



Release Notes | Version 5.5.0/0 | 24 October 2018





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# 1 Introduction

This document describes new features, problems fixed, software requirements, and other pertinent release information for the HVR release version 5.5.0/0. To view or download product documentation produced by HVR, visit <https://www.hvr-software.com/docs/>

## Problems or Questions

For problems or questions, contact us:  
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## Credits

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## 2 Installing an HVR Upgrade

Previously HVR had a concept of 'upgrade type', which is no longer used. Often all machine are upgraded at the same time.

All supported HVR versions are fully compatible with each other; it is not necessary to upgrade all machines in a channel at once. Instead it is possible to only upgrade certain machines (e.g. only the hub machine, GUI machine, remote capture or target). If this is done, it should be understood that each HVR release fixes some bugs and/or contains new features. Each bug fix or feature is only effective if the specific machine(s) indicated for it are upgraded. New features should not be used until all machines that are specified for that feature are upgraded, otherwise errors can occur.

For example, if a new HVR release fixes an integrate bug, then that release must be installed on the machine(s) which do integrate. So if only the GUI and/or hub machine is upgraded, then there will be no benefit.

To decide whether each machines needs to be upgraded, see the descriptions in sections New Features and Fixed Issues. For steps to upgrade HVR, see [Upgrading HVR](#).



## 3 Platform Compatibility and Minimum Requirements

This section provides information on HVR's compatibility and minimum requirements for standard HVR platforms.

### AIX 6.1-PowerPC-64bit

- **Operating System:** AIX version 6.1 and higher
- **Ingres:** version 9.1, 9.2, 9.3, 10.0, 10.1 and 10.2
- **Oracle:** version 10.x, 11,2 and 12.1
- **DB2 on Linux, Unix, Windows:** version 9.7, 10.5 and 11.1
- **File replication:** local, FTP/FTPS and SFTP
- **WebDAV/Sharepoint:** version 2010 and Online
- **S3:** supported
- **Salesforce:** supported
- **HVR user interface:** remote GUI or command-line



## Linux GLIBC2.5-x64-64bit

- **Operating System:** Linux (x86 64 bit) based on GLIBC 2.5 and higher
- **Operating System:** Red Hat Enterprise Server version 5 and higher
- **Operating System:** SuSE Enterprise Server version 10.0 and higher
- The 64-bit executables will not run on a 32-bit Linux machine
- **Ingres:** 64-bit (a64.lnx) version 9.1, 9.2, 9.3, 10.0, 10.1, 10.2 and 11.0  
Capture of X100 tables is not supported
- **Vector:** version 2.x, 3.x, 4.x, 5.0 and 5.1 as hub and target, not capture
- **Vector Hadoop Edition:** version 4.x as hub and target, not capture
- **Oracle:** version 11.1, 11.2, 12.1 and 12.2, Exadata
- **DB2 on Linux, Unix, Windows:** version 9.7, 10.5 and 11.1
- **DB2 for i:** version 7.1 and 7.2  
Requires ODBC driver manager UnixODBC 2.3.1  
Requires IBM i Access Client Solutions ODBC Driver 64-bit
- **PostgreSQL:** version 9.4, 9.5, 9.6 and 10  
PostgreSQL version 8.x, 9.0 - 9.3 as target and hub, not capture  
XtremeData dbX 1.x as target and hub, not capture  
Requires PostgreSQL 9 or 10 client (libpq.so.5 and its dependencies)
- **MySQL:** version 5.6 and 5.7  
**MariaDB:** version 10.0, 10.1 and 10.2  
**Aurora MySQL:** version 5.6 and 5.7
- **Snowflake:** version 2.x as target, but not hub or capture  
Requires ODBC driver manager UnixODBC 2.3.1 or 2.3.2  
Requires Snowflake ODBC driver 2.13.20 or higher
- **HANA:** version 1.0 SPS 11 and 12, and version 2.0 SPS 0, SPS 1 and SPS 2 as capture and target, but not hub  
Requires ODBC driver manager UnixODBC 2.3.2  
Requires HANA ODBC driver 1.00.110 or 1.00.120
- **Teradata:** version 14.x, 15.x and 16.x, as target and hub, not capture  
Requires Teradata ODBC driver 16.10 or 15.00  
Requires TTU 16.10 or 15.00 libraries
- **Greenplum:** version 4.0, 4.2, 4.3, 5.5 and 5.10 as target, not as capture or hub.  
Requires DataDirect Connect64 XE ODBC 7.1.3.99 - 7.1.5 driver for Greenplum provided by Pivotal
- **Redshift:** version 1.0.x, as target, not as capture or hub  
Requires ODBC driver manager UnixODBC 2.3.0  
Requires Amazon Redshift driver 1.2.6.1006-1
- **File replication:** local, FTP/FTPS and SFTP
- **Apache Hadoop HDFS:** version 2.2.0 and above  
HVR needs Hadoop 2.4+ libraries and Java 7 on its local machine to access HDFS (Java 8 if Hadoop 3.0.0alpha1 or later). 'hadoop' command must be in \$PATH or Hadoop home must have been configured via one of the following environment variables: \$HADOOP\_COMMON\_HOME, \$HADOOP\_HOME, \$HADOOP\_PREFIX
- **Apache Hive:** version 1.2.\*, 2.1.\*, 2.2.\* and 2.3.\*  
HVR can create Hive external tables above its S3 or HDFS files, so it can compare their contents with source tables' contents.  
HVR can also deliver changes into Hive ACID tables as a target location for its refresh and integration.  
Capture from Hive and hub database in Hive are not supported.  
External tables only supports deserialization of the following file formats CSV, AVRO, JSON (from Hive 2.2) and Parquet.  
Delivery of changes into Hive ACID tables for Hive versions before 2.3 is only supported with action ColumnProperties/TimeKey.  
By default HVR connects to Hive using Amazon ODBC driver 1.1.1. Other ODBC drivers namely HortonWorks ODBC driver 2.1.7 (and above) or Cloudera ODBC driver 2.5.12 (and above) can also be configured but environment variable HVR\_ODBC\_CONNECT\_STRING\_DRIVER must be configured. Example: HVR\_ODBC\_CONNECT\_STRING\_DRIVER="HortonWorks Hive ODBC Driver 64-bit"
- **Apache Kafka:** version 0.8 and above (including 0.11)
- **Apache HBase:** version 1.1, 1.2 and 1.3
- **WebDAV/Sharepoint:** version 2010 and Online
- **S3:** supported
- **Salesforce:** supported
- **HVR user interface:** native GUI (X client), remote GUI or command-line  
Native GUI requires X11 client libraries (libX11, libXext, libXrender), font rendering libraries libfontconfig and libfreetype.

### macOS-x64-64bit

- **Operating System:** MacOS Sierra (10.12.1) and higher
- **File replication:** local, FTP/FTPS and SFTP
- **WebDAV/Sharepoint:** version 2010 and Online
- **S3:** supported
- **HVR user interface:** native GUI, remote GUI or command-line

### Solaris 10-SPARCV9-64bit

- **Operating System:** Solaris for SPARC, version 9 and higher
- **Ingres:** version 9.1, 9.2, 9.3, 10.0, 10.1, 10.2 and 11.0  
Capture of X100 tables is not supported
- **Oracle:** version 10.1, 10.2, 11.1, 11.2 and 12.1
- **Teradata:** version 14.x, 15.x and 16.x, as target and hub, not capture  
Requires Teradata ODBC driver 16.10 or 15.00
- **File replication:** local, FTP/FTPS and SFTP
- **WebDAV/Sharepoint:** version 2010 and Online
- **S3:** supported
- **Salesforce:** supported
- **HVR user interface:** remote GUI or command-line

### Solaris10-x64-64bit

- **Operating System:** Solaris for Intel/AMD, version 10 and higher
- **Oracle:** version 11.2 and 12.1
- **File replication:** local, FTP/FTPS and SFTP
- **WebDAV/Sharepoint:** version 2010 and Online
- **S3:** supported
- **Salesforce:** supported
- **HVR user interface:** remote GUI or command-line

## Windows-x64-64bit

- **Operating System:** Windows XP, 2003, Vista, 2008, 7, 8 and 10. Windows Server 2012 R2 and 2016 NTFS and FAT file systems
- **Ingres:** version 10.0, 10.1, 10.2 and 11.0  
Capture of X100 tables is not supported  
Trigger based capture is not supported
- **Vector:** version 2.x, 3.x, 4.x, 5.0 and 5.1 as hub and target, not capture
- **Vector Hadoop Edition:** version 4.x as hub and target, not capture
- **Oracle:** version 10.1, 10.2, 11.1, 11.2, 12.1 and 12.2
- **SQL Server:** 2005, 2008, 2012, 2014, 2016 and Azure SQL Database  
**SQL Server:** Azure SQL Data Warehouse as target, but not capture and not hub
- **DB2 on Linux, Unix, Windows:** version 10.5 and 11.1
- **DB2 for i:** version 7.1 and 7.2  
Requires IBM i Access Client Solutions ODBC Driver 13.64.11.00
- **PostgreSQL:** version 9.4, 9.5, 9.6 and 10  
PostgreSQL version 9.0 - 9.3 as target and hub, not capture  
Requires PostgreSQL 9 or 10 client (libpq.dll and its dependencies)
- **MySQL:** version 5.6 and 5.7  
**MariaDB:** version 10.0, 10.1 and 10.2  
**Aurora MySQL:** version 5.6 and 5.7
- **Snowflake:** version 2.x as target, but not hub or capture  
Requires Snowflake ODBC driver 2.13.20 or higher
- **HANA:** version 1.0 SPS 11 and 12, and version 2.0 SPS 0 SPS 1 and SPS 2 as target.  
Requires HANA ODBC driver 1.00.110 or 1.00.120
- **Teradata:** version 14.x, 15.x and 16.x, as target and hub, not capture  
Requires Teradata ODBC driver 16.10 or 15.00  
Requires TTU 16.10 or 15.00 libraries
- **Greenplum:** version 4.0, 4.2, 4.3, 5.5 and 5.10 as target, not as capture or hub.  
Requires DataDirect Connect64 XE ODBC 7.1.3.99 - 7.1.5 driver for Greenplum provided by Pivotal
- **Redshift:** version 1.0.x, as target, not as capture or hub.  
Requires Amazon Redshift driver 1.2.6.1006-1
- **File replication:** local, FTP/FTPS and SFTP
- **Apache Hadoop HDFS:** version 2.2.0 and above  
HVR needs Hadoop 2.4+ libraries and Java 7 on its local machine to access HDFS (Java 8 if Hadoop 3.0.0alpha1 or later). 'hadoop.cmd' command must be in \$PATH or Hadoop home must have been configured via one of the following environment variables: \$HADOOP\_COMMON\_HOME, \$HADOOP\_HOME, \$HADOOP\_PREFIX.
- **Apache Hive:** version 1.2.\*, 2.1.\*, 2.2.\* and 2.3.\*.  
HVR can create Hive external tables above its S3 or HDFS files, so it can compare their contents with source tables' contents.  
HVR can also deliver changes into Hive ACID tables as a target location for its refresh and integration.  
Capture from Hive and hub database in Hive are not supported.  
External tables only supports deserialization of the following file formats CSV, AVRO, JSON (from Hive 2.2) and Parquet.  
Delivery of changes into Hive ACID tables for Hive versions before 2.3 is only supported with action ColumnProperties/TimeKey.  
By default HVR connects to Hive using Amazon ODBC driver 1.1.1.  
Other ODBC drivers namely HortonWorks ODBC driver 2.1.7 (and above) or Cloudera ODBC driver 2.5.12 (and above) can also be configured but environment variable HVR\_ODBC\_CONNECT\_STRING\_DRIVER must be configured. Example: HVR\_ODBC\_CONNECT\_STRING\_DRIVER="HortonWorks Hive ODBC Driver 64-bit"
- **Apache Kafka:** version 0.8 and above (including 0.11)
- **Apache HBase:** version 1.1, 1.2 and 1.3
- **WebDAV/Sharepoint:** version 2010 and Online
- **S3:** supported
- **Salesforce:** supported
- **HVR user interface:** native GUI, remote GUI or command-line

## 4 Log Based Capture Support

- **Ingres**
  - i. Log based capture is supported for all Ingres versions supported by HVR.
  - ii. No support for dual or partitioned DBMS log-files.
  - iii. No support for page-spanning rows.
  - iv. DDL replication (using action AdaptDDL) is not supported.
- **Oracle**
  - i. Log based capture is supported for all Oracle versions supported by HVR.
  - ii. Oracle RAC (cluster) and Oracle ASM are supported.
  - iii. For Oracle version 9, log-based capture is not supported for LOBs or tables without a primary key.
  - iv. Compressed tables are only supported for Oracle 11.2 and higher.
  - v. Log based capture is supported from Data Guard standby database for Oracle 11 and higher. HVR can also capture from an database that was previously a Data Guard target. If HVR was capturing changes from one primary Oracle database and a role transition occur (so that a different Data Guard target becomes the new primary) then HVR can continue capturing from the new primary, including capturing any changes which occurred before the transition. This process is automatic, providing that the HVR location is connecting to Oracle in a way which 'follows the primary'.
  - vi. Log based capture from tables that are encrypted using Oracle TDE is supported for Oracle version 11 and higher. Both tables in an encrypted tablespace and tables with encrypted columns are supported.
  - vii. HVR supports software and hardware (HSM) wallets. If the wallet is not configured as auto-login (Oracle internal file cwallet.sso), the password for the software wallet or HSM needs to be set on the HVR Live Wallet port using the hvrlivewallet command.
  - viii. The software wallet can be in ASM or in a local filesystem.
  - ix. Capturing from Oracle TDE is not supported on HP-UX.
- **SQL Server**
  - i. Log based capture is supported for SQL Server 2005, 2008, 2012, 2014 and 2016.
  - ii. Data Compression is supported.
  - iii. Capture from compressed backup transaction log files is supported.
  - iv. Encryption is not supported.
  - v. Capture from memory optimized tables is not supported.
- **DB2 on Linux, Unix, Windows (LUW)**
  - i. Log based capture is supported for DB2 on Linux, Unix, Windows (LUW)
  - ii. DDL replication (using action AdaptDDL) is not supported.
  - iii. The following table types are supported - regular tables, multidimensional clustering (MDC) tables, insert time clustering (ITC) tables, uncompressed tables, row compressed tables (both static and adaptive) and value compressed tables (both static and adaptive).
- **DB2 for i**
  - i. Log based capture is supported for DB2 for i.
- **PostgreSQL**
  - i. Log based capture is supported for PostgreSQL 9.4, 9.5, 9.6 and 10.
  - ii. Capture of TRUNCATE is not supported.
  - iii. When capturing via the SQL interface (/LogReadMethod=SQL) bi-directional replication is not supported because replicated changes will re-captured and replicated back.
  - iv. When capturing via the SQL interface (/LogReadMethod=SQL) versions before 9.4.12 should be avoided due to a PostgreSQL bug (detected in 9.4.6) which affected this HVR feature.
  - v. When capturing via the SQL interface (/LogReadMethod=SQL) PostgreSQL version 9.5.0 and 9.5.1 contain a bug leading to the test\_decoding plugin to return incorrect timestamp values and is therefore not supported.
  - vi. DDL replication (using action AdaptDDL) is not supported.
- **HANA**
  - i. Log based capture is supported on Linux (not Windows) for HANA: version 1.0 SPS 11 and 12, and version 2.0 SPS 0, SPS 1 and SPS 2.
  - ii. Only column-store tables are supported (no row-store tables).
  - iii. Capture of TRUNCATE is not supported.
  - iv. Capture of LOB datatypes is not supported.
  - v. DDL replication (using action AdaptDDL) is not supported.
- **MySQL and MariaDB**
  - i. Log based capture is supported for all MySQL and MariaDB versions supported by HVR.

## 5 HVR Network Encryption

An HVR connection to a remote location can be configured so that all communication over the network is encrypted. For network encryption, HVR uses OpenSSL, which is developed by the OpenSSL Project.

- On Windows, HVR uses OpenSSL version 1.1.0i
- On aix\_5.2 32bit, HVR uses OpenSSL version 1.0.1h
- On aix\_5.3-powerpc-64bit, HVR uses OpenSSL version 1.1.0i
- On aix\_5.3-powerpc-32bit, HVR uses OpenSSL version 1.0.2o
- On Solaris\_10-x64-64bit, HVR uses OpenSSL version 1.1.0i
- On Solaris\_10, HVR uses OpenSSL version 1.1.0i
- On all linux 64bit versions, HVR uses OpenSSL version 1.1.0i.
- For all other UNIX versions, HVR uses OpenSSL version 1.1.0i

**Note:** On UNIX, HVR's encryption will attempt to exploit the entropy (randomness) generation capability supplied by the '/dev/urandom' device. For optimal security, it is recommended that this Operating System option is installed, especially on the machine used to generate public/private key pairs.

## 6 Service Guard Compatibility

This product can operate as part of a HP High Availability Cluster because it obeys the Service Guard compatibility restrictions;

- Port number are calculated from service identifiers (control database name or path name) so different servers will not clash when relocated to the same host.
- Listening on TCP/IP ports is done using INADDR\_ANY addresses.
- The function gethostname(2) is reinvoked each time the HVR Scheduler is started, so when the enclosing package moves the correct address is selected the result is passed to HVR Monitor sessions for subsequent re-connections or URL's.

## 7 Windows Cluster Compatibility

The windows services in this product can operate as part of a Windows Cluster. The services (hvrremotelistener and hvrscheduler) can be created, started, stopped and deleted in the Windows Cluster. The services will act as 'Generic Service' resource within the cluster. To achieve this, an extra cluster option (-c) has to be specified in addition to the windows services administration option (-a) with the administration command. The syntax of the option is **-c <cluster-name>\<clustergroup-name>**.

For example, to create and start the hvrscheduler service in cluster Group 'mygroup' in cluster 'mycluster', execute **hvscheduler -acs -c mycluster\mygroup <opts> <hubdb>**

Note that both the Cluster and the Cluster Group should already exist.



## 8 New Features

This section lists the new features in each release of HVR since 5.3.1/0. All features introduced in releases since 5.3.1/0 are available in HVR 5.5.0/0.

### New Features in HVR 5.3.1/26

- **HVR-5372:** IMPROVED HVR INITIALIZE PERFORMANCE FOR HANA 2 SPS 01 AND NEWER  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-6087:** MIGRATED HVR TO OPENSSL 1.1.0I.  
To use this feature, upgrade HVR on all machine(s).
- **HVR-2789:** SUPPORT FOR CAPTURING CLIENT-SIDE ENCRYPTED FILES FROM S3.  
To use this feature, upgrade HVR on the hub and capture machine(s).

### New Features in HVR 5.3.1/25

- **HVR-3747:** COMPRESSION PERFORMANCE IMPROVEMENTS FOR CAPTURE.  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-4658:** HVR LOCATION DIALOG ALLOWS USER DEFINED ODBC DRIVER NAMES.  
To use this feature, upgrade HVR on the GUI and hub machine(s).
- **HVR-2920:** HVRSTATS PH3: GATHER FROM JOB, CATALOG AND PROFILE, GUI INTEGRATION, HVRSTATS JOB.  
To use this feature, upgrade HVR on the hub and GUI machine(s).
- **HVR-5870:** IMPLEMENTED MORE ACCURATE DATATYPE MAPPING BETWEEN HIVE AND DIFFERENT FILE FORMATS.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-6013:** IMPROVED HVR INITIALIZE DIALOG OPTIONS DEFAULTS.  
To use this feature, upgrade HVR on the GUI machine(s).
- **HVR-6108:** ORACLE LBC: FORBID GENERATING ENROLL IF RAC WORKS IN NOARCHIVELOG MODE.  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-2945:** RICH THIN-CLIENT STATISTICS VISUALIZATION FOR TIME-SERIES IN REAL-TIME.  
To use this feature, upgrade HVR on the GUI and hub machine(s).
- **HVR-5735:** SHOW/EDIT JOB QUOTA ATTRIBUTE FROM REFRESH & COMPARE DIALOG.  
To use this feature, upgrade HVR on the GUI machine(s).
- **HVR-5734:** HVRREFRESH -J OPTION TO SET OR MODIFY JOB QUOTA.  
To use this feature, upgrade HVR on the hub machine(s).

### New Features in HVR 5.3.1/23

- **HVR-5869:** ADD SUPPORT FOR UCS2 CHARACTER SET IN MYSQL.  
To use this feature, upgrade HVR on all machine(s).

## New Features in HVR 5.3.1/21

- **HVR-5857:** ADD SUPPORT FOR CAPTURE FROM PARTITIONED COLUMN TABLES FROM HANA.  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-5526:** ADDED COLUMNPROPERTIES /CAPTUREEXPRESSIONTYPE.  
To use this feature, upgrade HVR on the hub and capture machine(s).
- **HVR-5801:** ALLOW CHANGING CAPTURE /LOGREADMETHOD PARAMETER WITHOUT UPDATING ENROLL INFORMATION FOR SUPPORTED DATABASES.  
To use this feature, upgrade HVR on the capture and hub machine(s).
- **HVR-5835:** DO NOT ENABLE LOB CAPTURE FOR HANA IF CHANNEL CONTAINS TABLES WITH LOBS BUT NONE OF THE LOB COLUMNS ARE IN THE CHANNEL.  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-5810:** IMPLEMENTED DIRECT CAPTURE FROM MYSQL.  
To use this feature, upgrade HVR on the capture and hub machine(s).
- **HVR-5602:** IMPLEMENTED GUI SUPPORT FOR SLICING AND TABLES PER JOB REFRESH.  
To use this feature, upgrade HVR on the capture and GUI machine(s).
- **HVR-5821:** IMPLEMENTED CAPTURE OF 'TRUNCATE TABLE' OPERATIONS FOR MYSQL.  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-5547:** IMPLEMENTED CAPTURE OF DDL OPERATIONS FOR MYSQL.  
To use this feature, upgrade HVR on the capture and hub machine(s).
- **HVR-5725:** IMPROVED EXTENDED DATATYPE SUPPORT.  
To use this feature, upgrade HVR on all machine(s).
- **HVR-5548:** LDAP SUPPORT FOR HVRVALIDPW MECHANISM AND ABILITY TO PROMPT FOR REMOTE HUB PASSWORDS IN GUI.  
To use this feature, upgrade HVR on the hub and GUI machine(s).
- **HVR-5781:** TREAT DB2 FOR I FOR BIT DATA DATA TYPES AS CHARACTER DATATYPES WHEN HVR\_DB\_CHARSET\_BITDATA IS DEFINED.  
To use this feature, upgrade HVR on the capture and hub machine(s).

## New Features in HVR 5.3.1/20

- **HVR-5603:** ORACLE LBC: HANDLE TABLES REDEFINITIONS MADE BY DBMS\_REDEFINITION PACKAGE.  
To use this feature, upgrade HVR on the capture and hub machine(s).

### New Features in HVR 5.3.1/19

- **HVR-4614:** ADD SUPPORT FOR DB2 11.1 FOR LINUX, UNIX AND WINDOWS.  
To use this feature, upgrade HVR on the capture, hub and integrate machine(s).
- **HVR-5491:** ADD SUPPORT FOR MYSQL BIT DATA TYPE.  
To use this feature, upgrade HVR on all machine(s).
- **HVR-5515:** SIMPLIFIED SAPXFORM CHANNEL, SO /SAPAUGMENT IS UNNECESSARY.  
To use this feature, upgrade HVR on the hub machine(s).
- **HVR-5566:** SUPPORT BI-DIRECTIONAL REPLICATION FOR MYSQL SOURCE.  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-5584:** SUPPORT BIDIRECTIONAL REPLICATION FOR POSTGRES SQL SOURCE WHEN USING LOG READ METHOD SQL.  
To use this feature, upgrade HVR on the capture machine(s).

### New Features in HVR 5.3.1/17

- **HVR-5503:** ALLOW {HVR\_INTEG\_SEQ}, {HVR\_TX\_SEQ}, {HVR\_TX\_SCN} FOR RESTRICT /COMPARECONDITION DURING HVRCOMPARE WITH SPECIFIC SELECT MOMENT (-M).  
To use this feature, upgrade HVR on the hub machine(s).

### New Features in HVR 5.3.1/16

- **HVR-5442:** ADDED TABLEPROPERTIES /COERCEERRORPOLICY AND /COERCEERRORTYPE TO ALLOW MORE FINE GRAINED CONTROL OVER COERCE ERRORS.  
To use this feature, upgrade HVR on the GUI, hub, capture and integrate machine(s).
- **HVR-3907:** MAP NULL TO EMPTY STRING WHEN INTEGRATING TO HIVE WITH FILEFORMAT /CSV AND WITHOUT /NULLREPRESENTATION SET.  
To use this feature, upgrade HVR on the integrate machine(s).

### New Features in HVR 5.3.1/15

- **HVR-5461:** PERFORMANCE IMPROVEMENTS FOR UPLOADING MANY TINY FILES TO S3 WITH /S3ENCRYPTION=KMS\_KEY\_ID.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-5519:** SUPPORT CAPTURE REWIND FOR MYSQL LOG-BASED CAPTURE.  
To use this feature, upgrade HVR on the capture and hub machine(s).

### New Features in HVR 5.3.1/14

- **HVR-5485:** ADD SUPPORT FOR ACTIAN VECTOR 5.1 AND TARGET SUPPORT FOR X100 TABLES IN INGRES 11.  
To use this feature, upgrade HVR on the hub and integrate machine(s).
- **HVR-5493:** ALLOW USE OF 'LOCALHOST' AS MYSQL NODE NAME.  
To use this feature, upgrade HVR on all machine(s).
- **HVR-5484:** SUPPORT READING OF MYSQL BINARY LOG EVENT RECORDS LARGER THAN 16M.  
To use this feature, upgrade HVR on the capture machine(s).

### New Features in HVR 5.3.1/13

- **HVR-2893:** SUPPORT LOG-BASED CAPTURE FROM MYSQL.

To use this feature, upgrade HVR on the capture and hub machine(s).

### New Features in HVR 5.3.1/12

- **HVR-4072:** ADDED SUPPORT FOR ADAPTTDDL ON DB2 FOR I.

To use this feature, upgrade HVR on the capture and hub machine(s).

- **HVR-5186:** CHANGED SEMANTICS OF COLUMNPROPERTIES /ABSENT TO IGNORE COLUMN IN DBMS WHETHER IT EXISTS OR NOT.

To use this feature, upgrade HVR on the GUI and hub machine(s).

- **HVR-5348:** LOB AND LONG DATA SUPPORT FOR ORACLE LOGMINER CAPTURE.

To use this feature, upgrade HVR on the capture machine(s).

- **HVR-1492:** PERFORMANCE IMPROVEMENTS FOR DBMS SELECTS AND DATA PIPELINING.

To use this feature, upgrade HVR on the capture and integrate machine(s).

- **HVR-4948:** PERFORMANCE IMPROVEMENTS FOR UPLOADING MANY TINY FILES TO S3 WITH HIGH LATENCY.

To use this feature, upgrade HVR on the integrate machine(s).

- **HVR-5414:** TERADATA TPT PARAMETER PACK CAN BE CONTROLLED WITH ENVIRONMENT VARIABLE.

To use this feature, upgrade HVR on the integrate machine(s).

### New Features in HVR 5.3.1/11

- **HVR-5260:** WRITE DEFAULT VALUE INTO AVRO AND PARQUET WHEN /MISSINGREPRESENTATION ABSENT AND MISSING VALUE ENCOUNTERED FOR NON-NULLABLE COLUMN INSTEAD OF F\_JT0E39 ERROR.

To use this feature, upgrade HVR on the integrate machine(s).

### New Features in HVR 5.3.1/10

- **HVR-4754:** ADDED NATIVE SUPPORT FOR AZURE DATA LAKE AS A TARGET.

To use this feature, upgrade HVR on the GUI, hub and integrate machine(s).

- **HVR-5108:** SUPPORT SHA256 FOR HVR SSL CERTIFICATE GENERATION/SIGNING.

To use this feature, upgrade HVR on the hub machine(s).

- **HVR-5175:** SUPPORT TABLEPROPERTIES /MAPBINARY FOR DATABASE LOCATIONS (LOB COLUMNS).

To use this feature, upgrade HVR on the capture, hub, integrate and GUI machine(s).

## New Features in HVR 5.3.1/8

- **HVR-5141:** ADD SUPPORT FOR ACTIAN VECTOR 5.0.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-3108:** SUPPORT TABLEPROPERTIES /MAPBINARY FOR DATABASE LOCATIONS (NON-LOBS ONLY).  
To use this feature, upgrade HVR on the capture, hub, integrate and GUI machine(s).

## New Features in HVR 5.3.1/6

- **HVR-5128:** ALLOW CONTEXT VARIABLE SUBSTITUTIONS (HVRREFRESH/HVRCOMPARE -V) IN /RENAMEEXPRESSION.  
To use this feature, upgrade HVR on the hub machine(s).
- **HVR-5079:** HVRREFRESH AND HVRCOMPARE OPTION -S (TASKS FOR EACH SLICE) AND -N (TASKS FOR BUNDLES OF TABLES).  
To use this feature, upgrade HVR on the hub machine(s).
- **HVR-5094:** PERFORMANCE IMPROVEMENTS FOR CAPTURE CHECKPOINTING ON PARTIAL ROLLBACKS.  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-5122:** HVRMANIFESTAGENT LISTENS TO CONTEXT VARIABLES IN RENAME EXPRESSIONS (OPTS -I AND -M).  
To use this feature, upgrade HVR on the integrate machine(s).

## New Features in HVR 5.3.1/5

- **HVR-5041:** AGENTS ARE PASSED HVR\_LONG\_ENVIRONMENT FILE FOR TOO LONG ENV VALUES WHICH NEED TRUNCATION.  
To use this feature, upgrade HVR on the capture, hub and integrate machine(s).
- **HVR-4909:** CAPTURE DATA FROM ORACLE IOT TABLES WITH KEY COMPRESSION.  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-5073:** HVRMAINT NOW DETECTS USERS REMOVING LOGFILES.  
To use this feature, upgrade HVR on the hub machine(s).
- **HVR-5043:** INTRODUCED TABLEPROPERTIES /MISSINGREPRESENTATIONSTRING /MISSINGREPRESENTATIONNUMERIC AND /MISSINGREPRESENTATIONDATE.  
To use this feature, upgrade HVR on the hub and integrate machine(s).
- **HVR-5057:** LOG ATTEMPTED S3 RETRIES AFTER HVR\_URL\_RETRY\_TRACE\_THRESHOLD TIMES.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-5061:** RENAMED HVRCHANNELMERGE TO HVRSWITCHTABLE AND ADDED TABLE SCOPE.  
To use this feature, upgrade HVR on the hub machine(s).
- **HVR-5074:** HVRMANIFESTAGENT HAS STRICTER SANITY CHECKS FOR ITS INPUT.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-5047:** HVRMANIFESTAGENT LISTENS TO HVR\_LONG\_ENVIRONMENT.  
To use this feature, upgrade HVR on the integrate machine(s).

## New Features in HVR 5.3.1/4

- **HVR-4572:** ADD SAPXFORM TO DISTRIBUTION.  
To use this feature, upgrade HVR on the hub and integrate machine(s).
- **HVR-4300:** ADD SUPPORT FOR GREENPLUM 5.5.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-3777:** ADD SUPPORT FOR SNOWFLAKE DATA TYPES TIMESTAMP\_TZ AND TIMESTAMP\_LTZ.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-4850:** ADDED NEW PARAMETER /PARQUETVERSION TO ALLOW REPRESENTING DATA IN DIFFERENT FORMATS.  
To use this feature, upgrade HVR on the hub and integrate machine(s).
- **HVR-3020:** ADDED SUPPORT OF MONGODB AS A TARGET VIA PLUGIN.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-4823:** EXTENDED SUPPORTED RANGE OF GREENPLUM DATE AND TIMESTAMP VALUES TO INCLUDE YEARS BC AND YEARS > 9999.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-4825:** EXTENDED SUPPORTED RANGE OF REDSHIFT DATE AND TIMESTAMP VALUES TO INCLUDE YEARS BC AND YEARS > 9999.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-4950:** IMPROVED SQL SERVER DRIVER LOADING LOGIC ON LINUX.  
To use this feature, upgrade HVR on the capture, hub and integrate machine(s).
- **HVR-4830:** INTRODUCED HVR\_EVENT CATALOG TABLE FOR TRACKING HVRCHANNELMERGE.  
To use this feature, upgrade HVR on the hub machine(s).
- **HVR-5011:** OPTIONAL WORKAROUND FOR REMOTE ASM CAPTURE OVER TNS.  
To use this feature, upgrade HVR on the capture machine(s).
- **HVR-4878:** REDACT AWS\_KEY\_ID\_FROM HVR LOG FILES.  
To use this feature, upgrade HVR on the hub, capture and integrate machine(s).
- **HVR-4525:** SUPPORT SAPXFORM FOR NON-DATABASE TARGETS.  
To use this feature, upgrade HVR on the GUI and hub machine(s).

## New Features in HVR 5.3.1/3

- **HVR-4753:** ADD SUPPORT FOR INTEGRATION INTO INHERITANCE BASED PARTITIONED POSTGRESQL TABLES.

To use this feature, upgrade HVR on the integrate machine(s).

- **HVR-4734:** ADDED DBOBJECTGENERATION /REFRESHTABLEGRANT TO SPECIFY GRANT AFTER HVR REFRESH WITH TABLE CREATION.

To use this feature, upgrade HVR on the hub and integrate machine(s).

- **HVR-4849:** ADDED ENVIRONMENT VARIABLE TO PREVENT CAPTURE JOB FROM REACTING TO DDL RECORDS.

To use this feature, upgrade HVR on the capture machine(s).

- **HVR-4838:** ALLOW COLUMNPROPERTIES /CAPTUREEXPRESSION ON /TIMEKEY COLUMNS DURING COMPARE TO SANITIZE THEM.

To use this feature, upgrade HVR on the hub machine(s).

- **HVR-4768:** ENHANCED FUNCTIONALITY OF COLUMNPROPERTIES /DATATYPEMATCH AND /LENGTH.

To use this feature, upgrade HVR on the GUI and hub machine(s).

- **HVR-4768:** ENHANCED FUNCTIONALITY OF COLUMNPROPERTIES /PRECISION AND /SCALE.

To use this feature, upgrade HVR on the GUI and hub machine(s).

- **HVR-4392:** SUPPORT CAPTURE FROM SQL SERVER RUNNING ON LINUX.

To use this feature, upgrade HVR on the capture machine(s).

## New Features in HVR 5.3.1/2

- **HVR-4795:** ADDED SUPPORT FOR PARTIAL ROLLBACKS WHEN USING LOGMINER.

To use this feature, upgrade HVR on the capture machine(s).

- **HVR-4721:** CAPTURE DATA FROM ORACLE PLUGGABLE DATABASE BY USING LOGMINER.

To use this feature, upgrade HVR on the capture, hub and GUI machine(s).

- **HVR-3389:** SUPPORT SQL SERVER SOURCE DATABASE FROM LINUX (CLIENT).

To use this feature, upgrade HVR on the capture machine(s).

## New Features in HVR 5.3.1/1

- **HVR-4739:** ADDED OPTION HVRINIT -E FOR DEFAULT HVRINIT PLUS ENROLL FILE RECREATION.

To use this feature, upgrade HVR on the hub machine(s).

- **HVR-3906:** SUPPORT LOG-BASED CAPTURE FROM HANA 2 SPS 02 (COLUMNSTORE TABLES ONLY).

To use this feature, upgrade HVR on the capture machine(s).



## New Features in HVR 5.3.1/0

- **HVR-3999:** ADD SUPPORT FOR POSTGRESQL 10.  
To use this feature, upgrade HVR on all machine(s).
- **HVR-4108:** ADD SUPPORT FOR BULK LOADING INTO MYSQL AND MARIADB.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-4519:** ADDED HVR GUI ACCESS POLICIES TO CONFIGURE GUI AS READ-EXEC OR READ-ONLY.  
To use this feature, upgrade HVR on the GUI machine(s).
- **HVR-4164:** ADDED HVR CONTROL REPORT MESSAGES AFTER INTEGRATE SUB-CYCLES.  
To use this feature, upgrade HVR on the hub machine(s).
- **HVR-4599:** ADDED RETRY OPERATION WITH SCHEMA REGISTRY IN CASE OF HTTP RESPONSE CODE 500.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-4520:** BY DEFAULT INTEGRATE SHOULD NOT START IF REFRESH IS RUNNING IN CHANNEL.  
To use this feature, upgrade HVR on the GUI machine(s).
- **HVR-4636:** IMPROVED HIVE QUERY PERFORMANCE ON /TIMEKEY BULK COMPARE.  
To use this feature, upgrade HVR on the hub and integrate machine(s).
- **HVR-4499:** IMPROVED NUMBER(\*) -> AVRO,JSON,PARQUET PERFORMANCE.  
To use this feature, upgrade HVR on the integrate machine(s).
- **HVR-4550:** IMPROVED BULK COMPARE PERFORMANCE ON WIDE TABLES.  
To use this feature, upgrade HVR on the capture and integrate machine(s).
- **HVR-4282:** INCREASED HVR\_TX\_COUNTDOWN FROM 32BIT TO 48BIT.  
To use this feature, upgrade HVR on all machine(s).
- **HVR-4682:** NEW BULK COMPARE ALGORITHM FOR IMPROVED PERFORMANCE.  
To use this feature, upgrade HVR on the hub, capture and integrate machine(s).
- **HVR-4616:** PERFORMANCE TUNING OF KAFKA LIBRARY TO AVOID MELTDOWN PERFORMANCE PENALTY.  
To use this feature, upgrade HVR on the integrate machine(s).

## 9 Problems Fixed

This section lists the problems fixed in each releases of HVR since 5.3.1/0. All problems fixed in releases since 5.3.1/0 remains fixed in HVR 5.5.0/0.

## Problems Fixed in 5.5.0/0

Issue ID	Description	Resolution
HVR-5363	FIXED LOST ERROR MESSAGES IN SOLARIS/SPARC SUCH AS F_JG2216: DESTRUCTION OF HANDLE (TYPE 'NET') FAILED.	To fix this bug, upgrade HVR on all machine(s).
HVR-5890	ENHANCED HANA TABLE CREATION TO USE INVERTED HASH INDEXES TO REDUCE HANA MEMORY USAGE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-6151	SHOW CORRECT ERROR MESSAGE WHEN ATTEMPTING TO DO CAPTURE FROM ORACLE RAC USING LOGMINER.	To fix this bug, upgrade HVR on the capture and hub machine(s).
HVR-6229	FIXED POTENTIAL F_JD2236 AFTER ONLINE REFRESH FROM DB2 (LUW) 10.5 OR LATER SOURCE.	To fix this bug, upgrade HVR on the capture and hub machine(s).
HVR-6238	FIXED RARE F_JD2236 AFTER ONLINE REFRESH FROM SQL SERVER SOURCE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-6243	FIXED QUERY ERRORS RESILIENT BURST INTEGRATE AFTER ONLINE REFRESH FROM HANA SOURCES.	To fix this bug, upgrade HVR on the hub and integrate machine(s).
HVR-6252	FIXED F_JZ320A ENCOUNTERED COMMIT WITH PENDING LOB FRAGMENTS WHILE CAPTURING FROM DB2 (LUW).	To fix this bug, upgrade HVR on the capture machine(s).
HVR-6255	FIXED F_JR0321 TO ALLOW TABLES WITH ZERO COLUMNS IN HVR CATALOG.	To fix this bug, upgrade HVR on all machine(s).
HVR-6312	FIXED SIMULTANEOUS SCHEDULED REFRESHES FOR SAME LOCATION MIGHT RESTART INTEGJOB TOO EARLY OR RECEIVE F_JG2142.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6318	FIXED F_JD20DB DURING REPLICATION OF ALTER TABLE TO DECREASE COLUMN SIZE.	To fix this bug, upgrade HVR on the hub and integrate machine(s).
HVR-6322	FIXED F_JD20ED FOR SQLSERVER TIMESTAMP COLUMNS.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6329	FIXED F_JD20ED PREVENTING THE GUI FROM RESOLVING THE CAUSE.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6330	FIXED ADAPTDDL /ONDROPTABLE DEPENDING ON /ADDTABLEPATTERN.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6332	FIXED ODBC DRIVER SELECTOR CAN'T REMOVE SELECTION FOR SQL SERVER LOCATION.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6337	FIXED HVRSWITCHTABLE -A (ABORT) STILL REMOVING TABLE FROM CHN1 IF OPTIONS -S AND -T ARE USED.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6338	FIXED HVRSWITCHTABLE -A (ABORT) STILL DELETING INTEGRATE JOB OF CHN1 IF OPTION -S AND NO -T IS USED.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6350	FIXED HVRSWITCHTABLE -A (ABORT) NOT WORKING WITH A VERY BUSY RUNNING CAPTURE JOB.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6357	FIXED BROKEN EXPIRY FOR HVRCONTROL -F.	To fix this bug, upgrade HVR on the hub machine(s).

## Problems Fixed in HVR 5.3.1/26

Issue ID	Description	Resolution
HVR-1281	FIXED REPLICATION INCORRECTLY SKIPPING CHANGES AFTER AN ONLINE REFRESH (ALL OPTIONS FOR INGRES, POSTGRES; CAPTURE SKIPPING FOR OTHER DBMS'ES).	To fix this bug, upgrade HVR on the hub machine(s).
HVR-2889	FIXED F_JD0A55 DURING DIRECT CAPTURE FROM SQL SERVER.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4213	FIXED SAPXFORM GIVES F_JG251F WHEN PROCESSING CONTROL-CHARS VIA XML.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5143	FIXED HVRSTART -I INTEGJOB ON S3 DOES NOT EXIT AFTER SINGLE CYCLE IF RECOVERY WAS DONE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5321	HVRREFRESH CREATE EXTERNAL HIVE TABLES FOR S3+HTTPS FAILS WITH F_JD0D16.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5326	FIXED F_JD0AB9 DURING PARALLEL REFRESH FROM SQL SERVER.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5353	FIXED F_JD0F03 UNABLE TO CREATE SQL STATEMENT FOR VARCHAR(MAX) COLUMN DURING BURST INTEGRATE INTO AZURE SQL DATABASE.	To fix this bug, upgrade HVR on the integrate and hub machine(s).
HVR-5559	ALLOW SPECIFYING ODBC DRIVER PATHS FOR SQL SERVER HUBS AND LOCATIONS ON LINUX.	To fix this bug, upgrade HVR on all machine(s).
HVR-5559	SQL SERVER LOCATION TAKES ODBC DRIVER ENVIRONMENT VARIABLES ON LINUX PLATFORMS.	To fix this bug, upgrade HVR on all machine(s).
HVR-5577	ORACLE LBC FAILS WITH F_JZ1137 WHEN REDO THREAD IS RE-ENABLED.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5666	FIXED NUMBER OF RETRIES BEING ALWAYS RESET TO 0 FOR FILE CAPTURE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5685	FIXED BIDIRECTIONAL OR CASCADING REPLICATION WITH /BURST MIGHT BOOMERANG BIDIRECTIONAL CHANGES OR NOT CAPTURE CASCADE CHANGES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5855	FIXED 'F_JT0492: MULTIPLE DESCRIBE TAGS FOR TABLE...' AFTER DDL OPERATION.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5970	FIXED F_JT04C3 ON 'INTEG.BUSY','INTEG.BUSY2' FILES DURING INTEGRATE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6024	FIXED CAPTURE JOB FROM FILE OR FROM DB WITH CAPTURE /TRIGGERBASED. F_JG2459: GET VALUE OF 'PROC_LOAD_OPTS' FAILED.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6025	FIXED HUB FINGERPRINT MIGHT UNEXPECTEDLY CHANGE IF LINUX HOST HAS DOCKER INSTALLED, RESULTING IN HVR LICENSE ERROR F_JR0E14.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6076	FIXED INTEGRATE /BURST KEY-UPDATES WITH COLUMNPROPERTIES /BASENAME ON KEY COLUMNS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-6080	FIXED UNSUPPORTED DATA TYPE 'TIMESTAMP WITH TIME ZONE' FOR	To fix this bug, upgrade

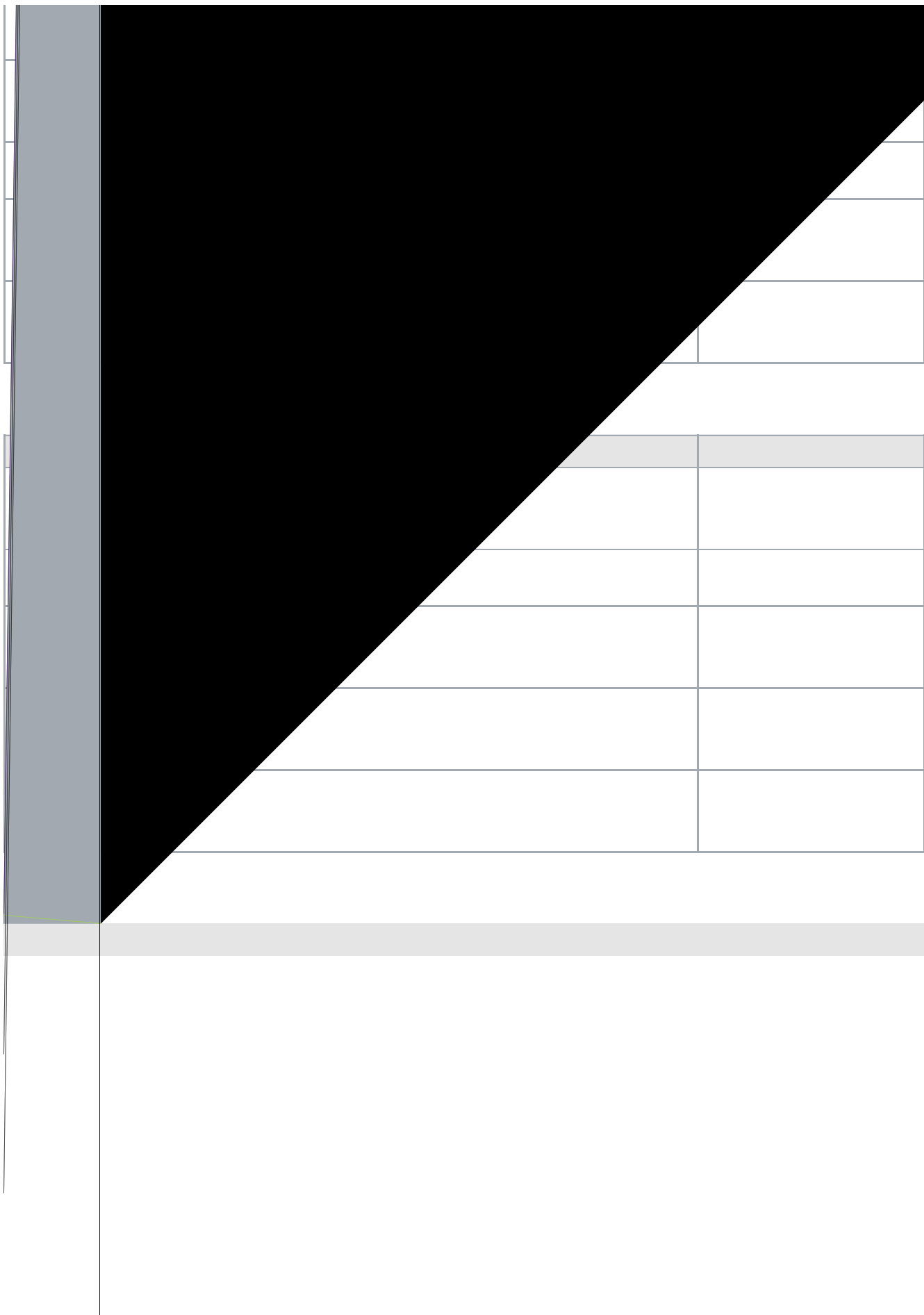
	COLLISIONDETECT /TIMESTAMPCOLUMN ON ORACLE.	HVR on the integrate machine(s).
HVR-6088	FIXED COLLISIONDETECT /TIMESTAMPCOLUMN NOT HANDLING COLLISIONS WITH DELETES PROPERLY.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-6097	FIXED HANDLING OF COLLISIONS WITH EQUAL TIMESTAMPS WHEN COLLISIONDETECT /TIMESTAMPCOLUMN IS USED.	To fix this bug, upgrade HVR on the hub and integrate machine(s).
HVR-6107	FIXED INTEGRATE FAILING WITH F_JD213B DESPITE /IGNORECOERCEERROR.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-6112	FIXED MAPPING OF 'TIMESTAMP WITH TZ' TO VARCHAR WHEN INTEGRATING INTO HIVE USING CSV.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-6117	FIXED HVREVENT -A MIGHT FAIL WITH MEMORY ERROR DEPENDING ON EVENT BODY.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6121	FIXED SEGMENTATION VIOLATION DURING EXUCTION COMPARE DIALOG.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6130	FIXED HIVE EXTERNAL TABLES ARE RECREATED EVEN IF NO MISMATCH DUE TO 'EXTERNAL TABLE ATTRIBUTES NEED TO BE CHANGED'.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-6132	FIXED COLLISIONDETECT /TIMESTAMPCOLUMN /TREATCOLLISIONASERROR NOT REPORTING COLLISIONS INVOLVING DELETES.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-6133	FIXED VIEWING STATISTICS FOR MORE THAN ONE HUB.	To fix this bug, upgrade HVR on the gui and hub machine(s).
HVR-6137	FIXED HVR COMPARE/REFRESH/INITIALIZE DIALOGS DON'T SELECT ALL TABLES WHEN SELECTING THE MASTER CHECKBOX.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6144	FIXED INTEGRATE /BURST IF ONLY LOCATIONPROPERTIES /STAGINGDIRECTORYHVR IS SET.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-6149	HVR STOPPED EMITTING TRANSACTIONS WITH EMPTY CAPTURE CYCLES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-6152	FIXED INTERNAL HVR VERSION REPRESENTATION FOR HANA VERSION.	To fix this bug, upgrade HVR on the hub and remote machine(s).
HVR-6168	FIXED F_JD229A DURING CAPTURE FROM DB2 FOR LINUX, UNIX AND WINDOWS WHEN A NEW COLUMN IS ADDED TO A SOURCE TABLE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-6174	FIXED HVRINIT DIALOG DOES NOT HAVE SUPPLEMENTAL LOGGING CHECKBOX ENABLED FOR POSTGRES SQL SOURCES.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6176	FIXED F_JG0D02, F_JG20D4, F_JG230E WITH '.PROFILE' AND '.PROFILE_TMP' FILES WHEN MULTIPLE JOBS TRY TO UPDATE PROFILES SIMULTANEOUSLY.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-6182	FIXED INCORRECT DATE IN BACKUP NAME WHILE UPDATING HVR.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6212	FIXED HVRINIT WITH SPECIAL CHARACTERS IN CAPTURE DATABASE NAME (SQLSERVER, INGRES, DB2 LUW): F_JG2142 FPROC INVOCATION	To fix this bug, upgrade HVR on the hub machine(s).

	DID NOT MATCH EXPECTED PROTOTYPE FOR ...DBENROLL.	
HVR-6218	FIXED HIVE VERSION DISCOVERY.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-6222	FIXED F_JD22EC WHEN CONNECTING TO SQL SERVER HUB DATABASE.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6223	FIXED STORED PASSWORD CORRUPTION WHEN EDITING HUB PROPERTIES FOR SQL SERVER.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6227	FIXED ODBC DRIVERS SELECTION DIALOG TO SELECT DRIVERS FROM REMOTE LOCATION/HUB, IF CONNECTION IS LOCATED ON REMOTE MACHINE.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6244	FIXED HVR INITIALIZE DIALOG CAPTURE REWIND OPTIONS ARE CLICKABLE EVEN THOUGH CAPTURE TIME IS NOT CHECKED.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-6254	FIXED F_JD0F03 DURING BURST INTEGRATE OF COLUMN WITH C DATATYPE INTO VECTOR.	To fix this bug, upgrade HVR on the integrate and hub machine(s).
HVR-6294	FIXED F_JC0ACA DURING INITIALIZE, CAPTURE OR REFRESH FROM AN SQL SERVER ALWAYS ON SECONDARY SOURCE.	To fix this bug, upgrade HVR on the capture machine(s).

## Problems Fixed in HVR 5.3.1/25

Issue ID	Description	Resolution
HVR-3569	FIXED BROKEN CASE CHECKS OF UTF8 LIKE STRINGS.	To fix this bug, upgrade HVR on all machine(s).
HVR-3827	FIXED HVRREFRESH -QRW -M DOES VERY EXPENSIVE FLASHBACK QUERY FOR CAPTURE SKIPPING.	To fix this bug, upgrade HVR on the hub and capture machine(s).
HVR-4216	FIXED F_JD20DB DURING CREATION OF HVR_STATS_STAGING CATALOG TABLE IN ORACLE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4810	FIXED F_JD022A COLUMN LENGTH TOO BIG FOR MYSQL CHAR.	To fix this bug, upgrade HVR on all machine(s).
HVR-5211	ORACLE LBC F_JZ1547: READ OVERFLOW IN EXTRACTING COLUMN DATA IN CHANGE TYPE 11.11.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5336	FIXED WRONG STATE IN SCANNER WHEN ADAPTTDDL AND INCREMENTAL ENROLL REVISIONS ARE INTERLEAVED.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5617	F_JZ1524. THE RESET LOG COUNT IN ONLINE REDO LOGFILE DID NOT MATCH THE EXPECTED VALUE WHEN CAPTURING FROM DATAGUARD STANDBY.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5678	FIXED GUI TRIES TO READ LOCAL PROFILE FILES WHEN CONNECTED TO REMOTE HUB.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-5807	LOGMINER SOMETIMES CAPTURES DUPLICATE INSERTS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5879	FIXED SETTING /ONERRORSAVEFAILED ONLY IF CONTINUOUS INTEGRATION IS USED AND INTEGRATION SIDE COULD SUPPORT IT.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5889	FIXED {HVR_OP} SUBSTITUTIONS MIGHT CONTAIN OP TYPES >= 10.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5908	FIXED 'F_JD0F03: UNABLE TO CREATE SQL STATEMENT...' WITH UNSUPPORTED DATA TYPE ON GREENPLUM.	To fix this bug, upgrade HVR on the hub and remote machine(s).
HVR-5914	F_JD0A3B: UNEXPECTED VALUE IN THE COLUMN LENGTH ARRAY WHILE SCANNING COLUMN IN A COMPRESSED RECORD.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5939	FIXED HVRSTRIP ATTEMPTS TO REMOVE HVR_HOME/LIB/ACCESS_RIGHTS.CONF AFTER UPGRADE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5947	FIXED SOME EC2 INSTANCES CANNOT RESOLVE DNS 'INSTANCE-DATA' FOR IAM/EC2 ROLES: F_JG N N	





## Problems Fixed in HVR 5.3.1/22

Issue ID	Description	Resolution
HVR-5694	FIXED WEBDAV WITH AUTHENTICATION HANGS OR TIMEOUTS WITH F_JG3505.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5709	FIXED F_JT02A6 AFTER DDL IF DDL SHOULD BE IGNORED.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5769	FIXED F_JD20DB DURING CREATION OF HVR_EVENT CATALOG TABLE IN ORACLE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5787	FIXED INTEGRATE RECOVERY FAILING WITH F_JD20FF FOR BURST INTEGRATE INTO SNOWFLAKE WITH CAPTURE LOCATION ORACLE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5871	FIXED HVR INITIALIZE FAILING WITH F_JG2412 WHEN GENERATING AN TABLE ENROLL INFO REVISION FOR HANA SOURCE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5877	FIXED "F_JD0F03 UNABLE TO CREATE SQL STATEMENT FOR COLUMN 'X' OF TABLE 'T' SINCE DBMS DOES NOT SUPPORT DATATYPE 'TYPE'" WHEN USING SOME ODBC DRIVERS FOR HIVE.	To fix this bug, upgrade HVR on the integrate machine(s).

## Problems Fixed in HVR 5.3.1/21

Issue ID	Description	Resolution
HVR-3595	FIXED {HVR_CAP_USER} IS UNRELIABLE FOR ORACLE.	To fix this bug, upgrade HVR on the capture and hub machine(s).
HVR-4864	FIXED COALESCE ERRORS DURING COMPARE MIGHT BE MASKED BY SECONDARY ERRORS SUCH AS F_JD0F09 WHILE BUILDING ROW INFO MESSAGE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5393	FIXED F_JZ0A4A DURING CAPTURE OF MULTI-ROW UPSERT OPERATIONS FROM HANA.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5430	FIXED HANGING HVR INITIALIZE WHILE EXECUTING SUPPLEMENTAL LOGGING FOR DB2 *LUW) BY ONLY RUNNING REORG AFTER ALTER TABLE WHEN DB2 SUGGEST IT AND ENVIRONMENT VARIABLE HVR_DB2_ALTER_TABLE_REORG_ENABLE IS SET TO 1.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5612	FIXED INTEGRATE/REFRESH INTO S3/FTP/WEBDAV MIGHT HANG.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5630	F_JD2208 INSERT NOT CAPTURED IN DISTRIBUTED TRANSACTION.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5652	FIXED S3 CONNECTION ERRORS IMMEDIATELY AFTER A PROTOCOL LEVEL RETRY ARE NOT RETRIED: F_JG3505: URL ERROR 5,6,7,28,35.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5700	FIXED HVRVALIDPW VALIDATION TAKES 10 SECONDS.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5763	FIXED F_JG2459: VARIABLE NOT SET WHILE COMMUNICATING WITH HVR4 LOCATIONS.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5782	FIXED HVRSTRIP -R REMOVING CRITICAL FILES FROM INSTALLATION.	To fix this bug, upgrade HVR on the remote machine(s).
HVR-5790	FIXED F_JD21F5: UNEXPECTED DATATYPE ENCOUNTERED FOR [HVR_OP	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5805	FIXED W_JT0452 DURING CAPTURE FROM A BUSY MYSQL DATABASE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5809	F_JZ1500. UNEXPECTED END OF FILE ENCOUNTERED WHILE READING ORACLE REDO LOGFILE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5837	FIXED ENROLL REVISIONS FOR DDL "DROP TABLE" CONTAINING INCORRECT ENROLL TIMESTAMP.	To fix this bug, upgrade HVR on the hub and capture machine(s).
HVR-5839	FIXED ONLINE REFRESH FROM HANA SOURCE DOES NOT SET CORRECT CONTROLS FOR SUBSEQUENT CAPTURE/INTEGRATE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5842	FIXED F_JZ0A4A AND F_JT1478 DURING CAPTURE OF MULTI-ROW UPDATES TO PARTITIONED TABLES FROM HANA.	To fix this bug, upgrade HVR on the capture machine(s).

## Problems Fixed in HVR 5.3.1/20

Issue ID	Description	Resolution
HVR-5620	ORACLE LBC F_JD2420: DATA VALUE IN LOG RECORD COLUMN X (ORACLE ID X AND DATATYPE VARCHAR2) IS TOO LARGE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5663	FIXED F_JD2100 COLTYPE '7' IS NOT SUPPORTED FOR SETTING DA VALUE WITH SQLTYPE '2' FOR SNOWFLAKE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5683	FIXED F_JD0D16 INVALID TABLE ALIAS OR COLUMN NAME DURING ROW-WISE COMPARE AGAINST HIVE ACID IF COLUMNPROPERTIES /BASENAME IS DIFFERENT THAN CATALOGS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5702	IMPROVE PERFORMANCE OF HVR ENROLL FOR ORACLE FOR DATABASES CONTAINING LOTS OF TABLES.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-5710	FIXED VARIOUS F_JD20EC REFRESH BACKWARD COMPATIBILITY ISSUES.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5713	FIXED F_JD0F03 WHEN BURST INTEGRATING INTO REDSHIFT VARCHAR(MAX).	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5722	IMPROVED PERFORMANCE OF RESILIENT INTEGRATE INTO POSTGRESQL TABLES WHICH DO NOT HAVE A PRIMARY OR UNIQUE KEY.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5727	FIXED BURST TABLE RECREATION DURING INTERGATION AGAINST HIVE ACID IF /EXPRESSIONSCOPE IS SET.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5733	FIXED CLOB TO VARCHAR COERCION FAILING WITH 'F_JG2918: HVR ENCOUNTERED TRUNCATED CHARACTER...!.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-5754	FIXED INCORRECT DATE/TIMESTAMP CONVERSION INTO PARQUET.	To fix this bug, upgrade HVR on the integrate machine(s).

## Problems Fixed in HVR 5.3.1/19

Issue ID	Description	Resolution
HVR-2763	FIXED INCORRECT UNPACKED ROWS COUNT FOR SAP CLUSTER TABLES ROW-WISE COMPARE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5068	FIXED F_JD2146: STRING CAN NOT BE CONVERTED INTO A NUMBER WITH SAPXFOM.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5416	FIXED 'F_JG0B0F: NOT SUPPORTED' WHEN BROWSING FOR HDFS DIRECTORY ON REMOTE LOCATION.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-5436	FIXED 'F_JT14AE: BURST INTEGRATE JOB CANNOT BUILD SQL WHERE CLAUSE...' AFTER ONLINE REFRESH.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5550	FIXED INCORRECT ERROR ON HVRINIT WHEN COLLISIONDETECT /TIMESTAMP COLUMN USED WITH POSTGRESQL.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5556	FIXED ALL DLL OPERATIONS RESULT IN INTEGRATE BARRIERS (*_P.TX* FILES) INSTEAD OF ONLY CATALOG AFFECTING ONES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5568	FIXED F_JT04C6: COPROCESSSS EXITED WITH EXIT CODE -1073740777 DUE TO INVALID STRFTIME FORMAT SPECIFIER ON WINDOWS.	To fix this bug, upgrade HVR on the capture, hub and integrate machine(s).
HVR-5590	FIXED F_JD0D16 INVALID TABLE ALIAS OR COLUMN REFERENCE '<EXTRA COL: >' DURING BURST INTEGRATE TO HIVE ACID.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5591	FIXED TABLE CREATE WITH DEFAULT DISTRIBUTION KEY WITH ABSENT KEY COLUMNS.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5600	FIXED 'F_JG2142: PROTOTYPE MISMATCH FOR UNXML' FOR XML OR CSV FILE TO DATABASE REPLICATION.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5611	F_JZ0A6B DURING CAPTURE OF MEDIUMINT VALUES FROM MYSQL.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5626	FIXED HANDLING OF NEGATIVE MYSQL MEDIUMINT VALUES.	To fix this bug, upgrade HVR on the integrate and hub machine(s).
HVR-5627	F_JG200A DURING CAPTURE FROM MYSQL TABLE WITH IGNORED COLUMNS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5646	FIXED WRONG SORTING OF UNPACKED ROWS COLUMN IN HVRREFRESH/HVRCOMPARE SCORE DIALOG.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-5657	FIXED COLUMNPROPERTIES /NAME NOT ALWAYS OVERRIDING COLUMNPROPERTIES /DATATYPEMATCH APPLIED IN UNDEFINED ORDER.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5658	FIXED F_JD022F UNEXPECTED DATATYPE '6' WITH LENGTH '0' ENCOUNTERED WHEN USING HVR COMPARE/REFRESH IN COMBINATION WITH COLUMNPROPERTIES /ABSENT WITH MYSQL/MARIADB.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-5660	FIXED F_JD0D16 INVALID TABLE ALIAS OR COLUMN REFERENCE 'TID' DURING BURST INTEGRATE TO HIVE ACID.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5667	FIXED MISSING ERROR CHECK WHEN ADAPTDDL IS DEFINED ON	To fix this bug, upgrade

	UNSUPPORTED CAPTURE LOCATIONS.	HVR on the hub machine(s).
HVR-5679	FIXED F_JD22A1: COLUMN 'BUR_.HVR_OP' DOES NOT EXIST FOR TERADATA.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5703	ORACLE LBC F_JD2424: MISSING VALUE FOUND FOR A TABLE WITH UNUSED COLUMNS.	To fix this bug, upgrade HVR on the capture machine(s).

### Problems Fixed in HVR 5.3.1/18

Issue ID	Description	Resolution
HVR-5098	FIXED INVALID UTF16 WORDS AT END OF STRINGS ARE REPLACED BY 2 REPLACEMENT CHARS INSTEAD OF 1.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5571	FIXED BURST INTEGRATE F_JD292C MULTIPLE UPDATES ERROR.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5576	FIXED INVALID UTF16 IN ORACLE CLOBS BEING INCORRECTLY SANITIZED DURING CAPTURE.	To fix this bug, upgrade HVR on the capture machine(s).

### Problems Fixed in HVR 5.3.1/17

Issue ID	Description	Resolution
HVR-5170	FIXED TIMEKEY REFRESH CREATES IDENTICAL {HVR_INTEG_SEQ} SUBSTITUTIONS FOR ALL ROWS.	To fix this bug, upgrade HVR on the hub and integrate machine(s).
HVR-5324	UPGRADED ZLIB, LIBXML2, OPENSLL, LIBSSH2 AND CURL ON ALL PLATFORMS.	To fix this bug, upgrade HVR on all machine(s).
HVR-5524	FIXED INTEGRATE /DBPROC SWAPPING BYTE ORDER OF INGRES AND ORACLE NCHAR/NVARCHAR DATA TYPES.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5551	FIXED MEMORY LEAK IN ORACLE LBC WITH LOB TABLES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5560	FIXED TABLEPROPERTIES /COERCEERRORPOLICY WARNING FLAVORS NOT WORKING FOR CLOBS INTO CSV OR XML.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5565	FIXED INTEGRATE AFTER HVRREFRESH -MSCN/-MNOW -QWO DOES NOT SKIP FIRST TX WITH SAME SCN.	To fix this bug, upgrade HVR on the capture machine(s).

### Problems Fixed in HVR 5.3.1/16

Issue ID	Description	Resolution
HVR-2651	FIXED TABLE EXPLORE RETURNING INCORRECT LENGTH FOR LARGE REDSHIFT VARCHARS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5497	FIXED SIGSEGV DURING LOADING DATA WITH BOTH TEXT/BLOB AND MEDIUMINT COLUMNS.	To fix this bug, upgrade HVR on all machine(s).
HVR-5525	FIXED ORACLE LBC F_JZ1125: UNKNOWN THREAD X WITH SEQUENCE Y HAS BEEN ENABLED ON BIGENDIAN PLATFORMS.	To fix this bug, upgrade HVR on the capture machine(s).

### Problems Fixed in HVR 5.3.1/15

Issue ID	Description	Resolution
HVR-5335	FIXED F_JG200C: INTERNAL ERROR TRIGGERED BUS ACCESS TRAP SIGBUS DURING CAPTURE OF ROWID ON SOLARIS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5504	FIXED F_JG2142 DURING TEST CONNECTION TO KAFKA LOCATION.	To fix this bug, upgrade HVR on the hub and integrate machine(s).
HVR-5517	FIXED INTEGRATE /DBPROC SWAPPING BYTE ORDER OF SQL SERVER NCHAR/NVARCHAR DATA TYPES.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5523	FIXED MISSING COLUMNS DURING BURST INTEGRATE OF RESILIENT UPDATE CONVERTED INTO AN INSERT.	To fix this bug, upgrade HVR on the integrate machine(s).

## Problems Fixed in HVR 5.3.1/14

Issue ID	Description	Resolution
HVR-5258	FIXED CAPTURE COLUMNPROPERTIES /ABSENT COLUMN ORDERING FOR FILE/KAFKA INTEGRATE.	To fix this bug, upgrade HVR on the capture and hub machine(s).
HVR-5298	FIXED ORACLE LBC F_JD2424: MISSING VALUE FOUND WHILE COMPARING COLUMN '<COLUMN>' OF TABLE '<TABLE>' WITH ANOTHER VALUE FOR THE SAME COLUMN/TABLE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5401	FIXED KMS ERRORS CANNOT BE MADE RETRIABLE BY HVR_S3_RETRY_WARN.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5467	FIXED ORACLE LBC F_JZ113A: DATA BLOCK HAS BEEN DECLARED SHRINKABLE TWICE AFTER ALTER TABLE SHRINK SPACE CASCADE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5469	FIXED USER TRIGGER DOES NOT GET 'OLD' AND 'NEW' VALUES FROM ORACLE INTEGRATE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5475	FIXED ERROR MESSAGES MIGHT BE LOST ON WINDOWS F_JT04A5: COPROCESS HAS EXITED ABRUPTLY.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5479	FIXED F_JD024D WHILE TESTING CONNECTION TO SNOWFLAKE WITH A NON-EXISTING SCHEMA.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5495	FIXED REMOTE ERROR MESSAGES MIGHT BE LOST WITH F_JG2199: SSL_WRITE FAILED.	To fix this bug, upgrade HVR on the remote machine(s).
HVR-5496	FIXED F_JG200A IF HVR_URL_TRACE>=3 IS SET ON S3 LOCATION WHICH CONTAINS IMPLICIT DIRECTORIES.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5499	CAPTURE FROM SQL SERVER USING DIRECT LOG READ METHOD HANGS OCCASIONALLY WHEN VLF SIZE EXCEEDS 4GB.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5501	FIXED COLUMN SIZE OF CHAR DATATYPE FOR HIVE ACID.	To fix this bug, upgrade HVR on the integrate machine(s).



### Problems Fixed in HVR 5.3.1/13

Issue ID	Description	Resolution
HVR-5306	FIXED COMPARE OF CLOB COLUMNS FOR HIVE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5397	F_JD2420: DATA VALUE IN LOG RECORD COLUMN X (ORACLE ID X AND DATATYPE VARCHAR2) IS TOO LARGE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5458	FIXED MYSQL TIMESTAMP DATATYPE GETTING A TIMEZONE OFFSET WHILE BURST-INTEGRATING OR BULK-REFRESHING INTO MYSQL OR MARIADB.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5460	FIXED F_JX0D03 'HVR_FILE_NAMES' FOR MONGODB, HBASE, BIGQUERY AND CASSANDRA PLUGINS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5465	FIXED F_JT0527 WITH STATE '(1,3)+1' DURING TIMEKEY COMPARE.	To fix this bug, upgrade HVR on the integrate machine(s).

## Problems Fixed in HVR 5.3.1/12

Issue ID	Description	Resolution
HVR-3761	FIXED AVRO TARGET REFRESH ERROR F_JD214D OUT OF RANGE DATE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4466	FIXED F_JD0234 UNSUPPORTED DATETIME VALUE ENCOUNTERED FOR MYSQL DATE OR DATETIME.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4726	FIXED HVRINIT (ENROLL FOR ORACLE DB) TAKES > 1HR FOR A 1500 TABLE CHANNEL.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5042	FIXED SCHEDULING/STARVATION/SPILLING ISSUES IN NETWORK-BOUND S3 UPLOADS WHEN UPLOADING MANY LARGE FILES.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5056	FIXED F_JG290D: RECEIVED STATUS CODE 400 THROTTLINGEXCEPTION IF S3ENCRYPTION WITH KMS IS SET.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5069	FIXED SOME S3 ERRORS IN 4XX RANGE CANNOT BE MADE RETRIABLE EVEN WITH HVR_S3_RETRY_WARN.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5151	FIXED HVRREFRESH MODULO SLICING FOR SQLSERVER.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5164	FIXED F_JG2917: TRUNCATED OF MULTIBYTE SEQUENCES AT END OF SOURCE COLUMNS MIGHT NOT BE REPLACED BY PROPER REPLACEMENT CHARS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5169	REDACT ERROR MESSAGE FOR KMS URL WHICH EXPOSES ACCESS_KEY_ID.	To fix this bug, upgrade HVR on the hub, capture and integrate machine(s).
HVR-5205	FIXED INCORRECT CAPTURE OF HANA TIME DATA TYPE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5289	FIXED INCORRECT LATENCY REPORTING DURING FILE INTEGRATE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5293	FIXED F_JD0D16 DURING BURST INTEGRATE INTO HIVE ACID WHEN THE BASE TABLE COLUMNS ORDER IS DIFFERENT THAN IN THE CATALOGS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5299	FIXED F_JT150B DURING CAPTURE FROM CSV FILES CONTAINING BOM OR MULTIBYTE UNICODE CHARACTERS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5310	FIXED F_JG290D: RECEIVED STATUS CODE 503 S3 ERROR SLOWDOWN IS NOT RESPECTED WITH EXPONENTIAL BACKOFF.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5319	FIXED PRESENCE OF AZURE DATALAKE STORAGE LOCATION INFORMATION AFTER RELOAD HUB.	To fix this bug, upgrade HVR on the gui and hub machine(s).
HVR-5320	FIXED F_JT150B: THE TRANSFORM COMMAND SAPXFORM.EXE FAILED WITH INDEX AND COUNT MUST REFER TO A LOCATION WITHIN THE	To fix this bug, upgrade HVR on the integrate

	BUFFER.	machine(s).
HVR-5327	FIXED ORACLE LBC F_JZ1201: SUPPLEMENTAL LOGGING INFORMATION IS MISSING AFTER ALTER TABLE SHRINK SPACE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5339	GENERATE VALID JSON FILE WITH /JSONMODE=ROW_ARRAY ACCORDING TO RFC4627.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5359	FIXED F_JR0126, BUSY SCHEDULER LOSING ERROR MESSAGE DUE TO RACE CONDITION.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5364	FIXED F_JG3505(URL ERRORS 35,55), F_JG352A ARE NOT AUTOMATICALLY RETRIED FOR S3 AND KMS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5365	FIXED F_JD2272 TABLE ALREADY EXISTS WHILE BURST INTEGRATING INTO TERADATA.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5368	LOGMINER: F_JT1456: LOG PARSING ERROR F_JZ1807. UNEXPECTED TOKEN ZTK_OTHER ('NULL;').	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5378	FIXED ORACLE LBC F_JD2421: DATA VALUE IN LOG RECORD COLUMN IS NOT CORRECT FOR XML COLUMNS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5387	FIXED BULK COMPARE BACKWARD COMPATIBILITY ISSUE WITH POSTGRESQL.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5399	FIXED SCHEDULER NOT NOTIFIED PROPERLY OF HVR_JOB TABLE CHANGES FOR HVRCOMPARE/REFRESH -D AND AUTO-JOB RESTART.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5405	FIXED HVRINIT FAILING WITH F_JJ1702 EVEN IF CAPTURE /LOGREADMETHOD=SQL IS DEFINED.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5415	FIXED F_JD22F1 FOR DB2 FOR I CAPTURE WITH MINIMIZED_ON_FIELD_BOUNDARY VALUE ZERO.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5420	ORACLE RDS/LOGMINER CAPTURE FALLS BEHIND AND STOPS CAPTURING CHANGES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5424	FIX ORACLE ASM REGRESSION.	To fix this bug, upgrade HVR on the hub, capture and integrate machine(s).
HVR-5449	TREAT 'HIVE ODBC ERROR 10160 STRING TRUNCATED' AS WARNING.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5451	FIXED COMPARE DIFFERENCE BETWEEN POSTGRES AND TERADATA TIME WITH TZ COLUMNS.	To fix this bug, upgrade HVR on the integrate machine(s).

### Problems Fixed in HVR 5.3.1/11

Issue ID	Description	Resolution
HVR-4691	FIXED F_JD0D16: DBMS ERROR (10160) STRING DATA RIGHT TRUNCATION DURING HIVE COMPARE OF TABLE WITH CHAR COL.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4829	FIXED HVR ALWAYS USING THE FIRST TOPIC IF MULTIPLE INTEGRATE /TOPIC ACTIONS ARE DEFINED ON KAFKA LOCATION.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5227	FIXED F_JG2901: INVALID UTF8 STRING DURING BURST INTEGRATION OF MYSQL BINARY COLUMNS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5269	FIXED LATENCY REPORTING FOR VECTOR TARGET OFF BY TZ.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5273	NUMERIC DATE) FOR COLUMNS WITHOUT MISSING VALUES.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5281	FIXED FAILURE TO CONNECT TO CERTAIN HUB CLASSES AFTER UPGRADE.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-5283	FIXED F_JD20FF DURING TABLE EXPLORE FROM DB2I SAP SYSTEM.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5286	FIXED INGRES LBC FAILS WITH F_JD2220 OR F_JD2216 FOR COMPRESSED TABLES WITH TIME WITH LOCAL TIME ZONE, TIME WITHOUT TIME ZONE, TIMESTAMP WITH LOCAL TIMEZONE OR TIMESTAMP WITHOUT TIME ZONE DATATYPES.	To fix this bug, upgrade HVR on the capture machine(s).

### Problems Fixed in HVR 5.3.1/10

Issue ID	Description	Resolution
HVR-2500	PREVENT F_JD2236 BY CREATING FAIL TABLES WITH NON-UNIQUE INSTEAD OF UNIQUE INDEX.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5184	FIXED HANDLING OF POSTGRESQL AND GREENPLUM LONG CHARS.	To fix this bug, upgrade HVR on all machine(s).
HVR-5198	FIXED F_JD22CA: BROKEN BURST INTEGRATE INTO REDSHIFT FOR BOOLEAN DATATYPE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5217	FIXED F_JD0F03 DURING CREATION OF FAIL TABLE IN POSTGRESQL.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5218	PROPERLY DECLARE SUPPORTED TIMESTAMP FORMATS WHEN CREATING TABLES IN HIVE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5249	FIXED INCORRECT CAPTURE OF INGRES LONG NVARCHAR ON BIG-ENDIAN PLATFORMS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5250	FIXED INCORRECTLY CAPTURING DB2 (LUW) 9 LOBS.	To fix this bug, upgrade HVR on the capture machine(s).

### Problems Fixed in HVR 5.3.1/9

Issue ID	Description	Resolution
HVR-5088	FIXED F_JD2163 DURING BINARY COLUMNS REPLICATION IN COMBINATION WITH CHARACTERMAPPING.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5167	FIXED HVR_CAP_TSTAMP DELIVERY INTO JSON AND AVRO TIMEZONE IS OFF.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5185	FIXED ORACLE DATES BEING DELIVERED INTO JSON WITH INCORRECT VALUE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5187	FIXED HVRSWITCHTABLE -A FAILS F_JG2459: GET VALUE OF VARIABLE FAILED.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5190	FIXED MISSING QUOTING IN HVR_COL_NAME SUBSTITUTION FOR HIVE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5196	JSON REQUIRES THE DATE/TIME VALUES TO BE FORMATTED AS SPECIFIED IN THE ISO-8601.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5199	FIXED HVRSWITCHTABLE WITH TABLE SCOPE NOT MOVING TABLE IF CHANNELS SHARE UNRELATED TABLE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5203	FIXED ADAPTDDL: F_JD0F03: UNABLE TO CREATE SQL STATEMENT SINCE DBMS [REDSHIFT] DOES NOT SUPPORT DATATYPE 'DATETIME2'.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5209	FIXED IGNORING OF FILEFORMAT CSV PARAMETERS FOR KAFKA LOCATIONS.	To fix this bug, upgrade HVR on the hub machine(s).

### Problems Fixed in HVR 5.3.1/8

Issue ID	Description	Resolution
HVR-5148	FIXED F_JD20ED WHEN DEFINING COLUMNPROPERTIES /LENGTH WITH ATTRIBUTE REPLACEMENT.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-5150	FIXED F_JD0F03 UNABLE TO CREATE SQL STATEMENT FOR COLUMN 'HVR_ERR_TSTAMP'.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5155	FIXED DBOBJECTGENERATION PARAMETERS ARE NOT USED DURING HIVE TABLES CREATION.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5161	F_JG20CD WHEN ATTEMPTING TO OPEN THE LOGSEGMENT_000_DIRECTORY.DAT FILE DURING ARCHIVE LOG ONLY CAPTURE FROM HANA.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5162	FIXED CAPTURING OF DEFAULT VALUED DB2 (LUW) LOBS IN COMPRESSED TABLES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5166	FIXED SOME INCONSISTENT TABLEPROPERTIES USE DURING PARTIAL REFRESH.	To fix this bug, upgrade HVR on the integrate machine(s).

**Problems Fixed in HVR 5.3.1/7**

<b>Issue ID</b>	<b>Description</b>	<b>Resolution</b>
HVR-5062	FIXED COLUMN MIGHT NOT BE DROPPED FROM TARGET DATABASE WHEN USING ADAPTDDL.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5101	FIXED TABLE NOT BEING DROPPED FROM ENROLL LIST AFTER INCREMENTAL ENROLL.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5127	FIXED ADAPTDDL: F_JT04C5: PIPE JSONPIPE ERROR RELOCATING COLUMN DURING INTEGRATION INTO KAFKA.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5142	FIXED TABLEPROPERTIES /MISSINGREPRESENTAION FIELDS REMAINING ENABLED IF /ABSENT IS CHECKED.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5146	FIXED F_JG200A DURING CAPTURE FOR LONG TRANSACTIONS TOUCHING CAPTURED AND NOT-CAPTURED TABLES (INTRODUCED BY HVR-5094).	To fix this bug, upgrade HVR on the capture machine(s).

## Problems Fixed in HVR 5.3.1/6

Issue ID	Description	Resolution
HVR-4425	FIXED GENERATION OF AVRO FILE WITH MISSING VALUES.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4827	FIXED F_JZ1126: ORACLE RAC: ALL THREADS ARE DEAD.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4951	FIXED F_JT150B DURING SAPXFORM INTEGRATE IF CAPTURE /COALESCE IS DEFINED.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4994	FIXED ORACLE LBC F_JZ1201: SUPPLEMENTAL LOGGING INFORMATION IS MISSING AFTER ALTER TABLE SHRINK SPACE CASCADE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5012	FIXED F_JG2463 DURING INTEGRATION INTO KAFKA WITH HVR_CAP_TSTAMP EXPRESSION.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5084	FIXED F_JD21D0 WHILE CAPTURING DB2 (LUW) LOBS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5093	FIXED CAPTURE MIGHT STARVE UNDER HIGH PARTIAL ROLLBACK LOAD WITH LOTS OF CHECKPOINT PREPARED MESSAGES BUT NO ROUTED MESSAGE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5095	FIXED F_JD20F2 "THE METADATA COULD NOT BE DETERMINED BECAUSE STATEMENT USES A TEMP TABLE" DURING HVR INITIALIZE ON SQL SERVER 2012.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5099	FIXED {HVR_INTEG_SEQ} BEING PREFIXED WITH 8 EXTRA 0-CHARS DURING REFRESH.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5100	FIXED HVRMANIFESTAGENT F_JX0E00: CANNOT FIND ENV VAR TO CROSS CHECK WHEN THERE IS NO DATA (INTRODUCED BY HVR-5074).	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5104	FIXED SAPXFORM 1.1.6654.28991 THROWS WRONG WARNINGS FOR INCOMPLETE ROWS.	To fix this bug, upgrade HVR on the hub and integrate machine(s).
HVR-5107	FIXED KAFKA BROKER VERSION BACKWARD COMPATIBILITY.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5110	FIXED PER-TABLE ONLINE REFRESH CONTROLS ARE EXPIRED EARLY IF NOT-REFRESHED TABLES UNDERGO INTEGRATE RECOVERY FOR S3 LOCATIONS.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5119	FIXED F_JG0D02 DURING CONCURRENT ONLINE REFRESHES.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5120	FIXED F_JT0426 AFTER UNEXPECTED HARDWARE FAILURE.	To fix this bug, upgrade HVR on the hub machine(s).

## Problems Fixed in HVR 5.3.1/5

Issue ID	Description	Resolution
HVR-4566	DISPLAY A PROPER ERROR MESSAGE WHEN SAPXFORM IS USED WITHOUT INTEGRATE /BURST.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4855	HVR INITIALIZE ON A BUSY SQL SERVER DATABASE TAKES TOO LONG.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4880	F_JD0A71 DURING CAPTURE OF LOBS FROM SQL SERVER SOURCE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4910	FIXED ORACLE LBC F_JD2420: DATA VALUE IN LOG RECORD COLUMN IS TOO LARGE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5064	FIXED INTEGRATE RECOVERY MIGHT THROW F_JT0426: UNEXPECTED END-OF-FILE ENCOUNTERED FOR 'INTEG.XXX' STATE FILES AFTER HARDWARE FAILURE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5066	FIXED INVALID LENGTH CHECK FOR ORACLE TNS IN THE LOCATION DIALOG.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-5072	FIXED HVRREFRESH CREATING INDEX EVEN THOUGH -K OPTION IS NOT SET.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-5078	FIXED F_JD21F8: ENCOUNTERED UNEXPECTED DATATYPE 68 WHILE SETTING DEFAULT.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-5087	TIMEKEY COMPARE CAN GIVE EXTRA UPDATES FROM CONSECUTIVE KEY UPDATES.	To fix this bug, upgrade HVR on the integrate machine(s).



## Problems Fixed in HVR 5.3.1/4

Issue ID	Description	Resolution
HVR-1854	HVR CREATES MULTIPLE EMPTY _P.TX FILES DURING CAPTURE FROM SQL SERVER USING LOG READ METHOD SQL.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4082	FIXED ORACLE LBC F_JZ1960: PASTE ENCOUNTERS KEY ZOP DATA UPDATE_BEFORE BUT IT FAILED TO FIND THE CORRESPONDING CHANGE AT TX.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4161	FIXED STRING TO DATE COERCION NOT CAPTURING TIME PART OF ISO8601 TIMESTAMPS.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-4534	LOGMINER: ORA-01289: CANNOT ADD DUPLICATE LOGFILE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4683	SNOWFLAKE: FIXED F_JG2228 UNABLE TO ALLOCATE MEMORY.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4687	FIXED BULK COMPARE OF NULL NCHAR COLUMNS FOR TERADATA.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4698	FIXED COLUMNPROPERTIES /DATATYPEMATCH LOOSING DATA WHEN SWITCHING FROM 'TEXT' TO 'REGULAR' TAB IN GUI.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-4736	FIXED W_JD0A10 DURING HVR INITIALIZE IF SOURCE TABLE CONTAINS COLUMNS OF CLR DATA TYPES (LIKE GEOMETRY) ON SQL SERVER.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4771	FIXED HVRSTATISTICS LOGGING DATA FOR INCORRECT TIMESTAMP.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-4804	FIXED REFRESH FROM TERADATA FAILING WITH JR0344: UNSUPPORTED CLASS.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4807	FIXED PARALLEL REFRESHES ON SINGLE TABLE FAILING WITH F_JD2209.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4813	FIXED SCHEDULED REFRESH AND COMPARE JOBS NOT BEING DISPLAYED IMMEDIATELY IN GUI.	To fix this bug, upgrade HVR on the gui and hub machine(s).
HVR-4844	FIXED ORACLE LBC F_JT1456: LOG PARSING ERROR F_JZ195F. PASTE ENCOUNTERS 11.17:2 WITH ONE LENGTH BUT ITS CORRESPONDING DATA STORE LENGTH IS DIFFERENT.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4845	FIXED F_JR0337 AFTER DEFINING COLUMNPROPERTIES /DISTRKEY ON KAFKA LOCATION.	To fix this bug, upgrade HVR on the hub and gui machine(s).
HVR-4858	FIXED ENVIRONMENT VARIABLE CAUSING UNDEFINED BEHAVIOR.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4866	FIXED DELETION OF SOME NECESSARY INSTALLATION FILES AFTER HVR UPGRADE.	To fix this bug, upgrade HVR on all machine(s).
HVR-4870	FIXED POSTGRESQL DATE AND TIMESTAMP VALUES WITH THE YEAR 4714 BC NOT ALWAYS PROPERLY HANDLED.	To fix this bug, upgrade HVR on the integrate machine(s).

HVR-4874	ORACLE CAPTURE REWIND TO "START OF OLDEST OPEN TRANSACTION" BROKEN FOR TABLES OWNED BY DIFFERENT USER.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4881	FIXED F_JG2142: FPROC MISMATCH DURING CAPTURE WITH /NOTRUNCATE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4921	FIXED LOSING OF COLUMN SEQUENCE IN KEY WHEN DISTRIBUTION KEY IS SET.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-4924	FIXED ORACLE RAC - THREAD POSITION BROKEN ON SOLARIS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4925	FIX COERCION TO AND FROM POSTGRES SQL TIMESTAMP WITH TIME ZONE VALUES.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-4926	FIXED COERCION TO SQL SERVER DATETIME LOSING MILLISECOND PRECISION.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-4946	FIXED HVRINIT FAILS ON MYSQL WHEN DB SQL-MODE CONTAINS NO_ZERO_DATE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4958	FIXED BURST INTEGRATE FAILING WITH F_JG2901: INVALID UTF8 STRING.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4959	FIXED S3 HEAD, DELETE OR KMS REQUESTS FAILING WITH F_JG3505 OR F_JG290D.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-4963	FIXED FILE REPLICATION INTO AVRO MAY ENTERED IN ENDLESS LOOP.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4970	FIXED REFRESH INTO KAFKA TOPIC WITH {HVR_CAP_LOC} FAILING WITH F_JD21DD.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4975	FIXED FILEFORMAT /CSV /FILETERMINATOR ON REFRESH AND INTEGRATE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4976	FIXED SIGSEGV IN CAPTURE JOB WHEN ADAPTDDL IS DEFINED ONLY ON CAPTURE LOCATION.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4992	FIXED RUNNING BUT IDLE CAPTURE JOB NOT REACTING TO INCREMENTAL ENROLL. RECREATION OF CAPTURE JOB NEEDED.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4993	FIXED HVRCHANNELMERGE -A WITH NO SCHEDULER WOULD REVERT CATALOGS BUT NOT FINISH ABORT.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4996	DB2 (LUW): FIXED UPDATE OF LOBS TO EMPTY STRING IS IGNORED IN SOME CASES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-5000	FIXED INTEGRATE FAILS WITH F_JD20DB: DBMS ERROR [ORA_01008: NOT ALL VARIABLES BOUND] WHEN INTEGRATING INTO ORACLE TABLE WITH INTEGRATEEXPRESSION FOR LOB COLUMN.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5002	FIXED F_JD2279: UNEXPECTED ENCODE ERROR DURING ORACLE CLOB CAPTURE.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-5004	FIXED F_JG290D: RECEIVED STATUS CODE 400 WHEN HVR_S3_ACL OR HVR_S3_STORAGE_CLASS ARE SET.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-5015	FIXED GENERATION OF PARQUET FILE WITH INTERVAL DATATYPE.	To fix this bug, upgrade

		HVR on the integrate machine(s).
HVR-695]	FIXED UNRESOLVABLE HOST CAUSING REJECTION FOR ALL HOSTS.	To fix this bug, upgrade HVR on the proxy and remote machine(s).

### Problems Fixed in HVR 5.3.1/3

Issue ID	Description	Resolution
HVR-4373	FIXED F_JD214A OUT OF RANGE POSTGRESQL BC DATE ENCOUNTERED.	To fix this bug, upgrade HVR on all machine(s).
HVR-4444	LOGMINER: LOG PARSING ERROR F_JZ1807. UNEXPECTED TOKEN ZTK_OTHER ENCOUNTERED WHEN SCANNING FOR TOKEN ZTK_SQL_HEXTORAW.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4557	FIXED INTEGRATE FILEFORMAT /CSV LINE SEPARATORS FOR INTEGRATE /BURST.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4672	FIXED CAPTURE OF OLD ROWID VALUES FOR UPDATE OPERATIONS FROM HANA 2 SPS 02.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4791	FIXED 'F_JG2228: UNABLE TO ALLOCATE' WHEN SENDING MANY MESSAGES TO KAFKA (E.G. REFRESH WITH ROW BUNDLING OR AVRO SCHEMA REGISTRY).	To fix this bug, upgrade HVR on the hub and integrate machine(s).
HVR-4834	FIXED 'F_JG352C' WHILE CONNECTING TO S3 BUCKET IN CN-NORTHWEST-1 REGION.	To fix this bug, upgrade HVR on the capture and integrate machine(s).

### Problems Fixed in HVR 5.3.1/2

Issue ID	Description	Resolution
HVR-4708	ORACLE LOGMINER CAPTURE GENERATES DUPLICATE ROWS F_JD220C DELETE UNEXPECTEDLY AFFECTED ZERO ROWS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4757	FIXED F_JD2236: DBMS ERROR UNIQUE CONSTRAINT VIOLATED DURING HVRCATALOGIMPORT.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4769	FIXED DATA CORRUPTION DURING REPLICATION OF NVARCHAR COLUMNS FROM HANA TO TERADATA.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4781	FIXED 'F_JD22CA' AND 'F_JD2916' DURING REDSHIFT STAGING BULK LOAD.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4790	FIXED KAFKA TOPICS BROWSE FAILING WITH SIGSEGV.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-4796	FIXED REPLICATION INTO HIVE ACID WITH HDFS FAILING WITH F_JG20D1.	To fix this bug, upgrade HVR on the integrate machine(s).

## Problems Fixed in HVR 5.3.1/1

Issue ID	Description	Resolution
HVR-1285	FIXED SELECT OF NVARCHAR COLUMN FROM TERADATA MAY RETURN EXTRA ZERO CHARACTER.	To fix this bug, upgrade HVR on all machine(s).
HVR-3846	FIXED REMOVING ALL ENTRIES FROM CATALOGS DURING IMPORT INSTEAD OF KEEPING IT(LIKE HVR4).	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4306	F_JT14A8 DURING CAPTURE FROM HANA IF HUB IS NOT ON LINUX.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4387	FIXED HVRADAPT DELETING TABLES FROM CHANNEL WHEN '+' PATTERN IS GIVEN.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4495	FIXED RESILIENT INSERT FOR INTEGRATE /BURST WITH /SURROGATEKEY AND /SOFTDELETE.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4681	FIXED F_JT0263: SORT RECEIVED ROWS FROM UNKNOWN TABLE WHEN SAPXFOM CHANNEL CONTAINS POOL AND CLUSTER TABLES.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4684	FIXED FAILURE DURING TERADATA CONNECT IF THE DRIVER NAME IS DIFFERENT THAN 16.10 DEFAULT.	To fix this bug, upgrade HVR on the hub and integrate machine(s).
HVR-4685	FIXED INVISIBLE LOCATIONPROPERTIES /STAGINGDIRECTORYDB AND /STAGINGDIRECTORYHVR IN THE GUI FOR SNOWFLAKE LOCATIONS.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-4701	FIXED F_JT0549 WITH '\$*' NOT LONGER SUPPORTED' ON SOLARIS.	To fix this bug, upgrade HVR on the hub and remote machine(s).
HVR-4711	FIXED TABLE EXPLORE FROM SAP CATALOG REPORTING WRONG ENCODING FOR NCHAR COLUMNS.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4712	FIXED INCREMENTAL ENROLL MIXING TABLE ENROLLMENTS OF DIFFERENT DBMS CLASSES.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4720	FIXED COLUMNPROPERTIES /BASENAME FOR KEY-UPDATES DURING INTEGRATE /BURST.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4722	FIXED F_JC0509 DURING RAC CONNECT WITH LONG HOSTNAMES.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4723	FIXED HIVE ERROR MESSAGE: CANNOT MODIFY PROPERTY AT RUNTIME.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4728	FIXED 'F_JG2142' WHEN RUNNING CAPTURE AFTER HUB UPGRADE TO HVR 5.3.0 AND HIGHER.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4735	FIXED 'F_JG3505: URL ERROR 52: SERVER RETURNED NOTHING' FOR S3 LOCATION.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4740	FIXED F_JG2901: INVALID CHARACTER DURING REPLICATION FROM GBK SOURCE WHEN CLOB VALUE IS GREATER THAN 64K.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4758	FIXED INCORRECT TRACING IN HVR MAINT OUTPUT.	To fix this bug, upgrade HVR on the hub machine(s).

## Problems Fixed in HVR 5.3.1/0

Issue ID	Description	Resolution
HVR-1252	FIXED F_JG2901 DURING ENCODING WINDOWS-1252 CHARACTERS.	To fix this bug, upgrade HVR on the capture and integrate machine(s).
HVR-4026	HVR QUERIES ALL_OBJECTS TO RETRIEVE INDEX INFORMATION WHICH MAKES SELECT ANY TABLE PRIVILEGE A PRE-REQUISITE.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4174	FIXED COMPARING 64BIT FLOAT POINT COLUMNS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4211	FIXED SCHEDULER SHUTTING DOWN NETWORK ISSUES FOR NON-ESSENTIAL SOCKETS.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4385	LATENCY REPORTING ON CASCADE STANDBY SYSTEM IS INCORRECT BETWEEN LOG SWITCHES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4395	FIXED CAPTURE OF DATE, TIMESTAMP AND SECONDDATE COLUMN VALUES FROM HANA FOR DATES BEFORE THE GREGORIAN REFORM.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4443	F_JT0451 TXGROUP REPORTS SEQUENCE REGRESSION FOR CHANGES WITH SAME LOGMINER SCN.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4463	FIXED F_JD21AE UNABLE TO CONNECT TO MYSQL DATABASE PLUGIN PVIO_SOCKET COULD NOT BE LOADED.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4500	GUI DOES NOT SHOW HANA IN NEW LOCATION DIALOG.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-4514	FIXED /EXPRESSIONSCOPE ISSUES WITH KEY UPDATES WITH /BURST.	To fix this bug, upgrade HVR on the hub and integrate machine(s).
HVR-4540	FIXED TERADATA CONTINUOUS INTEGRATE AND COMPARE DO NOT HANDLE PROPERLY INVALID CHARACTERS FOR COLUMNS WITH UNICODE CHARACTER SET.	To fix this bug, upgrade HVR on the hub, integrate and gui machine(s).
HVR-4541	FIXED CONNECTION TO S3 IN AWS CHINA CLOUD.	To fix this bug, upgrade HVR on the hub, capture and integrate machine(s).
HVR-4543	FIXED 'F_JD2184: INVALID OBJECT NAME HVR_STATUS_STAGING' DURING CATALOG UPGRADE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4546	FIXED GUI SHOWING INCORRECT CAPTURE EMIT OR ERROR 'F_JG35A5' AFTER HVR INIT WITH CAPTURE REWIND.	To fix this bug, upgrade HVR on the gui machine(s).
HVR-4554	FIXED SIGSEGV WHEN USING HVRLIVEWALLET ON HVRREMOTELISTENER PORT.	To fix this bug, upgrade HVR on the remote machine(s).
HVR-4558	FIXED TERADATA COMPARE SHOWS DIFFERENCE ON COLUMN WITH LATIN1 CHARACTER SET AND CONTAINING '0X1A' CHARACTER.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4561	FIXED HVR DOES NOT AUTOMATICALLY PICK UP TTU16.10 LIBRARIES FROM ODBCINST.INI.	To fix this bug, upgrade HVR on the hub and integrate machine(s).

HVR-4562	FIXED F_JD070F COLUMN NOT FOUND IN DBMS CATALOGS CACHE OF ORACLE SID WITH USER.	To fix this bug, upgrade HVR on all machine(s).
HVR-4564	F_JD0A1C DURING CAPTURE FROM COMPRESSED TABLES ON SQL SERVER.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4578	F_JD20DB "ORA-01284: FILE VASM://+... CANNOT BE OPENED" DURING CAPTURE FROM ORACLE ASM VIA LOGMINER.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4580	FIXED 'F_JG35A5: ERROR IN LOCAL TIME VALUE -1' WHEN RUNNING HVRROUTERVIEW.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4583	FIXED HTTP RESPONSE CODE 500 WITH MESSAGE "NON-NUMERIC DEFAULT VALUE FOR INT" IN AVRO WITH SCHEMA REGISTRY INTEGRATION.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4589	ORACLE LOGMINER CAPTURE DOES NOT DETECT NEW CHANGES AFTER INITIAL POSITIONING IN ARCHIVES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4592	FIXED HIVE EXTERNAL TABLES WITHOUT CSV /ESCAPECHARACTER CAUSES COMPARE DIFFERENCE.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4593	FIXED W_JD2903: EXTERNAL TABLE NEEDS TO BE RECREATED DURING REPLICATION INTO HIVE ACID.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4594	FIXED F_JG21F1 DURING HVR INIT AND REFRESH FOR CHANNELS WITH S3 ENCRYPTION INTRODUCED IN HVR-3316.	To fix this bug, upgrade HVR on the hub machine(s).
HVR-4596	F_JG2228: UNABLE TO ALLOCATE X BYTES OF MEMORY [POOLALLOC FROM JDORACHK.C:473].	To fix this bug, upgrade HVR on all machine(s).
HVR-4606	FIXED F_JD022A 'FILE NOT FOUND' WHILE BULK LOADING INTO MYSQL/MARIADB ON WINDOWS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4608	FIXED POTENTIAL HANG DURING PROCESS TERMINATION VIA GUARDIAN.	To fix this bug, upgrade HVR on the hub and remote machine(s).
HVR-4613	F_JD0AAC AND F_JD0A62 DURING CAPTURE FROM SQL SERVER USING DIRECT LOG READ METHOD WHEN VLF SIZE EXCEEDS 4GB.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4618	FIXED CAPTURE FAILING WITH 'F_JG2142: FPROC INVOCATION DID NOT MATCH THE EXPECTED PROTOTYPE: \${ORAWALLET...}'.	To fix this bug, upgrade HVR on the hub and capture machine(s).
HVR-4620	FIXED CAPTURE FROM COMPRESSED TABLE ON SQL SERVER IF SOME COLUMNS ARE MISSING AFTER DDL CHANGES.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4622	FIXED CAPTURE FROM ORACLE TDE FAILING WITH 'F_JD0707: COULD NOT RETRIEVE MASTER KEY FROM WALLET'.	To fix this bug, upgrade HVR on the capture machine(s).
HVR-4623	FIXED F_JG200F WRITING TO CLOSED DATASTREAM DUE KAFKA BROKER CONNECTIONS TIMEOUT.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4656	SYNCHRONIZED SCHEMA DEFINITION FOR JSON /JSONMODE=SCHEMA_PAYLOAD WITH KAFKA CONNECT JSON PARSER.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4659	IMPROVED INTEG SIDE SORTING OF CHANNELS WITH TRANSFORM	To fix this bug, upgrade

	/SAPXFORM.	HVR on the hub machine(s).
HVR-4671	FIXED HVR NOT DETECTING ERRORS DURING BURST INTEGRATE INTO TERADATA.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4675	FIXED 'F_JG2228: UNABLE TO ALLOCATE X BYTES OF MEMORY' FOR FILEFORMAT /JSON.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4676	FIXED F_JG2228 FOR FILEFORMAT /AVRO,/PARQUET WITH PER-ROW /RENAMEEXPRESSIONS.	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4686	FIXED F_JG2228 WHEN REFRESH TO FILEFORMAT /PARQUET	To fix this bug, upgrade HVR on the integrate machine(s).
HVR-4688	FIXED COMPARE OF NCHAR COLUMNS SHOWING DIFFERENCES.	To fix this bug, upgrade HVR on the integrate machine(s).

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