

Document Version History

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| --- | --- | --- | --- | --- |
| Version | Owner | Source | Date | Description |
| 1.0 | Rob Coupe |  | 23-Aug-2013 | Initial Draft |
| 1.1 | Rob coupe |  | 12-Sep-2013 | Selling error corrected |
| 1.2 | Rob Coupe |  | 29-Oct-2013 | Change to naming convention, core upgrade and product pre-upgrade checks, MapViewer applet changes and file structure |
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| For review: | | | | For approval: |
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Table of Contents

1. About this Document 2

1.1 Authors 2

1.2 Document Summary 2

1.3 Reference documents 2

1.4 Distribution 2

2. Introduction 2

3. Developer 11 Changes 3

4. Oracle 11.2.0.2 3

5. Spatial Registration and SDE metadata 3

6. Security Policies 4

6.1 Additional Network and Admin Unit Security 4

6.2 Securing Documents 4

7. Fixes, Enhancements and Changes at 4.7.0.0 6

7.1 Core modules and server code 6

7.2 Spatial manager 16

7.2.1 Preferences Changes including Admin-unit option. 16

7.2.2 Changes since 4.6 19

8. Known Problems at 4.6.0.0 22

8.1 MapViewer 22

8.2 Asset Hierarchies 22

8.3 Merge Query 22

8.4 Spatial Manager 22

8.5 Other Issues 22

# About this Document

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## Document Summary

This document provides a description of the changes in this release and information about how these changes may impact on an installation.

## Reference documents

|  |  |
| --- | --- |
| Author | Referenced Document |
| ESRI Support | http://support.esri.com/es/knowledgebase/techarticles/detail/29409 |
| Oracle Support | Document [ID 1268383.1] – Slow Performance when using SDO\_RELATE/SDO\_FILTER. |
| Oracle Support | Use \_allow\_level\_without\_connect\_by to Revert Back to 9i Hierarchical Query Behavior [ID 271939.1] |
| Oracle Support | <http://docs.oracle.com/cd/E28280_01/web.1111/e10145/vis_xmlapi.htm>  Explanation behind the changes to prevent excessive logging of warnings in the Java log file. |

## Distribution

Bentley/Exor Customers, Partners and Colleagues

# Introduction

This document highlights the key changes to the EXOR Core Highways database following the release of Core Highways v4.7.0.0. It is specifically targeted at users and system administrators of the EXOR systems. Changes in the core database functionality have the potential to have wide impact across all EXOR applications and it is important that these changes are understood. However, many of the functions of EXOR Core Highways are extremely technical in nature and this document is aimed at those with some degree of technical knowledge and not necessarily at end users.

It is not intended to be a full system description but a guide to indicate what changes have been made, why they have been made and the potential failings if this upgrade is not applied.

This release is available as an upgrade both from release 4.5.0.0. and 4.6.0.0 of EXOR Core Highways.

After reading through this document, should you have any need for training or consultancy then please contact your EXOR/Bentley account manager. If these changes are considered important for your current release and this is incompatible with this patch release then please contact support.

This release is, in the main a bug-fix release and a minor technology change in that it has been adapted to be used on the Oracle forms 11 Release 2 with an update to the Java version on the middle tier. See the installation guide for more details in relation to specific versions. This has minor differences over and above the version 11.1 platform supported in 4.5.0.0. It remains certified against Oracle 11.2.0.2 RDBMS and on windows platforms, it is certified with the July 2013 patch-set.

At the time of writing, the certification of the ESRI components for support of Spatial Manager and MapCapture Interface is intended to be the same as that in previous releases. Again, see the installation and upgrade guide for more details.

The issues that have been attended to are a result of internal testing, TSG Service requests raised by users and internally driven enhancements and improvements. Where the change has been made as a result of an existing ECDM log or Bentley Support Service Request raised by a user, the table of fixes makes reference to the relevant ECDM log number or Bentley TSG Service Request Identifier. The latter tend to be much larger numbers, generally prefixed by 800.

# Developer 11 Changes

The 4.7.0.0 release is based on a different technology stack to that of previous releases. It is built using Oracle Developer version 11R2 and uses the WebLogic Application server. It differs from the 4.6 technology stack only in the version of Java but differs more significantly from release 4.5.0.0 which was based on Developer 11.1. Between 4.5.0.0 and 4.7.0.0 several changes have been made to the WebUtil bundle. So, although there is a close degree of compatibility between forms across all three of these releases, the differences are sufficient to cause problems. Hence a full upgrade of forms and reports based modules is provided. For version numbers of the entire list of components see the release install and upgrade guide.

# Oracle 11.2.0.2

Please continue to ensure that statistics are disassociated from spatial objects as described in the 4500 release notes and as advised in the note issued by Oracle – Document [ID 1268383.1] – Slow Performance when using SDO\_RELATE/SDO\_FILTER. This note advises that the statistics on spatial tables and indexes are disassociated from the processes that use these indexes – namely spatial filters. The following adjustments are recommended in this note.

connect /as sysdba  
alter session set current\_schema=MDSYS;  
DISASSOCIATE STATISTICS FROM INDEXTYPES spatial\_index FORCE;  
DISASSOCIATE STATISTICS FROM PACKAGES sdo\_3gl FORCE;  
DISASSOCIATE STATISTICS FROM PACKAGES prvt\_idx FORCE;

# Release and Build Numbers

Starting with this release, the filename will now be composed of two digits for each part of the release number with the last two digits being reserved for a build number. So, the file name for this release will be of the form exnm0407000n\_en where

* ex indicates an Exor product
* nm indicates network manager (core product)
* 04 is the major release number
* 07 the sub-release number
* 00 the patch number
* 0n the build number - starting with build 1. i.e. 01
* \_en just signifies the release is in English

This means that the file name may change during the build and system test/QA process as there remains a potential to provide subsequent builds. The version numbers that are registered within the Exor table HIG\_PRODUCTS will remain in the format 4.7.0.1 until further notice. The change to use the last digit as a build number means that the code inside the HIG2 package which checks compatibility of product versions has changed so that only the first three components of the name are checked.

# Map Capture Interface

The Map Capture Interface product which is a loader of asset data and geometries given in an ESRI shape-file format is now included within the core product. The product exists alongside the NM3 folder in the release file structure. Documentation relating to this product can be found in the separate release note for this product. Please note that at the time of writing, the MCI product has a dependency on a licensed and fully upgraded Maintenance Manager. See the release installation and upgrade guide.

# Spatial Registration and SDE metadata

The Map Capture Interface product allows for loading and extraction of shape files. It requires all details of the asset spatial and attribute data to be registered in the SDE Geodatabase in order to make the data available to users.

At release 4.5 of the core application, the use of private views owned by sub-ordinate users was removed in favour of the standard settings of using private or public synonyms as directed using the option HIGPUBSYN. This was not the case for the Map capture Interface which continued to rely on private views and a lot of metadata held in the SDE schema.

This left a hole for the Map Capture Interface users in the sense that the core product would no-longer create and update the private views and no longer maintain the SDE metadata.

Recent fixes to the Map Capture Interface have removed the need for the private views but these changes have also necessitated some minor changes to the core application programs. Left unchecked, standard core fixes such as the general update fix 23 will reset the core changes thus losing some of the critical features of the MCI fix.

The 4.7 release standardizes the use of synonyms and improves the registration of the SDE metadata in the process.

The improvement also fixes an irritating feature of the ESRI system at 9.3.1 whereby a spatial feature layer would need to be viewed inside a spatial client or operated on through command-line administration command as the owner of the data before the layer was exposed and available to another user. So, every time an asset layer was generated in the exor system, the data (owned by the highways owner) would need to be viewed in Spatial Manager or extracted using SDE2SHP before it could be visible to other sub-ordinate users of the Exor system. This is now much improved with layers being available immediately after they have been built.

The system used an exemption table to flag objects for which no synonym would be generated as and when new objects were built in the highways owner schema. This exemption table held the rows which prevented the system from creating synonyms for the MapCapture Interface objects. If this data is present it will be removed.

Also, the system no longer needs to support the huge swathes of SDE metadata for subordinate user accounts to access MapCapture layers. Hence a new exemption table has been introduced. Rows in this table provide a mask of object-names for which no SDE metadata will be created for subordinate user accounts. It is primarily intended to hold the exclusion of the MCI data but it is referenced in the code and needs to be shipped.

# Security Policies

Security policies described in the following two sections are administered through the NM3NWAUSEC package. They were introduced inside optional fixes for 4.6 users. Note that security on the directories will prevent a restricted user from creating a directory which points to a folder and then granting role-based privileges on the directory. This would leave a security lapse. It is expected that directories and initial roles are created by users with the appropriate security profile before the directory privileges are granted by others.

Further server-based security was also introduced on the operations on spatial data where the server APIs expect a user to have access to a specific theme (through the theme-roles relationship) before an operation may be performed. Since themes data is hierarchical and transactions operate on the base table, the roles may be applied to themes other than the base table theme in order to make them active. Customers may need to check and add additional theme roles for some users after the upgrade. Lack of the relevant theme-role record will result in a server generated error ": NET-0339: You do not have permission to update this record"

Please check with your account manager before attempting to use these security policies.

## Additional Network and Admin Unit Security

Security on the following tables can be added through a new package NM3NWAUSEC and by executing the associated add-policy scripts. Subordinate users only are affected and the security extends to primary and secondary admin-unit related security on the following tables:

|  |
| --- |
| HIG\_PROCESS\_ALERT\_LOG |
| NM3\_SECTOR\_GROUPS |
| HIG\_FTP\_CONNECTIONS |
| NM\_ADMIN\_UNITS\_ALL |
| NM\_ELEMENTS\_ALL |
| NM\_MEMBERS\_ALL |

## Securing Documents

The document table until recently had no server-based security. It is used to hold records which relate to physical documents held inside one of various methods but also holds records that relate to public enquiries. This leads to the Documents table acting as two distinct partitions of data and each needs a separate restriction to secure the data.

Public enquiries carry an admin-unit which is denormalised from one of several sources such as the asset or road network to which it relates or from the admin-unit of the user who made the transaction that created the enquiry record. Admin-unit security was imposed on this table in a previous fix and I snow standardized in the 4.7 release..

Further fine-grain-access-control has also been introduced to cover the security on the documents that relate to files.

The new security policy will apply purely to the document records that relate to files held within an Oracle directory mapped to an Exor HIG\_DIRECTORY through the existing role-based security. The original method stopped short of restricting the user from seeing the table data relating to these directories. The policy makes secure the following Exor tables through the directory/role relationship:

|  |
| --- |
| HIG\_DIRECTORIES |
| DOC\_LOCATIONS |
| DOCS |

It does not affect any read/write/delete/execute privileges applied to these directories through Java privileges nor does it affect the security privileges on documents held as CLOBs inside neither an Oracle table nor those held on doc-locations which relate to middle-tier, FTP or other folders.

Predicates applied to these tables will be applied through the policies associated with the NM3NWAUSEC package. During the upgrade all the policies associated with the NM3NWAUSEC package will be dropped. A SQL script to drop and recreate the policies is also included in the \nm3\admin\ctx folder. Non-standard/optional security policies must be re-applied manually after the upgrade. See the release installation and upgrade guide.

# Fixes, Enhancements and Changes at 4.7.0.0

The following are a list of internal task identifiers with associated ECDM fault logs/Bentley TSG Service requests that have led to changes in the 4.7.0.0 release. Please note the list covers the distinct set of fixes over and above the initial 4.5.0.0 release. Many of the items on the list have already been supplied as fixes to either or both the 4.5 and 4.6 releases.

## Core modules and server code

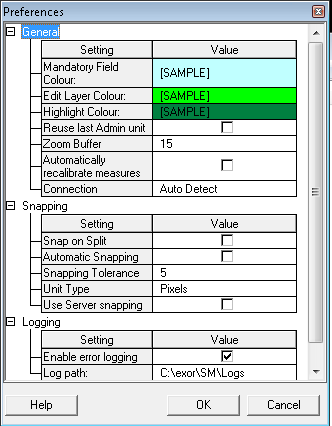
| Internal Task/Defect ID | Issue | TSG Service Requests and/or support log numbers |
| --- | --- | --- |
| S-92013  TK-259862 | Securing of documents (see optional fix above) |  |
| D-121561 | Trigger failure on removal of a directory role.  A directory may be secured by a role and is a pointer to an Oracle directory which in turn, is a pointer to a file-system folder. Granting privileges to the directory/role will make an attempt to grant the permissions directly onto the file-system. However, the directory is an instance-wide Oracle object and the Exor HIG\_DIRECTORY is just a record in a table. Under some circumstances, such as after data import or in cases where the Oracle directory is dropped or if the file-system is modified, the link between the role and the file-system is broken. Under these circumstances, it may be relevant to drop the directory role. In the current release, this will automatically fail as the file-system permissions cannot be applied. The fix also includes the change to allow the removal of a directory role where the directory does not relate to a physical file-system location. Without the fix, under the circumstances such as those identified above, a failure will result as illustrated:  ORA-20000: HIG-0257: Object does not exist:  REVOKE READ ON DIRECTORY <directory> FROM <role>  ORA-06512: at "HIGHWAYS.HIG", line 1464  ORA-06512: at "HIGHWAYS.HIG\_DIRECTORIES\_API", line 467  ORA-06512: at "HIGHWAYS.HIG\_DIRECTORY\_ROLES\_A\_IUD\_TRG", line 48  ORA-04088: error during execution of trigger 'HIGHWAYS.HIG\_DIRECTORY\_ROLES\_A\_IUD\_TRG' |  |
| 0111944 | Change to support SM builds greater than 3.30 in the flash and zoom of spatial features. The sever change supports the generation of aggregated shapes. | 8001178726 |
| 0111947 | Some instances with corrupt SDO\_GEOM\_METADATA relating to the network layers have problems building and registering new layers due the coalesce\_nw\_diminfo giving incorrect results. The change will allow the coalesce function to be performed on metadata with an empty dimension. |  |
| 0111952, 0112004 | Some customers have measures on the vertices of datum element shapes that are not monotonically increasing. This is a situation in which an Oracle problem results in the split operation producing shapes with ordinates that include (0,0). This change works around the problem under some circumstances. However, customers should ensure that datum vertices have unique and increasing measure. |  |
| 0110244 | MapViewer now allows the user to re-order layers by moving them up or down the list. | 722477  728035 |
| 0111973 | The HIG\_USERS form HIG1832 previously had a problem in the activation of the copy-user button and, after activation the tool could display error/warning message repeatedly. The functionality did complete successfully. This version removes the messages and includes all the previous fixes.  The copy user function will not be available if the form is executed in query-only mode or if the user in scope has been de-activated/end-dated.  A restricted user may not copy an unrestricted user. |  |
| 0111965 | MapViewer currently starts with an initial extent which is formed from the aggregated MBR of the network layers. The fix will check if extents exist for the admin-unit to which the user is linked (HUS\_ADMIN\_UNIT) and if so, the initial extent will use this. It is expected that professional services can configure a set of extents linked to specific admin units of choice (by type and level). If no data exists, the initial extent reverts to the original. | 8001355195 |
| D-119828 | Merge causes loss of inventory location data  Completed under task TK-256568 the issue was investigated and found to occur in cases where an asset id shares multiple locations over a single datum and has contiguous multiple sub-placements. The merge makes an attempt at consolidating/aggregating the sub-placements into larger chunks. The consolidation process used a faulty order-by clause and resulted in corrupt data. | 8001571608 |
| 0111977 ,  0109100 | Closure of the asset (for example through bulk update) now results in the end-date of any date-tracked asset shapes. Previous releases potentially left live geometries which relate to closed/retired assets. |  |
| 0110695 | Resolution of problems with replicated doc gateways and synonyms. In previous releases, users and metadata scripts could leave an object declared as both a gateway and a synonym. The upgrade script will tidy up and standardize on specific gateways. | 729536  8001079483 |
| 0112010 | Effective date and security in MV with data source. A new package was built to support the setting of context variables for a specific user during the start-up of MapViewer which allows it to have the expected role and admin-unit based security in the geometry data. |  |
| 0112013, 0112009 | Searches that are configured and saved in Locator are built from meaningful attribute names but when the saved searches are reviewed, the attributes are shown in their specific table/attribute name which is often meaningless to the user. The saved searches are now shown with meaningful attribute names in the same way as when the search is being built. |  |
| 0111189 | The server-code underpinning the merge datum API has been modified to prevent corruptions arising from Spatial Manager in providing too many choices to the user. The core code expects to merge two elements based on inheritance of attributes from the ID referenced in the first argument. This inheritance also includes direction. Hence, the direction of the first element determines the direction of the result and in turn determines the node to be dissolved. In the scenario where two datums start and end at the same nodes, there is a choice. The inclusion of the order-by in the relevant code limits the choice and will now arrange for the merge to inherit the direction of the first element as desired. Work will be required on SM to remove extraneous logic to fully satisfy the issues raised on the ticket. | 8001101079 |
| 0108264 | SM fails to display subordinate data. This relates to an issue in the SDE Geodatabase metadata whereby attribute data is not registered reliably until such time that the data is reviewed by the owner. See <http://support.esri.com/es/knowledgebase/techarticles/detail/29409> for more details.  Changes to the registration process should now enable a subordinate user the ability to render and operate on a layer that has been created by an owner before that owner has reviewed the data in an ESRI client. | ECDM Log# 715720 |
| 0111557 | SM fails to display asset layer as sub-user. This relates to failures, particularly inside ESRI clients, whereby spatial layers would not render. The problem is due entirely to poor performance resulting from ESRI client queries on join views without statistics being disassociated from specific objects as recommended by Oracle.  connect /as sysdba alter session set current\_schema=MDSYS; DISASSOCIATE STATISTICS FROM INDEXTYPES spatial\_index FORCE; DISASSOCIATE STATISTICS FROM PACKAGES sdo\_3gl FORCE; DISASSOCIATE STATISTICS FROM PACKAGES prvt\_idx FORCE; | 8001210153 |
| 0112032 | The asset bulk attribute update module (NM0116) performed an erroneous join in the code responsible for adding elements into existing groups which can lead to an attempt to create more rows than expected. This generally fails with the error "Value already added". |  |
| 0111193 | Delete global assets: Restore the ability to delete/close assets on any effective date. There are some checks enabled in the server code. Operating at dates in the past on a route or network area that has changed over time will only operate on the network area that is defined at that date. The procedure is stopped if the network has changed. Also, by operating at a specific date, some assets remain invisible and will therefore not be operated on. Conversely assets that are visible in the date tracked views that have been closed at a later date would also be closed at an earlier date. Again, the procedure will raise an exception and abort if these conditions are met. | 8001086110 |
| 0111537 | Delete global assets forms and server code failed to handle parts of asset locations that were included in the region of interest. Also, difficulties arose from the results table failing with a primary key violation in cases where multiple asset locations were included in the region of interest and where the user opted to execute multiple transactions in the same forms session. Also, the form failed to populate the targeted asset types on the second execution if the route/region was populated using a gazetteer search | 8001190683 |
| 0111410 | Screen showing the results table has been added. This had been removed around release 4.0.2 | 8001071432 |
| 0111681 | Security of asset data in the 4500 release is based on context variables which govern access independently to the session owner. In the FGAC restriction was being set to null for all unrestricted session owners despite the setting of the proxy user context variables. The unrestricted test is now supplemented with a test to ensure that the proxy user has not been set different to the session owner. |  |
| 0111809 | Failure to allow a user to remove a faulty extent. The problem is likely to have been caused by SM creating faulty extents from route layers. The extent is a three tier hierarchy and APIs exist to remove any one of the three tiers of data. SM only plugs into two of the three APIs allowing the removal of the extent or the extent member datums. To minimize the problem, the extent hierarchy is now cascaded after the API so at least the top level can be cleaned out.  Prior to this fix, the foreign keys from extent members and extent member datums were disabled but on many cases inadvertently enabled on customer sites. The script executes a clean-up - removing all orphan member and member datums before re-creating the foreign key with the cascade delete option. | 8001269723 |
| 0111930 | Delete Global Assets:  Code now raises two new exceptions to prevent problems in the data. These arise due to operations on end-dated data but where route measures or asset locations exist at a future date and would be left unaffected after the operation or where date-tracking integrity checks would lead to failure. These are reported inside the client module as follows:  - 'The NW has datums that start later than the effective date - the assets on this member datum would either be unaffected or would give rise to a server error  - Inv. data that is opened later than the effective date will remain unaffected or data that has been closed later than this date would be changed  In each case these exception prevent errors and indicate that the operation is not valid at the currently specified effective date.  The code cannot operate successfully on all assets in a hierarchy. The hierarchy is kept in sync to some extent but relationships to parent and child assets are closed/deleted even if the relation is flagged as optional.  Spatial data was not kept in sync in previous versions. Asset shapes that are dynamically segmented will have been kept in sync with the location data as long as the theme update\_on\_edit flag is set to 'Y' on the base table theme. Recent changes will correct any asset spatial representations that are remaining. Off network asset shapes will be end-dated or deleted as part of the process. Relationships between asset data and other entities such as schemes, defects, work-order-lines are not maintained by this code at this stage. Document associations are deleted when an asset is end-dated or deleted. This is due to the non-temporal nature of the document associations relationship.  New package has been introduced to keep spatial data in sync with bulk operations on sets of asset IDs. | 8001190785 |
| 0112099, 0112097 | Route shapes are generated as multi-part geometries and are split at points of discontinuity of connectivity or discontinuity of measure. Multi-part geometries should be generated with an SDO\_GTYPE of 3306. The fix will repair existing route shapes and will replace server code such that newly generated route shapes are built as 3306 where they are multi-part.  Please note that discontinuities in route measures leading to measures that are not monotonically increasing will be flagged as INVALID by the Oracle SDO validation APIs, despite the discontinuity being coincident with a part-boundary. | 8001410496 |
| 0111881 | This fix repairs the problem with using PBI queries which executed to give no results with an error suggesting that no network obeying the criteria could be found. Also, PBI queries returned incorrect results in some cases where a network extent over which the query was executed was smaller than the coverage of the candidate asset. | 8001274633 |
| 0111904 | This fix is mainly present to support the NSG application. There are changes in the behavior of an internal Oracle Spatial API, the minimum bounding rectangle and validation of a specific geometry type has changed such that the minimum values are zero. The impact of this difference in behavior had been corrected in the original 4.5.0.0 release. However, a knock-on effect was that a specific API inside nm3sdo package no longer failed and hence no exception was raised. During the installation of an empty NSG database, the extent of the existing network is computed and if exception was raised, the NSG system interpreted it to indicate that hard-coded UK bounds are created. Since it no-longer returns an error, the system registered empty dimension information with an end-result that the NSG loader fails to generate shapes. This fix is critical for new NSG installations, impact is virtually non-existent elsewhere. |  |
| 0111923 | Network operations such as Split may fail with privilege problems when executed by a subordinate user. This could be due to the user not being granted privileges on the use of some oracle object types. | 8001297944 |
| 0111996 | Ordering of the admin-units in the form HIG1860 has been improved. A new view is created to assist in the ordering of tree items alphabetically within each branch. | 8001319906 |
| 0111998 | When querying Audits within the form HIG1505, using a non-existing type the form no longer raises an Information message: "Query caused no record to be retrieved. Reenter". The form will now allow the query but will return no rows in cases where an invalid type is queried. | 8001300531 |
| S-92085 | Hig2520 has been modified to add a restriction section to allow the restriction of processes. It also allows deletion of processes (where applicable) and allocates a new status of ‘Job Missing’ when processes are missing from the Database Job queue but still exist within the process framework. | 8001406855 |
| D-118287 | Merge Query was reported as not working correctly in cases where the query included both continuous and point assets. In some cases, point data was missing when executed against a network group of groups. The code performed an incorrect intersection between candidate network and the splitting agent locations. | 8001546597 |
| TK -253755 | Population of the set of candidate datums during execution of merge query over a group of groups was slow due to an excessive number of records being retrieved. This was optimized and made reliable for the changes for D-118287 (above) to take effect . |  |
| 0111008 | Forms running in READ-ONLY mode prevent the opening of other modules. | 8001075194 |
| 0110406 | In this release Navigator also displays an asset hierarchy and its history. |  |
| 0111157 | The code processing the updates of end-dates on shapes for all records on a specific datum resulted in an erroneous update. It had potential to affect the records that had been previously closed. The same process was responsible under some circumstances of re-setting the end-date to be null on more records than it should have done. The code now targets the specific member records. | 8001100659 |
| 0111199 | GIS0020 will now create themes based on Inventory/Route types that do not have pre-existing views created. Previously this could result in errors/warnings being raised. |  |
| 0111528 | End-dating of inventory locations would allow completion despite locations in existence after the date of closure. This was due to the check being based on the locations of the inventory at the date at which the user wished to close it. A better checking process is now included and an exception was raised if the locations cannot be closed. | 8001172067  8001288133 |
| 0111532 | Asset forms now ensure that the IIT\_PRIMARY\_KEY column is validated based on the Mandatory flag if defined as a flexible inventory attribute. Under these circumstances, it requires the user to populate the primary key field and if not set an error is raised. | 8001187536 |
| 0111534,  0111467 | Reclassifying a group with secondary AD data could fail with date-related problems | 8001178316 |
| 0111540,  0111541 | Due to failings in the call to the reshape-route within client applications such as Spatial Manager, the server code had little chance of keeping the dates and shapes of routes in-sync with member data. This fix makes the rather sweeping change to ensure that the route shapes over time are the same as those that would be generated if the layer was refreshed. Namely, an aggregated route shape would exist for each distinct date-range. | 8001192315 |
| 0111817,  0112116 | Some subordinate user metadata in the mdsys.sdo\_geom\_metadata\_table would be retained after a layer had been dropped. This is now corrected. |  |
| 0111836,  0111882 | Complexities arising from testing and loading locations of child assets with an inherited location during the loading of data from MapCapture load files have been simplified. The code will now ignore any child locations in cases where the child asset type has an AT relation to the parent and where the parent location exists. Other areas of code will ensure that the child asset location is inherited from its parent. | 8001298259 |
| 0111843 | Hierarchies with a relation of AT driven by point XY data are now kept in sync when the parent XY is changed. | 8001300676 |
| 0111849,  0111848 | Server code has changed to prevent the end-date of asset locations where the chosen date is earlier than other locations for the same asset. This has been coded in the API used inside the forms modules but has also been coded inside the API used in many CSV loader implementations. It is code din both areas to avoid server header changes which have impact on the forms modules. Forms have been coded with an exception handler such that the server exception is trapped a more meaningful and formatted error message is displayed. | 8001288133 |
| 0111850,  0111818 | The generation of a spatial layer representing assets dynamically segmented from inventory location data now results in a theme which defaults the UPDATE\_ON\_EDIT flag to I for Immediate. Foreign table data will remain unaffected and will be generated with the flag set to N indicating asset spatial data will remain unchanged. | 8001298116 |
| 0111865,  0111660 | The HIG1862 and HIG1866 reports have SQL which makes use of the LEVEL pseudo column within a query block that doesn't have a connect by. At some stage, the rules governing the use of the pseudo-column have changed.   Earlier tasks relating to this ticket are handled by pointing the user to settings within the Oracle server to ensure compatibility with previous database methods. See 0111866 and 0111660 which recommend the following:  alter system set "\_allow\_level\_without\_connect\_by"=true scope=both;  See Oracle Metalink note: Use \_allow\_level\_without\_connect\_by to Revert Back to 9i Hierarchical Query Behavior [ID 271939.1]  At 4.6 and onwards, the reports will be modified to remove the dependency on this option. | 8001300575  8001440003 |
| 0111896, 0111386 | Locator maintains two distinct maps one that is pinned to the locator form window and one that is unpinned. Previous versions failed to synchronize the active theme from the unpinned map with the context sensitive List of Modules. | 8001139145 |
| 0111912 | Depending on upgrade path, the MV\_HIGHLIGHT table may still have a persistent unique index. The script to be executed in the upgrade will ensure all systems are configured the same. Having a unique index will prevent some asset shapes from being highlighted in the MapViewer map applet. |  |
| 0112005 | Changes to the doc-bundle loader are such that even if a record contains a reference to data through a gateway-synonym, the loader will load the appropriate gateway in the DOC\_ASSOCS table. Hence it is important that the metadata has a set of unique synonyms pointing to a set of unique gateways with no replication of entities as both gateways and synonyms. The DDL script will modify metadata and will make an attempt to correct reference data known to be a problem. Since this data can be user-defined, there may be issues with the script and if the fix DDL script fails then support should be contacted to help them clean some of the gateway metadata up.  Even if the uniqueness of synonyms and gateways across other entities is not guaranteed, the script should repair those that relate to NM\_INV\_ITEMS and NM\_INV\_ITEMS\_ALL. Existing documents will be made to associate to a single gateway so documents will be available from all modules that relate to either gateway or synonym. | 729536  8001079483 |
| 0112067, 0112068 | Asset attributes can no longer be updated in NM0590 and NM0510 without the appropriate privileges. |  |
| 0112071 | Resolved issue where selected network is not highlighted when the user clicks on the network to raise a defect or enquiry. | 8001232210  8001235570  8001339460  8001373269 |
| 0112078,  0112083 | The doc-bundle-loader would create documents with a date-issued value with a corrupted century due to an inadequate date conversion. This problem could arise through the use of the default values in the argument to the API but is also caused from the direct call to the API in the doc-bundle-loader package body. The problem is corrected both in the default values in the base API inside the doc-bundle-loader package. | 8001408214 |
| 0112079 | Server code is modified to perform a check to ensure that the user has the defined theme-roles before execution of spatial edits. Failure to grant the theme role prior to the edit will result in a server failure as shown below:  ORA-20000: NET-0339: You do not have permission to update this record ORA-06512: at "<SCHEMA>.HIG", line 1464 ORA-06512: at line 2  This should be trapped inside client operations. |  |
| 0112081,  0112070 | When creating asset views with the INVVIEWSLK option set, the system creates a view which delivers route-based measures on each asset member location. The end SLK values were corrupted due to a faulty DECODE statement which missed commas. These have been corrected. | 8001401894 |
| 0112112,  0111802 | Changes have been made to the registration process of the SDE metadata to make an attempt to re-use existing SRIDs. Problems in the case of an exception handler meant that if more than one appropriate SRID was available, too-many-rows was raised and was being handled in the same way as no data found – leading to extraneous SRIDs. Also, where the Oracle SDO SRID was null and base SDE metadata existed with a projection (in the SRTEXT of the ESRI SRID) code existed with cursors which joined on the SDO SRID without an NVL – leading to no-data-found and further registrations. | 8001292184 |
| 0112114,  0111878 | Using this fix allows the loading of hierarchies of assets to complete when using the CSV loader. Flags that were currently set only during the batch loading are now configured inside the nm3mapcapture\_ins\_inv.ins\_inv procedure so that subordinate metadata is properly handled. | 8001314953 |
| 0112115,  0110909 | The asset location relative to a circular route is faulty when is located across the initial and end nodes of the route but does not completely cover the route. The resultant asset location is identical to the result when the user has created an exclusive asset along the whole circular route – from start to end, then replaced it with a new asset internally within the measures of the route. The two fragments at each end of the circular route were failing to be displayed as two fragments. This was due to a faulty order-by clause which failed to pin down the order – hence the problem did not always arise and is very difficult to replicate. | 8001049753 |
| 0112119,  0111482 | Any Non-primary AD data on a group would cause the reclassify to fail due to date logic checks. The ad link record was not being set with an appropriate start date causing an error RA-20000: NET-0011: Start date is out of range of parent.: – NM\_NW\_AD\_LINK\_ALL.NAD\_NE\_ID 01-JAN-2011 > | 8001187136 |
| 0112120,  0111286 | Spatial triggers generated on foreign table spatial representations were coded with a SRID derived from the original layer. If a system user refreshed the SRID, the triggers would need to be regenerated. The triggers are now able to take a change to a tables srid value into account without regeneration of the triggers. Existing triggers will need to be refreshed for this to take effect. Care should be exercised in this respect in case any customer specific logic has been added to the triggers. |  |
| 0112123 | Surveyed Length is now calculated as the Max SLK. | 8001423232 |
| 0112168,  0112170 | GRI modules fail with an error whilst attempting to populate report-tags. an error is raised ORA-20001: Unknown Error Message: hways-150 ORA-06512: at "ATLAS.HIGGRI", line 436. due to a failure in what should be a context-driven cursor. This is now repaired. |  |
| 0112190,  0112194 | LRM tool on the MapViewer applet in locator uses server code which incorrectly translates measures to the route units despite the snapping being made directly to a route shape. Unit translation has been removed from the server code but there remains a 2DP rounding from within the applet. This will not be appropriate for some customer data. See also known problems below. | 8001446309 |
| 0112108 | Failure of column validation in custom layers when selecting a column name. |  |
| 0112314, 0112317 | The route aggregation of LRS data has been modified to correct a problem when multiple routes are being aggregated for the same located object |  |
|  |  |  |

## Spatial manager

### Preferences Changes including Admin-unit option.

The Layout of the Preferences form has changed to allow easier manipulation of user options. The applied changes offer a more extensible way of presenting the user options without need to redesign the form every time a new option is introduced.

The new preferences form layout is shown in the following picture.

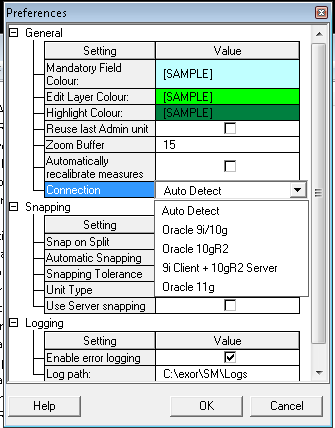


Options are displayed in a hierarchical view with main categories displayed as top elements (General, Snapping, Logging) and Settings displayed in a two columns grid that show a short description and the value of the setting.

Editing of each option is performed with an editor corresponding to the type of the value:

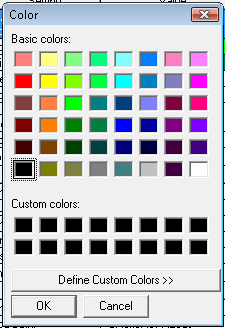
Boolean values are displayed with a check box.

List of Values are displayed with a Drop down List.

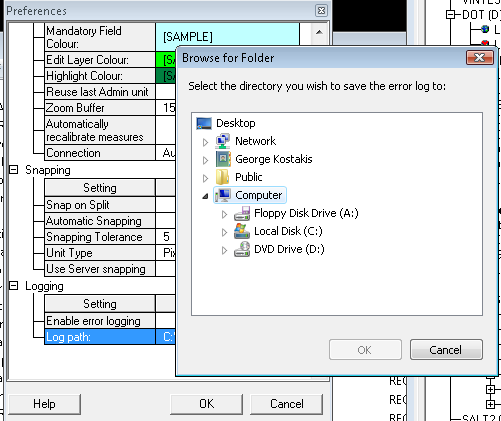


Numeric values are displayed in a standard way and can be edited using a spin control

Colour and path values set the color of the editor and provide a pop up dialog to enter the value.



Path values are displayed as standard text values and provide a popu up dialog to change their value.



### Changes since 4.6

There follows a table of changes that have been made to the Spatial Manager client since the original 4.6 version was built.

| Internal Task/Defect ID | Issue | TSG Service Requests and/or support log numbers |
| --- | --- | --- |
|  | Assign to existing allowing the user to enter the NE\_Unique value, bypassing the default functionality.  The user can now double click on the entry box and enter the ne\_unique value. | 8001355152 |
|  | Merge dialog provides a textual information on the merging operation to be performed and ensures that the order of the elements is properly arranged depending on the merge node. | 8001101079 |
|  | Edit Asset Location | 8001300564 |
|  | Copy/Trace issues | 8001433229 |
| 0111395  0111131  0110800 | Table Of Contents out of Sync  Corruption of ToC | 8001280782  8001229622  8001155729  8001022656  8001019602 |
| 0111196 | Merge issues | 8001101079 |
| 0112124 | Shape Properties dialog issue | 8001423263 |
| 0110186  0110915  0110847  0110759  0111264  0111148  0111143 | Security Issues | 8001092739  8001406658 |
| 0112311 | ASD numeric formatting issue | 8001412085 |
| D-122193 | By unticking the nodes box, the system will just perform a simple reshape with no history (and the "ESU ID" on the underlying element will be untouched). | 8001561593 |
| D-122054 | As part of the delivery of Spatial Manager for the Highways Agency system it is intended to produce a global map document (mxd) file, which would enable a common environment especially layers/symbols for each Spatial Manager user. The database (sde) connection of the user to first create the map document is saved as part of the file and therefore has to be changed for each user that is going to be using SM. When the username for the SDE connection in an mxd file is changed and saved within Spatial Manager to create a new mxd file, the link from the Layer in ArcMap to the Exor Groups layer is broken, this renders the layers saved in the file useless in terms of Spatial Manager. | 8001601780 |
| D-120152 | In version 4.0.x.x Build (6154) the selection list for adding members to the GOG was based on the groups that had been selected using the exor feature selection tool. In version 4.5.0.0 (3.38) the list is a check list, which can be very long.  The check list is not sorted by ne\_unique, making it almost impossible to locate the object to be added to the group. | 8001578138 |
| TK-266852 | Admin unit user option.  In systems where users can use multiple admin units when creating new datums the use of MRU Admin unit functionality can cause confusion and unnecessary checks. This fix introduced a new user option, “Re use last admin unit” that enables/disables this functionality. |  |
| D-119372  D-124921 | Various Issues raised by Kentucky relating to use of routes  Flash a route that has a distance break  When you expand a route in the tree, tab dividers do not automatically adjust to the length of text/characters in that field, must be manually adjusted  Once you manually adjust the tabs, it re-orders the route based on the field you clicked on to adjust.  Empty Route Members Grid  Maintaining Node's state when performing an operation  Additional fixes  Change Preferences form User Interface  Add “Re use Admin Unit” user option. | 8001572012 |
| D-120149 | Attributes form on base datum opens with the LOV on the first Flexible Attribute displayed. Remove this behavior. | 8001577072 |
| D-120832 | Parsing a Query that contains parameters the values of which must be populated from values of other attributes. | 800158947 |
| D-121404 | Manual update of auto-included members |  |
| D-120150 | Preferred LRM menu option is permanently de-activated | 8001571136 |
| D-121405 | Role based security on groups of section, groups of groups functionality |  |
| D-120151 | Changing the start date when adding members to group of groups throws an error | 8001552647 |
|  |  |  |

## MapViewer

| Internal Task/Defect ID | Issue | TSG Service Requests and/or support log numbers | |
| --- | --- | --- | --- |
| D-120741 | The following describes the changes to the MapViewer applet to prevent the accumulation of warnings issued to the Java log file. | 8001555173 | |
| The existing MapLocator Source Code uses standard MapViewer API for all types of PL-SQL calls e.g. SELECT Statements, Procedures, Functions etc. using a doQuery method. Which in turn converts it into an XML request enclosed within an info\_request tag as shown in below figure –    But as per Oracle documentation for MapViewer, the API supports only to SELECT Statements. Hence, it gives an error ORA-00900 – Invalid SQL Statement, when NON-SELECT PL-SQL Statements are passed to it.    More details at - <http://docs.oracle.com/cd/E28280_01/web.1111/e10145/vis_xmlapi.htm>  Hence, instead of executing NON-SELECT PL-SQL Statements through standard MapViewer API, a new Java Class is introduced in the Source Code named ExecPLSQL.java, which uses standard Java Database Connectivity (JDBC) API to call all types of PL-SQL statements.  In the Source Code, calls to SELECT Statement are still using MapViewer API and other calls are through the new Java Class.  To incorporate this change, we need one additional jar to be deployed on Forms Server – ojdbc6.jar. | | |
|  |  |  | |

# Known Problems at 4.6.0.0

## MapViewer

As mentioned in the previous sections, the version of MapViewer applet in the spatially enabled forms has yet to be determined. Some failures exist across all platforms though and those known to exist at the time of writing have been documented below.

|  |  |  |
| --- | --- | --- |
| Internal Task ID | Issue | Support Log(s) |
| 0112190 | The LRM tool used in MapViewer uses a spatial server function which converts units incorrectly and the applet performs a rounding to 2-DP. This can result in zero values for measures if route systems are in a different unit system to the datums. | 8001446309 |

## Asset Hierarchies

Several fixes have been put in place to improve the administration of hierarchical assets. However, some problems remain especially in the inheritance of subordinate asset locations when the hierarchy is defined with an AT relation and the subordinate asset is flagged as exclusive. The server code will raise an error during the addition of the second child asset in the hierarchy as the exclusivity rules are breached. This may not be an error since the child asset may only be exclusive within a specific attribute band or within a specific XSP. Ideally, the software should allow users to manipulate the hierarchy and have the exclusivity rules govern the location and date-ranges of child assets particularly those with an AT relation.

## Merge Query

The release notes of 4.4.0.0 contain a list of several known issues in relation to merge query, engineering dynamic segmentation and derived assets. Other than the list of fixes inside the previous chapter, these issues remain in release 4.5.0.0, 4.6.0.0 and 4.7

## Spatial Manager

The targeted issues for the release of Spatial Manager to be made available with the 4.6.0.0 release were not available at the time of writing this release note. Further information will be made available through the approved method.

## Other Issues

Other issues are being dealt with on the basis of a priority list which is allocated by support and product management. This list is in a state of flux. Also, many fixes are being checked as part of the QA process and as such cannot be confirmed as fixed at the time of writing. This makes any list of known issues slightly unreliable. An attempt has been made to list the issues that have arisen during the system test process.

|  |  |  |
| --- | --- | --- |
| Internal Task ID | Issue | Support Log(s) |
| 0111551 | NM0410 – Cannot create Additional Data Asset types. A constraint violation arises and is not handled correctly. The failure is due to an attempt to create an associated asset type (linked directly to the network) as a point item type. | N/A |
| 0111690 | Issue adding Roles to a user account. An error is raised when the users form is used to enter a role if the HIG\_USER role is not present in the multi-row block. Workaround by always entering new roles after performing an open-query on the roles block. Ensure HIG\_USER is listed in the block, creating it if necessary. | N/A |
| 0111835 | Errors may arise in subordinate users entering data in the holidays form on systems which also have TMA installed. Ensure TMA is at the 4.6 release level. TMA specific triggers on the holidays table can fail if not at the appropriate level. | N/A |
| 0112226  0112233 | The system allows users to reset a password containing the @ character. This throws an error when attempting to log into the system. Most illegal characters are prevented from being used during the setting of the password but some minor discrepancies arise between the two forms that allow the setting of the password. For example the error message “The character '£' cannot be used in a password.” will be thrown from when testing for special characters in form HIG1833. The form HIG1832 merely raises the fact that the password is invalid with no other directives. | N/A |
| 0112244 | There is an inconsistency in the application of admin unit privileges on network edits between split and un-split when a datum is auto-included into a parent group. This manifests itself by a subordinate user being able to operate on a network element such as a split but is unable to perform the undo operation unless they have read-only access to the admin unit of the parent element. | N/A |
| 0112118 | Associated data on a network element can cause an error such as that below when multiple AD types are configured.  ORA-01422: exact fetch returns more than requested number of rows  ORA-06512: at "DORSET.NM3NWAD", line 2514  ORA-06512: at "DORSET.NM3NWAD", line 323 | N/A |
| 0112245 | Some upgrades between 4.2 and this release may have left the account with missing error codes. These are error codes from around 464 to 470 under application ‘NET’. A script to insert any missing error codes will be prepared. | N/A |
| 0112246 | Users executing forms in “READ-ONLY” mode may experience multiple occurrences of a warning message "form open in read only mode" | N/A |
| D-119454 | Rescale Fails with loop at route end. A difference in behavior across various patch levels could have been observed due to an order-by clause failing to be specific in cases where a route looped back to a particular internal node. The order-by clause has now been made more specific to return a more definite outcome. | 8001562099 |