Support Newsletter

**December 10, 2016**

## Release News

ASE 16 SP02 PL04 with HADR was released in September, 2016. The new release supports HADR for both ASE custom applications and SAP Business Suite on ASE.

ASE 16 SP02 PL05 with HADR will be released with support for external replication.

SAP Replication Server 15.7.1 SP305 will be released by the end of Jan. 2017.

**HADR system consists of:**

SAP ASE  
SAP Replication Server  
Replication Management Agent (RMA)  
SAP Host Agent  
Fault Manager  
SAP ASE Cockpit

Underneath HADR system configuration there is a bidirectional MSA replication setup. The replication path from primary site to companion site is active while the reverse replication path is inactive. Failover switches the roles of the two sites and activates the replication path from the new primary to the new companion. The users of HADR system don’t need to know SAP replication server (SRS). SRS and ASE servers communicate with Replication Management Agent (RMA). RMA provides HADR user interfaces for DBA users and SAP ASE Cockpit and Fault manager.

SAP ASE Cockpit can monitor HADR and manually issue failover in GUI mode. The Fault Manager runs on the third node, monitoring the health of the primary and companion servers through SAP Host Agent, and triggers failover if the primary server or host fails and the HADR is running in synchronous mode.

**HADR system architecture**



**Main Features**

* It requires ASE\_ALWAYS\_ON license
* The components of the HADR system are installed on three separate nodes. The data is replicated from the primary node to the companion node by SAP Replication Server.
* It supports both custom applications and SAP Business Suite (BS).
* HADR can replicate data synchronously from the primary to the standby for high availability (HA) so the two servers are in sync with zero data loss. This requires a fast network link between the two servers and SSD (Solid State Drive) for SRS simple persistent queue (SPQ) directory so the synchronous replication can keep up with the workload of the primary. As the transactions are executed in the primary, Replication Agent sends their binary transaction records instead of LTL commands through the RAT-CI library to Replication Server and are stored in SPQ. The transactions are not committed until Replication Server acknowledges it has received them.
* HADR can also replicate data asynchronously from the primary to the standby for disaster recovery (DR). When the replication of HADR is in an asynchronous mode, the failover due to system failure or disaster could cause small data loss because the two servers are not in sync. Therefore, re-materialization may be required after the failover.
* SDK 16.0 SP02 supports ASE HADR through OCS, SAP jConnect and ASE ODBC Driver. In the HADR failover process, ASE servers notify client applications of their state changes and the applications can redirect connections to the new primary server.
* The replication of HADR can be configured, monitored and administrated by using the bundled tools-ASE installer, setuphadr, RMA, and ASE cockpit.
* ASE installer with HADR options and setuphadr tool can help users to setup a new ASE database system with HADR, upgrade the existing ASE servers to install HADR, and setup HADR after the installation of the new ASE servers. Setuphadr setups HADR with response files on the primary and companion.
* RMA provides an interface to setup, administer, and monitor the HADR replication system, hiding the complexity of replication server administrative activities. For example, the sap\_failover command fails over the primary from one node to another node. The sap\_materialize command instructs the servers to rematerialize the databases after the unplanned failover.
* ASE cockpit is a GUI ASE database administration tool. Each ASE server has its own ASE cockpit running on the same node. In addition to support of database administration and monitoring, ASE cockpit also communicates with RMA to run HADR administrative tasks like monitoring its status, issue planned failover, suspend replication, resume replication, rematerialize database, and view the server error log.
* Fault Manager (FM), which should run on the third machine, monitors the health of all the components in the HADR system. Based on the status of the system, it takes action. For example, if the primary database goes down, it confirms that it is down and automatically initiates a failover.
* To learn more about HADR, please read [HADR Users Guide](https://apps.support.sap.com/sap(bD1lbiZjPTAwMQ==)/support/pam/pam.html?smpsrv=https%3a%2f%2fwebsmp107.sap-ag.de#ts=26&s=ASE&o=most_viewed%7Cdesc&st=l&rpp=20&page=1&pvnr=67838200100900007308&pt=g%7Cr&ainstnr=67838200104900019689&fclfilter=G1%7CLINUX%20ON%20X86_64)

## Fixes and Workarounds

**Installation and Configuration**

[2272091](http://service.sap.com/sap/support/notes/2272091) - Error "No local host names could be found for this host!" during HADR setup

In the process of setting up HADR for SAP BS at primary node, the error “No local host names could be found for this host!" is raised. That is because of a product issue. Upgrading to the new version can fix the issue.

[2228961](http://service.sap.com/sap/support/notes/2228961) - Assertion failed: The installer is started with enabled replication environment variables, which is not supported

After sap\_teardown is canceled, try to run SAPinst to set replication and error will be reported in sapinst.log. That was because this installer was started in the already enabled SYBASE environment. This article provides steps to clear SYBASE environment for rerunning the SAP installer.

[2240893](http://service.sap.com/sap/support/notes/%202240893) - Error SQL9668 Login redirection to Primary server failed

After SAP kernel is upgraded, ASE servers restarted and showed an error - server cannot locate Primary Server information from HADR config. ASE server booted in STANDBY mode which is shown in its error log. The SAP application log dev\_w24.log showed Error SQL9668. This article provides steps to promote the server to PRIMARY and activate it.

[2045367](http://service.sap.com/sap/support/notes/2045367) - Error "The row count in the Master database does not match between source and target systems"

The problem was due to some unexpected change in the master database of the primary node before starting SAPinstall. The changes could be made by manually adding maint user or granting permissions to some sap users.

[2068210](http://service.sap.com/sap/support/notes/2068210) - CJS-00030 Assertion failed during HADR setup

When setting up HADR replication for SAP Business Suite for ASE, the installer reports error in the log –  
CJS-00030 Assertion failed: Found SAP database tables with quoted identifier issue. The database is not ready for replication. Refer to trace file sapinst\_dev.log for further information.

This is due to CR 761314. Workaround is to manually update sysobjects table and rerun the installer.

[2131991](http://service.sap.com/sap/support/notes/2131991) - Invalid rs\_session\_setting string - DRSuite

This has been filed as CR 779660. rs\_session\_setting function string for rs\_sqlserver\_function\_class has an invalid set command like “set literal\_param=’on’” instead of “set literal\_autoparam=’on’”. The workaround is to alter the function string rs\_session\_setting in SRS servers.

[2232422](http://service.sap.com/sap/support/notes/2232422) - Error "Cannot run this command as HADR is not configured" during HADR configuration

The error occurs during the 'Setup of Replication Environment' step in SAPinst to implement HADR for SAP BS. sapinst\_dev.log shows the error like:

ConfigureLocalRSInstance Failing Command Return Code 17158

ConfigureLocalRSInstance Failing Command Error Message Failed attempting to record an entry for dump and load support between host '<standby\_hostname>' and host '<primary\_hostname>' or its alias.

ConfigureLocalRSInstance Failing Exception SQL ERROR -- Message: 'Cannot run this command as HADR is not configured. A user with System Administrator (SA) role must reconfigure the system to enable HADR.' SQLState: ‘null’ Remote Code: '17158' Cause:

This is because HADR feature requires ASE 1.7 SP122 or higher or the instmaster script must be run after ASE upgrade to SP122 or higher.

[2388609](http://service.sap.com/sap/support/notes/2388609) - Error: 9417, Severity: 17, State: 2 ASE HADR

ASE with HADR configured reports this error – Error: 9417, Severity: 17, State: 2  
RepAgent(4): CI-resource 'CMD Package' is insufficiently configured, please use 'sp\_config\_rep\_agent' to change the configuration value of 'buffer pool size'. To suppress this message, you increase ‘buffer pool size’ and some rep agent parameters related to it. CR 799402 was filed to reduce the number of 9417 messages.

**Stop/Start**

[2174993](http://service.sap.com/sap/support/notes/2174993) - HADR: WARNING "split brain check refused to allow this server to become Primary"

When the primary ASE fails to promote to PRIMARY mode at reboot and applications can’t connect to the server, this WARNING can be seen in the primary ASE error log. HADR systems allow only one primary database to perform client transactions at a time. If the other member of the HADR logical group has been claimed to be Primary or it cannot be connected, the expected primary ASE will be stuck in “split brain” mode. This article helps to promote the ASE server and activate it as PRIMARY.

[2197568](http://service.sap.com/sap/support/notes/2197568) - SAP ASE and SRS: Unable to connect to SAP Application from SAP GUI

For some reason, both primary and companion ASE servers start in standby mode and SAP applications are unable to connect. The primary ASE server has the message “booting into HADR group SRS\_group in Standby mode” in its error log. You can read this article and follow the instruction to promote the ASE server to PRIMARY.

[2252673](http://service.sap.com/sap/support/notes/2252673) - stopdb script not working in a HADR environment

One way to stop SAP ASE in the HADR system is to use the stopdb script installed with SAP Host Agent. Due to an issue of the script, it doesn’t work and reports error “s-bit is not set for sybctrl executable: using SecureStore to retrieve ASE administrator and password. Password for ASE administrator as stored in SecureStore is incorrect. Provide password for operation system user syb<SID>,” even though s-bit and syb<SID> password are set correct. The problem can be fixed by downloading the script attached to the article.

**Failover**

[2293386](http://service.sap.com/sap/support/notes/2293386) - DML Command is terminated while sap\_failover is executed that may produce error 3957

After sap\_failover is executed, the application reports a 3957 error, “New transaction cannot be started due to an ongoing HADR deactivate operation.” This is due to CR 784069. There is a workaround and a fix in new releases.

[2328852](http://service.sap.com/sap/support/notes/2328852) - HADR Failover: java.sql.SQLException: JZ00L: Login failed - 'DR\_admin' connection failed against SRS

Executing sap\_failover command in DR agent returns login failure to a SRS. DR agent or RMA doesn’t store the security credentials of DR\_admin user but enforces authentication by pass-through authentication to the primary or standby SAP ASE, or primary or standby SRS. You are able to login DR agent or RMA with invalid password, but when you execute a command, it tries to login SRS server with the invalid password and you will get the login failure error. Using isql to DR agent or RMA with correct password will fix the issue.

[2047001](http://service.sap.com/sap/support/notes/2047001) - Unplanned failover with Rep. Server fails

This issue was reported in SAP Replication Server 15.7.1 SP 121 and it was fixed in later versions.

[2388651](http://service.sap.com/sap/support/notes/2388651) - sp\_hadr\_admin hangs for infinite time during log drain

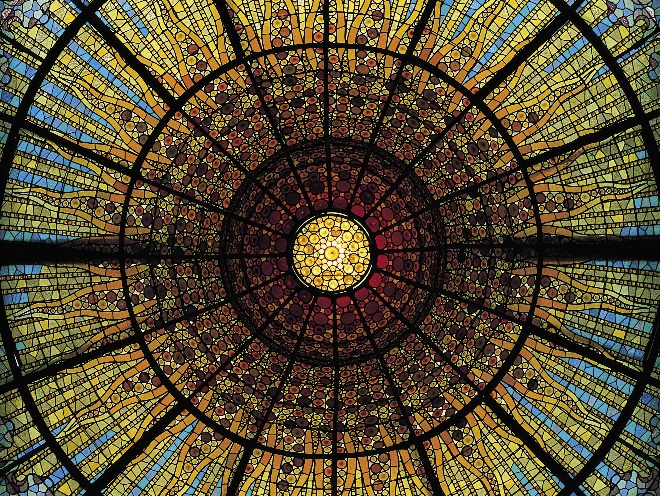
“sp\_hadr\_admin deactivate” command hangs if the rep agent is not able to connect to SRS server due to CR 764801. This CR is fixed in later versions.

[2379740](http://service.sap.com/sap/support/notes/2379740) - HADR - sap\_failover failed at "Timeout occurred waiting for the end of data marker for database 'master' to be received."

Sap\_failover failed at task number 6 with the error because it ran rs\_ticket as the end of data marker and the ticket never reached to the companion. “Admin who, dsi” shows dsi\_rs\_ticket\_report is set to ‘off’ for the connection. The fix is to change it to ‘on’ and resume the connection.

[2390976](http://service.sap.com/sap/support/notes/2390976) - Stack trace in \_pak\_unpack\_bytes - \_sqm\_load\_queue\_last\_seg

Due to CR 800743, SRS server went down with the stack when it executed a failover for HADR with external replication and it cannot start. It is addressed in the new version.

**Cockpit and Fault Manager**

[2253139](http://service.sap.com/sap/support/notes/2253139) - Error SQL11213 "Column count mismatch..." in DBA Cockpit HADR tab

This problem can be fixed by upgrade to a new version.

[2132583](http://service.sap.com/sap/support/notes/2132583) - SYB: ASE Lock timeouts DBACOCKPIT on HADR tables

This reports:

Error: 12205, Severity: 17, State: 2

Could not acquire a lock within the specified wait period. SERVER level wait period=1800 seconds, spid=237, lock type=shared intent, dbid=5, objid=1897054763, pageno=0, rowno=0. Aborting the transaction. This is because DR Agent log is too large.

[2385067](http://service.sap.com/sap/support/notes/2385067) - Fault Manager Status showing db host status: UNUSABLE

When executing "sybdbfm status" on the Fault Manager node, "db host status" shows UNUSABLE. FM starts a process in heartbeat mode on both primary and companion nodes. This problem was because the profile was missing in the primary ASE node. Restart FM to make sure the process uses the correct profile.

[2378495](http://service.sap.com/sap/support/notes/2378495) - HADR - Fault Manager terminated when up and running for few days

FM log file shows “Thread creation failed (Operation failed due to lack of resources.)”. This has been filed as CR 801544, which should be included in ASE 16 SP02 PL05.

## How-To Articles

[SAP ASE HADR Fault Manager – Overview, Installation, and Configuration](http://scn.sap.com/community/sap-replication-server/blog/2016/09/01/using-the-fault-manager-to-manage-your-hadr-environment)

The Fault Manager monitors the various components of the ASE 16.0 HADR environment and initiates automatic failover.

[2305518](http://service.sap.com/sap/support/notes/2305518) - Troubleshooting HADR issues in a Business Suite environment

This provides the locations of log files of all HADR components, basic DR Agent or RMA commands to get more information, and FAQ link.

[2297771](http://service.sap.com/sap/support/notes/2297771) - Warning #13061 reported in SRS log

In SRS errorlog, you see warning 13061 about SAP ASE and SRS sort order mismatch like:

WARNING #13061 DSI(105 <SID\_Site1>.<SID>) - seful/cm.c(7969)

Server <SID\_Site1> is using 'binaryalt' sort order, which is different from this Replication Server's sort order.

This is because since ASE 15.7 SP130, the default sort order of the ASE server for SAP BS is 'binaryalt'. However, 'binaryalt' sort order does not exist in SRS so SRS raises the warning. This is informational and will not have harm on the replication.

[2390954](http://service.sap.com/sap/support/notes/2390954) - How to manually install SAP Host Agent in an ASE HADR environment?

If you have chosen not to install SAP Host Agent in the installer, you can manually install it later with the steps provided by the article.

[2239261](http://service.sap.com/sap/support/notes/2239261) - How to modify the level of logging information in the DR Agent log

By default, the logging level is set to “TRACE”, which includes INFO, WARN (warning), ERROR, and DEBUG messages. If you want to change it, you edit /sybase/<SID>\_REP/SCC-3\_2/plugins/DR/**agent-plugin.xml** file. Read the article for the details.

[2369914](http://service.sap.com/sap/support/notes/2369914) - SYB: Sizing recommendations for the SAP Replication Server with SAP ASE 16.0 HADR

This note provides the minimum requirements based on log generation per hour.

[2379871](http://service.sap.com/sap/support/notes/2379871) - How to refresh the latency calculation time in a HADR environment

If you run sap\_status path command, you notice that the Latency Time is a long time ago. You can run sap\_send\_trace <primary\_host\_name> command to update it to the current time.

[2089569](http://service.sap.com/sap/support/notes/2089569) - How to re-materialize master or SID databases –

After unplanned failover, HADR system requires to rematerialize the databases because some data was lost and databases were out of sync. This article provides a step-by-step, straight forward procedure to rematerialize databases.

[2165143](http://service.sap.com/sap/support/notes/2165143) - How to perform a planned or unplanned failover - SAP ASE and SRS

This note provides steps to execute the both planned and unplanned failovers.

[2175528](http://service.sap.com/sap/support/notes/2175528) - FAQ HADR with SRS certified for Business Suite

This is the master KBA for FAQ HADR which indexes common useful KBAs about HADR documentation, installation, configuration, stop/start, failover, and ASE Cockpit.

[2231020](http://service.sap.com/sap/support/notes/2231020) - SYB: Release information for SAP ASE 16.0 SP02 with SAP Business Suite

This the Release Note for SAP ASE 16.0 SP02 with SAP Business Suite for installation and upgrade.

[2327379](http://service.sap.com/sap/support/notes/2327379) - HADR Known Issues for SAP ASE 16.0 SP02 PL04

The PDF file of HADR known issues list for this release is attached to the note.

[2154500](http://service.sap.com/sap/support/notes/2154500) - Need information about the replication\_maint\_role\_gp system role

New ASE versions added two new roles hadr\_admin\_role\_gp and replication\_maint\_role\_gp. The detailed information of these roles are discussed in this article.

## Tips and Tricks

**HADR log files for troubleshooting**

SAP ASE installer log: <installed\_directory>/log  
SAP ASE server log: <installed\_directory>/ASE-16\_0/install/\*.log

HADR component installers log: <installed\_directory>/DM/log

Setuphadr log: <installed\_directory>/ASE-16\_0/init/logs/setuphadr\*.\*

RMA log: <installed\_directory>/DM/RMA-15\_5/instances/AgentContainer/logs/\*.log

Replication Server log: <installed\_directory>/DM/<cluster\_id>\_REP\_<site\_name>/\*

Fault Manager log: <installed\_directory>/FaultManager/dev\_sybdbfm

**Shutdown ASE 16.0 HADR System**

The components must be shut down in an ordered sequence.

Fault Manage: sybdbfm stop  
Shutdown both ASE Cockpit  
Shutdown both backup servers  
Shutdown Primary RMA, then Standby RMA  
Shutdown Primary SRS  
Shutdown Primary ASE :   
“shutdown with wait nowait\_hadr”  
Shutdown Standby SRS  
Shutdown Standby ASE

**Start ASE 16.0 HADR System**

The components must be started in an ordered sequence.

Start the companion ASEStart the companion Backup ServerStart the companion Replication ServerStart the primary ASEStart the primary Backup ServerStart the primary Replication ServerStart the companion RMAStart the primary RMAStart the primary CockpitStart the companion Cockpit  
Start the Fault Manager

## Important Notes

**Report issue to SAP**  
[560499](https://service.sap.com/sap/support/notes/560499) Global Support Customer Interaction – telephone, fax, e-mail   
[67739](https://service.sap.com/sap/support/notes/67739) Priorities of problem incidents  
[36677](https://service.sap.com/sap/support/notes/36677) Structure of components in SAPNet – SAP R/3 front end  
[508140](https://service.sap.com/sap/support/notes/508140) Customer incident – customer login data   
[32736](https://service.sap.com/sap/support/notes/32736) 24-hour support not possible in this language   
[83020](https://service.sap.com/sap/support/notes/83020) What is consulting? What is support?

**Incidents @ SAP**[46742](https://service.sap.com/sap/support/notes/46742) Priority 1 support generally available [873046](https://service.sap.com/sap/support/notes/873046) Processing of customer incidents in English   
[69459](https://service.sap.com/sap/support/notes/69459) Japanese: short text maintained in English   
[50048](https://service.sap.com/sap/support/notes/50048) Several questions reported in one incident

**Trouble with an incident**  
[90835](https://service.sap.com/sap/support/notes/90835) SAP incident escalation procedure   
[984434](https://service.sap.com/sap/support/notes/984434) How to speed up customer incident processing

**Feedback to SAP**  
[736045](https://service.sap.com/sap/support/notes/736045) Complaints concerning SAP Service & Support

## Important Links

SAP Service Marketplace  
<http://support.sap.com>  
SAP Service Marketplace - SAP Notes  
<http://support.sap.com/notes>  
SAP Service Marketplace - Customer Incidents  
<http://support.sap.com/incident>  
SAP Software Download Center  
<https://support.sap.com/software.html>  
Request License keys <http://support.sap.com/licensekey>  
SAP Help Portal - Product documents  
<http://help.sap.com>  
SAP Replication Server Community Network  
<http://scn.sap.com/community/sap-replication-server>  
SAP Replication Server Wiki  
<http://wiki.scn.sap.com/wiki/display/SYBREP/SAP+Replication+Server>  
SAP D&T Academy on YouTube  
Search "SAP D&T Academy Replication Server " at <https://www.youtube.com>  
Social Media Product Support Channels  
<https://twitter.com/SAPSupporthelp>  
<https://www.facebook.com/SapProductSupport>Product Enhancement Requests  
Submit your ideas for Replication Product Enhancement  
<https://ideas.sap.com/ct/s.bix?c=EA962FCA-D4A7-46F6-A990-0FCB767E8EFC>

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