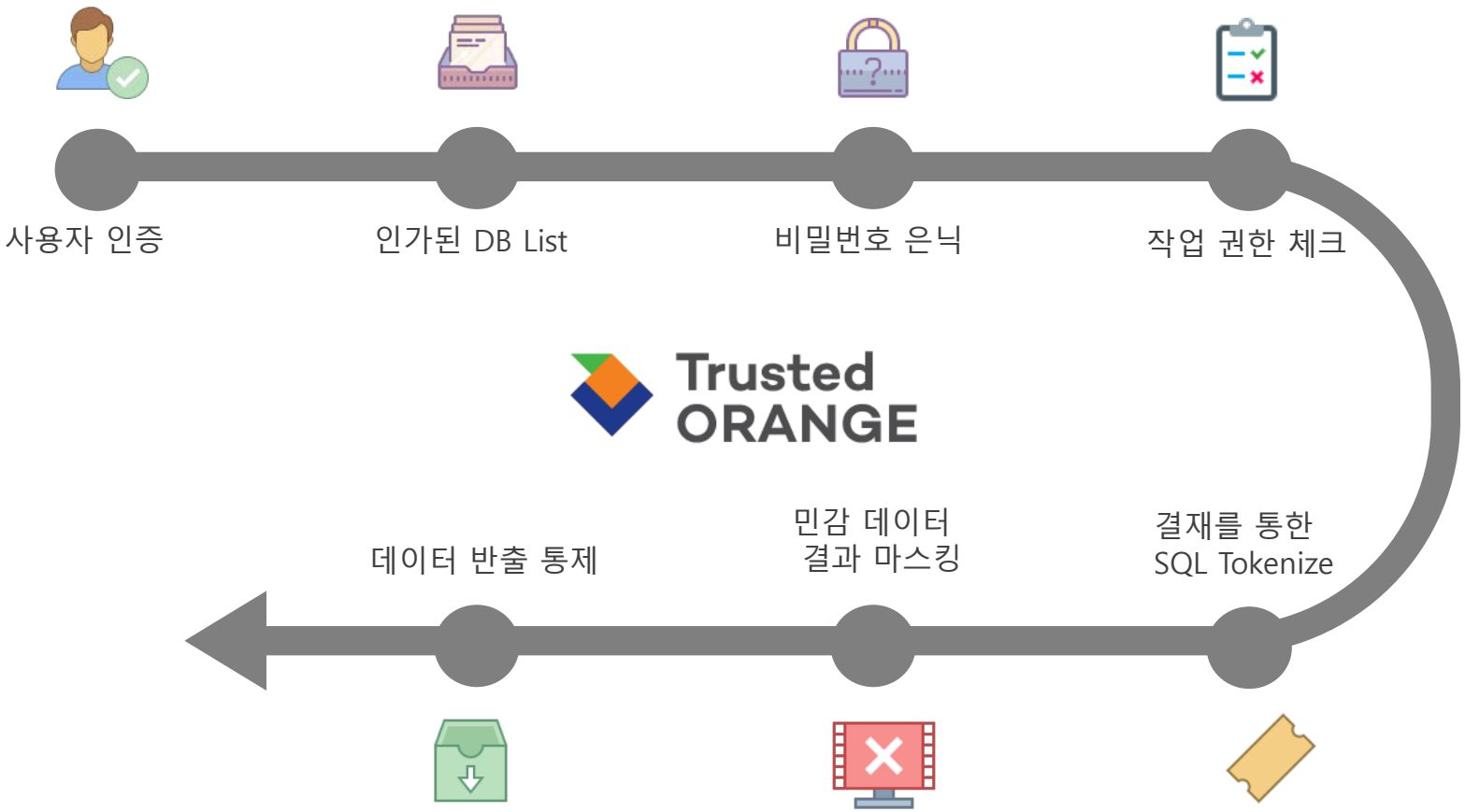


Chakra MAX : Database, System Audit and Protection

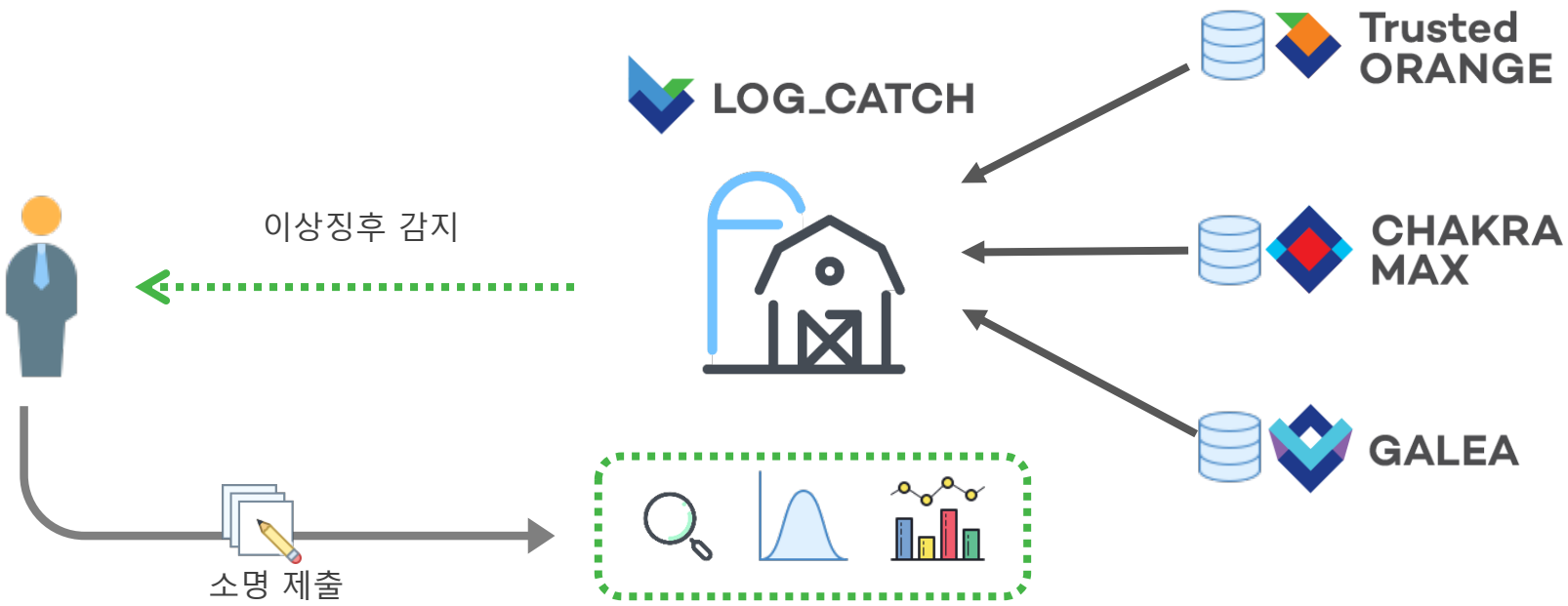


- 데이터베이스와 시스템의 감사와 차단
- 데이터베이스와 시스템의 활동 모니터링
- 데이터베이스와 시스템의 작업 결재 프로세스
- 동적 데이터 마스킹
- 컴플라이언스 준수 보고서

Trusted Orange : Database Privilege



LogCatch : Behavior Analysis



Thank you!

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