

# MooD 16.085 Release Notes

Here's a summary of updates to this document per version:

16.057	<p>Added support for SQL Server 2019</p> <p>Added additional notes for SQL Server setup.</p> <p>Added extra information about third party licences.</p> <p>Added known issue regarding Windows Updates causing issues with the formatted text editor and graphs in Business Architect.</p> <p>Added instructions for changing the default Excel range selection mechanism.</p>
16.076	<p>Updated the instructions for working around Request Validation exceptions raised by ASP.NET to recommend the new feature for turning off request validation per panel, control, symbol/node or field.</p> <p>Updated instructions for issues when using the placeholder localhost in SQL Connections.</p>
16.082.01/.02	<p>Added information about printing from Active Enterprise with conditional formatting applied to matrices.</p> <p>Added information about fixing Custom Visualisations which fail to render due to Content Security Policies.</p> <p>Added a list of issues fixed since the last major release.</p> <p>Added breaking changes:</p> <ul style="list-style-type: none"> <li>• executable files have been renamed.</li> <li>• encryption added to the MoodSynchronizeRepository command line.</li> </ul>
16.085	<p>Microsoft Office no longer needs to be installed for most of MooD to function – some paragraphs have been reworded.</p> <p>Now MooD supports the ODBC Driver 17 for SQL Server – more information on <a href="#">how to configure the preferred ODBC Driver</a> has been added.</p> <p>Added known Web issue regarding an error: registry key access <a href="#">marked for deletion</a>.</p> <p>Added a list of additional issues fixed since the last major release.</p> <p>A potential breaking change to security has been introduced. MooD is more secure <i>out of the box</i> by providing a default CSP. (See the What's New article <a href="#">here</a>). See additional notes in the <a href="#">Breaking Changes</a> section.</p> <p>Updated the client and server requirements.</p>

16.085.01	Added a list of issues fixed for <a href="#">16.085.01</a> Added a <a href="#">section</a> about using a shared repositories manager configuration file.
16.085.02	Added a list of issues fixed for <a href="#">16.085.02</a> Added notes on the <a href="#">shared repositories manager configuration file</a> – it had OS compatibility issues.

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Issues Fixed between 16.082.02 and 16.085

Issues Fixed between 16.076.00 and 16.082.02

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## Installing Mood 16

MooD is compatible with Microsoft® Windows® installations only. Additionally, you will need to connect to a SQL Server database to read or create MooD Repositories. Installation instructions for SQL Server are not included in this document. Please see [System Requirements](#) for information on platform and database requirements.

We recommend all Windows Updates are applied before installing MooD. Failure to do so could cause the installation to fail, or take hours to process. Please see the minimum client specifications in the link above for more information.

MooD Business Architect, MooD Business Integration Engine and MooD Active Publisher must be installed by opening **Setup.exe**, and not Data.msi. If you do so, your installation may be corrupted. If you need to use Business Architect only, then you do not need to install the other components. However, MooD Business Integration Engine and MooD Active Publisher both require MooD Business Architect to be installed first.

If you are installing all three, we recommend installing Business Architect first, followed by Business Integration Engine and finally Active Publisher. We also recommend uninstalling in the reverse order. Please refer to the **Active Enterprise Setup Guide**, available from MooD International Support for more instructions.

To install MooD Business Architect, locate **Setup.exe** on the MooD distribution media and **open it**.

- The installation will guide you through the process of installing prerequisites and will let you choose the installation location if you do not want to accept the default of **C:\Program Files (x86)\MooD\16\**.

Once installed, a **MooD 16** icon will appear on your desktop. Double-click this icon to open Repository Manager. If you need to install a licence, run Repository Manager **as an Administrator** to enable MooD for all logged in users. This is particularly important if you also intend to install MooD Active Publisher and MooD Business Integration Engine, which use different service accounts.

To find out more about Repository Manager, please consult the **Repository Manager User Guide**, available from the Windows **Start** menu and from Repository Manager's **File** tab. It is an Adobe Acrobat (PDF) document. You will need a PDF viewer installed, associated as the default application to process .PDF files.

## Known Installation Issues

### **MooD takes a long time to install, or complains of a failure to register a component.**

If recent Windows Updates have not been applied, the Microsoft Visual C++ 2015-2019 Redistributable prerequisite may experience the following issues:

- An apparently quick install, followed by the message “**failure to register moodmodelpublisher.dll.**”
  - To resolve this error, cancel the install
  - go to the *Programs and Features* Windows applet
  - In the installed programs list, click **Repair** on the Redistributable
  - try to install MooD again.
- A very slow install, possibly hours, we believe that Microsoft's Redistributable is comparing your Windows Updates and downloading required Windows Updates. We recommend waiting until it has completed. To avoid this situation, install MooD whilst disconnected from the network, or install all Windows Updates before attempting to install MooD.
- Prompts to install the Visual C++ Runtime when it's already installed (this is a known Microsoft issue). Accept the EULA, and continue - the install will run through very quickly.

- Due to the above issue, when uninstalling 16.045 and re-installing 16.032, you may be presented with an error that a newer version of Visual C++ is already installed - in which case uninstall the 2017 version and try again.

## Some files are left behind when I uninstall MooD

Uninstalling Business Architect will purposely leave some files on your system:

- RepositoriesManager.sdf - the connection details for your repositories.
- custom.cdf - the default custom dictionary file.

Uninstallation will remove all the other files.

## MooD Installer launched from the .msi file

If you accidentally click on the MSI file instead of **Setup.exe** you may see ***Licence client failed to initialize*** or other errors when MooD Repository Manager is launched in **Run as administrator** mode. If you experience these symptoms, uninstall MooD, and then install MooD again using **Setup.exe**.

## Uninstalling MooD, or other products may stop other MooD Technology Software from working

MooD Active Publisher and MooD Business Integration Engine depend on a valid installation of MooD Business Architect being present on the machine. Uninstalling MooD Business Architect will prevent these products from working. In addition, MooD depends on many Microsoft components which appear in the *Programs and Features* Windows applet. If these are removed, MooD may stop working, or may prevent MooD from uninstalling. If this occurs, you may have to reinstall these programs before being able to use or uninstall MooD. You can find these components within the installation media sub folders.

# History of Breaking Changes

## Breaking changes between Mood 15 and Mood 16

Since build 100 of Mood 15, many concepts have been removed from the product, and we have discontinued support for some third-party technologies. This is an ongoing effort to streamline the product and user experience. This programme continued into Mood 16 with full and widespread consultation with our solution builders and partners. Features removed in 16.x will not be retrospectively removed in Mood 15.x. Users can continue to use those features in Mood 15, but should migrate to alternatives before upgrading to Mood 16.

Mood Repository Manager detects when a repository uses these concepts, and it provides a warning when an upgrade is attempted. Note: **The upgrade action is irreversible. Data may be lost. Always ensure you have a verified and credible backup of your repository before upgrading to Mood 16.**

If the data is not upgraded, then it is deleted. If you still require this data in your upgraded repository, our support department may be able to help you export it from your backup and re-import the required data into replacement structures which *are* supported. Please see the table in the next section for the full list of changes between Mood Versions.

Mood 16 replaced many Mood 15 Web Panels with modern, interactive versions. This allows for better design aesthetics and the use of Material Design principles. The balance had to be struck between upgrading solutions like-for-like whilst not polluting the vision and power the new panels can bring. As such, panels may look different from their Mood 15 equivalents.

When panels on a model upgrade from Mood 15, any appearance settings will be upgraded to best fit the new look and feel. For example, where the panel supports them, settings like *font style*, *line colour* will be upgraded. Where there are new options these will either try and use an appropriate setting from the original panel, or be set to the default value for the new panel. Options that are no longer relevant to the panel will be discarded.

The new design principles encourage more use of space, and solution designers should endeavour not to cram as much as possible on a single page. However, the size and fit of upgraded panels on model will be kept as close as possible to the original to limit the amount of rework required. For example, a *Radio Buttons* panel showing five options displayed in an appropriately sized panel should still fit in the same sized panel in a repository upgraded from Mood 15. However, if the panel had used column grouping, some text may appear clipped with ellipsis (...) because the new control does not support dynamic column widths. You may also notice that a **new** *Radio Buttons* panel added to model will, by default, be configured with a more generous amount of vacant space, and requires more space to fit those five options (reflecting the new desired look & feel); the panel can still be configured to use less space to attempt to match the style of upgraded panels.

New panels added to the model may have different default settings than in Mood 15, but can be sized and styled to fit with upgraded panels. For example, in Mood 15 a Button panel added to the model had a grey gradient fill, in Mood 16 they will be plain white.

## Breaking changes between Mood builds

Feature Removed / unsupported	Build Removed	Impact/Assessment.	Warning given?	Data upgraded?
Upgrade of 2008se Repositories	15.100	Use build 99 or lower to upgrade a 2008se repository.	No	No
Simul8	15.100	Support for integration with the business simulation tool <i>Simul8</i> has been removed.	No	No
Table fields	15.101	The Table field type has been deleted, and as such all column definitions and data is also deleted. Table fields can be replicated by using multiple row relationship fields.	Yes	No
Internet Explorer 7.x	15.103	Viewing our web pages with IE7.x is no longer supported.	-	-
Microsoft SQL Server 2005.x	15.103	Storing a Mood Repository on this database version is no longer supported. Install a later version of SQL Server.	No	-
The pre-canned <i>comment field</i> within relationship fields.	15.105	The field is deleted, a normal string or text field is better suited and better supported.	Yes	No
Node sequences on models	15.105	Each node on a model could be assigned a particular sequence. Users could use this to replay the order in which events happen in a workflow. This poorly supported feature was removed.	No	No
Oracle 11gr2	15.105	Storing a Mood Repository within an Oracle database is no longer supported. Migrate to a supported version of SQL Server (either use Mood Integrator or database migration tools). Repository manager will not connect or list Oracle servers. Mood still supports Oracle as a 3 <sup>rd</sup> party data source.	-	-
Roles	15.106	The Role concept (typically used as the <i>Assigned Role</i> of a process) has been deleted from the product. A normal relationship to a user-defined type could be used instead.	Yes	No
Scenarios	15.106	The Scenario concept and Scenario Context Models have been removed from the product. A normal element type and model can be used instead, but there is no automatic conversion process.	Yes	No
Aztec Sunchart Visualization	15.107	The visualization will no longer work.	No	-
Delegated requirement links	15.107	A niche, and confusing sub-concept of requirement links was deleted.	Yes	No
Office 2007	16.001	Mood is no longer tested with Office 2007 products.		
Windows Vista (any)	16.001	Mood products are no longer supported or tested on any version of Windows Vista.		

<b>Windows XP (any)</b>	16.001	MooD products are no longer supported or tested on any version of Windows XP.		
<b>Internet Explorer 8.x, 9.x, 10.x</b>	16.001	Viewing our web pages with these browsers is no longer supported, although some sites may appear to work. We also do not support users with supported browsers <i>emulating</i> an unsupported browser version.	-	-
<b>Web Publisher (not Active Publisher)</b>	16.002	The ability to produce a static set of web pages which users shared on CD, USB or archived has been removed from the product. Users who value this feature need to stay on MooD 15 until further notice, or migrate to Active Publisher. Publishing Scheme configurations will be deleted.	-	No
<b>Field Activation</b>	16.005	Field activation – where any field of any element could perform a calculation or retrieve a value from an Excel file or other source was the root cause of multiple performance issues, limiting the success and longevity of solutions. The vast majority of activations discovered could be replaced by new functionality introduced into <i>Smart Columns</i> or by scheduled imports. The conversion needs to be performed by the user before upgrade.	Yes	Latest value kept.
<b>Memo fields (Rich Text)</b>	16.005	The field type <i>Memo</i> in MooD has been removed as RTF is not a Web friendly format, and there were significant performance issues at scale converting RTF to HTML and searching within RTF. During the upgrade process, Memo fields are upgraded into HTML fields. The quality of upgrade depends on the complexity of content. We recommend reviewing the upgraded content to determine if more work is required before making the solution live to your users. Typically, embedded images and documents are lost, and complex formatting may not appear as intended.	Yes	Attempted
<b>The <i>Keep History</i> feature on field data.</b>	16.006	The ability to track historical changes of simple field types has been removed. It was poorly supported and little used.	Yes	No
<b>Microsoft Access Repository upgrades</b>	16.007	Upgrades of MooD repositories stored in Microsoft Access files are no longer supported.	-	-
<b>MooD 2010 Repository Manager settings file upgrade</b>	16.007	The feature where repositories and servers from a MooD 2010 installation were automatically recognized when launching MooD 16 for the first time, has been removed. Servers and repositories will have to be reconfigured, or use MooD 15 as a pathway to retain the information.	No	No
<b>Many action panels can no longer use Symbol Styles, but can use Style Sheets.</b>	16.027	A new feature to handle styling of Web Action Panels, called Style Sheets has been introduced.	Yes	Yes

		<p>If users have applied normal Mood Styles to these action panels, those panels will be disassociated from those styles, and the panels will adopt their last known appearance when the model was saved.</p> <p>If you have modified the Mood Style after a diagram has been saved, Repository Manager will list the models you should revisit and re-save <b>before</b> you continue with the upgrade.</p>		
<b>Bing maps have been removed</b>	16.045	Bing maps in Mood have been non-functional for many years, and with the popularity of alternatives that we <i>do</i> support, we have decided to remove the component instead of attempting to resurrect it. If this becomes a major issue for you or your customers please contact our support department.		
<b>Formatted Text Editor has been upgraded</b>	16.048	The third-party component which powers the Formatted Text Editor has been upgraded from TinyMCE v3 to TinyMCE v4. Any client-side customisations to this component may no longer work and will likely need updating to use the latest DOM structure and event model. See <a href="https://www.tiny.cloud/docs-4x/">https://www.tiny.cloud/docs-4x/</a> for further information.	No	No
<b>Executable files renamed</b>	16.082	<p>Many Mood executable files have been renamed. This helps both support personnel and customers identify which processes and services are critical to their Mood installation and makes them easy to list in alphabetical order within Task Manager.</p> <p>This may break any existing script or SSIS execution calls via MoodSynchronizeRepository</p> <p>Changes are:</p> <p>MoodInt.exe is now MoodIntegrator.exe</p> <p>CefSharp.BrowserSubprocess.exe is now Mood.CEF.SubProcess.exe</p> <p>Salamander.HTMLRendering.exe is now MoodHTMLRendering.exe</p> <p>ChkRep.exe is now MoodValidator.exe</p> <p>In the services control panel Business Integration Engine 16 is now</p>	No	N/A

		<p>MooD Business Integration Engine 16</p> <p>The service short name BIE_16 is now MoodBIE_16</p> <p>BusinessIntegrationEngine.exe is now MoodBusinessIntegrationEngine.exe</p> <p>BIEManager.exe is now MoodBIEManager.exe</p> <p>Salamander.RepositoriesManager.Server.exe is now MoodRepositoryManagerService.exe</p> <p>synchronize-repository.exe is now MoodSynchronizeRepository.exe</p> <p>RepositoryManager.exe is now MoodRepositoryManager.exe</p> <p>RepositoryManager.com.exe is now MoodRepositoryManager.com.exe</p> <p>BulkDefinitionFieldCreator.exe is now MoodBulkDefinitionFieldCreator.exe</p>		
<b>MoodSynchronizeRepository command line</b>	16.082	<p>The command line of this tool previously allowed plain text passwords to be provided. As part of our security uplift, this is no longer allowed. Passwords must be encrypted when used on the command line to avoid exposing them. For more information use the command line</p> <p style="padding-left: 40px;">MoodSynchronizeRepository.exe /help</p> <p>Existing pipelines which call this executable will need to be changed.</p>	No	N/A

<p><b>Centralized management of Content Security Policies</b></p>	<p>16.085</p>	<p>In this version of Mood we allowed users to configure content security policies for Web Preview and Active Enterprise from within Business Architect, and those policies are now stored in the repository – meaning less management of Web.Config files during an upgrade or re-hosting. See the What's New article <a href="#">here</a>.</p> <p>The change to the configuration of the Content-Security-Policy (CSP) header as detailed in the 'What's New' section may constitute a breaking change under the following circumstances:</p> <ul style="list-style-type: none"> <li>• A CSP header was never configured in the Mood Active Enterprise (MAE) web.config file - or the default value was removed.</li> <li>• It was found necessary to amend the CSP in the MAE web.config file to allow specific solution functionality e.g. a Custom Visual, an XHTML panel or a specific Tile Server for a map.</li> </ul> <p>Where a CSP is too strict for the required functionality, a web user who is accessing MAE or Web Preview via a browser, will experience broken functionality e.g. missing images or data, incorrect fonts.</p> <p>To diagnose this, the user can press F12 to open the browser Developer Tools. If an overly restrictive CSP is the culprit the Developer Tools console will include red error messages giving details on which resources are being blocked by which CSP directives.</p> <p>If a CSP header is specified in the MAE web.config file, it will be used for MAE pages, in preference to the value configured in the Active Publishing settings. This is to ensure continuity for the MAE site.</p> <p>Immediately after upgrade it is possible that users of Web Preview will encounter problems which are not encountered on MAE. To rectify this, please start by copying the CSP to the Active Publishing Settings as described below.</p>	<p>No</p>	<p>N/A</p>
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		<p>It is strongly recommended, that as an upgrade step, any customised CSP which is in the MAE web.config file is copied to the Active Publishing Settings (please refer to the 'What's New guide') and the addition of the CSP header is removed from the MAE web.config file.</p> <p>If problems persist, the CSP will need modification to permit the restricted functionality. Resources to assist with this are detailed in the 'What's New' guide, or Mood Support can be contacted.</p> <p>If the CSP is causing problems for your users which need urgent resolution, the CSP (both in MAE web.config and in Active Publishing Settings) can be temporarily set to an extremely unrestrictive policy. e.g.</p> <pre>default-src * data: blob: 'unsafe-inline' 'unsafe-eval'; form-action *; frame-ancestors *;</pre> <p>Please <b>DO NOT</b> continue to use the unrestrictive CSP in the long term, as it effectively removes a layer of security against hacking. It is far better to work through and address the problems being caused by the default CSP.</p>		
<b>Web navigation and opening in a new window or tab.</b>	16.085	<p>Confusing options available to users of Navigation actions in a Button Action have been simplified (as mentioned in <a href="#">this article</a>).</p> <p>Navigations configured to open in a new window, or a new tab, will open a new window or new tab, and not re-use a previously 'new' tab or window.</p>	No	Yes

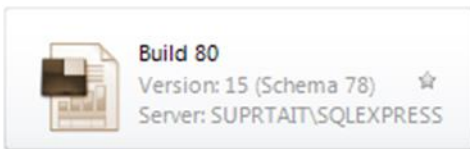
# Upgrading Mood Repositories

## Schemas & Upgrades

The **schema** is fundamental to each repository and its upgrade process. A schema defines the structure of the database within which Mood Repository data is stored. When this structure changes, through functional evolution, your repository data and structure may need to be transformed. Mood Repository Manager can manage this process for you.

The Mood schema will change much less frequently than the Mood build number. Builds introduce features and bug fixes on top of a schema. Hence, a schema can support several future builds. Once you have upgraded to a schema, you cannot revert to an older schema, hence why taking a backup is important.

In Repository Manager, repositories that do not match the schema of your current build appear in shades of brown (sepia). For example:



Such repositories cannot be opened in your version of Mood unless upgraded to the same schema.

**IMPORTANT:** Before upgrading any repository, first ensure the repository is not being used by other users and then **take a backup**. If failures occur during the upgrade process, you **must not** attempt to use the resulting repository – you should revert to the backup and try again, or contact the Support team.

To upgrade to a newer schema, in Repository Manager, select the repository and then select **Upgrade** (it is one of the few commands available to you). However, note the following:

**Once a repository has been upgraded to a new schema, you cannot open it in a version of Mood with an earlier schema.**

## Upgrades via the Command line interface

Repository Manager has a command-line interface which enables you to list, test upgrade, upgrade and mandate *multiple* repositories at a time. You can also schedule this via Task Scheduler. For more information at the command prompt where Mood is installed type

```
MoodRepositoryManager /?
```

## Restoring a repository with Change Data Capture Enabled

Restoring a backup of a repository from Mood 16 Build 32 or below that uses CDC will cause an exception to occur that the user *does not have elevated credentials to rebuild indexes*.

To solve this issue, restore the backup using SQL Management Studio using T-SQL with the KEEP\_CDC parameter and then connect the Repository via Repository Manager to continue the upgrade process. Newer Mood repositories can be restored directly through Repository Manager, and CDC data will be kept automatically.

## Upgrading Mood 2010 Repositories

Mood 16 can upgrade Mood 2010 repositories stored in SQL Server databases. However, Mood no longer supports upgrading repositories stored in Microsoft Access®, please use Mood 15 to upgrade the Access database into a SQL Server database and continue from there.

Blueprint Repositories may be provided by the Mood Install. If you need to use these repositories, please upgrade them yourself prior to incorporation.

## Upgrading Mood 2008se repositories

Use a build of Mood 15 (prior to build 100) to upgrade the repository.

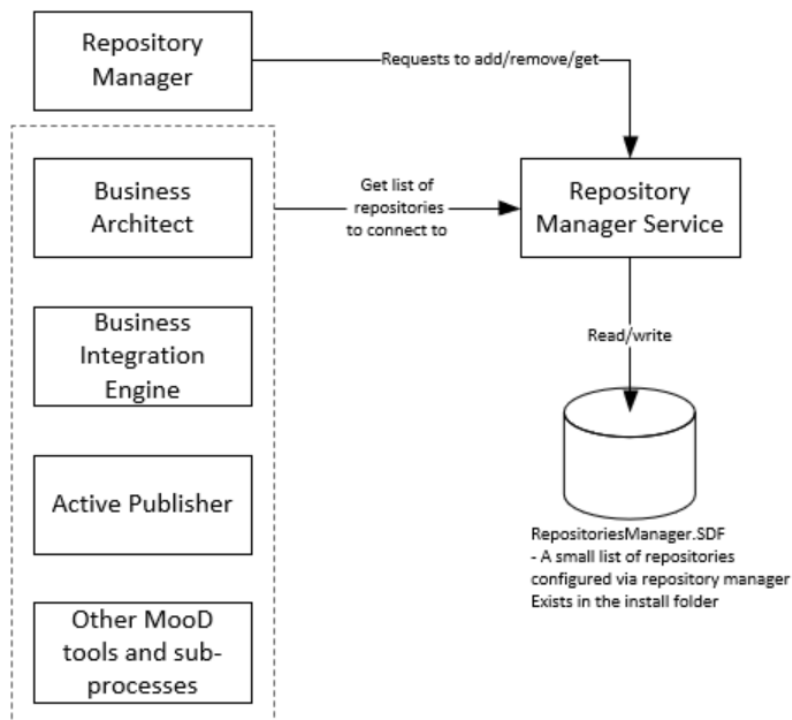
# Controlling repository connections in shared environments

## Background

After wider environmental testing, a major flaw was discovered with this mechanism: All operating systems involved must be the same – we found that the SQLCE drivers do not behave consistently across operating systems, and even when clients were set to read-only, some would attempt to reformat/reindex the SDF file to match the format required by the driver on that OS. Hence now, this mechanism is probably unsuitable for most situations and will be superseded by another approach in future. This topic has been retained for now, but use at your own risk, and you should test this feature fully in the real deployment environment before declaring success!

Build 16.085.01 introduced the ability to share a single view of available repositories in Repository Manager across multiple installs, within a strict set of pre-conditions, explained later.

First, let's look at how each install on a machine (physical or virtual) of Mood works with repository manager.



In a typical *Citrix* or *Parallels*-style environment, all users typically login to the same server machine, so will share visibility of the repository list as there is one Repository Manager Service and one SDF file. However, in a situation where all computers on the network have their own installation, then this pattern is repeated multiple times, with multiple SDF files (one per machine). This can mean disparity between what repositories are visible on each machine, and easy control by administrators to remove or add repositories across the installations.

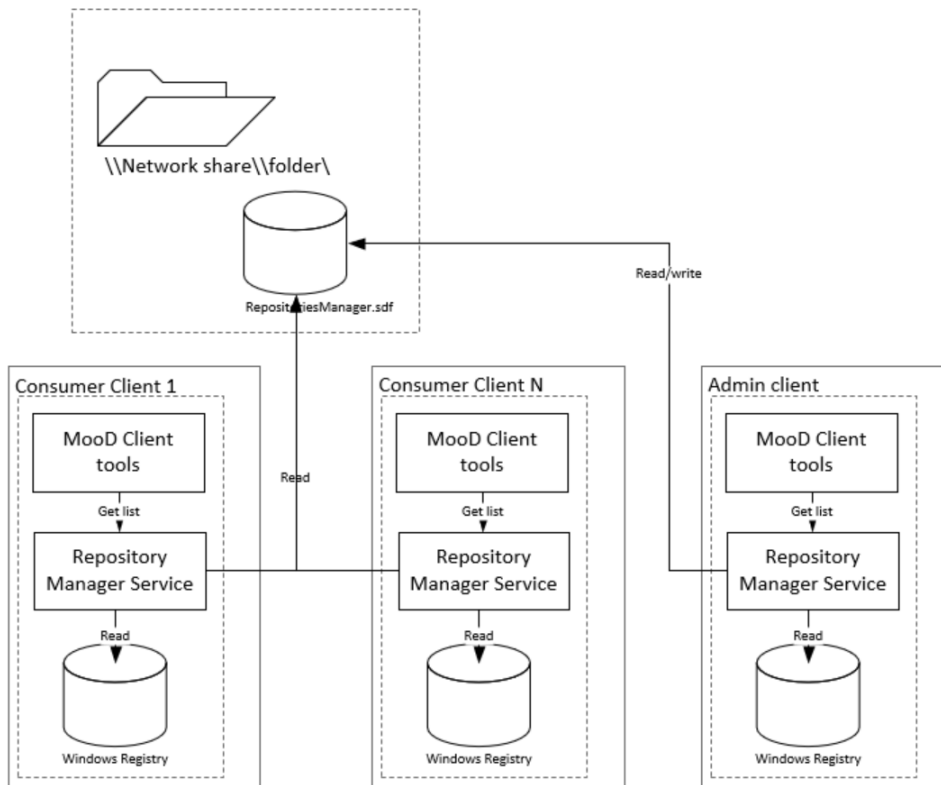
In all these environments, its typically undesirable for users to create their own repositories, without at least following a process, as each requires infrastructure consideration.

The obvious way of ensuring each client machine has the same SDF file, would be via some automated management script to stop the Repository Manager Service, replace the SDF file, and restart it; executed when each user logs in. This may be sufficient for some organizations who have responsive IT departments but can be burdensome for some organizations who do not.

Thus, we introduced a mechanism to address the use-case where multiple installs of Business Architect exist on a local intranet and use a single shared SDF file on the network. This mechanism may be replaced by other (better) methods in future, such as a centralized TCP/IP service or even centralized SQL Server Database.

## New Mechanism

Build 16.085.01+ now allows the SDF file to be moved to a shared network location, by configuring the start-up arguments of the *MooD Repository Manager Service 16*, in the Windows Registry of **each** machine involved. As the SDF database isn't designed to be a fully-fledged database like SQL Server, this setup requires all consumers as to be *read only* and one admin client is able to *read and write*.



Note: The local SDF file on each machine is ignored.

The following prerequisites are required for this method to work:

- An intranet/LAN environment in a domain.
- Domain joined clients, each with individual installations of Business Architect.
- These machines must be permanently connected to the network for MooD to work.
- All clients can access a shared network folder.
- One client is nominated as the only client that should update the SDF database.
- Consumer clients are not expected to add or remove repositories or servers.
- You have permissions to alter the windows registry on all machines involved and are competent to edit it.
- You expect all users to see all repositories in Repository Manager (even if the SQL Server denies access).
- You accept that if the file server hosting the shared network folder is unavailable that MooD clients may not be able to connect to repositories.
- You accept that some features which require write access to the SDF file will now no longer function as expected on the consumer clients, such as adding or removing tags, setting or un-setting favourites, adding or removing repositories or servers.

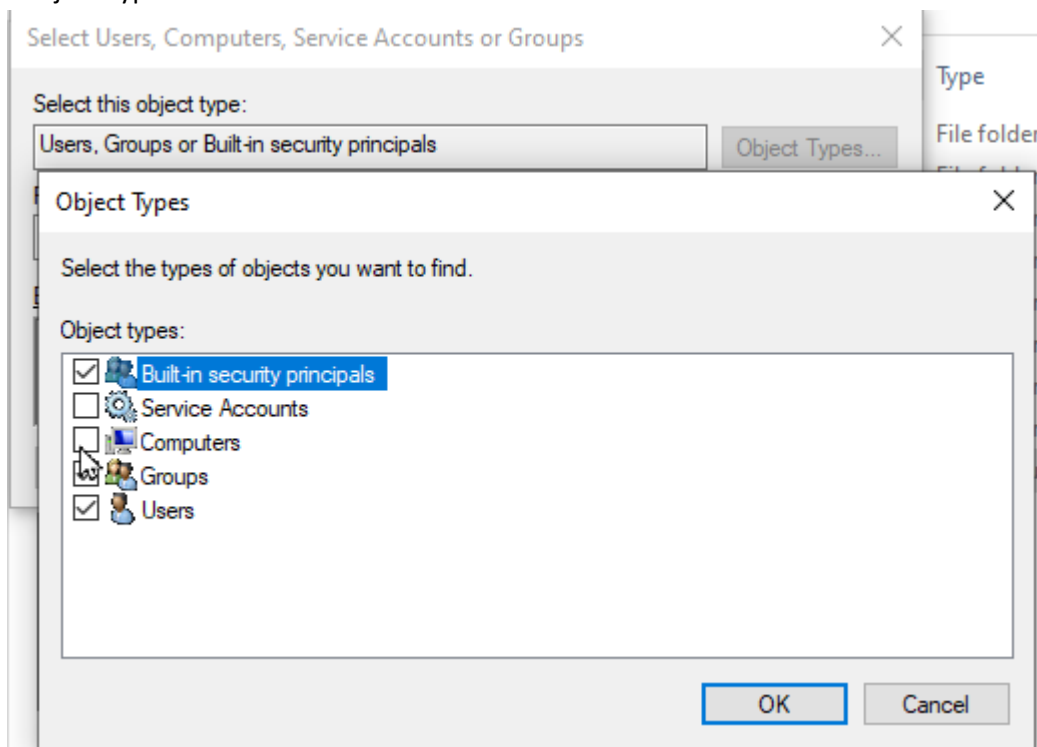
## Configuring the shared SDF file

On the admin-client, configure the repositories and servers as you would normally.

Now copy the SDF file from the local install to a network folder, e.g. [\\myserver\myfolder\RepositoriesManager.sdf](#)

Configure permissions of this file, (right mouse button the file, properties, security, Edit...).

- Add the “Authenticated Users” principal with the ability to **read** the file. As the name implies, this allows all authenticated users on the network; but also includes all computer’s “Local System” accounts on the network, which all Repository Manager Services run as. This provides access for the consuming clients. If you require more specific lockdowns, then you can add all involved domain machines as described below:
- If the name of the administrator machine is called ADMINPC, then add a dollar sign as the account name, allowing ADMINPC\$ to have read-write permissions. For this, you need to tick the *Computers* option in “Object Types...”











## Configuring a consumer

The following registry path defines how the repository manager service is started.

```
Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Mood Repository  
Manager Service 16
```

Inside this registry location will be an expandable string value, **ImagePath** as below:

Name	Type	Data
 (Default)	REG_SZ	(value not set)
 Description	REG_SZ	Manages the connection details of Mood repositories for all users and services.
 DisplayName	REG_SZ	MooD Repository Manager Service 16
 ErrorControl	REG_DWORD	0x00000003 (3)
 ImagePath	REG_EXPAN...	"C:\Program Files (x86)\MooD\16\MooDRepositoryManagerService.exe"
 ObjectName	REG_SZ	LocalSystem
 Start	REG_DWORD	0x00000002 (2)
 Type	REG_DWORD	0x00000010 (16)

Each read-only consumer will require the ImagePath updating as follows, replacing the SDF file location as desired:

```
"C:\Program Files (x86)\MooD\16\MooDRepositoryManagerService.exe" "\\myserver\myfolder\RepositoriesManager.sdf" "Read Only"
```

Manually restart the Mood Repository Manager Service 16, from the Windows Services control panel.

Whenever the repository manager service is started (automatically or manually) it should now use these parameters and consume the shared SDF file on the network.

Check the Windows Event log for any errors.

Note: We would expect that as part of a network deployment, the updating of the windows registry and restarting of the service on installation, would be an automated deployment process.

## Configuring the administrator

Similar to the client change above, the **ImagePath** needs editing, and the service restarting. This time the ImagePath needs to denote this machine is read-write. Please use the following syntax, replacing the location of the SDF file as desired. Shared read, means that multiple clients can read, but only this client can write.

```
"C:\Program Files (x86)\MooD\16\MooDRepositoryManagerService.exe" "\\myserver\myfolder\RepositoriesManager.sdf" "Shared Read" "flush interval=1;"
```

View the Windows Event log for any failures.

Attempt to show and hide repositories on the administrator client, and watch as the consumer clients repositories list automatically updates.

## Known Issues by Product Area

This section lists known issues by the product areas listed below.

- [Active Enterprise](#)
- [Business Architect](#)
- [Knowledge Activation](#)
- [Microsoft Visio® Business Integration Activator](#)
- [Microsoft® Project Synchronization Activator](#)
- [Synchronization Activator Technologies](#)
- [XML® Business Integration Activator](#)
- [Business Integration Engine](#)

# Active Enterprise

## Active Enterprise Requirements

Active Enterprise requires that both Mood and Business Integration Engine are installed previously. For further information and detail on how to smoothly install Active Enterprise and its prerequisites see the [Active Enterprise Server 16 Setup](#) document (Available from Mood International Support).

## Action panel rendering issues

- Action panel content is always drawn on top of the panel label and border (in Business Architect the label and border are drawn on top).
- When published, action panel content is always drawn on top of the model image. If any model content (shapes or lines) overlaps an action panel, it will be drawn in a square block on top of the action panel. Any transparent parts of this block cannot therefore be clicked through to the action panel beneath. Performance indicators, when turned on, advise the user which items they may need to move, or change the z-order of, to ensure that this overlapping does not adversely affect the action panels.
- Action panel content is not clipped if it overlaps the edge of the model.
- Shape styling is not supported.
- Only a subset of bar, milestone and plot shapes in Time Line and Bar chart matrices are supported.

## Opening Knowledge Activations in a new window

Windows may not open due to the web browser's pop-up blocker. This can occur when clicking on a button or link action panel or with the navigate action panel. The browser will report that the window has been blocked and provide the option to allow pop-ups. This should be enabled for the published site.

## “A potentially dangerous Request.Form value was detected from the client” exception when saving data

By default, ASP.NET validates all information sent to the server for potential cross-site scripting attacks. If you try to save data containing certain text patterns (such as `<script>`), ASP.NET will detect this as a possible cross-site script attack and display the exception. Mood encodes all data before putting it on the page, so normally this added protection is unnecessary and can be removed. However, if the site has been extended with custom pages and controls, it may not be safe to disable it.

### Workaround

Edit **web.config** and choose one of two methods, the first being the recommended:

The first method is to add some request validation exclusions to the **mood.web -> security -> requestValidation** section (and there are examples of these in the **web.config**). There are various ways of excluding parts of a solution from request validation. Exclusions can be added by specifying types of panels, types of web controls, symbols (nodes) on a model or fields. These exclusions can be combined to target specific parts. Information about the panel name, control name and node are included in the exception when it occurs e.g.

```
"A potentially dangerous Request.Form value was detected from the client (...=""). Node I
```

```
d: B640DF86F6664C5E891952735E132B62; Node Label: Text Editor; Panel Type: Text Editor;
Control Type: TextBox;"
```

To edit the list of exclusions in **web.config** (this walkthrough assumes you do not already have a security element elsewhere, as you can only have one; and that you've not had much experience with editing web.config or XML files)

Find the section

```
<mood.web>
```

Then just before the comment start tag `<!--` ensure you have the following structure:

```
<mood.web>
  <security>
    <requestValidation>
      <!-- put your request validation rules here-->
    </requestValidation>
  </security>
<!-- existing commented out block -->
</mood.web>
```

Now copy the relevant examples from the commented-out block into the rules section above.

e.g.

```
<mood.web>
  <security>
    <requestValidation>
      <!-- This will turn off request validation for all TextBox controls on a
page, that includes the "Text Editor" panel and also text boxes that appear in
popup forms or composite controls like the login panel. -->
      <add panelType="Text Editor" />
    </requestValidation>
  </security>
<!-- existing commented out block -->
</mood.web>
```

Should you accidentally delete the sections in the web.config, we've included a template structure here for your convenience:

```
<mood.web>
  <security>
    <requestValidation>

      <add controlType="control Type" /> <!-- This will turn off request validation for all controls with
the given type on a page, so if the control type "TextBox" were used then that would include the "Text Editor" panel
and also text boxes that appear in popup forms or composite controls like the "Login" panel. -->
```

`<add panelType="panel Type" /> <!-- This will turn off request validation for all controls for a given panel type, for example if "Text Editor" were used then all "TextBox" controls on a page from "Text Editor" panels on a model, but not those from composite controls or in popup forms would be excluded. -->`

`<add nodeId="node id" /> <!-- This will turn off request validation for all controls for the given symbol/node specified by the id on the model, symbol ids can be inspected by right clicking a panel on a model and choosing "Examine" then looking at the "General" information "Symbol ID"-->`

`<add nodeLabel="label name" /> <!-- This will turn off request validation for all controls for any symbols/nodes on any models for the given label, in this example that is where the label is "label name". -->`

`<add fieldType="field Type id" /> <!-- This will turn off request validation for all controls set to edit the field specified by the field type id, the id can be inspected by going to the Repository "Manage Field Types" and opening the field "Details" for the "Field Type ID". -->`

`<add fieldType="field Type" /> <!-- This will turn off request validation for all controls set to edit fields of the specified field type, where field types are the simple types, String, Boolean, Whole, Fractional, Date, Time, DateTime, and the Formatted Text, Pick List, or Relationship types. -->`

`<add controlType="TextBox" nodeLabel="my label" /> <!-- The parameters can be used in any combination to target specific controls, so for instance this will turn off request validation for all text box controls for panels that have the label "my label". -->`

```
</requestValidation>
</security>
</mood.web>
```

The second method is to change the request validation mode and revert to the .net 2.0 validation mode (note this may disable some cross-site scripting detection and other request validation capabilities):

```
<system.web>
  <httpRuntime requestValidationMode="2.0"/>
</system.web>
```

Then, either add `validateRequest="false"` to the **pages** element, to allow this behaviour on all pages:

```
<system.web>
  <pages validateRequest="false"/>
</system.web>
```

Or edit each *.aspx* page you require to support or suppress this error (i.e. **controller.aspx**, **login.aspx**) and add a `validateRequest="false"` attribute to the **Page** directive, for example:

```
<%@ Page language="c#" AutoEventWireup="true"
Inherits="Salamander.ActivePublisher.Controller" EnableViewState="False"
Codebehind="Controller.aspx.cs" aspcompat="true"
ValidateRequest="false"%>
```

## Performance counters

When enabling performance counters, ensure that the Active Enterprise application pool is running under an administrative security context. Mood will create the performance counters if they are not already present on the Active Enterprise server (which requires administrative privileges).

## Printing Conditionally formatted matrices from Active Enterprise

When printing matrices with cell formatting set to “no formatting” and conditional formatting applied to cells, printouts do not contain conditional format colouring applied to cells.

### Workaround

Enable “Background Graphics” in advanced printer settings dialog

## Content-Security-Policy prevents Custom Visual from functioning in the web

This can occur when a Custom Visual attempts to access a resource (e.g. data from an external web service, images from a tile server) which is forbidden by the default security mechanisms which safeguard the use of Custom Visuals.

When trying to view and use a Custom Visual panel in Active Enterprise or Web Preview, the panel does not display or does not operate as expected. Looking in the browser’s Development Tools (usually press F12 in the browser), there will be errors logs in the console indicating a violation of the Content-Security-Policy. The error log will usually indicate which resource request (e.g. a URL) is violating which directive of the Content-Security-Policy.

### Workaround

In Business Architect, open the Active Enterprise settings and select the ‘Security’ tab. This tab contains a field named ‘Visualization Content Security Policy’ which enables a solution administrator to modify the content-security-policy which is used for Custom Visuals. By adding the necessary statements to the relevant directives, the policy may be relaxed to allow access to the required resources without compromising the security of the application.

Note: The Visualization page receives two content-security-policy instructions, one specific to Visualizations and also the site-wide content-security-policy which is specified as a custom header in the web.config file. For any given directive, the browser will enforce the most restrictive of the two policies.

Therefore, for the amendments to the ‘Visualization Content Security Policy’ to work in Active Enterprise, any additions made to the ‘Visualization Content Security Policy’ must also be added to the Content-Security-Policy header value which is declared in the web.config file. Note that the additions should be made individually for each directive, do not overwrite the entire policy.

```
<system.webServer>
...
  <httpProtocol>
    <customHeaders>
      ...
      <add name="Content-Security-Policy" value="default-src..."/>
```

## Editing a form fails with System.Runtime.InteropServices.COMException

**Message:**

System.Runtime.InteropServices.COMException Retrieving the COM class factory for component with CLSID {25336920-03F9-11CF-8FD0-00AA00686F13} failed due to the following error: 800703fa Illegal operation attempted on a registry key that has been marked for deletion.

**Workaround**

Restart the server, it should not return. This was discovered on a server that had not restarted for over 30 days, and this was possibly caused by Windows Updates.

# Business Architect

## Drawing artefacts with ultra-high resolution screens

When users view Mood Business Architect with an ultra-high resolution display, for example 3840x2160 pixels, the user interface may look cramped, icons are too small, controls overlap and some buttons may be awkward to press. Many of these issues are a direct result from increasing text scaling in the Display Settings. Mood has addressed many such issues, but some may linger and be visually unappealing. We will continue to resolve these issues over time. For the best experience, we recommend using Mood at 100% magnification on a lesser resolution.

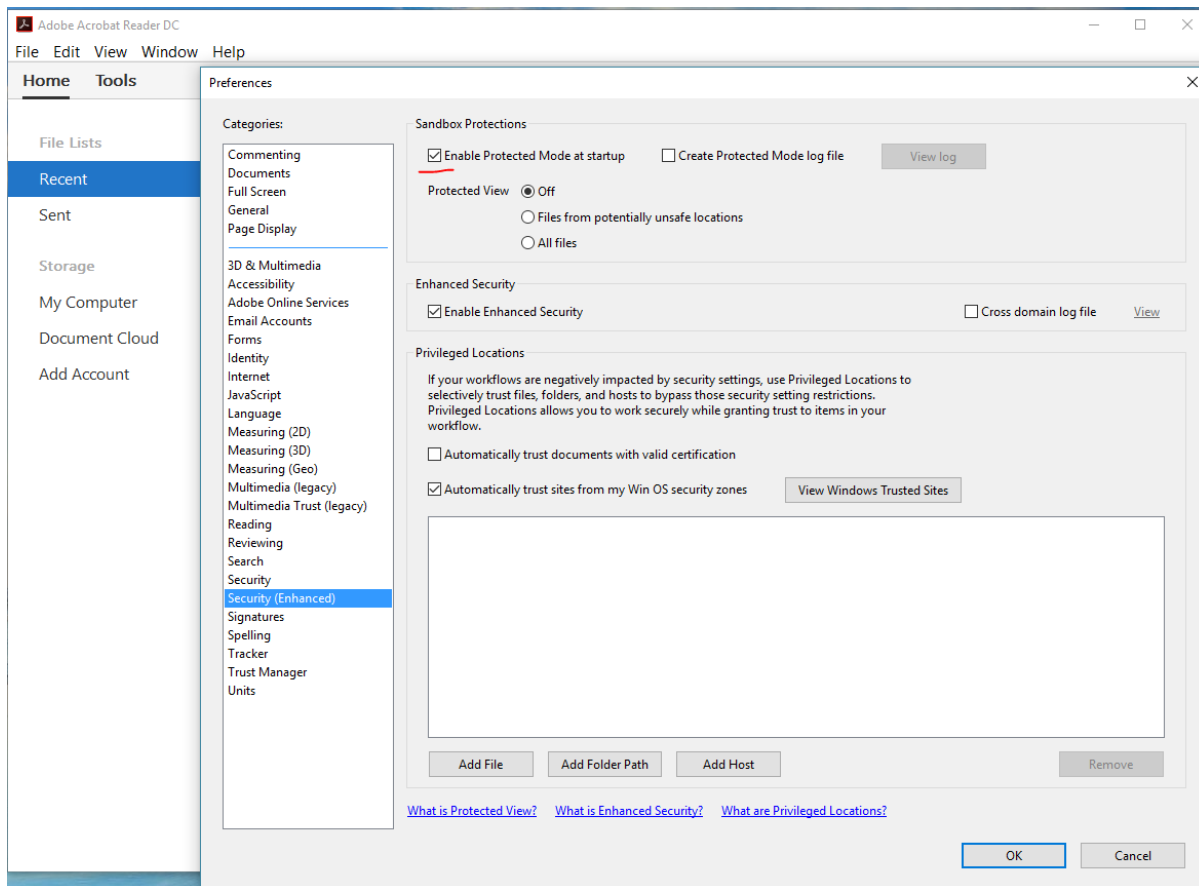
## Using Citrix with multiple monitors and different text scaling

When using Citrix with multiple monitors where each monitor has mixed text scaling factors, mouse clicks can appear to be 100 pixels away from your intended location. Business Architect can also render as a completely black box, making the product is unusable. When both displays are set to 100% scaling, this issue does not occur. As of writing, this is not a scenario supported by Citrix XenDesktop or XenApp environments, [see here](#) for more details.

## Helpfiles do not launch

Helpfiles for Mood products are shipped in Adobe Acrobat format (.PDF). When you press F1 or navigate to them via the menu systems, you may receive messages asking how you would like to open the file. If you have installed Adobe Acrobat Reader DC, and have associated the product with PDF files yet are *still* being prompted, please use Acrobat Reader to open the files yourself, located in the Mood Installation folders.

The alternative is to turn off security features in Adobe Acrobat Reader, which we **do not recommend**.



## Microsoft Office Automation - May Require Visual Basic for Applications

MooD does not require Microsoft Office products to be installed unless the following functions are used:

- Document comparisons in the Archive feature of Document Exports.
- Excel Native mode for Excel synchronizers.
- Selecting Excel data ranges when you have enabled the registry key `TryUseExcel` (see later).

In this scenario Visual Basic for Applications must be installed as part of your Microsoft Office installation. It is installed with a typical Microsoft Office installation, but can be omitted during a custom installation.

## Formatted text editor displays red error text after a long wait. Some graph panels show after a very long wait.

This appears to have been an issue introduced by the installation of .NET 4.8, as part of the May 2019 Windows Feature update, and is subsequently fixed in [KB4511555](#) released August 30th 2019.

An alternative workaround is,

- at the Windows search bar/Cortana, type 'OptionalFeatures.exe', press Enter.
- Scroll down and expand Internet Information Services

- Expand World Wide Web Services
- Expand Security
- Tick Request Filtering
- Wait for the update to install and then retry the action. (You may have to restart Business Architect).

## Knowledge Activation

### Cannot connect to a document stored within a public folder on a Microsoft® Exchange server

When following an Activated link to a document stored in a public folder (also known as a **freedoc**) on an Exchange server, a **HTTP 403 (Forbidden)** response is served.

#### Workaround

Microsoft® recommends that you use controlled access folders when access to **freedocs** is required. See Microsoft Knowledge Base article [KB834743](#).

### Errors when copying files and folders onto Microsoft® SharePoint® portal server

When copying folders into a Microsoft® SharePoint® server (by dragging a folder over the explorer view) files that have illegal characters will cause an error message of the form **An error occurred copying some or all of the selected files**. The files will not have been placed onto the SharePoint server.

A folder with illegal characters will trigger a similar, but more detailed message:

**Unable to create a folder named <Name of folder>. Please enter a different name.**

This is likely to happen when a published site contains Knowledge Centres within its structure (probably via the **Copy into Publication** option).

#### Workaround

Ensure that all files and folders to be copied do not have illegal characters in their names, including:

**/ \ : \* ? " < > | # <TAB> { } % ~ &**

### An Activated link to a file that is stored in the published site is not relative

If a Knowledge Centre is published to the same path as the Mood® web publication, Knowledge Activation should recognize this and create associated Activation links with relative addresses (of the general form **../..kc/file.ext**).

This detection fails when illegal characters are used in the Knowledge Centre's publishing path. These illegal characters prevent the comparison of paths working. This is because the illegal characters in the path will be replaced with hexadecimal numbers.

#### **Workaround**

Ensure no illegal characters are used in Knowledge Centre publishing paths when it is important that the Activated file is accessed by a relative link. Illegal characters include:

**% / # ? \* ! <SPACE>**

In general, all punctuation and whitespace, except minus and underscore, should be avoided in Knowledge Centre paths.

### **Changing Activator appears to lose properties from current Activation**

If the Activator for a current Activation is changed, for example from a Word Document Activator to a Text File Activator, the properties that were used in the original Activation are not carried through to the new Activator. Clicking **OK** at this point, with no properties set, will then remove the Activation. Clicking **Cancel**, however, will reset the Activator and properties to their values prior to changing Activator.

#### **Workaround**

None. This is expected behaviour. Activators are not guaranteed to have compatible properties from one to another, so previous properties cannot be safely reused after changing Activator.

### **Administrator can't open read-only repository (or repository using read-only driver)**

If the Administrator repository user opens a repository, Knowledge Activation will attempt to add a version stamp to the repository. This will fail, as the repository cannot be written to, and the following error will appear:

**The database has reported a problem. If the problem re-occurs try re-starting MooD. Otherwise, contact the Administrator of this repository.**

Non-administrator users will not encounter this error.

This only affects repositories which are set to read-only (or the driver used to access them is set to read-only using Repository Manager), and which have never been opened by the Administrator user with a previous version of Knowledge Activation installed.

#### **Workaround**

Before opening a repository for the first time ensure that the repository is not read-only, open the repository, close it again, then reset its read-only attributes.

### **First open of upgraded repositories may take a long time**

After upgrading, it may take a long time to open the repository. Knowledge Activation needs to update Activations in the repository to the latest format.

The time this operation takes is linked to the repository size, the number of activations, the speed of the computer, and the speed of the network connection (if any).

#### **Workaround**

None. This is expected behaviour.

### **Activated links are broken after partial merge**

After partial merge (Business Architect->File->Import), imported Activation links are broken because the Knowledge Centre the resources link to is not present.

This will only happen if the receiving repository does not already contain the same Knowledge Centre definition (with identical identifier).

#### **Workaround**

Ensure the receiving repository has the Knowledge Centre definition. This is best achieved through the working practice of partially merging satellite repositories into a master repository where the Knowledge Centre is initially defined. Satellite repositories should initially be created from the master using full integration once all Knowledge Centre definitions have been created.

### **Multiple select in the explorer bar**

Several elements can be selected together in the Mood Business Architect explorer bar. If the pop-up menu is displayed while several elements are selected, then there is an activation option. Clicking this option will only activate the element that was selected last.

#### **Workaround**

Do not use multiple select to activate several elements at once.

## **Microsoft Visio® Business Integration Activator**

### **Matrix and Measure properties not supported**

Matrix and Measure properties are not included in the output as there is no place in Visio to represent these properties. Formatted text, Reference, Inputs and Outputs and Simple type properties are included as custom properties of the Visio shape.

### **Incorrect shape size**

Some Visio shapes may not be the correct size. Models from some repositories upgraded from older versions may not display the shapes in the document output at the right size.

## Workaround

This can be worked around by resizing the elements in Business Architect.

## Incorrect shape orientation

Some Visio shapes may not be oriented correctly. Any element that has been rotated in Business Architect will not be shown rotated in the output document.

## Workaround

There is no known work around for this apart from not rotating elements.

## Shape style

The style of the element in Business Architect may not match the style of the Visio shape, including the type of shape, and the line, text or fill style. This is the main reason for the three different types of export, each export tries to set the style of the Visio shape using a different method. It is then up to the user to select how they want the output shape to be formatted, by selecting the appropriate export activator.

On import, if the Visio shape was based on a stencil, then a style is created or matched to in the style gallery based on this stencil. This style can then be edited so all elements representing Visio shapes from the same stencil can have the same properties. The style may then be used to match back to the original stencil to recreate the shape in an export using a style master document.

## Microsoft® Project Synchronization Activator

### The export activator is not intended for creating new MPP files from existing project data

It is designed to create MPP files for data that is original to Mood.

If you do export data brought in from Project, some information will be missing from the new file. For example, the project start date in the original project is not copied into your new file. Similarly, calendar and shift information will be missing, which may affect the duration and start dates of tasks.

## Synchronization Activator Technologies

### Localhost isn't recognized when configuring Manage Connections

You may be unable to communicate with SQL Server when specifying *localhost* in the Manage Connections dialogs.

## Workaround

Try using the machine name MACHINENAME or 127.0.0.1 (adding the \instancename if required), or use SQL Server Configuration Manager to enable named pipes as a connection protocol.

## Selecting Ranges In Excel - general

As of Mood 16.057, the Excel Range selector interface, which enables the user to specify the cell ranges and headers from Microsoft Excel spreadsheets, has been modified to use an internal engine in preference to Microsoft Excel's Interop API. This should provide a faster start-up time and prevent Excel.exe appearing in your list of running tasks.

However, if you encounter problems using the internal engine, it is possible to instruct Business Architect to use Excel first, in preference to the internal engine.

This instruction is specified in a Windows Registry Key value which may exist in the Current User or Local Machine sections of the registry. (Using the Regedit application)

Under

```
Computer\HKEY_CURRENT_USER\Software\MooD International\Business Developer\16.0  
  
Computer\HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\MooD International\Business  
Developer\16.0
```

Create a sub key called `ExcelSelector`

Within the key create a string value called `TryUseExcel`

Modify the Data of this value to say `On` to use Excel, or `Off` to not use Excel. (Off is the default).

The Current User key, if it exists, will take precedence over the Local Machine key.

If you do not have permission to use RegEdit, you can copy all the following text and save as a .reg file.

```
Windows Registry Editor Version 5.00  
  
[HKEY_CURRENT_USER\Software\MooD International\Business Developer\16.0\ExcelSelector]  
  
"TryUseExcel"="On"
```

Then, open a command prompt and assuming your file is called `useExcel.reg` located in `c:\temp`

```
Reg.exe import c:\temp\exceluse.reg
```

## Using Synchronizations with Microsoft Access 2010 .accdb format files

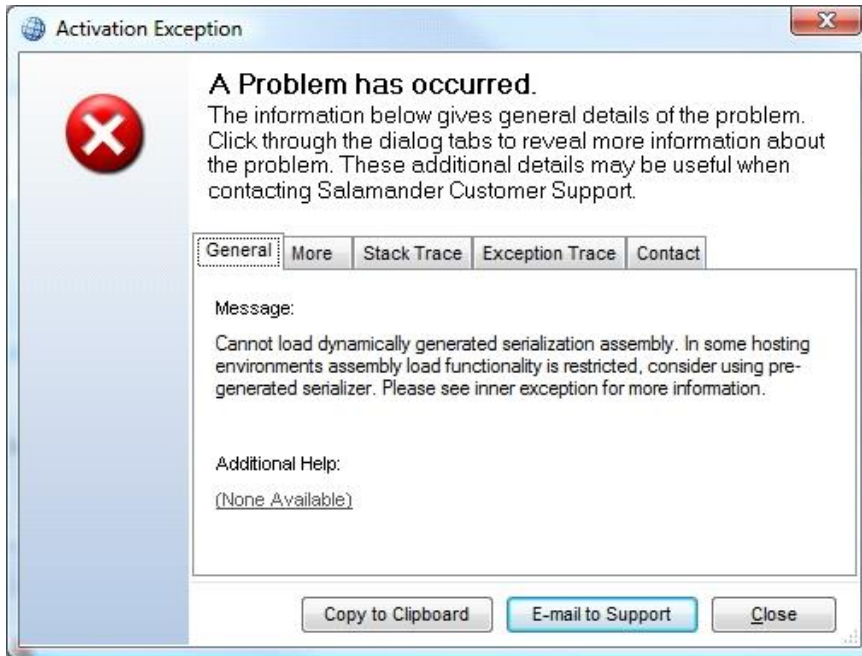
If the Excel Import does not recognize the **.accdb** file format, you need to install the Microsoft Access Database Engine 2010 32 bit Redistributable from this location:

<http://www.microsoft.com/en-gb/download/details.aspx?id=13255>

If you have a 64 bit version of Office installed, you need to run this installer from the command line using the `/passive` option ([see here](#)):

## Saving Synchronization Activations creates temporary assemblies in the TEMP folder

Synchronization activators use Microsoft .NET Framework® XmlSerialization to save serialization activations. The use of XmlSerialization creates and executes assemblies in the **TEMP** folder. If a policy has been set which prevents execution of assemblies in the **TEMP** folder, saving synchronization activations will fail and the following error will be shown:



### Workaround

To change this location modify **MooD.exe.config** in your MooD installation folder and add the **system.xml.serialization** section as below (note the double \\ when specifying folder paths):

```
<?xml version="1.0" encoding="utf-8"?>

<configuration>

<system.xml.serialization>

<xmlSerializer tempFilesLocation="c:\\tempfolder"/>

</system.xml.serialization>

</configuration>
```

## Excel imports may unexpectedly clear fields or create empty measures

Excel formats that include either hierarchies or metric grids may clear fields or create empty measures unexpectedly. This occurs when either a hierarchy has been compressed (Fig a) or a metric grid has missing entries (Fig b).

	A	B	C	D
1	Continent	Country	City	Value
2	Europe	England	London	10,000

**Fig a Compressed Hierarchy**

	A	B	C	D
1	Name		2006	2007
2	London	Sales	15	20
3		Return	20	30
4	York	Sales	9	12

**Fig b Missing Metric Values**

It is not always obvious that fields on the record description may not actually be specified within the source data. Those which are undefined will be cleared within Mood. In the above examples (Fig a) the Value field for Europe and England will be cleared, in (Fig b) the Return 2006 & Return 2007 fields for York will be cleared.

#### **Workaround (Hierarchy)**

Specify all the data explicitly, where each row represents a single hierarchical element with a defined value. Alternatively run 2 separate imports, the 1st importing a hierarchy, the 2nd importing values for elements, skipping elements if necessary by excluding them from the source data.

#### **Workaround (Metric)**

Ensure all the metric values are specified explicitly, or run individual imports for each measure, skipping elements if necessary by excluding them from the source data.

#### **Imported themes not visible**

If an import is used to add new themes to a repository, the new themes are not visible in Mood Business Architect until it is restarted. This is because the list of themes is not refreshed in Mood Business Architect.

#### **Workaround**

Close then reopen the repository. The newly created themes will then be visible.

#### **XML exports may take a long time to complete**

Using an Activator that exports data from the repository may take a long time to complete. The time the export operation takes is linked to the size of the repository, not the size of the tree being exported. Export Activators create an XML representation of the entire repository before transforming this into the desired format, so larger repositories will take longer to perform exports.

#### **Workaround**

None, this is expected behaviour.

# XMI® Business Integration Activator

## Rational Rose XMI not imported into Mood

If a UML Model in Rational Rose has been exported into XMI using version 1.3.4 or above of the Unisys XML Tools for Rational Rose, then the XMI will not be imported into Mood Business Architect. This is due to the fact that the targeted version of the Unisys XML Tools is 1.3.2.

### Workaround

Use version 1.3.2 of the Unisys XML Tools for Rational Rose to export UML models into XMI.

## Business Integration Engine

### Business Integration Engine Requirements

Business Integration Engine requires that Mood is installed beforehand and also requires a specific Server Licence. The Licence must be installed via Repository Manager as **Administrator** and then applied to **All Users**.

When installing the Business Integration Engine, the background service will automatically start before you have the opportunity to install a licence. Thus, after you have configured a valid licence you may need to restart the **Business Integration Engine 16** service in the Windows *Services* applet.

### Business Integration Engine and Active Enterprise do not support licence server based licensing

Business Integration Engine and Active Enterprise do not support licence server based licensing. To correctly license these services you should request a node locked licence from Mood Support. This is by design.

### Scheduling certain synchronizations will fail on Windows 7

Synchronizations affected: Microsoft PowerPoint export, Microsoft Project import and export, and Document export

Using the Business Integration Engine to schedule updates of an activator which uses any of the above synchronizers will fail when Business Integration Engine is hosted on Windows 7 or earlier.

Windows EventViewer will show the following error in the Application log when the schedule executes:

**System.Runtime.InteropServices.COMException**

# MooD Licence Server

## MooD Licence Server Requirements

The MooD Licence Server requires that MooD is installed beforehand and also requires a specific Server Licence. The Licence must be installed via Repository Manager as **Administrator** and then applied to **All Users**.

When installing the Licence Server, the background service will automatically start before you have the opportunity to install a licence. Thus, after you have configured a valid licence you *may* need to restart the **MooD Licence Server** service in the Windows *Services* applet.

## MooD SSIS Execution Synchronizer usage and guidance

The MooD (SQL Server) *SSIS Execution Synchronizer* can be used to execute SSIS packages on local or remote SQL Server Integration Services instances.

Some actions may be necessary when building the environment to enable SSIS synchronizers to access the SSIS packages. The nature of these actions differs according to the version of the SSIS instance and whether the target SSIS instance is on the same machine as MooD, or on a remote machine.

The steps necessary to enable the synchronizer to access the SSIS package will differ according to the version of the SSIS instance and whether the instance is installed on the local or a remote server.

## Execute SSIS packages on SSIS 2008 R2 on local machine

Prerequisites on local machine:

- MooD
- SQL Server 2008 R2 with “Integration Services” and “Client Tools Connectivity”

In the SSIS Execution synchronizer, use the ‘local’ SSIS Connection.

## Execute SSIS packages on SSIS 2012 on local machine

Prerequisites on local machine:

- MooD
- SQL Server 2012 with “Integration Services” and “Client Tools Connectivity”
- Install the MooDSSISExecution service for SQLServer 2012 as detailed below.

In the MooD Repository, from the **Synchronizers** library, create a new SSIS Connection to the local machine (as though it were a remote machine). Provide the server details for the local machine and specify the port on which the MooDSSISExecution service is listening.

## Execute SSIS package on SSIS 2008 R2 on remote machine

Prerequisites on local machine:

- Mood

Prerequisites on remote machine:

- SQL Server 2008 or 2008 R2 with “Integration Services” and “Client Tools Connectivity”
- Install the MoodSSISExecution service for SQLServer 2008 R2 as detailed below.

In the Mood Repository, from the **Synchronizers** library, create a new SSIS Connection to the remote machine. Provide the server details for the remote machine and specify the port on which the MoodSSISExecution service is listening.

## Execute SSIS package on SSIS 2012 on remote machine

Prerequisites on local machine:

- Mood

Prerequisites on remote machine:

- SQL Server 2012 with “Integration Services” and “Client Tools Connectivity”
- Install the MoodSSISExecution service for SQLServer 2012 as detailed below.

In the Mood Repository, from the **Synchronizers** library, create a new SSIS Connection to the remote machine. Provide the server details for the remote machine and specify the port on which the MoodSSISExecution service is listening.

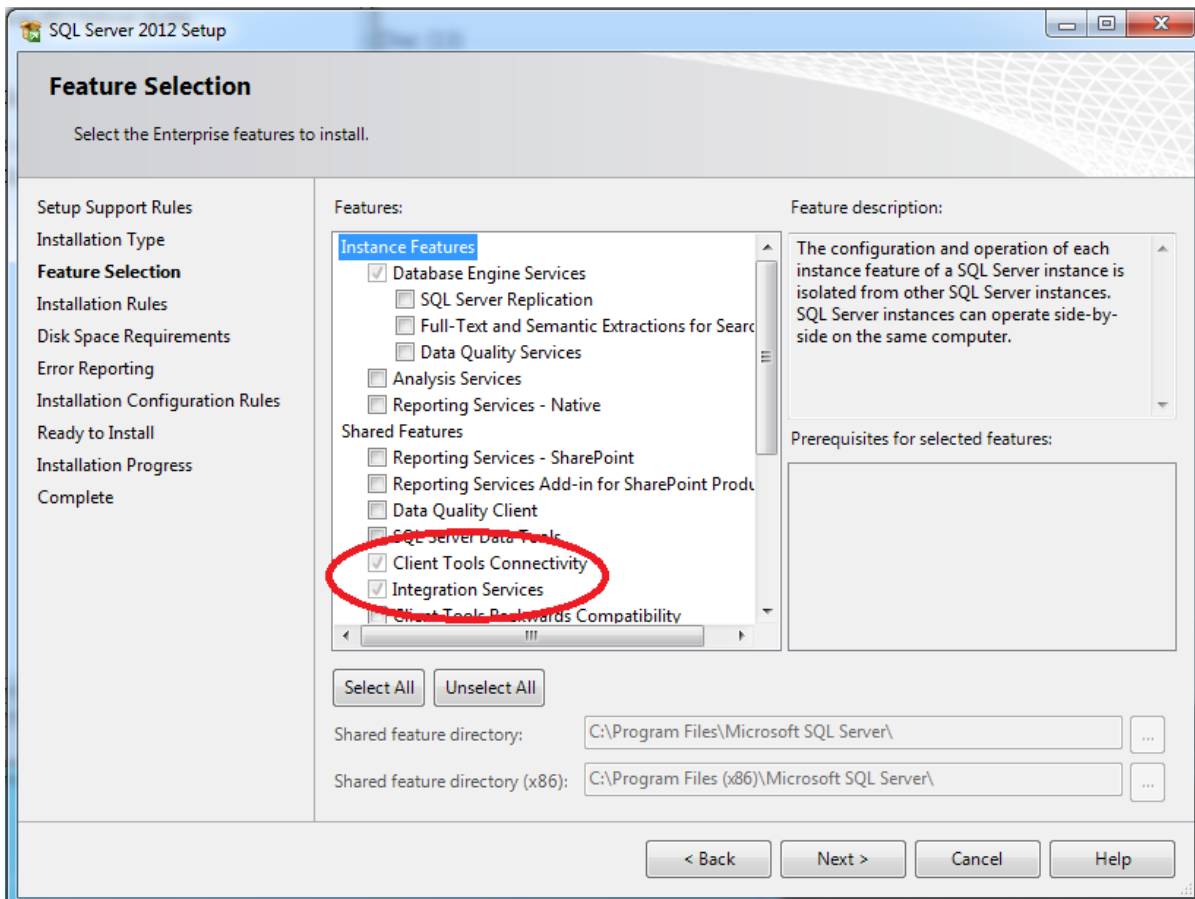
## Execute SSIS package on SSIS 2014 or above

Instructions as per SSIS 2012.

SQL 2016 must be version 13.0.4199.0 (SP1) or above.

## Installing SQL Server “Integration Services” and “Client Tools Connectivity”

The “Integration Service” and “Client Tools Connectivity” features can be installed from SQL Server installation media.



## Installing MoodSSIS Execution service

The Mood SSIS Execution service must have access to the Microsoft.SQLServer.ManagedDTS.dll assembly and any dependencies. By installing the SQL Server “Client Tools Connectivity” these assemblies will be installed to the Global Assembly Cache and hence be available to the service on the machine. It should be installed on the SQL Server machine, and enables the BIE Engine to communicate to the SQL/SSIS server wherever it may be.

If the “Client Tools Connectivity” features have just been installed, the machine may need to be restarted to ensure these assemblies are available.

### Delete the MoodSSISExecution.exe.config file

If the MoodSSISExecution service has already been installed, uninstall it prior to deleting the config file.

Locate the MoodSSISExecution.exe.config file in an installed version of Mood 16. On a default installation, it can be found in the following location:

C:\Program Files (x86)\Mood\16\Business Activation\MoodSSISExecution.exe.config

Delete this file.

### Install MoodSSISExecution service

On the machine on which the SSIS packages will be run, open a command prompt as administrator.

In the command prompt navigate to the folder which contains the MoodSSISExecution.exe file

```
cd "C:\Program Files (x86)\MooD\16\Business Activation"
```

And execute the MoodSSISExecution with appropriate flags

i.e. For SQLServer 2008

```
MooDSSISExecution /install 2008
```

This will install the MoodSSISExecution service which will listen on port 50016 by default.

It will also create a new version of the MoodSSISExecution.exe.config file. This file is required for operation of the service.

## Changing the MoodSSISExecution service port

The default port for the SSIS execution service is 50016, being the same as the default port for BIE.

If it is necessary to install the service on a machine which must also run an instance of BIE, it will be necessary to change the port on which the MoodSSISExecution service is listening.

This can be done by modifying the config file after the service has been imported.

Stop the MoodSSISExecution service (if running).

In the directory in which the MoodSSISExecution.exe was installed, a file named MoodSSISExecution.exe.config will have been created.

Open MoodSSISExecution.exe.config in an xml or text editor add or change the appSettings section as follows:

```
<configuration>
...
<appSettings>
    <add key="port" value="<yourPortValue>" />
</appSettings>
...
</configuration>
```

In the same directory create a copy of the MoodSSISExecution.exe.config file and rename it to be SSISExecution.exe.config

Restart the MoodSSISExecution service.

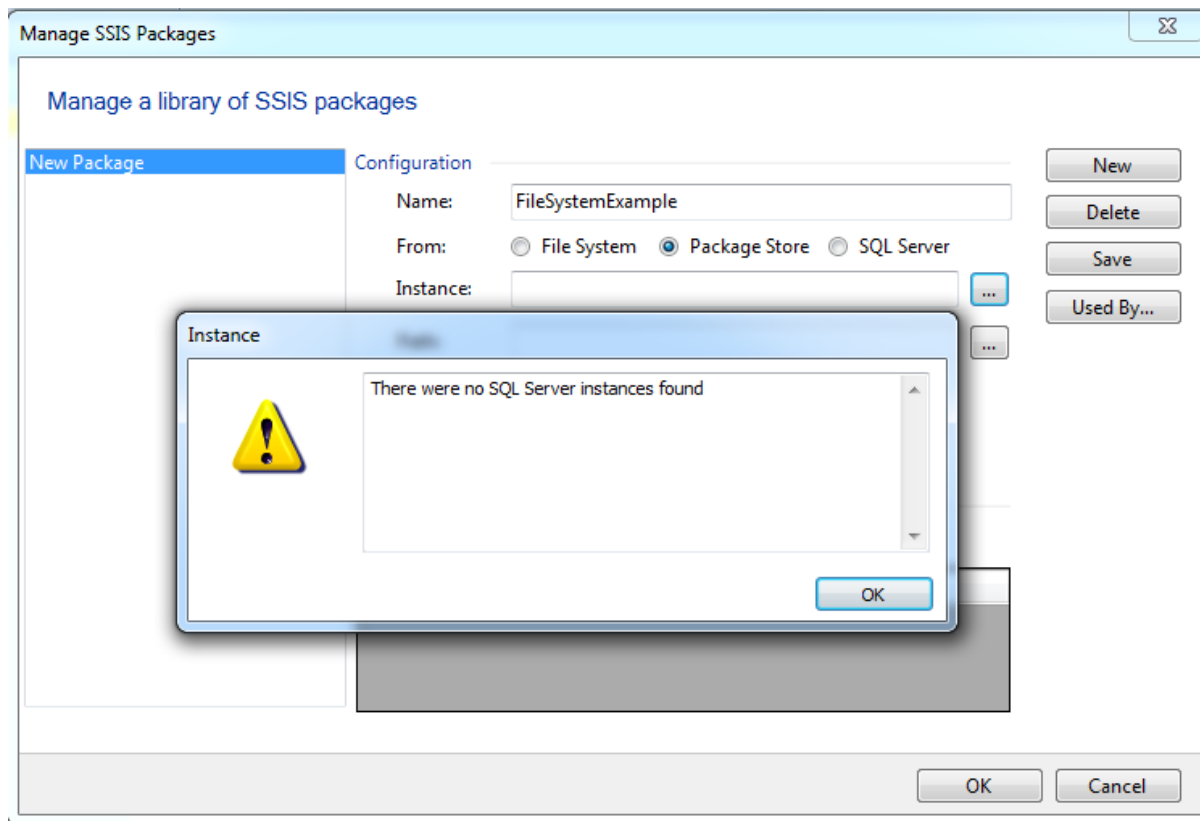
## Uninstalling the MoodSSISExecution service

To uninstall the MoodSSISExecution service, locate the MoodSSISExecution.exe file from which the service was installed. Run the executable and the service will be uninstalled.

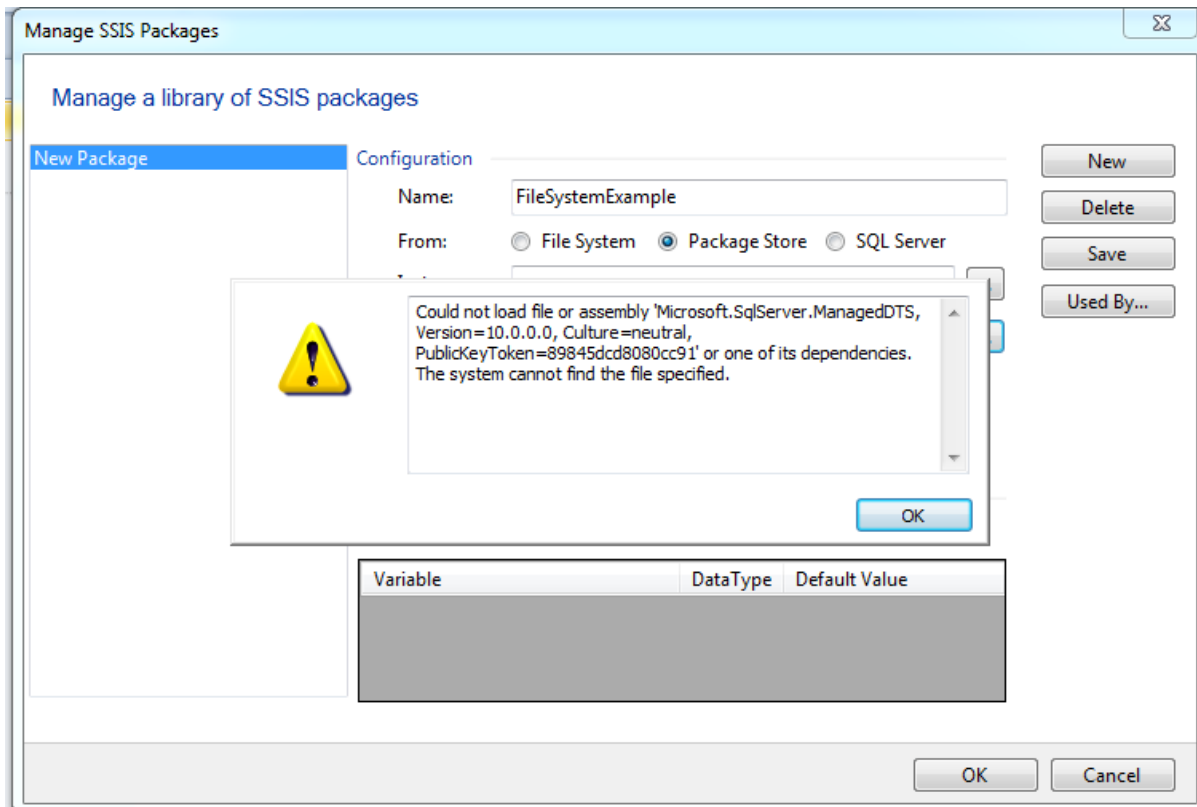
## Known issues with SSIS Package configuration on Mood

When the machine which is hosting Mood does not have SQL Server connectivity tools installed, the following behaviours can be encountered when configuring SSIS packages in the 'Manage SSIS Packages' dialog:

'No SQL Server instances found' message when using '...' button to help search for SSIS instances:



Exception when trying to inspect instance for available packages:



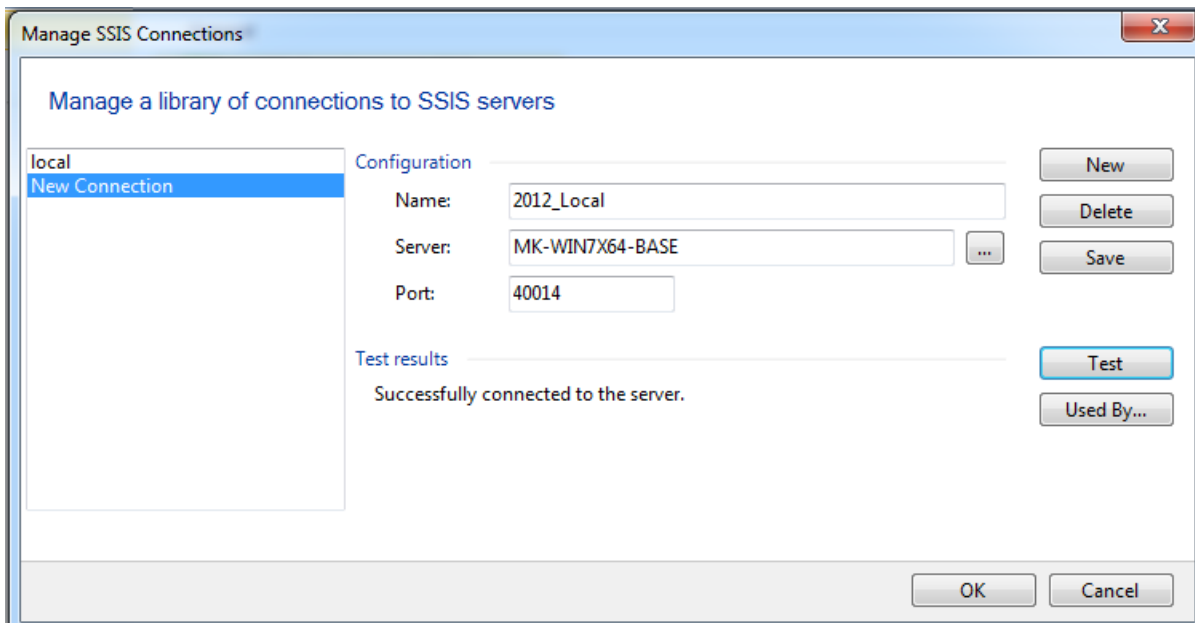
Both behaviours are due to Mood expecting to find the SQL Server connectivity tools which are not available on the server. The values for both fields may be entered manually.

## Screenshots from configuration of SSIS Connection and SSIS Package on Mood

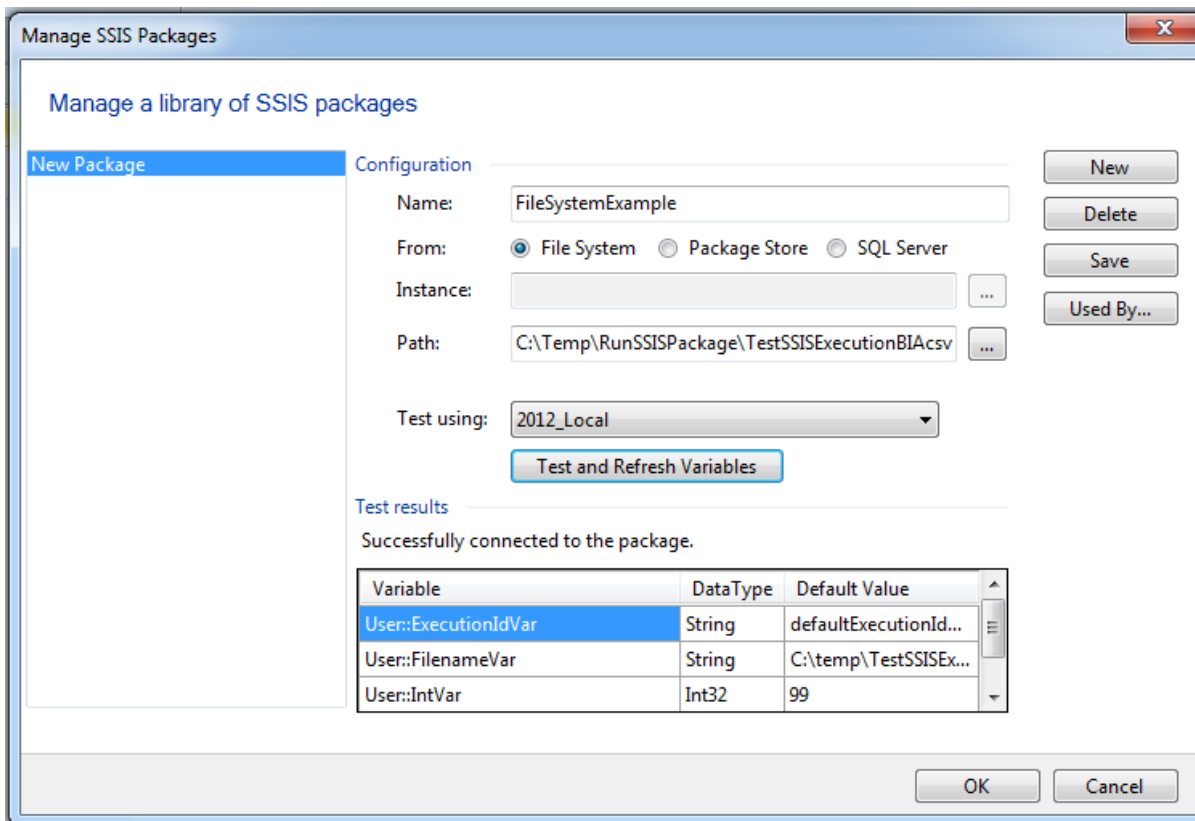
The following screenshots are taken from a sample deployment against SQLServer 2012 on the local machine.

Manage SSIS Connections:

Note the non-default port setting.



Manage SSIS Packages:



## System Requirements

Below are the client requirements for Business Architect. See the [next page](#) for the server requirements for the Web presentation layer.

Please note, if you are performing expensive database queries, or generating large reports or manipulating high resolution graphics – specifications need to account for this with appropriate and available RAM, CPU, GPU and Hard drive capacity. If using virtualization, use these specifications as a rough guide for initial sizing, and re-provision as demand grows.

## Minimum Client requirements for Business Architect

Minimum requirements for Mood 16.085:

- Processor: 2 cores 2GHz CPU 32 or 64 bit
- Memory: 1GB free RAM, after the operating system has loaded
- Display: 1024x768x16bit colour depth or greater
- Hard disk: 2GB free for installation
- Connection to a Microsoft SQL Server database, and an appropriate SQL Server driver (see later)

Microsoft Operating Systems supported:

- Windows 10 Version 1511 Build 10586.36 or above
- Windows 8.1 with S14 update (KB2919355)
- Windows 7 SP1
- Windows Server 2008 R2 SP1 64bit
- Windows Server 2012 with S14 update (KB2919355)
- Windows Server 2012 R2 with S14 update (KB2919355)
- Windows Server 2016 & 2019

Browsers supported (latest available versions):

- Microsoft Internet Explorer 11, Microsoft Edge, Google Chrome

Additional components installed when required:

- Microsoft .Net 4.6
- Microsoft Core XML 6 Services SP2
- Microsoft SQL Server 2008 R2 Native Client Driver
- Microsoft SQL Server compact edition 3.5
- Microsoft Visual C++ 2015-2019 Redistributable

## Typical Server requirements for the Presentation Layer (Active Publisher, Business Integration Engine)

Typical hardware (assuming one average sized Mood Repository with 50 users, and no other major services/apps contending for resources, and SQL Server not on the same machine):

Typical requirements:

- 12 Cores, 3GHz CPU
- 12 GB RAM

- 2GB free hard disk space for installation
- 10GB free hard disk space for operational working.
- Microsoft Windows Server® 2019 64bit
- 1 gigabit Network card
- Connection to a Microsoft SQL Server database, and an appropriate SQL Server driver (see later)

Microsoft Operating systems supported:

- Windows Server 2008 R2 SP1 64bit
- Windows Server 2012 with S14 update (KB2919355)
- Windows Server 2012 R2 with S14 update (KB2919355)
- Windows Server 2016 & 2019

Note: Virtual machines configured to use a *Dynamic Memory* technique may cause performance problems due to premature cache-pruning.

## Typical Server requirements for the Database Layer

For ultimate security and flexibility, production databases are often housed on a different machine to the Web Server, and thus the latency between web server and database needs to be low, and storage subsystems configured appropriately for the workloads required. Each repository requires careful capacity consideration for data imports, daily usage, log file storage and growth.

Versions of SQL Server

- Non-express versions of Microsoft SQL Server 2008 R2, 2012, 2014, 2016 SP1+, 2017, 2019
- Full Text Indexing must be installed (see below for more information)
- Operating systems as per the Presentation Layer, constrained by SQL Server's requirements.
- Tips:
  - As of SQL 2016 TempDBs are typically allocated correctly, but on older versions, ensure one TempDB is created per processor core.
  - Ensure all TempDBs have an identical initial size and fixed growth factors. (Rather than percentage based).
  - Enable TCP/IP protocols in SQL Configuration manager for the server if you use different machines for SQL and presentation layer.
  - Enable the Named Pipes protocol if using 'localhost' in connections.
  - If you do not need point-in-time recovery, consider changing database recovery models to 'Simple', and taking regular backups yourself. 'Full' recovery model is disk intensive.
  - Develop on the same version of SQL Server as your live environment.

Typical Hardware (increase or decrease based on analysis of queries and user loads)

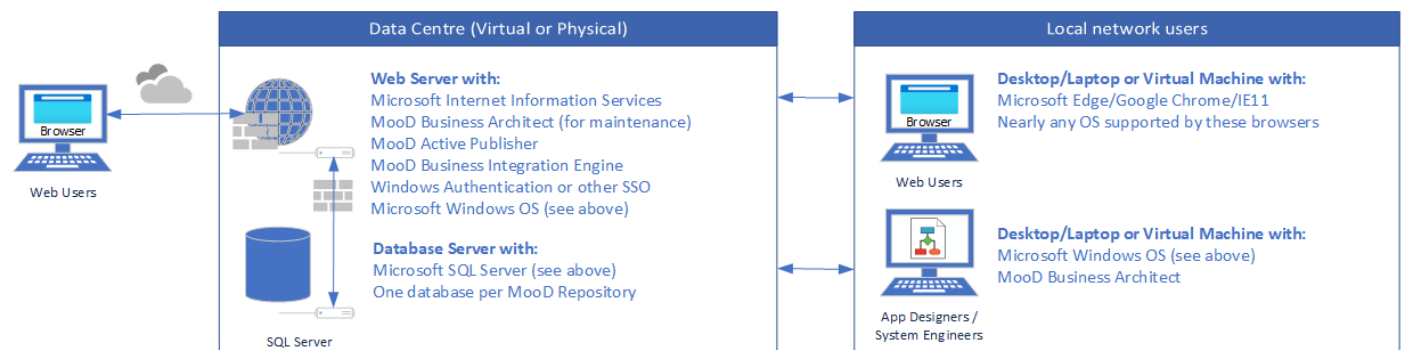
- 4 cores (3.06GHz processors).
- 16 GB RAM.
- 1 gigabit LAN card
- At least 3500 Read I/O per second, 1000 Write I/O per second, measured by Microsoft [DskSpd](#).
- Note: In comparison, 50k read and 15k write I/O per second is not uncommon for a modern laptop & Solid State Drive.

- Latency between the Web Server and the Database needs to be low, and storage subsystems configured appropriately for the workloads required.

MooD has been verified with the following drivers. These drivers will need to be installed onto any environment hosting Business Architect or Active Enterprise. See information on [how to configure the preferred ODBC Driver](#).

- Microsoft ODBC Driver 17 for SQL Server
- Microsoft ODBC Driver 13 for SQL Server
- Microsoft SQL Server Native Client 11.0

## Typical Topology



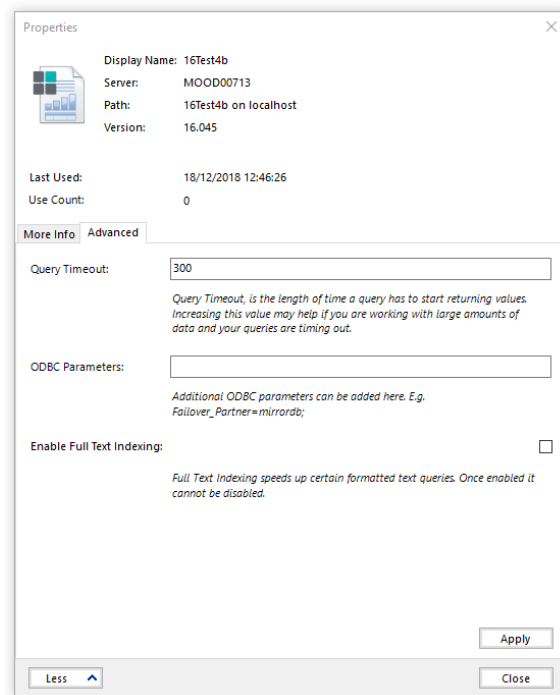
*This diagram does not show the multiple further options available with different SQL Server versions, nor does it show the connectivity you may require between internal data sources.*

## Full Text Indexing and SQL Server

To improve performance for certain MooD Queries which search through Formatted text field values, full text indexing (FTI) services should be installed when SQL Server is installed.

If you are using queries with Formatted text fields and your server is not enabled for FTI, MooD Business Architect will warn you via the Welcome Screen, MooD Repository Manager will warn you in the Advanced Properties page, and when visiting the Active Enterprise page *status.aspx*.

Our support team has put together [this article](#) (account required) to guide you through the process of installing and enabling FTI after installation. In addition, if services are installed but the feature is not enabled in the MooD Repository, MooD Repository manager can enable FTI from the Advanced properties dialog:



## Configuring different ODBC Drivers

By default, Mood will attempt to install the ODBC Driver 17 for SQL Server if not already present. Mood has been rigorously tested to ensure compatibility using this driver. However, depending on your client operating system and database server, you may need to change the driver being used. See the tables in [this Microsoft Article](#) to understand the differences in driver versions.

The ODBCPreferences.xml file, installed with the product, specifies the order in which to search for drivers. Users can edit or comment out drivers they do not want to use. Users are unable to change this on a per-repository basis currently.

For Synchronizers which use alternative database connections:

- SQL Server connections will automatically use the preferred driver in ODBCPreferences.xml
- ODBC Connections will use the driver specified in the DSN section of the odbcad (32bit) control panel applet.
- Connection String connections – will use the driver specified in the connection string.

Thus, if you require a specific driver, either use the ODBC Connection or the Connection String syntax.

## Issues Fixed in 16.085.02

Number	Issue
12425	Crash when selecting the "Multiline" option during Excel Import Synchronizer configuration when it should be disabled for certain data types
12426	"Select Fields" window of a popup or inline form has blank controls for Edit With, Option, Validate With, Show Description, Read Only, Custom Name - all dropdowns, combo boxes or checkboxes.
12430	Single Relationship Editor in editable matrix in web is unusable after setting value then removing it
12440	Smart column can produce the wrong outputs when a sub-query has been misused in a previous execute.
12446	Inserting a new line or a tab before a link in a rich text field will cause the link to break if upgraded to Mood 16
12449	Unable to check in a licence to the licence server manually
12453	Repository Manager using SQL Authentication - cannot create new Repository if SQL Server user cannot see an existing AUTHOR login
12455	A deployment pack failed to create a HTML Data entry, due to a conflict of a foreign key constraint.
12456	Licensing server can be faulty under load (multi-threading issues)
12459	Licence Server usage: Repository manager reports "Attempt to checkout mobile licence stopped."
12460	Business Architect's main view clips and jumps behind the ribbon when clicking certain tabs or views *WIN7 ONLY*
12471	Business Architect sometimes crashes when pasting a fact into a smart column.
11907	Excel import fails if the ArchiMate Blueprint has been applied and "Include Relationships On Relationships" is "on". – this is an improvement on the previous fix – now you can at least import one level deep when "off".

## Issues Fixed in 16.085.01

Number	Issue
12403	Excel matrix export/import round-trip incorrectly 'creates' rather than 'updates' elements where elements have a date for their name.
12405	Time-only fields in a field update action which are pinned to a session variable 'Current time' raise a validation error "expected a Time but a date and time was entered", and does not navigate to the model master, but the data is created.
12408	Business Architect crashes when clicking some links from the Start Page
12407	In the web, pressing return/enter in a text editor used for searching or filtering can initiate/activate an unrelated button on the model/page
12413	Datasheet matrix Pick List editing on the web spuriously shows the element icon in the edited cell.
12409	Excel Merge Export Synchronizer appends empty cells above matrix when specific cell is selected.
12410	Excel exports show columns which have been hidden in datasheets in Mood
12414	Custom Visualization hasAction elementIds array doesn't work (i.e., only one / the first element id of several will get a callback / answer).
12415	Off model action panels appear below the model when enter is pressed in text editor linked to an off model button.

## Issues Fixed between 16.082.02 and 16.085

For a list of new features, please visit the Customer Support Portal, where you can find more training materials.

Some duplicate (in appearance) issues and issues from 16.082 hotfixes may appear in this list.

Number	Issue
12235	Business Architect can crash if a '%' symbol is used in the name of a Picklist Item and Pick Type when configuring a freeform threshold fact in an aggregation matrix.
12259	Business Architect crashes if "Remove and Delete" is chosen when Action Panels, Info Panels, or Graphs are flipped and form part of the selection via Select All (Ctrl+A).
12217	Business Architect crashes when editing the Validation Message action and immediately choosing a comparison type.
12299	Business Architect crashes when saving a query containing a joined query which has been deleted.
12218	Button set to 'update fields on an element': Removing a field in Manage Themes causes activation exceptions to be shown to the user on opening a model.
12357	Excel import where a name is linked to an empty cell causes an abrupt stop to a Synchronizer and incomplete zombie elements, plus an ugly exception in Business Architect "The element name cannot be empty".
12378	Field values on Inline forms showing 'field(s) from related elements' are not saved correctly when using query variables
12205	In a rare circumstances Business Architect crashes when adding an Enhanced Metafile (.emf) onto a model
12354	Web Panels can show incorrect results when Server Caching is on and elements have non-unique names
12220	After deleting a pick list in use by a panel, an exception error is shown if that panel is subsequently flipped.
11308	A 'Link Button' configured to target a new window, pinned to another control for the source element, will navigate to a blank model
11311	A validation message for the 'required' condition falsely triggers when pinned to the selected element of a matrix.
12204	Active Enterprise Connection Queries return incorrect results. Mood Connection events report origin as Unknown rather than Active Enterprise
12277	Database snapshot activator does not drop the snapshot database on Azure Managed Instances
12045	Definition Window: Copied text from outside of a virtual machine, pasted to a definition window's formatted text field inside a virtual machine loses content
11241	Delete Element Synchronizer does not tell the user which element has failed if the user does not have permissions to edit an element
12248	Documents Synchronizer fails to load date/number variables if the system region (locale) has changed.
12348	Editing the range of a large excel file in an excel import can cause Out of Memory exceptions
12346	Element Names are an XSS vector in Relationship Field Controls which are set to be ReadOnly in web forms.
12306	Email synchronizer does not expose query variables
12247	Excel Merge Export overwrites an existing password protected Workbook even if the "Merge the matrices into the Workbook" option is selected.
12167	Exports can fail to show images from Formatted Text field editors when streamed from the web.
12318	Field Type Names are an XSS vector when Editing Timeline Matrices bars on the web.
12270	If SQL Server collation is different to database collation, temporary table statements may fail for Measure imports or some hierarchical imports.
12052	Importing a large Excel spreadsheet in Excel Native mode can cause Business Architect to show multiple Exception windows
12233	In the definition window, pressing Esc blanks the window
12289	Info Panels on the Web cannot be sorted if the column name has been given a different visual name than the original field name.
12241	Link Button panels where the Update Fields on an element action had been applied can lose their hard-coded flipside values or pins after upgrade.
12238	Matrices in popup or inline forms ignore variable values
12140	Panels which are variantated do not appear to have the correct used-by information of pinned symbols

<b>12370</b>	Pressing Close after opening the Spotlight mode's background popup can crash Business Architect
<b>12228</b>	Radial Chart node does not centre items clicked first time where other panels are green pinned to it and it is orange pinned to a calendar.
<b>12201</b>	Show Where Used does not work correctly for queries that are used within a relatedness chart
<b>12161</b>	Smart Column always returns 33 when calculating the length of a number converted to a string
<b>12240</b>	Smart Columns in popup forms ignore variable values
<b>12271</b>	Some queries will not be supported as SQL because SQL Version detection is wrong for Azure Managed Instances
<b>12285</b>	Synchronize Preview 'Search' can appear to not work where import list exceeds e.g., 1000+ items.
<b>12269</b>	The Apply Model Master tool will apply a model master to all model types in a Universal Theme despite being asked to only apply to one model type.
<b>12109</b>	Triple clicking an item on the explorer tree in BA begins a rename
<b>11971</b>	Users are not presented with a password dialog when setting up Excel imports for password protected workbooks.
<b>12291</b>	Web Forms: Name fields pinned from Form Creators or Editors do not populate with the expected text
<b>12297</b>	When inside Business Architect on a Virtual Machine, formatted text copied from a definition window and pasted to a host machine loses formatting.
<b>12252</b>	When using the Send To command in About Mood->File Versions screen, users are incorrectly shown a "MooD was unable to find a mail client on this computer" message.
<b>12347</b>	XSS Vulnerability: Element Name is a vector for XSS in Knowledge Activation on the Web
<b>12316</b>	XSS Vulnerability: Element Names are an XSS vector in Bar Chart Matrix Tooltips on the Web
<b>11979</b>	A RemotingException is thrown when reopening repositories after uninstalling Active Publisher and Business Integration Engine
<b>12223</b>	A validation error is shown on the web when a smart column or query's variable changes data type. i.e. "The data type cannot be converted to a string."
<b>11370</b>	A Web Text Editor panel with minimum and maximum validation configured can incorrectly show warnings for the minimum.
<b>12214</b>	Adding an .emf image to model via ribbon fails to render in Business Architect and on the Web
<b>11689</b>	After logging into a custom-designed Login page using text boxes and buttons, the user is not always redirected to their homepage on success.
<b>12206</b>	Business Architect asks the user if they mean to add a duplicate relationship, then ignores a negative response and adds it anyway.
<b>11635</b>	Business Architect Ribbon: Spelling inconsistency of 'Colours' and 'Colors' in UI dialogs
<b>2344</b>	Business Architect shows a null reference exception dialog when connecting to a knowledge centre that is in the 'work offline' state.
<b>9966</b>	Can't Excel import formulae including [square brackets] in server mode
<b>10191</b>	Cells in excel with errors can't be imported into a relationship field as a lookup.
<b>12219</b>	Conditionally formatted matrix cell has inconsistent background colour when edited in the web.
<b>12272</b>	Custom Visualization: Aggregation fact data is missing (null) when inside a list of values.
<b>12105</b>	Custom Visuals: Importing a zip file with a svg / image dependency produces a null reference exception
<b>10927</b>	Danish Time and Date Settings Cause Excel Hierarchy Import to Fail
<b>11301</b>	Deleting from a Formatted Text field in a floating Definition Window attempts to delete selected panels on the model
<b>10143</b>	Dropping multiple elements onto panels which allow users to add elements manually can result in multiple duplicate elements being added.
<b>12281</b>	Excel Merge Export: Streaming to the web streams an unopenable Excel file on some mis-configuration conditions.
<b>10610</b>	Excel synchronizers cannot open password protected Excel files from Excel 2010 onwards
<b>12178</b>	Exporting bulleted text from Business Architect to Word via Document Export Synchronizer indents bullet points from the second point.
<b>11237</b>	Field editor shows stale information / does not show empty date values
<b>8923</b>	Flipping panels that are grouped can cause a flipped panel to be unselectable

<b>10691</b>	Format Style shows Save as Initial Style for a link of this type as greyed out. (Now replaced with a Save option, and you should use Manage Themes instead).
<b>10473</b>	Formatting changes to requirement links are lost when the user refreshes the model
<b>12245</b>	Help->About->File Versions->Copy to clipboard : Files copied to clipboard doesn't include the installed files.
<b>12234</b>	Importing a CSV file with the Excel Import Synchronizer creates multiple elements with the same name for a related element.
<b>10973</b>	In Business Architect's Repository Explorer window, the user is not warned when renaming to a non-unique name when the warning option is enabled
<b>12279</b>	In Repository Manager, there is no visual indication of what the resultant action may be if the user presses enter when removing a repository, the Server tab then also shows an incorrect Show/Hide status.
<b>12360</b>	In the Definition Window of Business Architect, if you delete formatted text and reload the field, you may experience weird formatting issues.
<b>11755</b>	In the Definition Window of Business Architect, users are unable to remove strikethrough or background colours. - Fixed by the Clear Formatting menu item.
<b>12211</b>	In the Repository Explorer bar, pressing the delete key on an action or graph icon brings up the dialog to remove them from the gallery.
<b>10820</b>	In the Select Tool on a model, link types are not hidden when the 'eye' icon is set to 'hidden'.
<b>12209</b>	In the Web, elements on a Matrix and Info Panel do not show mouse over row-highlights when pinned by a button
<b>10676</b>	Info Panels shape formatting is lost in the Web when used in conjunction conditional formatting.
<b>10900</b>	Info Panels showing labels as column titles appear more indented on the Web than in Business Architect.
<b>12366</b>	Inline forms are refreshed, and the content is lost without warning when controls pinned to the inline form are changed
<b>12230</b>	Matrices in inline forms in Document Exports do not render if executed from Web Preview
<b>10805</b>	Matrix Row grouping with alternate row colours and zero-width columns does not display correctly in Business Architect or the Web
<b>12329</b>	Network Chart Tooltip which is set to 'Element Name' does not display after Upgrade.
<b>12215</b>	New Active Enterprise users are prompted to change their password even if it has been previously changed by logging into Business Architect
<b>12365</b>	Number fields on inline forms will not update nor correctly validate if they failed a validation first and a form dependency changed.
<b>12242</b>	Password fields in popup forms are not obfuscated with stars "*****" when a stylesheet is applied
<b>12086</b>	In Business Architect, the Pickup and Apply format tool does not apply pictures used as a fill image
<b>12350</b>	Potential Injection attack: Contains validator incorrectly allows RegEx input characters
<b>12058</b>	Pre-Chromium and Chromium versions of Microsoft Edge appear separately in the Web Preview browsers dropdown, and the second option does nothing.
<b>11984</b>	Show where used does not report results for a smart column when it is used in the definition of a conditional format of an info panel
<b>12239</b>	Smart Columns in inline and popup forms show as a matrix not the value returned for the given element
<b>9288</b>	Some Excel UI features are available in the range selection window when selecting data ranges in Excel Synchronizers, which causes issues with Mood's wizard.
<b>12298</b>	Symbols showing model images sometimes show the model master image only, rather than the composite of both.
<b>12244</b>	Synchronization mappings using a Split String Modifier mapped to two relationship lookups raises an exception 'The Microsoft Jet database engine cannot find the input table or query'
<b>12292</b>	The Business Integration Engine Manager is almost unusable on high resolution screens with various font scaling settings.
<b>8785</b>	The edit box is too small when renaming model masters in Business Architect
<b>11558</b>	Typing in text within the Query Builder feels very slow when the Query Overview panel is open.
<b>11294</b>	Unable to hide Relationship Links when using Layout's 'Select' tool

<b>12221</b>	Unable to select a Query in an Aggregation Matrix designer dimension level '<click to add a block here>' search field.
<b>10509</b>	Unticking "add rows/columns" in an aggregation matrix does not show a modification, and thus does not allow the user to save unless something else is modified.
<b>12002</b>	Updating a query to change the query in a "where the element is one of" clause is not detected as a modification for Save & Close prompting.
<b>12229</b>	Web Preview can show exception dialogs if Loading.aspx with a threaded run is invoked.
<b>12352</b>	When a Compare value of a Validator Message panel is pinned (using the cog icon) to info panels or matrices, no value is retrieved.
<b>12371</b>	When a panel is flipped in Business Architect, right clicking whilst holding any pin causes the panel to become unresponsive
<b>11547</b>	When constructing a Query to start from elements, after adding the first element, all further elements presented in the search window are limited to elements of the same type.
<b>12261</b>	When editing pins in Business Architect, deleting the green pin (Press 'Del') removes the pin from the UI instead of sending it home.
<b>12179</b>	Windows 7/Server 2016: The Web Preview button doesn't work for Edge
<b>12308</b>	Within the Performance view in Business Architect, Threshold names which are 37 characters or longer do not display correctly in the list on the left.
<b>12349</b>	XSS Vulnerability: 'Activation Properties' are a vector for XSS in Knowledge Activation on the Web
<b>12343</b>	XSS Vulnerability: Epoch names are a vector in the Epoch Picker on the Web.
<b>12377</b>	XSS Vulnerability: Matrix panel pagination template is an XSS vector in Matrix panels on the Web
<b>12195</b>	XSS Vulnerability: Pick item names are a vector as HTML Characters in Multi Pick items can disrupt the formatting of a Synchronizer Preview Window
<b>12321</b>	XSS Vulnerability: Relationship names are a vector in Relationship Editors in popup or inline forms.
<b>12162</b>	A Data Sheet Matrix Row Title is not shown when Matrix is first executed
<b>8568</b>	A Formatted text field editor in forms only updates validation when a save button is clicked instead of when the user has moved focus away from the field.
<b>12257</b>	A new matrix can appear in the Examine window of the wrong element
<b>11876</b>	Activation Exception: 'Permission to perform the action on this element was not given' if a user attempts to create a Knowledge Centre
<b>11118</b>	After installing Business Integration Engine with a custom port, the Manager doesn't use this port. And upon changing the value in the UI, it's not remembered for the next use of the tool.
<b>10575</b>	Applying a Model Master that has not been opened appears incorrectly in the Web.
<b>9361</b>	Business Integration Engine Installer should pull the old port number from the previous config
<b>12293</b>	Business Integration Manager - The impact of options in the user interface to disable or enable scheduling are unclear, and can lead users to believe synchronizers are failing.
<b>11341</b>	Buttons or link Buttons, set to 'Open in new window', open models in new tabs instead.
<b>12188</b>	Cannot create a new User Group if you already have one called "New Group"
<b>12208</b>	Column width cannot be changed in a Relationship Field Ticks matrix by right clicking a column title
<b>12315</b>	Database Imports are missing the option for 'current repository' in the connection dialog
<b>8754</b>	Deleting a repository in Repository Manager which is active in the Business Integration Engine causes an ugly exception "Failed to drop database".
<b>12309</b>	Document Export Patterns window gives a poor user experience when inserting or repositioning rules, as it refreshes and moves scroll positions.
<b>12210</b>	Documents Export – multiple formatted text in a matrix export removed spaces between formatting.
<b>11217</b>	Editing relationships on the Web from an Info Panel which is not showing an icon shows the message 'An error has occurred when trying to edit the value' in IE11 and Edge .
<b>9410</b>	Error "Cannot communicate with Microsoft PowerPoint (Invalid pointer)" when saving a presentation to PowerPoint in Spotlight mode. - We've removed the need for PowerPoint to be installed or used directly..
<b>11016</b>	Excel Import wizard cannot be completed after being given an invalid file
<b>10255</b>	Excel Import: Select Data Range step attempts to open hidden sheets and displays them incorrectly
<b>11888</b>	Excel Imports - After providing an invalid file, the user is able to continue selecting ranges

<b>11271</b>	Exporting a Matrix to Excel does not mark the 'count results' cell as numeric, but instead is marked as a string.
<b>10386</b>	Favourites: Multi-select in query window doesn't allow multi-add to favourites
<b>12200</b>	Graph panels are not redrawn after using the Format Style dialog to change their size
<b>10658</b>	If query groups are floated, adding a new query in one window, adds the query to the other floated windows as well.
<b>12274</b>	In Business Architect the Start Page options vanish when double clicking in the white space on the right-hand side
<b>11267</b>	In Business Architect's Performance view, Pick Lists are shown in an incorrect order.
<b>12313</b>	In Document Exports styles are not applied fully to the first formatted text rule
<b>11729</b>	In Repository Manager, backing up a repository and typing incorrect credentials produces an ugly InsufficientAuthenticationPrivileges exception
<b>8378</b>	In the Performance View of Business Architect, the threshold save dialogue pops up twice.
<b>10411</b>	In the range selection of an Excel Import, the second worksheet cells are not correctly highlighted
<b>12236</b>	Inside the Definition Window of a Mood User Group, the 'Choose' button in the Home Page section can be disabled after Selecting/Deselecting the Home Page drop-down
<b>10190</b>	Internationalization: Business Architect cannot import Excel data when system regional settings are Spanish
<b>12351</b>	Invoking another "Show Where Used" from within the "Show Where Used" window, does not show where the item is used.
<b>10453</b>	Manually Adding elements to a panel from the explorer bar adds too many elements
<b>12207</b>	New users that have reset their password using a token are asked to reset again on sign in
<b>12175</b>	Opening the Style Sheet editor dialog and closing it prompts the user to save changes when nothing has changed.
<b>12372</b>	Pressing the Enter key while typing in a calendar will not cause a pinned popup form to open
<b>11278</b>	Project Import Synchronizer fails in Active Enterprise with event log showing RPC_E_CALL_REJECTED
<b>12278</b>	Repository Manager shows an ugly exception when clicking 'Show' on a repository that no longer exists
<b>12253</b>	Show Where Used does not show matrices which are used in matrix thumbnails on models
<b>11173</b>	Synchronization - Aggregation Cache Dialog window has OK and Cancel in the wrong order.
<b>12275</b>	Synchronizer ribbon icons appear greyed out when double clicking nodes such as 'Performance' or 'Synchronize' options in the Library section of the Repository Explorer Bar.
<b>11235</b>	The % of row total option in matrices shows the value instead of % when there is only 1 column
<b>12224</b>	The "Save as the initial style for all info panels" option is available for Action panels but is not appropriate and has no function
<b>11236</b>	The act of unpinning an info panel from its subject is not recognised as a modification to the model and can be lost
<b>12323</b>	The Document Export Patterns Tab's scroll bar cannot be used when adding a Rule
<b>10388</b>	The Favourites Window doesn't allow users to add the first group
<b>12168</b>	The Windows Event log shows System.FormatException: Input string was not in a correct format when users enter bad information or data in text boxes on the Web. - it's not logged as an informational rather than an error.
<b>12324</b>	The wording in Form Pop-up Element Creators and Editors when prompting for unsaved changes is confusing.
<b>12212</b>	Tree Map using a query that returns no results raises an 'Uncaught TypeError' in the JavaScript console and shows a red cross in Chrome..
<b>11603</b>	Undo does not work in formatted number text editor
<b>11117</b>	Upgraded (from) Mood 15 Memo fields on a matrix show formatting when the cell format set to Plain Text
<b>7506</b>	User receives unhelpful Activation Exception message (RPC_E_CALL_REJECTED) on opening a Project file on a system where Project is not activated
<b>12243</b>	Web Preview does not open in the foreground when using the default browser button

<b>12144</b>	When configuring an Excel import, it's possible to fool the validation mechanism that your ID column is ok, resulting in a Synchronizer that does not execute.
<b>12320</b>	When dragging elements from the Explorer Bar directly onto a relationship field in the Definition Window the user is unnecessarily prompted to select a field.
<b>12222</b>	When modelling in Business Architect, the Bring to Front / Send to Back actions cannot be undone
<b>12099</b>	When the Repository Explorer bar opens on the Style Sheets tab, users may be unable to create New Model Master
<b>12345</b>	XSS Vulnerability: Validation messages are a vector for XSS when pinned to some controls.
<b>12047</b>	Custom Visualisations in Business Architect are not ordered deterministically.
<b>12202</b>	Dropping an element into the Definition Window to create a relationship always prompts for the field, rather than picking the field you've dropped into.
<b>8205</b>	Fill Effects in the Format Style dialog do not always reflect the correct settings of the selected shape.
<b>12294</b>	Floated windows and docked windows from the Repository Explorer retain the highlight of their previous selection even after selecting a new item in a new window.
<b>12312</b>	A list copied from Word to a formatted text field has broken indentation when exported via Document Export
<b>12317</b>	In Business Architect, Microsoft Edge can appear twice in the "Web Preview" dropdown
<b>12042</b>	In the Definition Window for a Mood User, and "Chosen by my user group" is selected, users can still drag in elements into the homepage field.
<b>12203</b>	In the Synchronization view of Business Architect, Synchronizer groups do not show a visible expand/collapse toggle icon.
<b>12335</b>	More than one 'Show Where Used' option is available on the context menus of elements in the 'Styles' tab.
<b>11355</b>	No user feedback given when a flipside input variable is set to ignore
<b>12231</b>	Nothing happens in Business Architect's Favourites window when the Export button is clicked and there are no models on the elements present
<b>11127</b>	Page Sizes of PowerPoint Slideshow Exports are incorrectly affected by off-screen content.
<b>9238</b>	Scrolling quickly through repositories in Business Integration Engine Manager results in strange visual artefacts
<b>12336</b>	Spotlight: Arrow keys cannot initially be used to changed slides while the "All Slides" menu is open
<b>12232</b>	Starting spotlight when there are no items in the favourites group does nothing.
<b>12199</b>	Symbols can appear to lose their grid snap position at different zoom levels
<b>12254</b>	The descriptions of the numeric styles and shape styles in the Documents Export "Start List" rules are unhelpful - a graphical representation would be nicer.
<b>11998</b>	The flipside of a Formatted Text Editor panel incorrectly suggests users can pin the value of the text
<b>7951</b>	The Model Master Ribbon button 'Follow Theme' is sometimes highlighted when it shouldn't be.
<b>12302</b>	The Style Sheet Editor does not retain its size between uses.
<b>12268</b>	The Synchronization 'select file' dialog text is truncated abruptly even on 100% font scaling.
<b>9621</b>	The tooltip in the Synchronizer Mapping Screen of a Database Import field incorrectly identifies a Whole Number as a Large Fractional Number
<b>12263</b>	The Zoom slider bar at the bottom of Business Architect does not update after clicking "Show pin" on action panel
<b>8751</b>	Users are prompted with confusing questions when there are unsaved changes in the Business Integration Engine Manager

## Issues Fixed between 16.076.00 and 16.082.02

For a list of new features, please visit the Customer Support Portal, where you can find more training materials.

Number	Issue
12218	Field update Activator: Removing a field in Manage Themes causes activation exceptions to be shown to the user on opening a model.
12217	Business Architect crashes when editing the Validation Message action and immediately choosing a comparison type.
12216	Google Maps logs a warning or fails to render
12204	Active Enterprise Connection Queries return incorrect results. Mood Connection events report origin as Unknown rather than Active Enterprise
12205	Images added to Business Architect as .emf cause Mood to crash when included in a model.
12186	Clicking 'remove' on a column in a matrix crashes Mood.
12156	On a specific Windows Server 2019 install clicking on the model canvas after changing some attributes of action panels or graph panels via the ribbon causes Mood to fully close without any warnings
12088	Business Architect appears non-responsive when opening a model master
12121	Excel Merge Export Synchronizer corrupts target file when merging into a specific cell
12163	Synchronizer(s) Execution Synchronizer does not continue if an error occurs, and you told it to.
12082	Repository Manager: When a database is restored and upgraded with a different name, the Remove Aggregation Cache Partitioning stored procedure fails
12093	Windows 7: Business Architect appears to hang or crash when pasting panels.
12091	Windows 7: Business Architect appears to hang or crash when 24 web controls are rendered
11905	Exporting bulleted text from Business Architect to Word via the Documents Export isn't possible or easy.
11970	Business Architect crashes when setting up an Excel Import Synchronizer using a password protected Excel document
12094	Business Architect reports a crash when closing after editing a style sheet
12134	Button panels and forms which allow Select Fields... to expose variables on the flipside can lose their hard coded values on upgrade to M16B76
12215	New Active Enterprise users are prompted to change their password even if it has been previously changed by logging into Business Architect
12207	New users that have reset their password using a token are asked to reset again on sign in
12010	Date markers in Timeline matrices are showing incorrect time when in web preview or Active Publisher
12142	The ribbon button for Insert Hyperlink is greyed out, and the Object button is available when in an element's Open window of Business Architect.
11896	Excel Import using a file pattern of "C:\?" or "C:\*" raises exceptions
12120	Excel import Synchronizer's Range selector does not enable the finish button when changing the data type of columns
12137	Field update action loses the reverse relationships functionality if a forward and reverse relationship of the same field is pinned to the flip side, and upgraded to 16.76
12139	Hyperlinks and Text Boxes in Models can't be edited easily because context menus have greyed out options.
12095	Running a Document Synchronizer in web preview can fail if the model contains an inline form, with the message "A problem has occurred rendering the panel."
12138	Excel files are reported as corrupted or unsafe by Excel when using the Business Architect Matrix Designer's Export to Excel feature.
11989	Matrix column widths configured in Business Architect are ignored by the Documents Synchronizer.
12151	Mood Queries fail to produce valid SQL when changing the order of OR conditions
12089	Open Street Map does not display tiles in Business Architect
12097	Open Street Map fails to render (shows a pink/red background in the panel) in IE11
12111	Any web form (i.e. Popup Element Creator) fails to create a relationship to another element via a Reverse Relationship when linked through Variable on the Inputs Tab pinned to any control.
12150	Queries changed from 'starting from variable' to 'starting from the parameter' cannot be cached using the Cache Synchronizer.
12024	In a form's configuration, changing a relationship field editor from multi-relationship to a ticklist control stops the form from loading. Event log shows a JSON serialization issue.

<b>11177</b>	Synchronizers: Relationship lookups are not case insensitive, causing duplicates to be imported.
<b>12132</b>	Business Architect can become non-responsive when opening a repository and selecting the 'List' icon.
<b>12152</b>	Show Where Used shows an empty result when adding a Model Master in a menu panel
<b>11415</b>	Smart column - 'where modified date' prevents the aggregation from executing
<b>12160</b>	Visio Import fails to import relationships and lines when stencils are connected together by lines.
<b>11988</b>	Visio imports fail with "Failed to find related target record for a new target link" when importing relationships on connections.
<b>12210</b>	Documents Export – multiple formatted text in a matrix export removed spaces between formatting.
<b>12098</b>	Windows7: Business Architect: Closing Mood encounters a window reporting Salamander.HTMLRendering.exe "Breakpoint - a breakpoint has been reached"
<b>12104</b>	Windows7: Business Architect reports that Mood HTML Rendering has stopped working when flipping a custom Visualization and making some changes.
<b>11630</b>	Aggregation Matrix Columns collapse into one column when the source query is empty.
<b>12124</b>	Aggregations: An incorrect list of fields is shown to the user when selecting fields of a Query Fact which is inside a Function Fact.
<b>11972</b>	Using a password protected Word template in the Documents Synchronizer can cause the user to be spammed with error dialogs.
<b>12209</b>	Elements on a Matrix and Info Panel do not show mouse over selection when pinned by a button
<b>10148</b>	A Database snapshot cannot be executed on rep connected with a SQL Server Authentication in Business Architect. - new feature added to select an alternative connection.
<b>11758</b>	The button panel option 'and open in a new window' doesn't update if the matching ribbon setting changes.
<b>12073</b>	Calendar: It is not possible to select the first or last year in the control.
<b>12153</b>	Child Model Masters which haven't been opened and saved and are subsequently applied to another model, can cause menu bar controls on the parent model master to be inaccessible on the child model master
<b>11747</b>	Double clicking the top left corner of the Excel Import range selector appears to highlight cells but doesn't change the data selection.
<b>12126</b>	Dragging a Query from the Repository Explorer on to a Query 'starting from a query' block doesn't immediately update the ribbon buttons for the query being edited.
<b>12110</b>	Exporting formatted text cells from a matrix to Excel appear as Arial 10, whereas the rest of the cells are Arial 8
<b>11691</b>	Excel Import Synchronizers produce cryptic messages when they encounter unsupported formulas.
<b>12116</b>	Excel Merge Export fails when target sheet name contains ' ! or \$
<b>11895</b>	Excel Merge Export requires Excel to configure a merge to excel.
<b>12170</b>	Salamander.Core.UI.Forms.ExceptionList is shown when a Synchronizer fails
<b>12164</b>	Execute Synchronizer(s) Synchronizer fails when executing another import Synchronizer with a cryptic message "No Alias was found within..."
<b>12090</b>	GoogleMaps and OpenStreetMap fail to render in Active Publisher because they are blocked by a Content Security Policy
<b>12148</b>	In Integrator, when merging, the progress text is hidden behind the squares
<b>12187</b>	A text editor fails to render with a smart column to count the child elements with a given name when there are none.
<b>11745</b>	Keyboard selection does not work in excel import
<b>12048</b>	Document Synchronizer: Cannot drag/drop a pattern on to the main window when there is no other content
<b>11875</b>	The Examine Window doesn't show an element has an updated 'modified date' when a relationship within the element has been modified. (fix does not extend to fields on relationships)
<b>12133</b>	Open Street Map: Osmarenderer shows a red background and console shows Content Security Policy errors when using Microsoft Edge (chromium).
<b>12092</b>	OpenStreetMap does not render in Active Publisher on Microsoft Edge (pre-chromium)
<b>12130</b>	Incorrect renderer URL for Open Street Map causes slow and repeated rendering
<b>12076</b>	Page request Mood Events are not logged/created when a user accesses a knowledge activated document

<b>11461</b>	Removing text from the name field in the Manage Database Connection window stops buttons from working
<b>5740</b>	Synchronization mapping screen - Pressing the delete button, while editing a comment, instantly removes the comment from the screen
<b>12013</b>	Synchronization mapping screen: Cannot add 'Measure Instances' record description if there is no Current Epoch
<b>12145</b>	Synchronization mapping screen: Scrolling the mouse when editing a comment causes red cross over the mapping screen and a message "Parameter is not valid"
<b>12127</b>	Synchronization field modifiers: String split/join/before/after etc field modifiers can't use tab and other characters
<b>12165</b>	The (Starting from) 'Types' dropdown does not work after docking query window
<b>11744</b>	Excel import range selection window - Unable to highlight the data when dragging outside of the data area.
<b>12149</b>	When performing successive merges, the displayed total merge time is measured from when Integrator was first opened
<b>12212</b>	Tree Map using a query that returns no results raises JavaScript exception error on the web.
<b>12167</b>	Exports can fail to show images from Formatted Text field editors when streamed from the web.
<b>12157</b>	A bend does not get added to the end of a line in an ArchiMate V3 blueprint with a style gallery applied
<b>12135</b>	Activation Exception thrown opening the Style Sheet Editor after a failed execution of a Database Snapshot Synchronizer
<b>11958</b>	Business Architect - When editing an element you cannot use the keyboard shortcut to open a relationship
<b>11320</b>	The Capture Model feature in Business Architect can sometimes include pins in the image.
<b>12155</b>	Changing a query called within a WHERE clause inside a query block doesn't trigger the modified star (*) to appear
<b>12051</b>	Changing content rules doesn't affect open models
<b>12141</b>	Business Architect: Cannot tab & type between fields when editing an element.
<b>12131</b>	Excel Import Synchronizer 'Select a Data Range' dialog does not always highlight all cells right of selected cell
<b>12060</b>	Business Architect: Multi-Selected Elements in the Repository Explorer do not deselect as expected when using arrow keys
<b>12180</b>	Administer page not visible and cannot be set in Active Enterprise Settings
<b>12169</b>	Network Chart dialog displays rings in the wrong order
<b>12049</b>	Repository Manager: rename via F2 silently fails when invalid characters are entered.
<b>11195</b>	Cannot reorganize Model Master Groups with drag and drop
<b>11999</b>	Table names are aligned incorrectly in the Database import Synchronizer, making them impossible to read.
<b>8427</b>	Business Architect: Model Master Pane- The option to view Large Thumbnails is not remembered the next time the pane is opened
<b>10427</b>	Snapshot Database Synchronizer cannot populate the database when the repository contains a 250 character Type (from manage themes) name
<b>12059</b>	Add/remove line bend cursor has visible transparent background
<b>12125</b>	Aggregations: Edit Parameters feature in the Custom Function Fact editor draws badly
<b>12117</b>	When editing an element in Business Architect, if the fields are expanded the context menu of a Relationship field refuses to remain on-screen
<b>12031</b>	Ease of use: Minor 'Move To' menu inconsistencies between Queries, Model Masters and other panes
<b>11001</b>	Repository Explorer Search Bar: Right Click Option for Open doesn't always open the fields of an element, sometimes the model.
<b>9854</b>	Library items: Can't right-click and create a new Synchronizer group
<b>11223</b>	Repository Explorer Search Bar: The right-mouse menu option for Look inside isn't available.
<b>12081</b>	Look Inside is mistakenly available on an Epoch menu
<b>8294</b>	Business Architect, examine window: There's no tooltip for copying an ID, which would help people know what it did.
<b>12071</b>	Manage Themes - When creating a measure theme, the Pick List name text is light grey and hard to read
<b>11858</b>	Excel Import Synchronizer: Poor grammar on the 'unable to open Excel file' message
<b>12112</b>	Timeline Matrix grouping method search box does not show what term the user has just typed.

<b>12074</b>	Pick Items: The Unknown State uses the wrong icon and shows the Query icon instead
<b>12177</b>	When specifying the name of the file in the flipside of a Button with \$N, it replaces the name of the button instead of the name of the subject element
<b>12189</b>	The Audit History menu item for Users and Groups is disabled
<b>12190</b>	The Find Owned Elements menu item for users and groups always shows elements owned by Administrator

## Further Information and Contact Details

MooD has a UK based technical support team. The contact details are:

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- 5.1.3 terminate this Licence immediately by notice in writing to the User and refund any of the Licence Fee paid by the User as at the date of termination (less a reasonable sum in respect of the User's use of the Mood® Technology to the date of termination) on return of the Mood® Technology and all copies thereof, in all cases, provided that the User provides all the information that may be necessary to assist Mood International in resolving the Non Conformity, including sufficient information to enable Mood International to re-create the Non Conformity.
- 5.2 The remedy set out in clause 5.1 shall constitute the User's sole remedy in relation to any Non-Conformity and shall be subject to the User complying with its obligations hereunder.
- 5.3 All other conditions, warranties or other terms which might have effect between the parties or be implied or incorporated into this Licence or any collateral contract, whether by statute, common law or otherwise, are hereby excluded so far as is permitted in relevant applicable law, including, without limitation, the implied conditions, warranties or other terms as to satisfactory quality, fitness for purpose or the use of reasonable skill and care.
- 5.4 Mood International does not warrant that the Mood® Technology will meet the User's requirements or that the operation of the Mood® Technology will be uninterrupted or error free or that defects will be corrected. Mood International shall also not be responsible for any failure by the Mood® Technology to provide any functions not specified in the Release Notes.
- 5.5 The exclusions set out in this Licence shall apply to the fullest extent permitted by the law provided that nothing shall limit Mood International's liability for: death or personal injury caused by its negligence or that of its officers, employees, contractors or agents; for fraud; for breach of the obligations implied by section 12 Sale of Goods Act 1979 or section 2 Supply of Goods and Services Act 1982, or for any other liability which may not be excluded by law.
- 5.6 Mood International shall have no liability to the User (or any person claiming under or through the User) for:
- a. any indirect, special, punitive, incidental, exemplary or consequential loss or damage;
  - b. any loss of profits, anticipated savings, turnover, business opportunity or damage to goodwill (whether direct or indirect); nor
  - c. any loss of data.
- Even if Mood International has been advised of the possibility of such damages.
- 5.7 Mood International's total aggregate liability, whether under this Licence or any collateral contract, in respect of loss or damage to the User's tangible property caused by the negligence of Mood International, its officers, employees, contractors or agents, shall not exceed five hundred thousand pounds.
- 5.8 Notwithstanding clause 5.6 Mood International's total aggregate liability, whether in contract, tort or otherwise and whether in connection with this Licence or any collateral contract, shall in no circumstances exceed a sum equal to the Licence Fees actually paid by the User to Mood International under this Licence.
- 5.9 The User accepts that the exclusions and limitations detailed above are reasonable and reflect the nature and application of the Mood® Technology, and are reflected in the Licence Fee.

## **6. Modifications**

- 6.1 The User recognises that modifications and upgrades to Mood® Technology pursuant to clauses 5.1.1, 7.8 or under the Support and Maintenance Agreement may affect their performance or functionality.
- 6.2 Subject to the provision of reasonable written notice to the User, Mood International reserves the right to amend the terms and conditions of this Licence and the accompanying Release Notes upon receipt by the User of the modifications and upgrades to Mood® Technology referred to in clause 6.2 above.

## **7. User Responsibilities and Acknowledgments**

- 7.1 The User will endeavour, subject to security constraints, to provide Mood International or its agent with all information considered necessary by Mood International to diagnose and remedy any Non Conformity or defect or alleged defect in Mood® Technology.
- 7.2 The User shall be responsible for providing proper and accurate operating methods, security, data input, back up, restart procedures and power supply.
- 7.3 The User agrees to reproduce and include any Mood International copyright and confidentiality notices on all copies of Mood® Technology.
- 7.4 The User recognises that the effective use of the Mood® Technology is dependent on proper training and compliance with good computer practices, which the User shall be responsible for implementing.
- 7.5 The User agrees to notify Mood International (or their licensed distributor) immediately if the User becomes aware of any unauthorised use or violation of the Mood® Technology by any person.

- 7.6 Other than in relation to Licensed Third-party Products, this Licence does not include any right to use Third-party Products including those required or utilised by Mood® Technology. User agrees to obtain, as required, such Third-party Products licences at their own expense.
- 7.7 Should the User fail to perform any of its responsibilities under this Licence then Mood International will not be responsible for any delay, expense or other consequences arising from such failure, and the client shall reimburse Mood International for any costs or expenses incurred due to such failure.
- 7.8 The User acknowledges that during Licence Activation the Mood® Technology will send information about the Hardware Device and the software on it to Mood International and the User consents to the transmission of this information.
- 7.9 During Licence Activation, Mood® Technology may modify components of the Mood® Technology installed on the designated Hardware Device and the User hereby consents to those modifications which shall not significantly affect the functionality of the Mood® Technology otherwise than as notified to the User by Mood International.
- 7.10 The User acknowledges that no representations were made prior to entering into this Licence. The User agrees that, in entering into this Licence, it did not rely on any representations (whether written or oral) of any kind or of any person other than those expressly set out in this Licence. The User shall have no remedy in respect of any representation (whether written or oral) made to it on which it relied in entering into this Licence and Mood International shall have no liability otherwise than pursuant to the express terms of this Licence

## **8. Intellectual property rights**

- 8.1 The User acknowledges that all Intellectual Property Rights in the Mood® Technology (including without limitation all upgrades, enhancements and modifications) belong and shall belong to Mood Enterprises, and the User shall have no rights in or to the Mood® Technology other than the right to use it in accordance with the terms of this Licence.
- 8.2 Mood International undertakes at its own expense to defend the User or, at its option, settle any claim or action brought against the User alleging that the possession, use, development, modification or maintenance of the Mood® Technology (or any part thereof) in accordance with the terms of this Licence infringes the UK Intellectual Property Rights of a third party (**Infringement Claim**) and shall be responsible, subject to clause 5, for any reasonable losses, damages, costs (including legal fees) and expenses incurred by or awarded against the User as a result of or in connection with any such Infringement Claim. For the avoidance of doubt, clause 8.2 shall not apply where the Infringement Claim in question is attributable to possession, use, development, modification or maintenance of the Mood® Technology (or any part thereof) by the User other than in accordance with the terms of this Licence or use of a non-current release of the Mood® Technology.
- 8.3 Clause 8.2 is conditional on:
- 8.3.1 the User notifying Mood International in writing, as soon as reasonably practicable, of any Infringement Claim of which it has notice;
- 8.3.2 the User not making any admission as to liability or compromise or agreeing to any settlement of any Infringement Claim without the prior written consent of Mood International, which consent shall not be unreasonably withheld or delayed; and
- 8.3.3 Mood International having, at its own expense, the conduct of or the right to settle all negotiations and litigation arising from any Infringement Claim and the User giving Mood International all reasonable assistance in connection with those negotiations and such litigation at Mood International's request and expense.
- 8.4 If any Infringement Claim is made, or in Mood International's reasonable opinion is likely to be made, against the User, Mood International may at its sole option and expense:
- 8.4.1 procure for the User the right to continue using, developing, modifying or maintaining the Mood® Technology (or any part thereof) in accordance with the terms of this Licence; or
- 8.4.2 modify the Mood® Technology so that it ceases to be infringing; or
- 8.4.3 replace the Mood® Technology with non-infringing software; or
- 8.4.4 terminate this Licence immediately by notice in writing to the User and refund any of the Licence Fee paid by the User as at the date of termination (less a reasonable sum in respect of the User's use of the Mood® Technology to the date of termination) on return of the Mood® Technology and all copies thereof, provided that if Mood International modifies or replaces the Mood® Technology, the modified or replacement Mood® Technology must comply with the warranties contained in clause 5.1 and the User shall have the same rights in respect thereof as it would have had under those clauses had the references to the date of this Licence been references to the date on which such modification or replacement was made.
- 8.5 The User hereby agrees to indemnify Mood International against any claims, damages, legal costs and judgments arising from the User's use of the Mood® Technology beyond the terms of this Licence.

## **9. Term and Termination**

- 9.1 Either party may terminate this Licence at any time on written notice to the other if:
- 9.1.1 the other is in material or persistent breach of any of the terms of this Licence and either that breach is incapable of remedy, or the other party fails to remedy that breach within 30 days after receiving written notice requiring it to remedy that breach;

- 9.1.2 the other is unable to pay its debts (within the meaning of section 123 of the Insolvency Act 1986), or becomes insolvent, or is subject to an order or a resolution for its liquidation, administration, winding-up or dissolution (otherwise than for the purposes of a solvent amalgamation or reconstruction), or has an administrative or other receiver, manager, trustee, liquidator, administrator or similar officer appointed over all or any substantial part of its assets, or enters into or proposes any composition or arrangement with its creditors generally, or is subject to any analogous event or proceeding in any applicable jurisdiction; or
- 9.1.3 if an Event of Force Majeure continues for 60 days.
- 9.2 Mood International may terminate this Licence:
- 9.2.1 at any time upon written notice to the User in the event that the User initiates formal legal proceedings that challenges the validity of Mood Enterprises' Intellectual Property in the Mood® Technology;
- 9.2.2 if an applicable Licence Fee is not paid within 60 days of receipt of Mood International's invoice in relation to the same; or
- 9.2.3 if the User fails to pay fees due under the Support and Maintenance Agreement within 60 days of receipt of Mood International's invoice in relation to the same.
- 9.3 Termination by either party in accordance with the rights contained in clause 9 shall be without prejudice to any other rights or remedies of that party accrued prior to termination.
- 9.4 On termination for any reason:
- 9.4.1 all rights granted to the User under this Licence shall cease;
- 9.4.2 the User shall cease all activities authorised by this Licence;
- 9.4.3 the User shall immediately pay to Mood International any sums due to the Mood International under this Licence; and
- 9.4.4 the User shall immediately destroy or return to Mood International (at Mood International's option) all copies of the Mood® Technology then in its possession, custody or control and, in the case of destruction, certify to Mood International that it has done so.
- 9.5 Clauses 3, 4, 5, 7, 8, 9, 10, 11, 12, 13 and 14 shall survive such termination.
- 10. Prices and Payment**
- 10.1 The User shall pay to Mood International the applicable Licence Fee in relation to each component of Mood® Technology.
- 10.2 Subject to clause 5.1.3, the Licence Fee shall be non-refundable.
- 10.3 Where payment is not made by electronic means prior to download, the Licence Fee shall be payable by the User to the account specified on Mood International's invoice and no later than 30 days following receipt of Mood International's invoice (electronic or otherwise).
- 10.4 Mood International shall be entitled to charge interest on late payments at a rate of [3] % above the Bank of England base rate.
- 10.5 Title to licences and all other rights associated with those licences, are retained by Mood International until payment in full is received.
- 11. Confidential Information**
- 11.1 Neither party may disclose to any commercial third parties any commercial in confidence information received from the other in the course of implementing this Licence unless otherwise agreed in writing by the other party.
- 11.2 Clause 10.1 shall not apply to information which has entered the public domain or which has been obtained from a third party legitimately without restriction.
- 12. Force majeure**
- 12.1 No party shall be liable to the other for any delay or non-performance of its obligations under this Licence arising from any cause beyond its control including, without limitation, any of the following: act of God, governmental act, war, fire, flood, explosion or civil commotion (an "**Event of Force Majeure**"). For the avoidance of doubt, nothing in clause 12 shall excuse the User from any payment obligations under this Licence.
- 13. Waiver**
- 13.1 No forbearance or delay by either party in enforcing its rights shall prejudice or restrict the rights of that party, and no waiver of any such rights or of any breach of any contractual terms shall be deemed to be a waiver of any other right or of any later breach.
- 14. Severability**
- 14.1 If any provision of this Licence is judged to be illegal or unenforceable, the continuation in full force and effect of the remainder of the provisions shall not be prejudiced.
- 15. Amendments**
- 15.1 Any amendment, waiver or variation of this Licence shall not be binding on the parties unless set out in writing, expressed to amend this Licence and signed by or on behalf of each of the parties.
- 16. Third party rights**
- 16.1 No term of this Licence is intended to confer a benefit on, or to be enforceable by, any person who is not a party to this Licence.
- 17. Notices**

17.1 Any notice required to be given pursuant to this agreement shall be in writing, and shall be sent to the other party by first-class mail or fax, provided that faxes are confirmed within 24 hours by first-class mailed confirmation of a copy. Correctly addressed notices sent by first-class mail shall be deemed to have been delivered 72 hours after posting and correctly directed faxes shall be deemed to have been received instantaneously on transmission, provided that they are confirmed.

**18. Entire agreement**

18.1 This Licence, together with the Support and Maintenance Agreement, where applicable, contains the whole agreement between the parties relating to the subject matter hereof and supersedes all prior agreements, arrangements and understandings between the parties relating to that subject matter.

**19. General**

19.1 The terms and conditions of this Licence shall apply to all software and services supplied by Mood International or its agent to the User, unless subject to a subsequent agreement between the parties.

19.2 This Licence may not be assigned by the User without the prior written consent of Mood International.

19.3 This Licence may be assigned by Mood International without the prior written consent of the User.

19.4 This Licence shall be governed by English Law and subject to the non-exclusive jurisdiction of the English courts.

19.5 The Mood® Technology is protected by copyright and intellectual property laws both nationally and internationally.

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