

Table 1: DBMS usage patterns for the projects in our sample. MySQL stands for MySQL or MariaDB, PostgreSQL stands for PostgreSQL or CockroachDB, MS SQL Server stands for MS SQL Server or Microsoft Azure SQL Database, Filestore stands for Google Cloud Firestore.

Project	DBMS Replacement Patterns
Activiti	<p>Hazelcast \rightarrow HyperSQL_{In} \rightarrow Hazelcast_{Out} HyperSQL</p> <p>HyperSQL \rightarrow PostgreSQL_{In} \rightarrow HyperSQL_{Out} PostgreSQL</p> <p>MS SQL Server \rightarrow HyperSQL_{In} \rightarrow MS SQL Server_{Out} HyperSQL</p>
CAS	<p>Couchbase \rightarrow H2_{In} \rightarrow Couchbase_{Out} H2</p> <p>Couchbase \rightarrow Cassandra_{In} \rightarrow Couchbase_{Out} Cassandra</p> <p>Couchbase \rightarrow InfluxDB_{In} \rightarrow Couchbase_{Out} InfluxDB</p> <p>Couchbase \rightarrow MS SQL Server_{In} \rightarrow Couchbase_{Out} MS SQL Server</p> <p>Couchbase \rightarrow Filestore_{In} Couchbase_{Out} \rightarrow Filestore</p> <p>PostgreSQL \rightarrow Hazelcast_{In} \rightarrow PostgreSQL_{Out} Hazelcast</p> <p>PostgreSQL \rightarrow Redis_{In} PostgreSQL_{Out} \rightarrow Redis</p> <p>PostgreSQL \rightarrow MongoDB_{In} PostgreSQL_{Out} \rightarrow MongoDB</p> <p>PostgreSQL \rightarrow Oracle_{In} PostgreSQL_{Out} \rightarrow Oracle</p> <p>PostgreSQL \rightarrow Couchbase_{In} PostgreSQL_{Out} \rightarrow Couchbase</p> <p>Couchbase \rightarrow PostgreSQL_{In} \rightarrow Couchbase_{Out} PostgreSQL</p> <p>Couchbase \rightarrow DynamoDB_{In} \rightarrow Couchbase_{Out} DynamoDB</p> <p>Couchbase \rightarrow AzureCosmosDB_{In} \rightarrow Couchbase_{Out} AzureCosmosDB</p> <p>Couchbase \rightarrow FirebaseRealtime_{In} \rightarrow Couchbase_{Out} FirebaseRealtime</p> <p>CouchDB \rightarrow H2_{In} \rightarrow H2 CouchDB_{Out}</p> <p>CouchDB \rightarrow FirebaseRealtime_{In} \rightarrow CouchDB_{Out} FirebaseRealtime</p> <p>CouchDB \rightarrow AzureCosmosDB_{In} \rightarrow AzureCosmosDB CouchDB_{Out}</p> <p>CouchDB \rightarrow InfluxDB_{In} \rightarrow InfluxDB CouchDB_{Out}</p> <p>CouchDB \rightarrow GoogleCloudFilestore_{In} CouchDB_{Out} \rightarrow GoogleCloudFilestore</p>
CommaFeed	<p>Redis \rightarrow H2_{In} \rightarrow Redis_{Out} H2</p> <p>HyperSQL \rightarrow Redis_{In} \rightarrow HyperSQL_{Out} Redis</p> <p>HyperSQL \rightarrow SAPSQLAnywhere_{In} HyperSQL_{Out} \rightarrow SAPSQLAnywhere</p> <p>HyperSQL \rightarrow SAPAdaptiveServer_{In} HyperSQL_{Out} \rightarrow SAPAdaptiveServer</p> <p>HyperSQL \rightarrow H2_{In} HyperSQL_{Out} \rightarrow H2</p>
JMeter	<p>MySQL \rightarrow PostgreSQL_{In} MySQL_{Out} \rightarrow PostgreSQL</p> <p>PostgreSQL \rightarrow H2_{In} \rightarrow PostgreSQL_{Out} H2</p>

ModelDB

	SQLite \rightarrow MongoDB _{In} \rightarrow SQLite _{Out} MongoDB SQLite \rightarrow MySQL _{In} SQLite _{Out} \rightarrow MySQL SQLite \rightarrow MS SQL Server _{In} SQLite _{Out} \rightarrow MS SQL Server SQLite \rightarrow PostgreSQL _{In} SQLite _{Out} \rightarrow PostgreSQL
Ngrinder	SQLite \rightarrow H2 _{In} \rightarrow SQLite _{Out} H2
Nifi	Cassandra \rightarrow PostgreSQL _{In} \rightarrow Cassandra _{Out} PostgreSQL Cassandra \rightarrow Hazelcast _{In} \rightarrow Cassandra _{Out} Hazelcast Cassandra \rightarrow MicrosoftAzureCosmosDB _{In} \rightarrow Cassandra _{Out} MicrosoftAzureCosmosDB Cassandra \rightarrow Neo4j _{In} \rightarrow Cassandra _{Out} Neo4j Cassandra \rightarrow Snowflake _{In} \rightarrow Cassandra _{Out} Snowflake Couchbase \rightarrow Hazelcast _{In} \rightarrow Couchbase _{Out} Hazelcast Couchbase \rightarrow PostgreSQL _{In} \rightarrow Couchbase _{Out} PostgreSQL Couchbase \rightarrow MicrosoftAzureCosmosDB _{In} \rightarrow Couchbase _{Out} MicrosoftAzureCosmosDB Couchbase \rightarrow Neo4j _{In} \rightarrow Couchbase _{Out} Neo4j Couchbase \rightarrow DynamoDB _{In} \rightarrow Couchbase _{Out} DynamoDB Couchbase \rightarrow Snowflake _{In} \rightarrow Couchbase _{Out} Snowflake GoogleCloudDatastore \rightarrow Ignite NoSql _{In} \rightarrow GoogleCloudDatastore _{Out} Ignite NoSql Ignite NoSql \rightarrow PostgreSQL _{In} \rightarrow Ignite NoSql _{Out} PostgreSQL Ignite NoSql \rightarrow MicrosoftAzureCosmosDB _{In} \rightarrow Ignite NoSql _{Out} MicrosoftAzureCosmosDB Ignite NoSql \rightarrow Neo4j _{In} \rightarrow Ignite NoSql _{Out} Neo4j Ignite NoSql \rightarrow Hazelcast _{In} \rightarrow Ignite NoSql _{Out} Hazelcast Ignite NoSql \rightarrow Snowflake _{In} \rightarrow Ignite NoSql _{Out} Snowflake Oracle \rightarrow Cassandra _{In} \rightarrow Oracle _{Out} Cassandra Oracle \rightarrow DynamoDB _{In} \rightarrow Oracle _{Out} DynamoDB Oracle \rightarrow GoogleCloudDatastore _{In} \rightarrow Oracle _{Out} GoogleCloudDatastore Oracle \rightarrow HBase _{In} \rightarrow Oracle _{Out} HBase Oracle \rightarrow Couchbase _{In} \rightarrow Oracle _{Out} Couchbase PostgreSQL \rightarrow Cassandra _{In} \rightarrow PostgreSQL _{Out} Cassandra PostgreSQL \rightarrow DynamoDB _{In} \rightarrow PostgreSQL _{Out} DynamoDB PostgreSQL \rightarrow GoogleCloudDatastore _{In} \rightarrow PostgreSQL _{Out} GoogleCloudDatastore PostgreSQL \rightarrow HBase _{In} \rightarrow PostgreSQL _{Out} HBase PostgreSQL \rightarrow Couchbase _{In} \rightarrow PostgreSQL _{Out} Couchbase SAPAdaptiveServer \rightarrow Cassandra _{In} \rightarrow SAPAdaptiveServer _{Out} Cassandra SAPAdaptiveServer \rightarrow HBase _{In} \rightarrow SAPAdaptiveServer _{Out} HBase SAPAdaptiveServer \rightarrow GoogleCloudDatastore _{In} \rightarrow SAPAdaptiveServer _{Out} GoogleCloudDatastore

	SAPAdaptiveServer \rightarrow Couchbase _{In} \rightarrow SAPAdaptiveServer _{Out} Couchbase SAPAdaptiveServer \rightarrow DynamoDB _{In} \rightarrow SAPAdaptiveServer _{Out} DynamoDB SAPSQLAnywhere \rightarrow GoogleCloudDatastore _{In} \rightarrow SAPSQLAnywhere _{Out} GoogleCloudDatastore SAPSQLAnywhere \rightarrow HBase _{In} \rightarrow SAPSQLAnywhere _{Out} HBase SAPSQLAnywhere \rightarrow Cassandra _{In} \rightarrow SAPSQLAnywhere _{Out} Cassandra SAPSQLAnywhere \rightarrow Couchbase _{In} \rightarrow SAPSQLAnywhere _{Out} Couchbase SAPSQLAnywhere \rightarrow DynamoDB _{In} \rightarrow SAPSQLAnywhere _{Out} DynamoDB
SpotBugs	GoogleCloudDatastore \rightarrow Oracle _{In} \rightarrow Oracle _{Out} Google-CloudDatastore
Zeppelin	Ignite NoSql \rightarrow Neo4j _{In} \rightarrow Ignite NoSql _{Out} Neo4j MS SQL Server \rightarrow Redis _{In} MS SQL Server _{Out} \rightarrow Redis MySQL \rightarrow Redis _{In} MySQL _{Out} \rightarrow Redis PostgreSQL \rightarrow Redis _{In} PostgreSQL _{Out} \rightarrow Redis Hazelcast \rightarrow InfluxDB _{In} \rightarrow Hazelcast _{Out} InfluxDB Ignite NoSql \rightarrow MySQL _{In} \rightarrow Ignite NoSql _{Out} MySQL Ignite NoSql \rightarrow H2 _{In} \rightarrow Ignite NoSql _{Out} H2 Ignite NoSql \rightarrow HBase _{In} \rightarrow Ignite NoSql _{Out} HBase Ignite NoSql \rightarrow InfluxDB _{In} \rightarrow Ignite NoSql _{Out} InfluxDB Ignite NoSql \rightarrow MongoDB _{In} \rightarrow Ignite NoSql _{Out} MongoDB